GAMS

➤ OPTIMIZATION ➤

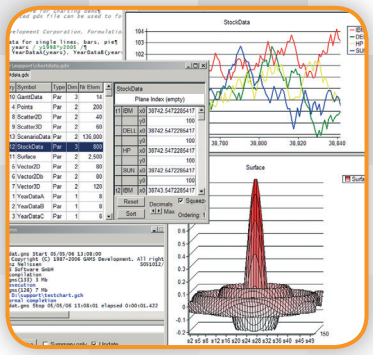
GENERAL ALGEBRAIC MODELING SYSTEM

High-Level Modeling

The General Algebraic Modeling System (GAMS) is a high-level modeling system for mathematical programming problems. GAMS is tailored for complex, large-scale modeling applications, and allows you to build large maintainable models that can be adapted quickly to new situations. Models are fully portable from one computer platform to another.

State-of-the-Art Solvers

GAMS incorporates all major commercial and academic state-of-the-art solution technologies for a broad range of problem types.



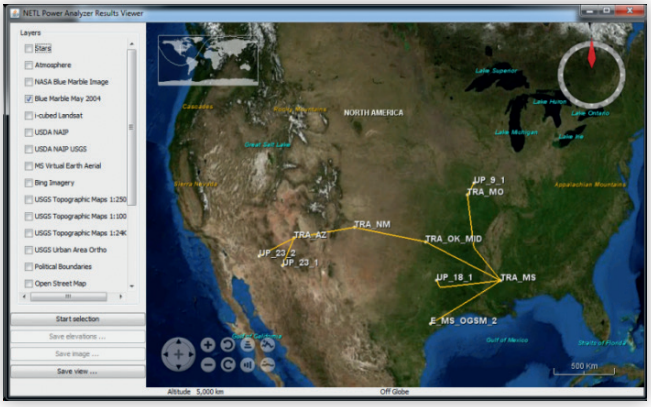
GAMS Integrated Developer Environment for editing, debugging, solving models, and viewing data.

Optimizing to combat Climate Change: CO_2 Capture, Utilization, Transport, and Storage

U.S. DEPARTMENT OF ENERGY | NETL

The electricity generation sector in the U.S. is a major contributor of CO_2 emissions. Thus reductions from this sector will play a central role in any coordinated CO_2 emission reduction effort aimed at combating climate change. One technology option that may help the electricity generation sector meet this challenge is Carbon Capture and Storage (CCS).

The U.S. Department of Energy uses GAMS to analyze potential CO_2 emission reduction scenarios in which CCS may play a role in meeting emission goals. The NETL CO_2 CTUS model developed by the DOE National Energy Technology Laboratory is written in GAMS. It optimizes on a least cost basis potential networks of CO_2 pipelines and storage infrastructure amenable to handling the transport and storage of captured CO_2 from CCS systems.



Graphical representation of the NETL CO_2 CTUS model and NEMS integration

When integrated into the National Energy Modeling System (NEMS) a detailed portrayal of CCS in energy economy projections is rendered. A version of CTUS has been modified and incorporated into the U.S. Energy Information Administration's (EIA's) version of NEMS, and is in turn used to produce the Annual Energy Outlook.

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