The MIT Joint Program on
the Science and Policy of Global Change

will sponsor a seminar by

Dr. David Laughton
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on

A Real Options Analysis of a CO_2 Sequestration Project

Monday 26 April 2004 1000 - 1200
MIT Room E40-496

The seminar will present an application of real options analysis to the evaluation of a geological CO_2 sequestration option. The real options approach combines decision trees (to take care of flexibility considerations in a situation that involves sequential decision-making) with modern asset pricing (to deal with complex issues of uncertainty in project development). The analysis is based on a stochastic process representation of the resolution of uncertainty in the determinants of the project cash-flow, in this case the price of CO_2 emission permits and of natural gas. Elicitation of inputs to the uncertainty analysis was carried out in cooperation with a number of associates, including Andrew Weaver of the University of Victoria, Myles Allen of Oxford University, and Mort Webster of the University of North Carolina. Important in the results is the substantial difference in assessment, as compared to the results of standard discounted cash-flow (DCF) techniques.

This presentation will lead into a discussion of some of the issues that arise in the parameterisation of a stochastic process for the evolution of GHG emission regulation, possibly including the potential use of large integrated assessment models to inform judgments about such stochastic process models.