

## The AMIGA Modeling System Component Modules

**Vehicle and Transportation Module.** Represents the energy use from air and passenger rail travel, five freight modes, and the stocks and new sales of light-duty vehicles by eight size classes (including vans, SUVs, and delivery trucks) and six drive train technologies (including hybrid and fuel cell vehicles).

**Residential Energy Module.** Captures the effects of economic growth, energy prices, and technology on residential energy demand.

**Commercial Energy Module.** Captures the effects of economic growth, energy prices, and technology on commercial energy demand.

**Industrial Production and Energy Module.** Calculates sector activity levels for 120 industrial sectors. Calculates electricity, gas, oil, and coal demands by sector. Calculates business investment for both energy-related equipment and other production capital.

**Oil Refinery Module.** Represents crude oil inputs, conversion efficiencies, and petroleum product slate.

**Electricity Generation Module.** Dispatches power-plants at the unit level (approximately 2000 units) and calculates resulting fuel use and emissions of criteria pollutants and greenhouse gases. Calculates new gas, coal, nuclear, and renewable (wind, biomass) generation capacity investment.

**Gas Supply and Distribution Module.** Estimates effects on expected natural gas prices from increases or decreases in gas demand, accounting for technical progress in finding and producing gas.

**World Oil Market Price Module.** Estimates the world oil response function to reductions in oil imports.

**Coal Mining Module.** Represents coal supply functions (minemouth prices at different levels of coal demand).

**Government and Service Sectors Module.** Estimates government spending (Federal Defense and Other, State and Local Education and Other) and activity levels in 60 service sectors.

**Macroeconomic and Household Module.** Calculates final demands for goods and services by households, business investment, government, and net foreign exports. Estimates the basket of consumer purchases including housing and motor vehicles. Calculates Gross Domestic Product.