M E M O R A N D U M

Dominion Shareholder Proposal
Request to adopt quantitative goals for reducing total greenhouse-gas emissions

Dominion Resources, Inc **Symbol: D**

Vote "FOR"
Shareholder Proposal for Greenhouse Gas Goals

Shareholders request that the Board of Directors adopt quantitative goals, taking into account International Panel on Climate Change guidance, for reducing total greenhouse-gas emissions from Dominion Resources Inc.'s products and operations. At reasonable cost and omitting proprietary information, the company should report by the end of 2014 on its plans to achieve these goals.

Why a "FOR" vote on the Shareholder Proposal:

We believe climate change presents significant risk to Dominion, the global economy, public health and the natural environment. In just the past year, numerous scientific findings, high-profile campaigns, and action from the U.S. government have raised awareness of the risks and opportunities associated with climate change.

Based on Dominion's present public disclosure of information and policies related to climate change, we do not believe Dominion is taking appropriate action to mitigate these risks.

We write specifically to recommend that the company set a public goal to reduce its GHG emissions and describe its implementation plan. In addition, we believe it is important that businesses directly and through their trade associations support legislation and regulation that allow the U.S. and other countries to reduce GHG emissions at a rate consistent with the long-term goals identified by the Intergovernmental Panel on Climate Change (IPCC) of reducing emissions by 80% globally by 2050[1]. This view is now mainstream. For example:

- the US National Academy of Sciences and the Royal Society recently issued a report emphasizing the imperative for rapid reductions in emissions of CO_2[2].
- A powerful and informed discussion of the need for GHG emissions goals and the probability of a near-term carbon fee can also be found in James Hansen's writings and recent white paper[3].

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[1] https://www.ipcc.ch/report/ar5/wg1/
[2] http://royalsociety.org/policy/projects/climate-evidence-causes/
[3] http://www.columbia.edu/~jeh1/mailings/2014/20140221_DraftOpinion.pdf

- More than 140 top-ranked firms, such as Apple, Autodesk, eBay, Gap, General Motors, Intel, Levi Strauss, Nestle, Symantec and North Face have signed the Climate Declaration[4], asserting that the U.S. must undertake a "coordinated effort to combat climate change" if it is to "maintain our way of life and remain a true superpower in a competitive world." These companies see the financial upside of tackling climate change today, both for their own bottom lines and the overall economy, and they understand that addressing climate change represents the biggest economic opportunity of our time.
- The Obama Administration and US EPA (backed by US Supreme Court decisions), are acting to reduce U.S. emissions including via proposed regulations on new and existing power plants.
- See the Addendum to this memo for further updates on scientific and political developments related to climate change.

In addition to this general need for GHG goals, Dominion has specific issues that make it critical for them to set GHG goals and address the company's impact on climate change.

I. Dominion faces legal and financial risks due to not setting GHG goals

1. Energy production faces risks that can cause large financial loss from even a single event.
   The need for a greater emphasis on sustainability is illustrated by incidents such as BP's 2010 Deepwater Horizon oil spill, where a single occurrence caused significant losses to shareholders, with financial loss to the company still occurring but will undoubtedly total in excess of $20 billion. As illustrated by many recent payments and litigation, Dominion is not immune to environmental risks. In setting GHG goals, Dominion would be likely to increase investment in renewable energy, which faces much less risk for financial losses due to climate change.

2. Appropriate action on goals can lessen long-term financial impact.
   All electric utilities that have not taken aggressive action to diversify their generation portfolio and include low-carbon and renewable energy face fundamental threats to their core, traditional business model. There have been many recent articles discussing how electric utilities are at risk by not making changes quickly enough, as shown in the sample list below. Setting GHG goals will ensure that Dominion's actions will begin to protect the company from those risks.

   – http://www.eei.org/ourissues/finance/Documents/disruptivechallenges.pdf
   – http://www.businessweek.com/articles/2013-08-22/homegrown-green-energy-is-making-power-utilities-irrelevant
   – http://www.businessweek.com/news/2013-05-10/rooftop-solar-conflict-heating-up-as-companies-counter-utilities

[4] http://www.ceres.org/files/bicep-files/ca-climate-declaration

- http://breakingenergy.com/2012/09/24/study-results-make-renewable-energy-investments-now-or-risk-mi/
- http://blog.rmi.org/blog_2014_02_25_will_the_electricity_grid_become_optional
- http://www.businessweek.com/articles/2013-08-22/homegrown-green-energy-is-making-power-utilities-irrelevant
- http://thinkprogress.org/climate/2013/08/20/2492121/utilities-afraid-rooftop-solar/
- http://grist.org/climate-energy/solar-panels-could-destroy-u-s-utilities-according-to-u-s-utilities/
- http://www.cleanenergycollective.com
- http://pictorial-guide-to-energy.blogspot.com/2011/06/explain-yourself-solar-guy.html
- http://apps3.eere.energy.gov/greenpower/buying/community_re.shtml
- http://powerforthepeopleva.com/2013/10/24/wind-and-solar-in-virginia-a-status-update-for-consumers-advocates-and-policy-makers/

3. Dominion's ability to attract data center customers is at risk.

Projected load growth in data centers is important to Dominion's financial viability: according to financial giant UBS, data centers are expected to contribute to half of Dominion Virginia's load growth in 2014.[5] Major companies such as Microsoft, Facebook, Google, Apple, and Yahoo preferentially site their data centers on grids with high levels of renewable energy generation.[6] [7] [8] Given that industry peers such as Consolidated Edison, Entergy, Duke Energy, Exelon, National Grid, Xcel Energy, and AEP have set absolute greenhouse gas goals, Dominion's ability to attract new data center customers is at risk unless the Company addresses these customers' concerns about greenhouse gas management. And since nuclear power generation is controversial (particularly due to the ongoing Fukushima disaster), Dominion's nuclear capacity is not likely to satisfy most of these potential customers.

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[5] UBS Global Research. Dominion Resources. Equity Analysis. February 3, 2014.

[6] http://www.midwestenergynews.com/2013/04/24/how-wind-energy-helped-iowa-attract-facebooks-new-data-center/

[7] http://www.datacenterknowledge.com/archives/2013/10/18/its-official-yahoo-announces-170-million-expansion-in-ny/

[8] http://ecowatch.com/2013/11/04/tech-companies-renewables-combat-data-center-energy-crisis/

II. Dominion faces risks to its reputation that need to be addressed

1. Dominion faces increasingly angry customers, a skeptical public, and critical media. Dominion has had severe problems with their public image in recent years. These would be much ameliorated by a positive and concrete action such as setting GHG goals. Some examples of recent issues:
    - Dominion made more profit than legally allowed in at least two out of three recent years and was forced to return some of that excess to customers[9] – but by Virginia law, they have to return only a fraction of that excess to the rate holders, which led to many very angry customers[10].
    - Dominion received over $76 million in bonuses for use of renewable energy as a part of the Virginia voluntary RPS, although they added no renewable energy generation to Virginia but instead bought Renewable Energy Credits (RECs) from older, out-of-state systems. There was a public outcry when it became widely known that Dominion had spent $2M on old RECs from other states, and received in return $76M out of the pockets of Virginia rate-payers, and developed no renewable energy generation[11,12]. The Virginia AG report[13] found that:

      The Renewable Portfolio Standard (RPS) adder has not served to advance the environmental concerns [that led to its inclusion in the legislation] because the utilities have not built any new renewable energy facilities to comply with the RPS goals, but instead, have primarily relied on buying Renewable Energy Certificates (RECs) from existing renewable facilities, including hydroelectric plants that have been in service for more than 80 years.

      The RPS adder has contributed to increases in customer bills and will likely have a significant future impact by allowing utilities to keep profits that exceed their SCC-approved fair ROE and reducing the chance that customers will be entitled to future rate decreases.

      Overall, Dominion's use of the RPS is leading to a deal that could be very expensive to its ratepayers.
    - Dominion is seen by the public as making no investment in renewables, and yet when others take steps toward increasing Virginia's production of renewable energy, Dominion actively steps in to oppose it – as demonstrated when the Washington and

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9 http://hamptonroads.com/2011/12/dominion-ordered-refund-783-million-customers
10 http://hamptonroads.com/2011/12/dominions-excess-profits
11 http://articles.washingtonpost.com/2011-12-30/opinions/35288335_1_renewable-energy-renewable-portfolio-dominion-power
12 http://www.chesapeakeclimate.org/file-uploads/kelly-trout/Virginia_RPS_Backgrounder_10-2012.pdf
13 http://www.ag.virginia.gov/Media%20and%20News%20Releases/News_Releases/Cuccinelli/AG%20Report%20on%20Statutory%20ROE%20Adders.pdf

Lee University attempted to install a large solar array as part of a power purchase agreement, and received a cease-and-desist letter from Dominion[14].

- Another recent action that angered the public was Dominion's action to put a high standby fee on solar systems over 10 kW. At that time, this regulation applied to only a single customer with a solar array over 10 kW. Application of this fee directly inhibits adoption of solar power and feasibility of negotiating financing since it roughly doubles the payback period. Numerous public comments were received by the Virginia State Corporation Commission (SCC) in opposition to this fee. The fee was a very different approach than other utilities such as Tennessee Valley Authority and Austin Energy have taken towards solar, where they offer healthy feed-in tariffs to encourage solar generation and thus lessen the companies' need for expensive peaker plants at peak electricity use times.
- In case PUE-2012-00064 to the Virginia SCC, Dominion proposed an extremely low purchase price for customer-generated solar. Dozens of angry Dominion customers from all over the state attended the hearing, many public witnesses spoke in opposition to the low rates and short term of the program, and over 1200 public comments were submitted in opposition to the program. Several professional solar installation companies testified to say that there would be no customers for this program, since they would not be able to tell their customers that this was a financially sound option.
- Dominion has been pressured a great deal in the press recently because they seem to be opposed to altering their behavior, regardless of reputational or financial consequences. The Virginian Pilot did a scathing editorial on Dominion's "no comment" policy[15] which has been strictly enforced on every story for the last year: Dominion will not give the Virginian Pilot information on any story the newspaper is going to run. This is hardly the mark of an open and transparent company.

Numerous media sources reported Dominion's legislative agenda as hostile to renewable energy and sustainability. Meanwhile, polling indicates an increasing amount of support for renewable energy. Several blogs have arisen specifically targeting Dominion practices; one of the most knowledgeable is http://powerforthepeopleva.com.

A selection of major news articles and editorials mentioning Dominion and exposing its anti-renewable legislative agenda:

- Dominion Power's wind and solar façade (The Washington Post)
- Virginia needs a better energy policy (The Washington Post)
- Dominion's bait and switch (Virginian-Pilot)

[14] http://articles.washingtonpost.com/2011-12-30/opinions/35288335_1_renewable-energy-renewable-portfolio-dominion-power

[15] http://hamptonroads.com/2012/10/utilitys-policy-no-comment-hardly-useful-customers-0

- Dominion's excess profits (Virginian-Pilot)
- Dominion must invest in clean energy (Virginian-Pilot)
- Utility's overcharging shows need for true regulation (Virginian-Pilot)
- Keep renewables, or repeal the law (Richmond Times-Dispatch)
- Don't extend monopoly to the sun (Virginian-Pilot)
- On Dominion's money and energy stance (Daily Press)
- Dominion's dual solar proposals (Virginian-Pilot)
- Dominion's sunshine tax (Virginian-Pilot)
- State law hurting Virginia's green future? Lawmakers eye changes (WSLS News 10)
- Staunton solar firm faced utility challenge (News Leader)
- Solar project caught in legal shadows (News Leader)
- Here we go again – another power play (Virginian-Pilot)
- Renewable energy laws are exploited (Richmond Times Dispatch)
- Dominion's ineffective gift (Virginian-Pilot)
- Where's Virginia's Renewable Energy? (Richmond Times-Dispatch)
- Squelching sun power (Virginian-Pilot)
- From coal-burning to carbon-free (The Washington Post)
- Hundreds protest at Dominion VA Power (NBC News Channel 12)
- Environmental protesters target Dominion Va. Power (Richmond Times-Dispatch)
- Dominion makes play for offshore wind dominance (Virginian-Pilot)
- Virginia Environmentalists Urge Wind Power Speedup (WRIC ABC News Channel 8)
- Nuclear power protestors outside Dominion (NBC News Channel 12)
- Is Dominion serious about offshore wind? (Offshore Wind Wire)
- Dominion to Feds: delay Google's wind line (Daily Press)

Contrarily, major polls indicated public support for renewable energy:

- 59% of Americans prefer clean energy production over oil, gas and coal (Gallup)
- By a 3-to-1 margin, Americans prefer clean energy subsidies (Civil Society Institute)
- 82% of Americans believe government should support domestic solar manufacturing (SEIA)
- 70% of Americans support local wind projects; a new twist on NIMBYism (Saint Consulting)
- 76% of Americans worry about lack of clean energy progress (UT at Austin)

2. Dominion faces an increased number of shareholder resolutions regarding sustainability policy.
In each of the 2013 and 2014 proxy seasons, there were at least nine shareholder proposals submitted to Dominion. Dominion opened dialog on none of them, but immediately protested most of them to the SEC. Substantially more shareholder resolutions are submitted to Dominion than to most other companies. The number has been growing each year as more shareholders take this route to express their dissatisfaction with Dominion's policies. One reason for the large number of shareholder resolutions filed at Dominion is that many people feel that the utility's management is

only looking at short term profit, and working to satisfy certain related companies (such as coal companies), but are not acting so as to assure future financial stability and success. The number of proposed resolutions is one indication of the shareholder view of the inadequacy of Dominion’s current policies.

III. Dominion has not implemented this resolution

Dominion’s argument, in their letter to the SEC requesting no-action if this resolution were excluded from their proxy, is that the Company has substantially implemented this proposal. The SEC, obviously, rejected this argument. This argument consists of the following: Dominion has a strategy for sustainability, they are planning to meet the Virginia voluntary Renewable Portfolio Standard (RPS) as well as the North Carolina RPS, and they have reduced carbon intensity. None of those actions, as laudable as they may be, are the same as setting a quantitative goal for GHG emission. Many industry and academic studies have shown that in any area, the key to making progress is setting a concrete goal or target. Then actions can be planned to meet the goal, and the goal can be used as a metric to measure progress.

The VA and NC RPS goals are not a metric of greenhouse gas (GHG) emission. In fact, Dominion’s total GHG emission could rise, while still meeting both states’ RPS. Because of how the Virginia RPS is structured (off-shore wind counts 3x, solar and onshore wind count 2x, biomass, hydro and renewable energy credits <u>from already existing facilities in other areas</u> count toward the goal), Dominion could meet Virginia RPS values while substantially *increasing* their total GHG emission. Clearly, these RPS standards are not the same as setting a concrete GHG emission reduction goal.

Dominion states that meeting the Virginia voluntary RPS is “expected to result in reduction of carbon emission intensity.” Thus they are tacitly admitting that it may not reduce carbon or GHG actual total emission at all, and in fact, it is possible that it will not even reduce carbon intensity, depending on how much biomass is implemented. The Dominion 2013 IRP states the following about the VA RPS:

> *Virginia RPS Program - The Company plans to meet its 2013 target by applying renewable generation from existing qualified facilities and purchasing cost-effective RECs.*

In other words, <u>no new renewable low-carbon generation</u> is planned to meet the VA RPS.

Reducing carbon intensity (CO_2/MWhr), as Dominion states that they have done from 2000-2012 is again, while laudable, not the same as reducing total GHG emission. A company could reduce carbon intensity by buying renewable energy generation that expands their market, and still increase their total GHG *emission* while reducing their carbon *intensity*. Also, Dominion is making a large investment in their transition to natural gas, which is less GHG intensive than coal at combustion, but becomes more GHG intensive than coal if lifecycle gas leakage rates exceed approximately 3.2%.[16]

[16] http://www.edf.org/methaneleakage

Dominion states that "as one of the recommended options in 2013 Plan [IRP], the Company submitted a 'Fuel Diversity Plan,' which contained new solar, off-shore wind, nuclear and demand-side management." But in fact this plan is not a "recommended" option; in the IRP Dominion does not suggest following this plan, and nowhere in the IRP do they give a full and open cost/benefit analysis of why this is not the best plan to follow. In fact, in the 2013 IRP, their recommended plan ("Plan A: Base Plan") lists new development of fossil fuel generation of 7060 MW, biomass of 20 MW, and potential solar of 26 MW. This plan will not decrease the overall GHG emission from Dominion generation.

Dominion's letter states they have "plans to pursue the development of offshore wind resources." But in fact, there is no offshore wind in their IRP in their energy generation plan for the next 15 years. Many public statements of Dominion executives have made it clear that Dominion is not fully committed to offshore wind development. Tom Farrell, Dominion CEO, has said in shareholder meetings that it will be more than 20 years before offshore wind is financially feasible, and that he will not support development of that resource until it is financially feasible.

IV. Conclusion

Dominion faces serious challenges with regard to environmental and sustainability goals that are not being addressed. Financial and reputational risks to Dominion's shareholders are numerous and severe. Dominion should be strongly encouraged to develop goals for reduction of greenhouse gas emissions by a FOR vote on this shareholder resolution.

Addendum -- Understanding and Managing Climate Change Risk

From Walden Asset Management

I. An Update on the Science

Recent studies demonstrate that our climate is changing and that human activity is a principal cause. The evident impacts are costly in both economic and social terms. Continued inaction will introduce ever greater levels of uncertainty into the climate system, making planning and adaptation increasingly challenging and costly.

On May 9, 2013, the National Oceanic and Atmospheric Administration (NOAA) reported atmospheric levels of carbon dioxide (CO_2) reached 400 parts per million (ppm), nearly 22 ppm above average levels one decade ago and well above the 350 ppm that scientists believe we must return to in order to avoid severe consequences of climate change. According to the International Energy Agency (IEA), the world is currently on a path to raise the atmospheric concentration of greenhouse gases (GHG) to at least 660 ppm carbon dioxide equivalent (CO_2e), corresponding to a warming of 3.6°C or more.[17] Records from NOAA indicate that 2012 marked the 36th consecutive year that the yearly global temperature was above average. Furthermore, all twelve calendar years in the 21st century rank among the warmest in the 133-year period of record.[18]

In August 2013, two prominent scientific bodies strengthened their positions on the role of humans in causing climate change. The American Geophysical Union (AGU) released an updated statement on climate change noting that "humanity is the major influence on the global climate change observed over the past 50

Figure 1: Societal and economic impact of extreme weather

- In 2011, the U.S. experienced 14 extreme weather events with losses exceeding $1 billion each; in 2012, there were 11 such events costing an estimated $110 billion in total damages and resulting in 377 deaths.
- Superstorm Sandy wreaked devastation, including loss of life, homes, and businesses and caused losses projected at more than $65 billion.
- Drought in the U.S. Midwest in 2012 affected 80 percent of agricultural land, particularly corn and soybean production, costing approximately $30 billion.

Source: National Oceanic and Atmospheric Administration, and United States Department of Agriculture. Economic Research Service.

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17 Birol, Fatih, "World Energy Outlook 2012," November 12, 2012, International Energy Agency. http://www.worldenergyoutlook.org/publications/weo-2012/

18 Blunden, Jessica, Derek S. Arndt, "2012 State of the Climate Report," *Bulletin of the American Meteorological Society,* 94, S1-S258. http://journals.ametsoc.org/doi/pdf/10.1175/2013BAMSStateoftheClimate.1

years." The AGU typically renews its position statements every four years. After reviewing the statement in 2012, the group concluded that the statement needed to be updated before renewal due to "significant advancement in understanding of climate change and its impacts on the world."[19] In late 2013, the Fifth Assessment Report (AR5) of the Intergovernmental Panel on Climate Change (IPCC), the leading scientific authority on climate change, was published. The report strengthened its previous statement on the impact of human activity on climate change, stating there is now a 95 percent probability that humans are the principal cause.[20]

The IPCC report supports the findings from the "Draft Climate Assessment Report" produced by the National Climate Assessment and Development Advisory Committee. The report states, "Impacts related to climate change are already evident in many sectors and are expected to become increasingly challenging across the nation…" Figure 1 on Page 1, details some of the damage recently caused by extreme weather in the United States. The Federal Advisory Committee's report goes on to note, "There is mounting evidence that the costs to the [U.S.] are already high and will increase very substantially in the future, unless global emissions of heat-trapping gases are strongly reduced."[21]

Of course, the impact of climate change will be felt around the globe. In November 2012, The World Bank published a report describing the devastating likely impact of a 4°C temperature increase, which is the most probable scenario if GHG emissions continue on their current trajectory. The report notes increased flooding, food scarcity leading to under-nutrition and malnutrition, increased incidence of epidemic diseases, and potential for large-scale displacement of populations. It notes that vulnerable populations around the globe, which are least able to cope with the impacts of climate change, could be the hardest hit. In addition to describing a range of potentially devastating impacts, the report notes that a "4°C world is so different from the current one that it comes with high uncertainty and new risks that threaten our ability to anticipate and plan for future adaptation needs."[22]

II. The Business Case for Addressing Climate Change

The business case for managing climate risk is urgent and compelling. The rationale includes managing financial, regulatory, reputational and physical risk, as well as potentially realizing operational efficiencies leading to significant cost savings.

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[19] "American Geophysical Union Releases Revised Position Statement on Climate Change," August 14, 2013, American Geophysical Union, AGU release no. 13-38. http://www.agu.org/news/press/pr_archives/2013/2013-38.shtml
[20] Gillis, Justin, "Climate Panel Cites Near Certainty on Warming," *New York Times*, August 19, 2013.
[21] National Climate Assessment and Development Advisory Committee, "Draft Climate Assessment Report," Jaunary 11, 2013, United States Global Change Research Program. http://ncadac.globalchange.gov/
[22] Schellnhuber, Hans Joachim, William Hare, et. al, "Turn Down The Heat: Why a 4 degree centigrade world must be avoided," November 2012, The World Bank Group. http://documents.worldbank.org/curated/en/2012/11/17097815/turn-down-heat-4%C2%B0c-warmer-world-must-avoided

Regulatory risk: In 2010, international governments formally set a long-term goal to limit global warming to below 2°C, requiring a stabilization of the atmospheric concentration of GHG emissions below 450 ppm CO2e. A growing number of jurisdictions have introduced carbon pricing with carbon taxes or cap-and-trade schemes to facilitate meeting that goal. The most established regulatory regime remains the EU Emissions Trading Scheme, but actions have also been taken in Australia, China, South Korea, and the Canadian Province of British Columbia. At the state level in the U.S., California's Cap-and-Trade Program took effect in early 2012 and compliance obligations commenced on January 1, 2013. The program sets a state-wide limit on sources responsible for 85 percent of the state's emissions.[23]

In the United States, the Obama Administration has begun to regulate carbon pollution indirectly through actions on fuel economy standards. President Obama, in an address at Georgetown University on June 25, 2013, demonstrated his resolve to continue to cut GHG emissions. He noted that "Americans across the country are already paying the price of inaction" and outlined a three-pronged climate-change plan that will reduce emissions from the nation's power plants, advance renewable energy technology, and invest in infrastructure to help cities and states adapt to extreme weather exacerbated by climate change.

Financial risk: Regulation presents potential financial risk to companies, the extent of which depends significantly on the type of regulation as well as the company's carbon footprint, which in turn depends on its mix of energy, among other factors. Regardless of potential regulatory risk, many companies are taking steps to reduce risk associated with volatility of energy prices. For example, companies are increasing their procurement of renewable energy, either directly through on-site generation, power purchase agreements, or renewable energy credits. These actions both help manage risk associated with energy price fluctuation and can reduce GHG emissions.

Physical risk: As noted above, extreme weather events, predicted to increase as a result of a changing climate, can cause devastating financial losses. In addition to the losses noted above, massive flooding in Thailand in 2011 resulted in significant business losses in the automotive and technology industries. World production of hard drives fell about 30% in the fourth quarter of 2011, impacting Seagate, Toshiba, Western Digital and Intel, with Intel reportedly losing nearly $1 billion in revenue.[24] Toyota noted that the floods cost the company 230,000 vehicles in lost production and 120 billion yen.[25] In light of these types of risks, companies are now beginning to integrate climate change into enterprise risk management systems and develop

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[23] http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm.

[24] Arthur, Charles, "Intel Cuts Revenue Forecast as Thai Floods Hit PC Sales," *The Guardian,* December 12, 2011. Retrieved from: http://www.theguardian.com/technology/2011/dec/12/intel-cuts-revenue-forecast-thailand.

[25] Kim, Chang-Ran, "Toyota Halves Profit View, Counts Cost of Disasters, Yen," *Reuters*, December 9, 2011. Retrieved from: http://www.reuters.com/article/2011/12/09/toyota-idUSL3E7N85NI20111209.

corresponding adaptation plans, for example, assessing potential impacts to manufacturing and supply chain assets near sea level.

Reputation: As public knowledge of the impacts of climate change increases, companies seen as being unwilling to address the problem might well face public disapproval, potentially challenging their license to operate. Well-orchestrated advocacy campaigns can cause significant brand damage. Recent examples of campaigns include Greenpeace's "Clean our Cloud" campaign[26] targeting technology companies such as Apple, Amazon and Microsoft, and 350.org's Fossil Free and Keystone XL campaigns targeting oil and gas companies.[27] On the other hand, companies seen as contributing positively to societal solutions to climate change can build goodwill and improve overall corporate reputation.

Operational efficiencies: Many companies are finding that addressing climate change through a focus on energy efficiency can result in significant savings. In a recent paper, CDP (formerly known as the Carbon Disclosure Project) and World Wildlife Fund (WWF) demonstrated that efforts by U.S. companies, excluding utilities, could result in net present value of savings up to $780 billion between 2010 and 2020. While energy efficiency projects require capital, many companies have shown that the return on investment can be sizeable. In fact, 79 percent of U.S. companies in the S&P 500 that report to the CDP earn a higher return on their carbon-reduction investments than on their overall corporate capital investments.[28]
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III. Taking Action

To manage the risks associated with climate change, Walden recommends a multi-faceted approach that includes: defining how a company will address climate risk, including setting goals to reduce GHG emissions; publicly reporting the company's policy, strategy and progress achieving these goals; and aligning lobbying and political spending priorities with a forward-looking climate policy.

1. *Establish a policy on how to manage risk related to climate change including goals and targets for reduction of emissions.*

The first step is for companies to define a strategy to address climate risk, which includes measuring and setting a goal to

Figure 1: Goals and Targets

- 59 percent of the Fortune 100 companies have GHG or renewable energy targets or both.
- 63 percent of the Global 100 companies have GHG or renewable energy targets or both.
- 64 percent of CDP respondents have GHG emission reduction targets.

[26] Greenpeace. Clean our Cloud Campaign. http://www.greenpeace.org/international/en/campaigns/climate-change/cleanourcloud/.
[27] www.350.org.
[28] Tcholak-Antitch, Zoe, Tom Carnac, et. al., "The 3% Solution: Driving Profits Through Carbon Reduction," June 18, 2013, CDP and World Wildlife Fund. http://worldwildlife.org/projects/the-3-solution.

reduce emissions. Given the significance of the issue, we believe that board-level oversight is appropriate.

In order to mitigate the worst impacts of climate change, the IPCC estimates that a 50 percent reduction in GHG emissions globally is needed by 2050 (relative to 1990 levels) to stabilize global temperatures, entailing a U.S. target reduction of 80 percent. The longer action is delayed, the more drastic the reductions necessary. As such, the IPCC recommends a near-term target of 25-40 percent reduction by 2020, which equates to 3 percent per year.[29]

Many companies have established GHG reduction goals. For example, approximately 60 percent of Fortune 100 and Global 100 companies have established GHG or renewable energy targets (See Figure 2).[30] While the exact target a company sets will depend on many factors, we urge companies to consider how the specific goal will enable society to meet the long and medium-term targets established by the IPCC.

EMC's goal represents best practice commitment in this area. The company states, "As a global enterprise, EMC recognizes and embraces our role in helping mitigate the impacts of climate change…To set our emissions targets, we began with the imperative to achieve an absolute reduction of at least 80 percent by 2050 in accordance with the Intergovernmental Panel on Climate Change's (IPCC's) Fourth Assessment Report recommendations."[31]

2. *Disclose the company's strategy to address climate change and disclose progress in meeting goals.*

As investors we rely on public disclosure of information to inform our investment decision-making and we recommend that companies disclose their strategy and progress on implementing their climate change goals. In 2010, the U.S. Securities and Exchange Commission established guidelines requiring companies to evaluate the risks of climate change, including complying with current (or future) regulations, when assessing what information to include in corporate filings.[32]

In addition to disclosing climate risks in financial filings, we encourage companies to respond to the climate survey from CDP. Representing over 722 institutional investors globally, with more than $87 trillion in assets, CDP calls for disclosure from companies on their GHG emissions and

[29] Ibid.
[30] "Power Forward: Why the World's Largest Companies are Investing in Renewable Energy," December 10, 2012, Calvert Investments, Ceres and World Wildlife Fund. https://www.ceres.org/press/press-releases/majority-of-world2019s-largest-companies-shifting-to-clean-energy.
[31] EMC. Energy & Climate Change Strategy. http://www.emc.com/corporate/sustainability/sustaining-ecosystems/strategy.htm
[32] "SEC Issues Interpretive Guidance on Disclosure Related to Business or Legal Developments Regarding Climate Change," January 27, 2010, Securities and Exchange Commission. http://www.sec.gov/news/press/2010/2010-15.htm.

climate change management programs. In 2012, over 4,100 companies, including 68 percent of the S&P 500, responded to the survey. [33]

3. *Ensure public policy and lobbying activity are aligned with a forward-looking policy on climate change.*

The public perception is that Corporate America opposes laws and regulations addressing climate change or renewable energy. As a result company political spending and lobbying activities to influence policy, including through third parties, are increasingly under scrutiny. For example, investors are questioning public policy advocacy by trade groups, such as the U.S. Chamber of Commerce, which since 1998 has spent $1 billion lobbying, often obstructing progress on climate-related legislation.

Investors have asked hundreds of companies to: disclose their political spending and lobbying policies, establish board oversight, and identify all direct and indirect expenditures for political purposes. Over 125 S&P 500 companies now disclose such political and/or lobbying expenditures and policies.

In light of the urgency of this issue, we believe companies should review their public policy advocacy positions on climate change, whether at the federal, state or board level. This review should include direct advocacy through lobbying, public statements, grassroots advocacy and advocacy through third party organizations like trade associations and other tax-exempt organizations.

We are hopeful such a review would allow the company to establish new or updated positions for public policy in light of the IPCC's established goal of reducing GHG emissions 80% by 2050, and to make appropriate changes if past advocacy has been at odds with company commitments to address climate change. For example, as a result of carrying out such a review, a number of organizations have disassociated with the American Legislative Exchange Council (ALEC) which has been responsible for developing model legislation attempting to roll back renewable portfolio standards.

Companies are also taking the step to proactively articulate their positive support for U.S. policy action on climate change. For example, the Business Environmental Leadership Council (BELC) was created with the belief that business engagement is critical for developing efficient, effective solutions to the climate problem. Starting with 13 companies, BELC is now the largest U.S.-based group of corporations focused on addressing the challenges of climate change and supporting mandatory climate policy. The BELC is comprised of industry leading, mostly

[33] To download the 2013 climate change questionnaire and more details regarding the survey, including guidance for responding, visit: https://www.cdproject.net/en-US/Respond/Pages/carbon.aspx

Fortune 500 companies across a range of sectors with combined revenues of $2 trillion and 3.5 million employees.[34]

Similarly, in May, members of the Ceres-led Business for Innovative Climate & Energy Policy (BICEP) network launched the Climate Declaration.[35] More than 500 businesses, including major companies like General Motors and Nike, signed the Climate Declaration, which calls for action on climate change and notes that tackling climate change presents one of the greatest economic opportunities of the 21st century.[36]

[34] Center for Climate and Energy Solutions. Business Environmental Leadership Council (BELC). http://www.c2es.org/business/belc.
[35] BICEP is an advocacy coalition of businesses committed to working with policy makers to pass meaningful energy and climate legislation that will enable a rapid transition to a low-carbon, 21st century economy that will create new jobs and stimulate economic growth while stabilizing our planet's fragile climate. For more information, see https://www.ceres.org/bicep/about.
[36] For more details on the Climate Declaration, see http://www.ceres.org/bicep/climate-declaration.