

**COMMONWEALTH OF VIRGINIA
STATE AIR POLLUTION CONTROL BOARD**

**OZONE ADVANCE ACTION PLAN
RICHMOND-PETERSBURG, VIRGINIA**

**Annual Report
April 30, 2014**

Richmond-Petersburg Ozone Advance Action Plan - Annual Report

Control Program	Stakeholders	Time Frame	Milestones	Feedback & Comments
<i>Metropolitan Planning Organizations</i>				
64 Express	VPA, RAMPO, HRTTO	On going	<ul style="list-style-type: none"> TEUs transported annually 	<ul style="list-style-type: none"> In 2013, 7,965 containers moved by the barge service.
RideFinders	Ridefinders, RAMPO	On going	<ul style="list-style-type: none"> VMT avoided annually Vehicle trips avoided annually 	<ul style="list-style-type: none"> Developed a mobile app: http://www.ridefinders.com/FrontEnd/HTML/all-about-ridesharing.asp?id=140 FY 2013 estimate of 46,748,952 VMT reduced annually. See <i>Evaluation of RideFinders' FY2013 Transportation Demand Management Program Impact</i>
<i>Virginia Commonwealth University</i>				
Solar Energy	VCU	On going	Program ongoing?	<ul style="list-style-type: none"> Program ongoing; No new projects planned at this time.
Dashboard	VCU	On going	Program ongoing?	Program ongoing.
Sustainable Building Program	VCU	2013-2015	<ul style="list-style-type: none"> Program ongoing? Further facilities planned? 	Program ongoing.
Wind Turbine Study	VCU	2013-2015	<ul style="list-style-type: none"> Study complete? Findings published? More turbines installed? 	<ul style="list-style-type: none"> Project and study complete; No new wind turbines planned at this time.
Micro-Grid	VCU, Dominion	On going	<ul style="list-style-type: none"> Equipment installed? Data gathering efforts? Findings published? Energy savings annually? 	Program ongoing.

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<i>DMME-Division of Energy</i>				
VEMP	DMME	On going	<ul style="list-style-type: none"> SF of public buildings retrofitted? Private capital deployed? Energy savings? 	<ul style="list-style-type: none"> Total value of contracts through FY 2012 is nearly \$537 million. More information for FY2013 is being collected from contractors, including building square footage and quantification of avoided energy units. http://www.dmme.virginia.gov/DE/PerformanceContractingSupport.shtml See VEMP-All ESCOs and Contract totals Through FY12.xlsx
Energize Virginia	DMME	2011-2016	<ul style="list-style-type: none"> Funds awarded? Programs to be implemented? 	<ul style="list-style-type: none"> More than \$10M awarded. Projects include energy performance contracts, and a solar thermal system. See DMME-Performance Measures FY14Q1.xlsx, tab RLF 1.01.03
Residential Retrofit Program	DMME, RREA, LEAP	2013	<ul style="list-style-type: none"> # of homes evaluated Energy savings? 	<ul style="list-style-type: none"> 109 jobs in FY14Q1. See DMME-Performance Measures FY14Q1.xlsx, tab Building Retrofits 1.02.06 http://leap-va.org/success-stories/
<i>United States Army Base - Fort Lee</i>				
Low NO _x Burner Requirements	Fort Lee	On going	<ul style="list-style-type: none"> Program ongoing? 	<ul style="list-style-type: none"> Program is ongoing. Estimated NO_x reductions of 15,260 lbs in 2013.
Sustainable Building Practices	Fort Lee	On going	<ul style="list-style-type: none"> Program ongoing? New certifications? 	<ul style="list-style-type: none"> Since 2005, the LEED Silver standard has been applied to all new construction and major renovation on Fort Lee, saving thousands of dollars from reduced energy and water consumption. Construction during the last five years includes over 60 buildings 13 silver buildings, and four gold building. Of those 60 registered buildings, there are 11 buildings pursuing silver certification and 10 buildings pursuing gold certification.
Renewable Energy	Fort Lee	On going	<ul style="list-style-type: none"> Program ongoing? New installations? 	<ul style="list-style-type: none"> Fort Lee currently has two large barracks, totaling 217,000 SF, equipped with GSHP. The current GSHPs provide 3,342 mmbtus of thermal energy each year (0.7% of demand) with an annual energy cost savings of \$21,000. Two other major barracks projects and three battalion headquarters were funded in FY13 and will reap much of the same energy savings and air pollution reductions from harnessing geothermal energy and reducing reliance on natural gas. The previous facilities as the locations where the new barracks will be constructed have already been demolished and the new facilities should be constructed by the end of the calendar year.

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Transportation and Mobile Emissions	Fort Lee	On going	<ul style="list-style-type: none"> TMP drafted? Hybrids purchased? NEVs purchased? Fuel saved? Other metrics? 	<ul style="list-style-type: none"> In process of implementing TMP. Hybrid/NEV purchases phased out; new fuel efficient conventional vehicles purchased.
<i>Dominion Virginia Power</i>				
Energy Conservation Programs	Dominion	On going	Program ongoing?	<ul style="list-style-type: none"> Company currently offers several energy conservation programs to its residential and non-residential utility customers in Virginia and continues to evaluate opportunities to redesign current and develop new demand-side management initiatives. https://www.dom.com/dominion-virginia-power/customer-service/energy-conservation/ec-programs.jsp
Generating unit retrofits and fuel switches	Dominion	2012-2016	<ul style="list-style-type: none"> Retrofits installed? Units where fuels have been successfully changed? 	<ul style="list-style-type: none"> Permits received for Hopewell, Altavista, and Southampton fuel switch from coal to biomass. Units have begun burning biomass and no longer burn coal. Installation of SO₂ scrubbers has been completed for all coal units at the Chesterfield Power Station near Richmond, VA.
Solar Partnership Program	Dominion	2013-2018	<ul style="list-style-type: none"> Program ongoing? MW owned/installed? 	<ul style="list-style-type: none"> Dominion announced 12/9/2013 the installation of more than 2,000 solar panels on the rooftop of Canon Virginia Inc, in Gloucester County, VA. The panels will generate more than 500 kw of electricity. https://www.dom.com/about/media-downloads.jsp See Dominion Solar Roof Top.pdf Company has begun installation of 600 rooftop solar panels on the campus of Old Dominion University in Norfolk, VA that are expected to be operational in Spring 2014 and will generate 132 kW of electricity.
Renewable Generation Tariffs	Dominion	Currently pending approval	Program approval received?	<ul style="list-style-type: none"> Company received approval of program from SCC in December 2012. Company began accepting applications in June 2013. https://www.dom.com/about/stations/renewable/solar/solar-purchase-program.jsp
Alternative Vehicles and Fuels Program	Dominion	Ongoing	% of fleet powered by alternative fuels?	<ul style="list-style-type: none"> Vehicles powered by alternative fuels (AVFs) now make up about 28% of Company's on-road fleet of about 5,700 cars and trucks.

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<i>Virginia Clean Cities</i>				
Luck Stone	VCC, Luck Stone	Completed in 2012	<ul style="list-style-type: none"> Repowered/retrofitted equipment in use? Problems reported? 	<ul style="list-style-type: none"> No reports of equipment problems
Virginia Get Ready	VCC	On going	<ul style="list-style-type: none"> Program ongoing? 	<ul style="list-style-type: none"> Deployed two EV planning docs in 2013 as well as tools for advancing electric vehicles and infrastructure. VA registrations of electric vehicles increased from 729 in 2012 to 1,257 in 2013. VA public charging stations increased in number from 140 in 2012 to 212 in 2013. See http://www.virginiaev.org/ See va_electric+hybrid_vehicles_and_stations_2008-2013.xlsx
Propane Autogas Program	VCC	2009-2013	<ul style="list-style-type: none"> Program ongoing? 	<ul style="list-style-type: none"> Program concluded in 2013. Converted 117 vehicles to autogas in VA Alternative fuel vehicles estimated to reduce NOx emissions 273 tons annually in VA See VCCC-2013report-NOxCalculations.xlsx
<i>Honeywell Permitting/NOx Reductions</i>				
Honeywell SCR Installation	VDEQ	12/2012 through 06/2019	<ul style="list-style-type: none"> # of SCR installed? Annual emissions of NOx? 	<ul style="list-style-type: none"> Two SCR commenced operation December of 2012. Two additional SCR under construction.
<i>Virginia Department of Environmental Quality – Ozone Forecasting</i>				
Ozone Forecasting	VDEQ	Ongoing	Program funded?	<ul style="list-style-type: none"> Program continues to be funded and operating Forecasts were integrated into the new RideFinders mobile app: http://www.ridefinders.com/FrontEnd/HTML/all-about-ridesharing.asp?id=140
<i>Regional Reductions</i>				
Invista Powerhouse Project	VDEQ	2013-2014	<ul style="list-style-type: none"> Construction begun? New units operational? Coal units retired? 	<ul style="list-style-type: none"> New boilers started operation in January of 2014. Shutdown request for existing boilers 1 and 2 effective January 9, 2014. Shutdown request for existing boiler 3 expected summer of 2014.

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Celco Powerhouse Project	VDEQ	2015	<ul style="list-style-type: none"> Construction begun? New units operational? Coal units retired? 	<ul style="list-style-type: none"> The facility informed VDEQ that construction commenced for the six natural gas boilers on 7/16/2013.
Dominion-Bremo Power Station Conversion to Natural Gas	Dominion	2013-2014	<ul style="list-style-type: none"> Permit received? Construction commenced? Coal pile removed? 	<ul style="list-style-type: none"> Bremo Bluff permit for gas conversion finalized 5/24/2013. Station ceased burning coal in fall of 2013. Outage and work commenced for unit fuel switch this winter. Project is expected to be completed in the next few months. See Title V permit for Bremo Bluff.pdf
Other				
Virginia Offshore Wind Technology Advancement Project	Dominion	2017-2018	n/a	<ul style="list-style-type: none"> Dominion is planning an offshore wind technology testing facility, which will consist of two offshore wind turbines with a combined capacity of approximately 12 MW. https://www.dom.com/about/stations/renewable/vowtap.jsp On September 4, 2013, Dominion bid \$1.6 million to win the lease for 112,800 acres off the Virginia coast to develop an off-shore wind farm capable of generating up to 2,000 MW of electricity, and is actively developing this large-scale commercial off-shore wind project. https://www.dom.com/about/stations/renewable/commercial-offshore-wind-development-project.jsp See Dominion Wind Power.pdf
Green Operators Program at the Port of Richmond	VPA, RAMPO	2013-2015	n/a	<ul style="list-style-type: none"> Funds requested from CMAQ to begin a retrofit/replacement operation for 100 Class 8b dray trucks that are 2003 MY or older; Estimated emission reductions of 107 tpy VOC and 4 tpy NO_x. See CMAQ_VPA_RichmondDrayTrucks_CraneProject.pdf
Crane Acquisition at Port of Richmond	VPA, RAMPO	2013-2015		<ul style="list-style-type: none"> Funds requested from CMAQ to purchase new, Tier 4 crane. Estimated emission reductions of 3.99 tpy NO_x. See CMAQ_VPA_RichmondDrayTrucks_CraneProject.pdf
GRTC Bus Conversion	RAMPO	2013-2016	n/a	<ul style="list-style-type: none"> GRTC is converting its fleet of diesel powered buses to compressed natural gas.
National Parks	VCC, NPS	On going		<ul style="list-style-type: none"> NPS is adding 12 prone lawn mowers and 2 electric vehicles to fleet, along with a public EV charging station and 2 private EV charging stations.