Energy Policy Act of 2005

During the April 27, 2005 meeting of the Air Improvement Resources (AIR) Executive and Advisory Committees, the group requested a report on the then-evolving draft Energy Policy Act of 2005.

On July 27, 2005, the House and Senate Energy Bill conferees released the final Conference Report[1] on the Energy Policy Act of 2005, available online through the U.S. Senate Committee on Energy and Natural Resources homepage[2]. On August 8, 2005, President Bush signed the final bill[3]. The following lists some of the key provisions of the 1,724 page Conference Committee report[4]. This document was reviewed by the AIR Technical Committee during their meeting of August 8, 2005.

In future updates, AACOG staff and the AIR Technical Committee will report on elements of the bill which directly impact programs in the San Antonio region.

Energy Efficiency

Efficiency and Conservation in Home and Commercial Businesses:
Creates ambitious efficiency and conservation program that sets first-time efficiency standards for 14 large appliances and raises the efficiency standards for others. Provides a total of $2.7 billion in tax incentives to encourage efficiency and conservation.

- These provisions will shave between 10 and 40 percent off the anticipated growth of energy demand by 2015. The American Council for an Energy Efficient Economy reports that these provisions will save 50,000 MW of peak electricity demand by 2020. That's the equivalent of 170 300-MW power plants
- Efficiency and conservation tax credits encourage the construction of energy-efficient offices and homes, the purchase of energy efficient heating and cooling systems and appliances
- Expands an existing business solar investment tax credit from the current 10 percent to 30 percent for the purchase of solar equipment
- A tax deduction equaling the cost of energy efficient equipment installed if the equipment reduces the energy and power consumption of a commercial building by 50 percent
- Tax credits for the contractors of new energy efficient homes if the homes achieve an energy savings of 50 percent or more over the 2003 International Energy Conservation Code
- Tax credits for the purchase of water heaters, heat pumps, air conditioners, furnaces and other equipment that achieve certain efficiency levels when purchased for residential properties

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[1] "Text of the Conference Report on the Energy Policy Act of 2005," dated July 27, 2005, available as: http://energy.senate.gov/public/_files/ConferenceReport0.pdf
[2] U.S. Senate Committee on Energy and Natural Resources homepage: http://energy.senate.gov/public/
[3] "Domenici, Energy Committee Senators Comment On Presidential Signing Of Energy Bill," press release of August 8, 2005, available online: http://energy.senate.gov/public/index.cfm?FuseAction=PressReleases.Detail&PressRelease_id=234746&Month=8&Year=2005
[4] Primary basis: Conference Report Summary by Fuel as well as staff and committee member notes http://energy.senate.gov/public/_files/Conferencereportoverviewexpanded080105.doc.

- Tax credit for manufacturers who produce highly energy-efficient dishwashers, clothes washers and refrigerators
- 30 percent tax credit for the purchase of solar, photovoltaic and fuel cell properties for use in residences

Efficiency and Conservation in Government Buildings:
- Provides long-term authorization of Energy Savings Performance Contracts, a program, which provides incentives for energy-saving improvements in federal buildings
- Helps state governments save energy by authorizing grants to states with up-to-date building codes to increase compliance with those codes

Renewable Energy

- Provides $2.7 billion in tax credits to encourage the production of clean renewable energies for wind, closed-loop biomass, open-loop biomass, geothermal, small irrigation power, landfill gas, and trash combustion
- Expands the tax credit for production of incremental hydropower; in addition, allows pass through of the credit to members of a cooperative
- Authorizes the issuance of $800 million of tax-credit bonds before December 31, 2007 to support renewable investment by municipal power authorities, rural cooperatives and others

Hydropower
Improves regulation on hydroelectric dams to allow for more hydroelectric power generation while preserving existing protections for fish and the environment.
- Hydroelectric dams are the nation's largest renewable energy source and account for 7 percent of America's electricity supply
- Provisions pave the way for that re-licensing in a way that protects the environment and allows for input from the public and special interest groups (nearly half of American non-federal dams need to be re-licensed by 2020)

Geothermal
Geothermal energy is an abundant energy, in various parts of the country, that is under-utilized. Geothermal energy is clean, renewable and, in countries like Iceland, is a primary source of energy.
- Creates a competitive geothermal leasing program that allows the private sector – not just government geologists – to identify geothermal areas for leasing. The program is intended to bring geothermal energy to the market sooner.
- Incentives to counties to encourage geothermal development by allowing them to keep a percentage of the royalties from that development.

Vehicles and Fuels

Fuel Efficiency
- Offers business and consumers tax credits for the purchase of alternative-fuel and hybrid vehicles. The value of the tax credit ranges from $2,000 for smaller, personal

cars to $40,000 for the purchase of buses, etc. This conservation incentive totals $874 million.
- Provides a 30 percent credit (up to $30,000) for investments in alternative fuel refueling stations. Qualifying fuels include E-85, natural gas, hydrogen, and biodiesel, among others. The credit expires after December 31, 2007.
- Instructions to National Highway Traffic Safety Administration (NHTSA) to look for ways to improve Corporate Automobile Fuel Efficiency standards while taking into consideration the impact on automobile safety, jobs, and the economy.
- Tougher requirements for federal alternative fuel fleets to ensure these vehicles actually use clean alternative fuels.
- Creates the joint flexible fuel hybrid vehicle commercialization initiative to improve technologies for the commercialization of hybrid/flexible fuel vehicles. The program is intended to reduce petroleum consumption by bringing new clean technologies to the market faster.
- Creates new programs to create railroad efficiency, aviation fuel conservation and emission reductions, reduce heavy engine idling times to reduce fuel consumption and pollution and to promote ultra-efficient energy technology for air crafts.
- Gives NHTSA increased funds to promote implementation and enforcement of fuel economy standards.

Clean Cities program: Subtitle B: Hybrid Vehicles, Advanced Vehicles, and Fuel Cell Buses

- Sets provisions and charges DOE with responsibility of promotion and improvement of domestic production of hybrid systems, retrofits, and advanced diesel vehicles by awarding grants. The DOE Clean City Program is reauthorized and funded to administer grants to agencies and governments for acquisition of AFVs and fuel cell vehicles and initiate pilot programs to test and promote fuel cell vehicles. A demonstrative project for fuel cell transit buses is funded whereby 25 vehicles are distributed among 5 localities. Subtitle B also sets aside $200,000,000 for conducting research for estimating the potential benefits of widespread application of alternative fueled vehicles and ultra low sulfur diesel vehicles.

Subtitle C- Clean School Buses

- Holds the EPA, DOE, and related federal agencies responsible for identifying eligible entities for replacement of their school buses, built before 1991, with AFVs or ultra-low sulfur diesel buses. At least $200,000,000 in form of grants was allocated for the duration of the program. The above federal agencies are also held responsible for promoting retrofit technologies for diesel school buses by distributing grant money (at least $100,000,000 for the duration of the program) among the eligible entities.
- Under this subtitle provisions are established for the DOE to enter into agreement with private sector (fuel cell bus developer) for development of fuel cell powered school buses. The intention is to allow the schools' natural gas infrastructure to accommodate for the fuel cell buses

Railroads, Aviation, Conservation

DOE, DOT, and EPA are charged with the duty of studying methods to run the rail industry cleaner and more efficient; includes demonstration funding for railroad efficiency, a provision to review mobile emission reductions trading, a provision calling for DOE to increase efforts to improve diesel fuel emission technologies, and establishment of a biodiesel engine-testing program. Under this subtitle the EPA is

required to submit a report to Congress on the emission trading and crediting program describing the volumes and sources of reductions and credits. Other miscellaneous items covered in this section are:

- Aviation fuel conservation and emissions
  - EPA is asked to study aircraft emissions in non-attainment areas and suggest ways to reduce emissions from aircraft idling or other inefficiencies at airports.
- Diesel fuel vehicles
  - EPA is asked to monitor advancement in diesel technology to assure compliance with the Tier 2 standards, as well as, developing the low-emission and high efficiency diesel engine technology
- Conservation by bicycling program
  - Authorizes DOT to allocate funds and promote a program to be named "Conserve by Bicycling Program" designed to conserve energy through use of bicycles and development of necessary infrastructure.
- Reduction of engine idling
  - Authorizes EPA to test and promote technologies, such as IdleAir, to reduce need for idling by long-haul trucks. The MOBILE model will be modified to better reflect emission reductions from Idling restrictions, or use of idling reduction technologies.
- Biodiesel engine testing program
  - Provisions for the DOT to test and promote biodiesel fuel and related technologies and report the results to the Congress.
- Ultra efficient engine technology for aircraft
  - Provisions for the DOE and NASA to cooperate in the development of ultra-efficient engine technology for aircrafts; fuel efficiency to increase by 10% and the impacts of NOx from landing and takeoff to decrease by 70%.

Hydrogen

Authorizes $3.7 billion over 5 years for hydrogen and fuel-cell research as well as infrastructure to support hydrogen-powered cars.[5]

[5] If 20% of cars used fuel cell technology, oil import cuts are estimated at 1.5 million barrels daily, according to the U.S. Fuel Cell Council. Hydrogen-powered cars reduce our reliance on foreign oil and protect our environment. With hydrogen fuel, a zero-emission car is possible. Safe and affordable hydrogen-powered fuel-cell vehicles would emit water vapor instead of exhaust fumes. Two years ago, the President launched his Hydrogen Fuel Initiative to develop the technology to produce, store, and distribute hydrogen for use in fuel-cell vehicles. Hydrogen can be produced from domestic fossil, nuclear, or renewable resources. Some barriers are already being overcome. While gasoline prices climb, hydrogen fuel is becoming more affordable. New technologies have driven the cost of natural gas-based hydrogen down from $5.00 per gallon in 2003 to $3.60 today. The movement toward a hydrogen economy is gaining momentum in the United States. Five major energy companies have joined as partners in the President's FreedomCAR and Hydrogen Fuel Initiatives. In addition, over 70 projects at universities and federal laboratories have been selected to conduct basic research in support of the hydrogen economy. The United States has also organized support from around the world for hydrogen technology. Sixteen nations and the European Commission have joined the U.S.-initiated International Partnership for The Hydrogen Economy, an international effort to collaborate on hydrogen research and establish global codes and standards necessary for all countries to realize competitively priced hydrogen vehicles and fueling infrastructure by 2020. The United States currently produces about 9 megatons of hydrogen per year, almost all of it by reforming natural gas. The Department of Energy estimates that by 2040 cars and light trucks powered by fuel cells will require about 150 megatons per year of hydrogen. The higher efficiency of fuel cells would dramatically improve the efficiency of future energy use. Today's fuel cells achieve efficiencies of 60 percent compared to 22 percent for gasoline engines and 45 percent for diesel engines. Unlike electricity, which must be produced and used at the same rate, stored hydrogen can be stockpiled for much later use. Fuel cells can also supplement the conventional electric grid during periods of peak consumption. This approach could lead to lower electricity costs and a more reliable grid.

- Creates a hydrogen research program in conjunction with federal labs, universities, and auto manufacturers to design hydrogen cars.
- Authorizes the construction of a nuclear reactor at the DOE Idaho National Laboratory, which will generate both electricity and hydrogen which could be used as fuel in the hydrogen economy.[6]
- Authorizes the adding of funds for federal research (beyond the $440 million already spent) to help move hydrogen fuel-cell cars from the laboratory to the showroom. Provisions to help overcome critical technology barriers in the production, transportation, storage, and use of hydrogen.

Ethanol and Motor Fuels

Ethanol

Creates an ethanol mandate requiring fuel manufacturers to use 7.5 billion gallons of ethanol in gasoline by 2012 (said to reduce oil consumption by 80,000 barrels of oil a day by 2012, according to Energy Information Administration).

- The Farm Bureau estimates that the ethanol provisions
  - Reduces crude oil imports by 2 billion barrels and reduce the outflow of dollars largely to foreign oil producers by $64 billion;
  - Creates 234,840 new jobs in all sectors of the U.S. economy;
  - Increases U.S. household income by $43 billion;
  - Adds $200 billion to GDP between 2005-2012;
  - Creates $6 billion in new investment in renewable fuel production facilities; and
  - Results in the spending of $70 billion on goods and services required to produce 7.5 billion gallons of ethanol and biodiesel by 2012.

Coal

Coal is one of America's most abundant resources. It accounts for more than half of our electricity and we have enough of it to last nearly three centuries.

- Creates a strong federal program to design and deploy clean coal technologies so America can use this vital resource while protecting our air and water.
  - The clean coal program will help protect vital jobs in America's coal states. It will help create 62,000 jobs, according to the Coal Utilization Research Council.
  - The program ensures Americans new electricity that is abundant, reliable, affordable and cleaner than ever before.
- Tax incentives to encourage the construction of clean coal facilities, including a new 20 percent investment tax credit for clean coal facilities and a new 20 percent investment tax credit for coal gasification units that produce fuels and chemicals.

Specifically, Subtitle A - Clean Coal Power Initiative of Title IV: Coal, of the Committee Print of the Energy Policy Act of 2005 authorizes (Section 401) appropriations of $200,000,000 for each of fiscal years 2006 through 2014, to remain available until expended, to the Secretary of Energy to carry out the activities in the section. They include that the Secretary shall ensure that at least 70% of the funds are spent on coal-based gasification technologies (gasification combined cycle, gasification fuel cells and

[6] Building a first-of-its-kind nuclear reactor to co-generate hydrogen will create 3,000 construction jobs and 500 long-term, high-paying, high-tech jobs. (Nuclear Energy Institute)

turbine combined cycle, gasification co-production, hybrid gasification and combustion, and other advanced coal based technologies "capable of producing a concentrated stream of carbon dioxide"). The Secretary shall establish milestones such that, by 2020, coal gasification projects are able to remove at least 99% of SO2, emit not more than 0.05 pounds of NOx per million Btu, achieve at least 95% reductions in mercury emissions, achieve a thermal efficiency of at least a) 50% for coal of more than 9,000 Btu; b) 48% for coal of 7,000-9,000 Btu; and c) 46% for coal of less than 7,000 Btu.

Oil and Gas

In the last three years, crude oil prices have gone up 171 percent, according to NYMEX. Gasoline prices have climbed 36 percent and diesel prices are up 55 percent, according to AAA. A prosperous economy and strong job sector requires affordable oil and gas. Strong domestic production of these energies is critical to keeping energy affordable.

- Provisions to streamline oil and gas development on existing federal lease sites to bring the fuels to market sooner
- Permanently authorizes the Strategic Petroleum Reserve and authorizes the DOE Secretary to fill the reserve to 1 billion barrels
- Calls for a DOI inventory of oil and gas resources on the Outer Continental Shelf to enable to the federal government to better assess the extent of these resources
- Facilitates the construction of needed gas infrastructure by improving and streamlining the process to permit pipeline infrastructure with FERC as the lead agency and with a consolidated record
- Provides coastal impact assistance of $1 billion over four years to energy-producing states to encourage ongoing production by assisting in coastal enhancement and conservation programs
- Ensures an adequate supply of natural gas in the coming years, including clarification of FERC exclusive authority to site LNG facilities; ensures supply by creating a clear process for siting natural gas infrastructure such as pipelines and storage

Oil Shale and Tar Sands

The U.S. Geological Survey estimates the United States has 2 trillion barrels of oil locked in oil shale, primarily in western states. The country has an additional 80 billion barrels of oil in tar sands.

- Establishes a task force for making recommendations on a national oil shale and tar sands leasing program
- Creates an oil shale R&D program
- Directs the DOI Secretary to conduct a commercial lease sale for oil shale in states where the Secretary finds support and interest for doing so

Climate Change

- Creates a Climate Technology program that directs the Secretary of Energy to lead an inter-agency process to develop and implement a national climate technology strategy
- Establishes an executive branch Climate Coordinating Committee and Climate Credit Board to assess, approve, and fund these projects

- Creates incentives for innovative technologies and encourages partnership with other developing nations, using greenhouse gas intensity as a measure of success

Nuclear Power

Nuclear energy is the world's largest source of emission-free energy. Nuclear power plants produce no controlled air pollutants, such as sulfur and particulates, or greenhouse gases. The use of nuclear energy in place of other energy sources helps to keep the air clean, preserve the Earth's climate, avoid ground-level ozone formation and prevent acid rain.

- Provisions to ensure that nuclear energy remains a major component of the Nation's energy supply (Nuclear power currently provides 20 percent of America's electricity. It is our cheapest form of electricity, second only to hydropower. It one of our safest, most reliable and cleanest energies.)
- Offers a 1.8 cent per kilowatt hour production tax credit for electricity produced by new nuclear power (this applies only to the first half dozen advanced nuclear power plants)
- Offers federal loan guarantees for innovative technologies – including new advanced nuclear reactors – that will diversify and increase energy supply while protecting the environment (These guarantees are available only for new technologies that provide clean energy and protect the environment. Those seeking guarantees pay into the U.S. Treasury a sum equal to the financial risk assessed by the CBO, thus not costing taxpayers a dime.)
- Establishes standby support framework through the DOE for new nuclear plant construction against regulatory or judicial delays for six reactors. This standby support would cover the delay before plant is put into operation.
- Extends Price Anderson liability protection through 2025 for both NRC licensees and DOE contractors
- Creates a stand-by support program to ensure that consumers do not have to pay higher electricity bills because of unforeseen delays in the construction of new nuclear power plants due to bureaucratic red tape or litigation; the program insures the utilities for the cost of these delays.
- Provides for the export of high enriched uranium to Canada, Belgium, France, Germany, or the Netherlands for the sole purpose of producing diagnostic and life saving medical isotopes until a low enriched uranium alternative is commercially viable and available
- Requires the DOE to propose a permanent disposal facility to Congress for Greater Than Class C waste within one-year of enactment
- Strengthens security of nuclear facilities, including improved federal oversight of plant security and the expansion of federal statutes for sabotage of nuclear facilities

Notable Differences between House and Senate Versions

Changes to the Clean Air Act: Transport / Attainment Dates For Downwind Ozone Nonattainment Areas

The House version offered an amendment to the Clean Air Act[7] to define upwind and downwind ozone nonattainment areas, and to allow an extension date for attainment if "an area in another State that the Administrator has found to be significantly contributing to nonattainment in the downwind area in violation of section110(a)(2)(D) and for which the Administrator has established requirements through notice and comment rulemaking to eliminate the emissions causing such significant contribution… The attainment date extended under this subsection shall provide for attainment of such national ambient air quality standard for ozone in the downwind area as expeditiously as practicable but no later than the date on which the last reductions in pollution transport necessary for attainment in the downwind area are required to be achieved by the upwind area or areas."

This allowance is not present in the final Conference Report.

The Conference Report would authorize[8] a demonstration project to address the effect of transported ozone and ozone precursors in Southwestern Michigan. "The Administrator shall assess any difficulties such areas may experience in meeting the 8-hour national ambient air quality standard for ozone due to the effect of transported ozone or ozone precursors into the areas. The Administrator shall work with State and local officials to determine the extent of ozone and ozone precursor transport, to assess alternatives to achieve compliance with the 8-hour standard apart from local controls, and to determine the timeframe in which such compliance could take place." This project has a two year timeframe for completion.

Changes to the Clean Air Act: Analysis of Motor Vehicle Fuel Changes and Emissions Model under the Anti-Backsliding Rule

The bill requires[9], not later than four years after enactment, that the EPA Administrator publish public comment of a draft analysis of changes in air emissions due to the use of motor vehicle fuels and additives implemented through the Energy Policy Act of 2005. Not later than 5 year after enactment, the analysis shall be published in final form. The Administrator shall develop and finalize an emissions model that "reflects, to the maximum extent practicable, the effects of gasoline characteristics or components on emissions from vehicles in the motor vehicle fleet during calendar year 2007."

Renewable Energy

Title II of the House version (H.R. 6) addresses expansion of renewable energy resources – solar, wind, biomass, ocean, geothermal, hydroelectric, and landfill gas – by establishing incentives for their production; requiring the federal government to increase use of renewable energy beginning with 3% in 2007 to 7.5% in 2013 and beyond; and providing financial assistance to consumers for weatherization and renewable energy systems installed in homes and small businesses. Other Title II programs include establishment of an annual inventory that quantifies and characterizes the nation's renewable energy resources and a grant program designed to protect the electrical

[7] See pages 29-32 of the U.S. House of Representatives Committee on Energy and Commerce Print of the Energy Policy Act of 2005, Title XIV, Section 1443, "Attainment Dates For Downwind Ozone Nonattainment Areas." http://energycommerce.house.gov/108/0205_Energy/05policy_act/Title 14 - Miscellaneous.PDF

[8] Section 996, Western Michigan Demonstration Project, pages 997-999 of 1724, "Text of the Conference Report on the Energy Policy Act of 2005," http://energy.senate.gov/public/_files/ConferenceReport0.pdf

[9] Section 1506, Analysis of Motor Vehicle Fuel Changes, pages 1528-1530 of 1724, "Text of the Conference Report on the Energy Policy Act of 2005."

transmission and distribution lines of insular areas. If passed, H.R. 6 authorizes an estimated $3 billion[10] over the next five years to implement and carry out Title II programs.

According to a report of the House Committee on Energy and Commerce, H.R. 6 provides incentives to increase the country's energy from clean and renewable power, and at the same time, create more than 100,000 new jobs in the renewable energy industries through 2007.[11] Title II includes measures intended to boost the solar energy industry by, among other mandates, installing 20,000 solar rooftop systems in federal buildings by 2010. Title II authorizes $100,000,000 for increased hydropower production and creates financial incentives for renewable energy production. In addition, the bill addresses a core obstacle to increasing renewable resources – the lack of transmission capacity.

Although not as controversial as other sections of the Bill (e.g., the Arctic National Wildlife Refuge (ANWR) and ethanol and MBTE sections), Title II is not without opposition. Much of the criticism directed at Title II focuses on (1) the hydroelectric power policies, which some congressmen feel undercuts safeguards for dam relicensing, and (2) failure to include a Renewable Portfolio Standard (RPS)[12] policy in the bill.

RPS policies are designed to promote the use of renewable energy sources by requiring that electrical retailers purchase a portion of their energy from renewable sources. Opponents are concerned the absence of a national RPS policy demonstrates a lack of progress toward greater renewable energy use. Although Rep. Tom Udall of New Mexico introduced an amendment to H.R. 6 Title II that would have required electric utilities to generate 15% of their energy from renewable sources by 2022, the amendment was never forwarded to the full house.[13] In contrast to those concerned with the lack of a national RPS policy, proponents of the bill as it currently reads say an RPS would raise electricity costs to consumers, be unfair to regions that lack viable renewable resources and fail to diversify the country's fuel needs.[14]

[10] House Committee on Energy and Commerce. Energy Policy Act of 2005. U.S. House Committee on Energy and Commerce Press Office.
[11] Ibid.
[12] Page 6, Bamberger, Robert L. and Behrens, Carl E., "Energy Policy: Comprehensive Energy Legislation (H.R. 6) in the 109th Congress," updated April 22, 2005. Available online: http://fpc.state.gov/documents/organization/45212.pdf
[13] Letter from Rep. Tom Udall (NM-3) to the House Speaker
[14] House Committee on Energy and Commerce (no date). Energy Policy Act of 2005. U.S. House Committee on Energy and Commerce Press Office.