

WCAN Surry Powerpoint Speaker Notes -short version, 9/27/09

Thank you for inviting Williamsburg Climate Action Network to give this presentation on an important issue to this community. My name is _____, and I want to tell you about someone who wants to move into our neighborhood.

Slide 1 Our New Neighbor

Slide 2 Location of Surry Plant

In Dec. 2008, Old Dominion Electric Cooperative - otherwise known as ODEC and not to be confused with Dominion Virginia Power - announced a plan to build a coal fired electric plant in the town of Dendron in Surry County.

1.7 million residents in the Hampton Roads area would be affected by the construction of this plant. Williamsburg is 18 miles from Dendron.

Slide 3 Why Does Distance From a Coal Plant Matter?

Why does the distance from a coal fired electric plant matter? Because those living within a 30 mile radius suffer the most serious health effects from the pollution from a coal fired plant. Recent studies for the Environmental Protection Agency (EPA) estimate that in Hampton Roads, with a population of 1.7 million people, 170 to 340 people die prematurely each year from current levels of coal power plant pollution.

Source: Clean Air Task Force from EPA data, http://www.catf.us/projects/power_sector/power_plant_emissions/
life years lost: http://www.catf.us/publications/reports/Dirty_Air_Dirty_Power.pdf

Slide 4 Large Scale Coal Plants in Virginia

The Red Circles indicate the three coal fired electric plants already located in our area:

Yorktown,	1150 MW total, 355 MW from coal, 2200 tons coal/day (795 MW from oil, 20,000 barrels oil/day, when peaking)
Chesapeake	760 MW total, 638 MW from coal, 4500 tons coal/day
Chesterfield	1720 MW total, 1328 MW from coal, 8400 tons coal/day

The ODEC plant proposed for Surry would be 1500 MW, all from coal, 9000 tons coal per day.

All 1.7 million people in Hampton Roads, including 400,000 children, live within 30 miles of a coal fired plant, some within 30 miles of two plants. Virginia has become one of the top ten most dangerous states to live in for power plant pollution.

www.dom.com

<http://hamptonroadspersforms.org/profiles/regional/profile.php>

SLIDE 5 - What are the emissions from coal fired electric plants ?

Coal fired electric plants emit -

Fine Particle Pollution

Mercury

Sulfur Dioxide

Nitrogen Oxide

These are the most harmful to human health among the 60 + toxic chemicals.

Slide 6 -Health Effects of Living Near Coal Fired Electric Plants

The health effects of living near coal fired electric plants are:

1. asthma, chronic bronchitis, degraded lung function - related to fine particle pollution
2. respiratory failure from sulfur dioxide, nitrogen oxide
3. cardiovascular disease from sulfur dioxide and fine particles
4. lung cancer - from fine particle pollution
5. effect on unborn babies - related to mercury

A recent study by researchers affiliated with the American Cancer Society found that people living in the most polluted cities have approximately a 24% increased risk of cardiopulmonary death over those living in the cleanest areas. For lung cancer, there is approximately a 16% increased risk for those living in the more polluted cities.

Based on EPA data, 120 lung cancer deaths and 1,421 heart attacks in Virginia each year are attributable to power plant pollution.

Sources: Clean Air Task Force.

<http://web.archive.org/web/20070126064011/www.cleartheair.org/regional/factsheets/factsheetVAfinal.pdf>

http://www.ucplanning.org/soe/images/how_does_this_affect_me.gif -this link for image is not active at present.

Slide 7 What are the risks for our children?

Effects of power plant emissions on children include respiratory hospitalizations, asthma, stunted lung growth, premature birth, low birth weight and even infant death.

Children are particularly susceptible to pollution because their defense mechanisms have not yet fully developed and they breathe more rapidly compared to adults. Pound-for-pound, children breathe 50% more air than do adults, and as a result, our children inhale a greater percentage of pollution.

The journal, Pediatrics, reported in August 2009 that high levels of environmental pollutants during pregnancy were linked to a 4 point IQ loss by age 5.

Source: <http://www.catf.us/publications/view/14>
Clear the Air, "Virginia's Dirty Power Plants."

Slide 8 Fly Ash

The burning of coal for electricity leaves behind a byproduct called fly ash - another serious threat to our health.

A golf course which was contoured with 1.5 million tons of fly ash was opened in the fall of 2007 in Chesapeake Va.

Less than one year later, water from the site and the wells of nearby residences showed arsenic levels 8 times higher, lead levels 5 times higher, and aluminum levels 500 times higher than the municipal drinking water standards.

In March 2009, 400 citizens sued Dominion for over \$1 billion for supplying the fly ash despite a consultant's report that the ash would eventually leach harmful elements into the drinking water of nearby homes.

Sources: www.wvec.com/news/downloads/flyashcomplaint.pdf
www.chesapeakeclimate.org/news/news_detail.cfm?id=542

photo: Gary Ballard Collection - approved by him.

<http://hamptonroads.com/2008/07/fly-ash-piles-challenge-rises-safe-disposal>
<http://www.mcrc.osmre.gov/PDF/Forums/CCB5/3.1.pdf>

slide 9 What About Clean Coal?

What about Clean Coal? Would that eliminate the negative health and environmental effects? The electric power industry has lovely images to match their Clean Coal slogan.....

Slide 10 Clean Coal Does Not Exist!

The term “clean coal” is based on the idea that you could capture carbon dioxide and store it, so it is not released into the atmosphere. But clean coal technology does not exist for large scale electric power generation - and ODEC’s proposal for the Surry plant design does not include a capability for carbon capture technology should it become available. Why? because that technology is extremely expensive and would raise the price of electricity generated through coal.

Sources: Cost increase of up to 91% - [IPCC, 2005] *IPCC special report on Carbon Dioxide Capture and Storage*. Prepared by working group III of the Intergovernmental Panel on Climate Change. Metz, B., O. Davidson, H. C. de Coninck, M. Loos, and L.A. Meyer (eds.). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 442 pp. Available in full at www.ipcc.ch (PDF - 22.8MB) www.coal-is-dirty.com/the-coal-hard-facts

Slide 11 And what could be clean...

What could be clean about this environmental disaster? This is a scene from our Appalachian mountains. Coal is definitely not clean for the communities where it is mined - either underground or by blasting off the tops of our Virginia mountains. Mountaintop removal involves clear cutting native hardwood forests, using dynamite to blast away as much as 800 to 1000 feet of mountaintop and then dumping the waste into nearby valleys, often burying streams and polluting rivers. Source: <http://www.coal-is-dirty.com/the-coal-hard-facts>

Slide 12 Do we need another coal fired power plant in the Hampton Road..

Do we need another coal fired power plant in Hampton Roads? ODEC says yes. This map shows ODEC's 11 cooperatives serving 1/2 million members in Virginia, Maryland and Delaware. We may not need the electric power generated here, but it will serve their customers in other areas.

Residents of Dendron are asking why they should suffer the health and environmental effects from a facility generating electricity for distant areas.

Source: Map from ODEC website.

Slide 13 What can you tell me about the proposal?

ODEC plans to build a plant that will produce:

- Up to 1500 MW of electricity from coal - at a cost of:
- \$6 Billion - on a
- 1600 acre land parcel on the Main Street in the town of Dendron, Surry County. It will
- Begin operation 2016 and will emit
- 14.6 million tons CO₂ each year

According to ODEC, the Surry plant would be similar to the 850 megawatt Clover plant in Halifax County, pictured here, which is jointly owned by ODEC and Dominion Power.

It bears repeating that the Surry plant would be the largest coal fired electric plant in Virginia, and would tower over the town of Dendron.

Its emission of 14.6 million tons of carbon dioxide per year, will contribute hugely to climate change in an area which is second only to New Orleans in its vulnerability to the rising waters of climate change. [Repeat] “the rising waters of climate change”

sources: <http://www.usgcrp.gov/usgcrp/nacc/education/southeast/se-edu-5.htm>
ODEC, Virginian Pilot

Slide 14 What is the scientific evidence of a threat of rising waters?

This map, from the U.S. Geological Survey, shows that vulnerability to sea level rise along Virginia’s coasts is extremely high.

In January 2009, the U.S. Climate Change Science Program released results of a three year study on the impacts of sea level rise. According to the report, “Sea level is rising, and the rate is accelerating,” and it could exceed a 3 foot rise by 2100.

Sources:

<http://www.climatechange.gov/Library/sap/sap4-1/final-report/default.htm#finalreport>

<http://web.vims.edu/adv/pubs/bulletin/Spring09/411feature1.html?svr=www>
www.nwf.org/globalwarming/pdfs/Virginia.pdf

image:<http://woodshole.er.usgs.gov/project-pages/cvi/imagery/largenat.jpg>

Slide 15 What would a 3 foot rise mean for the Virginia Coast?

This map shows the area of Hampton Roads which would be inundated by a 3 foot or 1 meter rise in water. There are approximately 146,000 people living in this affected area.

Source: http://www.architecture2030.org/2030_challenge/index.html

Slide 16 How do the citizens of Dendron and Surry feel?

How do the citizens of Dendron and Surry feel about the plant? The area needs jobs, and ODEC promises approximately 2000 construction jobs and 200 permanent jobs at the plant. However, jobs at these facilities are often not filled by local citizens due to the need for highly technical and specialized employees.

The company will be paying millions of dollars in taxes to the county, and some of those funds will go to the town of Dendron. These economic benefits are attractive to some local officials, businesses and citizens.

Other citizens are asking whether those economic benefits can overcome the health and environmental effects of toxic emissions as well as miles of train cars bringing coal to the area every week and the withdrawing up to 18 million gallons of water a day from the James River.

Slide 17 Regional Economic Effects

There are significant regional economic effects -

Fishing: According to the Chesapeake Bay Foundation, this plant would add 1.9 million more pounds of nitrogen pollution, increasing the excess algae and robbing the water of oxygen vital to fish, crabs and oysters.

Power Plants and the Chesapeake Bay:

HYPERLINK "<http://www.cbf.org>" <http://www.cbf.org>

HYPERLINK "http://www.epa.gov/mercury/control_emissions/index.htm" www.epa.gov/mercury/control_emissions/index.htm

Crops: A recent NASA study showed that the U.S. soybean crop - the main crop in surry - is suffering nearly \$2 billion in damage every year from ozone. Ozone, acid rain and toxic metals also effect our home garden plants and soil health.

["http://www.nasa.gov/topics/earth/features/soybeans.html"](http://www.nasa.gov/topics/earth/features/soybeans.html) <http://www.nasa.gov/topics/earth/features/soybeans.html>, HYPERLINK "<http://www.omafra.gov.on.ca/english/crops/facts/01-015.htm#sulfur>" <http://www.omafra.gov.on.ca/english/crops/facts/01-015.htm#sulfur>

Property Values: The larger the coal plant, the more it lowers regional property values.

Davis, Lucas W. "The Effect of Power Plants on Local Housing Values and Rents: Evidence from Restricted Census Microdata Diss. University of Michigan, 2008)

Slide 18 What are the alternatives in Virginia?

What are the alternatives in Virginia to building more fossil fuel plants? In Virginia, we are fortunate to have several good alternatives, such as

- Energy Efficiency and Conservation
- Biomass Energy, and
- Wind Power

Slide 19 Energy Efficiency

Energy efficiency can save energy and money, create green jobs and save the environment. Some of these choices are cheap and some are expensive. Consumers need to persuade utilities and governments to make these choices affordable - by providing rebates and other incentives.

A study by the American Council for an Energy Efficient Economy concluded that with moderate efficiency measures, Virginia can meet 19% of its electricity needs by 2025-- even when allowing for growth. A 19% savings would equate to the electricity generated by 4 plant the size of Surry.

(The ACEEE report does NOT include any allowance for conservation, so even more ground could be gained by adding conservation to the mix.)

source: <http://wiseenergyforvirginia.org/downloads/VaACEEE.pdf>

Slide 20 Energy Efficiency, How Does It Make a Difference?

Does energy efficiency make a substantial difference?

In Austin, Texas, the local utility company constructed a “virtual power plant” built exclusively of energy efficiency choices.

They:

- established and enforced energy efficiency building codes
- offered rebates for high efficiency appliances, and
- other programs

Over 12 years, energy savings accumulated until they totaled 550 megawatts. During this period Austin's population doubled and the local economy grew by 46%. The energy efficiency power plant enabled Austin to take the real coal-fired power plant off the planning books.

http://apps1.eere.energy.gov/states/alternatives/virtual_power_plant.cfm

Slide 21 Biomass Energy

Biomass is plant matter such as trees, grasses, other agricultural crops and biological material such as algae, that can be used for the production of fuels, electric power and heat.

Scientists are working to develop cost effective, environmentally friendly biomass conversion technologies to reduce our nation's dependence on foreign oil, improve our air quality, and support rural economies.

Virginia has good to excellent biomass energy potential. The 2007 VA Energy Plan estimates 750 MW potential from biomass.

sources: http://www.governor.virginia.gov/TempContent/2007_VA_Energy_Plan-Full_Document.pdf source: NERL

Slide 22 Biomass Energy, Pittsylvania plant

One of the largest biomass electric plants in the US is an 80 MW facility located in Virginia outside Danville. Pittsylvania's sole source for producing electricity is from burning wood chips. A key advantage of wood fuel is that it is "carbon neutral," meaning it does not result in any net addition of greenhouse gases to the atmosphere." This plant powers 20,000 homes and employs 26 people. source:www.dom.com

Slide 23 Wind Power

“Wind farms” or clusters of modern wind turbines could be developed in Virginia in offshore marine sites and in mountain areas. Wind energy offers:

- Better jobs than coal
- Local taxes and new, related green businesses
- Is carbon neutral and healthier
- Offers water savings over burning coal
- More expensive in the short run, cheaper/cleaner in the long run. These costs decrease with scale.

Slide 24 Wind Power (VCERC)

After two years of study, Virginia Coastal Energy Research Consortium scientists concluded that

- building a wind farm off Virginia Beach is feasible,
- it would cost approximately \$1 billion for about 1200 MW
- it could create more than 1,000 "green" jobs over three years
-

VCERC has identified large areas of powerful Class 4 and 5 winds located in relatively shallow waters beyond 12 nautical miles offshore on the outer continental shelf off Virginia Beach.

These areas are suitable for installing commercially proven offshore wind turbines sufficient to meet at least 20% of Virginia's future annual electricity demand.

In the western part of the state, Dominion Power is already exploring an investment in wind energy in Wise and Tazewell counties.

The 2007 VA Energy Plan commissioned by the Commonwealth of Virginia estimates 28,000 MW offshore wind potential and 1,950 MW on shore potential.

Sources: www.eere.energy.gov, <http://rredc.nrel.gov>, VCERC chart comparing costs -<http://wiseenergyforvirginia.org/downloads/VaACEEE.pdf>
<http://hamptonroads.com/2009/02/supporters-offshore-wind-farm-seek-stimulus-help>

Slide 25 What About the Costs of Alternative Energy ?

This graph presents the levelized costs of electric energy produced in a variety of ways. Computing levelized cost includes initial investment, operations and maintenance, cost of fuel and cost of capital.

This graph shows that efficiency, onshore wind, biomass, even natural gas, are cheaper than new pulverized coal plant energy. Offshore wind is roughly comparable with pulverized coal, without the subsidies coal enjoys. Notice that new nuclear is more expensive than pulverized coal. Also notice that IGCC coal - energy produced with coal through Carbon Capture and Storage technology is the most expensive.

Slide 26 Moving Toward Change

Here we have three important areas for new initiatives -

The Governor's Commission on Climate Change recommended increasing the proportion of electricity generation from emissions-free sources.

Governor Kaine launched his Renew Virginia initiative to make Virginia a leader in attracting renewable energy companies and green jobs to Virginia.

For example - A number of offshore wind developers have contacted the Commonwealth to share their plans to lease federal waters off Virginia to develop wind power.

On September 15th, Governor Kaine submitted a letter to the director of the U.S. Department of the Interior - formally requesting the formation of a federal-state- local task force to guide and facilitate the leasing process.

In terms of the Virginia Legislature - we need to convince our legislators to pass legislation -

to establish a mandatory energy efficiency standard and
to require an increased percentage of energy from renewable energy sources.

http://www.deq.state.va.us/export/sites/default/info/documents/climate/CCC_Final_Report-Final_12152008.pdf

Slide 27 Change brings New Opportunitites

There are constantly changes and new conditions concerning energy:

In 2008, 19 coal plants were cancelled or put on hold.

As of September, 25, 2009 11 have been cancelled or put on hold.

What are the reasons to reconsider coal fired electric plants?

- decrease in demand due to current recession
- rising construction costs
- citizen opposition
- concerns about carbon regulation
- alternative energy choices becoming more mainstream
- concern about climate change

As citizens, we need to be informed and active and communicate to our local and state officials about our desires for our communities.

[http://www.sourcewatch.org/index.php?title=Coal_plants_cancelled_in_2008 and 2009](http://www.sourcewatch.org/index.php?title=Coal_plants_cancelled_in_2008_and_2009)

Slide 28 What is Your Choice?

Coal has been the traditional choice because it is a local resource and the cheapest per kilowatt hour. But energy costs are changing, and when you factor in almost certain federal Carbon Dioxide controls and costs, coal will be more expensive and alternatives such as wind will look more affordable.

And we need to remember that energy efficiency is always the best choice - the cheapest Kilowatt hour is the one you do not use.

Synapse Energy Economics, David Schlissel and Lucy Johnston. The Financial Risks to Old Dominion Electric Cooperative's Consumer-Members of Building and Operating the Proposed Cypress Creek Power Station. Cambridge MA, April 22, 2009.

Full report available at: <http://wiseenergyforvirginia.org/downloads/ODEC%20Coal%20Plant%20Report,%2004%2027%2009.pdf>

Slide 29 What Can We Do to Influence Choices?

What can we do as citizens to influence choices?

- Contact ODEC
- Contact your local officials
- Contact your state officials and legislators
- Write to the local media
- Educate your family, friends and community

We are talking about issues of life and quality of life here - not just economics.

Slide 30 (Earth in hands)

We need to ask ourselves -

“If a visitor arrived from another planet, what account would we give of our stewardship of the planet Earth?” Carl Sagan

WE DO HAVE THIS EARTH IN OUR HANDS !