

**STATE OF VERMONT PUBLIC SERVICE BOARD**

Docket 7970

Petition of Vermont Gas Systems, Inc., )  
for a certificate of public good, )  
pursuant to 30 V.S.A. § 248, )  
authorizing the construction of the )  
“Addison Natural Gas Project” )  
consisting of approximately 43 miles of )  
new natural gas transmission pipeline )  
in Chittenden and Addison Counties, )  
approximately 5 miles of new )  
distribution mainlines in Addison )  
County, together with three new gate )  
stations in Williston, New Haven and )  
Middlebury, Vermont )

**MOTION OF 350 VERMONT FOR LEAVE TO FILE AMICUS CURIAE BRIEF  
IN SUPPORT OF OPPOSING PARTIES**

350 Vermont (350VT) respectfully requests permission to submit this amicus curiae brief in support of opposing parties in Docket 7970, Petition of Vermont Gas Systems, Inc., for a certificate of public good, pursuant to 30 V.S.A. § 248, authorizing the construction of the “Addison Natural Gas Project” (AGNP) consisting of approximately 43 miles of new natural gas transmission pipeline in Chittenden and Addison Counties, approximately 5 miles of new distribution mainlines in Addison County, together with three new gate stations in Williston, New Haven and Middlebury, Vermont.

**IDENTITY AND INTERESTS OF AMICUS CURIAE**

350VT is a tax-exempt corporation organized under the laws of the State of Vermont and is the only statewide organization in Vermont working solely to build a grassroots movement to reverse climate

change. 350VT engages in public education and advocacy on climate change by taking guidance from Vermont communities most impacted by climate change and holding the fossil fuel industry accountable through the power of people taking collective action. 350VT's mission is to unite a mass movement for bold solutions that both lift up Vermonters and cut down carbon — to be a national and global example for solving the climate crisis. We believe that everyone has a right to a secure, healthy and ecologically sound environment. Yet, our world is presently facing an economic, ecological, and social crisis of proportions never before seen in human history. The survival of life as we know it is at imminent risk from global climate change. The times demand that we build broad and unified social movements that are strong enough to confront and overcome the systems which have created this crisis, while assuring that this human right is reflected in policy and on the ground at the state and local level. This means acting in solidarity with the communities most immediately affected by the climate crisis, working for a just transition to a renewable society, and challenging inequalities rooted in race, class and gender dynamics, both internationally and in our own communities. We collaborate across diverse segments of the climate movement and support those engaged in actions consistent with our vision.

Our support for this Docket is grounded in new evidence related to the economic and environmental costs of the Addison Natural Gas Pipeline. The cost of the pipeline has increased substantially for the second time, and the IPCC recently reported that methane is a far more potent greenhouse gas than we previously realized.<sup>1</sup> As part of 350VT's core mission, we provide support to local Vermont communities, ratepayers and landowners most impacted by fossil fuel infrastructure that is harmful to global efforts to stem climate change and locally detrimental to Vermonters.

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<sup>1</sup> See [http://www.ipcc.ch/report/ar5/wg2/docs/WGIAR5-IntegrationBrochure\\_FINAL.pdf](http://www.ipcc.ch/report/ar5/wg2/docs/WGIAR5-IntegrationBrochure_FINAL.pdf) at p. 80.

We submit this amicus brief on behalf of our 5,000 Vermont members, including at least 211 in Addison County, 1521 in Chittenden County, and 62 in Franklin County, many of whom are current customers of Vermont Gas Systems or landowners, affected or potentially affected by the pipeline expansion envisioned in this Docket. We also submit this brief in support of the nearly 400 individuals, who have filed complaints with the Public Service Department (PSD)—they ask that the PSD represent their interests before the Public Service Board by opposing continued certification of the Project. They ask that the PSB curtail these unwanted charges on customer bills to build Phase I of the ANGP. Notwithstanding their keen interest in this case, most Vermonters, even those who attended public hearings prior to the original evidentiary hearings, are unable to participate in these formal proceedings. 350VT seeks to ensure that certain relevant issues raised by the public at earlier proceedings and which have evolved over time continue to be adequately considered. 350VT's comments in this brief address the relevant issues on remand that were raised by the public earlier and have gained greater urgency because of project management, schedule, cost, and scientific developments. Our goal is to highlight some of the evidence in the record that was not fully developed during the hearings and to demonstrate the policy issues that demand revisiting since the original proceedings and the first remand.

#### FUNDING FOR PREPARATION AND FILING OF BRIEF

350VT confirms that we have received no funding for the purpose of preparing this brief from any individual or entity. The brief was prepared by volunteer members, and was reviewed by select

members of our Board of Directors on a volunteer basis and an attorney in an advisory capacity only. We file the brief *pro se*.

We thank you for your consideration of the motion.

Signed this 8<sup>th</sup> day of July 2015 at Burlington, Vermont.

A handwritten signature in black ink, appearing to read 'mmb', followed by a horizontal line extending to the right.

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AMICUS BRIEF OF 350 VERMONT

I. INTRODUCTION

“This project is intended to bring a less expensive energy choice to Vermonters. Conditions that add costs to the Project will ultimately be reflected in Vermont Gas’ rates and increased costs to Vermont Gas’ customers. Before simply adopting ... recommendations, therefore, not only should the merits of the suggestions be tested, but the relative benefits should be weighed against the cost impacts.”

Eileen Simollardes, June 2013<sup>2</sup>

<sup>2</sup> 6/28/13 Prefiled Rebuttal Testimony of Eileen Simollardes.

350 Vermont (350VT) respectfully submits this amicus brief and urges the State of Vermont Public Service Board (the Board) to reopen the certificate of public good (CPG) for the Addison Natural Gas Project (the Project) in the above-referenced Docket.

As an organization committed to climate advocacy, education, and action, 350Vermont is primarily focused on mitigating the severity of the climate crisis, drastically reducing our carbon emissions, and ending our use of fossil fuels as quickly as possible. We understand that vast reductions in energy use and attendant aggressive conservation and efficiency measures are a vital part of the climate response framework. We also acknowledge that for the foreseeable future, humanity will still likely require a great deal of energy. As the era of unsustainable use of fossil fuels comes to a close, we will need to replace those fuels with a diverse array of renewable energy sources which can support our demands for electric power, home heating, and transportation.

350VT supports the development of renewable energy projects in Vermont that achieve the maximum possible reductions in greenhouse gas (GHG) emissions, now and into the future. We support projects that protect human health, wildlife, and the health of sensitive ecosystems, and also stabilize costs to consumers and distribute energy costs as equitably as possible. These projects must rely on an open and accountable process for siting renewable energy facilities that incorporates principles of human rights and climate justice. Because there are often conflicts among these essential priorities, we believe that open, democratic processes are the best means we have to address potential conflicts about Vermont's climate and energy future. The processes

of decision-making must empower those most affected by policy decisions and guarantee equal access to fair and transparent energy justice and adjudication.

It is through this lens that we submit this amicus brief with comments and begin by stating our overarching assessment of Phase I of the Project under review in this Docket. Vermont Gas Systems, Inc.'s (VGS) continued pursuit of Phase I of the ANGP places permanent and unnecessary fossil fuel infrastructure into sensitive ecological areas, dismisses international consensus on the urgent need to reduce methane emissions, destabilizes consumers home heating rates, distributes project costs disproportionately to Vermont families, and projects benefits to a small number of large industrial customers. Egregiously, VGS has achieved all of this, in part, by holding back material evidence of escalating costs before, during, and after proceedings specifically aimed at assessing those costs against Vermont's utility infrastructure expansions standards. Citizens are questioning the fairness, transparency, and efficacy of the §248 process, because VGS has not acted as a responsible business with proper respect to the authority of the Board, and, ultimately, accountability to the public.

As a result and in response to evidence from the most recent technical hearings in this Docket and the Board's deliberations regarding relief from judgment under V.C.R.P. Rule 60(b), we respectfully urge the Board to consider the following findings, a discussion of which follows in the rest of this document:

1. The Project is not needed to meet the present and future demand for service under 30

V.S.A. §248(b)(2).

2. If the costs of the Project were allocated equitably and with respect for ratepayers' rights to just and reasonable rates, the resulting cost and benefit allocations would likely mitigate any existing commercial demand for natural gas delivered by pipeline.
3. There are less costly, less environmentally detrimental, and more temporary alternatives to this project to meet present and future demand for thermal energy service.
4. We urge the Board to adopt the most current, objective, and internationally sanctioned scientific measures of GHG emissions—carbon emissions reductions should be calculated net of methane emissions.
5. We urge the Board to consider that unless VGS can clearly meet the requirements of §248(b)(4) without violating fundamental tenets of just and reasonable rates, as well as comply with the Vermont Constitution, the Board must grant relief from judgment.
6. It would be unreasonable to rely on VGS's statements or calculations to support a finding that the Project will result in economic benefit or on PSD's assessment of economic net benefit.
7. Both the Board's administrative ruling and VGS's evidence must stand on their own. The Board must be able to reach the conclusion that the outcome would not be different today on the basis of current evidence and the grounds of prior decisions.

In its 3/25/15 Procedural Order, the Board stated that it would review whether to reopen the case under V.C.R.P. Rule 60(b)(1) (mistake, inadvertence, surprise), 60(b)(2) (newly discovered



evidence), and 60(b)(3) (fraud, misrepresentation or other misconduct) and would permit parties to submit evidence in support of motions under any of these provisions. 350VT's amicus comments ask fundamental climate, energy, and justice issues of fact, law and policy as they relate to the Board's current review of this Docket. We seek to assist the Board in its review of motions under Rule 60(b)(2) and 60(b)(3) as they relate to 30 V.S.A. §248(b)(2), and §248(b)(4), and to a lesser degree to §248(a)(3), thereby lending support to the Rule 60(b)(2) motions and positions of AARP, Conservation Law Foundation, Kristin Lyons, and Nathan and Jane Palmer.

## **II. STANDARD OF REVIEW**

The Board may grant relief from a final order under Rule 60(b)(2) (newly discovered evidence) if the movant shows that vacating the judgment would not be an empty exercise. While the movant "need not establish that it possesses an ironclad claim,"<sup>3</sup> the movant must at least show that, if the newly discovered evidence were proved and "would probably change the outcome."<sup>4</sup> Thus, in order to grant relief from judgment, a party must only show that newly discovered evidence, if proved, would probably change the Board's conclusion as to the Project's adherence to any one of the §248 criteria related to the construction of new natural gas facilities.

Under §248(a)(3), a company may not commence construction or site preparation for a new natural gas facility unless the Board first finds that the facility "will promote the general good of the State" (emphasis added) and issues a CPG. §248(b) places temporal limitations on the Board's

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<sup>3</sup> See *Teamsters, Chauffeurs, Warehousemen and Helpers Union, Local No. 59, Plaintiff, Appellant, v. Superline Transportation Company, Inc.* 953 F. 2d 17 (1992) at p. 4

<sup>4</sup> See *In re Petition of Ryegate Wood Energy Co.*, Docket No. 5218, Order of 11/30/90 at 4 quoting *Moore's Federal Practice* § 60.23[4] (2d ed. 1990)

determination and requires an affirmative finding of adherence to the criteria of each of the subsections: “*Before* the Public Service Board issues a certificate of public good” (emphasis added) for new natural gas facilities, it “*shall*” make each of several findings, including, *inter alia*, that the Project satisfies §248(b)(2) by a showing that: 1) there must be present and future demand for natural gas service in Addison County; 2) the investment in and/or construction of the pipeline must be *required* to meet that present and future demand; and 3) consistent with least-cost integrated resource planning, the proposed pipeline must be the lowest-cost option for meeting that demand compared to energy conservation, energy efficiency, or load management measures. The Board must also find that the purchase, investment or construction “*will* result in economic benefit to the State and its residents” in accordance with §248 (b)(4) (emphasis added).

We urge the Board to hold VGS to the same standard as any other utility and require that the company demonstrate that its proposed Project still meets the §248 standards in the face of clear and convincing evidence that the Project would not have passed the §248 test in light of new evidence. We ask that the Board determine whether to reopen the case on the basis of all of the facts. We ask that the board subject the project to a reasonably rigorous evaluation, applying either the original standards set by the Board or reasonably rigorous and peer-reviewed measures that have been subjected to review by all parties. We also ask that the Board give close consideration to the rights of working Vermonters, who are current or prospective residential and small business customers of VGS, to just and reasonable rates, and to the protections of the Vermont Constitution. They must be given reasonable notice and opportunity to comment on new Project conditions. Additionally, many details of misstatements of costs, lack of updated market information, speculative calculations of rate impacts, and optimistic savings, emission reductions,

and market saturation targets have yet to be subjected to reasonable quantitative risk analysis. If the Board reviewed the case again today, the outcome would likely be different.

**III. RULE 60(b)(2) RELIEF FROM JUDGMENT (NEWLY DISCOVERED EVIDENCE) – APPROPRIATE MEASURES OF DEMAND AND ECONOMIC BENEFIT**

As a preliminary matter, we are disturbed by the unjustified changes, made by VGS and PSD the measures and economic modeling tools, including the assumptions and inputs, used to determine the Project’s compliance with §248(b)(2) and 248(b)(4) criteria across the three proceedings (original, first remand, and second remand). Specifically, VGS has eliminated “inconvenient” inputs previously included in its methodology and model such as increased rates and loss of expendable income for current customers. PSD has added previously ignored “indirect” benefits and alternative Project financing scenarios that were never mentioned previously. The effect in both cases is to skew the net economic benefit in VGS’ favor.<sup>5</sup> As a practical matter, allowing utilities and PSD to “move the goal posts” (in this case closer) whenever cost increases threaten a project’s compliance with §248 would remove regulatory certainty for opposing parties and render Rule 5.409 meaningless. Opposing parties would face an insurmountable burden of proof on appeal or motion for relief from judgment and face an impossible task of identifying changes, investigating the validity of changes, and either proving them unreliable or proposing and proving the merits of alternative models under severe time constraints. Opposing parties would also be robbed of their capacity to make strategic litigation choices in the context of ever-shifting standards. In the absence of a second round of discovery and sur-rebuttal testimony, opposing parties have been

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<sup>5</sup> For a more comprehensive discussion, see Section V.A.ii below.

left at an even greater unfair disadvantage to meet the evidence burden of Rule 60(b)(2). Roughly 400 ratepayers filed complaints with the PSD about the surcharges and the amounts that will likely be recovered in rates in connection with the current Project cost, and their complaints were not voiced by the PSD during the recent proceedings. This is extremely concerning. The non-disclosure of the full cost of a project upon application for a CPG and the material changes to project costs of this magnitude after the issuing of a CPG disadvantage the ratepayers, landowners, and organizations with limited funds available to litigate their undeniable interests and energy justice issues. This undermines their rights to reasonable notice so that decisions can be made about whether to intervene in a case. Perhaps worst of all, if the Project's CPG is not reopened, it will demonstrate that lowballing project costs to obtain a CPG is an acceptable and effective approach to circumvent regulation in the pursuit of a CPG.

**IV. DISCUSSION - RULE 60(b)(2) RELIEF FROM JUDGMENT (NEWLY DISCOVERED EVIDENCE) – NEED TO MEET CURRENT AND FUTURE DEMAND - 30. V.S.A. §248(b)(2)**

The Project is not required to meet a need for present and future demand for thermal energy service because service because no such demand exists that cannot already be met through alternative, lower-cost, and temporary bridging fuel sources.

**A. The Demand for Lower Priced Thermal Energy Services Is Satisfied by Energy Efficiency Measures, Heat Pumps, and Compressed Natural Gas.**

Since December 23, 2013, three new substitute thermal energy products and services have entered the Addison County market: 1) multi-head cold climate heat pumps, often in combination

with building energy efficiency retrofits, 2) *Compressed Natural Gas* (CNG) tanker transportation services directly to the large-scale industrial process customer's premises, and 3) CNG tanker transport to a CNG unloading facility supplying a local gas distribution network (a. k. a. "gas island"). Another substitute thermal energy service has the potential to enter the Vermont and Addison County markets: CNG canister delivery services to small-scale businesses and residences. Such CNG canister service would be extremely competitive in the Vermont thermal energy marketplace, but this type of service is currently encumbered by a regulatory barrier to market entry<sup>6</sup>. CNG is a temporary solution for customers in need of a thermal energy fuel with no other present-day renewable alternatives.

The advent of these four substitute thermal energy services in Addison County eliminates the need for present and future demand for gas thermal energy services delivered by pipeline. VGS has produced no new evidence to show how competition from these alternatives will impact demand for its product<sup>7</sup>. The Board can no longer assume the historic consumer behavior VGS has observed in its existing customer base because Vermont has statutory goals to reduce its GHG emissions<sup>8</sup>. The public goals have precedence over a private corporation's profit goals, and, therefore, VGS's forecast of market penetration rates may be inflated given future policy changes and incentives instated to meet the 10 V.S.A. § 578 statutory goals. Pursuant to V.R.C.P. Rule 60(b)(2), these competitive developments are of "*such a material and controlling nature as will probably change the outcome.*" The obsolete assumptions in this Docket's evidentiary record supporting a

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<sup>6</sup> PSB Docket 7970 Second Remand, *Rebuttal Testimony of George Gross on Behalf of Nathan Palmer*, May 28<sup>th</sup> 2015, page 6, lines 80-87.

<sup>7</sup> PSB Docket 7970 Second Remand, *Order Re Palmer Motion to Compel Discovery*, June 6<sup>th</sup> 2015, page 6, The Company has stated that "it did not perform market research analysis of the type requested, and that it did not rely upon such information for its testimony."

<sup>8</sup> 10 V.S.A. § 578

Certificate of Public Good must be reviewed in light of these competitive developments.

It is no longer certain the Project can cost-effectively deliver natural gas at the lowest price per million BTU compared to these competing options: cold climate heat pumps, building energy efficiency retrofits, CNG tanker transport, CNG gas island, and CNG canister transport. VGS' proposed investment of this magnitude creates an undue risk that VGS will not meet its target market penetration, and the Project may not generate the expected revenue needed to sustain underlying business assumptions. Consequently, there is a previously unrecognized yet credible risk that the Project could financially fail. The collateral economic damage from such an event would clearly not "*promote the general good of the State*" (30 V.S.A. § 248(a)(3)).

**i. Cold Climate Heat Pumps and Energy Retrofits are the most cost effective Residential Solution**

As a general approach, the most cost-effective solutions in the residential thermal energy market are the ones that minimize the building owner's exposure to the price volatility of fossil fuels on the global energy market. As would be expected, the three best available options<sup>9</sup> are constrained by the building owner's budget:

- The combination of a *Cold Climate Heat Pump* (CCHP) with a purchase of community solar panels does provide the lowest overall total cost of ownership. It does so by generating your own electricity to power the CCHP<sup>10</sup>. However, that solution demands an initial capital investment well beyond the means of most ordinary Vermonters. The alternatives of a cold climate air source heat pump or a building energy efficiency

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<sup>9</sup> PSB Docket 7970 Second Remand, *Pre-filed testimony of George Gross on Behalf of Nathan Palmer*, page 38 lines 7-19, page 39 lines 1-11, May 8<sup>th</sup> 2016 (corrected), text reproduced with author's permission.

<sup>10</sup> It is understood that this is relying on net-meter credits to artificially "store" the abundant summer time electricity until it is needed in the winter. In the long-term, the correct solution would be seasonal timescale energy storage (e. g. a renewable energy fuel) technology for the solar energy harvested in the summer.

retrofit have lower initial capital requirements. They will be affordable by a larger fraction of Vermonters.

- The cold climate heat pump solution will usually require an initial capital investment between \$4,000 to \$10,000. In the representative heat pump scenario, the heat pump energy cost savings recovered its \$8,000 investment with within 7 years<sup>11</sup>.
- Building energy retrofit projects do not neatly fit into one tidy solution, they span a continuum of options. Experienced contractors will be adept at finding a set of such options fitting within the ceiling of a cash constrained budget. For this reason, the low budget energy efficiency projects (under \$10,000) will be where most Vermonters will start their energy investments.

ii. **Existing Energy Services in Addison County Avoids Committing Our Investment in a Fossil Fuel Infrastructure that Will Be Stranded by Our Migration to a Future Renewable Thermal Energy Fuel within the next Decade.**

Since December 2014, CNG tanker transport and gas island services have become available in Addison County<sup>12</sup>. On an interim basis, these services are satisfying the thermal energy requirements of Addison County's large-scale industrial process customers and the county's medium to large-scale building space heating customers. The Petitioner has postured this solution as a holding pattern until the ANGP pipeline is available. What the Petitioner does not acknowledge is that instead of building the ANGP pipeline, CNG energy services can be used to avoid committing the existing and projected new ratepayers to generate \$986M of

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<sup>11</sup> PSB Docket 7970 Second Remand, *Pre-filed Testimony of George Gross on Behalf of Nathan Palmer*, exhibit NP\_2R\_GMGROSS\_Exh-B, worksheet tab "assumptions", the heat pump's initial capital outlay assumption relies on D. Derrick's Docket 7970 First Remand testimony, exhibit 1, showing an installation quote from Jackman Inc.

<sup>12</sup> PSB Docket 7970 Second Remand, *Pre-filed Testimony of George Gross on Behalf of Nathan Palmer*, exhibit NP\_2R\_GMGROSS\_Exh-F, NG/Advantage March 2015 newsletter, May 6<sup>th</sup> 2015.

revenue by year 2047<sup>13</sup> for a fossil fuel infrastructure that is at risk of being abandoned before its debt is paid off. As the Board is well aware, 10 V.S.A. §578 sets a statutory goal of sourcing 70% or more of Vermont's energy from renewable sources by year 2050. The IPCC AR5 report is unequivocal in its conclusion: climate change is a societal survival issue and we are not responding quickly enough to avert an irrevocable global scale disaster.

In response to this mandate, within the next decade one or more renewable thermal energy technology<sup>14</sup> successor(s) to fossil fuels that are now in development will mature and they will start their global scale deployment. Vermont must be positioned to move nimbly to embrace the best one of these emergent solutions. If we are obligated to pay the projected cost of service that would be incurred by the ANGP pipeline investment, then our ability to make a migration to such a solution would be delayed until 2047. Though the Petitioner has conjectured that renewable natural gas could be a successor to fracked gas<sup>15</sup>, there is no evidence<sup>16</sup> in this docket substantiating the hypothesis there will be an economically competitive and scalable renewable gaseous energy technology that could reuse the ANGP infrastructure sooner than 2047<sup>17</sup>. Unlike the ANGP pipeline, CNG provides

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<sup>13</sup> PSB Docket 7970 Second Remand, Pre-filed Testimony of Barbara Wilson on Behalf of Nathan Palmer,

<sup>14</sup> *IPCC Special Report on Renewable Energy Sources and Climate Change Mitigation, 2011, Chapter 2 Bioenergy*, Edenhofer, Pichs-Madruga, Sokona, Seyboth, Matschoss, Kadner, Zwickel, Eickemeier, Hansen, Schlomer, Von Stechow (editors).

<sup>15</sup> 6/22/15 D. Rendall, THT at 34:1-9.

<sup>16</sup> *Id.*, at 34:18-19.

<sup>17</sup> We examine this issue further in a subsequent section, which at a high level identifies there are unquantified adverse land-use and greenhouse gas emission impacts from developing large-scale (9 to 15 Bcf per year) renewable natural gas production in Vermont.



a genuine bridge fuel capability<sup>18</sup> because it does not incur the unacceptable societal risk that the huge ANGP pipeline cost of service will preclude Vermont's rapid movement to the best future renewable thermal energy fuel.

**B. Future Thermal Energy Services Will Demand Compliance with GHG Emission Reduction Statutes even though the Project Can Not Credibly Claim Compliance**

The Project does not specify a binding plan as to how it will meet the future demand for a renewable thermal energy carrier. To satisfy the statutory goals in 10 V.S.A. § 578, the VGS network's total GHG emissions must be reduced by 50% by year 2028 relative to the 1990 baseline. In the Docket 8180, the PSD proposed<sup>19</sup> a biomethane transition that over a 20-year period would optionally displace 20% of the VGS system-wide gas purchases. The same PSD proposal had loopholes to allow the substitution of fossil-fuel gas for thermal energy applications. To realize our migration to zero carbon dioxide and methane emissions, a future thermal energy service must transition to a renewable and sustainable energy carrier. Yet as of this writing, there is no scalable renewable energy carrier production process and associated binding plan to make that transition for Vermont's gaseous thermal energy applications. In the Docket 8180, biomethane production from dairy farms and other sources was evaluated extensively.<sup>20</sup> That testimony found that there were potentially insolvable problems with respect to scaling up to 15 Bcf per year.<sup>21</sup> Biomethane production also has significant land use impacts that have not yet been fully qualified or quantified by any party.

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<sup>18</sup> As part of the "bridge" solution, the market may choose to deploy gas/liquid dual fuel capability and/or CNG storage to satisfy firm space heating service availability requirements. The investment in this additional infrastructure will not be of sufficient scale as to obstruct the migration to the preferred renewable energy fuel.

<sup>19</sup> PSB Docket 8180, *Rebuttal Testimony of Walter (TJ) Poor on Behalf of Department of Public Service*, September 12<sup>th</sup> 2014.

<sup>20</sup> PSB Docket 8180, *Surrebuttal Testimony of George Gross on Behalf of Solar Haven Farm LLC*, November 14<sup>th</sup> 2014.

<sup>21</sup> *Id.*, G. M. Gross surrebuttal testimony, page 7 lines 142-146.

Absent a credible plan to reduce its GHG emissions in alignment with Vermont's statutory goals, the conclusion is that the Project must be retired long before the end of its 50-year service life. In other words, based on the testimony filed in the Docket 8180, the Project is already known to be a future stranded public infrastructure investment.

### **C. The Project's Absolute Global Warming Potential Metric**

To avoid unreasonable risk of adverse impacts on Vermont's environment, natural resources, and climate, the Board must apply the most recent internationally supported science on methane emissions. Among the new evidence to emerge since the December 2013 order is the publication of the volume authored by the IPCC Working Group 1 (WG1) Assessment Report 5 (AR5) entitled "*Climate Change 2013: The Physical Science Basis*"<sup>22</sup>. Within the IPCC WG1 AR5 volume's series of chapters, the Chapter 8 "*Anthropogenic and Natural Radiative Forcing*" describes the underlying physical science research supporting the specification of the most widely applied GHG emission metrics. In his testimony, Mr. Palmer's witness George Gross<sup>23</sup> identified a problem in the well-known *Global Warming Potential* (GWP) GHG measurement metric that has been relied upon by all parties in the Docket 7970 to calculate GHG reduction economic benefits. In particular, the time horizon used to calculate methane's GWP was set to 100 years by several parties, despite the fact that the IPCC WG1 AR 5<sup>24</sup> cautions that:

***"There is no scientific argument for selecting 100 years compared with other choices. The choice of time horizon is a value judgment because it depends on the relative weight assigned to effects at different times."*** [bold emphasis added]

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<sup>22</sup> IPCC Working Group 1, Assessment Report 5, *Climate Change 2013: The Physical Science Basis*, <http://www.ipcc.ch/report/ar5/wg1/>

<sup>23</sup> PSB Docket 7970 Second Remand, technical hearing transcript June 23<sup>rd</sup> 2015, page 303 line 6 through page 305 line 10.

<sup>24</sup> Id. IPCC WG1 AR5 Chapter 8, page711

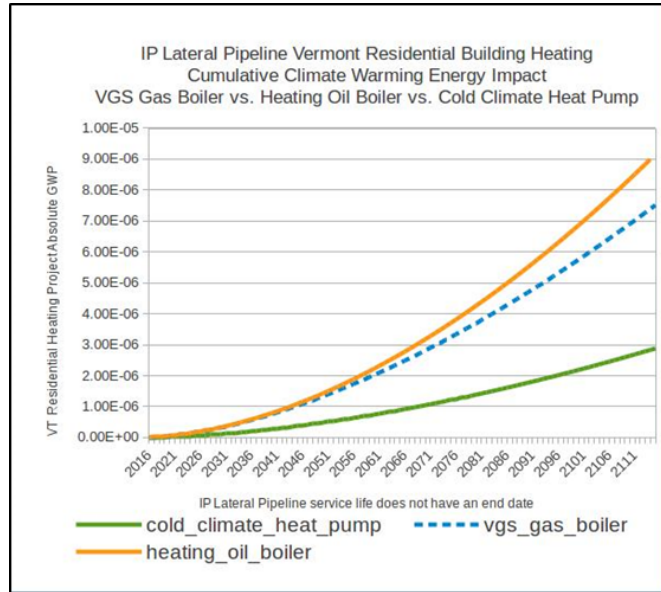
This warning from the IPCC highlights how the author of an otherwise objective scientific GHG emissions analysis can subjectively alter the methane or other near-term climate forcers (NTCF) gas's Global Warming Potential factor value and change the conclusions that are drawn from that GHG analysis. By selecting the favorable GWP time horizon<sup>25</sup>, a person or business can bias the decision making process of regulators who interpret a project's GHG emissions. Importantly, if GHG emissions evidence is presented with different GWP time horizons, interpretations of GHG emissions can be confused. In January 2015 testimony in Docket 8180, the Palmers' witness and a landowner intervener in that Docket, Mr. Gross, developed an alternative application of the IPCC WG1 AR5 GHG emission metrics, called the "Project Absolute Global Warming Potential," to measure the proposed pipeline project's societal costs that did not depend on GWP.

In short, the *Methane Global Warming Potential* metric and its interrelated CO<sub>2</sub>e emissions per MM-BTU factor as they are currently being applied by multiple Parties to this Docket 7970 is subjective and potentially biased. The Board's prior reliance on such evidence cannot lead to a judicially fair decision. In the interests of fairness, the Board should decide to grant the motion Rule 60(b)(2) to reflect this new scientific information. Instead of the subjective and biased kilograms of CO<sub>2</sub>e per MM-BTU metric currently being applied to CO<sub>2</sub>, Methane, and other GHG emissions in this Docket 7970, the newest climate science available in the IPCC WG1 AR5 would argue for replacing the existing GWP and CO<sub>2</sub>e metrics with a GHG metric based on the project's cumulative *Absolute Global Warming Potential* (AGWP) summed across all of its GHG emissions over the time period. The AGWP formula for each type of GHG is defined in the appendices of the

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<sup>25</sup> Id. IPCC WG1 AR5, Chapter 8, section 8.7 Emission Metrics, page 714, "User related choices (see Box 8.4) such as the time horizon can greatly affect the numerical values of the CO<sub>2</sub> equivalents."

IPCC WG1 AR5, Chapter 8. In his study, Mr. Gross applied the IPCC AGWP metrics to cold-climate heat pumps. An illustration excerpted from that study is shown below.



It shows the GHG emission climate warming impact of space heating with either gas or heating fuel oil as being nearly identical throughout the building's service life. In contrast, heat pumps were substantially lower in their AGWP.

**D. Residential Demand for a Thermal Energy Service has not been Researched and Measured by a Qualified Expert**

There has been substantial effort expended by multiple parties to quantify the ongoing costs of heating using various fuels and the initial costs of converting a residence from its existing heating plant to another<sup>26</sup>. Although this information is valuable in a theoretical sense, it ignores the vast body of scientific research by experts who study and understand human behaviors, their beliefs, and decisionmaking processes for complex purchases such as heating systems. It is clear the

<sup>26</sup> PSB Docket 7970 Second Remand, respective pre-filed testimony documents of B. Wilson on behalf of Palmer, G. Gross on behalf of Palmer, Fyles on behalf of Palmer, Coda on behalf of VFDA, Hopkins on behalf of PSD.

residential thermal energy market has a bewildering array of cost factors and site-specific assumptions that might shape consumer demand for the ANGP gas product. It is also clear that no party has presented definitive expert testimony on these human factors. There are the many changes noted earlier in the market's set of competing CCHPs and other thermal energy options. It would be unwise for the Board to base a decision to continue a \$153.6M construction project without an assurance that there is data to support one's confidence that this investment will be a warranted.

**E. The Project No Longer Complies with Least-cost Integrated Planning Requirements under § 248(b)(2)**

§248(b)(2) specifically directs the Board:

*“In determining whether this criterion is met, the Board shall assess the environmental and economic costs of the purchase, investment, or construction in the manner set out under subdivision 218c(a)(1)(least cost integrated plan) of this title...”*

In its December 2013 order, the Board concluded<sup>27</sup> that the VGS Project was the least cost integrated plan to deliver thermal energy services to Addison County. As shall be discussed below, based on the current new evidence this conclusion is no longer accurate. The Project is no longer the least cost integrated plan to deliver thermal energy services to the Addison County market segments.

The calculation of a “least cost” integrated plan starts by identifying a set of roughly comparable candidate integrated thermal energy plans. Each such integrated plan is offering services capable of “meeting the need for present and future demand for service”, as per 30 V.S.A. § 248(b)(2). In

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<sup>27</sup> PSB Docket 7970 Order Re Certificate of Public Good, December 23<sup>rd</sup> 2013, page 70.

the current Docket 7970 context, there are two such candidate integrated thermal energy plans:

1. Addison Natural Gas Pipeline gas service with a construction cost of \$153.6M.
2. The “*Alternative Integrated Thermal Energy*” plan provides both unregulated CNG tanker transport and regulated CNG gas island services to the industrial and commercial markets. These markets are comprised of the following VGS rate classes: Interruptible Sales Service, G4, G3, and G2. In the residential and small-scale business market segments (VGS rate R and rate G1 respectively), instead of using CNG, install cold climate heat pumps and/or building energy efficiency retrofits. Note that heat pump installations meeting the qualifications specified by 30 V.S.A. § 209(d)(3)(c) are integral to an energy efficiency project and therefore when considered in the context of 30 V.S.A. § 248 (b)(2) such heat pumps are energy efficiency measures.

An integrated thermal energy plan's total cost over a specified time period is a tally of the project's following component cost items. They are summed over the time period spanning from 2014 through 2049:

- The integrated thermal energy plan's cumulative cost over the time period for those major cost/expense components paid by the ratepayers<sup>28</sup> that are largely independent of the gas volumes sold, which includes but is not is not limited to: a gas pipeline network's Operations and Maintenance service expenses; return requirement, in other words the repayments of the project's capital investment (debt principal and returning equity to the shareholders); and debt interest payments; property taxes.

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<sup>28</sup> PSB Docket 7970 Second Remand, Attachment A.PSD.VGS. 1-1.2 No IP \$153.6 December 2014 2014 EIA to 2049.xls, worksheet tab “financial analysis”, rows 57, 59, 62, and 85, January 15<sup>th</sup> 2015.

- The VGS shareholder's *Return on Equity* (ROE) applied to the project's "rate base", accumulated over the studied time period. For VGS, the ROE is currently set at 10.26%.<sup>29</sup>
- The monetized cost of the integrated thermal energy plan's cumulative GHG emissions over the studied time period. This cost item corresponds to the societal economic cost specified by 30 V.S.A. § 218c(a)(1)(B): "*the State's progress in meeting its greenhouse gas reductions goals*". In light of the IPCC WG1 AR5 guidance and the subjective bias inherent in the methane GWP, this cost quantity should be based on the Project's AGWP metric instead of the kilograms of CO<sub>2</sub>e per MM-BTU metric that has been in common regulatory usage up until now.

The 30 V.S.A. § 218c(a)(1)(C) economic cost represents "*the value of the financial risks associated with greenhouse gas emissions from various power sources*". In this context, the financial risk that must be quantified is caused by a family of well-known climate warming feedback mechanisms [<sup>30</sup>]. The climate science community recognizes these are "tail risks" at the far end of a Bell curve shaped probability distribution function. However, if any one of them were to be triggered then it would start an irreversible chain of self-reinforcing feedback loops leading to global catastrophic warming followed by the collapse of agriculture. The disconcerting thing about these climate warming feedback loops is the poor level of confidence that the climate scientific community currently has in its estimates of the threshold level at which our GHG emissions might trigger one of these feedback loop mechanisms. A complete integrated thermal energy plan cost tally must quantify this risk of the potential climate induced economic damage incurred by Vermont.

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<sup>29</sup> PSB Docket 7970 Second Remand, Attachment A.PSD.VGS. 1-1.2 No IP \$153.6 December 2014 2014 EIA to 2049.xls, worksheet tab "financial analysis", row 22, January 15<sup>th</sup> 2015.  
<sup>30</sup> *What We Know: The Reality, the Risks and Response to Climate Change*, American Association for Advancement of Science, page 15-19, section entitled "Abrupt Climate Change", <http://whatweknow.aaas.org>

**i. § 218c(a)(1) as It Applies to the Project**

The Project's cost components and ROE costs are published in the Petitioner's supporting financial analysis spreadsheet exhibits. There should be little difficulty summing them over the integrated thermal energy plan's time period of 2014 through 2049. Developing the Project AGWP would leverage the existing formulas implemented in the Docket 8180 spreadsheet exhibit authored by Mr. Gross. Most of the work would be reconfiguring that spreadsheet for each type of GHG to scale the gas's AGWP by the VGS ANGP forecast of the annual MM-BTU consumed of each fuel over the time period. We urge the Board to review the evidence presented in the Relief from Final Judgment proceeding to decide the open question of what monetary value to assign to the computed AGWP.

**ii. § 218c(a)(1) as It Applies to the Alternative Integrated Thermal Energy Plan**

The Alternative Integrated Thermal Energy Plan must go through an analogous cost assessment methodology as one will have done for the Project. The obvious modification is the scaling the Operations and Maintenance costs in proportion to the number of CNG tanker truck round trips. Initial capital costs will be primarily the CNG unloading facility, CNG tanker trailers, and the gas island distribution network. In the residential market segment, the Project AGWP calculation must account for displacement of ANGP gas product GHG emissions by cold-climate heat pumps and building energy efficiency retrofits.

**F. The Least-Cost Integrated Thermal Energy Plan Must Be Determined in the Relief from Final Judgment Proceeding**

No party in the Docket 7970, including the Petitioner, has done a least-cost integrated thermal energy plan analysis of the Project versus an alternative integrated thermal energy plan. Such an



analysis would quantify the Project's GHG emission costs using today's best available climate science and metrics. This information was not previously available during earlier chapters in this proceeding. On the basis of this new evidence, we urge the Board to open a Relief from Final Judgment proceeding.

**V. RULE 60(b)(2) RELIEF FROM JUDGMENT (NEWLY DISCOVERED EVIDENCE) – ECONOMIC BENEFIT TO THE STATE AND ITS RESIDENTS – 30 V.S.A. §248(b)(2)**

**A. The newly discovered evidence related to economic benefit meets the requirements for relief from judgment under Rule 60(b)(2).**

- i. The second cost increase, according to the Board's rules is material.<sup>31</sup> It is greater than 26% over \$121.6m. The second estimated cost is 170% of the budget approved by the Board in the December 23, 2013 Order and CPG.**

The second cost increase could not have been discovered by opposing parties through reasonable due diligence because the information was in the sole possession of the VGS and its project management contractors. VGS's expert witness, Ralph Roam of PwC admitted under oath that he and VGS Project Executive Sponsor, Jim Sinclair were aware that there would be a second substantial increase "in September 2014."<sup>32</sup> VGS knew of the second increase while the Board was still reviewing the first estimated cost increase under Rule 60(b)(2), but did not

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<sup>31</sup> "Second VGS cost increase" is a misnomer since the 12/19/14 cost increase is the third cost increase since VGS filed its Petition on 12/20/12. The original estimated Project cost was \$83.8m. On 2/28/13, VGS submitted supplemental testimony and a revised estimated Project cost. See EXH. PET. SUPP. JH-11 (2/28/13).

<sup>32</sup> 6/22/15 THT, Testimony of Ralph Roam, at p.110, line 3.

disclose this information. During the technical hearing on the first cost increase, VGS's witnesses, Eileen Simollardes and Donald Gilbert, were each asked whether they expected another material increase they both testified that they could not guarantee that there would not be a cost increase, but they believed that the budget was close to final with contracts signed, materials purchased, mainline transmission construction bids received, and 70% of right of ways signed.<sup>33</sup>

- ii. **Without relief from judgment, opposing parties would be unduly prejudiced, and ratepayers and others in affected counties would be denied the opportunity to comment on VGS's material increases in rates, reduction in savings, and changed circumstances regarding the cost-competitiveness and global warming potential of VGS's pipeline expansion.**

None of these individuals and entities had the opportunity to consider the implications of the much higher cost of the Project for the potential economic benefit to residents of the State and the accuracy of VGS' claims with respect to net economic benefit for the State. VGS, has changed the economic measures used to calculate economic benefit essentially by removing debits to net economic benefit such as increased rates and loss of expendable income for current residents.<sup>34</sup>

DPS has developed its own new methodology and model that includes, inter alia, inclusion of indirect and hard-to-quantify economic benefits, and the capacity to test multiple scenarios based

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<sup>33</sup> See 9/26/2014 THT, Testimony of Donald Gilbert and Testimony of Eileen Simollardes.

<sup>34</sup> e.g. increase in assumed dollar value per ton of Co2 emissions, change of NPV discount rate, exclusion of rate impact and reduction in current ratepayers' expendable income, partial versus comprehensive economic impact analysis, reliance on future adjustments to VGS return on equity, capital structure, rates and rate allocations. See 7/22/15 THT, Simollardes at p.216, line 17 to p.220, line 23.

on hypothetical changes to the capital cost structure of the project so that hypothetical outcomes of future rate cases can be applied to the analysis.<sup>35</sup> Neither has presented any persuasive evidence that this model is more accurate, complete or reliable than the alternative measures and methodology proposed by AARP's experienced utility economist, Dr. David Dismukes. Both AARP and citizen witness, Barbara Wilson, testified to simple math mistakes, spreadsheet coding errors, and methodological problems with the assumptions, inputs, economic modeling tool, and calculations of economic benefit. More importantly, in pre-filed testimony, VGS's CEO, Don Rendall stated that VGS had conducted an economic net benefit analysis and determined that the project would produce \$229.4 million over 35 years in net economic benefit to the State of Vermont.<sup>36</sup> However, VGS's economic analyst, who carried out the analysis referenced in Mr. Rendall's pre-filed testimony himself testified that he had not, in fact, carried out an economic impact analysis but had rather carried out a much more narrow analysis of the net benefits to the State from Project construction.<sup>37</sup>

In turn, the PSD's witness, Dr. Asa Hopkins, stated that he had lingering concerns about the reliability of PSD's economic modeling and net benefit analysis.<sup>38</sup>

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<sup>35</sup> 5/6/15 Hopkins PFT (Second Remand Testimony) at p. 24, line 16 to p.25, line 24.

<sup>36</sup> 3/27/15 PFT, Rendall, at p.5, lines 2-4. Referring to Ms. Simollardes testimony, Mr. Rendall stated, "the Project has substantial net benefits of approximately \$91.6 million over the next 20 years. These benefits will continue to accrue for many years beyond. Over the next 35 years, the net benefits are estimated to be over \$229.4 million."

<sup>37</sup> 07/22/15 THT, Heaps at p.140, lines 3-16; see also Simollardes at p.217, lines 13-17.

<sup>38</sup> 05/20/15, Continued Deposition of Asa Hopkins, at p.24, line 16 to p.25, line 24.

iii. **If the case were reopened, opposing parties would prevail on the merits of a challenge to the Project's adherence to §248(b)(4).**

Opposing parties have offered ample evidence to support a conclusion by the Board that VGS has not accurately depicted the economic benefits and losses of the Project. We will also demonstrate below that the second increase is a “game changer”. If opposing parties’ claims are proved, it will confirm that the Project: 1) will no longer deliver any tangible benefit to ratepayers; 2) cannot feasibly result in economic benefit to the State without violating the rights of VGS residential and small business customers to just and reasonable rates; and 3) will not afford economic benefit without violating the rights of residential ratepayers and landowners, under Article 7 and Article 18 of the Vermont Constitution. Finally, if proved, opposing parties’ claims will demonstrate that if VGS respects these legal and Vermont Constitution protections, the necessary reallocation of costs to large commercial and industrial customers would undermine demand for natural gas service of these anchor clients. In other words, without what amounts to a subsidy from current residential ratepayers, natural gas service by pipeline is a much less attractive option to potential large-scale commercial customers. The inescapable conclusion will be that VGS’ latest cost increase has placed the Project in a no-win situation, in which it will not be able to comply with Vermont’s other laws, generate enough demand that the Project is required to meet that demand, and deliver an overall economic benefit.

iv. **VGS will suffer no prejudice if the Board grants relief from judgment and reconsiders whether to issue a CPG.**

Don Rendall stated that the company looked forward to engaging in a review process similar to that of the first remand. Furthermore, this proceeding is of VGS's own making. VGS has admitted to serious cost estimation and cost control failures and to misconduct related to disclosure of the first cost increase. Mr. Roam's testimony reveals that the Board could have considered the entire 77% cost increase during the first remand. Instead, the Board and Parties have expended additional resources and funds associated with the second cost increase, coupled with a severe imbalance in access to working papers and hard evidence from VGS of customer savings, projected rate impacts, and other data critical to calculating economic benefit (and losses) associated with the Project.

B. **If the Board reopens the case, opposing parties will prove that Petitioner's evidence of economic benefit is based on unreliable data, modeling, calculations, and analysis and is thus insufficient to support net economic benefit to the State.**

VGS's net economic benefit analyses thus suffer from several troubling deficiencies:

- VGS's own expert witness, Mr. Heaps, testified under oath that VGS did not commission him to do a net economic benefit analysis and that he never did such an analysis. His analysis was confined to the economic benefit from Project construction.
- Mr. Heap's findings regarding disposable income and job losses contradict VGS's economic analyst, Mr. Carr, during the original proceedings, whose findings were consistent with

those of Dr. Dismukes. The Board based its original findings and conclusions related to economic benefit, in part, on Mr. Carr's testimony.<sup>39</sup>

- VGS's has admitted that its original project management team failed miserably in cost estimation, project management, and risk analysis and mitigation. In September 2014,<sup>40</sup> VGS outlined a number of improvements that it was making to the project team and cost controls. It's now evident that none of these improvements was applied to the estimation, control, or risk assessment of Project revenues, rates, gas costs, customer savings, or conversion rates and market penetration. AARP's expert and a citizen witness, Ms. Wilson, found several errors and inconsistencies in VGS's spreadsheets and projections.
- VGS's potential customer conversion projections for Addison County are almost three years old when market conditions favored natural gas to a much greater degree than they do today even without counting expected rate hikes.
- PricewaterhouseCoopers (PwC) cost estimation expertise and quantitative risk analysis (QRA) identified a 78% increase Project costs over the approved Project budget. Nevertheless, VGS has done no QRA on any other aspect of project besides costs.
- Mr. St. Hilaire testified that there was no risk of higher tolls for transportation of natural gas to the Vermont border. According to the Reasons for Decision, referenced in Mr. St. Hilaire's rebuttal testimony, "Overall, TransCanada's proposed tolls, which are to be set for six years (subject to reevaluation during the 2018 to 2020 toll review discussed in Chapter

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<sup>39</sup> See 7/22/15 THT, Simollardes at p. 213, line 25 to p.219, line 4.

<sup>40</sup> See 9/26/14 THT, Gilbert at p. 123, line 23 to p.128, line 13.. See also: 7/22/15 THT, Rendall at p.63, line 4.

8), increase tolling levels set in the RH-003-2011 Decision by 52% for Eastern Triangle short haul, 18% for Eastern Triangle long haul, and 12% for all others.”<sup>41</sup>

- Even if VGS changes its delivery or receipt point for natural gas to a location closer to the Vermont border, the transport cost will be rolled into the gas cost since the gas still has to get to that closer facility.
- Mr. Hilaire may be unaware that TransCanada’s proposed Energy East project is progressing, and still a risk to VGS’s gas supply. Mr. St. Hilaire used exclusively the past tense (e.g. “Energy East was....”). TransCanada has never suggested that it planned to cancel the Energy East project, TransCanada submitted revised application materials with the National Energy Board of Canada (NEB) on June 30, 2015. According to the Reasons for Decision, referenced in Mr. St. Hilaire’s rebuttal testimony, the conditions of the Decision are not applicable to Energy East. TransCanada’s capacity contracts can be terminated in connection with infrastructure modifications.
- VGS and PSD have made significant changes to the theoretical underpinnings, measures, modeling tool, assumptions, inputs, and standards since the original proceeding and again since the first remand. Experts carrying out economic benefit analysis are also all new.
- Mr. Rendall and Ms. Simollardes testified that the rate sheets provided at the Board’s request are not indicative of future rate increases. If this is true, VGS savings projections, like its expected conversion rates and market analysis, are questionable. Since savings are a key to calculating net economic benefit, VGS calculations of net benefit are inconclusive.
- VGS did not conduct quantitative risk analysis on project elements other than cost.

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<sup>41</sup> National Energy Board of Canada, Reasons for Decision, TransCanada PipeLines Limited, RH-001-2014

**C. The PSD's finding of net economic benefit is flawed.**

The PSD has not sufficiently vetted VGS's updated costs or economic benefit analysis measures, modeling, assumptions, inputs, or calculations for the Board to rely on its calculation of net economic benefit. For example,

- PSD did not vet or verify VGS's cost estimate or work breakdown schedule. In September 2014, PSD also admitted that it had not verified VGS's updated costs. Nine months later, VGS has admitted that the Project's executive sponsor knew about the likelihood of a material cost increase at around the same time. If PSD had reviewed VGS's updates more carefully, the cost estimation error could have been identified more quickly.
- Dr. Hopkins admits that all of PSD's economic analysis and modeling were based on VGS's numbers. PSD did not assess the accuracy, completeness, or reliability of the numbers provided by VGS.
- Since PSD relied on VGS's assumptions and inputs, PSD's calculation of net economic benefit is inconclusive and biased too.
- VGS and PSD changed the assumptions, inputs, modeling, and measures for estimating the economic benefit of the Project. We don't know whether the Project still would have shown an economic benefit under the original scenario and analysis.
- PSD's expert witness, Dr. Hopkins, expressed doubts about the effectiveness of the REMI modeling tool and the validity of the results of PSD use of the tool. He stated that their analysis of the Project's net benefit was "improving," but that he was not yet satisfied with



it. Ms. Wilson also identified a material error in one of PSD's spreadsheets after Dr. Hopkins gave oral testimony.<sup>42</sup>

- AARP's Dr. David Dismukes, an experienced PhD utility economist, also expressed numerous concerns with VGS's and PSD's economic benefit analysis and presented his own estimate, which produced substantial net losses.
- PSD has done no market research or evaluation in Addison County, and Dr. Hopkins did no market research or literature review on consumer fuel switching before preparing his comparative analysis of the market demand for natural gas and heat pumps.

Without reliable assumptions and inputs for Project revenues, rates, gas costs, customer savings, conversion rates, and market penetration, VGS economic net benefit analysis should be given no credence by the Board. If the Board reopens the case, VGS would have an opportunity to present new evidence and a more reliable net economic benefit analysis. VGS could also introduce quantitative risk analysis (QRA) and other performance management methodologies to increase confidence in its non-cost projections. PSD would have an opportunity to continue to improve its modeling techniques and to evaluate the accuracy and completeness of VGS assumptions and inputs. Since VGS will recover all of the Project costs from ratepayers, it seems sensible for VGS's customers to demand risk mitigation, effective performance management, and regulatory oversight after another substantial cost increase.

The analytical framework, used by VGS and PSD to change the assumptions, inputs, measures, and model for calculating net economic impact and net present value, if accepted by the Board as valid,

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<sup>42</sup> 6/23/15 THT at 261:6-24 (Barbara Wilson).

would undermine the credibility of the Board's review process. The Board required that VGS provide like rate calculations so that the updated rate information could be compared to prior proceedings. It seems logical that the Board would also require like analyses of economic benefit and also like Project cost updates and work breakdown areas (WBAs).

**D. A finding of economic benefit to the state and its residents cannot be predicated on future intervention by the Board.**

- i. As a practical matter, VGS cannot rely on possible future board decisions in other Dockets as evidence for the proposition that the Project will result in economic benefit under §248(b)(2).**

VGS' August 28, 2012 Successor Alternative Regulation Plan ("Successor Plan"), established, and authorized *inter alia*, a new approved cost of service and base rate, as well authorized capital structure (55%) and a new base ROE and ROE adjustment mechanism. Under the Successor Plan, the initial term of which expires on September 30, 2015, VGS is required to file an Alternative Regulation Purchase Gas and Annual Rate Adjustment on an annual basis.<sup>43</sup> VGS is also required to file petitions to the PSB for approval of changes to the company loan instruments or new equity placements.<sup>44</sup> VGS, with DPS support,<sup>45</sup> now contends that the Board's decisions in these other dockets and dockets like them will heavily influence the net economic impact of the Project

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<sup>43</sup> See 8/21/12 Order, Dockets 7803, Petition of Vermont Gas Systems, Inc. for approval of a Successor Alternative Regulation Plan and 7843, Investigation into tariff filing of Vermont Gas Systems, Inc. re: proposed Cost of Service.

<sup>44</sup> See e.g. 11/8/2013 Order, Docket 8131 Petition of Vermont Gas Systems, Inc. for approval of 1) issuance of First Mortgage Bonds in the amount of \$35,000,000; and 2) three-year extension of existing Unsecured Revolving Debt of up to \$45,000,000.

<sup>45</sup> See 5/6/15 Hopkins PFT at p.15, line 16 to p.16, line11.

thereby implying that the Board has control over the economic impact of the Project and can correct any deficiencies in the future through its own action.<sup>46</sup>

Additionally, the plain language of §248 does not support VGS's and PSD's logic that there is no need for the Board to determine with any degree of certainty today that the Project will result in economic benefit to the State and its residents because the Board can influence the economics of the Project in future rate cases and other dockets. The plain language of §248 mandates the Board determine that the Project complies with §248 on the basis of the conditions at the time the Board issues an Order. §248 not only prohibits any company from beginning site preparation or construction of new facilities "*unless* the Public Service Board **first** finds that the same will promote the general good of the State and issues a certificate to that effect *pursuant to this section.*" §248 also says that "**Before** the Public Service Board issues a certificate of public good it **shall** find" that the Project **will** result in economic benefit to the State and its residents." In other words, the Board must evaluate and find that a Project will result in economic benefit before it can even contemplate whether to issue a certificate of public good. §248 does not say that the Board shall, for example give due consideration to whether a Project will result in economic benefit. The statute says that the Board "**shall find**" that the Project **will** result in economic benefit "**before**" it issues a CPG.

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<sup>46</sup> e.g. a lower cap on ROE or a lower minimum capital to debt ratio, could help to suppress overall rate increases when the Project comes into service and VGS' begins to recover the costs from ratepayers.

In both the original proceeding and the first remand, the Board relied on VGS' preliminary statement of rate impact to quantify the approximate price advantage of natural gas over other heating fuels, the basis for the Board's finding that there was demand for natural gas in Addison County and conclusion that the project was needed to meet that demand. The Board also based its findings on the value of customer savings, and the net economic benefit of the Project on VGS' evidence of rate impacts, and thus concluded that the Project met the §248(b)(4) standard.

There is little comfort in VGS's and PSD's suggestion that a 15.3% is only illustrative because the Board will have to approve proposed rates and allocation of costs among ratepayers. VGS would have to petition the Board to make the kinds of changes proposed (e.g. change in authorized ROE, capital structure, or approved rates) to mitigate the 15.3% rate impact, and the company has a poor track record of following up on proposed enhancements to the Petition or promised actions even when those proposals and promises were incorporated as conditions in the CPG.<sup>47</sup>

As the Board has previously pointed out, ratemaking and rate design are both an art and a science. The production of economic benefit and demand for a good or service through regulatory decision-making is a fraught with complications and intervening conditions, and even the most well thought-out policies and decisions can fail produce the desired results. The Board has itself often lamented that its efforts to get VGS to extend its natural gas service to more communities in Vermont by authorizing an increased rate of return on equity (ROE) over a decade-long period

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<sup>47</sup> For example, VGS has yet to meet at least three conditions of the CPG that required follow up: submission of an aggressive energy efficiency program to serve new customers in Addison County, a lapse which has also affected VGS' progress on establishing an EEU (See 4/17/15 Order in Docket 7676, Investigation into appointment of an entity to provide natural gas efficiency services); submission of a bio-methane expansion program; and finalization of the VGS-VELCO Operations & Maintenance Agreement.

failed to accelerate significant expansion. From a regulatory standpoint, it is simply impossible to guarantee today that the Board will grant conditions necessary to support net economic benefit in the future. It's also impossible to know now whether any action taken by the Board would be effective in keeping rates low. Many other economic factors will influence the flexibility the Board has to impact rates, and the cost of the Project will have to be recovered regardless of any other market-driven adjustments to rates.<sup>48</sup>

**ii. Due process also prohibits VGS from relying on future decisions in separate dockets to make its case.**

To the extent that VGS seeks to rely on facts from future Board decisions in other Dockets as evidence of economic benefit, including data such as ROE, capital structure, rates and other data to be used in calculating economic benefit, other parties to the case must have an opportunity to review and comment on those decisions and their implications for the Board's findings and conclusions of law. The only reasonable plain language interpretation of §248(a)(3) is that the Board must make all determinations regarding §248 criteria before issuing a CPG rather than allowing the Petitioner to introduce additional evidence of compliance with a required element of the §248(a)(3) test after the CPG has been issued. The Board's December 23, 2013 Order noted that all parties have a right to comment on any collateral permit, the receipt and substance of which the Petitioner chose to use as evidence that the Project satisfies a §248(b) criteria.<sup>49</sup> In that instance, since VGS had proffered permits from the Agency for Natural Resources (ANR) and the U.S. Army Corps of Engineers (US ACoE) as evidence that the Project would not have an undue adverse impact on natural resources or

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<sup>48</sup> See Wilson PFT page 31, lines 19-22 and p. 32, lines 1-6 and Section V. D. ii chart above, "ANGP Revenue Requirement by Source". See 7/22/15 THT, also Simollardes at p. 221, line 19 to p.22, line 7.

<sup>49</sup> December 23, 2013 Order pp. 116-117.

the environment under §248(b)(5), the Board barred VGS from commencing site preparation or commence construction until all four permits had been issued.

We urge the Board to adopt the same position that it did in its December 23, 2013 order, when it found that to the extent that VGS made a strategic decision to rely on collateral permits as its evidence that the project complies with §248(b)(5), the company must also obtain those permits before the Board can determine whether the burden of proof has been met, and to do so requires providing all parties with opportunity to review and comment as a condition precedent to that finding. Because VGS has similarly chosen to rely on evidence of future Board orders as part of its proof that the Project will result in economic benefit to the State and its Residents, VGS must also now wait until it has submitted the final Orders in those separate Dockets and subject those Orders to review and comment by all other parties before the Board can rule on whether the Orders, when taken together with all other evidence already presented in this proceeding, are adequate to support a finding of net economic benefit and the conclusion that the Project meets the requirements of §248(b)(4).

**iii. Refusal to produce updated rate evidence, on which the Board's 12/23/13 and 10/10/14 Orders were predicated and which is exclusively in VGS control, is not a viable defense to a 60(b)(2) motion.**

An important limitation on the Board's capacity to determine whether a project meets the §248 criteria is that, as the Board has repeatedly reminded parties, it can only rule on those matters and evidence brought before it by the Petitioner and other parties. In this case, the Petitioner has not brought before the Board concrete evidence of the rate impact of the

Project but has rather stated the calculations provided by Ms. Simollardes in her testimony were illustrative but that the company is committed to competitive and affordable rates. This is the evidence the Board has before it, and that evidence clearly suggests a rate impact of over 15% even without taking into account the additional 5.4% ratepayer contributions to the SERF.

We recognize that whether the Project subjects ratepayers to unjust and unreasonable, unduly discriminatory, or preferential rates is a question for VGS's next rate case. However, to the extent that VGS relies on elements of the Board's decision in that rate case as evidence that the Project is required to meet demand for service under §248(b)(2) or will produce an economic benefit to the State and its residents under §248(b)(2), VGS should be required to produce approved rates before the Board determines whether to reopen the Docket. In our estimation, the opposing parties have submitted ample evidence that the Project will not produce economic benefit applying VGS's rate projections and other available data. To the extent that VGS seeks to refute that evidence, it must present something to the Board for review. If VGS chooses to remove from the table its illustrative rate calculations and rely on the Board's issuance of decisions in other Dockets, the company must be bound by the same conditions as the Board set regarding collateral environmental purposes: All parties must be afforded the opportunity to review and comment on the evidence before the Board can make finalize a judgment.

- D. The Board should reopen the case to consider whether, with an updated cost of \$153.6m, the Project can feasibly satisfy §248(b)(4), without violating customers' rights to just and reasonable rates.**

The Board has long recognized and enforced fundamental principles for avoiding unjust and

unreasonable, unduly discriminatory, and unfairly preferential allocation of costs associated with natural gas infrastructure expansion are longstanding and well embedded at the federal level and in other states' statutes and statutory interpretation.

**i. The only evidence of rates and cost allocation suggest that VGS will not be able to carry out the Project without imposing unjust and unreasonable rates.**

As a general rule, regulators assign the costs of system upgrades to those who benefit to the extent that they can be identified.”<sup>50</sup> This general rule is outlined in two principles. “Cost causation” dictates that the customers, who create the need for new transmission – must absorb increased rates equivalent to the costs of the upgrades they have necessitated.<sup>51</sup> The “beneficiary-pays principle,” asserts that to justify socialized cost allocation or rolled-in cost allocation to ratepayers for transmission facilities, system-wide benefits of a new transmission facility must be proved or described with “reasonable particularity.”<sup>52</sup> Upon proposal of cost-allocation of Project costs, a utility would bear the burden of presenting substantial evidence that the new facilities would provide system-wide benefits to all customers rather than benefits only to a portion of customers located along the portion of the system where the new facilities are installed. For example, a looping project located near one end of a large system would be unlikely to serve customers at the other end of the system and would thus not qualify for cost allocation to all of the utility’s customers regardless of their location on the system.

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<sup>50</sup> Pub. Serv. Comm’n v. FERC, 545 F.3d 1058, 1067 (D.C. Cir. 2008) and ISO New England, Inc. v. New England Power Pool, 91 FERC ¶ 61,311, at 62,076 (2000).

<sup>51</sup> *K N Energy*, 968 F.2d at 1300–01.

<sup>52</sup> *Algonquin Gas*, 948 F.2d at 1313.



Similarly, extension of a transmission line to a new community, the savings benefits of which are predicated on possible future system expansion projects would also unlikely qualify.<sup>53</sup>

**ii. As costs have skyrocketed, the implications for VGS customers has changed dramatically**

When the Project was originally conceived, the cost may have been reasonably proportionate to the population projected to benefit. While the budget increased marginally thereafter until the first substantial increase, the initial small increase was effectively balanced by the expectation that International Paper Company would make the possibility of rapid expansion to a large potential market, Rutland, to offset the costs of expanding into Addison County a reality. VGS enjoyed a substantial competitive advantage, and concerns about the feasibility of completing the project without unjust and unreasonable rates were minimized. On the one hand, VGS contended that once the company reached Rutland, a large customer base would create downward pressure on rates for current customers, and on the other hand, the company was able to persuade the Board that at the underestimated costs of \$86.6M or even \$121.6M, all customers would enjoy rates substantially lower than fuel oil or propane. Given that the cancellation of Phase II ensures both a significant cost increase and a prolonged delay in the Phase III expansion to Rutland, presumed benefits to existing customers such as the depression of rates may not come to pass. The situation has now changed dramatically, and we urge the Board to closely evaluate likely rate impacts given the cancellation of Phase II.

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<sup>53</sup> See Maser, Gabe, *It's Electric, but FERC's Cost-Causation Boogie-Woogie Fails To Justify Socialized Costs for Renewable Transmission*, GEORGETOWN LAW JOURNAL, Vol. 100:1829, 2012 at 1842.

We contacted Ms. Wilson, who submitted testimony in this Docket to provide us with a summary of how the projected project Cost of Service would be allocated by rate class through 2047, which is summarized in the figure, below. Based on the new price tag for the Project of \$153.6M, VGS’s revenue requirement through 2047 is projected to be \$986.2M. Existing ratepayers in Franklin and Chittenden counties pay 44% of the total project COS through 2047. They clearly receive no benefit from the Project. And, Middlebury and Vergennes residential customers contribute nearly as much as the large industrial customers, even though the savings for the residential rate class is a fraction of the savings that the large industrial customers will realize.

SOURCE OF REVENUE REQUIRED TO BUILD AND OPERATE THE PIPELINE THROUGH 2047	EST. NO. CUST.	ANGP NEW REVENUE	RATE INCREASE	SERF FUND	TOTAL
REVENUES		\$490.4M	\$394M	\$101.8M	\$986.2M
MIDDLEBURY/VERGENNES RESIDENTIAL	2,580	36.2%	5.1%	1.9%	20.2%
MIDDLEBURY/VERGENNES G1	338	6.8%	1%	0.4%	3.8%
MIDDLEBURY/VERGENNES G2	72	1.6%	0.2%	0.1%	0.9%
MIDDLEBURY/VERGENNES G3	48	10.5%	1.5%	0.9%	5.9%
MIDDLEBURY/VERGENNES G4	24	6.8%	1%	0.6%	3.8%
LARGE INDUSTRIAL	4	38.1%	5.4%	0%	21.1%

ANGP Revenue Requirement by Source<sup>54</sup>

VGS’s financial data does not take into account the State of Vermont GHG reduction goals. In order to reduce GHG emissions by 50% by 2028, we as a state must reduce our use of fossil fuels. Therefore, we cannot reasonably assume that residential customers will continue to use the same quantities of fossil fuels as in the past to heat their homes over the time horizon that

<sup>54</sup> The source from which this summary data was pulled comes from the BJV\_A\_Attachment A.PSD.VGS. 1-1.2 No IP \$153.6 December 2014 EIA to 2049.xls workbook. The total required revenue comes from the *FUND USE* worksheet and the revenue by ANGP rate class was pulled from the *Market and Revenue Analysis* worksheet. The Franklin and Chittenden County revenues were extracted from the *Fund Use* worksheet.

VGS is depending on to pay for the Project. An investment of this magnitude seems extremely risky in a time when we are committed to reducing our use of fossil fuels.

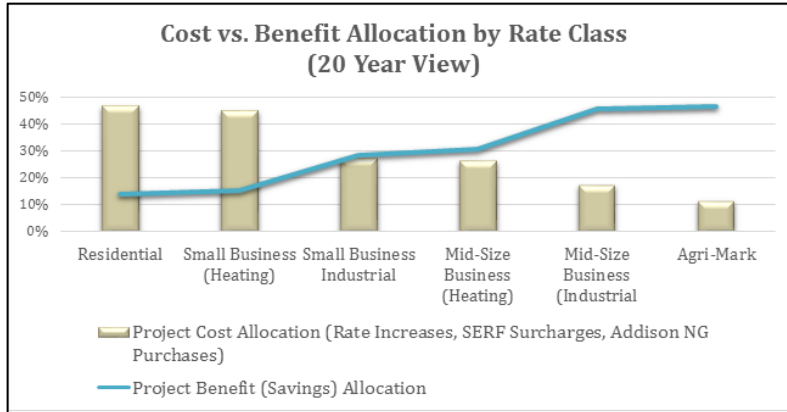
Furthermore, it is our understanding that large industrial customers will continue to use their existing fuel sources, such as no. 6 heavy fuel oil<sup>55</sup>. However, the financial analysis submitted by VGS assumes that 100% of the industrial fuel will be displaced by natural gas. Since this is very unlikely, a portion of the industrial revenue will ultimately need to be allocated across the firm customer rate classes as well. Both of these factors will negatively impact the availability of revenue thereby resulting in increased rate pressure as a result of the Project.

**iii. VGS's illustrative customer rates reflect disproportionate allocation of costs and benefits between rate classes**

Ms. Wilson also provided us with a summary of how the projected project COS would be allocated by rate class in relationship to the benefits that they would receive over the next 20 years, which is several years beyond 2028. The figure below summarizes her findings related to cost and benefit allocations across each rate class.

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<sup>55</sup> WILSON PFT, Exhibit NP\_2R\_WILSON-EXH-16, A.PALMER:VGS.RTA.1-14, "Admit that Agrimark/Cabot is receiving CNG. Denied that is has converted from #6 Heavy Fuel Oil. Agrimark is an interruptible customer and will continue to utilize its alternate fuel."



*Cost versus Benefit Allocation by Rate Class<sup>56</sup>*

As the graph in figure 2 shows, Agri-mark enjoys an energy savings of 47% and only loses 11% due to the projected rate increase<sup>57</sup>. Whereas, the ANGP residential customers only save 14% after losing 47% of their savings to the SERF surcharge and projected rate increase. The graph clearly depicts that the incremental revenue that will be recovered from Addison county residential ratepayers is disproportionate to the actual benefits that they will receive. The average annual energy savings summed across all of the estimated 2,580 residential customers is less than 25% of the savings of the largest industrial customer, yet the residential rate class contributes almost the same amount towards the ANGP COS, assuming the interruptible customers are even subject to the rate increase.

Several critical project shortcomings from a ratepayer perspective include:

- The residential and small business ratepayer estimated annual savings are so small that it will take years to recover the costs associated with even the least expensive conversion approach. The average energy savings, resulting from converting from fuel oil to gas, barely

<sup>56</sup> Exhibit A provides the supporting data for this graph.

<sup>57</sup> The large industrial companies, such as Agrimark, are interruptible customers and may not be impacted by the rate increase. If this is the case, the revenue shortfall that would have been provided by these customers will have to be spread across the firm ratepayers, which will increase the rate pressure.

cover the annual lease fee of \$264, let alone the costs of removing/closing a disconnected fuel tank.<sup>58</sup>

- VGS customers have not been afforded reasonable notice and an opportunity to be heard on the rate impacts of the Project. VGS' 47,000 residential customers deserve to have their rights to reasonable notice of capital expenditures that will result in substantial rate increases and reasonable opportunity to comment on rate increases that will affect them in the future – before a project has received a CPG. VGS recently wrote a letter to the Chittenden County Regional Planning Commission stating that it had no plans to increase rates by 15%.<sup>59</sup>
- Senior customers in Chittenden and Franklin Counties will be disproportionately impacted by the cost allocation of most costs to residential customers in these two counties because even if VGS expands to Rutland, most will not benefit from any downward pressure in rates in their lifetimes.

**iv. VGS rate projections show that costs and benefits of specific Project facilities have not been allocated to customers in a just and reasonable manner.**

When new facilities or upgrades are designed to contribute to reliability, they typically receive less scrutiny in terms of whether costs are “rolled up” and shared among all customers, or incremental costs of an upgrade or expansion is charged only to those customers who benefit or new customers, who gain access to a system through expansion. When projects are a hybrid of upgrades or new facilities that clearly only serve one group of customers or a

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<sup>58</sup>Required by Vermont Statute 10 VSA Chapter 59, §1926. Also see “Underground Storage Tank Rules” State of Vermont Agency of Natural Resources, dated October 1, 2011, and “Aboveground Storage Tank Rules”, dated February 10, 2014.

<sup>59</sup> 6/23/15 THT, Peyser at p.280, line 30 to p.281, line 16, referring to 6/17/2015 VGS letter to the Commissioners of the Chittenden County Regional Planning Commission, signed by Ned Farquhar, Vice President, Communications and Government, and copied to Charlie Baker, Executive Director.

portion of a project will clearly contribute to system reliability but others will not, the costs and benefits of the larger project should be allocated accordingly. In other words those portions that will only benefit a small portion of customers should be charged to those customers while upgrades can be proved to benefit the entire system can be spread across all customers. VGS continues to make generalized claims of economic benefit to the entire state and in particular to Chittenden and Franklin County customers; however the company has yet to describe in any detail any concrete or individualized benefits that will be enjoyed by any distinct portion of Project facilities, or by the entire Project that could reasonably support VGS's illustrative rate allocation. VGS has not provided any tangible proof of benefits to Chittenden and Franklin County customers. Since only a small segment of the proposed new facilities, could be construed to contribute to improved system stability or reliability for current or new customers, only that portion of the new facilities should be charged to those customers, who will benefit. Costs for the rest of the project, most of which will only benefit new customers, including large industrial clients, who are currently scheduled to get most of the benefits associated with the Project, should be recovered through increased cost of service to new customers.

**iv. The Board should preclude VGS from disproportionately allocating Project costs to residential customers in Chittenden and Franklin Counties, and require that VGS follow generally accepted cost and benefit allocation principles.**

If the Board required VGS to demonstrate credibly that it will allocate benefits equally across rate classes in Addison County, there would likely be little, if any, demand for service. VGS has only submitted historical data to substantiate its assertions of demand. In our own estimation,

based on VGS's own testimony, if the Project met minimum industry standards of fair cost and benefit allocation, oil and propane would likely have a price advantage over natural gas in Addison County. Under such circumstances, it is unlikely that VGS would be able to garner any demand for natural gas at all.<sup>60</sup> Additionally, and in the absence of new evidence from VGS to counter this zero sum outcome, we urge the Board to reopen the CPG and offer VGS the opportunity to submit new evidence, including alternative rate scenarios.

**F. The evidence in this proceeding, if proved, would demonstrate that the Project cannot produce both economic benefit and demand for service without encroaching on Vermonters' rights to economic justice as defined in the Vermont Constitution.**

Based on the evidence presented by VGS, at the current Project cost, the Project would be open to challenge under the Common Benefits Clause of the Vermont Constitution. Federal and state statutes, as well as the court decisions echo provisions of the Vermont Constitution. For example Article 7 of the Vermont Constitution, "the common benefits clause," proscribes "governmental favoritism toward not only groups or 'set[s] of men,' but also toward any particular 'family' or 'single man.'" <sup>61</sup> In Baker, the Court enumerated several factors to be considered in determining whether the Common Benefits Clause has been violated, including the (1) significance of benefits and protections of challenged law; (2) whether omission of members of the community from the benefits promotes the government's stated goals; and (3) whether the classification is significantly under-inclusive or over-inclusive.<sup>62</sup> Of course, not every allocation of costs among rate classes or communities is suspect since the characteristics of rate classes and the benefits obtained from a

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<sup>60</sup> See Wilson PFT page 31, lines 19-22 and p. 32, lines 1-6 and Section V. D. ii chart above, "ANGP Revenue Requirement by Source". See 7/22/15 THT, also Simollardes at p. 221, line 19 to p.22, line 7.

<sup>61</sup> Baker v. State 170 Vt. 194, 744 A.2d 864 (1999).

<sup>62</sup> Id.

pipeline expansion should understandably be related to consumption, revenue enhancement, and other factors. However, the Vermont Constitution provides a unique protection to all citizens of the state: no individual, entity or group can be unjustly favored or receive exclusive access to the benefits of a public initiative at the expense of the rest of the community or state. Benefits must be shared fairly, transparently and equitably unless there is a reasonable justification to do otherwise. Even if not directly relevant to a given §248 case, Article 7 serves as a reminder that if a project will only serve the demand or economic benefit of a very small number of customers, and others, who will receive no benefit at all will be required to bear the cost of that benefit, a utility project likely requires further scrutiny – first and foremost under §248 but under other appropriate legal standards as well. In the context of Article 7 of the Vermont Constitution, both §248(b)(4) and §248(a)(3) require a rigorous review of whether all Vermonters – as a community – stand to gain from a project. But, Article 7 and the plain language of §248(b)(4) further dictate that the relative assignment of costs and benefits to individual residents and financial interests residing in the state is equitable and that any residents, who must bear a portion of the costs of a project (regardless of the mechanism by which the utility recovers those costs) are also afforded access to the resulting benefits of the investment.

- i. **Disregard for the newly discovered evidence of VGS’s updated Project costs, cost controls to date, and project rate impact on current and future customers would contravene Article 18 of the Vermont Constitution.**

Article 18 of the Vermont Constitution gives every citizen of the state the right to demand that state government and adjudicative bodies uphold Vermont’s unique values, including frugality.



“That frequent recurrence to fundamental principles, and a firm adherence to justice, moderation, temperance, industry, and frugality, are absolutely necessary to preserve the blessings of liberty, and keep government free; the people ought, therefore to pay particular attention to these points, in the choice of officers and representatives, and have a right, in a legal way, to exact a due and constant regard to them, from their legislators and magistrates, and in making and executing such laws as are necessary for the good government of the State.”

These values, set forth in Vermont’s Constitution, are basic principles of a sustainable energy future for Vermont and also provide grounding to §248(b)(2)’s requirement that there be demand for a project, that an investment must be necessary to meet that demand, and that the new facility be the least-cost option for achieving the requirement itself. It also serves as a reminder that economic benefit cannot simply be claimed. Frugality means that a cost-benefit analysis must reasonably subject both costs and claimed savings or other benefits to scrutiny and cost realism. Cost estimates must be reliable, and based on scientifically-grounded measures of benefit – no matter how complex those calculations may need to be, and a full assessment of risks that could materially alter not only the costs but also the benefits of the Project.

Frugality holds that citizens’ earned income, natural resources, and our climate are dear, and the State and public enterprises with the power to charge fees for service and the authority to condemn property under eminent domain are obligated to exercise caution for all of our resources – whether financial or natural. These entities, the state agencies that regulate them, and the bodies that have adjudicative authority over charges, should reject projects that a reasonable Vermonter would consider to be beyond the means of the state and especially projects that are, on their face, beyond the means of those residents, who will be required by

the state to bear the costs. In this case, it would not be consistent with citizens' right to a government actions informed by frugality to impose project costs on ratepayers without a full and complete investigation into the costs, the specifics of how those costs will be allocated among ratepayers, and an individualized cost-benefit analysis by rate class, ratepayer location, and the potential for unduly discriminatory rates according to age.

## CONCLUSION

An administrative order must stand or fall on the grounds articulated by the agency.<sup>63</sup> We urge the Board to disregard VGS's and PSD's changed standards for calculating the economic benefits of the Project and reopen the case on the grounds that, the Project would no longer pass the economic benefit test, on the basis of which the Board made its original findings and conclusions.

Alternatively, we ask the Board to recognize the overwhelmingly meritorious evidence that the Project meets neither the standards of §248(b)(2) or §248(b)(4)<sup>64</sup> and therefore to conclude that the outcome of both the Board's December 23, 2013 and October 10, 2014 decisions would have been different if the newly discovered evidence presented in this proceeding had been available.

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<sup>63</sup> see *Algonquin* citing *SEC v. Cheery Corp.*, 332 U.S. 194, 196, 67 S.Ct. 1575, 1577, 91 L.Ed. 1995 (1947)

<sup>64</sup> e.g. re: §248(B)(2), the lack of any significant price differential between natural gas and fuel oil and propane to support a Board finding of a "substantial price advantage" supporting continued demand, the absence of any updated market studies to support VGS's original market penetration estimates and clear evidence that according to VGS's own model for projecting demand, as outlined in Docket 7712 and reiterated in the original 7970 proceeding, it's unlikely that VGS will be able to achieve saturation projections or generate demand for natural gas taking into account projected market fuel prices and the rate impact of the updated costs increase, and the risk of further rate impacts that could wholly ameliorate any price advantage of natural gas over oil and propane; and e.g. §248(b)(4), errors identified in VGS's and PSD's analysis, the admission of Mr. Heaps, VGS's expert witness on economic benefit that he did not conduct a net economic benefit analysis at all; the misleading use of energy pricing and conversion data in VGS's exhibits; Dr. Hopkins statements in depositions, rebuttal testimony, and oral testimony indicating variously that he does not have expertise in critical areas of economic and market analysis, including customer fuel-switching behavior, he does not trust that the economic modeling tool used by PSD adequately captures fuel price fluctuations, and PSD relied wholly on costs, assumptions, and inputs provided by VGS; and the much more comprehensive, expert, and logical net benefit analysis, education and background, utility expertise, and theoretical basis of the testimony of AARP's witness, Dr. Dismukes.

Notwithstanding the Board's conclusions regarding whether the Project continues to meet §248(a)(3), 248(b)(2) and §248(b)(4) standards, we call on the Board to find that given the 78% cost increase with no more than unsubstantiated claims from VGS that the company is committed to affordable and competitive rates, no proposed cost allocations scenarios, and no particularized description of the Project's benefit to current customers or to residential and small-scale business customers in Addison County, the Project will certainly result in unjust and unreasonable rates according to fundamental principles of cost allocation and benefits, and that the Project would violate citizens rights under Articles 7 and 18 of the Vermont Constitution.

We further urge the Board to reject VGS's and PSD's assertion that the Project still meets the criteria of §§248(a)(3), 248(b)2) and 248(b)(3) just because there are ways that the Board can mitigate future rate impacts through amendments to VGS' Successor Plan (or approval of a new Plan), rejection of proposed rates in an Annual Rate Adjustment, or decisions in other dockets (e.g. petition re: loans, bonds, or equity) in the future. We urge the Board to adopt the same position it took regarding environmental permits in its 12/23/13 Order: if VGS wishes to use permits as evidence of meeting a §248 requirement, the Board and all parties must have the opportunity to review and comment on the permit and the extent to which it is, in fact, proof of meeting the §248 standard in question. If VGS seeks to use future Orders of the Board regarding adjustment to VGS's authorized rates, ROE, capital structure, and/or cost allocation as proof that the Project meets a §248 standard, VGS should be required to produce those Orders so that all parties can exercise their due process rights to review and comment before issuance of a CPG (or in the case before the

Board rules on 60(b)(2) motions, or alternatively during new proceedings after the Board vacates its 12/23/13 Order).

VGS has taken no procedural steps to request amendments to VGS's capital structure, ROE, ratemaking or rate design, and VGS has made no motion for amendments to the CPG. Either the Board's review of the material changes to the Project and other updated evidence in this Docket is premature and all VGS activity related to the Project should be stayed until the Board can rule on VGS submissions in those Dockets or on proposed amendments to the CPG, or the Board must review on the evidence brought before it in this Docket in accordance with the standards and analysis applied in prior 7970 decisions, and deem that the Project must be reopened because it no longer complies with §248(b)(4) on the basis of the evidence presented.

## Exhibit A

	Residential	Small Business (Heating)	Small Business (Industrial)	Mid-Size Business (Heating)	Mid-Size Business (Industrial)	Agrimark
<b>Average Energy Savings (w/o SERF or Rate Increase)</b>	\$785	\$1,225	\$2,295	\$17,950	\$39,437	\$4,984,471
<b>Average Energy Savings (w/ SERF and Proposed Rate Increase)</b>	\$419	\$677	\$1,678	\$13,279	\$32,764	\$4,416,627
<b>% Energy Cost Savings (NG vs. Fuel Oil)</b>	14%	15%	29%	31%	46%	47%
<b>Lost Savings by Rate Class</b>	\$ 366	\$549	\$618	\$4,671	\$6,673	\$567,844
<b>% Energy Savings Lost by Rate Class to pay for ANGP</b>	47%	45%	27%	26%	17%	11%

**Notes:**

- Customer savings numbers do not include conversion costs or any other additional fees such as annual lease fees and low-income assistance surcharges. For example, if a residential customer leases their equipment from VGS, the average savings would be \$155/yr. This does not include the \$454 to \$2945 cost estimate to remove their fuel tank (see WILSON PFT, Exhibit NP\_2R\_WILSON\_EXH-5, item 9)
- The source from which this summary data was pulled comes from the BJW\_A\_Attachment A.PSD.VGS. 1-1.2 No IP \$153.6 December 2014 EIA to 2049.xls Workbook, which was filed with Ms. Wilson's PFT. All numbers are based on an average of the projected fuel prices and savings for the periods of 2016 thru 2034 for firm customers and 2015 thru 2034 for Agrimark.