EAN 2020 Pitch Submission Form

1. Pitch Submitted By [Name(s) and Organization(s)]:

Richard Cowart, Regulatory Assistance Project (RAP, Don Rendall Vermont Gas Systems (VGS), and Rick Weston, RAP. We have had helpful input from several others, who may join the project later.

2. Contact Email Address(es) rcowart@raponline.org; drendall@vermontgas.com; rweston@raponline.org

3. Phone Number(s). 802-456-7488; 802-272-8550 (Richard)

4. *Pitch Title*:

The Light at the End of the Pipe: Vermont's Clean Heat Strategy

5. Pitch Summary: (for more detail please see the proposal, attached)

To meet Vermont's climate goals, we need an exit strategy for the traditional natural gas business, alongside a transition strategy for fossil heat generally -- a strategy that includes both pipeline and non-pipeline "delivered" fuels. Vermont Gas Systems (VGS) can play a leading role in this transition.

We believe that a combination of forward-looking business strategies and regulatory policies can (a) transform VGS into a low-carbon, high-value energy services company for Vermont homes and businesses; and (b) leverage change in the delivered fuels industry towards the same ends. This project aims to develop that **Clean Heat strategy** via research and engaged dialogue across the entire energy supply sector.

6. How would you describe the status of this pitch:

A combination of Level 1 and Level 2. VGS and RAP, at least, are prepared to advance specific ideas on gas regulation and business models for a regulated gas company (Level 2). Engaging the delivered fuel sector will take longer and is just beginning (Level 1).

7. What Energy Sector(s) Does this Pitch Apply to? (Check all that apply):

X-Energy Efficiency (proceeds in parallel with fuel switching)
X- Electricity (heat pumps and DSM will replace much of the fossil fuels avoided)
Transportation
X- Thermal Heating and/or Cooling (the main focus of this work stream)
None

8. Which Criteria Category(ies) Does It Address? (Check all that apply):

X- Promoting energy equity

X- Significant reductions in fossil fuel use and GHG pollution from energy
X- A stronger and more just Vermont economy
X-Clean energy jobs
X-Energy security and resilience
X-Sustainable energy landscape
X-Committed leadership from multiple network members

9. Which Leverage Areas Would It Attempt to Shift? (Check all that apply):
X-Policy & Regulatory Reform (the main focus)
Public Engagement (will be required later, but not the focus now)
X-Workforce Development/Workforce Transition
X-Technology Innovation (not a huge focus, but renewable gasses may play a role)
X-Capital Mobilization

10. Scale of Impact on Vermont's Energy and Emissions Goals: If this proposal came to fruition, how would it help meet Vermont's energy and emissions goals by 2025 and/or 2050? Please outline assumptions and, if available, provide calculations-- especially for emissions reduction estimates.

See attached proposal. VGS is responsible for over 7% of Vermont's emissions; and by leveraging change in the delivered fuels sector we can address another 20%. This proposal seeks to reduce almost all of the VGS emissions and a substantial portion of emissions from the delivered fuels sector.

Also note: realistic plans and regulatory models for phasing out fossil gas are extremely rare, but are needed across the US (and in Canada and other nations). This is a cutting-edge proposal in a state that has a tradition of leadership in clean energy. By providing a model for other jurisdictions we may well leverage greater climate impacts outside of Vermont than we do inside the state.

11. Benefits and costs of this proposal for Vermont and Vermonters: Including, where possible, economic (local economic development and jobs), financial (consumer savings), social, public health, and environmental. Who will be better off? Who will not be able to benefit?

A forward-looking strategy to phase out fossil gas will benefit everyone by reducing GHG emissions; doing this in a structured way protects all gas customers from the costs, disruptions, and stranded costs that will result from NOT acting in advance and having to rapidly switch energy sources under urgent timelines. Lower-income customers are helped in particular by cost recovery plans that won't leave them as the last customers on the system, paying for fixed system costs spread across declining sales volumes.

Replacing imported fossil fuels with renewable energy, thermal modernization, and energy efficiency has been shown repeatedly to provide very large economic and jobs benefits to Vermont. Because some aspects of the transition will tend to raise costs in the short term, for

investments that lower costs over time, capital financing plans and targeted assistance programs will be needed to help consumers, especially lower-income households. But programs to phase out fossil fuels will necessarily be linked to efficiency and clean heat options that will offset these costs. The good news is that the clean alternatives (efficiency, heat pumps, renewable heat) do not impose long-term cost burdens on consumers but do provide large macroeconomic and environmental benefits to the state as a whole.

12. Collaboration and Commitment: What partners/organizations are already working together and/or committed to work together on this issue?

At this point RAP and VGS are the principal partners. Efficiency Vermont and Energy Futures Group have expressed interest. We are carefully considering how to reach out to the delivered fuel sector, but are confident that substantial progress could be made on the gas side even if other fuel suppliers do not participate. This proposal is likely to attract interest from many others once launched.

13. Key stakeholders and decision-makers: Who else needs to be involved to move this proposal forward? (e.g., Legislature, Governor, a regulatory agency, a business, organization, media outlet, or financing institution, people with lived experience, etc.)

After an initial scoping round of policy discussions (RAP and VGS and perhaps another thought partner) we would reach out to the regulators (PUC and DPS) and then engage the Governor's office and legislative leaders. Support from the PUC and DPS will be essential to the VGS regulatory reforms and business model evolution. Meanwhile, to make progress on the delivered fuels front, we need to engage at least one or two forward-looking fuel companies, and need to explore legislative options for bringing the delivered fuels sector to the table. Our proposal to provide transition assistance, stranded cost recovery, and buy-out options will help to open doors among the fuel dealers. Finally, consumer advocates, housing advocates, low-income advocates will need to participate and help to design transition features that protect consumers generally and low-income consumers in particular.

14. If selected, EAN staff will support you in pulling together and facilitating a dedicated Action Team to work on this pitch over the next year, and possibly beyond. Describe what success would look like for this idea a year from now.

- The idea that there should be a widely-agreed and PUC-approved VGS transition plan away from fossil gas would be well understood, and a policy proceeding at the PUC would be underway;
- The legislature would be seriously considering any needed statutory changes to enable VGS to provide renewable heat and fuel switching services, and authorizing the PUC to ensure that VGS and other fossil fuel providers are all making progress towards established clean heat goals on an equal basis.
- Working groups would be coordinating work under this proposal with the work being done to "push" thermal progress (e.g., via a Clean Heat Standard or increase in the all-

fuels tax), and to “pull” progress through large-scale efficiency/weatherization funding programs.

15. Is there anything else you would like us to know about this pitch?

Yes – we’re exciting that this new phase of the clean energy transition is getting underway.

The Light at the End of the Pipe: Vermont's Clean Heat Strategy

A New Future for Vermont Gas and Vermont Heat Customers

Richard Cowart and Don Rendall
EAN proposal September 2, 2020

1. **What is the idea?**

Decision-makers quite rightly are looking beyond the power sector to the companion sectors that must also be transformed in order to achieve our essential climate goals. Those sectors -- buildings and heating/cooling, transportation, and some industrial applications – are substantially connected to fuel oil, propane and natural gas, as a source of power generation (gas), and for direct energy services (oil, propane and gas). But these fossil fuels, or most of them, have to go. The fossil fuel "bridge" needs to be both short and narrow.

Vermont needs an exit strategy for fossil oil, propane and gas, alongside a transition strategy for fossil heat generally, a strategy that includes both pipeline and non-pipeline ("delivered") fuels.

We believe that a combination of forward-looking business strategies and regulatory policies can (a) transform VGS into a low-carbon, high-value energy services company for Vermont homes and businesses; and (b) leverage change in the delivered fuels industry towards the same ends. This project aims to develop that **Clean Heat strategy** via research and engaged dialogue across the entire energy supply sector.

NOTE: in everything that follows, we strongly advise continuing to apply the Vermont principle of "efficiency first" to the clean energy transition. A strong program of efficiency investments in our building infrastructure and electric end-uses is essential; the transition away from gas and fuel oil will likely be extremely expensive and physically difficult absent strong efficiency performance. Those policies are being developed in a parallel path, so we do not elaborate them in this proposal.

2. **DATA here**:
    - Vermont's reliance on fossil fuel for buildings accounts for almost 28% of Vermont's GHG emissions – about 20% from fuel oil, propane and about 7% from natural gas. .
    - Fractions used for heat (vs process energy)
    - Climate goals require eventual replacement of almost all of this, and
    - Why we can't wait until 2030 to get started.

3. **Four Elements of the Clean Heat strategy:**

(1) A new business model for VGS. We begin with the reality that over the next 20 years, and perhaps sooner, gas utilities in North American will be facing declining sales of fossil gas, increased carbon regulation, and the prospect of following the coal business into a declining and unprofitable future. Or, like some evolving companies (e.g., telephone utilities embracing

mobile services, computer companies moving into cloud storage) pipeline gas companies could evolve into high-efficiency, low-carbon energy service companies.

VGS occupies a unique position as the only utility-regulated entity among fossil energy suppliers in Vermont. This position comes with great responsibility, which can be viewed as a detriment, or as an opportunity. VGS has embraced this opportunity, and obligation, to pursue a responsible low-carbon future for the energy services it delivers. It also gives VGS the opportunity to work with its customers and its regulators to avoid a future of declining sales and lost customers.

VGS has announced and adopted a Climate Plan, that sets aggressive goals for reducing carbon delivered through its system – a 30% reduction by 2030 and achieving "net zero" by 2050. https://www.vermontgas.com/2050-vision. To deliver on these goals, VGS will need to describe and model the possible cost-effective paths to meeting the VGS share of Vermont's carbon reductions, akin to the utility IRPs and electric industry restructuring plans of past years. This plan will chart the realistic path for a phase-out of fossil gas in Vermont. This might include, as a transitional element, a proportion of total sales from "renewable" gas, biogas and emerging hydrogen technologies, but must be realistic about the feasibility and penetration of these resources on a long-term basis. It should also analyze options for new lines of business for VGS, including helping both existing and new customers to switch to low-carbon energy sources and to lower their overall energy demands consistent with Vermont's energy goals.

(2) and (3) Gas regulation for the Vermont Clean Heat transition. It is not enough for VGS to pursue the right policies on its own. As a regulated entity, its transition away from a pipeline gas commodity company to a clean heat energy services company will require regulatory support on both ends of the transition –i.e., both for VGS and for its customers. We will examine two regulatory techniques to deliver the phase-down on schedule: (1) an accelerated depreciation schedule for natural gas pipes and related assets, together with (2) a PBR regulatory regime for VGS that rewards success in converting customers away from fossil fuels on schedule, and success in maintaining safe operations and service quality even as traditional gas sales volumes decline.

Additional notes on gas regulation:

- A "flash cut" is not possible. We can only exit traditional fossil gas and oil as quickly as we can add renewable electricity, other decarbonized heating technologies and renovate buildings. Existing traditional natural gas delivery systems will have to be phased down and out of use, losing customers and sales year after year, while still maintaining a safe level of service at equitable rates to those remaining end-users who have not yet converted to other energy sources.

- We need to avoid creating new stranded costs in the gas sector as we prepare for the transition. New pipelines and hookups must be evaluated closely against available and emerging alternatives, and a quick-response heating appliance program is needed to avoid, as much as possible, customers investing in new fossil-based heat systems that will obsolete before reaching the end of their useful lives.

- With or without an adopted exit plan, regulators should require and then approve or modify a "stranded cost recovery" plan that begins early in the process – collecting needed revenue from the existing customer base and using it to accelerate the depreciation of the company's plant, which will lower revenue requirements later in the process, when fewer customers are available to pay.

- The phase-out cannot be done in a hop-scotch fashion. Regulators should work with VGS to evaluate opportunities for targeting potential communities, neighborhoods, and large customers, where opportunities for alternative thermal technologies would be optimal, potentially avoiding system maintenance, repairs and upgrades, in order to avoid a lock-in of new stranded costs. Areas that are suitable for district heating systems should also be mapped.

(4) Leveraging the VGS transition to drive change in Vermont's delivered fuels sector. In comparison to other states, Vermont is unusually dependent on a largely unregulated fossil fuel supply industry. Vermont cannot possibly achieve our climate goals by transforming the natural gas sector and leaving the delivered fuels sector in the last century. We need a clean heat transition plan that helps the customers of all fuel suppliers to a more efficient, less-polluting energy mix. Many strategies have been proposed to accelerate progress in this sector, with little success to date. With leadership from VGS and Vermont's nationally-leading electric utilities, we believe we can design a clean heat transition plan for all fossil heat in Vermont, guided by the following ideas:

- The cost of weatherizing and fuel-switching buildings and energy systems in Vermont should be spread across all energy sources, and not just paid for in electric rates

- A Clean Heat performance standard should be applied on an even-handed basis across all fossil heat energy suppliers. The power sector is meeting this standard through its renewables obligations and fuel-switching programs; VGS and other fuel suppliers should face a similar requirement, phased in over time in line with the state's overall climate goals.

- Fossil fuel suppliers should join VGS in recognizing that their best long-term strategy is to transition away from commodity fossil sales towards becoming efficient low-carbon energy service suppliers. But that transition may be hard for many to make. To assist fuel dealers in this changing environment we propose to provide at least two options: (a) transition assistance, job training and asset recovery for those fuel dealers who would like to redirect their businesses; or (b) the opportunity to sell their business assets and transition their customer base to an energy service company that will commit to achieving the pace of change required to meet the state's climate goals.

- By combining (a) a definite, ever-increasing target for new clean heat installations across a period of years with (b)an offer to assist fuel companies either to move into

new services or to sell their assets we believe we can create the needed environment for change in the fossil fuel sector. VGS could play an important role by entering the energy service business, serving both its existing and new customers.