



Energy Conservation and Efficiency: Options and Alternatives for Government and Industry

**Puerto Rico Chamber of Commerce
The Conrad Hotel
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Background



Through innovations in energy and environmental policies, programs and technologies, the Southern States Energy Board enhances economic development and the quality of life in the South.

- SSEB Mission Statement



- **Established 1960, expanded in 1978**
- **16 U.S. States, Puerto Rico and U.S. Virgin Islands**
- **Each jurisdiction represented by the governor, a legislator from the House and Senate and a governor's alternate**
- **Federal Representative Appointed by U.S. President**



SSEB Role in Puerto Rico



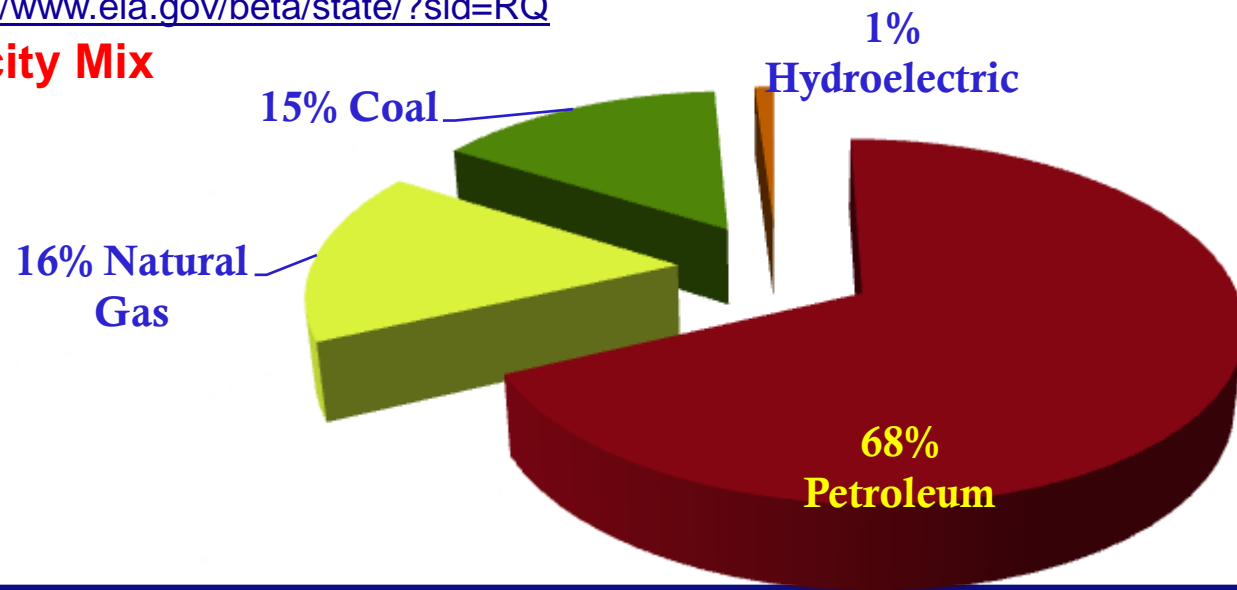
- SSEB founded in 1960
- Puerto Rico joined SSEB May 30, 1970
 - Governor Luis Ferré
 - Dr. Modesto Iriarté
 - Dr. Juan Bonnet
- Annual Meetings in Puerto Rico
 - 1981
 - 1993
 - 1999
- 2012 SSEB Associate Member meeting at Rio Mar Beach Resort
- Past Chairmen
 - Governor Carlos Romero Barceló
 - Governor Pedro Rosselló González



Electricity Mix in Puerto Rico



- Puerto Rico has Renewable Portfolio Standard -20% by 2035
- 2010 Solar thermal water heaters fifth nationwide
- Two wind facilities operational in 2012
 - Santa Isabel & Windmar – 120 MW
- EIA forecasts potential for 30 BKWh annually from ocean wave energy projects <http://www.eia.gov/beta/state/?sid=RQ>
- **2011 Electricity Mix**



Focus: Energy Efficiency in the South

- Energy Efficiency and Energy Conservation for small and medium sized businesses
- Programs at state and federal level to benefit members
- Examples of SSEB member states that have implemented small/ medium business programs
- What options are available for commercial entities to become more energy efficient?





Insights from the National Perspective



- President Obama Plan for the Strong Middle Class & Strong America
 - Energy Security Trust
 - Doubling Renewable Electricity by 2020
 - Energy Efficiency Race to the Top for states
- Alliance to Save Energy – Energy 2030
 - Invest in energy productivity economy-wide
 - Modernize regulations & infrastructure to improve efficiency
 - Educate, engage consumers on how to drive energy productivity
 - Expenditures on energy efficiency were 3 ½ times investment in conventional energy technology in 2010
- Senate Energy Committee Leadership (Wyden & Murkowski)
 - Encourage integrated efficiency systems & building efficiency

Innovative Funding Mechanisms for Energy Efficiency

- Green Banks
 - New York Green Bank - \$1 Billion
 - Funds from Energy Efficiency Portfolio Standards, Renewable Portfolio Standards & private investment
 - State will issue new borrowing by the Green Bank to support loans for energy efficiency improvements
 - Connecticut created Green Bank in 2011 – Clean Energy Finance & Investment Authority
 - Bank borrows money / aggregates new and existing capital sources
 - Funds clean energy projects, including electricity and natural gas vehicle infrastructure, electricity storage, renewable energy and energy efficiency
 - Puerto Rico Green Energy Fund
- Performance Contracting (ESCOs)
- DOE Energy Efficiency and Renewable Energy Program funding
www.eere.energy.gov/topics/buildings.html

Property Assessed Clean Energy Financing Legislation

- **PACE – efficiency expenditures added to home mortgage**
- **EE & RE upgrades paid through property tax assessment**
- **Status: on hold pending FHFA ruling**
 - **Pay off mortgage at resale**
 - **Continuation with new mortgage**
- **Florida has a commercial PACE program underway**
- **28 States Allow PACE**

National PACE Policy

24 States Have PACE Authority

4 States Have PACE Legislation Pending





2012 Legislation Related to Energy Efficiency Activity



- SC – HB 4639 updates building energy codes to 2009 International Energy Conservation Code standards
- FL – HB 7117 authorizes local government to use surtax proceeds for residential energy efficiency expenditures
- GA – SB 113 Allows Guaranteed Energy Performance Savings Contracts for local government entities (cities and counties)
- LA – SB 538 Defines commercial building energy conservation code as ASHRAE 90.1 - 2007
- MD –
 - HB 1186 makes geothermal heat pump grant program eligible for state RPS
 - HB 1187 accelerates solar goal of 2% in state RPS to 2020
 - HB 1280 allows owner of EV charging station to charge fee

See: <http://www.sseb.org/files/legislative-digest-2012.pdf>



2012 Legislation Related to Energy

Efficiency Activity, *continued*



- VA
 - HB 894 Utility energy efficiency programs can use several rate tests for approval (TRC, RIM, Utility Cost test, Participant test)
 - HB 1167 High performance buildings act requires state buildings > 5000 sf to conform to LEED-equivalent
- WV - SB 76 Green Buildings Act requires public buildings meet ASHRAE 90.1-2007
- OK – SB 1096 OK state facilities energy conservation reduction target of 20% by 2020
- PR – **Passed!**
 - SB 2372 Energy Performance Contracts for energy efficiency and renewable energy to reduce dependence on oil
 - SB 2472 Net metering account amendments



Building Code Adoptions in 2012



- Alabama – 2009 IRC + amendments (2009 IECC equivalent)
- Arkansas – ASHRAE 90.1 -2007 and 2009 IECC chapter 5
- Kentucky – 2009 IECC
- Louisiana – AHSRAE 90.1 -2007
- South Carolina – 2009 IECC
- Maryland – 2012 IECC



State Energy Plans



- **Oklahoma First Energy Plan**
 - Promote energy efficiency/consumer management of energy use
 - Plan to achieve 20% energy savings by 2020 among state entities
 - Develop Transportation sector
 - CNG Vehicles (24 Governors)
 - Keystone pipeline
 - Clean Line Transmission
 - Robust build out of wind industry
- **Mississippi Energy Roadmap**
 - Expand energy capacity through increased conservation & efficiency
 - Grow transportation and energy infrastructure
 - Promote energy-focused R&D and workforce



State Energy Plans, continued



- **Virginia Energy Plan**

- Make Virginia the Energy Capital of the East Coast
- Expand public education regarding Virginia energy production & consumption, effect on economy, & energy efficiency opportunities
- Maximize investments in clean energy R&D

- **West Virginia: Five Year Energy Plan (2013-2018)**

- Stakeholder involvement
- Renewable Energy Policy
- Energy Efficiency Policy

- **Michigan**

- Energy Policy Principles: Reliable, Affordable, Environmentally Sustainable, Efficient
- Promote / encourage through programs like *Michigan Saves*
- Include energy efficiency measures on home sales
- Benchmark state buildings to identify potential savings

Innovative Local Government Policy

- Green Building Codes for municipal and commercial buildings – Better Building Programs & Building Labeling
 - DC Energy Rating System for Business & homes
- City codes and ordinances
 - Pre-wiring for home Electric Vehicle charging station, e.g. (Murfreesboro, TN)
 - Ensuring public access to EV charging (Nashville, TN)
- Eco-districts incorporate sustainability practices for water, energy and transportation (e.g. San Francisco)
- Local Government Greenhouse Gas Emissions Reduction Plans
- Use of rating systems- LEED, GBC, Green Globe, Energy Star
 - http://www.energystar.gov/index.cfm?c=small_business.sb_index
- Training for builders, inspectors, and codes enforcement





Business Examples of Energy Reduction



- **New York Times Building**
 - Features include: under-floor air distribution systems, efficient lighting, smart window shades
 - Energy use cut by 24%/ heating use 51% over first 5 years
 - LBNL study of building estimates 12% RoR for building
- **Popular retrofit projects on commercial buildings (SEEA)**
 - Lighting upgrades (incandescent / T-12 with T-8, T-5, CFL, LEDs)
 - HVAC replacement or tune up & installation of programmable thermostats
 - Insulation upgrade – ceiling, walls, foundation
 - Air sealing
 - Replacing appliances with Energy Star or efficient models
- **Success Story--- Carrboro NC WISE program at Surplus Sid!**
 - Thrift Shop reduced energy consumption 70%
 - Re-insulated roof, new heating, ventilation and AC system
 - WISE pays: 40% of cost for insulation/20% cost for HVAC upgrades



Getting to Commercial Efficiency Through Effective Models



- Fully adopt IECC 2012 Building codes and provide training
- Requirements/ Incentives for LEED certifications or equivalent
- Implement actions from ICLEI Municipal Clean Energy Toolkit
- Implement actions from US Mayors' "Energy & Environmental Best Practices Guide" www.usmayors.org/bestpractices/eandebp07.pdf
- Encourage walkability and efficiently- built environment in urban land design
- Develop funding mechanism for commercial efficiency & renewable energy resources
- Utilize models such as Southface and SEEA for codes development & training www.southface.org
 - Reference SEEA *Best Practices for Effective Enforcement of Georgia Energy Codes* <http://bit.ly/QHfI5d>



Specific Actions to Achieve Energy Efficiency in the Commercial Sector



- Replace lighting with CFL & LED lighting (reduce use by up to 75%)
- Install heat pump water heater (reduce energy use by half)
- Install automatic light sensors and programmable thermostats
- Install Green roof/ white roof
- Install vending machine misers
- Remove personal space conditioning in offices
- Optimize & maintain systems within building envelope
- Explore Time of Use / other utility rate programs
- Conduct expert Energy Audits to identify potential savings

Barriers keeping commercial entities from pursuing energy efficiency measures? (Testimony of Kevin Kosisko, ABB 2/26/13)

- Lack of information on efficiency options
- Inadequate funds or financing
- Lack of a clear business case for investment



THIS IS NOT THE
TIME TO TALK ABOUT
CLIMATE LEGISLATION.



THIS
EITHER.

HAVE IT
YOUR WAY.

TOLES

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