C-ROADS "CP"

A Common Platform Climate Simulator To Support the International Negotiations

C-ROADS "CP" is a scientifically-grounded, rapid-run-time, multi-region climate simulator in use by top policy-makers and analysts. It is designed to match IPCC AR4 results and complement the use of disaggregated GCMs.

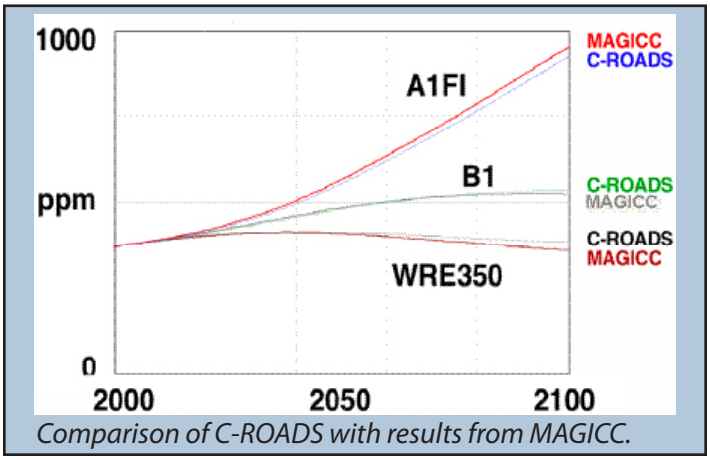
The C-ROADS "Common Platform" simulation is designed to help climate analysts improve their understanding of how various proposals to the UNFCCC will impact climate outcomes.

The C-ROADS (Climate Rapid Overview and Decision Support) simulator is based on the biogeophysical and integrated assessment literature and includes representations of the carbon cycle, other GHGs, radiative forcing, global mean surface temperature, and sea level change. The simulation is grounded in the established literature yet remains simple enough to run quickly on a laptop computer.

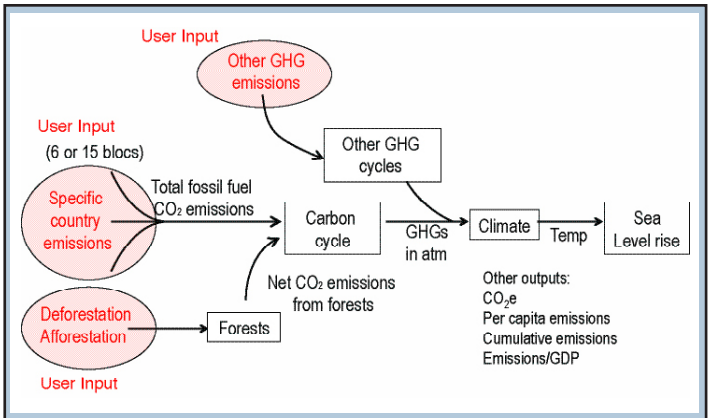
The model uses historical data through the most recent available figures, including country-level GDP and population and GHG emissions from fossil fuels, changes in land use, and other sources. Scenarios for the future are calibrated to the IPCC SRES scenarios with the World Energy Outlook growth allocations between regions.

Model users determine the path of net GHG emissions (e.g., CO_2 from fossil fuels and land use, non-CO_2 GHGs and CO_2 sequestration from afforestation), at the country or regional level, through 2100.

The model calculates the path of atmospheric CO_2 and other GHG concentrations, global mean surface temperature, and sea level rise resulting from these emissions.



Comparison of C-ROADS with results from MAGICC.

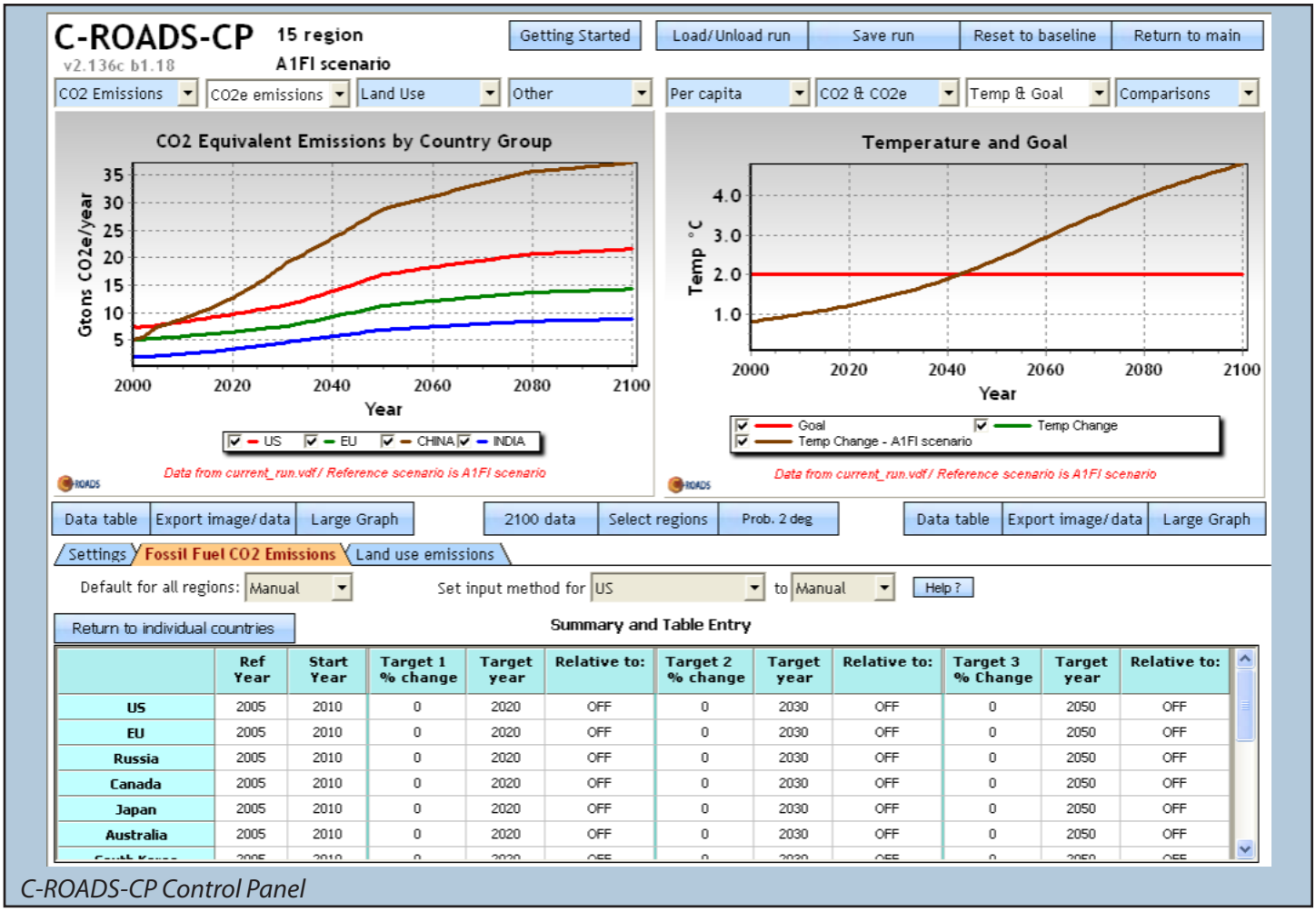


C-ROADS-CP Simulation Structure

The user can choose the level of regional aggregation. Currently, users may choose to provide emissions inputs for six or fifteen different blocs of countries, depending on the purpose of the session, via sliders in the simulation or via an .xls file. Outputs may be viewed for any of these aggregation levels, in graphs, .xls, or .gas files. Other key variables such as per capita emissions, energy and carbon intensity of the economy (tonnes C per dollar of real GDP), and cumulative emissions are also displayed.

The climate simulator is designed to broaden understanding of the climate system's responses to human intervention and to help decision-makers improve their understanding of the impacts and consequences of the dramatic changes that the IPCC has projected for the world. C-ROADS has been used in strategic planning sessions for decision-makers from government, business and civil society and in interactive role-playing policy exercises.

C-ROADS is intended to complement use of other, more disaggregated models such as MAGICC, MINICAM, AIM, and MERGE. In fact, C-ROADS creates output files in .gas format for subsequent testing.



	Ref Year	Start Year	Target 1 % change	Target year	Relative to:	Target 2 % change	Target year	Relative to:	Target 3 % Change	Target year	Relative to:
US	2005	2010	0	2020	OFF	0	2030	OFF	0	2050	OFF
EU	2005	2010	0	2020	OFF	0	2030	OFF	0	2050	OFF
Russia	2005	2010	0	2020	OFF	0	2030	OFF	0	2050	OFF
Canada	2005	2010	0	2020	OFF	0	2030	OFF	0	2050	OFF
Japan	2005	2010	0	2020	OFF	0	2030	OFF	0	2050	OFF
Australia	2005	2010	0	2020	OFF	0	2030	OFF	0	2050	OFF

C-ROADS-CP Control Panel

C-ROADS underwent a scientific review, which concluded, in part:

C-ROADS … is a timely simulation tool that provides policymakers and policy analysts … a better understanding and intuitive feel for the broad brush, long term consequences of climate change given various GHG reduction strategies. This very rapid simulation model reproduces the response properties of state-of- the-art three dimensional climate models very well – well within the uncertainties of the high resolution models—and with sufficient precision to provide useful information for its intended audience. Given the model's capabilities and its close alignment with a range of scenarios published in the Fourth Assessment Report of the IPCC we support its widespread use among a broad range of users and recommend that it be considered as an official United Nations tool.

C-ROADS is based on research originally conducted at MIT, and has been developed by a partnership of MIT's Sloan School of Management, the Sustainability Institute, and Ventana Systems. Ventana Systems is a leading simulation and consulting firm. The lead modeler at Ventana Systems on the project is Dr. Thomas Fiddaman, whose 1997 MIT doctoral dissertation, supervised by Prof. John Sterman, forms the foundation of the C-ROADS model.

The development and use of C-ROADS has been supported by ClimateWorks, Zennström Philanthropies, the Foundation for Global Communities, the Morgan Family Foundation, the Rockefeller Brothers Fund, and others. The team works closely with partners such as Dr. Bob Corell of the Climate Action Initiative.

For more information:

Travis Franck
tfranck@climateinteractive.org
www.climateinteractive.org

CLIMATE INTERACTIVE

VENTANA systems, inc.

MIT Sloan MANAGEMENT