

# THE ATLANTIC COAST PIPELINE: GREENHOUSE GAS EMISSIONS BRIEFING

## FACTS AT A GLANCE

<b>Total Annual GHG Emissions:</b>	<b>67,591,816 metric tons</b>
<b>Emissions Equivalent:</b>	<b>20 coal plants or 14 million passenger vehicles</b>
<b>Project Name:</b>	Atlantic Coast Pipeline
<b>Ownership:</b>	Atlantic Coast Pipeline, LLC: Joint Venture Partners are: Dominion Resources (48%); Duke Energy (47%) Southern Company (5%)
<b>Operator:</b>	Dominion Resources
<b>Pipeline Length:</b>	600 miles
<b>Pipeline Diameter:</b>	42 inch (333 miles) 32 inch (186 miles) 20 inch (83 miles)
<b>Pipeline Capacity:</b>	1.5 billion cubic feet per day (cf/d)
<b>Project Cost (Est.):</b>	\$5 to \$5.5 billion
<b>States Affected:</b>	West Virginia, Virginia and North Carolina
<b>Gas Source:</b>	West Virginia and Pennsylvania, Marcellus Formation, Appalachian Basin
<b>Pipeline Route:</b>	From northwestern West Virginia, southeast through Virginia and south to North Carolina
<b>Destination Markets:</b>	Virginia and North Carolina
<b>Subscribers:</b>	Duke Energy Progress (30%); Virginia Power Services Energy (Dominion) (20%); Duke Energy Carolinas (18%); Piedmont Natural Gas (Duke) (11%); Virginia Natural Gas (10%) and Public Service Co. of North Carolina (7%)
<b>Permit and Project Schedule (Est.):</b>	Final EIS (June 2017), FERC Permit (September 2017), Construction (Late 2017- Late 2019)

## ATLANTIC COAST PIPELINE OVERVIEW

The Atlantic Coast Pipeline is a proposed interstate natural gas pipeline that would run over 600 miles from northwestern West Virginia, southeast through Virginia and south across eastern North Carolina. The route of the pipeline crosses the Allegheny Highlands straddling the border between West Virginia and Virginia, threatening pristine forests, headwaters,

and steep fragile terrain, as well as many farms, communities and other properties all along its path.<sup>1</sup>

The project is backed by three major utility companies, Dominion, Duke and Southern, with Dominion the majority shareholder and pipeline operator. Contracts for the gas have primarily been signed with

subsidiaries of the pipeline owners, with Duke Energy companies booking 59 percent of capacity, while a Dominion subsidiary has booked 20 percent. However, details remain scarce regarding where the actual demand for the gas will come from.<sup>2</sup>

Above: Construction of Columbia's Line MB Extension in Maryland.  
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<sup>1</sup> See the Allegheny-Blue Ridge Alliance website for more information: <http://www.abralliance.org/>

<sup>2</sup> Synapse Energy Economics, "Are the Atlantic Coast Pipeline and the Mountain Valley Pipeline Necessary? An examination of the need for additional pipeline capacity into Virginia and Carolinas" Prepared for Southern Environmental Law Center and Appalachian Mountain Advocates, September 12, 2016. [https://www.southernenvironment.org/uploads/words\\_docs/2016\\_09\\_12\\_Synapse\\_Report\\_-\\_Are\\_the\\_ACP\\_and\\_MVP\\_Necessary\\_\\_FINAL.PDF](https://www.southernenvironment.org/uploads/words_docs/2016_09_12_Synapse_Report_-_Are_the_ACP_and_MVP_Necessary__FINAL.PDF)

The Atlantic Coast Pipeline is currently scheduled to complete the federal permit process by fall 2017 and the companies expect it to be in service by late 2019. However, several delays have already occurred and this schedule could change.<sup>3</sup>

Climate science clearly indicates that we need to reduce consumption of all fossil fuels and make a just transition to a clean energy economy.<sup>4</sup> Building major gas pipelines today will undermine action to protect our climate because pipelines increase access to gas that we cannot afford to burn. Increasing gas supply and use exacerbates climate change.

- ▶ **Producing electricity from gas is currently dirtier than coal-fired power because methane leakage along the gas supply chain more than doubles the life cycle emissions of gas compared to just counting emissions from gas combustion.**
- ▶ **Current methane leakage reduction goals are not enough to make up for the projected increase in gas use.**
- ▶ **To achieve climate goals, we need a total transition away from fossil fuels by mid-century.**
- ▶ **Each new pipeline from the Appalachian Basin will trigger new gas production.**
- ▶ **Each new pipeline will trigger additional demand for gas fired power that could be met with clean energy sources and demand management.**

For fully referenced details of the above points see Oil Change International's [Gas Pipeline Climate Methodology](#).<sup>5</sup>

For these reasons, the Atlantic Coast Pipeline will contribute significant amounts of greenhouse gases (GHGs) that lead to climate change.



<sup>3</sup> For updates see the Allegheny-Blue Ridge Alliance website: <http://www.abralliance.org/>

<sup>4</sup> Oil Change International, 'The Sky's Limit: Why the Paris Climate Goals Require a Managed Decline of Fossil Fuel Production'. September 2016. [http://priceofoil.org/content/uploads/2016/09/OCI\\_the\\_skys\\_limit\\_2016\\_FINAL\\_2.pdf](http://priceofoil.org/content/uploads/2016/09/OCI_the_skys_limit_2016_FINAL_2.pdf)

<sup>5</sup> Oil Change International, "Gas Pipeline Climate Methodology: Calculating Greenhouse Gas Emissions for Natural Gas Infrastructure." February 2017. Available at: <http://priceofoil.org/2017/02/08/gas-pipeline-climate-methodology>

# ATLANTIC COAST PIPELINE ANNUAL EMISSIONS TOTAL 68 MILLION METRIC TONNES

We estimate the full life cycle greenhouse gas (GHG) emissions of the Atlantic Coast Pipeline using Oil Change International's [Gas Pipeline Climate Methodology](#) (see Footnote 5).<sup>7</sup>

The annual GHG emissions caused by the Atlantic Coast Pipeline would be almost 68 million metric tons. This is equivalent to the emissions from 20 average U.S. coal plants or over 14 million passenger vehicles.<sup>6</sup>

Additional emissions are caused by changes in vegetation cover in the pipeline corridor. Vegetation clearance is estimated at 4,208 acres, including clearing of 3,424 acres of upland forest, resulting in loss of carbon stock.<sup>9</sup>

## REDUCED METHANE LEAKAGE LOWERS EMISSIONS - BUT ONLY BY A MAXIMUM 23 PERCENT

In May 2016, the U.S. Environmental

Protection Agency announced standards for reducing methane leakage from the oil and gas sector.<sup>10</sup> The standards affect new, modified and reconstructed production wells, while existing wells are being assessed for further action. This rule alone will not achieve the stated Obama administration goal to reduce methane emissions from the oil and gas sector by 45 percent from 2012 levels by 2025.<sup>11</sup> While the Trump administration may seek to gut the methane goals, it remains important to understand what impact these reductions would have should they be implemented.

### The annual emissions come from four sources:<sup>7</sup>

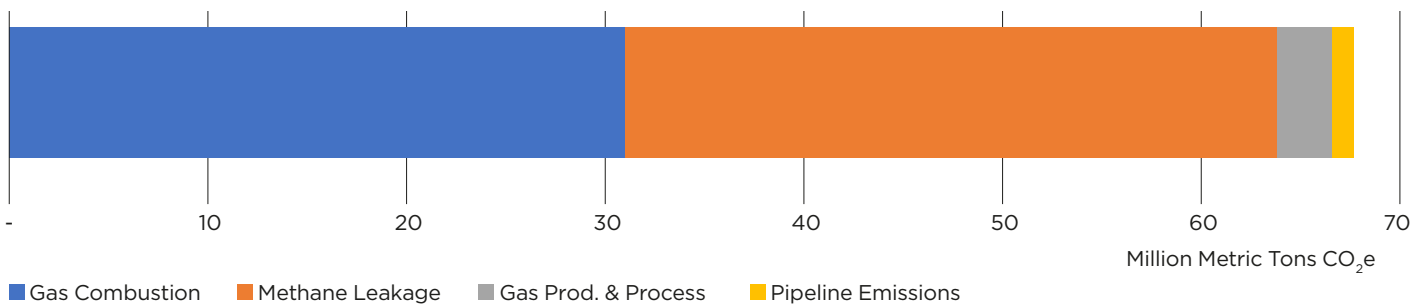
- Emissions from the combustion of the gas the pipeline would carry = 31.1 MMt CO<sub>2</sub>e
- Emissions from methane leaked across the gas supply chain = 32.7 MMt CO<sub>2</sub>e
- Emissions from pipeline operation = 1 MMt CO<sub>2</sub>e
- Emissions from extraction and processing = 2.8 MMt CO<sub>2</sub>e

This estimate does not include construction emissions, which according to FERC, would amount to 915,870 short tons over 2 years of preparation and construction.<sup>8</sup>

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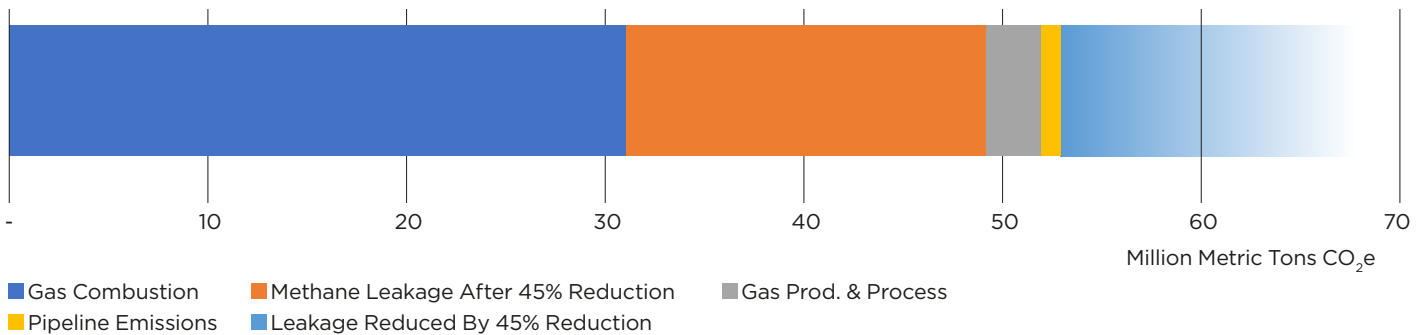
Assuming a 45 percent reduction does occur across the gas supply chain, we find that the total annual emissions could be cut by a maximum of 14.7 MMt to a total of 52.9 MMt. This is a reduction of 23 percent of the total emissions without methane leakage reductions. The remaining emissions are equivalent to 15 average U.S. coal plants or 11 million average passenger vehicles.<sup>12</sup>

Figure 1. Atlantic Coast Pipeline Annual GHG Emissions



Source: Oil Change International using IPCC, PSE, FERC and Santoro et al. See [Gas Pipeline Climate Methodology](#) (see Footnote 5).

Figure 2. Atlantic Coast Pipeline Annual GHG Emissions with Methane Reduction Goal



Source: Oil Change International using IPCC, PSE, FERC and Santoro et al. See [Gas Pipeline Climate Methodology](#) (see Footnote 5).

6 U.S. Environmental Protection Agency. "Greenhouse Gas Equivalencies Calculator." <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>  
 7 MMT = Million Metric Tons. Figures are rounded.  
 8 Federal Energy Regulatory Commission. 'Atlantic Coast Pipeline and Supply Header Project Draft Environmental Impact Statement. December 2016.' FERC/EIS-0274D. Table 4.11.1-5, Pp. 4-451. Figure amounts to 830,863 metric tons. <https://www.ferc.gov/industries/gas/enviro/eis/2016/12-30-16-DEIS.asp>  
 9 Federal Energy Regulatory Commission. 'Atlantic Coast Pipeline and Supply Header Project Draft Environmental Impact Statement. December 2016.' FERC/EIS-0274D. Pp. ES-10 <https://www.ferc.gov/industries/gas/enviro/eis/2016/12-30-16-DEIS.asp>  
 10 U.S. Environmental Protection Agency, 'EPA Releases First-Ever Standards to Cut Methane Emissions from the Oil and Gas Sector' May 12, 2016. <https://www.epa.gov/newsreleases/epa-releases-first-ever-standards-cut-methane-emissions-oil-and-gas-sector>  
 11 The White House, 'Fact Sheet: Administration Takes Steps Forward on Climate Action Plan by Announcing Actions to Cut Methane Emissions' January 14, 2015. <https://obamawhitehouse.archives.gov/the-press-office/2015/01/14/fact-sheet-administration-takes-steps-forward-climate-action-plan-anno-1>  
 12 U.S. Environmental Protection Agency, Greenhouse Gas Equivalencies Calculator <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>



# FERC CLIMATE ANALYSIS INADEQUATE

The Federal Energy Regulatory Commission (FERC) is the primary federal agency that assesses the need for and impacts of interstate gas pipelines, and it issues permits for construction and operation.<sup>13</sup>

FERC's assessment of greenhouse gases (GHGs) emitted by the Atlantic Coast pipeline in the project's Draft Environmental Impact Statement (DEIS) was woefully inadequate.<sup>14</sup> FERC appears to have selected data, sources and assumptions that conveniently allow it to conclude that the project "would not significantly contribute to GHG cumulative impacts or climate change."<sup>15</sup>

Two fundamental flaws underpin FERC's analysis leading to this deficient conclusion.

1. Emissions from gas are assumed to be less than half those of coal;
2. Upstream production and downstream consumption of gas are assumed to be unaffected by the project.

For the first of these, FERC cites a Department of Energy (DOE) report published in May 2014.<sup>16</sup> While this report is relatively recent, the science and study of methane leakage from oil and gas production and infrastructure has moved on significantly since its publication.<sup>17</sup> The report dramatically underestimates the life cycle emissions of natural gas use for power generation leading to an inaccurate conclusion that gas is consistently cleaner than coal.

The primary factors leading to the DOE report's low emissions estimate for gas is a low methane leakage rate (1.2 percent - 1.6 percent) and the calibration of methane's global warming potential with



CO<sub>2</sub> to a 100-year time frame rather than a 20-year time frame. These issues are explained in more detail in [Gas Pipeline Climate Methodology](#) (see Footnote 5). Using the latest available research on methane, we conclude that average leakage rates across the U.S. gas supply chain are over twice that assumed in the DOE report and these emissions have a dramatic impact on climate change within the timeframe of the project.

FERC makes the second assumption – that the pipeline will not impact production or consumption of gas – offering no evidence whatsoever to support this critical supposition. In our [Gas Pipeline Climate Methodology](#), we present compelling evidence that gas production in the Appalachian Basin can only grow with

more pipeline capacity. Each new pipeline allows for a commensurate amount of production growth.

We also show that the increasing supply of natural gas in the United States is in direct competition with clean energy. As the cost of clean energy continues to decline, it competes with both new and existing gas and coal generation capacity. This clearly indicates that in the absence of new gas supply, it is clean energy – not coal or more expensive imported gas – that would be implemented in its place.

It is time for FERC to abandon these outdated and ineffectual assumptions about gas development and acknowledge that more gas pipeline capacity leads to more GHG emissions.

<sup>13</sup> See Federal Energy Regulatory Commission, 'Natural Gas,' FERC Website. <https://www.ferc.gov/industries/gas.asp>

<sup>14</sup> Federal Energy Regulatory Commission, 'Atlantic Coast Pipeline and Supply Header Project Draft Environmental Impact Statement. December 2016.' FERC/EIS-0274D. <https://www.ferc.gov/industries/gas/enviro/eis/2016/12-30-16-DEIS.asp> Pp. 4-509-4-513

<sup>15</sup> Federal Energy Regulatory Commission, 'Atlantic Coast Pipeline and Supply Header Project Draft Environmental Impact Statement. December 2016.' FERC/EIS-0274D, pp 4-513. <https://www.ferc.gov/industries/gas/enviro/eis/2016/12-30-16-DEIS.asp>

<sup>16</sup> U.S. Department of Energy, National Energy Technology Laboratory, Office of Fossil Energy, 'Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas from the United States', May 29, 2014. DOE/NETL-2014/1649 [https://www.netl.doe.gov/energy-analyses/temp/LCAGHGReportLNG%20Report\\_052914.pdf](https://www.netl.doe.gov/energy-analyses/temp/LCAGHGReportLNG%20Report_052914.pdf)

<sup>17</sup> Adam Voiland, 'Methane Matters: Scientists Work to Quantify the Effects of a Potent Greenhouse Gas', NASA Earth Observatory. <http://earthobservatory.nasa.gov/Features/MethaneMatters>

# CONCLUSIONS AND RECOMMENDATIONS

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This briefing provides a calculation and discussion of the greenhouse gas emissions and climate impact of the proposed Atlantic Coast Pipeline. This assessment utilizes Oil Change International's [Gas Pipeline Climate Methodology](#) (see Footnote 5), which also expands on why calculating the full lifecycle emissions of gas pipeline projects is crucial for assessing the true impacts of such projects.

This information is a vital counterweight against the barrage of misinformation coming from industry and many parts of the government that claim that the expansion of natural gas production and use helps to address climate change. This so-called bridge to clean energy argument has been entirely debunked.<sup>18</sup> If gas ever did form a bridge to a clean energy transition, it is clear today that we have already crossed it and it is time to move on.

We recommend the following actions for citizens fighting the Atlantic Coast Pipeline.

- ▶ **File written comments with FERC stating the annual emissions for the pipeline and urging the agency to reject the project's permit on climate grounds.**<sup>19</sup>
- ▶ **Share this information with your community so that citizens are informed about the climate impact of this and other gas pipelines.**
- ▶ **Contact your State and Federal representatives and urge them to request FERC reject the permit.**
- ▶ **Contact your state environmental regulators (DEQ or DEP) and urge them to reject state permits for the project.**
- ▶ **Sign the [Pledge of Resistance](#) to Atlantic Coast Pipeline.**<sup>20</sup>
- ▶ **Join the call to [#keepitintheground](#) and reject all new fossil fuel infrastructure.**<sup>21</sup>
- ▶ **Contact the [Regional Bold Alliance Pipeline Fighter](#) for more information on fighting the Atlantic Coast Pipeline.**<sup>22</sup>
- ▶ **Join local, regional and national groups in calling for the rejection of this and other natural gas projects.**



Oil Change International is a research, communications, and advocacy organization focused on exposing the true costs of fossil fuels and facilitating the coming transition towards clean energy. Website: [www.priceofoil.org](http://www.priceofoil.org) Contact: [info@priceofoil.org](mailto:info@priceofoil.org)



The Bold Alliance is a network of small but mighty groups protecting land and water. Website: [www.boldalliance.org](http://www.boldalliance.org) Contact: [info@boldalliance.org](mailto:info@boldalliance.org)

## Other Key Organizations Fighting Atlantic Coast Pipeline

[Allegheny Blue Ridge Alliance](#)  
[Ohio Valley Environmental Coalition](#)  
[Appalachian Voices](#)  
[Wild Virginia](#)  
[Chesapeake Climate Action Network](#)  
[Virginia Sierra Club](#)  
[Southern Environmental Law Center](#)  
[Appalachian Mountain Advocates](#)  
[NC WARN](#)

For questions on gas pipeline GHGs, contact Lorne Stockman: [lorne@priceofoil.org](mailto:lorne@priceofoil.org)

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<sup>18</sup> Joe Romm, 'By The Time Natural Gas Has A Net Climate Benefit You'll Likely Be Dead And The Climate Ruined', February 19, 2014, <https://thinkprogress.org/by-the-time-natural-gas-has-a-net-climate-benefit-youll-likely-be-dead-and-the-climate-ruined-22fd00f89e73>  
<sup>19</sup> Use the following Docket Number when contacting FERC regarding the Atlantic Coast Pipeline: CP15-554-000  
<sup>20</sup> <https://www.nonewpipelines.org/>  
<sup>21</sup> [www.keepitintheground.org/appalachian-gas](http://www.keepitintheground.org/appalachian-gas)  
<sup>22</sup> Carolyn Reilly, [carolyn@boldalliance.org](mailto:carolyn@boldalliance.org) - 540-488-4358