

Atlantic Coast Pipeline--Externalities

BACKGROUND

The Atlantic Coast Pipeline (ACP) has been represented as both environmentally safe and economically beneficial, providing economic opportunity for local communities along the proposed route. What have not been represented are the costs and losses which may result from the construction and presence of a natural gas pipeline. These costs and losses are borne by parties other than the owner of the proposed pipeline and are called externalities, or external costs. These costs are borne by landowners, homeowners, farmers, taxpayers and lifeforms inhabiting critical ecosystems in or near the pipeline right-of-way.

This paper highlights the types of external costs that stakeholders must consider before approving or supporting such pipeline, as well as other considerations which are material and relevant to such decision.

The rosy promises of jobs and property tax windfalls should not be allowed to override prudence, common sense, and analysis of all relevant risks and costs of supporting this pipeline. If something seems too good to be true it almost always is.

While this paper provides numerous extracts from the comprehensive papers listed as **REFERENCES**, it is strongly recommended that stakeholders obtain and read the entire well-referenced studies to gain a deeper understanding of the issues and likely costs that will come with the construction of this proposed pipeline. Quotation marks are generally omitted below due to frequent excerpting of text from these studies. A footnote in a heading applies to all the contents under that heading unless otherwise indicated.

COSTS

A. Effects on Ecosystem Services¹: Ecosystem services are the benefits nature provides to people for free, like purified water or recreational opportunities, that will become less available and/or less valuable due to the ACP's construction and operation.

1. Water Supply: Clean water is provided by natural filtration.

- Building the pipeline risks contamination through erosion, sedimentation, or spills.
- Costs to homeowners, farmers and municipalities to replace existing water supplies can be enormous.

2. Food and Farmland: Changes to land use:

- ... it seems likely that the ability to manage acreage for row crops will be greatly curtailed, if not eliminated entirely by the physical limits imposed by the ACP and by restrictions in easements to

be held by ACP LLC. These include limits on the weight of equipment that could cross the corridor at any given point and difficulty using best soil conservation practices, such as tilling along a contour, which may be perpendicular to the pipeline corridor. (This would require extra time and fuel use that could render some fields too expensive to till, plant, or harvest.)

- Reclassifying cropland as pasture/forage (which is generally less productive of ecosystem services) recognizes these effects while also recognizing that some sort of future agricultural production in the ROW (grazing and possibly haying) could be possible.
- An additional effect ... is long-standing harm to agricultural productivity due to soil compaction, soil temperature changes, and alteration of drainage patterns due to pipeline construction.

3. Construction:

- Construction of the pipeline corridor itself would require clearing an area 125 feet (38.1 m) wide in most areas and 75 feet (22.9 m) wide in wetlands. After construction, the permanent right-of-way (ROW) would be 75 feet wide along the entire length of the pipeline. It is from within this construction zone and right-of-way that the greatest disruption of ecosystem processes will occur, so it is from these zones that reductions in ecosystem processes will occur.
- Loss of aesthetic value and impacts on water (both supply and regulation of flow) represent the largest losses during the construction phase.
- As in communities impacted by the shale gas boom itself, communities along the pipeline can expect spikes in crime as transient workers come and go, more damage to roads under the strain of heavy equipment, increases in physical and mental illnesses including asthma, depression, anxiety, and others triggered by exposure to airborne pollutants, to noise, and to emotional, economic, and other stress. See, for example, Ferrar et al. (2013), Healy (2013), Fuller (2007), Campoy (2012), and Mufson (2012).²

B. Effects on Property Value¹: To say that the impacts and potential impacts of the ACP on private property value is important to people along its proposed route would be an extreme understatement.

1. Land Price Effects: Landowners and Realtors along the proposed route of the Atlantic Coast Pipeline report that buyers have backed out of contracts and that other buyers are simply less interested in potentially affected properties (Davenport, 2015; Hotz, 2015; R. Smith, 2015a).²¹ In the words of one Realtor, “every single one of my buyer clients who are looking to buy property in Augusta County have told me that they do not want to even look at properties that are located ON or NEAR the proposed locations of the ACP” (Adler, 2015).

2. Realtors Survey:

- 68% of Realtors believe the presence of a pipeline would decrease residential property value.
- 70% of Realtors believe a pipeline would cause an increase in the time it takes to sell a home.
- More than three quarters of the Realtors view pipelines as a safety risk.
- In a survey of buyers presented with the prospect of buying an otherwise desirable home with a 36-inch diameter gas transmission line on the property, 62.2% stated that they would no longer

buy the property at any price. Of the remainder, half (18.9%) stated that they would still buy the property, but only at a price 21%, on average, below what would otherwise be the market price.

3. Visual Effects and Viewshed Analysis: ... utility corridors from which power lines can be seen decrease property values (by 6.3% in one study) (Bolton & Sick, 1999). This suggests a pipeline corridor reduces property value either by impairing a good view or, if like power lines, by simply being unattractive.

C. General Economic Effects¹:

1. ... economic development plans recognize the importance of a high quality of life, a clean environment, and scenic and recreational amenities to the economic future of people and communities.
2. Workers, businesses, and retirees who might otherwise choose to locate along the ACP's proposed route will instead pick locations retaining their rural character, productive and healthy landscapes, and promise for a higher quality of life.

OTHER CONSIDERATIONS

A. Lack of Need: The financial dynamics of the natural gas industry encourage overbuilding of natural gas pipelines, i.e. the construction of excess capacity. A weak regulatory process and a lack of coordinated planning for natural gas infrastructure facilitate this process.² Lack of need portends a future with an unprofitable pipeline, a result which would impact promised property tax revenues (see below) to counties and unnecessary burden to ratepayers.

- None of the economic interests within the natural gas industry have any incentive to seriously consider whether alternatives to natural gas— energy efficiency, renewable energy or other forms of power generation—may be cheaper.²
- FERC (Federal Energy Regulatory Commission) primarily relies on whether a pipeline developer has been able to recruit enough companies to contract for capacity on the line. If a pipeline is fully or near fully subscribed, FERC considers this strong evidence that the pipeline is necessary. This approach by FERC is highly likely to result in excess capacity that will be underutilized.²
- ... the Atlantic Coast Pipeline (has) applied for recourse rates that include a return on equity of 14%.²
- The pipeline capacity being proposed exceeds the amount of natural gas likely to be produced from the Marcellus and Utica formations over the lifetime of the pipelines.²
- ... existing natural gas pipeline capacity is going underutilized, even as companies propose new pipelines. A 2015 report by the Department of Energy found that from 1998 to 2013, existing pipelines in the U.S. had an average capacity utilization of 54%.²
- Giant pipelines and costly new LNG plants are exactly the wrong way to go. They're anachronisms. They will probably be obsolete before they're even operational, and will certainly become so long before their shelf life expires.⁴

- Even if ACP gas never departs the mainland, there’s still a strong possibility that we wind up with a massive pipeline that finds itself sitting there, stuffed with gas that no one wants.⁴
- ... increasing utilization of capacity that is not fully utilized in existing interstate natural gas pipelines, re-routing natural gas flows, and expanding existing pipeline capacity are potentially lower-cost alternatives to building new infrastructure and can accommodate a significant increase in natural gas flows.⁴
- Ratepayers—specifically the customers of Dominion Virginia Power, Piedmont, Virginia Natural Gas, Public Service Company of North Carolina, Duke Energy Progress and Duke Energy Carolinas—are on the hook for 96% of the project’s costs through the rates that they are charged to ship gas on the pipeline. These ratepayers will bear the following risks. One is that the Atlantic Coast pipeline would go underutilized.²

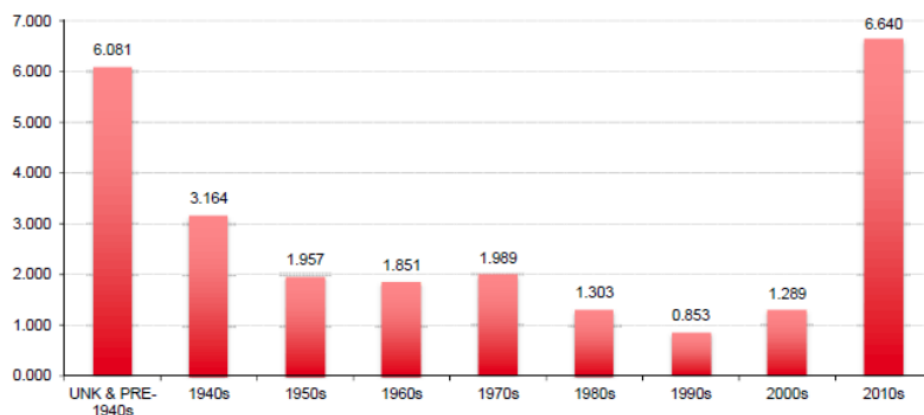
B. Safety Issues: While both air travel and pipelines are safer than their road alternatives, the analogy only extends so far. Airplanes are replaced routinely and older equipment is monitored regularly for airworthiness and replaced when it reaches its safety limits. Pipelines, on the other hand, can stay underground, carrying highly pressurized gas and oil for decades – even up to a century and beyond. And while airplanes have strict and uniform regulations and safety protocols put forth by the Federal Aviation Administration, such a uniform set of standards does not exist for pipelines.⁵

1. High Consequence Areas: A high consequence area (HCA) is “the area within which both the extent of property damage and the chance of serious or fatal injury would be expected to be significant in the event of a rupture failure (Stephens, 2000, p. 3).” The HCA for this pipeline could amount to as much as 1,000 feet on either side of the pipeline.¹

2. Evacuation Zones: The evacuation zone is defined by the distance beyond which an unprotected human could escape burn injury in the event of the ignition or explosion of leaking gas The evacuation zone for this pipeline could be over a half-mile wide on either side of the pipeline.¹

3. Pipeline Incidents²: Data from the Pipeline Safety Trust shows that pipelines built in the 2010s are failing at a rate similar to the failure rate for pipelines constructed pre-1940.

Average number of annual incidents over 2005-2013 per 10,000 miles of onshore gas transmission pipe by decade of pipe installation



Source: U.S. Pipeline and Hazardous Materials Safety Administration, Pipeline Safety Trust

As of March 2015.

C. Export: “While pipeline backers maintain that the gas transported via the ACP would not be for export, the pipeline would add to overall national gas transmission capacity and thus would serve to free up more gas for export at Dominion Cove Point LNG LP’s newly approved liquefied natural gas export facility in Calvert County, Maryland.”¹

D. Property Tax Windfall: The promised property tax windfall to counties is fragile and subject to change.

1. Tax Value Basis: For utility infrastructure like pipelines, the assessed value is based on an annual appraisal of the company owning the pipeline⁶, and then such assessed value is assigned to locations based on the particular assets which are located there—like miles of pipe or compressor stations there, etc. That appraised value is dependent on cash flows realized by the pipeline owner, ACP LLC.
2. ACP LLC estimates of value expected to be added to the local tax base is subject to ACP LLC’s ability to maintain estimated net cash flows. While this paper does not assert any intentional misrepresentation of the facts to date, any number of things can negatively influence those projections of cash flows:

- Errors in estimated future cash flows because of having to use estimates for revenues and expenses. Actual operating data may prove that initial estimates were naïve or overly optimistic.
- Overestimating revenues because of a drop in demand for natural gas caused by reduction in need for electricity.
- Overestimating revenues because of fluctuations in the price of natural gas.
- Overestimating revenues because of a drop in demand caused by the imposition of a carbon tax or fee.
- Overestimating revenues because of errors in estimating natural gas supply in the Marcellus and Utica shale plays.
- Underestimating expenses and costs because of cross-charges or other administrative costs passed to ACP LLC by the companies that own it.

E. Fracked Gas Damage: The decision to build a pipeline to transport fracked gas contributes to the continuing practice of harvesting gas by this method. The responsibility for the damage caused by fracking must be borne by the pipeline companies, potential gas customers as well as the drilling companies. Such downsides include⁷:

- Air pollution
- Water contamination
- Inherent engineering problems
- Radioactive releases
- Occupational health and safety issues
- Public health effects
- Noise pollution, light pollution and stress
- Earthquake and seismic activity

- Wells are pathways for toxic fluid migration
- Flood risks
- Prevents solar and wind from use
- Fugitive methane rapidly heats the planet

F. Miscellaneous:

1. Abuse of Eminent Domain: Landowners are at risk from having their land seized and potentially damaged for pipeline projects that are not needed.²

2. Climate Change: Current projections for U.S. natural gas production – fueled by the ongoing gas boom in the Appalachian Basin – are not aligned with safe climate goals, or the current U.S. long-term climate target. Any analysis of the need for gas supply must be premised on national and international climate goals, not business-as-usual.³

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