

The National Energy Modeling System: An Overview 2003

Summary of NEMS Detail

Energy Activity	Categories	Regions
Residential demand	Sixteen end-use services Three housing types Thirty-four end-use technologies	Nine Census divisions
Commercial demand	Ten end-use services Eleven building types Ten distributed generation technologies Sixty-four end-use technologies	Nine Census divisions
Industrial demand	Seven energy-intensive industries Eight non-energy-intensive industries Cogeneration	Four Census regions, shared to nine Census divisions
Transportation demand	Six car sizes Six light truck sizes Sixty-three conventional fuel-saving technologies for light-duty vehicles Gasoline, diesel, and thirteen alternative-fuel vehicle technologies for light-duty vehicles Twenty vintages for light-duty vehicles Narrow and wide-body aircraft Six advanced aircraft technologies Medium and heavy freight trucks Thirty-seven advanced freight truck technologies	Nine Census divisions
Electricity	Eleven fossil generation technologies Two distributed generation technologies Seven renewable generation technologies Conventional and advanced nuclear Marginal and average cost pricing Generation capacity expansion Seven environmental control technologies	Fifteen electricity supply regions (including Alaska and Hawaii) based on the North American Electric Reliability Council regions and subregions Nine Census divisions for demand
Renewables	Wind, geothermal, solar thermal, solar photovoltaic, landfill gas, biomass, conventional hydropower	Fifteen electricity supply regions
Oil supply	Onshore Deep and shallow offshore	Six lower 48 onshore regions Three lower 48 offshore regions Three Alaska regions
Natural gas supply	Conventional lower-48 onshore Lower-48 deep and shallow offshore Coalbed methane Gas shales Tight sands Canadian, Mexican, and liquefied natural gas Alaskan Gas	Six lower 48 onshore regions Three lower 48 offshore regions Three Alaska regions Eight liquefied natural gas import regions
Natural gas transmission and distribution	Core vs. noncore Peak vs. offpeak Pipeline capacity expansion	Twelve lower 48 regions Ten pipeline border points
Refining	Five crude oil categories Fourteen product categories More than 40 distinct technologies Refinery capacity expansion	Three refinery regions aggregated from Petroleum Administration for Defense Districts
Coal supply	Three sulfur categories Four thermal categories Underground and surface mining types Imports and Exports	Eleven supply regions Sixteen demand regions Sixteen export regions Twenty import regions