

Implementation of the Virginia Energy Plan

Manufacturing Development Commission
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Stephen A. Walz
Department of Mines, Minerals and Energy
804-692-3211
Stephen.Walz@dmme.virginia.gov



Virginia Energy Policy – SB 262

- **Major components of SB 262**
 - State energy policy statements & objectives
 - Virginia Energy Plan
 - Energy conservation
 - Income tax deductions – Efficient equipment & fuel cells
 - Renewable electricity production & PV/solar/wind grants
 - Landfill/synthetic/waste gas state & local tax exemption
 - OCS – Resource study, Atlantic planning area, natural gas exploration beyond 50 miles, study in Minerals Management Service EIS

Virginia Energy Policy – SB 262

- **Major Components of SB 262**
 - Dominion Virginia Power electric fuel factor annual recovery
 - R&D framework – federal grants
 - VCCER Clean Coal
 - ODU Coastal Energy Research Consortium
 - Coordinated SCC/natural resources permit process study
 - State building energy efficiency
 - Wind/solar site rating

Virginia Energy Policy – SB 262

- **12 Virginia Energy Objectives**
 - Reliable energy supplies at reasonable cost
 - Rates of energy consumption in relation to economic growth
 - Sufficient infrastructure for reliability
 - Use energy resources more efficiently
 - Facilitate conservation
 - Optimize intrastate & interstate supply and delivery
 - Increase use of less polluting energy sources

Virginia Energy Policy – SB 262

- **Virginia Energy Objectives (continued)**
 - Research greenhouse gas sequestration
 - Remove impediments to use of low-cost, indigenous energy resources & ensure viability of energy producers
 - No disproportionate adverse impact to economically disadvantaged or minority communities
 - Foster economically developable alternate sources at market prices to diversify energy portfolio
 - Increase use of biofuels

Virginia Energy Policy – SB 262

- **12 Virginia Energy Policy Statements**
 - Support R&D and promote renewable energy use
 - Ensure supply & conservation support economic growth
 - Promote R&D of clean coal technologies
 - Promote cost-effective conservation
 - Ensure affordable natural gas
 - Transmission & distribution, CBM, methane hydrates, landfill gas, LNG
 - Promote electricity through non-greenhouse gas technologies

Virginia Energy Policy – SB 262

- **Virginia Energy Policy Statements (continued)**
 - Facilitate new/expanded petroleum refining
 - Promote alternate fuel/efficient motor vehicles
 - Reduce petroleum demand by developing infrastructure for synthetic and hydrogen-based fuels
 - Promote ethanol and biodiesel from agriculture
 - Avoid disproportionate adverse impact on economically disadvantaged communities
 - Energy generation & distribution systems to minimize impacts to pristine natural areas & significant onshore natural resources

Virginia Energy Plan

- DMME to develop
- DEQ, SCC, VCCER assistance
- 10 year plan, updated every 5 years
- Coordinate with legislative commissions
- Due by June 30, 2007

Virginia Energy Plan

- **Stakeholder Input**

- Public Listening Sessions
- Advisory Group Meetings
 - September 11 – Abingdon
 - September 25 – Annandale
 - October 18 – Lexington
 - November 2 – Williamsburg
- Final Public Listening Session
 - December 4 – Virginia Beach
 - Virginia Beach Municipal Center, 6:30 p.m.

Virginia Energy Plan

- **Stakeholder Input**

- Advisory Group

- Consumers
 - Local Government
 - General Business Interests
 - Environmental Interests
 - Electric Utilities
 - Natural Gas Utilities
 - Petroleum Industry
 - Energy Extractive Industry
 - Renewable Energy Interests
 - General Energy Interests

Virginia Energy Plan

- **Stakeholder Input**
 - Agency input
 - DEQ, SCC, VCCER
 - Other agencies and institutions
 - CIT & VRTAC on RD&D
 - Review other plans
 - One-on-one interviews
 - Web comments

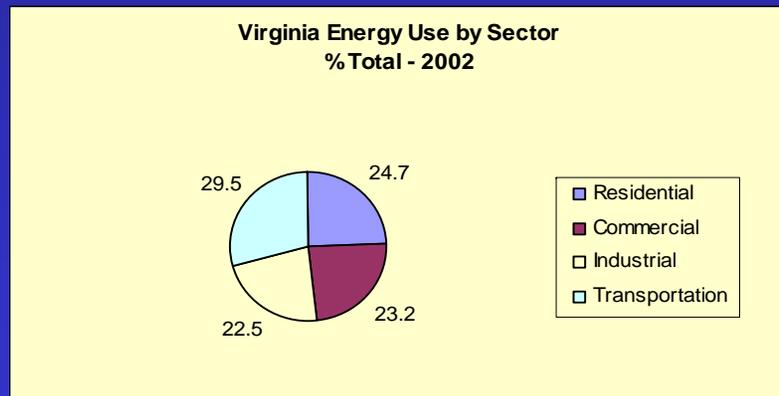
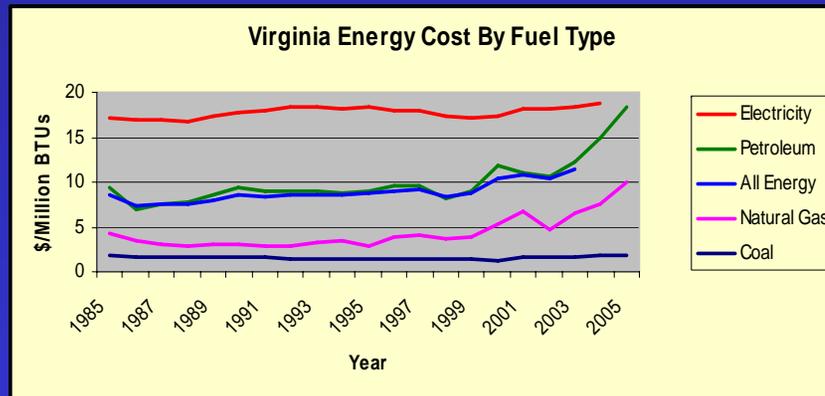
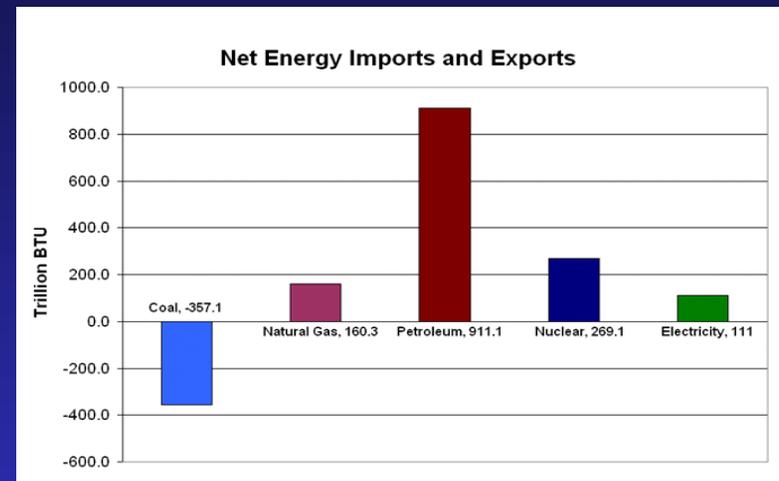
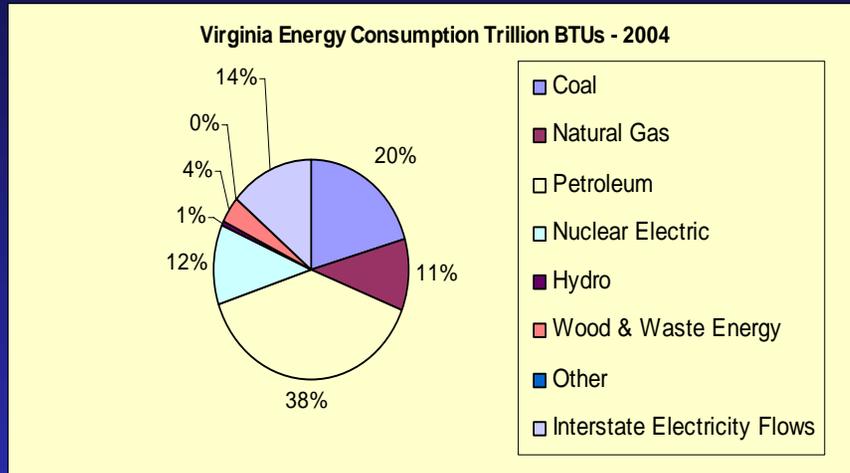
<http://www.dmme.virginia.gov/VaEnergyPlan>

Virginia Energy Plan

- **Plan Outline**
 - I. Introduction
 - II. Virginia Energy Sources & Consumption
 - III. Energy Conservation & Efficiency
 - IV. Virginia/Regional Energy Infrastructure
 - V. Energy and Environment
 - VI. Energy Research & Development
 - VII. Conclusions & Recommendations

Virginia Energy Plan

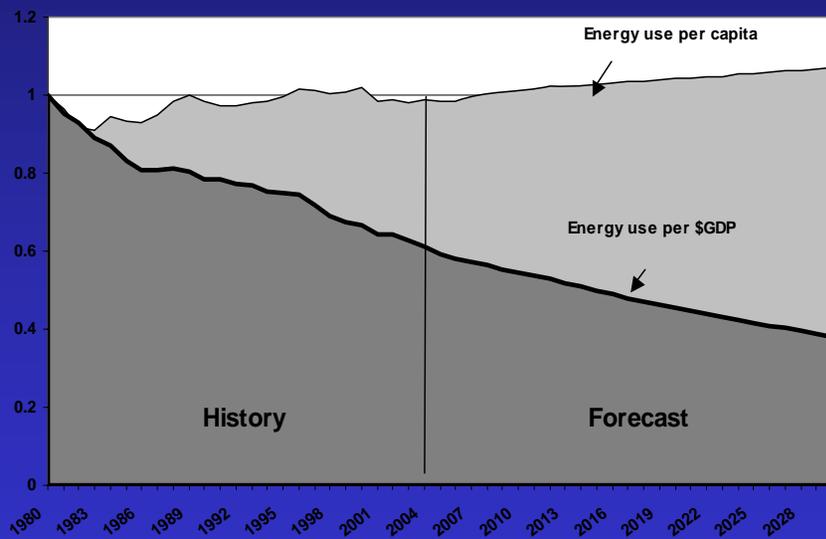
Where Have We Been?



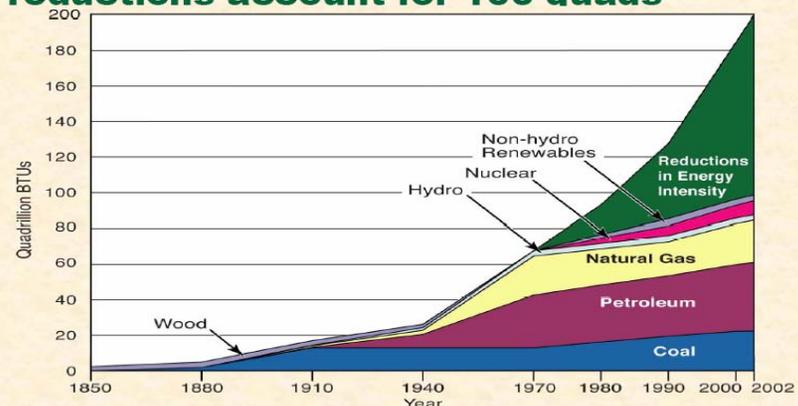
Virginia Energy Plan

How Have We Done?

National Energy Use Per Capita and Per Dollar of GDP
(Index: 1980=1)



New physical supply has grown by 25 quads since 1973, energy intensity reductions account for 100 quads



OAK RIDGE NATIONAL LABORATORY
U. S. DEPARTMENT OF ENERGY

Source: Marilyn Brown (2006)



Virginia Energy Plan

What Issues Should be Addressed?

- **Energy Resources and Consumption**
 - Sources of energy/consumption patterns/fuel diversity
 - Land use
 - Transportation
 - Traditional or new technologies for supply growth
 - Economic development opportunities
 - Training needs
 - Utility regulation & rates
 - Offshore energy
 - Renewable portfolio standard/net metering use
 - State purchases of alternate electricity supplies
 - Agricultural benefits of biofuels

Virginia Energy Plan

What Issues Should be Addressed?

- **Energy Conservation and Efficiency**
 - Government, utility & private roles
 - Facilities and fleets
 - Consumer education
 - Incentives & funding
 - Building standards/green buildings
 - Demand response or reduce consumption
 - New technologies
 - Telecommuting
 - Expand solar equipment local tax exemption (eg. LEED)

Virginia Energy Plan

What Issues Should be Addressed?

- **Energy Infrastructure**

- Adequacy of existing infrastructure
- Future infrastructure needs
 - Long-term planning needs – state & regional
 - New infrastructure/usual and typical extensions
- Financing needs & risk mitigation
- Principles for review of infrastructure projects
- Disproportionate adverse (positive) impact on economically disadvantaged & minority communities
- Coordinated SCC-natural resource agency review
- Security
- Role of conservation to offset need
- Regional infrastructure

Virginia Energy Plan

What Issues Should be Addressed?

- **Energy & Environment**
 - Environmental impacts of production
 - Environmental impacts of use
 - Reliability needs
 - Carbon & other emissions
 - Energy & biodiversity
 - Land conservation easements
 - Synergies – energy efficiency/alternate energy supplies & environmental benefits

Virginia Energy Plan

What Issues Should be Addressed?

- Research, Development and Deployment
 - Inventory – University/National labs/Private company

Energy R&D at Virginia Universities and Colleges													
	Energy Generation/Sources									Energy Use/Impact			Energy Policy
	Coal, Oil, Gas	Nuclear	Fuel Cells/ H2	Alternative Fuels	Other Renewables					Energy Storage	Efficiency/Conservation	Buildings/Environment	Energy Policy/Economics
				Alternative Fuels: Waste- or Bio-derived	Geothermal	Hydroelectric	Solar/Photovoltaics	Wind	Coastal (Wind/Tidal/Current/Wave)				
College of William and Mary		•					•		•		•		•
George Mason University													•
Hampton University	•												
James Madison University			•	•				•	•		•	•	•
Norfolk State University							•		•				
Old Dominion University	•			•			•	•	•		•	•	
University of Virginia	•	•	•	•			•			•	•	•	•
VCU			•	•			•			•	•	•	
Virginia Military Institute													•
Virginia Tech	•	•	•	•	•	•	•	•	•	•	•	•	•
Virginia State University				•									

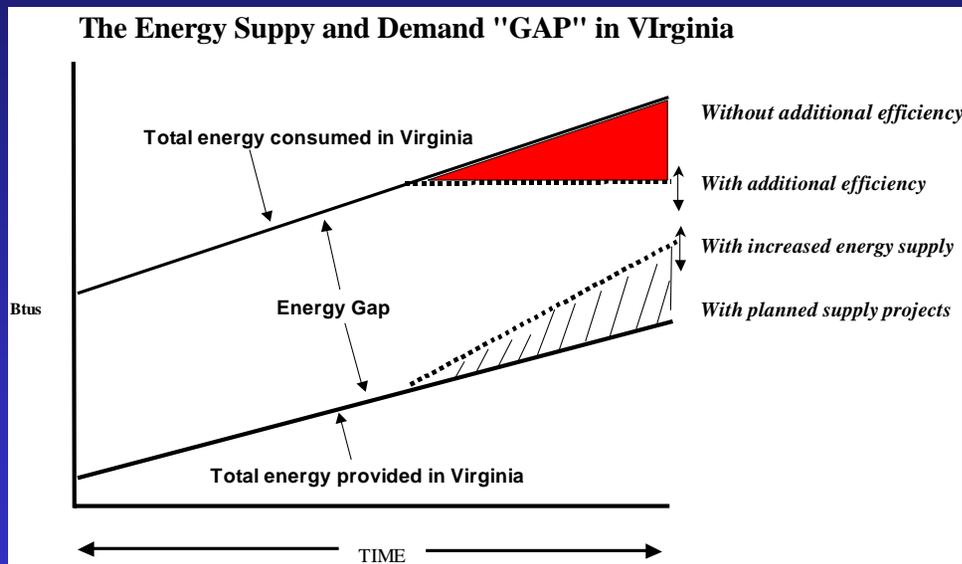
Virginia Energy Plan

What Issues Should be Addressed?

- **Research, Development and Deployment**
 - Strengths & weaknesses
 - Financial needs
 - Public-private cooperative RD&D
 - Governance of state RD&D efforts
 - Target for growth

Virginia Energy Plan

Path Forward



- Identify paths to the future
- Identify and distinguish Virginia's strengths
- Match our strengths to areas of greatest opportunity and establish goals
- Drive market-based solutions to our challenges
- Implement creative, cost-effective solutions

Virginia Energy Plan

Path Forward

- **Consistent with SB 262 Policy and Objectives:**
 - Provide low-cost energy supplies
 - Increase energy conservation and efficiency
 - Provide adequate energy infrastructure
 - Develop alternate energy sources
 - Minimize energy's effect on the environment
 - Expand energy RD&D
 - Support Virginia's mining, agricultural, & industrial base
 - Provide Virginia's future energy workforce