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INNOVATIVE RESEARCH FOR A SUSTAINABLE FUTURE

GLIMPSE – A COMPUTATIONAL FRAMEWORK FOR SUPPORTING STATE-LEVEL ENVIRONMENTAL AND ENERGY PLANNING

What is GLIMPSE?

GLIMPSE is a decision support modeling tool being developed by EPA that will assist states with energy and environmental planning through the year 2050.

Users of GLIMPSE can explore the impacts of energy technologies and policies on the environment. For example, GLIMPSE can examine measures that promote energy efficiency by estimating energy savings, analyzing how emissions and air quality would be affected, and reporting how energy-related water use would change. Additional technologies that could be analyzed include electric and hydrogen fuel cell vehicles, wind and solar power, and carbon capture and sequestration.

An exciting feature is that users can specify energy, air quality, and water use goals within GLIMPSE, which then identifies cost-effective strategies for meeting those goals. For example, states could use GLIMPSE to develop air quality management strategies that also meet renewable electricity targets, energy security objectives, and factor in how droughts could affect power plant operations.

GLIMPSE is built on the Global Change Assessment Model (GCAM), developed by the Pacific Northwest National Laboratory (PNNL). The model simulates the interactions between human systems (such as economy, energy, agriculture, land use, and buildings) and earth systems (such as water and carbon cycles). PNNL and EPA researchers are working together to improve GCAM's ability to support environmental analyses.

What are the strengths of GLIMPSE?

User-Friendly: Users can specify many complex technology or policy scenarios in minutes. GLIMPSE includes tools for visualizing model results, including the energy and environmental the impacts of scenarios.

Fast: Once a scenario has been specified, model results are available within hours.

Flexible: Many of the assumptions about the future can be changed. For example, users could explore alternative assumptions about population and economic growth, technology availability, and future policies.

Comprehensive: By simulating the interactions among human and earth systems, GLIMPSE can identify important unintended consequences and other policy considerations that may not otherwise be apparent.

Multi-scale: Users can specify policies or examine energy technologies at the state, regional, or national level within the context of a global scenario.

Who should use GLIMPSE?

GLIMPSE software will be useful to federal, regional and state policy analysts, energy and environmental planners, and faculty and students performing environmental and energy research.

How does GLIMPSE work?

GLIMPSE runs on Windows and requires no special software or hardware. Future versions of GLIMPSE will also execute on Linux and Apple computers.

How do I get GLIMPSE?

GLIMPSE is still under development and not yet publicly available. However, the GLIMPSE research team is working with a small number of partners willing to be beta testers to help researchers improve the software. To volunteer for beta testing, please contact one of the project scientists under contact information:

For more information, please visit: GLIMPSE EPA Webpage: https://www.epa.gov/air-research/glimpse-computational-framework-supporting-state-level-environmental-and-energy

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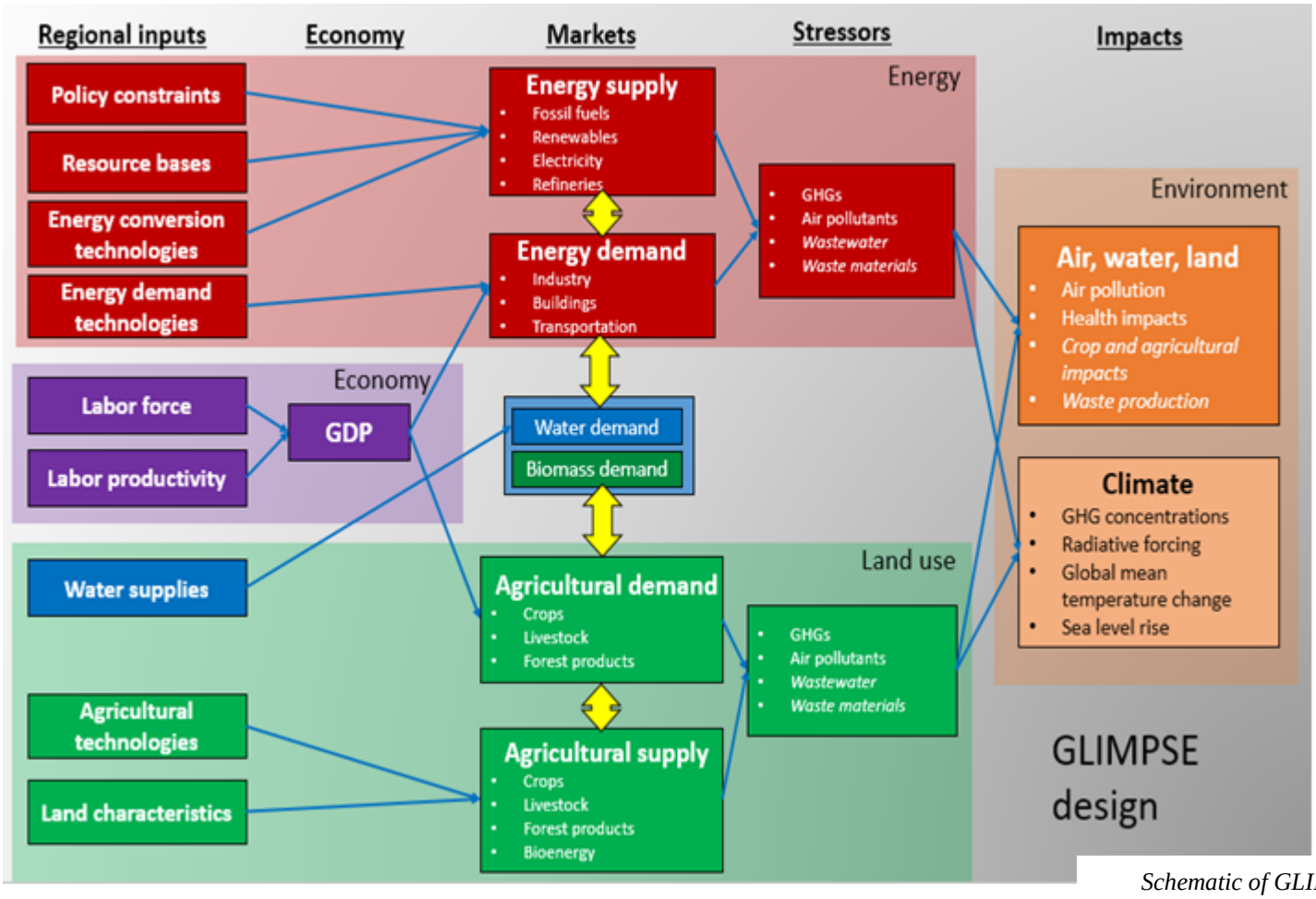

Schematic of GLIMPSE

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