



*Getting to a Sustainable
Energy Future*

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Overview

- ✧ Achievements of Last Three Years
- ✧ Elements of a Sustainable Energy Future (for Pennsylvania)



Achievements of Last Three Years

- ✧ Alternative Energy Portfolio Standards Act
- ✧ Revitalization of Pennsylvania Energy Development Authority
- ✧ Decision by Gamesa to locate manufacturing plant and North American headquarters in Pennsylvania
- ✧ Many, many projects for wind, solar, biodiesel, fuel cells, methane digesters, and the like
- ✧ And much more



Principles/Themes

- ✧ Many objectives (economic development, job creation, reduction of other pollutants, address climate change)
- ✧ Energy policy as opportunity
- ✧ Constructively engage all stakeholders (including coal and agriculture)
- ✧ Use all appropriate tools, not just regulation
- ✧ Greater integration of energy and environmental policy
- ✧ Power of example (on-the-ground energy projects)
- ✧ Based on information, not ideology



In Other States:

- ✧ Other states have launched similar initiatives, with similar themes/principles
- ✧ Varying levels of attention to climate change as a motivating factor
- ✧ More interstate cooperation
 - ✧ California, Oregon, Washington
 - ✧ RGGI
 - ✧ Gulf Coast states



But some major pieces are missing

Federal Leadership

Increasing dependence on foreign energy

Rising fuel prices

Energy consumption as a national vulnerability

Balance of payments

Rejection of Kyoto Protocol without providing a comparable alternative

Refusal to engage on post-Kyoto (2008—2012) commitments



Why this Matters

- ✧ U.S. is world's largest emitter of greenhouse gases
- ✧ U.S. is world's single largest consumer of energy
- ✧ U.S. has unmatched technological capability, economic strength, and military ability
- ✧ In truth, we cannot have a sustainable energy policy without the active engagement of the federal government.



What States Can Do Now

- ✧ Show what works and what does not work
- ✧ Provide models that could be adopted at federal level
- ✧ Through the sum of their actions, begin to move the national economy in the right direction
- ✧ Make it safer for national office holders to seriously address energy/climate issues



Elements of a Sustainable Energy Future (for Pennsylvania)

- ✧ Stay on course with existing efforts
- ✧ Supplement these efforts by giving greater attention to:
 - ✧ Energy efficiency
 - ✧ Climate change mitigation
 - ✧ Vulnerabilities/adaptation
 - ✧ Stewardship as a personal ethic



Stay on Course with Existing Efforts

- ✧ AEPS Implementation
- ✧ PEDDA Grants and Loans
- ✧ Energy Harvest and other Grants
- ✧ Pollution prevention initiative (which includes energy efficiency and renewable energy)
- ✧ EDGE
- ✧ Clean Cars



ENERGY EFFICIENCY

- ✧ The energy we don't use is the cleanest energy of all
- ✧ Reduce demand pressure on prices
- ✧ Strengthen economy
- ✧ Create more opportunities for job creation and technology development
- ✧ Protect the poor and those on fixed incomes
- ✧ Reduce vulnerabilities
- ✧ Mitigate climate change



Buildings

- ✧ 2003 International Energy Conservation Code
- ✧ In many cases, this Code is less stringent than EPA Energy Star standards
- ✧ Implemented by local municipalities
- ✧ Application to existing buildings
 - ✧ Not typically applicable to existing residential buildings unless there have been structural changes
 - ✧ Keystone Home Energy Loan Program for existing buildings—a starting point



Incentives to Drive Less

- ✧ Greater application of multiple use zoning in new developments
- ✧ Acts 67 and 68 are not enough
- ✧ Smart growth legislation

Appliances

- ✧ Proposed legislation targeting 7 types of appliances
- ✧ Would go into effect when a sufficient number of other states in region have adopted similar legislation
- ✧ Standards may increase when other states adopt more stringent standards

CLIMATE CHANGE MITIGATION



Why?

- ✧ **Human health:** heat-related summer heat deaths projected to increase in Philadelphia and Pittsburgh.
- ✧ **Temperature:** 2-3 degree F increase by 2030, 5-10 degree F increase by 2100
- ✧ **Species and ecosystems:** warming is likely to substantially limit trout populations



Rainfall and Weather Extremes

- ✧ Droughts may become more frequent
- ✧ Heavy precipitation events have been increasing, and may continue to increase
- ✧ “Potential changes in the intensity and frequency of hurricanes are a major concern”—U.S. Global Change Research Program
- ✧ May be increased risk of floods

Mitigation Measures—Possible Approaches

- ✧ Reduce “business as usual” emissions of greenhouse gases
- ✧ Encourage national and international decision-making to develop and implement effective global regime
- ✧ Minimize long-term costs for state and local constituencies



Biannual State Inventory

- ✧ Essential to know trends, know impacts of current actions, and plan reductions (e.g., what will AEPS achieve?)
- ✧ Last Pa. Inventory—2001

GHG Reduction Registry

- ✧ Primary benefits:
 - ✧ protect early actors
 - ✧ give them some recognition,
 - ✧ and perhaps establish economic value for reductions
- ✧ Many states already have registries
 - ✧ California
 - ✧ New Hampshire
 - ✧ Wisconsin
- ✧ Pennsylvania engaged in discussions on Regional Greenhouse Gas Registry (RGGR)—which would set credible and uniform rules, and provide basis for cap-and-trade system



Carbon Sequestration

- ✧ Coal will be part of Pennsylvania's energy future
- ✧ Deep geologic sequestration is likely to capture more carbon than forests or soils
- ✧ Mapping of good geologic targets for sequestration in Pa. is almost complete
- ✧ Next steps:
 - ✧ How to manage sequestration risks (e.g., leakage)?
 - ✧ How to get coal-fired power plants to employ sequestration?

Targets and Timetables

- ✧ Foundation for planning any reductions
 - ✧ How ambitious to be?
 - ✧ How to achieve planned reductions?
- ✧ Other states have targets and timetables
- ✧ Montgomery County is setting targets/timetables
- ✧ Pa. Consortium for Interdisciplinary Environmental Policy to launch program so colleges/universities can set targets and timetables



Stakeholder Process

- ✧ Hundreds of available legal and policy tools
- ✧ Stakeholder process helps determine which ones are politically acceptable
- ✧ Widely used among states and localities that are addressing climate change



VULNERABILITIES/ ADAPTATION

- ✧ Climate impacts are likely to fall more heavily on low-income persons, children, older persons, and persons with chronic respiratory problems
- ✧ Pennsylvania's population includes a significant portion of older people. Because these effects are likely to intensify over time, all of us are likely to experience growing stresses from global warming as we age.
- ✧ Water systems may face more disruptions from drought, flash floods, storms, and electricity outages.



Possible Measures

- ✧ Water conservation
- ✧ More effective limits on building in vulnerable areas (e.g., floodplains)
- ✧ Acquisition of air conditioning systems for people who are vulnerable to extremely hot days
- ✧ Stakeholder process could be useful here as well

STEWARDSHIP AS A PERSONAL ETHIC

- ✧ Pennsylvanians understand something about personal environmental stewardship.
- ✧ Seniors—conservation and efficiency during Great Depression and WWII
- ✧ Most of us--Act 101 and recycling
- ✧ Fundamentally: government cannot do everything



Foundations

✧ Faith communities


✧ Ethics/Morality

*Commitment to our
children/grandchildren*





*Sustainable Energy is
Everyone's Responsibility*



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