

# Pennsylvania's Climate Action Plan

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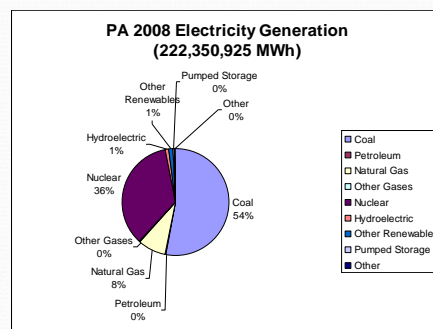
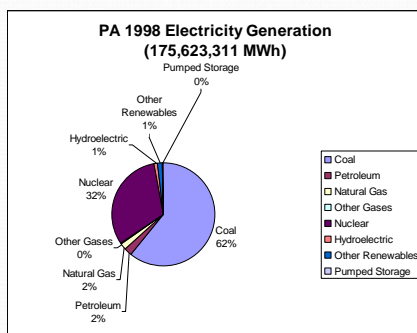
*The Impacts of Greenhouse Gas Policy Options on the U.S. Economy*  
April 23, 2010

## Pennsylvania Profile

- Commonwealth of over 2,500 municipalities
- Population: 12.3 million
  - 6<sup>th</sup> most populous state in nation
- Land Cover
- Coal Production
  - 65 million tons (2008); 4<sup>th</sup> largest producer
- Economy
  - GSP = \$553 B (2008); 6<sup>th</sup> largest
  - Employment = 5.8 M (Sept. 2008)

## Pennsylvania Electricity Profile

- Electricity Generation
  - 222,351 GWh (2008); 2<sup>nd</sup> largest generating state
  - 54% coal; 36% nuclear; 8% natural gas; 2% renewables



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## Advisory Committee

- Act 70 of 2008 requirement
- Establishment of Climate Change Advisory Committee (CCAC)
  - 21 members (18 appointed by General Assembly and Governor); 3 ex-officio cabinet members
  - PA Coal Association, United Mine Workers of America, Allegheny Energy, Pennsylvania Power & Light (PPL), US Steel, Conergy, The Nature Conservancy, Penn Environment, PennFuture, Carnegie Mellon University, local government, consultants and industry & trade advocates

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## Climate Change Action Plan

- Requirement of Act 70
- Final report was published on December 18, 2009
- Impacts Assessment, Inventory & Projections, Macroeconomic Assessment
- Includes 55 specific work plan / measures for 7 broad sectors (57 measures considered)
  - Electricity Gen/Trans/Dist
  - Residential & Commercial (buildings)
  - Land Use & Transportation
  - Industry
  - Waste
  - Agriculture
  - Forestry

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## Climate Change Action Plan

- Establishes a 30% reduction target below 2000 by 2020
- Recent state & federal actions combined with work plan recommendations yield 39% reduction
- No cap and trade or other direct regulatory controls on emissions
- Looked at cost effectiveness, economic impacts & harmonization with other programs
- Findings summarized in Executive Summary of the plan

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## Climate Change Action Plan

### Consolidated Voting Record

| Voting Action     | #  | Comments            |
|-------------------|----|---------------------|
| Unanimous Support | 28 |                     |
| Super Majority    | 19 | 2/3 voting support  |
| Simple Majority   | 8  |                     |
| Total Recommended | 55 |                     |
| Not Recommended   | 2  |                     |
| Recent Actions    | 5  | Voting not required |
| Total Measures    | 62 |                     |

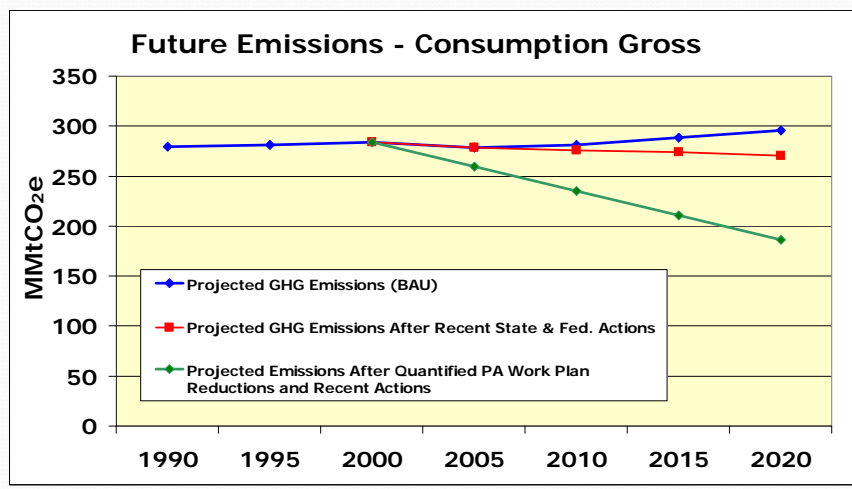
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## Action Plan Summary

- 39% GHG reduction below 2000 levels by 2020
  - From 295 million metric tons carbon dioxide equivalent (MMtCO<sub>2e</sub>)
  - To 186 MMtCO<sub>2e</sub>
- 55 Work Plans addressing a number of economic sectors for 85 MMtCO<sub>2e</sub>
- Existing programs contribute an additional 25 MMtCO<sub>2e</sub>
  - Alternative energy portfolio standard (AEPS)
  - Electric utility conservation
  - Federal EE appliance standards
  - Federal CAFE and GHG standards (Inclusive of PA Clean Vehicles Program and biofuels mandate)
  - Diesel anti-idling program

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## PA Reductions from Recent and Proposed Measures



## State Actions

- Pennsylvania Actions (Proposed & Final)
  - Diesel Anti-Idling Rules
  - PA Clean Vehicles Program
  - Act 213 of 2004 (AEPS)
  - Act 1 of 2008 (Alt. Energy Investment Act)
  - Act 129 of 2008 (EE & Demand Reduction)
  - Act 78 of 2008 (Biofuel Development & In-state Production Incentive Act)
  - Regional Low Carbon Fuels Standard (currently under development)

## Effect of Energy Efficiency

- ACEEE PA Assessment (April 2009)
  - Electricity reduction = 61,000 GWh (~1/3 of consumption)
  - Job creation potential = 27,000
  - Increase to GSP = \$2.6 Billion
  - <http://www.aceee.org/pubs/e093.htm>
- University of California Berkeley, University of Illinois Champaign-Urbana and Yale University Study
  - progressive energy efficiency and climate mitigation efforts could stimulate the creation of 74,000 new jobs at net cost savings to the Commonwealth

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## Macroeconomic Assessment

- Performed by Dr. Adam Rose, Univ. Southern California
- REMI PI+ Model
  - Most widely used macroeconomic model by government agencies throughout the U.S.
  - Data specific for designated region/state
  - Superior to other models for forecasting
  - Comparable to CGE models for analytical power and accuracy
  - PA purchased most robust (169 sector) data set available through REMI to provide finest level granularity
  - Inputs come from specific work plan analyses

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## Macroeconomic Assessment

- 55 recommended work plans; 42 had quantified results enabling macro analysis
  - 21 with net cost savings; 13 with net costs; 8 cost neutral
  - \$3.33 billion impact to GSP in 2020; increase of 0.48%
  - \$5.08 billion by 2020 is the forecasted cumulative Net Present Value (NPV) impact on total Gross State Product (GSP)

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## Macroeconomic Assessment

- Jobs Impact
  - 53,000 = Forecasted net job creation; increase of 0.71%
  - Largest job gains in Residential/Commercial and Forestry Sectors (~26 thousand & 16 thousand, respectively)
  - Losses mostly associated with fossil fuel-based energy generation, transmission & distribution
    - More than offset by well paying, professional and technical jobs associated with energy efficiency and conservation

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## Macroeconomic Assessment

- Two recently enacted state actions modeled
  - AEPS:
    - Adds \$1 B to GSP in 2020; NPV of \$3.2 B
    - Adds approximately 9 thousand jobs
  - Act 129:
    - Adds \$0.13 B to GSP in 2020; NPV of \$0.29 B
    - Adds approximately 2 thousand jobs
- Total Impact to Commonwealth of Pennsylvania (42 recommendations and recent actions)
  - \$6 billion added to GSP
  - 65,000 additional jobs

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## Questions?

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[www.dep.state.pa.us](http://www.dep.state.pa.us) Key word: Climate

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