



Energy Modelling Platform for Latin America and the Caribbean (EMP-LAC) | 2024

Concept Note

Context

The Energy Modelling Platform (EMP) is an initiative supporting an Open-Source global community of practice made up of governments, finance institutions, universities, consultants and professionals, working together to achieve sustainable development and climate compatible growth. The EMP is divided into the following six chapters: African (#EMPAA), Latin American and Caribbean (#EMPLAC), North American (#EMPNA), Asia Pacific (#EMPAPAC), Energy and Climate Modelling Platform for Europe (#ECEMP) and the Global SDSummerSchool.com. The EMP has so far delivered 11 successful events worldwide.

The main objective of the EMP-LAC 2024 is to contribute to creating optimised investment business cases for the energy transition in Latin America and the Caribbean. Attracting this investment will meet the continent's growing demand for low-carbon, inclusive, and climate-resilient development pathways whilst making use of its large resource base.

This event is an excellent opportunity to acquire free training relevant to your professional role, to get access to discussion forums, and coaching skills in models and tools for energy planning needs.

To date, two EMP-LAC events have taken place. The first one, EMP-LAC 2022, was held online. The second one, EMP-LAC 2023, was much larger and took place 16 January - 3 February 2023. The first week was online and the last two weeks were in-person in San José - Costa Rica. Including trainers and participants, this event welcomed more than 100 people from 25 different countries. To continue this work, the EMP-LAC 2024 will take place in the city of Niterói, Rio de Janeiro, in Brazil, from 15 January - 2 February 2024.

Objectives

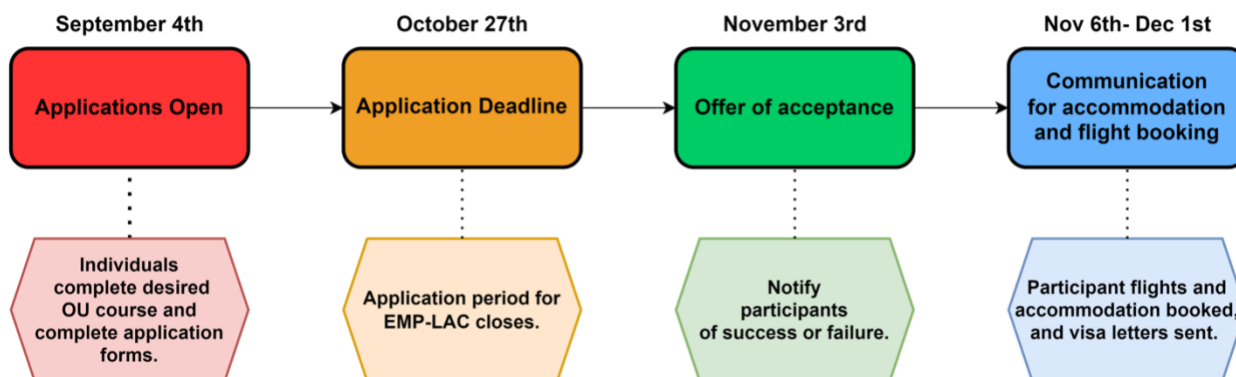
- Gather the energy planning and modelling community in Latin America and the Caribbean to share experiences, models, and data in climate, land, energy, and water systems.
- Support human and institutional capacity in Latin America and the Caribbean for integrated energy modelling and investment planning.
- Support the development of centres of excellence for energy planning in Latin America and the Caribbean.
- Promote efficient and widespread use of open-source modelling tools to support the implementation of the SDGs and the Paris Agreement.

Structure of the EMP-LAC 2024

This year's EMP-LAC will be an in-person event from 15 January – 2 February in Brazil (with the first week of training being online).

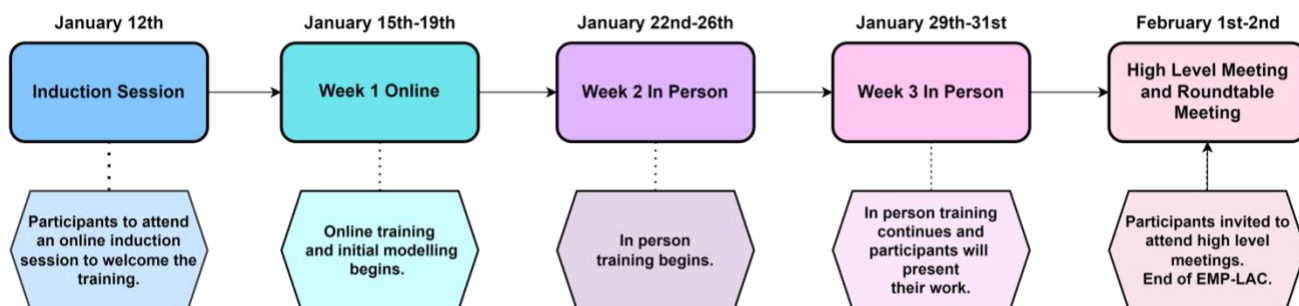
The application period is shown in this diagram:

Application Period



The application period will be followed by the training period, see below for dates and details. Please note that the majority of training sessions will be **conducted in English**. However, there will be Spanish and Portuguese speakers/trainers on hand to assist.

Training Period



During the EMP-LAC 2024, participants will acquire energy and resource modelling skills using one of the following open-source modelling tools/practices for sustainable development pathways under leading academics and researchers in the field of model-informed development strategies. There are eight tracks. They will focus on either:

- **Energy and Flexibility Modelling: OSeMOSYS & IRENA FlexTool**

This course will help participants to understand what investments, at what time, and at what scale, are needed in the energy sector to meet the growing demand for energy while meeting security, environmental, and other constraints. Special considerations will be made for modeling the flexibility of the electricity system, to account for high renewables penetration.

- **FinPlan (Financial Planning of Energy Infrastructure) and Investment Pipelines**

This training course will provide basic knowledge on financial theory and will show how financing is done in the power sector across the world. The primary focus will be on developing countries, and we will demonstrate how to carry out financial analysis of power projects using FINPLAN.

- **MAED and Energy Balance Studio**

This course will teach participants how to use two of the International Atomic Energy Agency (IAEA) modeling tools: the Model for Analysis of Energy Demand (MAED) and the Energy Balance Studio. In the process, participants will learn about energy balances and energy systems in general, assisting them in energy system planning.

- **Introduction to CLEWS: Climate, Land-Use, Energy and Water Systems**

This course will teach participants how to analyse policy decisions on issues such as the promotion of clean energy, competition for water and agricultural modernization, by teaching how to define model components, linking them together in an integrated system

representation, populating the model with data, running a model, and interpreting results using CLEWS.

- **OnSSET / The Global Electrification Platform**

This course will help participants learn about geospatial energy modeling, how to build your own electrification analysis, how to include the geospatial dimension in your energy modelling to unlock new dimensions and gain an understanding of the earth's different energy resources, and how to incorporate them in your energy modeling.

- **Input-Output-based Life-Cycle Assessment with MARIO**

The main goal of the course is to introduce students to the fundamentals of quantitative impact assessment methods and to the application of such using MARIO, an open-source python-based platform designed to handle and process input-output models. These quantitative models are specifically aimed at assessing the prospective environmental and economic impacts resulting from the application of technological or policy interventions at meso- and macro-scale, comprehensively including supply chain effects in a Life Cycle perspective.

- **Net Zero Playbook**

This course will guide participants through the key steps required to successfully deliver an electricity system transition. It will use an engaging "lectures and case studies" approach to set out how to create a long-term vision for the electricity mix. It will build understanding of the key elements of political support, policy and regulatory delivery mechanisms, network infrastructure and operational requirements, all framed by enabling technologies, supply chain and workforce needs and consumer and public buy-in. Participants will also bring their own case study to the course (e.g., a country or region), to work on collaboratively with ICTP convenors and other participants. This will bring the course material to life and ensure practical value when returning home.

- **Spatial Data Management and Analytics for Integrated Energy Planning**

From theory to practice, trainees will be introduced to the importance of spatial data and analytics for providing actionable insights for the expansion of clean energy services to support socio-economic development. Participants will work on practical hands-on exercises to identify high-priority areas for energy interventions. They will also upload, manage, and configure custom data in EAE's dynamic backend infrastructure. Through the training, participants will have the opportunity to customise a fully functioning version of Energy Access Explorer for a given geography (this may be national or subnational) and/or use a case of interest.

Each course has two parts:

- **Self-paced study:** Participants will complete the track of their choice and attach the certificate of completion on their application form (except for participants applying to “Net Zero Playbook”, “Input-Output-based Life-Cycle Assessment with MARIO” and “Spatial Data Management and Analytics for Integrated Energy Planning”, where a certificate is not needed for these courses). After participant acceptance, an Induction Session will take place (12 January). Participants will attend an introductory session on the geopolitics/political economy of the energy transition vis-à-vis long-term energy planning, to set the scene for the training course. Week 1 of the School (15 – 19 January) will be conducted online. Coaching and troubleshooting sessions will be scheduled to support applicants and further their modelling knowledge.
- **In-depth hands-on training** Week 2 and Week 3a (22 – 31 January) is comprised of an interactive component with dedicated trainers. Applicants will receive further coaching and training on using the tool from their chosen track for a national case study. Applicants are expected to develop a poster, and an 'elevator pitch' presentation for a senior decision-maker. Applicants are required to present the PowerPoint and poster in Week 3a on 1 February. Feedback will be given based on these presentations, as well as invitations to a high-level dialogue (1 February).

Participants will receive a certificate from CCG and the Universidade Federal Fluminense on successful completion of the hands-on training. Trainers will also receive a certificate from CCG and the Universidade Federal Fluminense for successfully acting as a trainer.

The last two days of the School (Week 3b, February 1st and 2nd) will be dedicated to:

- **A High-Level Strategic Dialogue** of government officials, representatives of international organisations and the expert community on planning and policies for national and sustainable development for the 2030 Agenda. This strategic dialogue is scheduled to occur on 1 February.
- **Roundtable Discussion on Strategic Energy Planning** - A complementary event organised by the FCDO, this event is scheduled to occur on 2 February (for trainers only).

Application

There is no fee to attend. However, competition for places is high, and places are limited. Applicants interested in participating in the EMP-LAC are required to complete the application form using the link below:

https://loughboro.qualtrics.com/jfe/form/SV_1zcZMrro79iHin4

This form has a 'Personal Details' section and an 'Application' section, where candidates are required to share information such as, but not limited to, their current job responsibilities, motivation for the application, and field of interest. This information from the candidate will subsequently be taken into consideration for the application process.

1. In order to be considered, you **must attach the Open University certificate** of completion for your chosen track to your application (unless you are applying for the “Net Zero Playbook”, “Input-Output-based Life-Cycle Assessment with MARIO” or “Spatial Data Management and Analytics for Integrated Energy Planning”).
2. Additionally, candidates are required to complete the [‘Modelling, policy and political economy’ course](#) available on the Open University website, and **attach the certificate of completion** on the application form (this must be done also for applicants to the “Net Zero Playbook”, “Input-Output-based Life-Cycle Assessment with MARIO” or “Spatial Data Management and Analytics for Integrated Energy Planning”). **Please note, this course is available only in English.**
3. Furthermore, a stamped **Letter of Commitment** stipulating an **express statement from participants’ respective institutions towards attendance of the module of choice** is **also mandatory** for attendance. To apply, you will have to demonstrate:
 - That the output of your study is in demand by the government that you represent; or
 - That the skills, tools, and teaching material that you acquire will be used in university teaching or government planning knowledge management; or
 - That the output will fit into policy-relevant research to be published on a visible platform.

Supporting documentation will require a letter from a head of unit or higher (government) or head of department or higher (university and others). Exceptions will be made for selected candidates from participating organizations and ongoing technical assistance programmes, and applicants will be notified via those channels. Priority will be given to

participants from countries with a demonstrated need and ability to apply the training to policy development. The selection of participants will include considerations of equity, diversity, and inclusion.

4. Lastly, a **Letter of Motivation** must be submitted by the applicant, in **which the applicant states why they should be selected for the course, and how their background knowledge and experience makes them ideal for the course.**

The deadline to submit the application form for participants who wish to **attend in person** is at **12.00 pm (GMT-3) on 27 October**, and applicants will be notified of their outcome by 12.00 pm (GMT-3) on 3 November.

Funding for in-person participants

Funding will be made available for in-person participants to cover the cost of travel, accommodation, and lunch. However, participants not selected for funding can still attend at their own expense. Please specify in your application if you wish to be considered for funding and whether you wish to attend the entire event in person or for a select few days.

Partners

In alphabetical order:

- Climate Compatible Growth Programme (#CCG)
- Energy Sector Management Assistance Program (ESMAP)
- Green Grids Initiative
- International Atomic Energy Agency (IAEA)
- International Renewable Energy Agency (IRENA)
- Imperial College London (ICL)
- KTH Royal Institute of Technology (KTH)
- OpTIMUS Community of Practice
- Politecnico di Milano
- Simon Fraser University
- Sustainable Energy for All (SEforALL)
- The Loughborough Centre for Sustainable Transitions: Energy, Environment, and Resilience (STEER)
- Universidade Federal Fluminense
- Universidade Federal de Juiz de Fora
- United Kingdom Foreign, Commonwealth and Development Office (UK FCDO)
- United Nations Department of Economic and Social Affairs (UNDESA)
- United Nations Development Programme (UNDP)
- University of Cambridge

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- University of Costa Rica
 - University of Oxford
 - World Bank Group (WBG)
 - World Resource Institute
 - 2050 Pathways Platform

IT requirements

Note that participants will require a computer with stable internet access to participate in the training. It is recommended, for all tracks, that participants have at least 8 GB of RAM and a relatively new computer. Specific Tracks have additional computer requirements above and beyond this minimum:

- CLEWs - Windows 10 computer
- Energy Modelling and Power System Flexibility - Windows 10 computer, 8GB RAM, MS Office with Microsoft Access.

Further information contact: Email: inquiries@optimus.community