

Fairfax County Energy Task Force Meeting Notes March 31, 2011

Until recently, the region's energy focus had been upon reducing energy consumption and the Leeds certification of individual buildings, and upon energy conservation education. The NVRC's energy summit in March 2009, the Arlington Task Force, the creation of the Loudoun energy strategy and the MWCOG work hit a cord that resonated, and now there is a groundswell of enthusiasm for the efficient use of energy in order to stabilize our energy costs, enhance our region, and reduce emissions. In large measure, this change has been inspired by NVRC and MWCOG, urged forward by leading regional elected officials, including Fairfax Chairman Sharon Bulova, Arlington's Jay Fiset, Loudoun's Andrea McGimsey in Northern Virginia.

Goals

Is a regional plan and goal desirable? If so, what is the region; Northern Virginia; the metropolitan region; The Chesapeake Crescent; or some greater East Coast combination?

Each locality is different. Even within Northern Virginia there are very significant differences between Fairfax, Arlington, Loudoun and Prince William, and their incorporated cities. Within the jurisdictions that make up the Metropolitan Washington Council of Governments area, the differences expand.

The common ground possible at this time is for all to move forward with a program to increase energy efficiency, improve the stability of supply, and reduce emissions, each according to their needs, and to join forces in the resolution of common obstacles, and possibly to harmonize their own internal regulatory structure to reduce the danger of outside forces playing one locality against another.

Arlington's energy inventory shows that 75% of its energy consumption comes from buildings, and about half its transportation energy is consumed by pass through traffic. Arlington's Jay Fiset noted that Fairfax and Loudoun's energy profiles are likely to be quite different.

MWCOG's representative Jeff King noted that the organization's charter included a cooperative purchasing function, which could be of value to member localities as they sought to meet their own energy goals.

Fairfax

Loudoun County has approximately 1.1 million residents and occupies 400 sq. miles. Its \$6 billion annual budget is divided between schools (53%) and the rest of the county (47%). The county is governed by 10 elected Supervisors – 9 represent specific districts, the Chair is elected at-large. The County's population is not only customers for government services, but in many ways are "stockholders" in the government who want a return on their investment, as well as the delivery of services that make sense to them and which fit their needs for the tax dollars they pay. The size of the County and its electoral districts require localized approaches to meet these requirements. Determination of overall government strategy requires significant public engagement in order to generate popular support.

The Board of Supervisors sets the County's strategic direction based on voter input. The County Executive and Senior Management team interprets the Board's strategic direction, creating an implementation plan that becomes the basis for the County government's operations and services.

Fairfax County's Environmental and Energy Goals

The Board's environmental agenda was adopted in 2004, was broken into 16 areas, and represented a 20-year vision. It was amended in 2007 to add trees and climate change as objectives http://www.fairfaxcounty.gov/living/environment/eip/bos_environmental_agenda.pdf.

The Board's policy led to the County's Environmental Improvement Program or EIP <http://www.fairfaxcounty.gov/living/environment/eip/>. The EIP is limited to County-funded environmental projects and provides a tool for making cross organizational decisions regarding environmental investments, planning and policy. Energy efficiency is inherent in the EIP action areas.

Fairfax's Cool Counties initiative <http://www.fairfaxcounty.gov/living/environment/coolcounties/> is a pledge to achieve significant, measurable and sustainable reductions in County government greenhouse gas emissions. The pledge was signed in July 2007.

Two-thirds of U.S. counties have a population of 50,000 or less. Some are growing rapidly, others are not. This highlights the difficulty of setting a uniform broad numeric goal as opposed to a common policy of "climate stabilization."

Fairfax County's current energy policy was adopted by the Board in 2009 to encourage energy efficiency and conservation throughout the County. The policy sets a goal of reducing energy consumption, and thus greenhouse gas emissions, and supports the Board's environmental agenda and Cool Counties initiative.

<http://www.fairfaxcounty.gov/living/environment/county-energy-policy.htm>

With the exception of the Comprehensive Plan, all the County's energy plans and policies are pragmatic. The Comprehensive Plan guides land use and reflects the Fairfax community's belief that environmental protection and preservation are overarching components of the quality of life. Three Comprehensive Plan goals relate to conservation – environmental protection, energy conservation, and open space.

<http://www.fairfaxcounty.gov/dpz/comprehensiveplan/policyplan/preface.pdf>

The County's environment and energy programs are linked to the population through a number of committees:

- The Environmental Coordinating Committee
<http://www.fairfaxcounty.gov/living/environment/>;
- The Energy Efficiency and Conservation Coordinating Committee
<http://www.fairfaxcounty.gov/living/environment/energy/>;
- The Environmental Quality Advisory Council
<http://www.fairfaxcounty.gov/dpz/eqac/>;
- A regional coordination body.

The County's energy initiatives began nearly 10 years ago and were aimed at cutting government costs. The average one percent annual reduction achieved since 2001 has resulted in a cost saving of \$700 million to date. The government center's lighting, heating and air conditioning retrofit project is saving almost 10%, or \$100,000 a year. The County invests where there is a payback within a reasonable amount of time so that the projects pay for themselves.

Today the County is engaged in a broad array of energy efficiency projects, ranging from the recovery and use of methane gas from landfills to LED parking lot lighting. More information can be found in the presentations, together with the URLs for the relevant web sites.

<http://www.fairfaxcounty.gov/chairman/energytaskforce.htm>

The County's extensive school system is a key part of its energy efficiency program. Since 2005, building space has increased by 815,000 sq. ft., 10,880 additional students have been enrolled, but total energy consumption has remained flat, and overall energy efficiency has been improved by six percent.

Fairfax County gained \$9.6 million from the federal government in 2009 from federal Energy Efficiency and Conservation Block Grants (EECBG), which is being applied to 15 projects, ranging from information technology to residential energy education and outreach. Of critical importance to the Task Force, the program is funding a countywide greenhouse gas emissions inventory

<http://www.fairfaxcounty.gov/living/environment/energy/eecbg-project-status-march2011.pdf>.

Greenhouse Gas Emissions Inventory

The County has worked with George Mason University to inventory its greenhouse gas emissions. The inventory for County operations has been completed and the countywide inventory report should be available to the Task Force in April or May. As with Arlington, County Government operations are roughly four percent of countywide totals.

A greenhouse gas inventory provides a baseline against which measurable goals can be assessed.

Growth and Land Use

<http://www.fairfaxcounty.gov/living/landuse/>

- Transit-Oriented Development <http://www.fairfaxcounty.gov/planning/tod.htm>
- Revitalization <http://www.fcrcvit.org/>
- Green Buildings
 - Sustainable Development Policy for Capital Projects
<http://www.fairfaxcounty.gov/news/2008/030.htm>
 - Comprehensive Plan Policy
<http://www.fairfaxcounty.gov/dpz/comprehensiveplan/policyplan/environment.pdf>

The County's planning is based on the protection of stable residential areas and development focused upon employment and mixed use centers, such as the Route 28 and Dulles Corridors, including Tysons Corner.

Density incentives are provided for sustainable development, and just over 30 plans have been approved against these incentives to date. The transformation of Tysons provides opportunities for energy efficiency projects, ranging from distributed energy, building design for energy innovation, and support for electric vehicle operations. County planning includes aggressive pursuit of air quality and transportation improvements, a tree canopy goal of 45% by 2037, water quality and parks. (Note: National Air and Space Museum research into “urban forests” is showing that about eight percent of the nation’s greenhouse gas removal comes from trees in urban and suburban areas.)

Education, Outreach and Recognition

<http://www.fairfaxcounty.gov/living/environment/energy/>

The County is promoting its energy efficiency activities through its web site, social media and through programming on Channel 16.

The County has gained national recognition for its initiatives at a steady rate since 2002.

Preview of May 26th Presentation

The County is researching the state legislative and regulatory framework with which energy efficiency projects must comply. The report will be published May 26th and will cover the following topics.

- Industry economics, including factors that contribute to project viability and return on investment;
- State legislative and regulatory framework;
- Under state law, Fairfax County has only those powers specifically conferred, necessarily implied, or essential;
- No local authority to revise building codes or provide electricity;
- State law regulates energy services to the public;
- Regulated utility services include provision of heat, chilled air, chilled water, light, power, or water – with only limited exceptions;
- Incumbent electric utilities are exclusive (monopoly) service providers in their authorized territories;
- Opportunities for campus environments under single ownership.

Arlington

Jay Fisette provided an overview of Arlington County’s energy efficiency initiatives:

- Arlington’s Task Force has completed its work over the past 18 months and has presented the Board of Supervisors with a county energy plan for approval.
- In the United States, very few counties have an energy plan. In other parts of the world, they do. Based on traditional sources of energy, shortages can be expected, as the world is forecast to double its energy consumption by 2030.
- Arlington’s government decided to lead by example, but found that only 3.5% of the County’s greenhouse gas emissions come from county government operations.
- Arlington sees greenhouse gas emissions as a useful surrogate for energy use. Arlington’s first step was to establish an energy consumption baseline for the entire county. In 2007, the County’s greenhouse gas emissions were 13.4 metric tons per resident. (See Slide 5 http://www.fairfaxcounty.gov/chairman/pdf/energy_3.31.2011_arlington.pdf)

Greenhouse Gas Indicators

- National Greenhouse Gas per capita per year (in metric tons CO₂), a surrogate for energy consumption per capita
 - Canada 22.6
 - USA 21.7
 - Denmark 14.1
 - Germany 11.7
 - European Union 10.5
 - Washington DC 19.7
 - **Arlington County 13.4** with a goal of 3
 - Loudoun County 14.2 with a goal of 6.0
 - Canada – Guelph 12.2 with a goal of 5.0
 - Mannheim 6.0
 - Copenhagen Denmark 3.0 with a goal of 0 by 2050
- Arlington's energy consumption/greenhouse gas production is well below the U.S. and Canadian averages, but above the European Union.
- The driving force for Arlington's energy initiative is to retain the County's competitiveness as a place to live and work, to improve its energy security and stability, and to improve the environment.
- On January 1, 2010, the Arlington County Board created a Community Energy and Sustainability Task Force, whose purpose was to:
 - Recommend countywide goals for the long-term, mid-term and short-term reduction of greenhouse gas (GHG) emissions as well as key strategies and actions to be taken by government, the private sector, the non-profit sector and individuals to meet those goals. (Energy use is the predominant cause of GHG emissions and is therefore the primary focus of this effort.)
 - Produce a Community Energy Plan (CEP) to provide a foundation for the County's Energy Master Plan, which could ultimately become an element of Arlington County's Comprehensive Plan.
- The 29-member Task Force combined business leaders, educational institutions, government at all levels, the energy industry, associations and regional transportation authorities. Four of the 29-member Task Force represented citizen groups.
- The bi-monthly Task Force meetings included fact finding and early Town Hall meetings, creation of a preliminary recommendation, which was the subject of a second round of Town Hall meetings. The final recommendations were made to the County Board in March 2011, and are expected to be approved this April. Creation of the resulting implementation plan is expected to take a further 18 months.
- The Task Force recommended a greenhouse gas emissions target of 3 metric tons of CO₂ per capita per year by 2050, down from 13.4 metric tons per capita in 2007. The Task Force also recommended a lower goal of 2.2 metric tons per capita if regional initiatives enabled broader energy efficiency projects.
- Most of the gain is projected to come from the more efficient use of energy, with a relatively small portion projected to come from the use of renewable energy.

- Some 75% of Arlington’s energy use is in residential and commercial buildings. The Task Force recommended increases in building energy efficiency, ranging from 30% to 50%, plus the creation of a mixed use net zero scaled energy project.
- Use of renewable energy on a countywide basis, and in particular, photovoltaic systems and use of clean and renewable energy sources for domestic hot water and space heating.
- Use of distributed energy systems, a proven technology widely used elsewhere. (Federal government buildings, Dulles and National Airports are examples.)
- Approval of scale projects, including possible candidate areas in East Falls Church, Rosslyn, Columbia Pike and Crystal City. Crystal City is particularly attractive because much of it is under the control of one owner.
- Energy efficient transportation.
- To implement the recommendations, the Task Force proposed:
 - Institutionalizing energy planning;
 - Energy performance labeling, including plaques in the lobbies of commercial buildings stating the energy reductions being achieved on site;
 - Education and training;
 - Incentives and financial help;
 - Sustained county and regional programs.

Energy Modeling Results

http://www.fairfaxcounty.gov/chairman/pdf/energy_3.31.2011_arlington.pdf

Arlington County projects only modest population growth during the next 40 years. Task Force energy modeling was used to demonstrate how the recommendations could result in reduced energy use per capita.

The Task Force also defined the benefits all County elements would gain – a key to generating sustained support for a community energy plan.

Vice Chairman Fisette stated that awareness of the energy proposals had already resulted in inquiries from foreign companies seeking to break into the U.S. market.

Loudoun County

Loudoun County has developed an energy strategy – it’s not yet a plan. An overview was provided by Supervisor Andrea McGimsey.

Over the next 30 years, Loudoun County projects a 69% increase in population and a 116% growth in employment. This highlights its challenge and difference to Arlington.

Loudoun County adopted an energy strategy in December 2009. The strategy sets the following energy goals:

- Be recognized as location of choice for investment
- Have consistently lower energy costs relative to surrounding areas
- Be recognized as a regional-state-national model
- Have the lowest greenhouse gas emissions in the country

Major investments will contribute to meeting the County Energy Strategy

Loudoun County's energy strategy represents a 30-year roadmap aimed at sustaining the County's competitiveness and ability to attract high quality employment. The strategy's development gained the active support of the utility companies and many businesses.

The current short-term focus is applying federal Energy Efficiency and Conservation Block Grants (EECBG) to a number of projects, including:

- Installation of LED street lights in Purcellville (completed in March 2011) estimated to generate a 60% energy saving.
- Energy home improvements. Five homes are gaining grants of up to \$30,000 each to improve their energy efficiency. The project's completion date is June 2011.
- Use solar panels to provide electrical energy for the Youth Shelter expansion project. Installation of the solar panels is scheduled for June 2011.
- Solar powered LED lighting and electric vehicle charging stations are being installed at five locations. Construction is scheduled to commence in April 2011.
- Residential education and outreach, which involved the installation of energy improvements to an Ashburn home as an example that was publicized to homeowners in the County. The project was completed in 2010.
- A green business challenge was launched in March 2011 as the cornerstone of a business education and outreach program that gained the enthusiastic support of the Loudoun Chamber of Commerce.
- A combined heat and power generation feasibility study is scheduled to be completed by September 2011.
- DIT server virtualization program planned installation in April 2011.
- A feasibility study for the creation of a scaled energy project based on Moorefield Station, essentially the creation of a small city around the Route 772 terminus of the new Metro Silver Line.

Supervisor McGimsey noted that:

- The events of January and earlier in the Gulf underline the fact that “we have a duty to use energy efficiently.” “A 30-mile head of lettuce is better than a 3,000-mile head of lettuce.”
- Loudoun is home to many data centers which house most of the nation's digital infrastructure. These data centers throw off a lot of heat which can be recaptured and reused.

MWCOG

Jeff King provided an overview of the initiatives taken by the Metropolitan Washington Council of Governments with respect to climate change concerns. The MWCOG initiatives were stimulated by the leadership of Jay Fisette, Sharon Bulova and others.

An MWCOG steering committee published a climate change report in November 2008, which led to the creation of a climate energy and environment policy committee. This committee launched a three-year short-term action plan in January 2010 whose goal is to see the region use 10% less energy by 2012 and to provide 10% of its energy from renewable sources.

The goals set are to return the region to its 2005 level of energy consumption by the end of 2012, and thereafter to progressively achieve an 80% reduction in energy consumption against the 2005 baseline by 2050.

MWCOG launched a number of educational and challenge programs, details of which can be found at the following web sites:

CEEPC Home Page

http://www.mwcog.org/committee/committee/default.asp?COMMITTEE_ID=250

Region Forward

<http://www.regionforward.org/>

WE CAN

<http://www.wecansaveenergy.org/>

Energy Contracts

<http://www.mwcog.org/members/editcontracts/search.asp>

Clean Energy Cooperative Procurement

<http://www.epa.gov/greenpower/cecp/washington.htm>

Other Committee Websites (EAC, IGBG, Street Lights, Task Force, etc)

<http://www.mwcog.org/committee/>

Points from Discussion

- Arlington has set a goal of three tons of greenhouse gas per capita by 2030. That's what Copenhagen is achieving today. Where does Copenhagen expect to be in 2030? Answer: zero.
- Labeling to clearly demonstrate in a very public manner the goals and the progress toward those goals is critically important. Acknowledging the "power of public data," Arlington now has all its environmental data on-line.
- A regional building template that could be clearly displayed in the lobby of buildings is preferable. Education of children growing up here based on a clear region-wide message is desirable.
- The maintenance of green buildings requires a different trained workforce to the maintenance of the older generation of buildings.
- Rules of Homeowners Associations in some instances limit the abilities of homeowners to install solar cells, windmills, and other renewable energy devices.
- In Virginia, building codes are set by the state, not by the localities.
- The Kentucky school system has a remarkably good energy education program, which relates a school's energy use to its pupils on a daily basis. Their system is worth adapting to our needs.