



Policy Office

The PA DEP Energy Office & State Energy Program Plan

September 13, 2016

Climate Change Advisory Committee Meeting

Tom Wolf, Governor

Patrick McDonnell, Acting Secretary



PA DEP State Energy Office

OPPEA (Office of Pollution Prevention and Energy Assistance)

- Primary CWoPA entity under Governor's jurisdiction for outreach and awareness regarding the benefits of energy conservation, energy efficiency and alternative energy programs
- Provide advocacy and deployment of alternative fuel transportation programs
- Maintain situational awareness for implementation of the CWoPA's Emergency Support Function #12 (Energy Emergency)
- Pennsylvania "Energy Office"
- PA's main contact to the US DOE & US EPA P2 programs

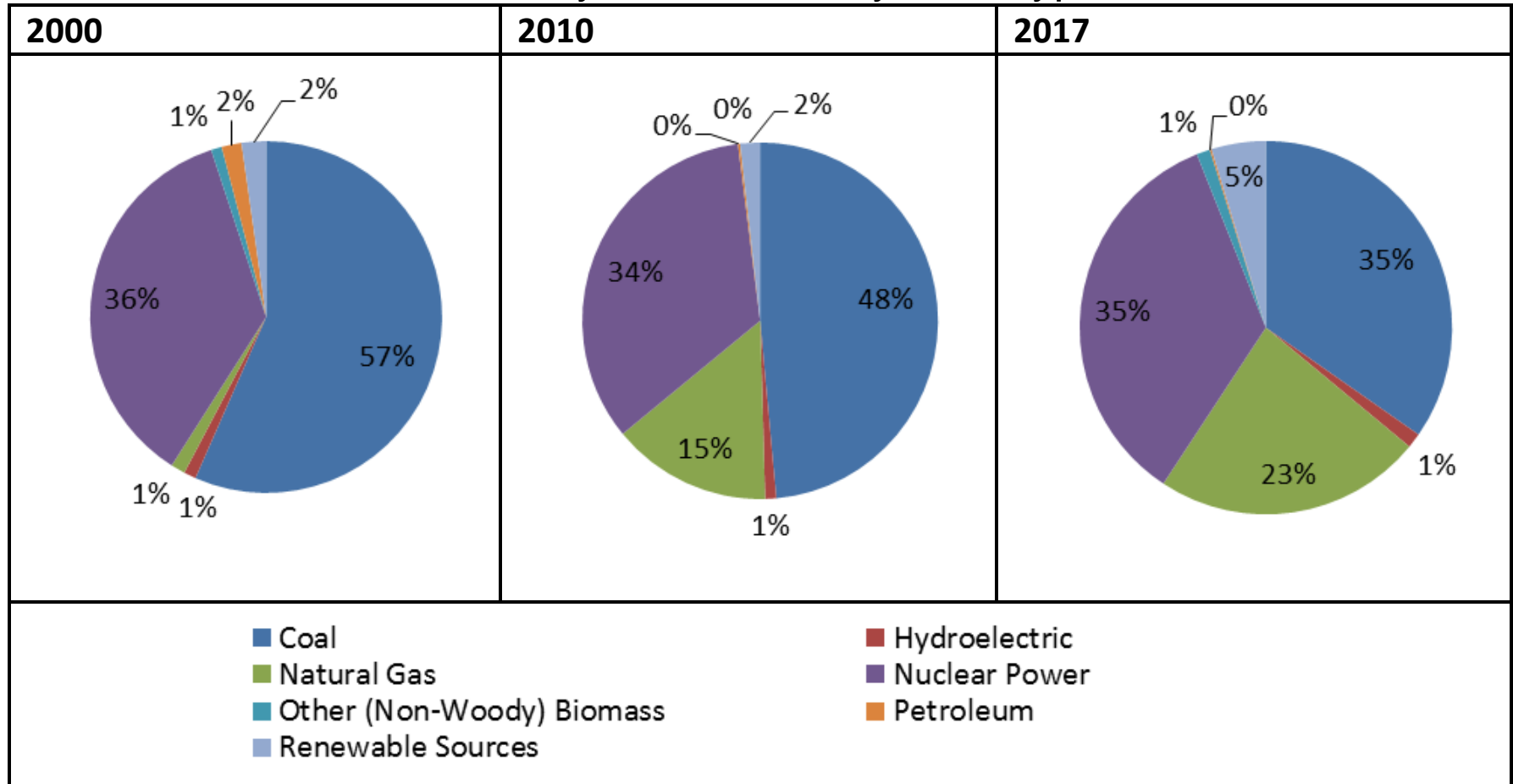
Keystone State Energy Portfolio

- Largest U.S. Electricity Exporter
- 2nd largest Nuclear Generator in U.S.
- 2nd in Extracted Gas Production in U.S.
- 3rd largest Electricity Generator in U.S.
- 3rd largest Energy Producer in U.S.
- 3rd highest CO2 Emissions in U.S.
- 4th largest Coal Producer in U.S.
- 16th in total Solar (PV) Production
- 17th in total Wind Production
- 17th in Energy Conservation & Efficiency



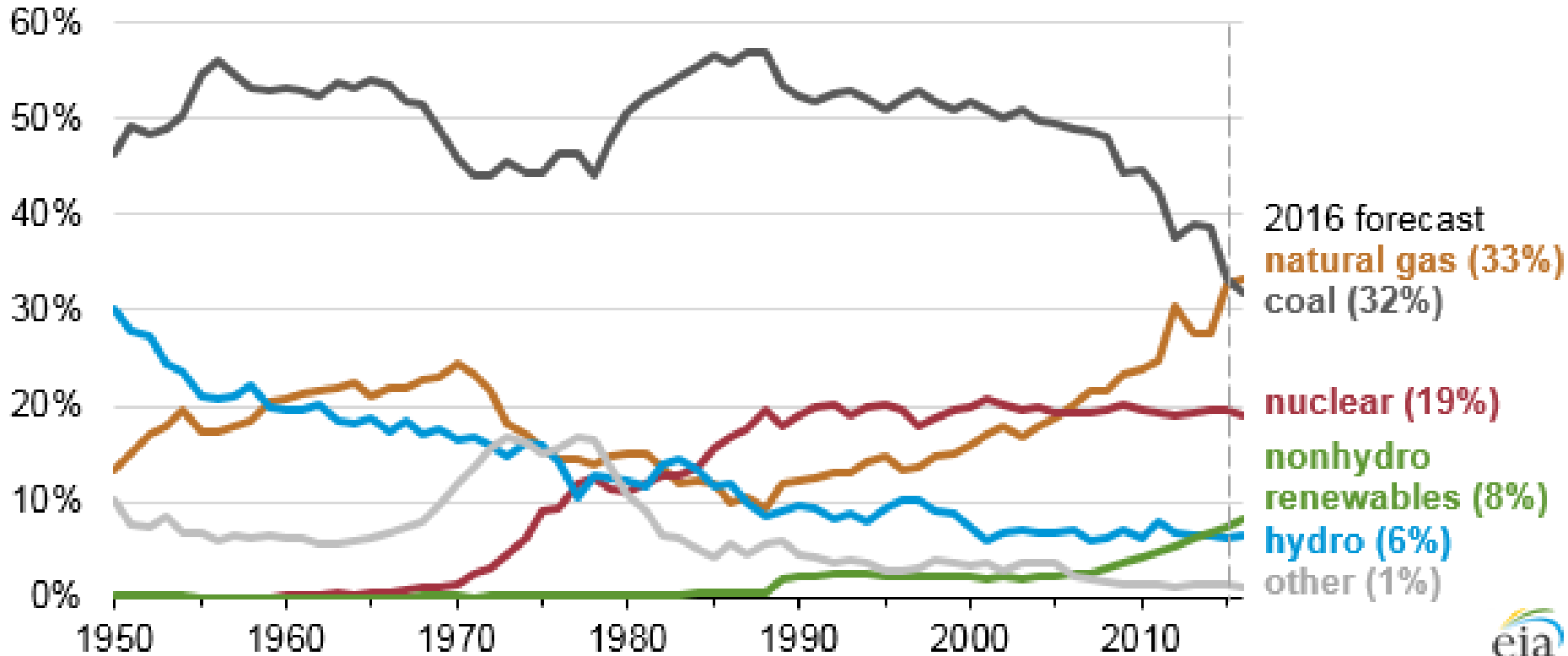
A Changing Energy Landscape

PA Electricity Generation by Fuel Type



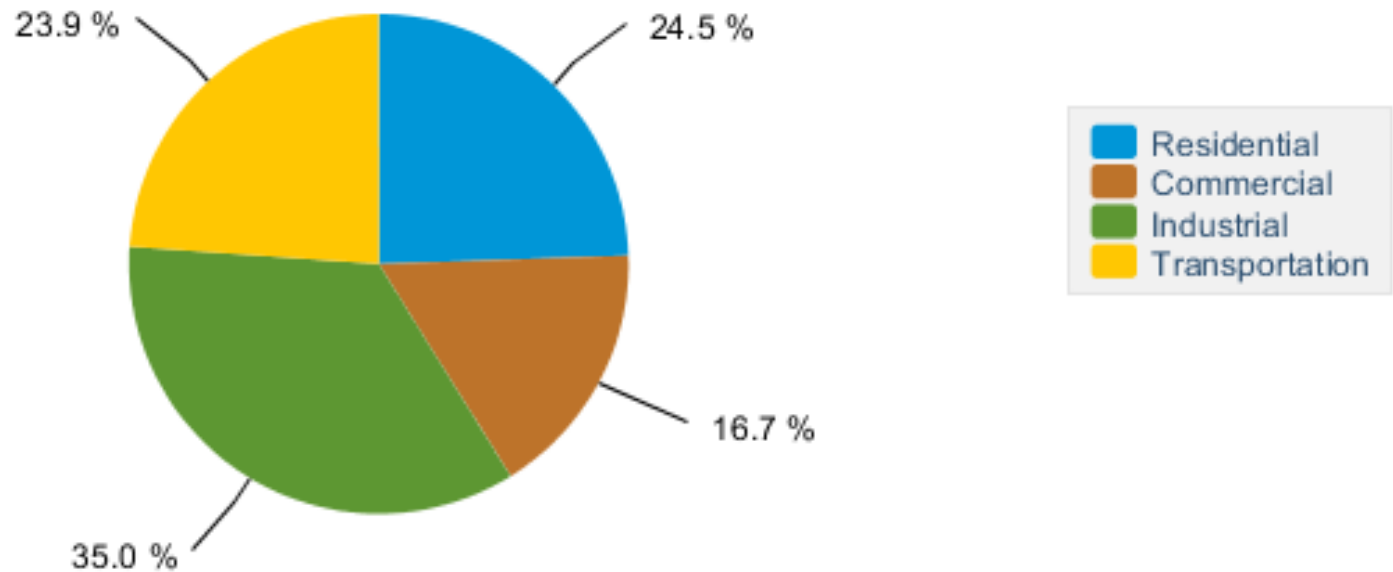
U.S. Electricity Generation

Annual share of total U.S. electricity generation by source (1950-2016)
percent of total



Energy Consumption in PA

Pennsylvania Energy Consumption by End-Use Sector, 2013





PA 2016 State Energy Program Plan

- Every year, each State Energy Office submits a State Energy Program (SEP) plan to the U.S. Department of Energy for a formula-based grant for energy efficiency, renewable energy, and energy assurance activities.
- PA's 2016-17 plan consists of six major projects, four of which are directly tied to work plans / recommendations from Pennsylvania's Climate Change Action Plan Update
- The remaining two projects will enable better coordination of energy efforts with other state agencies and plan for the future, and to enhance energy emergency preparedness capabilities.
- SEP also supports staffing and administrative functions related to the other activities of the energy office



PA 2016 SEP Plan (cont.)

- ❖ Combined Heat & Power (CHP) Enabled Renewable, Distributed Energy Micro-grid Technology
- ❖ Energy Assessments for Small / Medium Manufacturers
- ❖ Small Business Energy Assessments / Retrofits (in low income areas)
- ❖ Building Operator Training
- PA State Agency Energy Planning and Evaluation, Measurement & Verification (EM&V) Protocols
- Energy Emergency Assuredness / Planning

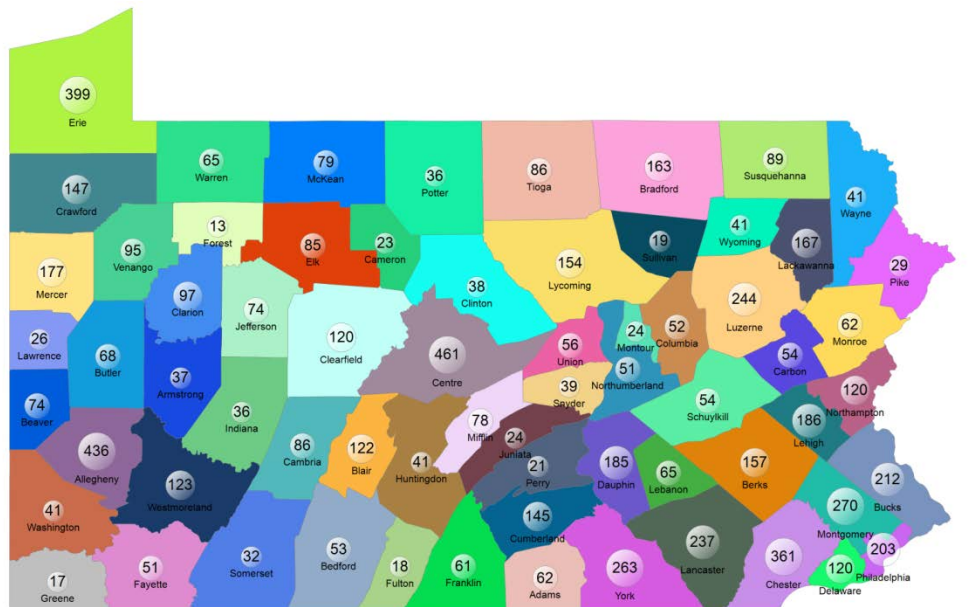


Combined Heat & Power

- Increase deployment of CHP systems in PA
- PUC proposed policy statement to promote CHP investments
- Encourage Electric Distribution Companies (EDCs) and Natural Gas Distribution Companies (NGDCs) to make CHP an integral part of their energy efficiency and resiliency plans
- Demonstration project @ microgrid within the Philadelphia Navy Yard (natural gas – solar hybrid CHP)
- Reading & Pittsburgh expressed interest in CHP projects

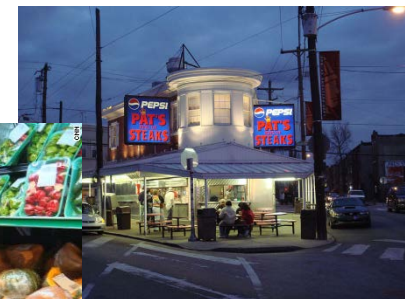
Manufacturing Energy Assessments

- Small to Medium Sized Manufacturers in Pennsylvania
- Energy Efficiency (E2) assessments and technical assistance
- PennTAP (Pennsylvania Technical Assistance Program) & PSU Engineering Students
- 70 – 75 on-site assessments
- Typically 40-50% install some type of retrofit



Restaurant / Convenience Store Energy Assessments & Retrofits

- Restaurants and Convenience Stores are typically the most energy intensive types of commercial buildings (3x to 5x Office)
- Low income communities in PA
- Philadelphia region (initially) as model for statewide applications
- Overcome barriers
 - Assessment costs
 - Contractors
 - Financing
- 60 assessments
- \$95,000 SBAG carve-out (at least 10 retrofits)
- ~ 878,000 kWh/ year energy savings



Building Operator Certification



- Nationally-recognized training for facility managers & HVAC technicians that focuses on improving the energy efficiency of commercial buildings
- Consists of eight 8-hour classes, as well as several homework assignments and open-book exams
- Topics include HVAC systems & controls, lighting fundamentals, and indoor environmental quality

Financing

- PEDA (PA Energy Development Authority)
 - Technical assistance / staff support
- Green Energy Loan Fund Management
 - 11 EE / AE projects, ~\$14.8 M
- Alternative Fuels Incentive Grants (AFIG)
 - 35 projects, ~ \$6 M
- Energy Financing Gap Analysis



Technical Assistance

- Climate Change Action Plan
- Clean Power Plan
- Energy Data Analysis and Outreach
- Energy & Pollution Prevention Grants Technical Review
- Alternative Fuel Technical Assistance Program
- Act 129 Support
- DEP Energy Outreach to Schools
- Pollution Prevention (P2)
- Solid State Street Lighting Technical Assistance Program

Transportation

- **Transportation Climate Initiative Coordination**
 - TCI Clean Vehicles workgroup
 - Partnerships with FHWA Fixing America's Surface Transportation Act projects (I-80, Turnpike, Multi-state Corridor I-95)
- **Electric Vehicles / EV Everywhere**
 - EV Everywhere PA Stakeholder group to identify stretch goals
 - Coordinate education and outreach between all interested parties
 - Create unique support and funding opportunities
- **Volkswagen Settlement**
 - Zero Emissions Vehicles (ZEV) Fund (\$1.2B / 49 States)
 - Mitigation Fund (\$110M)
- **AFIG Grants & Technical Assistance**

Energy Conservation & Efficiency

- National Energy Efficiency Registry Project Partner
 - DOE-funded, led by TN, w/ GA, MI, MN, OR, TCR & NASEO
 - Streamline evaluation of energy efficiency investments
 - Compliance, standardized benchmarks for evaluation
- Building Energy Codes
 - Pennsylvania Energy Code Collaborative
 - Outreach and education on building energy codes
 - Voting ICC Member
- DGS GESA Evaluations at State Facilities
- Interagency Sustainability Work Group
 - In-house (CWoPA Agencies) / External (Local / Muni Gov't, Schools, Univ.)
- Executive Orders / Legislation
 - Lead By Example
 - Expand Opportunities

Renewable Energy

- Alternative Energy Portfolio Standard (AEPS) compliance
 - Environmental compliance required for credit registration
 - Resolution of environmental permitting and compliance issues
- PA DGS 30% RE contract
- Finding Pennsylvania's Solar Future



ODAR

- Energy Planning and EM&V
 - Update and upgrade of OPPEA web Presence
 - Development of data sets for existing CHP, Solar, Bio digesters, CNG Stations, EV charging stations etc. funded by DEP and other CWoPA entities
 - Development of maps and PA specific information for use in gap analysis and “next opportunity” funding programs
- Energy Assurance
 - Maintain situational awareness of energy supplies and contacts
 - Populate and maintain Energy Contact database
 - Participate in update of ESF 12 with DEP Emergency Response Coordinator
 - Continue to develop inroads for liquid fuel assurance
 - Participate in various working groups (PUC, NASEO, DOE, EPA, etc.)



pennsylvania
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Policy Office

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