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## MEMORANDUM

Date: March 12, 2008

To: COG Board of Directors

From: Stuart A. Freudberg, Director *SAF*  
Dept. of Environmental Programs

Subject: Background Information Regarding Resolution R14-08 and Proposed  
Coal-Fired Power plant in Wise, Virginia

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Greenbelt  
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Prince George's County  
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Fairfax County  
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Loudoun County  
Manassas  
Manassas Park  
Prince William County*

### Overview

At its meeting on February 27, 2008, COG's Climate Change Steering Committee (CCSC) received a briefing from Fairfax Board of Supervisors' Chairman Gerry Connolly regarding a proposed 668 megawatt (MW) coal-fired power plant in Wise, Virginia, which is in the far southwest part of the state. The attachment to this memorandum provides additional information on the proposed facility including a location map.

The facility, officially known as the "Virginia City Hybrid Energy Center", is currently the subject of a public comment period regarding the proposed operating permit that would be issued by the Virginia Department of Environmental Quality (DEQ). The public comment period began on January 12, 2008 and closes on March 12, 2008.

The CCSC discussed the information provided by Mr. Connolly and expressed a number of concerns about the proposed facility. In particular, the committee was concerned about the increase in greenhouse gas emissions that were expected to result from the facility and the potential for transported air pollution that could impact the Washington metropolitan region. The committee further was seeking assurances from the state that alternatives to a coal-fired facility including renewable energy and energy conservation would be thoroughly investigated before proceeding with a coal-fired facility.

As a result of the CCSC deliberation, Resolution R14-08 was prepared reflecting the committee's agreement and recommendations for inclusion in a comment letter to Virginia DEQ. As is noted further below, the Metropolitan Washington Air Quality Committee is scheduled to meet on Friday March 7, 2008 and is expected to discuss the air quality issues associated with the proposed facility. The results of MWAQC's deliberations will be conveyed to the Board once this information becomes available.

For further information, please contact me at 202/962-3340 or [sfreudberg@mwkog.org](mailto:sfreudberg@mwkog.org), or Jeff King of my staff at 202/962-3238 or [jking@mwkog.org](mailto:jking@mwkog.org).

## **Background on Proposed Virginia City Hybrid Energy Center**

Construction of a coal-fired generation facility in the coal-field region of southwest Virginia was promoted in legislation passed in the 2004 session of the Virginia legislature (SB 651). This legislation included an incentive for a coal-fired powerplant utilizing Virginia coal. One of the motivations for the facility was to reduce imports of electric energy into Virginia, currently estimated at over fifty percent (50%) of annual state electric energy consumption in 2006.

The estimated cost of the facility is \$1.8 billion. Dominion indicates that approximately 800 construction jobs are expected, as well as 300 permanent jobs including 250 in the coal-mining industry once the facility is operating.

Dominion states on its website that its planned design includes a number of features intended to reduce the environmental impact of the facility, including the capability of utilizing up to twenty-percent of its fuel in the form of biomass, reduced water consumption, a “fluidized bed clean coal” combustion design, and state of the art air quality controls.

Dominion has projected that its 2.3 million customers will require an additional 4,000 MW of electricity by 2017, representing an approximately a fifteen percent (15%) increase in the utility’s generating capacity. The proposed Wise, Virginia facility would provide about seventeen percent (17%) of the forecast new generation requirement. Dominion has voluntarily committed to achieve a twelve percent (12%) renewable energy generation target by 2022, and has indicated its support for the Virginia Energy Plan goal of a reduction of energy consumption via conservation of ten percent (10%) of 2006 levels by 2025. Dominion has initiated a new program to work with the public in achieving this goal.

## **COG Climate Change Steering Committee Discussion**

The focus of the CCSC briefing and discussion was on the potential increase in greenhouse gas emissions (primarily carbon dioxide, or CO<sub>2</sub>) expected to result from the facility. Air quality impacts were also briefly discussed and it was noted that this topic would be addressed at the March 7, 2008 meeting of the Metropolitan Washington Air Quality Committee (MWAQC). The COG Board will be alerted to any policy action taken by MWAQC on March 7<sup>th</sup> regarding the facility.

The proposed facility was discussed by the CCSC in the context of a proposed 2012 greenhouse gas emission reduction goal for the Washington region, and the recognition that should the facility be constructed as planned, it could significantly diminish the effects of the greenhouse gas reduction actions being considered for the Washington region.

As illustrated in the table below, the proposed facility represents about six percent (6%) of the current estimated greenhouse gas emissions in the Washington metropolitan region. In addition, the table shows that the estimated CO<sub>2</sub> emissions from the facility could offset as much as fifty-nine percent (59%) of the proposed Washington region greenhouse gas emission reduction by 2012.

Under a business as usual estimate for 2012, emissions in our region are forecast to grow by

approximately ten percent (10%) between 2005 and 2012, or 8 million metric tonnes/year. Although yet to be formally proposed by the CCSC or adopted by the COG Board of Directors, the CCSC is strongly considering recommending a regional greenhouse gas reduction goal that would result in currently projected emissions in 2012 being reduced to 2005 levels, effectively eliminating the projected 10% increase between 2005 and 2012. A series of actions are being discussed to achieve this goal. The CCSC report to the Board is expected in May, 2008.

2005 Estimated CO <sub>2</sub> emissions in the Washington region	74 million metric tonnes/year#
2012 Estimated CO <sub>2</sub> emissions in the Washington region	82 million metric tonnes/year
2012 Proposed* CO <sub>2</sub> emissions goal for the Washington region	74 million metric tonnes/year
Needed CO <sub>2</sub> reduction to meet 2012 goal	8 million metric tonnes/year
Estimated CO <sub>2</sub> emissions from proposed Virginia Hybrid Energy Center	4.7 million metric tonnes/year@
Percentage of Washington metropolitan region 2005 regional greenhouse gas emissions (CO <sub>2</sub> equivalents) represented by the Virginia Hybrid Energy Center	6%
Percentage of Washington metropolitan region 2005-2012 CO <sub>2</sub> reduction represented by Virginia Hybrid Energy Center	59%

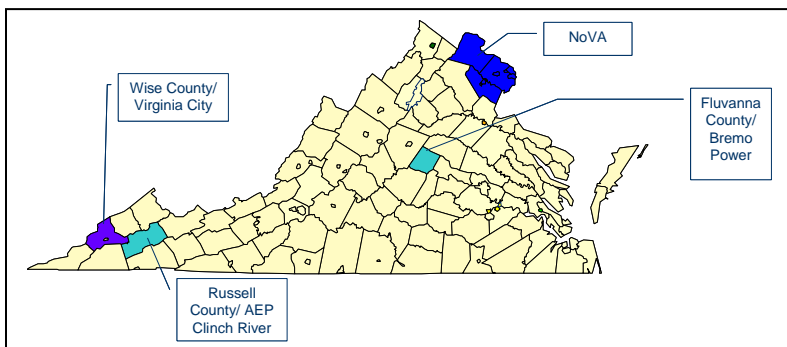
# All regional emission estimates were developed by COG environmental staff and are in CO<sub>2</sub> equivalents, the vast majority of which is CO<sub>2</sub>.

\*This is a goal currently under discussion by the COG Climate Change Steering Committee and has not been formally proposed to or adopted by the COG Board of Directors.

@ Likely will range between 4 million and 5 million metric tonnes/year

**Background Information**  
**Proposed Coal-Fired Power Plant in Wise County Virginia**  
**Prepared by COG Staff 3-4-2008**

**Project Developer:** Dominion  
**Name of Proposed Facility:** Virginia City Hybrid Energy Center  
**Location:** Wise County Virginia  
**Capacity:** 668 megawatt (gross), 585 megawatt (net)  
**Fuel:** coal, coal waste, biomass  
**Timeline:** Application provided to DEQ on July 7, 2006; Permit for public comment on January 12, 2008; Begin operating by 2012. Comments are due to Virginia DEQ by March 12, 2008.



**Legislative Mandate**

To improve in-state power capacity and enhance economic development in distressed areas of Virginia, Virginia SB 651, signed into law on April 15, 2004, promotes the construction of new electrical generation in the southwest Virginia coalfield region.

**Controls at Other Facilities and Potential for Air Pollution Transport**

The location of the proposed Virginia City Hybrid Energy Center in Wise County is in close proximity to the American Electric Power (AEP) Clinch River power plant which is subject to a recent federal consent decree. By 2018, this facility must reduce sulfur dioxide (SO<sub>2</sub>) emissions from about 28,000 to about 16,000 tons annually. The facility also must also install Selective Non-Catalytic Reduction (SNCR), for about a 40 percent reduction in overall nitrogen oxide (NO<sub>x</sub>) emissions. As a result of controls on the AEP facility, even with the new emissions of fine particulate matter (PM<sub>2.5</sub>), NO<sub>x</sub>, and SO<sub>2</sub> from the Virginia City Hybrid Energy Center in Wise County, according to Virginia Dept. of Environmental Quality (DEQ) staff, PM<sub>2.5</sub>, NO<sub>x</sub>, and SO<sub>2</sub> emissions from that source region are actually expected to decline, thereby reducing the potential for degradation of air quality in the Washington region.

Dominion has also proposed to convert one of their coal-fired power generating facilities (Bremo Bluff) in Fluvanna County to natural gas if the new plant in Wise County is approved. According to Virginia DEQ staff, this action will serve to reduce overall pollutant emissions contributing to air pollution transport into the Washington region.

**Greenhouse Gases**

Operation of a new coal-fired power plant with a capacity of 668 MW will cause emissions of greenhouse gases to rise. Preliminary estimates are that the plant will increase carbon dioxide (CO<sub>2</sub>) emissions by approximately 4-5 million metric tons annually. CO<sub>2</sub> emission increases will be partially offset by the fuel conversion at Bremo Bluff.

**For more information:**

<http://www.deq.state.va.us/air/permitting/permits.htm>

[http://www.dom.com/about/stations/fossil/pdf/vchec\\_brochure.pdf](http://www.dom.com/about/stations/fossil/pdf/vchec_brochure.pdf)

<http://www.dom.com/about/stations/fossil/swva.jsp>

<http://www.dom.com/news/elec2008/pr0204.jsp>