

# 2012 Indiana Renewable Resources Study

Presented by:

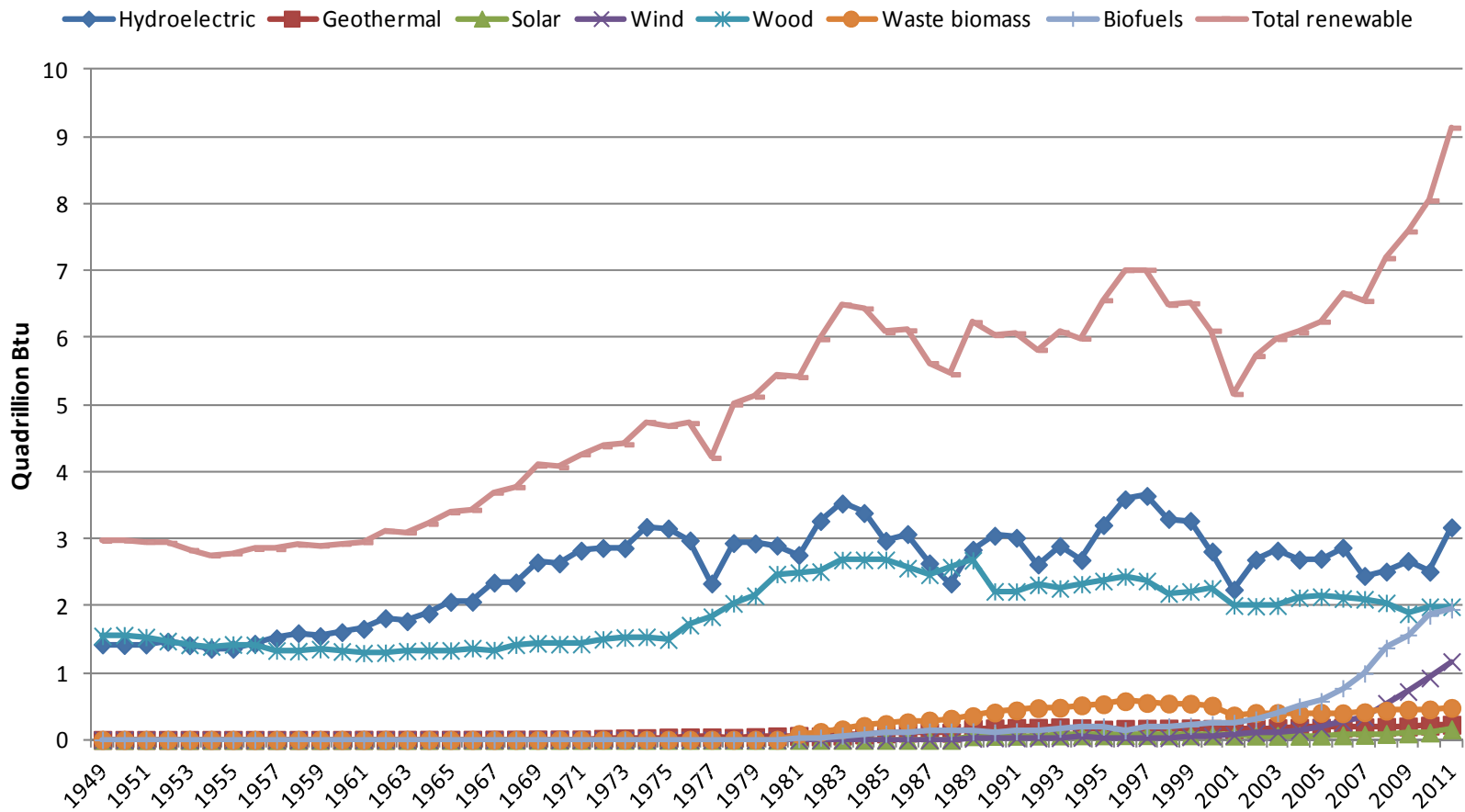
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Presented to:

Regulatory Flexibility Committee  
Indiana General Assembly

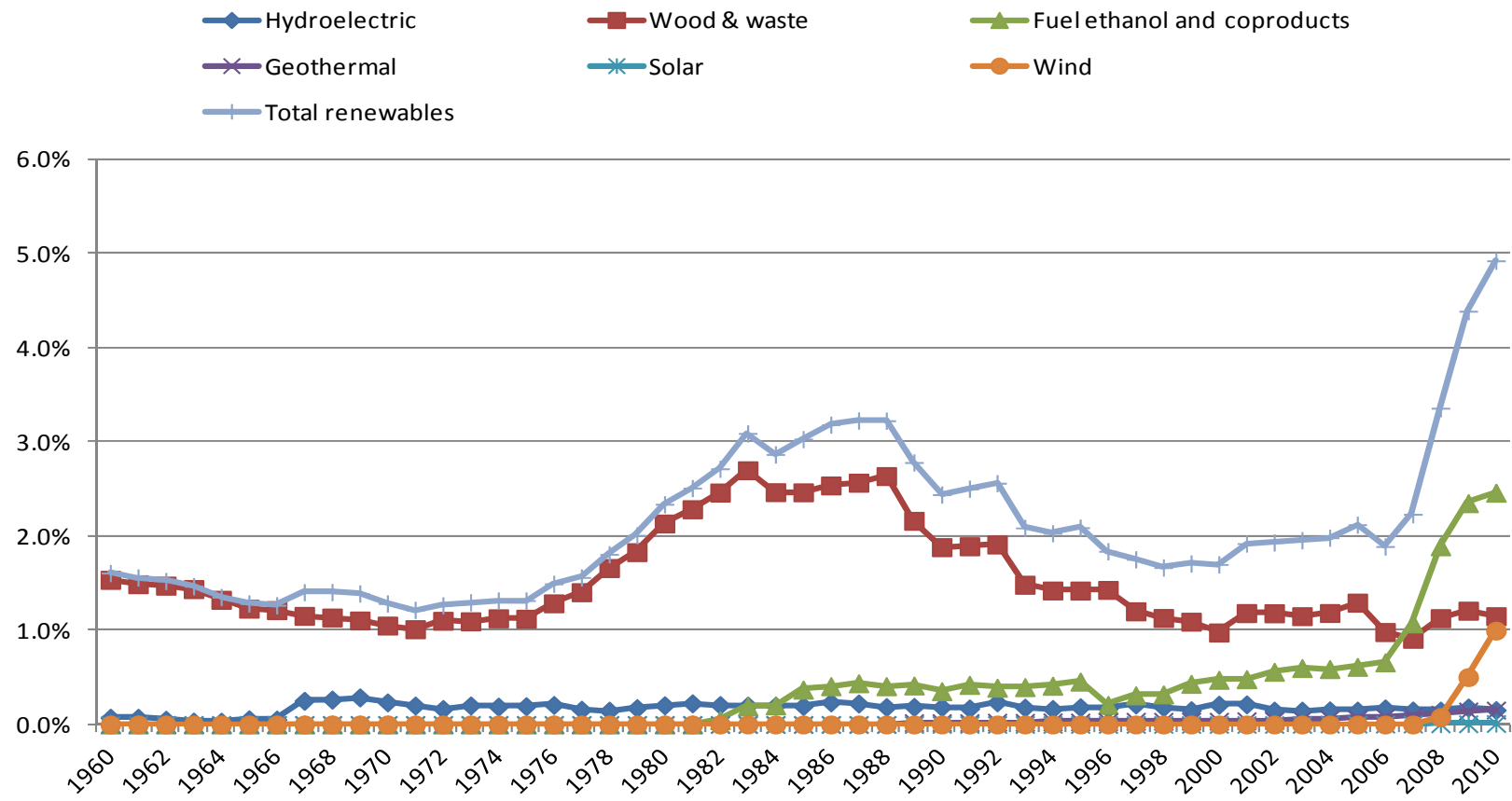
September 6, 2012

# Renewables Share of U.S. Energy Consumption



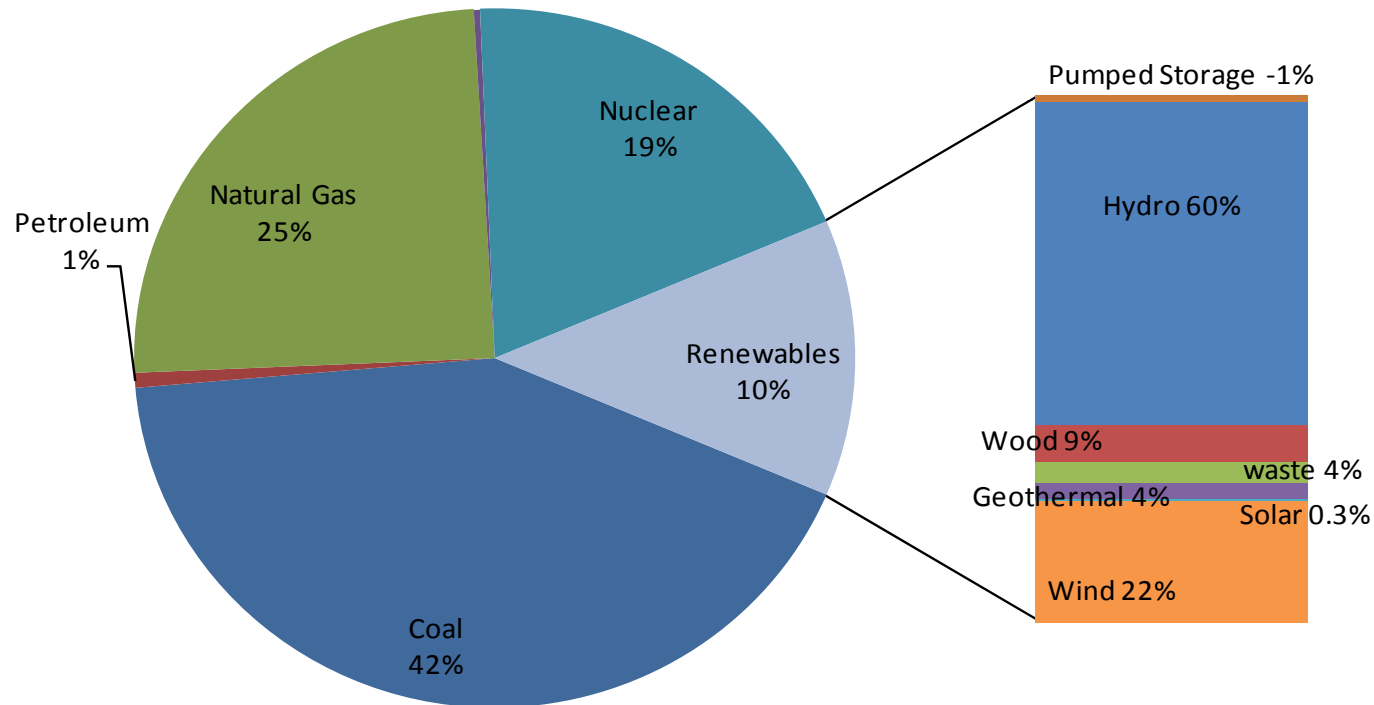
Source: Energy Information Administration (EIA)

# Renewables Share of Indiana Energy Consumption



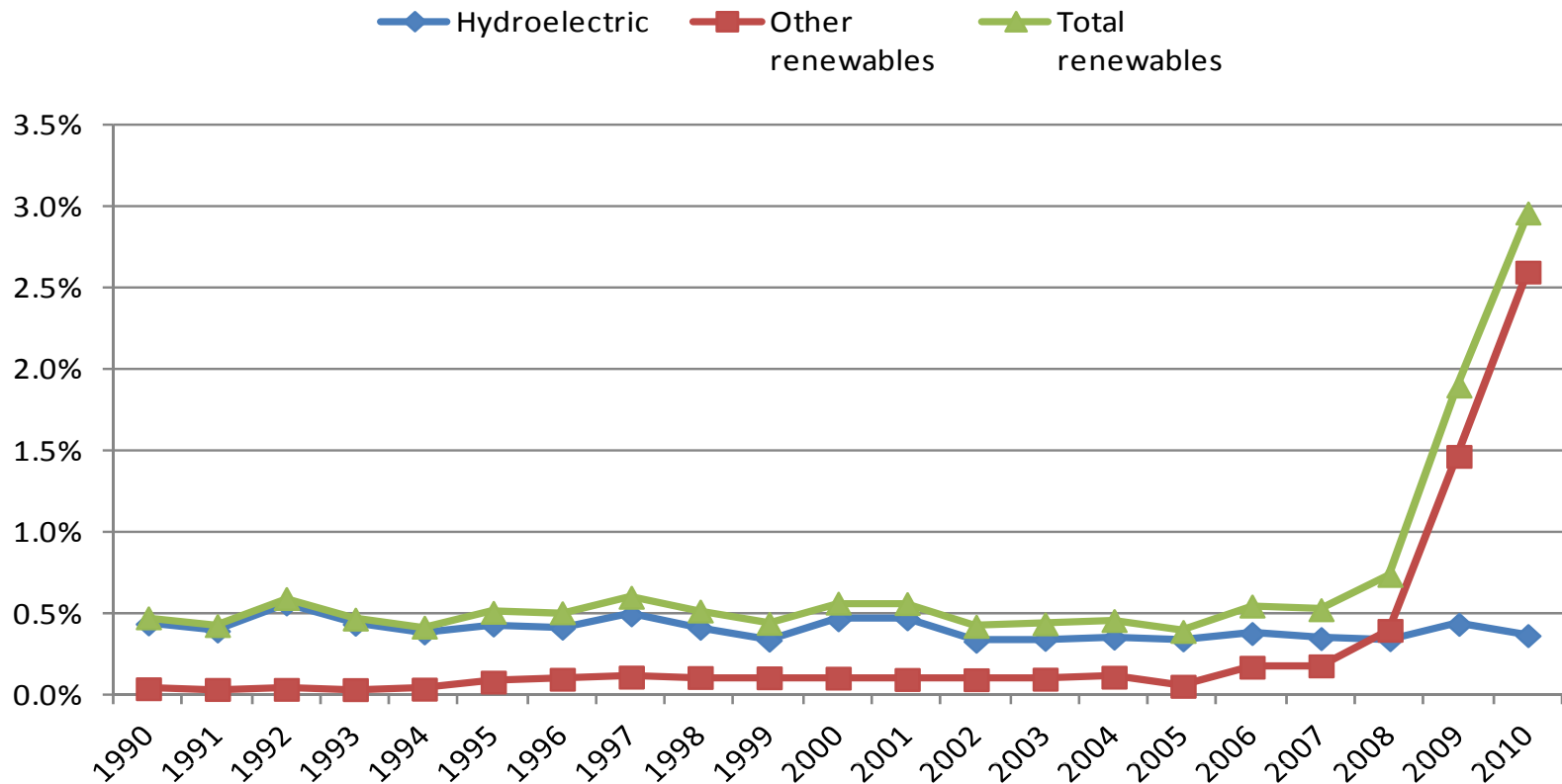
Source: EIA

# 2011 U.S. Electricity Generation by Energy Source



Source: EIA

# Renewables Share of Indiana Electricity Generation

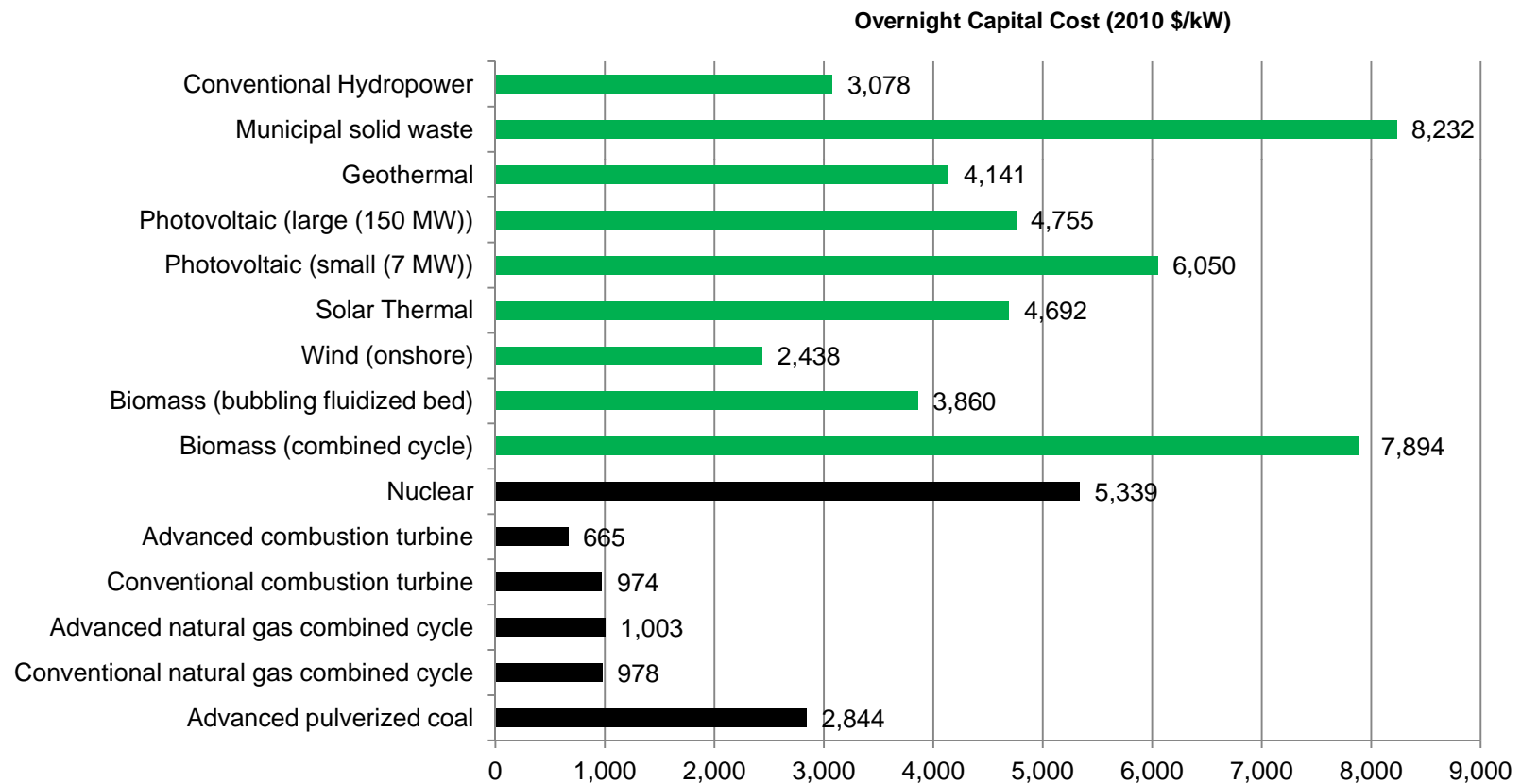


Source: EIA

# Barriers to Renewables

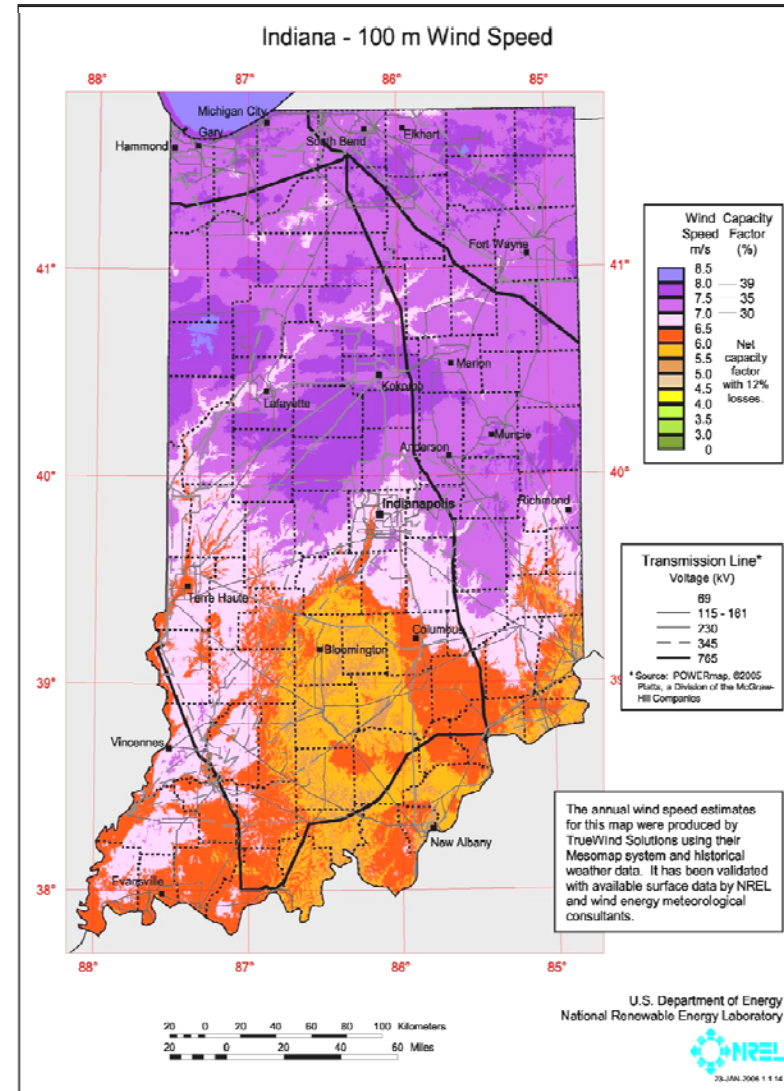
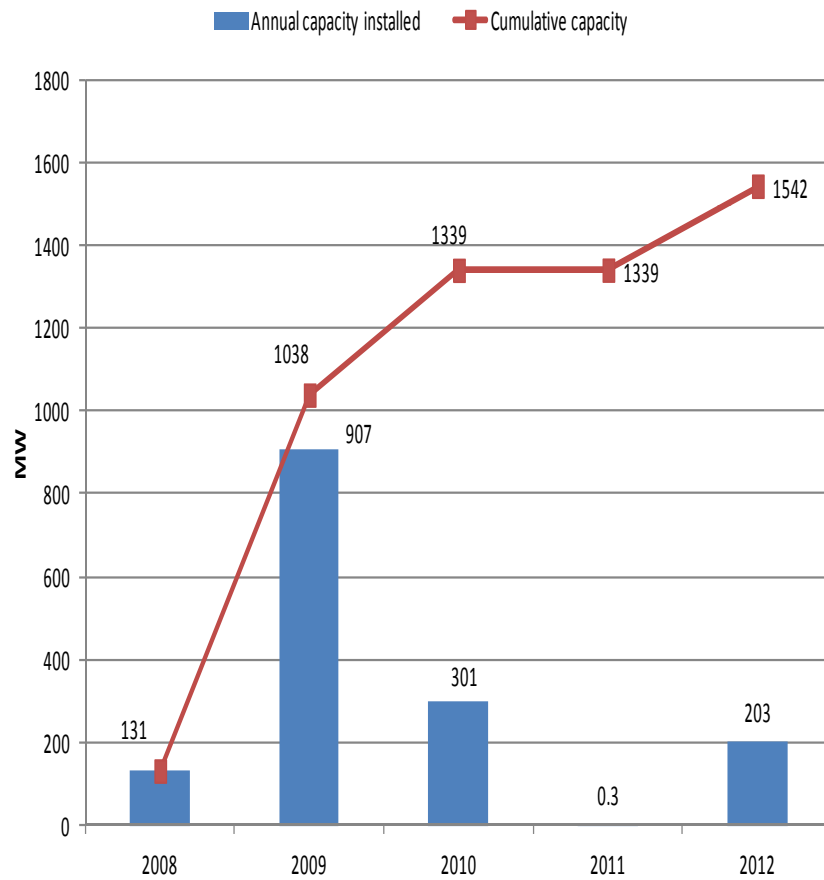
- Major barrier is cost
  - Most renewable technologies have high capital costs
  - According to EIA Indiana's average electric rate in 2010 was 7.67 cents/kWh vs. the national average of 9.83 cents/kWh
- Limited availability for some resources
  - Solar/photovoltaics, hydropower
- Intermittency for some resources
  - Solar/photovoltaics, wind

# Capital Costs for Various Generation Sources



Data source: EIA

# Wind





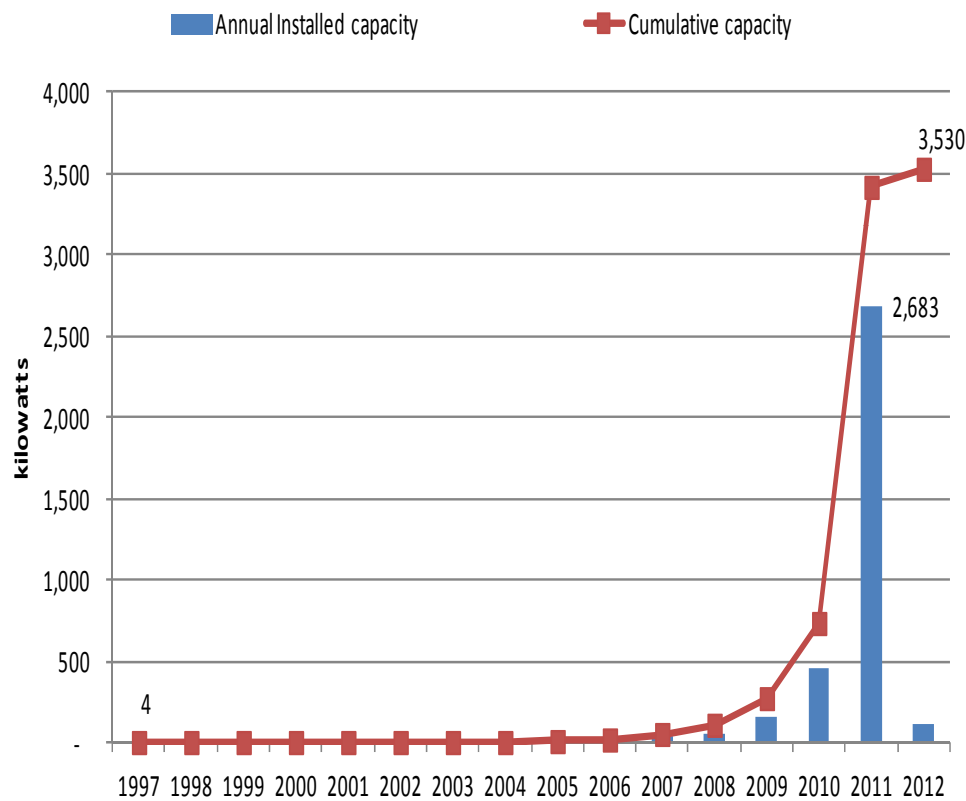
# Energy Crops

- Transportation fuels
  - Ethanol
  - Biodiesel
- Other possibilities
  - Fast growing hardwood trees (hybrid poplar/willow)
  - Grasses (switchgrass)
- Barriers to be overcome
  - Other high-value uses for the land
  - Price of competing fossil fuels
  - Harvesting and transportation costs

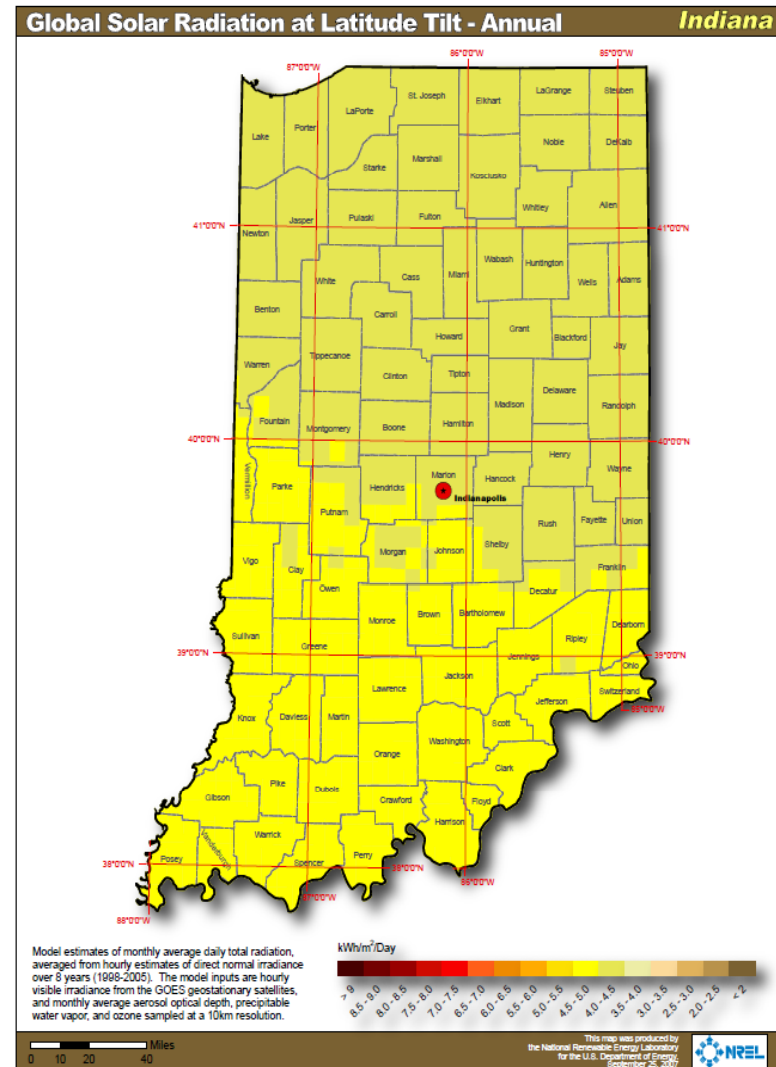
# Organic Waste Biomass

- Until the recent increase in ethanol production, this resource was the largest source of renewable energy in Indiana
  - Primarily due to the use of wood waste
- It is the 3<sup>rd</sup> largest source of renewable electricity generation in the state
  - Landfill gas
  - Municipal solid waste
  - Animal waste biogas
  - Wastewater treatment

# Solar Energy



Photovoltaic capacity in Indiana



Source: National Renewable Energy Laboratory

# Photovoltaics

- Growing rapidly in Indiana, but still a small contributor overall
- 188 installations totaling over 3.5 MW of capacity
  - Fort Harrison Federal Compound
  - Metal Pro Roofing
  - Johnson Melloh
- 10 MW project proposed at Indianapolis airport

# Hydroelectric Power

- Indiana has 73 MW of hydroelectric generating capacity.
  - mostly run-of-the-river (no dam)
  - 2<sup>nd</sup> largest source of renewable electricity
- American Municipal Power is constructing an 84 MW facility at the Cannelton Locks on the Ohio River
  - expected to be operational in 2014

# Further Information

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