

## Dominion Energy Shareholder Proposal: Report on Methane Emissions Reduction Targets, Measurement, and Disclosure

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**RESOLVED:** Shareholders request Dominion issue a report (at reasonable cost, omitting proprietary information) reviewing the Company's policies and plans to measure, monitor, mitigate, and set quantitative reduction targets for methane emissions resulting from natural gas storage assets.

Proponents request the report include:

Leakage rate as a percentage of production, throughput, and/or stored gas; management of high risk storage infrastructure; reduction targets; and methods to track progress over time. Best practice strategy would utilize real-time measurement and monitoring.

### Rationale for a "YES" vote

Implementing the Proposal would allow investors to better assess the Company's methane risk exposure to unnecessary economic loss from leaking gas, an evolving regulatory regime and the Company's ability to respond quickly and economically to a change in policy and environmental liability. Without proper disclosure, we believe shareholders are unable to effectively assess methane risk.

**A strong, storage-focused program of measurement, mitigation, target setting and disclosure would indicate a reduction in regulatory and legal risk, as well as efficient operations maximizing gas for sale and shareholder value.**

### Background:

1. **Leaked Gas is Lost Revenue:** Leaked gas has a direct economic impact on companies, as it is no longer available for sale, establishing a clear business case for reduction targets and control processes. Poor oversight of gas infrastructure, including storage facilities, has a direct economic impact on Dominion. Implementing the proposal would allow investors to better assess the Company's methane risk exposure to unnecessary economic loss from leaking gas, an evolving regulatory regime (i.e. the Company's ability to respond quickly and economically to a change in policy), and environmental liability. Without proper disclosure, we believe shareholders are unable to effectively assess methane risk.
2. **Gas Storage Vulnerabilities Present Outsized Risk:** The 2015 failure of a gas injection well at Southern California Gas Company's Aliso Canyon Storage Field in Los Angeles revealed major vulnerabilities in the maintenance and safety of natural gas storage facilities. The incident exposed both a lack of oversight and contingency planning in the face of a well blowout.
  - a. Dominion has storage facilities that may face similar risks, as it is estimated to hold the 3rd highest volume of natural gas in the country. There are over 400 gas storage facilities around the country. According to the Energy Information Administration (EIA),

over 80 percent of these facilities are also located in depleted oil wells, like Aliso Canyon, many of which were drilled decades ago.

- b. The casing failure of well SS-25 in Aliso Canyon precipitated the release of over 100,000 tons of methane into the atmosphere over several months, resulting in the relocation of 8,000 families and jeopardizing California's mitigation objectives under the state's climate law AB-32. Relocation, clean up, and well containment costs soared to over 700 million dollars<sup>1</sup>, with criminal filings and civil lawsuits against SoCal Gas.
  - c. Following yet another Aliso Canyon leak in December 2017, local community members reported increased negative health impacts and have maintained vocal opposition to the facility's reopening.<sup>2,3</sup>
3. **Methane has an Outsized Impact on Global Warming:** Methane has a potent impact on the environment, which threatens the natural gas industry's social license to operate. On a 20-year timescale, methane has 86x the Global Warming Potential (GWP) of CO<sub>2</sub>,<sup>4,5</sup> represents over 25% of the EPA Greenhouse Gas Inventory,<sup>6</sup> and its concentration in the atmosphere is 150% higher than pre-industrial levels (as compared to CO<sub>2</sub>, which is 40% higher).<sup>7</sup> Methane impact has spurred academic, industry, and public debate, has been featured in *Forbes* and *The New York Times*, and has led to investor, regulatory and legal action over the last several years.
- a. A February 2018 study from *Nature Geoscience*<sup>8</sup> found that the amount of methane in the atmosphere coming from natural gas supply chains have been underestimated.
  - b. *The New York Times* reported in April 2016 that leakage from oil and gas wells is the largest source of methane gas in the atmosphere.<sup>9</sup> In April 2016, the E.P.A. released a report concluding the amount of the gas leaking from oil and gas wells is much higher than previously reported.<sup>10</sup>
  - c. An August 2015 *New York Times* article cited methane leaks in the supply chain far exceed estimates. "Natural-gas gathering facilities, which collect from multiple wells, lose about 100 billion cubic feet of natural gas a year, about eight times as much as estimates used by the Environmental Protection Agency, according to the study, which appeared in the journal *Environmental Science & Technology*."<sup>11</sup>
  - d. An October 2016 study from journal *Nature*<sup>12</sup> asserts that methane emissions from fossil fuel production are 20 to 60 percent higher than widely cited estimates. It is one of the most exhaustive analyses of long-term global methane emissions and methane carbon isotope records, with implications for climate policy worldwide. The *Nature* study analyzed thousands of air samples taken over three decades (between 1984 and 2013) at 84 sites on every continent that are part of NOAA's Global Greenhouse Gas Reference

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<sup>1</sup> <http://www.latimes.com/local/lanow/la-me-porter-ranch-settlement-20160913-snap-story.html>

<sup>2</sup> <http://abc7.com/latest-aliso-canyon-leak-residents-report-symptoms/2800169/>

<sup>3</sup> <https://signalscv.com/2018/02/groups-demand-barger-force-shutdown-aliso-canyon-gas-site/>

<sup>4</sup> <http://www.ipcc.ch/report/ar5/wg1/#.UxdnSaXDG8M>

<sup>5</sup> In 2013, IPCC increased the GPW of methane from 72x to 86x over a 20-year timescale, and from 25x to 34x over a 100-year time horizon. [http://en.wikipedia.org/wiki/Global-warming\\_potential](http://en.wikipedia.org/wiki/Global-warming_potential)

<sup>6</sup> <http://www.pnas.org/content/110/44/17768>

<sup>7</sup> <http://www.ipcc.ch/ipccreports/tar/wg1/017.htm>

<sup>8</sup> <https://www.nature.com/articles/s41561-018-0073-0>

<sup>9</sup> <https://www.nytimes.com/2016/05/13/us/obama-methane-epa.html?ref=topics>

<sup>10</sup> [https://www.nytimes.com/2015/08/05/science/methane-leaks-may-greatly-exceed-estimates-report-says.html?\\_r=0](https://www.nytimes.com/2015/08/05/science/methane-leaks-may-greatly-exceed-estimates-report-says.html?_r=0)

<sup>11</sup> [https://www.nytimes.com/2015/08/19/science/methane-leaks-in-natural-gas-supply-chain-far-exceed-estimates-study-says.html?\\_r=0](https://www.nytimes.com/2015/08/19/science/methane-leaks-in-natural-gas-supply-chain-far-exceed-estimates-study-says.html?_r=0)

<sup>12</sup> <http://www.nature.com/nature/journal/v538/n7623/full/nature19797.html>

Network.

4. **Reporting is Inadequate:** We find current reporting to be woefully inadequate and there is a large dissonance between current industry/company reporting/estimates and scientific findings.
  - a. Academic studies have identified methane leakage rates of up to 9%, over 6X the Environmental Protection Agency's (EPA) 1.4% leakage estimate<sup>13</sup> and industry estimates. The short-term climactic benefit of natural gas over coal is negated when leakage rates exceed 2.7%.<sup>14</sup>
  - b. Dominion's 2016 methane management report fails to address core concerns raised in the shareholder proposal. The 2018 shareholder proposal to Dominion was written in response to the deficiencies in the company's current reporting, as the Company has not addressed storage assets, despite the Company's significant storage operations. The report is a patchwork of broad discussion, select reporting, and some technologies deployed. Unlike peers, it does not provide current, publicly available information on its leakage rates and a quantitative strategy to reduce the impacts methane emissions may have on the Company.
5. **Regulatory Risk:** A failure by companies to proactively inspect, monitor, and upgrade critical storage infrastructure with the aim of reducing methane emissions has resulted in more rigorous regulations.
  - a. The last administration's EPA released new rules in 2016 to reduce oil and gas sector methane emissions. While the current EPA has attempted to avoid these methane regulations, court rulings have blocked such attempts. There continues to be clear momentum toward greater reporting requirements and reduction targets over the last few years.
  - b. In March 2014, the White House released a "Strategy to Reduce Methane Emissions" as a key element of the President's Climate Action Plan.<sup>15</sup> This action came in the wake of a 2013 EPA watchdog report per a February 2013 Bloomberg article entitled "Fracking Emissions Get Review After EPA Watchdog Report." The article stated, the EPA has "agreed to more closely study air emissions from hydraulic fracturing after the agency's auditor concluded its current data is insufficient to make policy decisions."<sup>16</sup> The group also referred to air pollution estimates as being of "questionable quality."<sup>17</sup>
  - c. At the public opinion level, natural gas remains a controversial issue. A March 30, 2016 Gallup poll shows Americans increasingly oppose fracking in oil and natural gas, with 36% in favor and 51% against (up from 40% in 2015).<sup>18</sup>
  - d. At the state level, New York State has banned hydraulic fracturing.<sup>19</sup> Colorado adopted the first regulations in the nation expected to directly reduce 1000,000 tons of methane from oil and gas operations, followed by Ohio, Wyoming, California, and Massachusetts.
6. **Investor Action:** In 2017, 15 shareholder proposals were filed at various companies asking for methane management disclosures.

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<sup>13</sup> <http://www.wri.org/blog/5-reasons-why-it-s-still-important-reduce-fugitive-methane-emissions>

<sup>14</sup> <https://thinkprogress.org/bridge-out-bombshell-study-finds-methane-emissions-from-natural-gas-production-far-higher-than-epa-de1d123e8cf0>

<sup>15</sup> <http://www.whitehouse.gov/the-press-office/2014/03/28/fact-sheet-climate-action-plan-strategy-cut-methane-emissions>

<sup>16</sup> <http://www.bloomberg.com/news/2013-02-21/fracking-emissions-get-review-after-epa-watchdog-report.html>

<sup>17</sup> <http://mobile.bloomberg.com/news/2013-02-05/greenhouse-gas-emissions-fall-in-u-s-power-plants-on-coal-cuts.html>

<sup>18</sup> <http://news.gallup.com/poll/190355/opposition-fracking-mounts.aspx>

<sup>19</sup> <http://www.nytimes.com/2014/12/18/nyregion/cuomo-to-ban-fracking-in-new-york-state-citing-health-risks.html>

- a. From 2006 to 2016, methane proposals garnered the largest average vote percentages (25%) of any other environmental proposals.<sup>20</sup>
- b. In October 2014, investors representing over 300 billion in assets under management called on the EPA to regulate methane as a serious climate problem, with proven cost effective solutions, stating it is insufficient to rely on voluntary initiatives and state-level action and a methane policy can reduce risk and create long-term value for investors and the economy.<sup>21</sup>
- c. High profile investor Jeremy Grantham of GMO LLC also highlighted the challenge of natural gas in his February 2014 Quarterly Letter to clients: “‘Fracking gas,’ like all natural gas, is basically methane. Methane unfortunately is an even more potent greenhouse gas than CO<sub>2</sub>: at an interval of 100 years it is now estimated to be 32 times as bad, and at 20 years to be 72 times worse! **If it leaks from well head to stove by more than 3%, it gives back its critical advantage and becomes no better than coal in its climate effect. Emissions, for whatever reasons, have not been carefully monitored.** It would be nice, though, to know how fast we are roasting our planet. A series of tests in the next three years or so, privately funded, will measure leakages. In old cities with Victorian era gas lines, leakage will be terrible – probably 2% or 3% on their own. At some “cowboy” wells, emissions will be much higher than that.”<sup>22</sup>

## Response to the 2018 Board of Director’s Statement in Opposition

### Dominion’s Reporting is currently inadequate, lagging that of industry peers.

Methane emissions management has moved to a mainstream investor concern, as academic studies, regulatory changes, and public attention have highlighted the complexity and importance of the issue. Investor analysis is reliant upon improved disclosure going forward, without which it is not possible to evaluate methane risk.

As of 2016, 22 companies in North America and Europe provided their leak rates as a percentage of natural gas production or throughput at given segments through disclosure to CDP.<sup>23</sup> Unlike peers including Sempra and other Methane Challenge participants, Dominion fails to report on its leakage rate, among other disclosures listed below.

Dominion states in its methane report that it “currently measures, mitigates, and takes action to reduce methane emissions from its operations.” The current report located on the company’s website<sup>24</sup> references regulatory compliance, involvement with the EPA Natural Gas Star Program, and some general language about an Environmental Management System; however, in the very same report, The Company states, “Dominion has not set specific reduction targets for methane emissions as such emissions are decreasing nationally and national policy as well as individual company actions such as those described in this report are driving that decrease.” Given the October 2016 study published in Nature indicating methane emissions from the oil and gas sector are 20% to 60% higher than previously thought<sup>25</sup> (in addition to the many other studies indicating higher-than-thought levels of methane

<sup>20</sup> <http://www.valuewalk.com/2016/06/environmental-shareholder-proposals/2/>

<sup>21</sup> <http://www.greenbiz.com/blog/2014/10/15/eyes-oil-gas-investors-seek-methane-rules>

<sup>22</sup> [http://www.gmo.com/websitecontent/GMO\\_QtlyLetter\\_ALL\\_4Q2013.pdf](http://www.gmo.com/websitecontent/GMO_QtlyLetter_ALL_4Q2013.pdf)

<sup>23</sup> 2016 Carbon Disclosure Project: Oil and Gas Companies response to OG7.5 regarding leak rate through the O&G module

<sup>24</sup> <https://www.dom.com/community/environment/environmental-reports-anddata>.

<sup>25</sup> <http://www.nature.com/nature/journal/v538/n7623/abs/nature19797.html>

emissions), the Company's statement equates to a lack of accountability to investors. The national figures are based on outdated Global Warming Potential (GWP) factors and throughput estimates, not actual measurements.

**Core concerns and key elements not addressed include:**

- A. **Leakage rate:** No methane leakage rate is reported as a percentage of production, throughput, or stored gas, despite such reporting by peer companies. And there is no way for investors to calculate a leakage rate. While investors should have transparency into the absolute amount of methane emission in metric tons, more importantly investors seek to understand the leakage rate, a normalized value which allows investors to compare Dominion's performance to its peers, and understand how Dominion's performance affects the climate.
  - a. If leakage is greater than approximately 3%, natural gas is worse than coal from a climate change standpoint. Without having a normalized number, Dominion's reporting is only helpful for aggregating industry-wide volumes at the EPA, and is certainly not helpful to investors. Other peer companies including those involved with the EPA Natural Gas Methane Challenge Program are taking initiative.
  - b. As of 2016, 22 companies in North America and Europe provide their leak rates as a percentage of natural gas production or throughput at given segment through disclosure to CDP<sup>26</sup>.
  - c. Percentage of assets reported: EDF found in its February 2015 Transportation and Storage Study, that only 38% of methane emissions are currently reportable.<sup>27</sup> The Company does not include the percentage of assets that they are reporting on. That is, the percentage of assets that are over the 25,000 metric tons of CO<sub>2</sub>e per year threshold. Without this transparency, it is impossible to understand the full scope of the issue.
- B. **Company-wide quantitative targets:** There are no company-wide methane reduction targets. Quantitative target setting is a core aspect of the Proposal.
  - a. In contrast to Dominion's actions, the ONE Future Initiative is a group of natural gas supply chain companies that are setting a goal of achieving a 1% leakage rate, with various sub-targets for individual segments of the natural gas supply chain, including a transition and storage target of 0.31% leakage as a percentage of throughput by 2025. The Company states its goal is to "track methane emissions from gas transmission and storage business; adopt best practices to reduce methane emissions." One would hope this is an obvious goal for all natural gas companies, but it is neither a quantitative disclosure nor helpful to investors seeking an apples-to-apples comparison of Dominion's performance and targets versus its peers.
- C. **Storage facility risk management:** In Dominion's 2016 Methane Management Report, there is no discussion of risks associated with depleted oil well storage facilities and accompanying mitigation strategies, as prominently highlighted in the Proposal. The current reporting does not address the risk management of storage facilities like those at Aliso Canyon, despite Dominion's industry-leading exposure. We are particularly concerned with older wells that have similar profiles to Well SS-25, the well that blew out at the Aliso Canyon facility, which was drilled in the 1950s with design standards long past their point of expiration. The Pipeline and

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<sup>26</sup> 2016 Carbon Disclosure Project: Oil and Gas Companies response to OG7.5 regarding leak rate through the O&G module

<sup>27</sup> <http://www.edf.org/climate/methane-studies>

Hazardous Materials Safety Administration (PHMSA) recently issued a first ever federal rule of downhole well management at methane storage facilities, and noted that, “Based on its field experience and knowledge of the industry, PHMSA is aware that many of the existing underground natural gas storage facilities across the country have wells with characteristics similar to Well SS25.” (PHMSA, Interim Final Rule on Safety of Underground Natural Gas Storage Facilities, 2016). While Dominion has stated it supports the PHMSA rule, investors need to understand how Dominion is approaching the substantial operational and regulatory risks associated with its storage of natural gas. Disclosures that have yet to be provided by Dominion to address the integrity and risk management of storage facilities would include:

- a. Overview of storage facilities and wells; the age of facilities and wells
  - b. Well integrity testing and management
  - c. Transition plan for high risk infrastructure
  - d. Concrete leak rate
  - e. Monitoring program
  - f. Emergency response plan once a leak is discovered
- D. **Lack of Real Time Measurement and Management:** Further studies underline the need for real time measurement and management to control poorly performing assets.
- a. EDF’s February 2015 Gathering and Processing study found 30% of facilities contribute 80% of leaks for that segment of the value chain.<sup>28</sup>
  - b. While Dominion states that “a small portion of our wells are monitored real time,” in its opposition statement, there has been no transparency into the Company’s use of real time monitoring and measuring versus the use of throughput estimates, and what percentage of assets are covered by these distinct methods. The Company simply asserts that GHG emissions reported “are based on a combination of actual field measurements (i.e., GHGRP leak surveys), company average leak factors obtained through the GHGRP applied to non-GHGRP facilities, composition of methane in the natural gas, and published EPA emission factors and protocols.” This is meaningless to investors seeking to understand performance. It is impossible to know the extent of Dominion’s monitoring and measurement program without meaningful, company-wide, disclosures.

## Conclusion

Given the importance of operational efficiency to Dominion Energy’s profitability, as well as the regulatory, environmental, and social license risks facing the Company, we believe the Company’s current level of disclosure is woefully inadequate.

For shareholders to fully evaluate methane risk, we strongly believe the Board of Directors needs to report how the Company is managing methane leakage risk, including for its substantial storage assets. The report should include quantitative targets, and how progress will be measured toward achieving those targets, and a discussion of measurement methodology. We strongly urge you to support the Proposal. Managing methane risk may have a direct impact on the profitability of Dominion Energy and we believe it is in the best interest of shareholders.

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<sup>28</sup> <http://www.edf.org/climate/methane-studies>