Sustainability Institute

**FOR IMMEDIATE RELEASE**

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**The final Copenhagen Accord reaffirms the importance of limiting global warming to 2 °C, but current national commitments would lead to approximately 3.9 °C (7.0 °F) warming by 2100.**

*To close that gap global emissions must peak within the next decade and fall approximately 50% below 1990 levels by 2050 (a cut of approximately 60% below current emissions). The sooner the nations of the world begin to close this gap the cheaper and easier it will be.*

The Climate Interactive research team from Sustainability Institute, the MIT Sloan School of Management, and Ventana Systems have analyzed the greenhouse gas emissions reductions targets stated in the final Copenhagen Accord and compared these with the emissions reduction commitments made by individual nations. The analysis, based on the C-ROADS climate policy simulation model (http://climateinteractive.org), assumes that all national commitments offered prior to and during the Copenhagen meeting remain in force, are verifiable and will be fully implemented.

The Accord adopted in Copenhagen (accessed 19 December 2009) calls for "deep cuts in global emissions…so as to hold the increase in global temperature below 2 degrees Celsius" compared to preindustrial levels. Simulations of the C-ROADS model show that doing so requires global greenhouse gas emissions to peak by 2020 and then fall 50% below 1990 levels by 2050 (a cut of approximately 60% below current emissions).

However, simulations of the C-ROADS model show a large gap between the targets in the final Copenhagen agreement and the commitments offered by individual nations. Using the C-ROADS model, the researchers estimate that current confirmed proposals (that is, submissions to the UNFCCC or official government positions) would raise expected global mean temperature by 3.9 °C (7.0 °F) by 2100. Including conditional proposals, legislation under debate and unofficial government statements would lower expected warming to an increase of approximately 2.9°C (5.2°F) over preindustrial levels. Full details and assumptions are at http://climateinteractive.org/scoreboard/copenhagen-cop15-analysis-and-press-releases.

Climate Interactive researcher and MIT Professor John Sterman comments "If you pour water into your bathtub faster that it drains out, the level of water in the tub will rise. In exactly the same way, the world currently pours about twice as much $CO_2$ into the atmosphere each year than nature can remove, increasing the concentrations of greenhouse gases that drive continued warming, sea level rise, and other climate changes that pose grave risks to our economy and welfare (see http://ngm.nationalgeographic.com/big-idea/05/carbon-bath). The longer we delay the emissions reductions required to stabilize greenhouse gas concentrations, the more costly it will be to cut emissions, the worse warming will be and the more the people of the world, rich and poor, will suffer. The longer we delay, the greater the risk that warming will trigger positive feedback loops in the climate system that can limit the ability of the land and oceans to remove $CO_2$ from the atmosphere, causing still faster accumulation of $CO_2$ in the atmosphere and still more warming, in a vicious cycle. The good news is that there are many opportunities to cut emissions today, profitably, with technologies for efficiency, and for clean, renewable energy. And the faster we do so, the cheaper it gets: through R&D, scale economies and learning, every megawatt of solar and wind we build today lowers the costs of the next one, further boosting demand for clean energy and cutting emissions in a virtuous cycle. The nations whose policies drive these positive feedbacks the fastest will create jobs and build the industries that will dominate the economy of the future."

**Notes For Editors:**

The C-ROADS (Climate - Rapid Overview And Decision Support) climate policy simulator is a scientifically sound tool that enables users to rapidly evaluate the impact of national greenhouse gas (GHG) emissions reduction policies on key climate impacts including per-capita emissions, atmospheric GHG concentrations, mean global temperature and sea level, through 2100. C-ROADS has been carefully calibrated to the best available peer reviewed science, including the Fourth Assessment Report of the IPCC. The scientific review panel that assessed the model concluded that C-ROADS "reproduces the response properties of state-of- the-art three dimensional climate models very well.... 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 was developed by the Sustainability Institute, MIT Sloan School of Management, and Ventana Systems. Full documentation and details are available at http://climateinteractive.org.

- C-ROADS is based on simulation modeling originally conducted at MIT and has been developed by a partnership of MIT's Sloan School of Management, Sustainability Institute and Ventana Systems.

- C-ROADS draws upon and is intended to complement the insights of other, more disaggregated models such as MAGICC, MINICAM, EPPA, AIM and MERGE.

- The development and use of C-ROADS has been supported by Active Philanthropy, Zennström Philanthropies, The Morgan Family Foundation, The Rockefeller Brothers Fund and others.

- Sustainability Institute is a non-profit organization based in Hartland, VT, USA. It was founded by Donella Meadows in 1997. Current projects at SI include simulation modeling of climate change and public health and the Donella Meadows Leadership Fellows Program.

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