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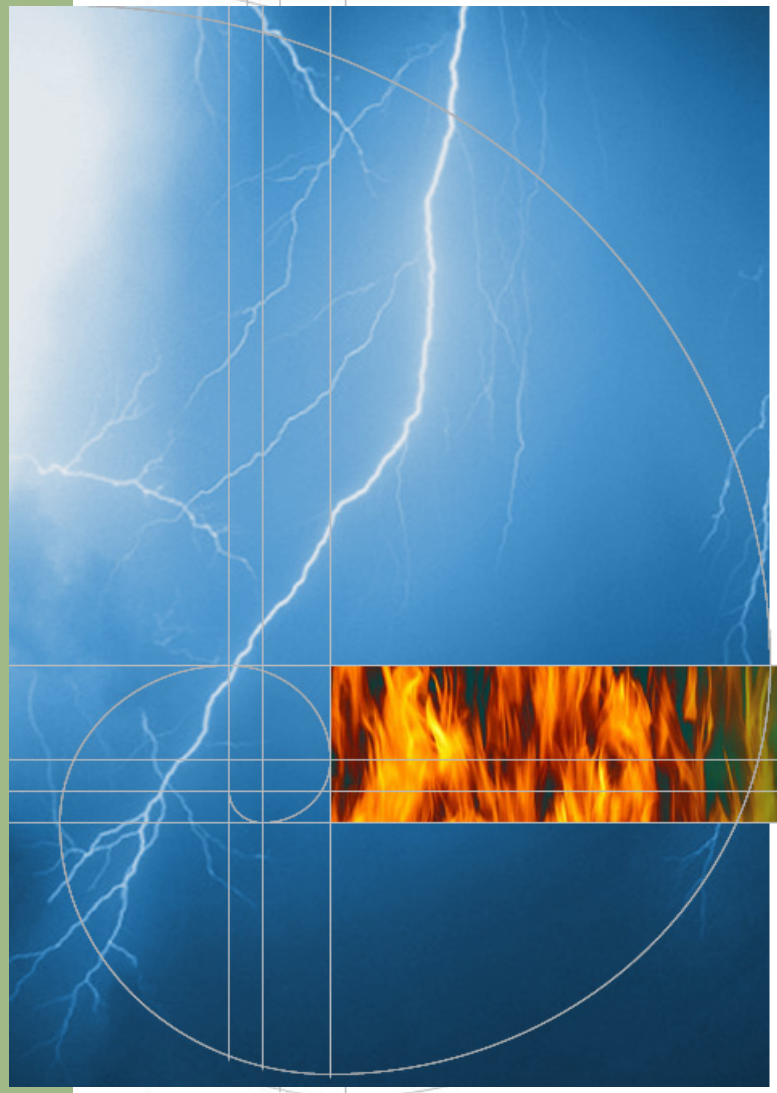

Meeting our Energy Challenges
Through
On-Site Clean Energy Generation

Siemens Building Technologies

October 5, 2009

- Facing Global Energy Challenges
- Siemens Building Technologies;
  On-site Clean Energy Generation

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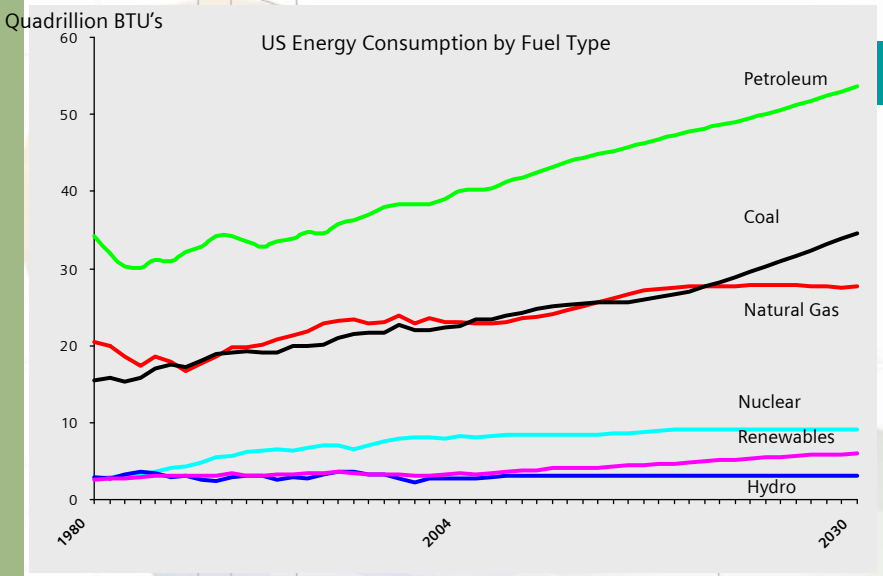
Facing Global Energy Challenges

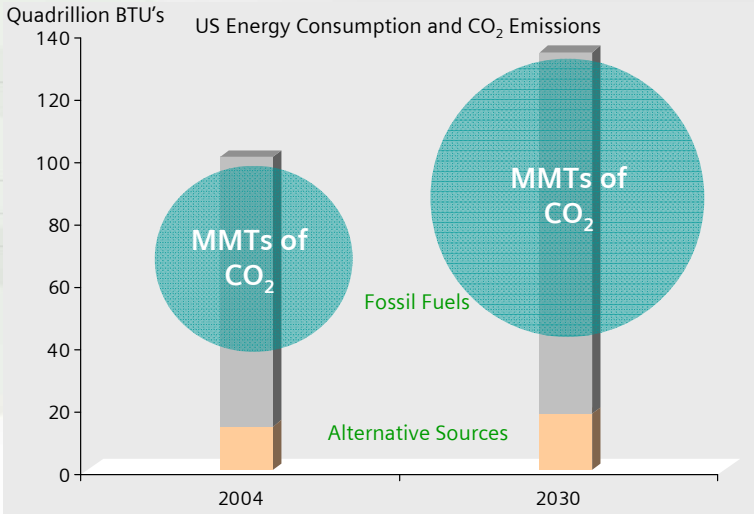


What we Know Today....

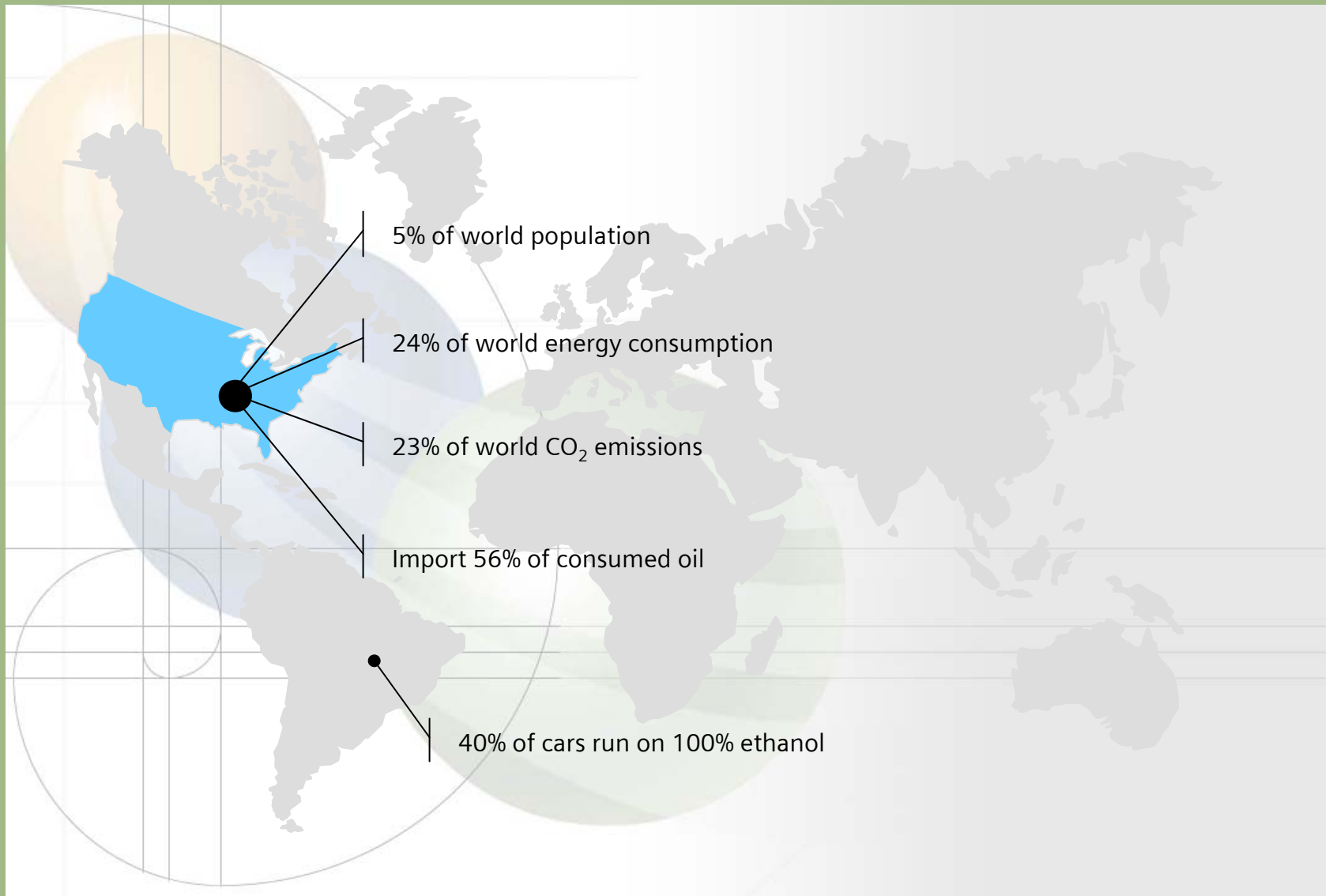
- Increased demand for fossil fuels
- Global fossil fuel production will peak
- Our nations facilities are aging and inefficient
- Energy prices are rising and volatile
- Strained energy infrastructure and delivery system

Impacts our World of Tomorrow....

- Increased global competition for scarce resources
- The US produces ¼ of the world's CO_2 emissions
- Cheap, plentiful energy supply is a thing of the past
- A reliable and secure energy supply is a national security issue



Facing Global Energy Challenges



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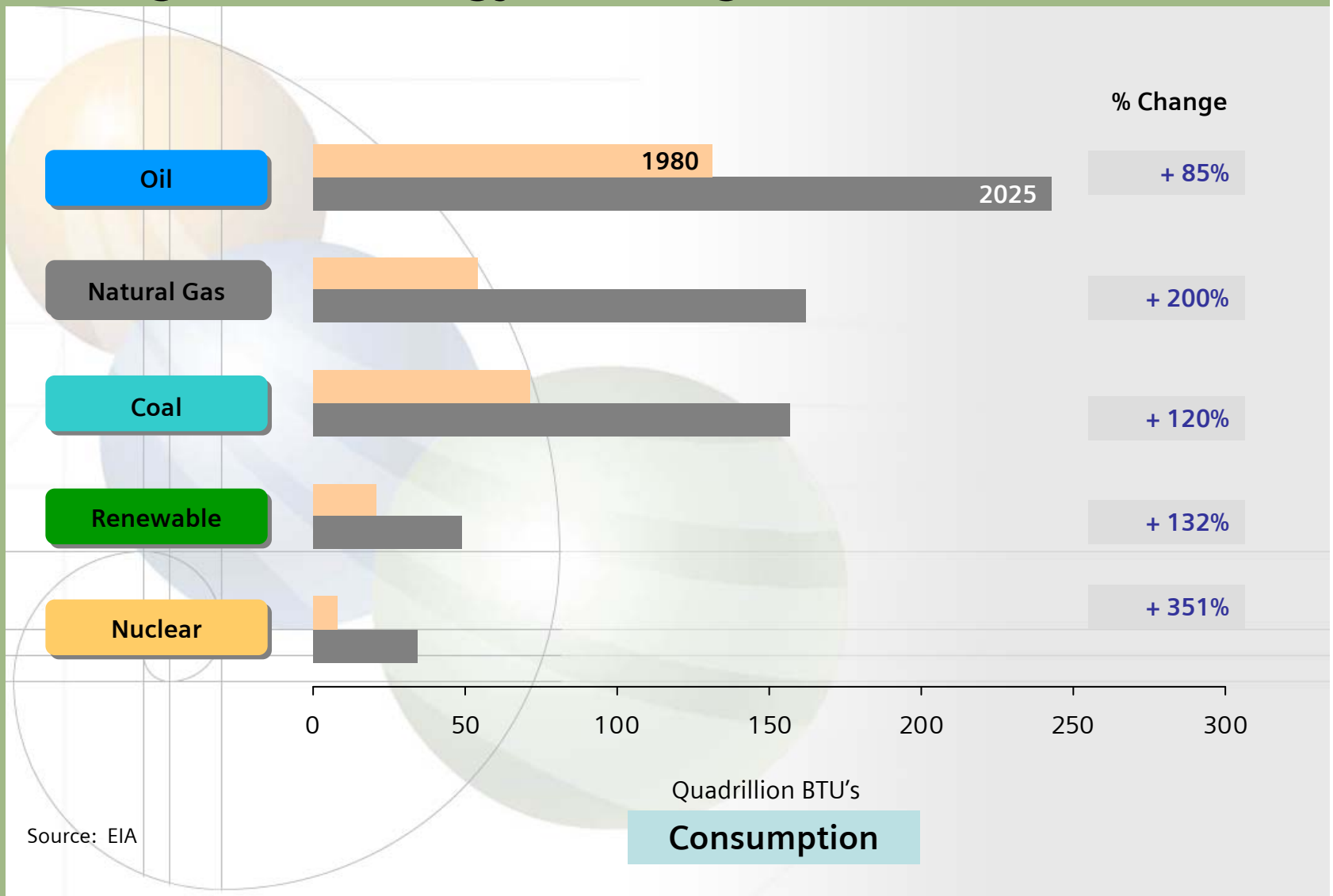
Facing Global Energy Challenges

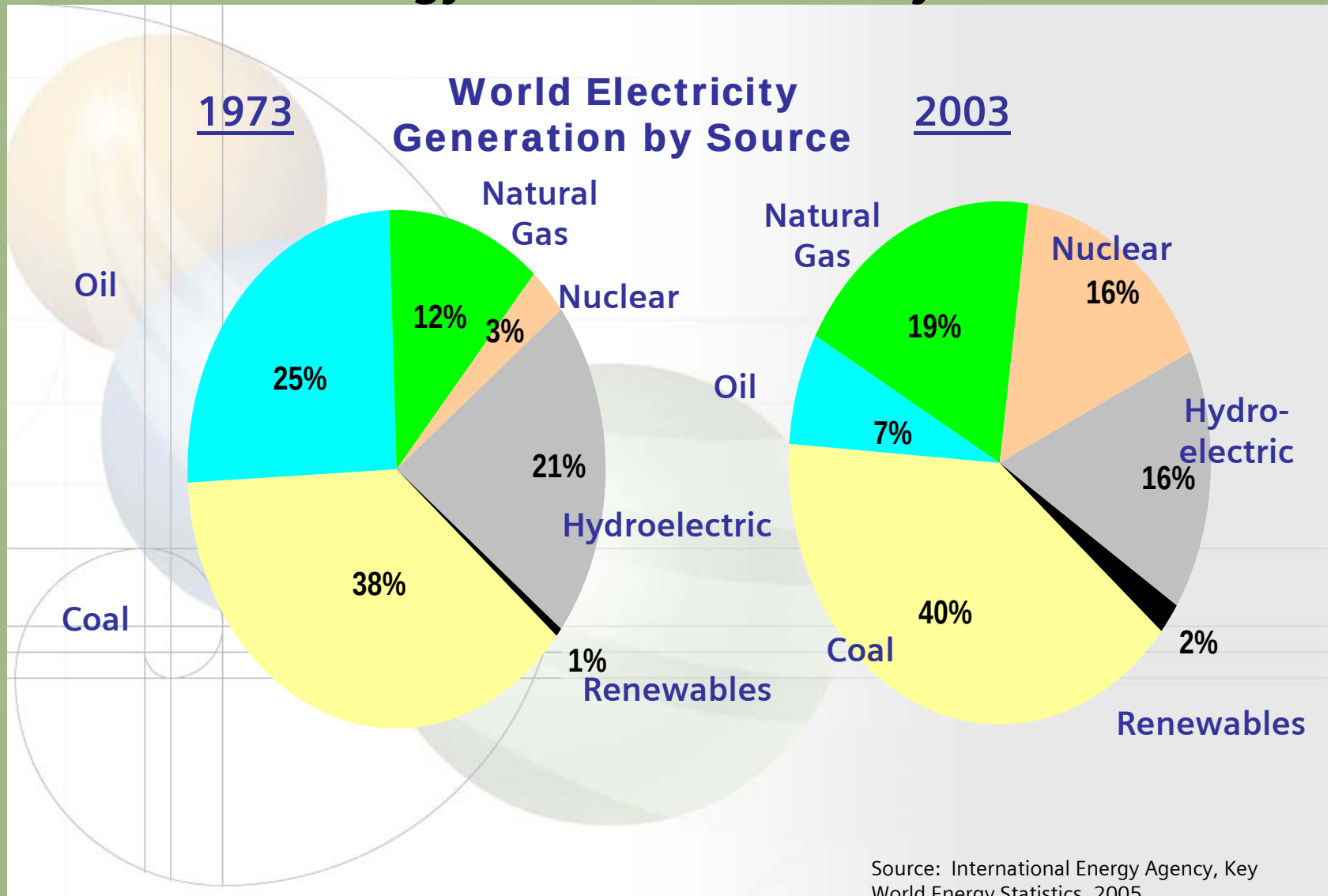


Source: EIA

Meeting those Challenges

- **Manage** total energy expenditure and costs to achieve stability and predictability – and affordability
- Continually **Improve** facility energy performance to maximize efficiency & reduce operating costs
- **Ensure** a robust, flexible and diverse supply of energy to met long term needs
- **Balance** goals for environmental initiatives with financial impact & budgetary constraints
- **Create** healthy environments for all communities

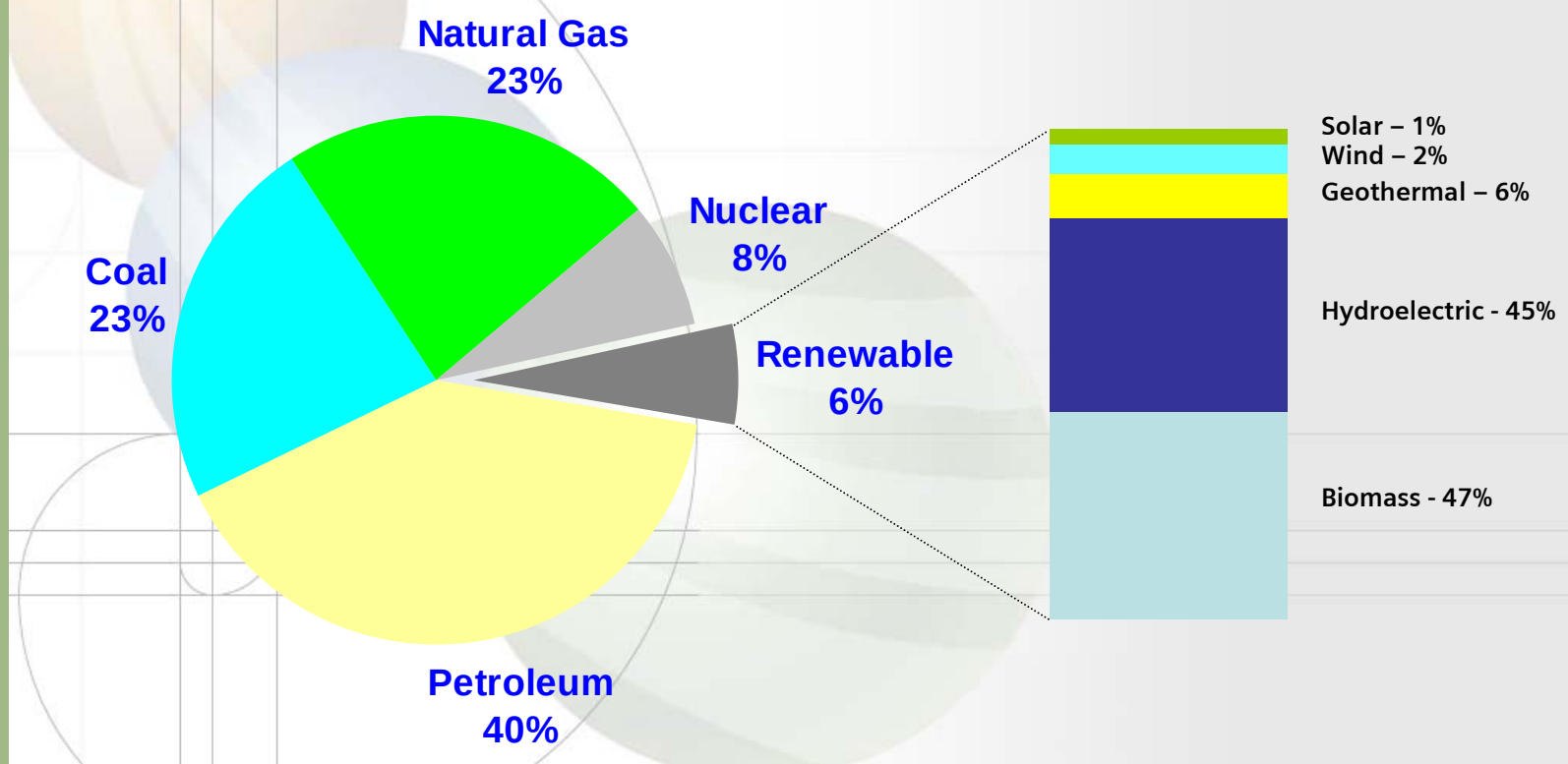
Renewable Energy – Still in it's Infancy



Source: International Energy Agency, Key World Energy Statistics, 2005

Role of Renewables in the U.S. Energy Supply

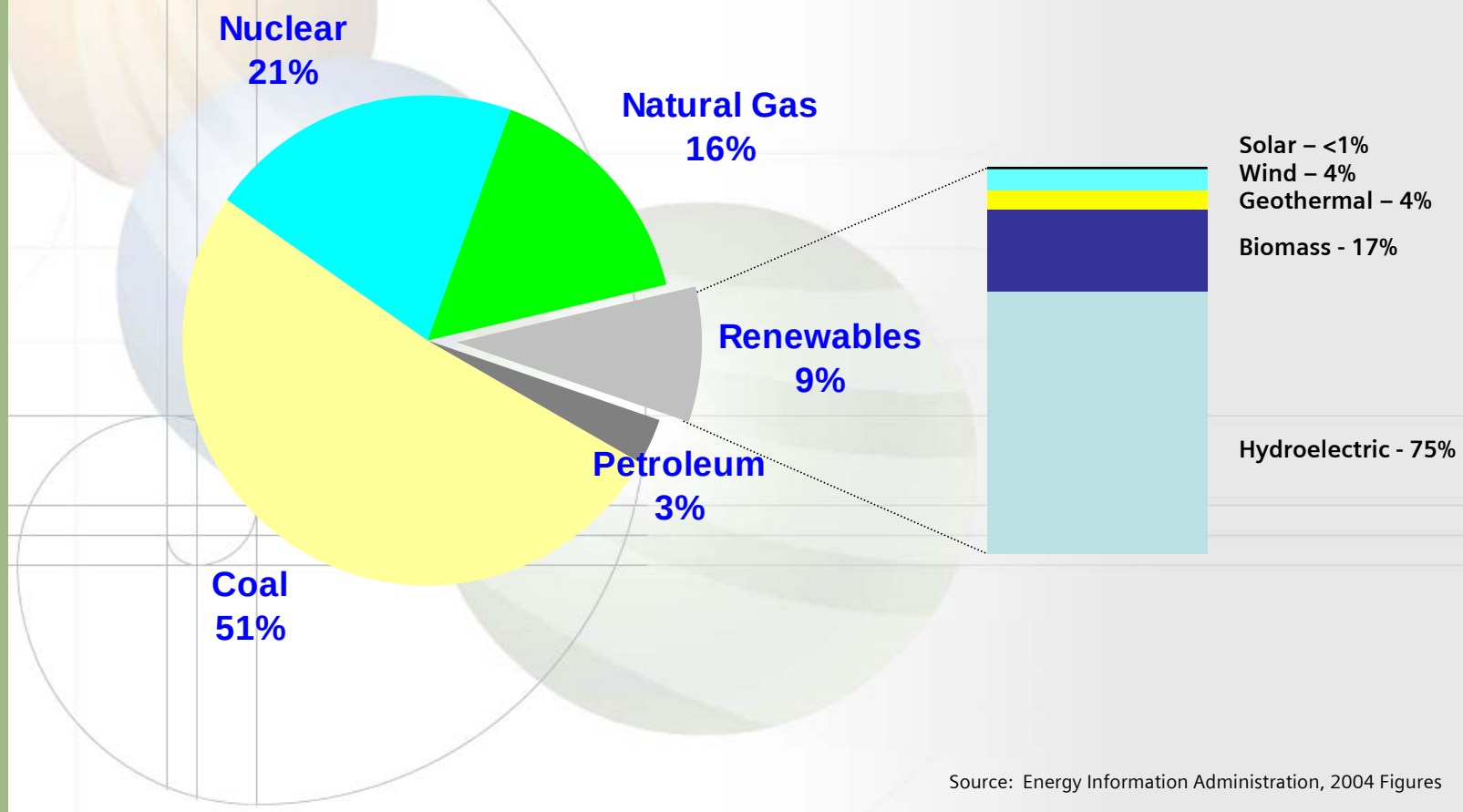
Domestic U.S. Energy Consumption by Source – All Forms of Energy



Source: US Department of Energy, 2004 Figures

Role of Renewables in U.S. Electricity Generation

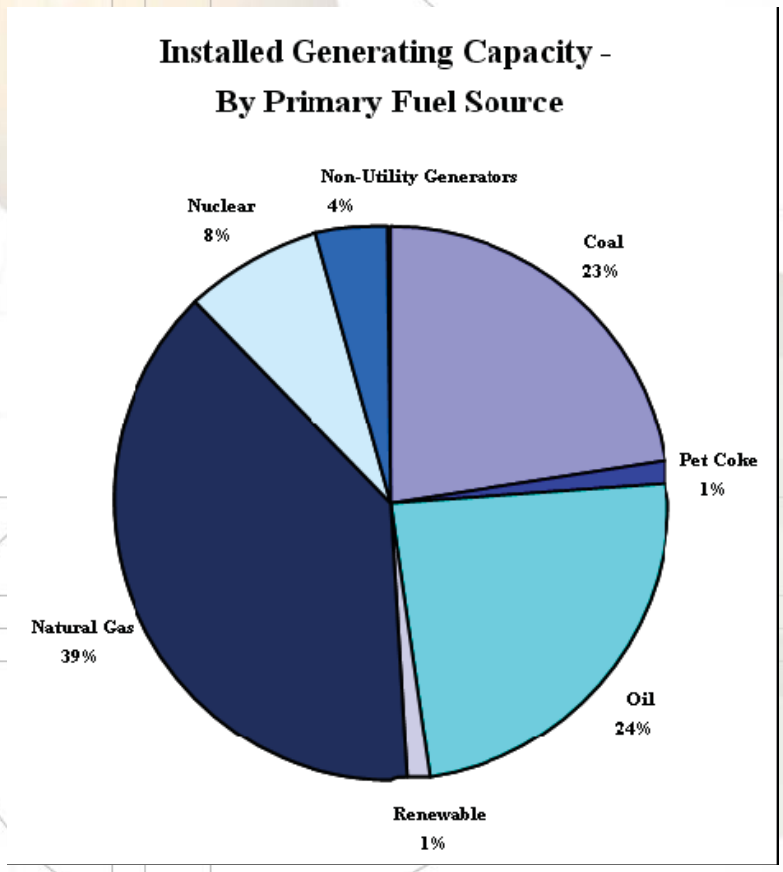
U.S. Electricity Generation by Source – (Power Only)

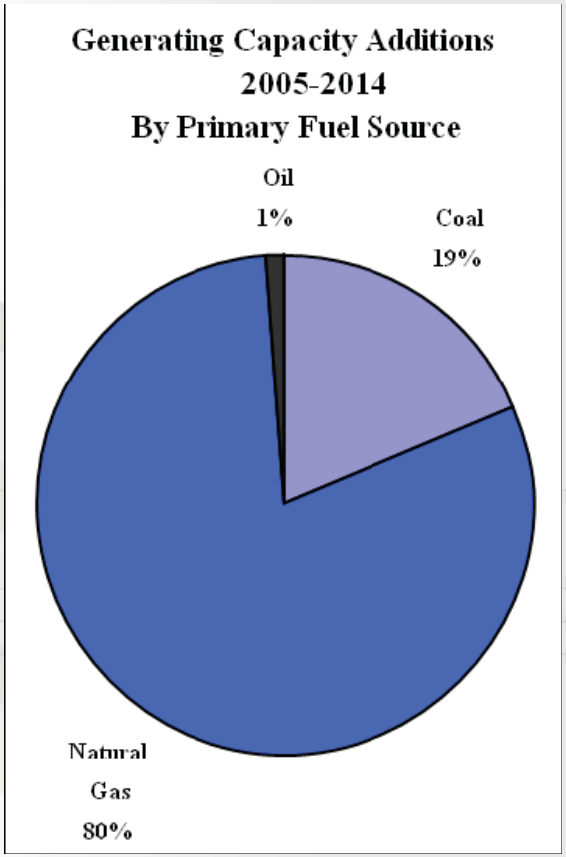


Source: Energy Information Administration, 2004 Figures

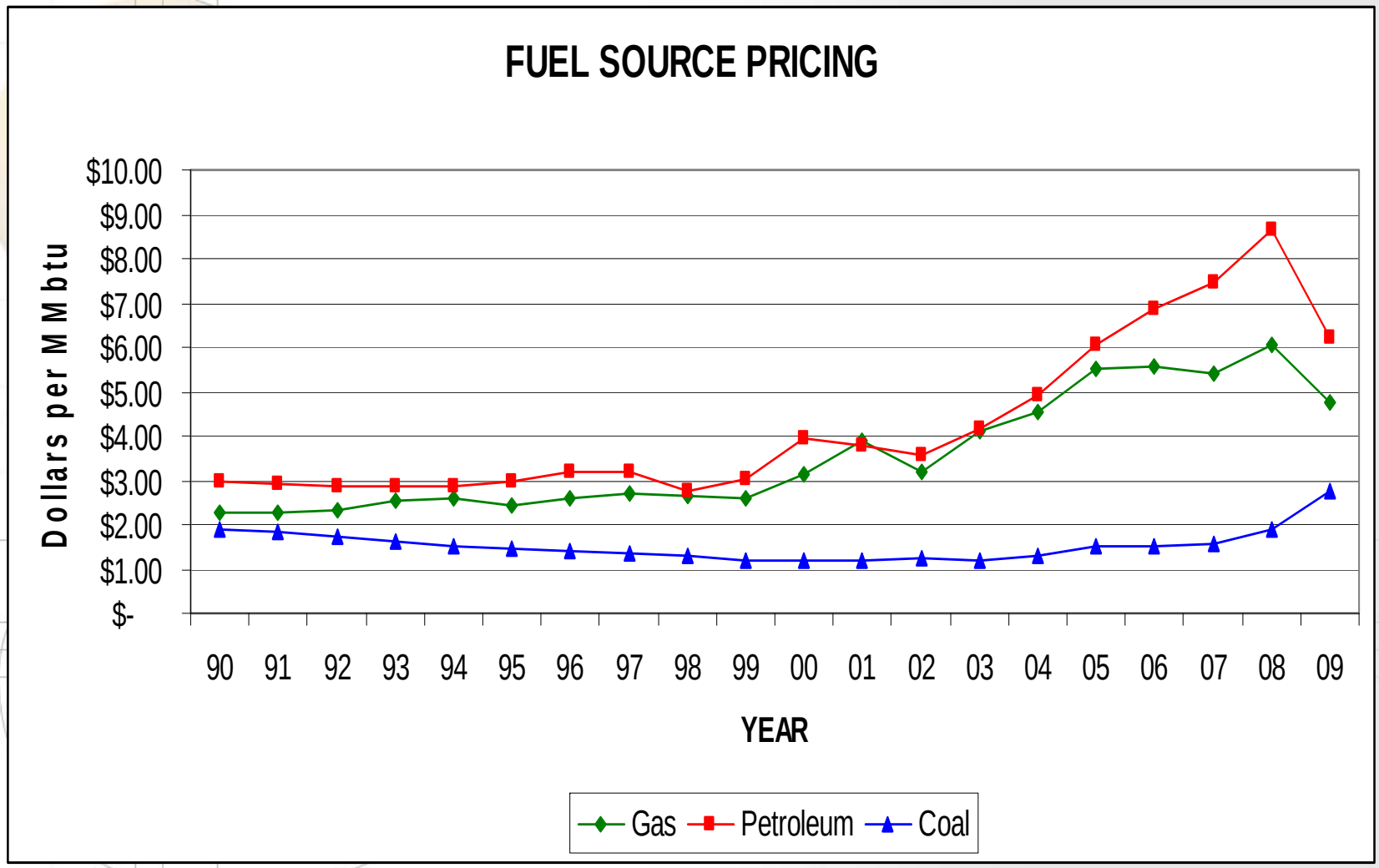
Role of Renewables in the Florida Energy Supply

Florida Electric Generating By Fuel Source





Role of Renewables in the Florida Energy Supply



Benefits Of Renewable Energy

Schools and Communities that turn to renewable energy are enjoying these benefits:

- Economic:
  - Fuel cost savings
  - Reduced operating expenses
  - Job creation related to project
  - Improved economic development near the landfill
- Community:
  - Enhanced image as an innovative community
  - Responsible community planning
  - A safer landfill and reduced odors
- Environmental:
  - Improved local air quality
  - Reduced greenhouse gas emissions
- Energy:
  - A reliable local fuel source
  - Less need for polluting fossil fuels

- Facing Global Energy Challenges
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Alternative and Renewable Energy

- Net Metering
- Avoided Cost Rate
- Power Purchase Agreement (PPA)
- Renewable Energy Credits (RECs)
- Carbon Credits
- Renewable Portfolio Standard (RPS)
- Feed-In Tariff
- www.dsireusa.org

Siemens-Alternative and Renewable Energy

- Solar Photovoltaic (PV)
- Solar Thermal
- Wind
- Fuel Cell
- Geothermal Cooling

Alternative and Renewable Energy – Solar PV

- Service Territory
  - Net Metering
  - Avoided Cost Rate
- State Incentive capped ($100k)
- Fed Tax Incentive
- Impending RPS
- Currently ~ 40+ year pay back

Alternative and Renewable Energy – Solar PV

- Area Requirement
  - 75,000sqft – TRAD.
  - 100,000sqft - TF
- 5.5 Full Sun Hours
- Low Maintenance
- Cells Produce DC to be converted to AC
- 20 Year Warranty

Siemens-Solar Photovoltaic

Siemens provided a 1.1 megawatt solar photovoltaic generation PPA combining Carport mounted (700kw) and roof mounted (400kw) for Siemens Transportation Services in Sacramento California. The system is expected to generate almost 30 million KWh of electricity over the first 20 years and is equal to approximately 150 residential solar systems.

Siemens-Solar Photovoltaic

Siemens was the contractor for a 128 kw solar photo voltaic carport structure for the South Coast Community College in Costa Mesa, California.

Siemens-Solar Photovoltaic – Thin Film

Thin Film Solar PV is applied directly to the roof with an adhesive

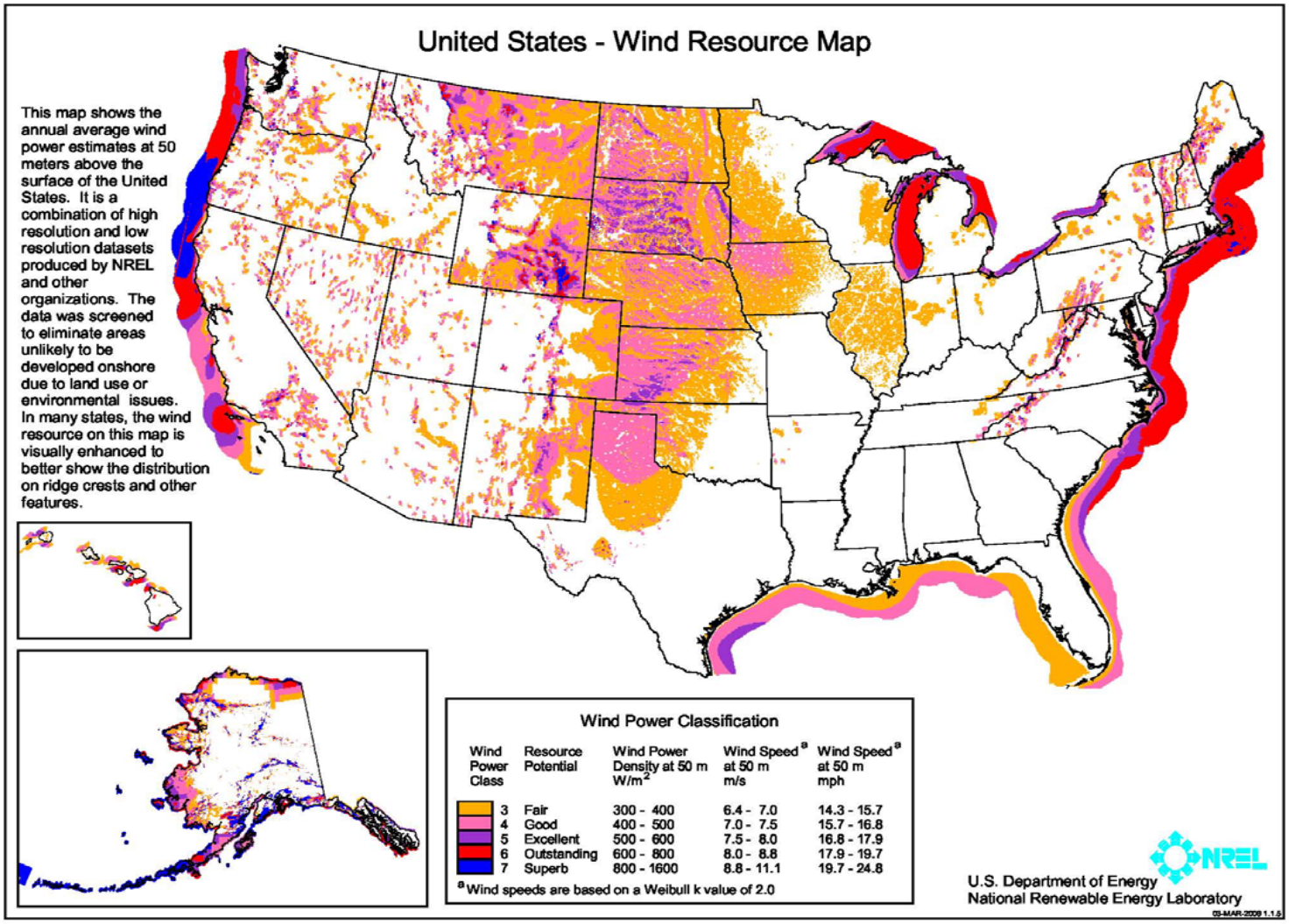
Alternative and Renewable Energy - Solar Thermal

- Water Heaters
- Space Heating
- Swimming Pools
- Air Conditioning
- Science Labs
- Sterilization

Alternative and Renewable Energy - Wind Energy

- RECs
- Schools with land
- Demonstration Project
- Education Enhancements

Alternative and Renewable Energy - Wind Energy

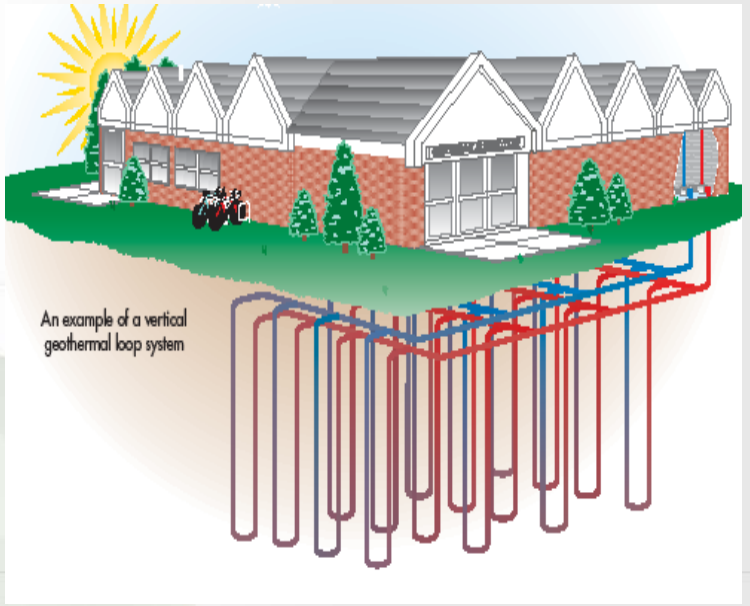


Alternative and Renewable Energy – Fuel Cell

- Computer Labs
- District Computer Servers
- Remote Schools
- Education Programs
  - NREL

Alternative and Renewable Energy – Geothermal

- HVAC Energy Reduction
- Buildings In Close Proximity
- Environmentally Friendly
- Safety
- Space Requirements
- Installed 105 units in Sylacauga, AL



Advanced Renewable Energy

- Biomass
  - Shaw
- Landfill Gas
  - Three Rivers
  - Manatee County
- Solar Thermal Power
  - Arizona
  - California
  - Nevada

Waste Gasification

Shaw Industries and Siemens have developed a 15 million dollar process for converting carpet and wood waste into steam energy and, as a result, will lower plant emissions, greatly reduce the amount of post-manufacturing carpet waste in landfills, and save Shaw's plant up to 2.5 million dollars per year.

Landfill Gas

Hudson Valley Community College

Siemens Building Technologies, Inc. (Siemens) has assisted the Hudson Valley Community College in upstate New York to become energy independent, partially by converting methane gas from a local landfill into electricity. The project is expected to save the community college more than $1.3 million in energy costs while paying for the construction, operation and maintenance of the plant over a 15-year period.

Solar Thermal Power

The sun over Nevada is supplying environmentally friendly electricity — thanks to a solar-thermal power plant that recently went online in the desert there. The facility with an area of one square kilometer focuses sunlight for heating water, with the resulting steam used to drive a 64-megawatt turbine built by Siemens.

Questions?