Memo on Dominion Shareholder Proposal 2 (Proxy Item 6)

Set And Pursue Goal For 20% Renewable Electricity Energy Generation By 2024

<table>
<thead>
<tr>
<th>Dominion Resources, Inc</th>
<th>Symbol: D</th>
</tr>
</thead>
</table>

Dominion Resources faces material financial and reputation risk from its policy of favoring expansion of coal-fired generation over renewable generation.

Vote “FOR”
Shareholder Proposal 2 (Proxy Item 6) that requests Dominion Resources to:

Set and pursue a company goal to achieve 20% renewable electricity energy generation by 2024.

Rationale behind a “FOR” vote on the Shareholder Proposal:

**Dominion faces legal and financial risks that need to be disclosed and mitigated:**

1. Coal-fired generation continues to face new financial risks: limitation of mountaintop removal mining permits, increasing regulation on coal ash disposal, and increasing litigation costs over detrimental effects of coal mining. The U.S. Environmental Protection Agency (EPA) is tightening regulation over the air, water, and waste effects of coal-fired plants. As Dominion moves to expand coal-fired generation, with no viable carbon-capture scenario, all coal-fired plants are a financial risk. In Dominion’s annual Integrated Resource Plans (IRPs), no cost increases due to regulatory effects or fossil fuel supply risk are allotted for up through 2025.

2. Fossil fuel generation of electricity continues to face increasing costs in the form of regulatory limits on greenhouse gas generation, and regulatory limits on other pollutants such as mercury. In making plans for the future generation mix it will promote, Dominion is not accounting for the risks posed by the use of fossil fuels for electricity generation. Despite repeated requests, Dominion has not made public the cost comparisons used for justification of expansion of coal generation over renewable. The EPA is developing regulations for CO₂ and other greenhouse gas emissions; specifically, in the EPA’s plan issued December 23, 2010, the agency is moving forward on greenhouse gas standards for fossil fuel power plants. With 41% of its 2009 electric generation originating from coal-fired units, Dominion will remain heavily reliant on coal. Coal combustion contributes more than 90% to the company’s total NOₓ, SO₂, CO₂ and mercury emissions, according to data extrapolated from the report *Benchmarking Air Emissions of the 100 Largest Electric Power Producers in the United States* (Natural Resources Defense Council, 2010). Dominion has not factored these new regulations into the decisions made about new coal
generation versus renewable. Dominion shows no increase in renewable energy generation up through 2025, but huge increases in coal-fired generation\textsuperscript{6}.

3. The Dominion Board of Directors has agreed that there is increasing public and regulatory scrutiny of the adverse community, environmental, and public health impacts from mountaintop removal coal mining: “The U.S. Environmental Protection Agency is in the process of evaluating and potentially strengthening the environmental rules and regulations for this type of mining.”\textsuperscript{7} However, the IRPs produced by Dominion continue to assume expansion of coal-generated power, with no accounting for financial burden due to increasing regulatory limits on coal mining.

4. Dominion currently faces many lawsuits that involve coal-fired generation and its consequences, in particular a $1B lawsuit over coal ash disposal\textsuperscript{8}.

**Dominion faces risks to its reputation that need to be addressed:**

1. Dominion states in the Environmental section of their website that they are committed to meeting the Virginia goal of 15% renewable by 2025 and the North Carolina mandatory portfolio requirement of 12.5% renewable by 2021\textsuperscript{9}. However, in the past several years of Dominion’s IRPs, there is no financial or organizational plan presented to achieve these goals. A cogent analysis of Dominion’s 2009 IRP can be found in the comments submitted by the Southern Environmental Law Center, Appalachian Voices, Chesapeake Climate Action Network, and the Sierra Club regarding SCC case PUE-2009-00096 on November 13, 2009, publicly posted at [www.scc.virginia.gov](http://www.scc.virginia.gov).

   The comments provide data to show that Dominion is making no effort to meet the Virginia renewable goal, and is in fact making little meaningful progress in increasing their renewable energy portfolio at all\textsuperscript{10}. In all IRPs up through 2009, renewables, including solar and wind, are dismissed in a few sentences. In the 2010 IRP, renewables are discussed, but still seen as not financially viable; the cost comparisons are undisclosed (redacted) and so it is unknown whether they incorporate future regulatory costs. Off-shore wind is stated to be “in the very early stages of study and data collection,” and “additional studies are required,”\textsuperscript{11} so it is not shown as a planned generation option. Renewable generation is flatlined at the current very minor level up through 2025\textsuperscript{12}. In contrast, the US Energy Efficiency and Renewable Energy (EERE) department details a plan for 10 GW of off-shore wind energy by 2020 at a cost of $0.10 / kWh, and 50 GW by 2030 at $0.07 / kWh\textsuperscript{13}.

2. As a rate-regulated utility, Dominion needs to maintain a good reputation with regulators, rate payers, and the public. If Dominion foregoes the trust of regulators, customers, and the public, it will be more difficult to operate existing facilities as well as undertake and finance new projects.

3. The name of the Dominion renewable energy organization reveals an inherent bias: “Alternative Energy Solutions”. Obviously, when a company considers clean energy to be an “alternative,” i.e. not mainstream, renewable energy programs will not come to the forefront unless requested by the shareholders.
4. Dominion has faced an increased number of shareholder resolutions in the area of renewable energy. In the 2011 proxy, Dominion protested two shareholder resolutions on renewable energy: one regarding providing an option of purchase of 100% renewable energy by customers (something routinely provided by other utilities, but not by Dominion), and one for the option for Dominion to profit by financing homeowner rooftop solar. Other electric utilities have implemented various financing programs for distributed photovoltaic (PV), such as Southern California Edison, San Diego Gas and Electric, Duke Energy, PSE&G14, Atlantic City Electric, Jersey Central Power & Light, Rockland Electric Company15, and Florida Solar Energy Systems16. These options are evidently not part of Dominion’s planning, since they were both excluded from the proxy. In addition, for the 2011 proxy, Dominion negotiated a withdrawal on a shareholder resolution dealing with the water quality effects of the company power generation practices.

5. Dominion is not keeping pace with other electric utilities in the arena of renewables. For example, in 2007, the Texas energy company TXU agreed to scrap plans for 8 of 11 new coal plants, reduce their emissions to 1990 levels by 2020, and double investment in renewable energy. Duke Energy has commercial-scale solar projects, nine US wind farms with over 1,000 MW total generation, a senior vice-president for wind generation, and a distributed rooftop solar generation program. Florida Power and Light has commercial scale solar and wind plants, including 14 MW of wind and over 110 MW of solar generation17. MidAmerican, after 2011 construction is complete, will generate 26% of its total electricity generation from wind18. National Grid has two commercial scale solar plants complete, and 4 more under construction19. And in addition, seventeen of the states with renewable portfolio standards have more aggressive requirements than that proposed here20.

6. Dominion is in a region with extraordinary access to both wind resources and organizations of wind experts. The latter include Virginia Wind Energy Collaborative (http://vwec.cisat.imu.edu/), Virginia Coastal Energy Research Commission (http://vcerc.org/), and NASA Langley Research Center. Although occasionally paying lip service to these organizations, Dominion has made no concrete steps in wind generation in partnership with these agencies.

Conclusion:

This request may seem unduly prescriptive. However, Dominion’s past behavior shows that it will not make meaningful change if there is any other option. Thus, a prescriptive definition of the best option in terms of both financial and reputation concerns is seen as necessary. The overwhelming national and international consensus is that transition to renewable energy needs to happen quickly to avoid huge costs associated with environmental degradation, failure of the fuel supply chain, and risk of world energy market and financial system collapse (Intergovernmental Panel on Climate Change, International Energy Agency, World Energy Council, US EPA, Union of Concerned Scientists). This timeline for renewable energy generation is both realistic and feasible21, and will position Dominion well for future financial success.
Additional Resources:


- New wind power installations constituted 35% of all new electric power installations in the US in 2007.
- United States possesses the potential for 900,000 megawatts (MW) of electricity from its offshore wind resources.
- Several utilities, studies and commissions have shown wind to be cost competitive with other new energy generation; implementation of wind in several markets has led to cost reductions.
- Wind contributes to national security by lessening our dependence on fuels from unstable nations.
- Wind can benefit local employment, water shortages, and tax revenue.
- Wind avoids the future volatility of fossil fuel prices.
- Cumulative economic benefits from 1000 MW of wind power development in Virginia are forecast to be $1.2 billion, annual CO2 reductions are estimated at 3.0 million tons, and annual water savings are 1,600 million gallons.

US Offshore Wind Energy Collaborative, [http://www.usowc.org/](http://www.usowc.org/), has a report posted that lays out a path forward for the US power utilities, and shows the feasibility of large increases in the fraction of US power supplied by wind. They also discuss the impact of potential future enactment of a federal Renewable Electricity Standard.

Virginia Wind Energy Collaborative, at [http://vwec.cisat.jmu.edu/](http://vwec.cisat.jmu.edu/), has a range of reports posted that show the cost competitive nature of today’s wind power, and the benefits for local economies.

Virginia Coastal Energy Research Commission, at [http://vcerc.org/](http://vcerc.org/), states that offshore wind represents one of the most economically viable pathways for achieving the US DOE wind power goal of 20% by 2030\textsuperscript{22}. Virginia offshore wind potential using VCERC wind assessment of class 5 and 6 winds, current lease blocks and available technology is estimated at 3 GW based on 3.5 to 5 MW turbines (this total of 3 GW is about half of what Dominion is currently producing in Virginia from coal, and is equivalent to production from six coal plants). Long-term estimates are considerably higher as deeper water foundations and higher yield technology are developed, and as further mapping makes more areas available for development. Developing just 20% of the Mid-Atlantic region’s offshore wind potential in depths less than 30 m (as required for economical monopile-based projects using commercially available technology) would result in 33.1 GW of installed offshore wind capacity, more than the total power generation capability in Virginia currently. At 17,600 GWh per year, offshore wind power in non-excluded areas off Virginia Beach has the potential to become Virginia’s third largest electrical energy source.
American Wind Energy Association, http://www.awea.org/, has a host of relevant research, including:

- Total installed U.S. wind capacity as of 2010 was 40,180 MW.
- Over 10,000 MW of wind generation was installed in the United States in 2009 alone.
- New, larger turbines (1.5 MW to 3 MW) generate 120 times as much electricity as 1980s models at one-fourth the cost.
- With its federal incentive, “large” wind is now in a competitive range with any convection new generation (7-9 cents per kilowatt-hour, depending on the project size and average wind speed at the site) with any other type of power plant built today.
- Because of fuel savings over time, investments in wind power and in new transmission lines for renewable energy pay for themselves.

The following is the resolution as in appears in the Dominion 2011 proxy:

Resolution: The shareholders request that Dominion Resources set and pursue a company goal to achieve 20% renewable electricity energy generation by 2024.

Rationale: Electricity production accounts for 40% of world CO₂ emission (US Energy Information Administration). Coal contributes 80% of the US CO₂ production from electricity generation (EIA).

The International Energy Agency, Intergovernmental Panel on Climate Change, and World Energy Council agree that quick, aggressive action is needed to reduce carbon-based energy sources and expand renewable resources, to prevent dangerous interference with the climate system. Climate change produces devastating ecological damage and negative human health effects. Companies are financially impacted both by weakened economies and a probable future direct tax on carbon emissions.

Mountaintop removal mining removes whole mountaintops and fills stream valleys. A coal plant burning 1.6 million tons of coal concentrates two tons of uranium and five tons of thorium in fly ash. At over 50 tons per year, coal plants are this nation’s largest producers of mercury (EPA). Coal sludge spills and fly-ash mitigation are damaging and costly, with 126 million tons of coal waste annually (National Research Council). Coal-fired plants cause premature deaths of 24,000 Americans annually (American Lung Association). The Virginia Governor’s Commission on Climate Change came within one vote of banning all new coal-fired plants (2008). Federal hindrances to mountaintop removal mining continue to mount.

This 20% goal, roughly 3000 MW, is achievable by implementing off-shore and on-shore wind power, rooftop solar, biomass generation, and conservation measures.

Wind power constituted 42% of all new US electric power installations in 2008. With the current 28,000 MW of installed US wind power, rates are comparable to wholesale electric power (US Department of Energy Efficiency and Renewable Energy). Virginia is lagging
other states in installed wind power. EERE forecasts the cumulative economic benefits from 1000 MW of Virginia wind power at $1.2 billion.

Current tax and financial policy is very favorable to wind, with 30% investment tax credit, bonus depreciation, loan guarantees, grants, and transmission assistance. Using existing production facilities, Dominion could install 3000 MW of wind power by 2024 in Virginia coastal waters; developing 20% of the mid-Atlantic offshore wind sites would yield 33,000 MW (VCREC). In addition, on-shore wind farms are a profitable, cleaner and less conflict-laden alternative to new coal or nuclear plants and their associated mining.

Distributed solar is benefited by available tax credits, and could be financed by Dominion at a profit. The ACEEE report shows that energy efficiency measures can offset 20% of Virginia electricity needs by 2025.

Currently, Dominion’s stated policy of commitment to the Virginia voluntary goal of 15% renewable by 2025 is not reflected in the company’s own Integrated Resource Plans. Taking on this goal would align Dominion’s plans with stated policy.

By shifting to electricity generation that is free of the environmental, health, and financial handicaps of coal, Dominion will position itself for future financial success.

Recommended reading:
* Plan B 4.0
* Earth: The Sequel
* Big Coal
* Coal River

http://www1.eere.energy.gov/windandhydro/
http://www.epa.gov/cleanenergy/
http://vwe.cisat.jmu.edu/
http://www.awea.org/
http://www.vcerc.org/
http://www.repoweramerica.org/
http://www.ucsusa.org/clean_energy/
http://www.350.org/

---

2. In addition to other requests, open verbal requests in front of the shareholders were made by Ruth Amundsen at the 2009 and 2010 Dominion shareholder meetings.
4. Dominion CDP report, question 5.2b.
5. NRDC Benchmarking Emissions 2008 pp28
7. Opposing Statement to the 2011 Mountaintop Removal Mining Shareholder Proposal from the Dominion Board of Directors
17 [http://www.fpl.com/about/ten_year/pdf/plan.pdf](http://www.fpl.com/about/ten_year/pdf/plan.pdf)