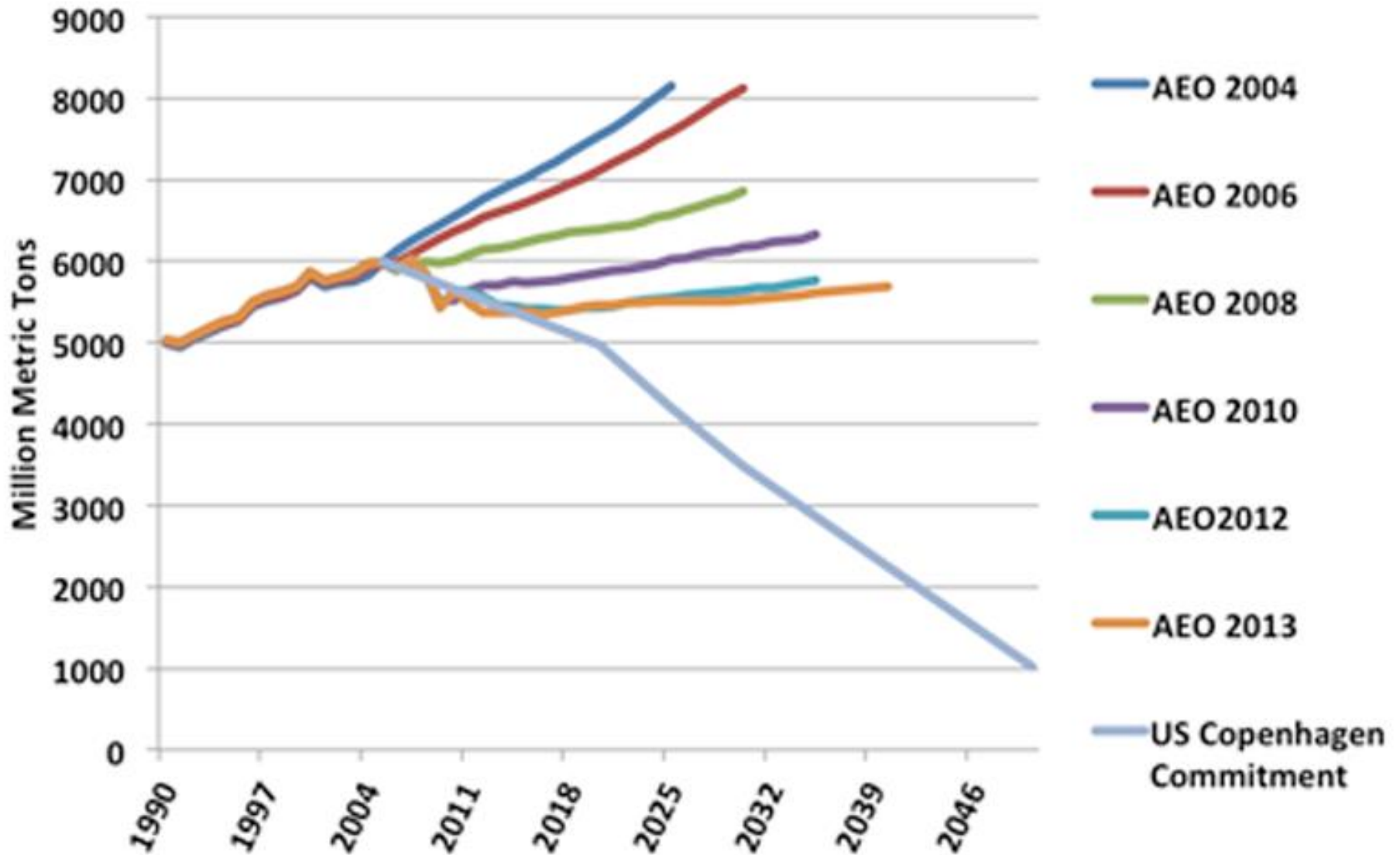


Nexus Perspectives: Water, Energy, and Climate

Jonas Monast,
March 7, 2014

Forecasts for CO2 Energy Emissions (From EIA Projections and U.S. Copenhagen Commitment)



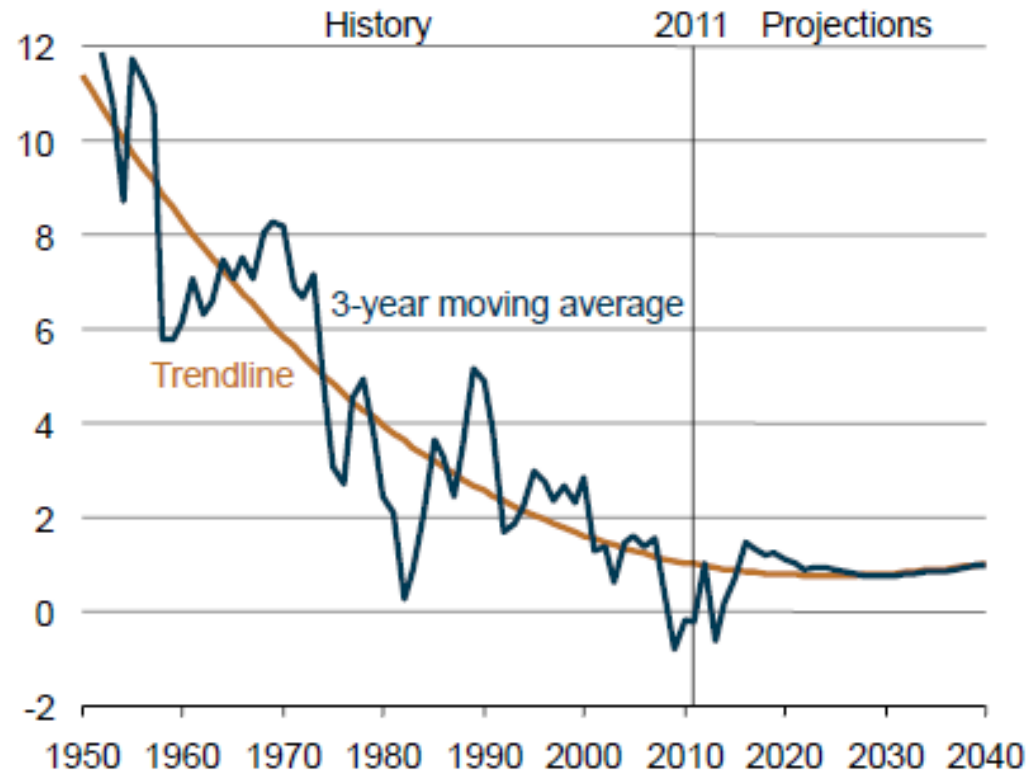
U.S. Energy Sector Risks

(regulator and/or utility perspective)

- Retiring coal
- Defaulting to gas
 - Concerns about volatility
- Regulatory uncertainty
- Potential nuclear retirements
- Uncertain demand growth
- High capital expenditures
- Intermittent renewable generation (rooftop solar)
- CO₂ regulations
- Infrastructure planning for drought and extreme weather

Low Demand Growth

**Figure 75. U.S. electricity demand growth, 1950-2040
(percent, 3-year moving average)**



Risk Mitigation Strategies

- Demand response/energy efficiency
 - Delay major capital investments
- Dynamic pricing, smart grid options
- Renewable generation
- New/emerging technology
- New nuclear(?)
- Increased dispatch of existing coal

GHG regulation under the Clean Air Act

- Power sector performance standards
 - Flexible statutory language
 - E.g., “best system of emission reduction”
 - Limited precedent
 - Important role for the states
 - Laboratories for effective policies

GHG Reduction Strategies

- Energy efficiency
- Renewable energy
- Emission averaging/trading
- Biomass co-firing
- Retire high emitting facilities
- New technologies

Electricity sector risk

- Demand response/energy efficiency
- Dynamic pricing, smart grid options
- Renewable generation
- New/emerging technology
- New nuclear(?)
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Power sector GHG reductions

- Energy efficiency
- Renewable energy
- Emission averaging/trading
- Biomass co-firing
- Retire high emitting facilities
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- New nuclear (?)

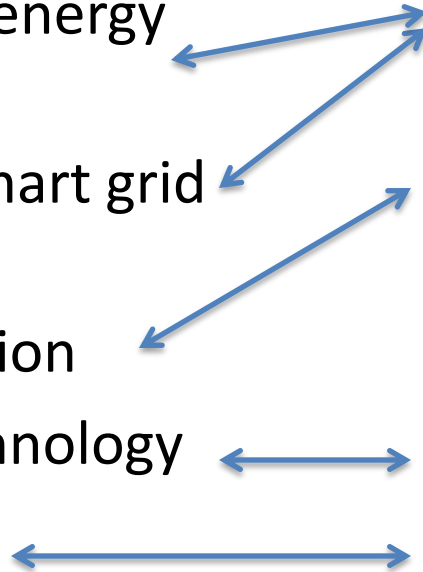
Multi-benefits

Electricity sector risk

- Demand response/energy efficiency
- Dynamic pricing, smart grid options
- Renewable generation
- New/emerging technology
- New nuclear(?)
- Increased dispatch of existing coal

Power sector GHG reductions

- Energy efficiency/reduce demand
- Renewable energy
- Emission averaging/trading
- Biomass co-firing
- Retire high emitting facilities
- New/emerging technologies
- New nuclear (?)



Water Risk?

- Options for a systems approach?



Thank You

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