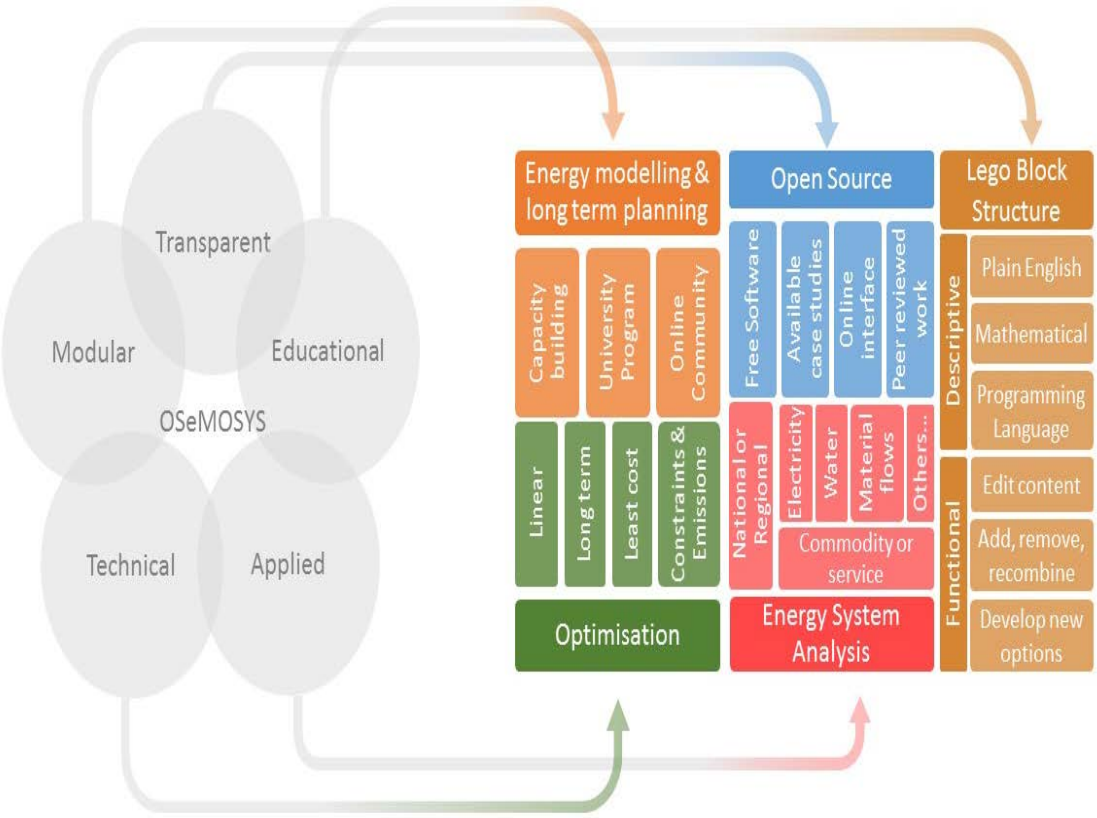
Model **OSeMOSYS**

SIM4NEXUS

The model

OSeMOSYS
Open Source Energy Modelling System

The Open Source Energy Modelling Systmes (OSeMOSYS) is a is an open-source energy system optimisation model with a medium- to long-term time horizon and **designed to inform the development of national and multi-regional energy strategies**. The model has been designed to fill a gap in the analytical toolbox available to the energy research community and energy planners in developing countries.



Spatial and temporal coverage

Spatial coverage: Flexible (local to global)

Spatial resolution: No inherent resolution

Temporal scale: Flexible, up to 2100 in sub-hourly steps

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement NO 689150 SIM4NEXUS

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Nexus coverage

The model primarily uses the energy sector as its entry point, but it is flexible in terms of inputs from other sectors, modelling other sectors, and at providing outputs to other modelling tools.

Inputs

- Costs for all technologies and fuels
- Input and output fuels and efficiencies for all technologies
- Emissions for all fuels
- Disaggregated demand values
- Existing capacities and installation absolute and rate limits
- Renewable energy targets, emissions targets, other scenario factors

Outputs

Cost minimised solution with capacity installations and energy outputs for all technologies, with associated costs

Recent applications

OSeMOSYS is applied in different studies of different spatial spans, from global, regional to country-level, and featuring multiple nexus approaches.

- KTH & UNECE, 2015. Sava River Basin Basin Water-Food-Energy-Ecosystems Nexus assessment (Draft). Geneva. http://www.savacommission.org/announce_detail/55/2
- UN, United Nations, 2014. Prototype Global Sustainable Development Report . Chapter 6: Special Theme: The Climate, Land, Energy, Water, Development (CLEW-D) Nexus. PP 93-103. https://sustainabledevelopment.un.org/content/documents/1454Prototype%20Global%20SD%20Report2.pdf

Further information

OSeMOSYS website

OSeMOSYS download

Model management infrastructure (MoManI)

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