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Introducing CCG

University Partnership:



What is Climate Compatible Growth (CCG)?

- CCG is an FCDO UK AID-funded research and evidence programme
- CCG aims to accelerate roll-out of improved infrastructure that reduces GHG emissions and increases inclusive economic growth in LMICs.
- CCG supports countries to carry out rigorous analysis on climate transitions and develop associated investment plans to facilitate finance mobilisation
- CCG features some of the UK's leading universities and experts engaged on applied research in this field
- CCG has developed a distinctive philosophy of engagement
 - Work in close partnership with LMIC governments and a variety of international organizations to co-create practical solutions
 - Empower countries to make their own decisions regarding how best to navigate their own climate transitions
 - Embed locally self-sustaining analytical capacity by collaborating both with policymakers and with academics based in local universities

CCG works through three channels

Country Partnerships

Sustained deep engagements with local policymakers and universities in a handful of selected countries

International Partnerships

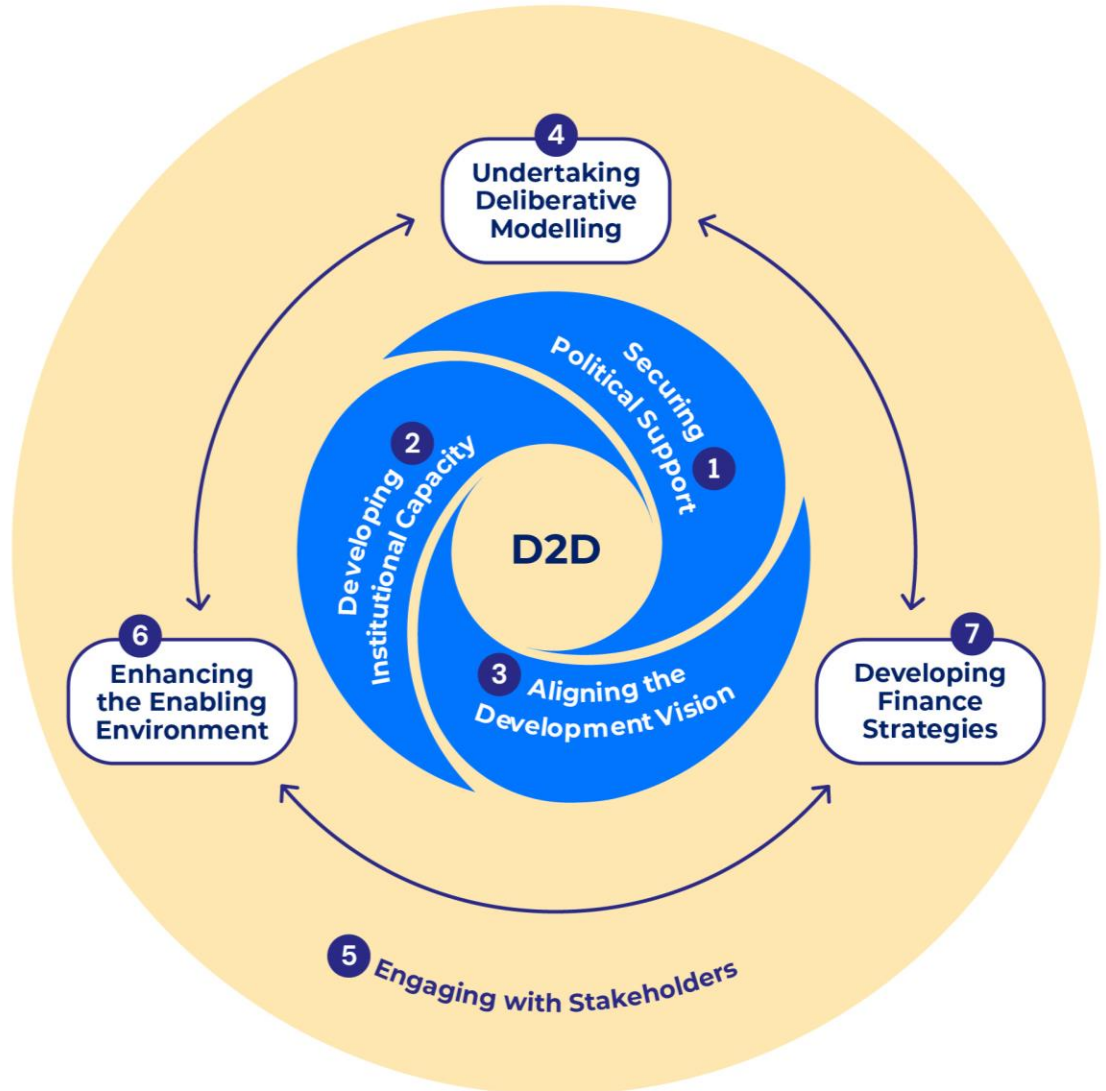
Shorter and more targeted engagements with a much wider range of countries as well as international organizations

Applied Research

Cutting edge research on energy, transport and materials planning undertaken in partnership with local institutions to address live policy questions identified by country counterparts

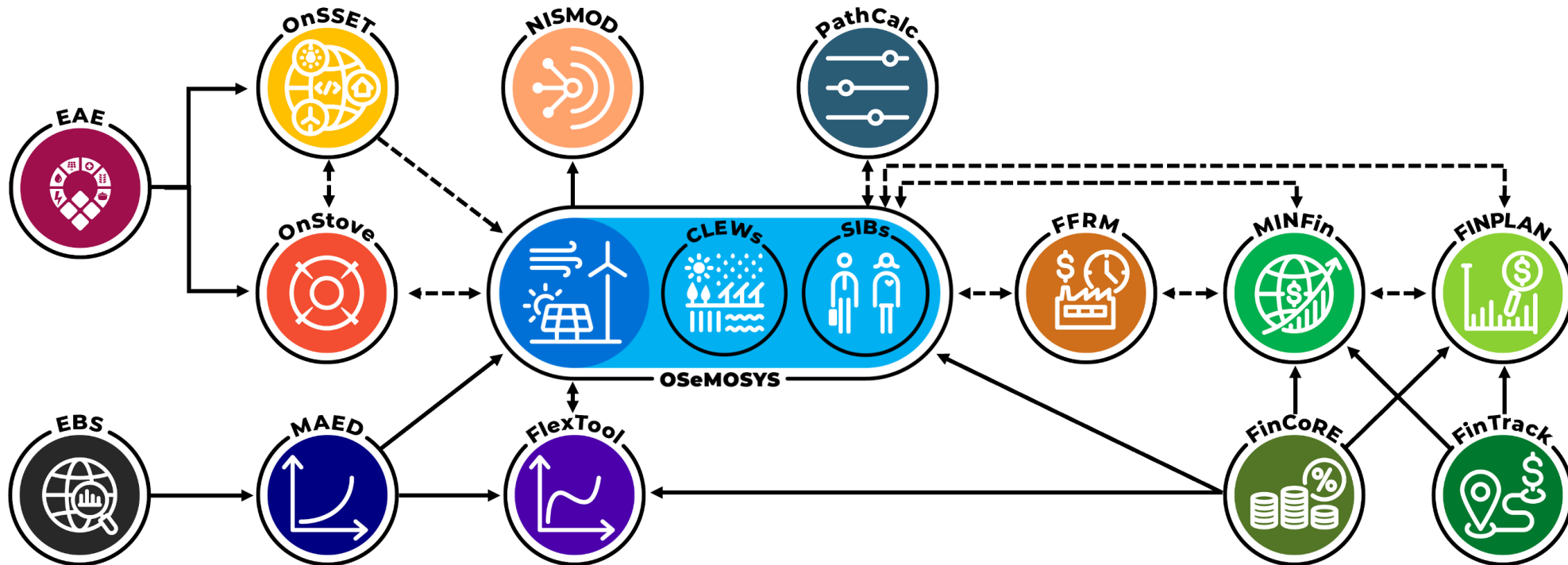
CCG's engagements are guided by Data-to-Deal framework

- The D2D framework distils experience of success stories. like **Costa Rica**, into a **practical framework** to help countries mobilize finance for long-term transition plans.
- D2D encompasses **seven components**, from initial **data** collection, all the way through to the agreement of a **deal**, all driven by a strong stakeholder engagement process.



CCG's open-source modelling ecosystem

Bridges techno-economic and financial planning tools, enabling decision-makers to apply familiar models within their expertise while fostering **cross-disciplinary collaborations**



CCG models: Geospatial

GIS



Energy Access Explorer

Identifies high priority areas for energy access interventions based on energy supply and demand

Outputs: energy access potential area share, population share, etc.



Open Source Spatial Electrification Tool

Optimizes the expansion of electricity access whilst considering locations and infrastructure constraints

Outputs: electrification costs, electricity demand projections, network expansion, etc.



Open Source Spatial Clean Cooking Tool

Compares the relative potential of different cookstoves based on their costs and benefits

Outputs: optimum stove mix map, deaths avoided, average household time saved, opportunity cost gained, etc.



National Infrastructure Systems Model

Analyzes infrastructure systems across different sectors and assess their resilience and investment needs

Outputs: network efficiency and resilience indicators, population affected, required investments, etc.

CCG models: Techno-Economic

Techno-economic



Model for Analysis of Energy Demand

Evaluates future energy demand based on demographic, socioeconomic, and technological developments

Outputs: detailed projection of energy demand and hourly electricity demand profile, disaggregated by end-use sector



Open Source Energy Modelling System

Optimizes the least-cost capacity expansion plan based on a pre-defined demand

Outputs: least-cost capacity expansion plan, investment costs, emissions, etc.



Climate, Land, Energy and Water Systems

Analyze the interdependencies between climate, land use, energy, and water systems

Outputs: water use by sector and stress levels, land use changes and food security



Social Impacts and Benefits

Quantify the social and environmental implications from a capacity expansion energy plan

Outputs: number of jobs, traffic fatalities, global warming costs, etc.

CCG models: Techno-Economic

Techno-economic



IRENA FlexTool

Optimizes least-cost power system flexibility assessments based on national capacity plans

Outputs: base load, peak load, curtailment, loss of load, reserve adequacy, etc.



Pathways Calculator

Leverages ambition levels and levers to show the impact of various choices on demand, costs, and emissions

Outputs: interactive visualization dashboard of potential pathways and their demands, investments, emissions, etc.

CCG models: Financial

Financial



FinTrack: Climate Finance Tracker

Identifies potential future concessional finance envelopes and under-utilization

Outputs: over 30 sources of concessional climate finance, provides information on concessionality of financing terms and complexity of application processes



Model for Informed National Financing

Simulates strategies to close the financing gap between investment needs and available cost of capital

Outputs: annual financing repayment needed to service debt and equity in support of the long-term energy plan



Model for Financial Analysis of Sector Expansion Plans

Simulates financial performance of power plants by comparing the costs with available financing sources

Outputs: tariff requirements, revenue forecasts, NPV, IRR, debt repayment schedule



Financing Costs for Renewables Estimator

Estimates cost of capital for solar and wind projects financed by international commercial investors

Outputs: cost of capital disaggregated into risk-free rate, country risk, instrument premium, and technology risk

CCG models: Financial

Financial



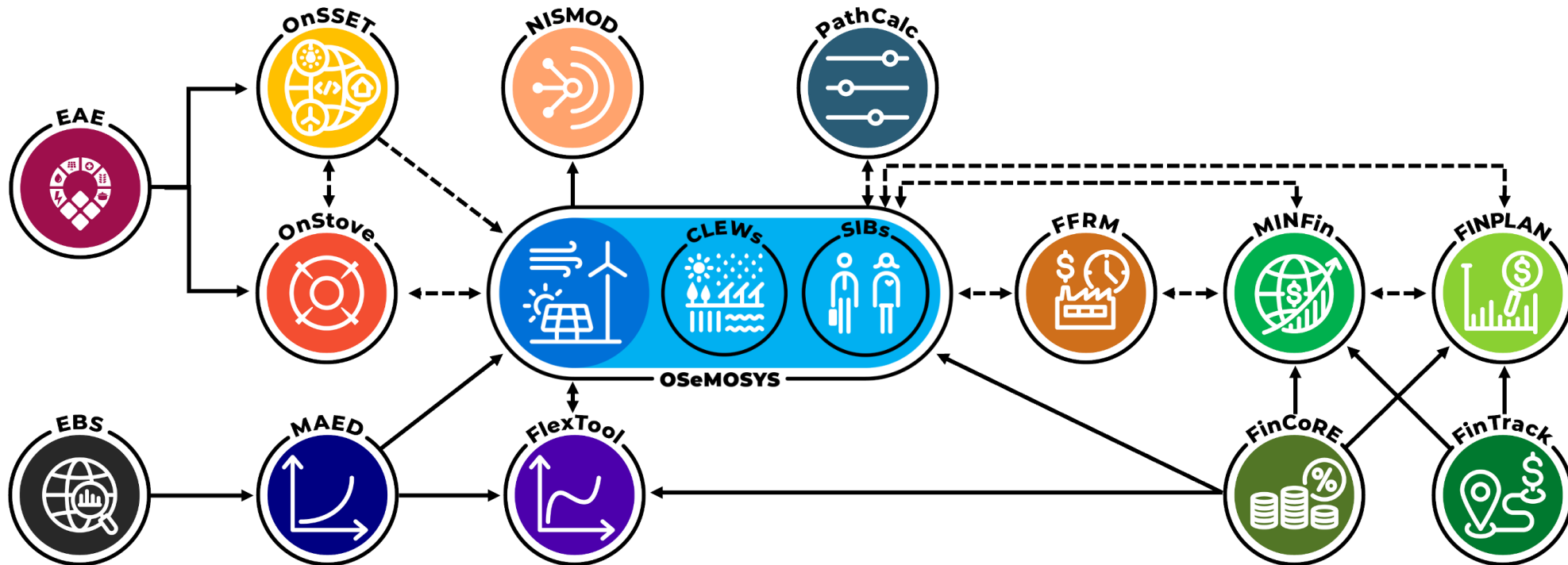
Fossil Fuel Retirement Model

Quantifies the foregone revenue resulting from early shut down of fossil fuel plants

Outputs: plant retirement schedules and discounted revenue under PPA and Market regimes

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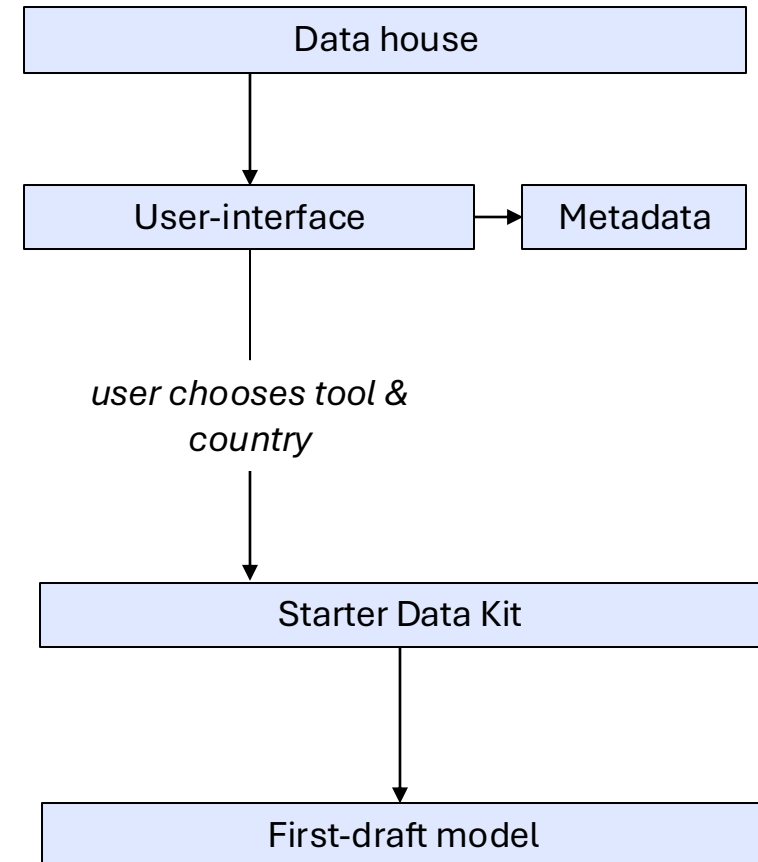


Starter Data Kits (SDKs)

Data for energy planning is often difficult to access, poorly documented, and time-consuming to compile.

Starter Data Kits are designed to overcome these challenges by providing **ready-to-use, off-the-shelf datasets tailored to specific modelling tools**.

Each SDK comes packaged for easy integration and quick modelling uptake, complete with metadata for transparency. Users can also replace or update any dataset with their own inputs, ensuring flexibility and adaptability.



CCG capacity building as a ladder supporting skills progression

Countries can use any of the following capacity-building modalities:

CCG Bootcamps

A programme enabling energy professionals in country to acquire energy transition modelling skills and apply them to produce a plan or strategy with coaching support

↑ *preparatory training*

↑ *intensive training*

↓ *follow-up training*

↑ *sustained capacity*

Open Learn Collection

A suite of free self-administered Open University online training courses available for anybody to gain basic level certification in energy transition modelling

Energy Modelling Platform

A programme of annual regional in-person training events for mid-career professionals to develop mid-level certification in energy transition modelling

Energy Modelling Community

A programme of ongoing professional enrichment to continue to support alumni to improve energy transition modelling skills and apply them in their work

EMP-X

A programme for trained individuals to organize their own in-country trainings utilising energy modelling tools

↓ *select training materials*

↑ *train the trainers*

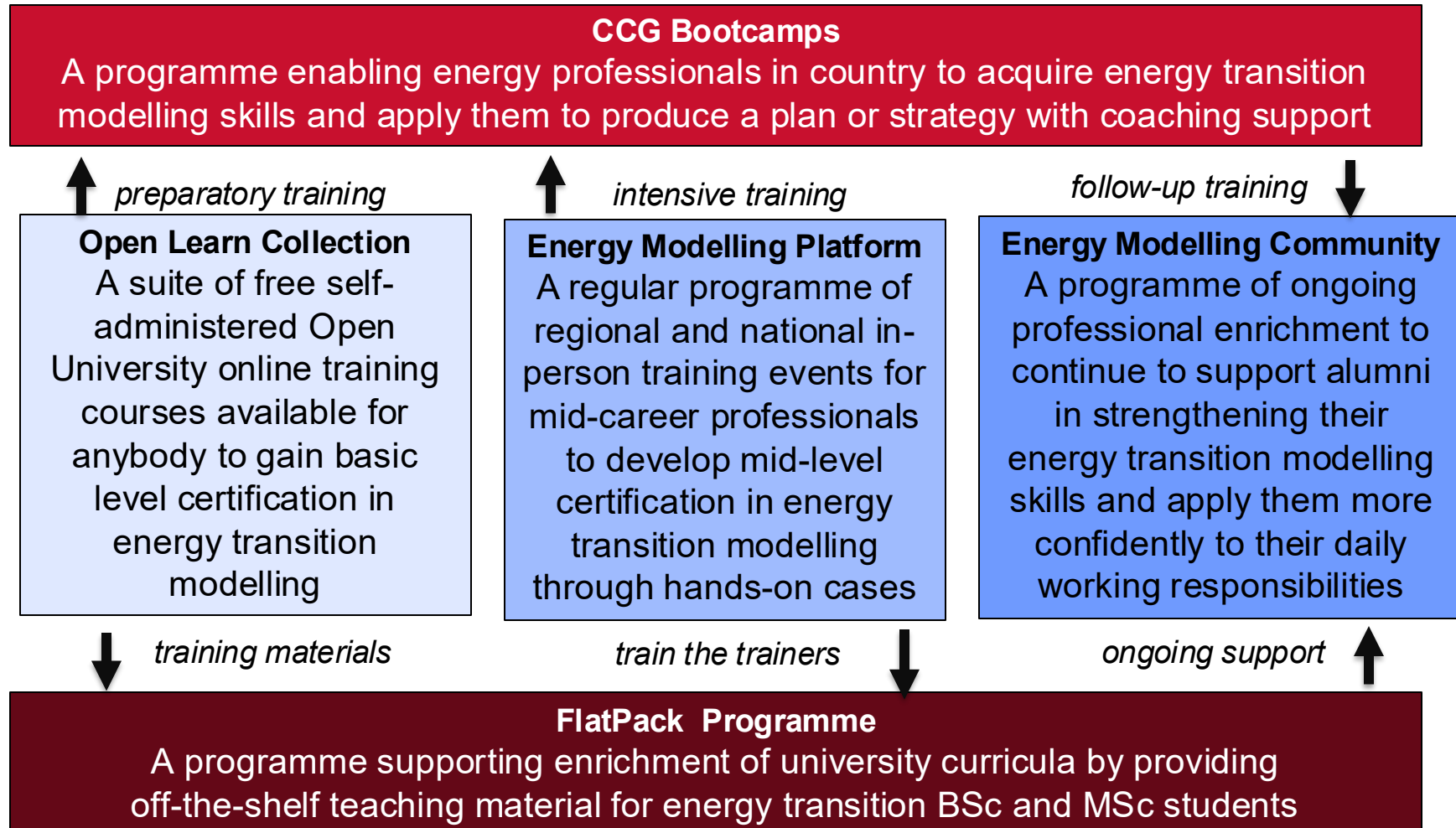
↓ *ongoing support*

↑ *elevation pathway*

Flatpack Programme

A programme supporting enrichment of university curricula by providing off-the-shelf teaching material for energy transition BSc and MSc students

CCG capacity building offer



CCG capacity building in numbers

Open Learn Collection

- 16 courses offered (5 in 4 languages)
- 500,000 downloads and 5,500 certifications

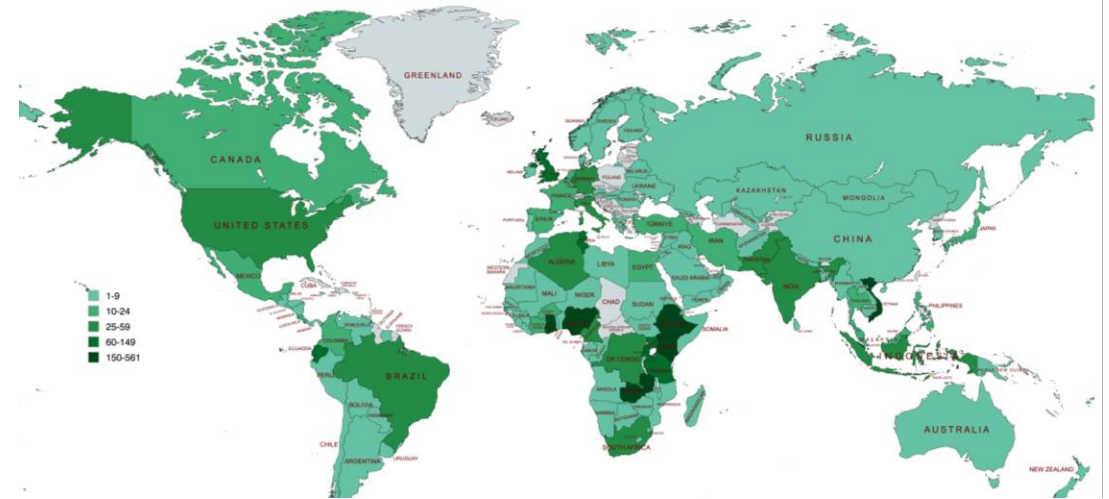
Energy Modelling Platform

- >1,000 certifications
- 32% female, 68% male
- 45% from academia, 42% from government

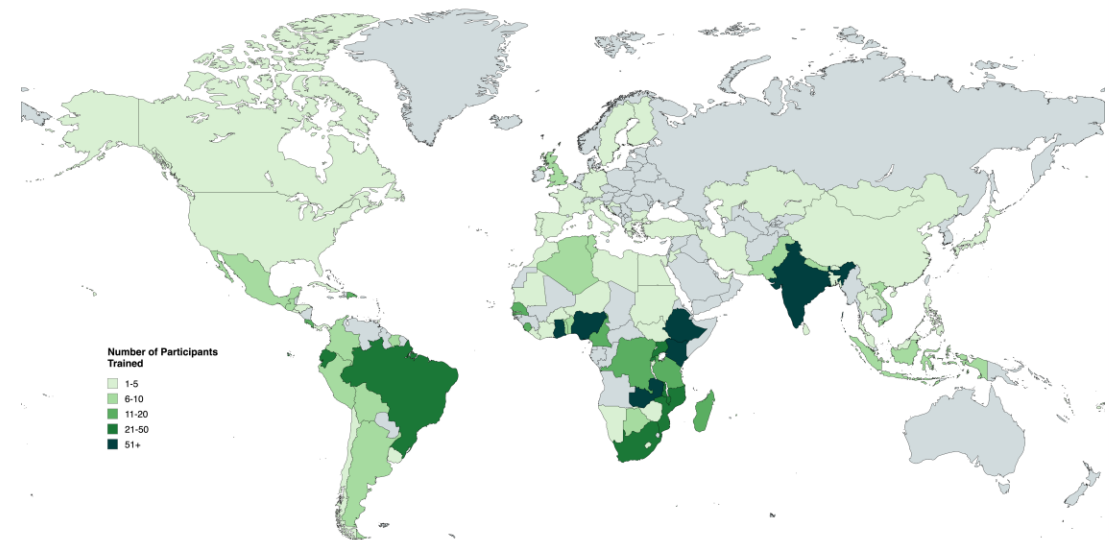
Energy Modelling Community

- 44 universities teaching CCG curriculum
- 25/12 Lead/Associate Trainer certifications
- 13/36/55 Gold/Silver/Bronze Badges for competence in modelling

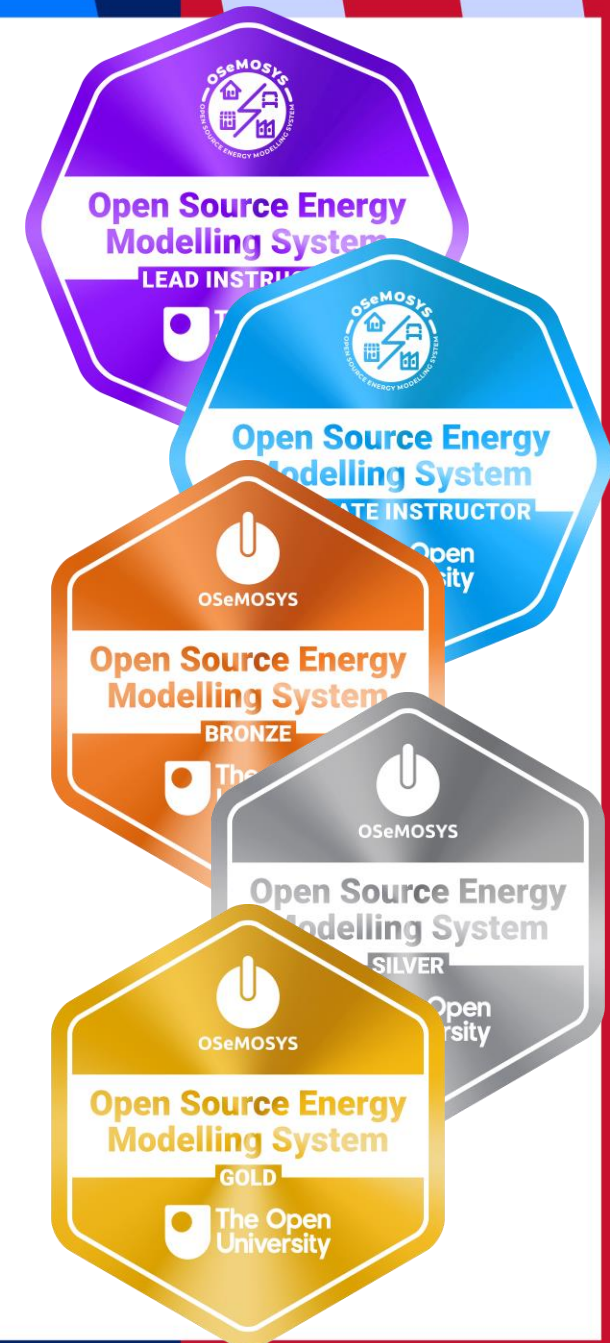
Map of Open Learn Collection Enrolments



Map of Energy Modelling Platform Enrolments



CCG capacity building in pictures





More information on our website:
www.climatecompatiblegrowth.com



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University Partnership:

