NY-GEO Request of the Commission in Proceeding 20-G-0131:

As our initial response to the Commission's Proceeding in Regard to Gas Planning Procedures (20-G-0131), NY-GEO requests the Commission, as it begins the proceeding, to develop a format for utilities to report their costs under the 100-foot rule and to order utilities to begin collecting data in that format, as well as to file a report in that format to the best of their ability by December 31, 2020, and each subsequent year thereafter.

Such cost data should include, and to the degree practical, break down costs by main line, service line, service connections, appurtenant facilities, permits, risers, landscaping/grade finishing, meters, regulators, negative salvage value, labor, all paving charges that are legally imposed by any governmental authority for the repair or replacement of any street or sidewalk disturbed in the course of the installation, and any other cost to the corporation to provide the service.

These data should be presented in total and broken down by residential, non-residential and any other classes deemed informative by the Commission.

The report should include the average, mean and per foot cost of ratepayer subsidy provided under the 100-foot rule for various classes required by the Commission.

The report should also include projections, as well as historical data, of the number of services installed and to be installed under the 100-foot rule, along with the utility's estimate of how many of these customers would still request (or have requested) service if the incentive of free infrastructure under the 100-foot rule had not been part of the transaction.

Further, the report should include an analysis of the impact that the potential repeal of the 100-foot rule may have on other items that are part of Capital Expenditure (Capex) budgets.

NY-GEO makes this request as part of this proceeding because we contend the 100foot rule is the lynchpin of gas expansion in New York State. This subsidy distorts the market and creates an unlevel playing field that discourages consumers from properly considering other heating and cooling alternatives. In that context, it is important to understand the cost of that lynchpin for ratepayers.

Of course. there are several other issues of importance to consider and address in this proceeding. These include u tare not limited to:

• Rolling back regulations that generously interpret the 100-foot rule

- Carrying out the Commission's instruction to minimize gas infrastructure investments in a way that does least damage to New York's low and moderate-income residents and to the economy in general
- Squaring depreciation practices with the need to decapitalize gas utilities in line with the GHG goals made law by the Climate Leadership and Community Protection Act
- Developing a realistic glide path for gas utilities to provide an adequate contribution to meeting the GHG goals made law by the Climate Leadership and Community Protection Act
- Exploring the role of gas utilities, and the impact of their potential decline on low and moderate residents as gas use is greatly diminished in the face of the climate crisis challenge

We have chosen to focus this initial filing on the costs of the 100-foot rule because this is an issue that can and should be addressed immediately in order to set the stage for a transparent and fully informed discussion as other issues are grappled with.

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The Cost of the 100-Foot Rule

We submit this report both to document some of the costs we have identified that flow from the 100-foot rule and to illustrate the difficulty of accurately documenting those costs under current reporting procedures.

In the opening "background" statement in its order, the Commission calls on utilities,

...to meet current customer needs and expectations in a transparent and equitable way while minimizing infrastructure investments and maintaining safe and reliable service. Additionally, planning must be conducted in a manner consistent with the recently enacted Climate Leadership and Community Protection Act (CLCPA).¹

The 100-foot rule is a key impediment to minimizing gas infrastructure investments. While Section 30 of Article 2 of the Public Service Law mandates utilities to provide gas service to those who request it, Section 31 makes it advantageous and even lucrative for New York's citizens to request this service. Section 31.4 provides 100 feet of service line – and, as practice has evolved, up to 200 feet of infrastructure – for free to those who request it, paid by other ratepayers. As this report will show, the cost of this subsidy, while substantial, is currently very difficult to document.

The Commission's requirement of consistency with the CLCPA, as well as its emphasis on transparency and fairness, underlines the importance of developing accurate cost data on the 100-foot rule. The CLCPA requires New York to reduce greenhouse gas (GHG) emissions 40% by 2030 and 85% by 2050. It is clear that if the State's ambitious climate goals are to be met, transitioning away from burning fossil fuels will be an important key to success. As stated in the Commission's December 2018 Comprehensive Energy Efficiency Order: ²

As discussed in the stakeholder forum, the potential of heat pumps to contribute to energy efficiency and carbon reduction goals is very large. Heating and cooling of buildings causes one-third of the state's GHG emissions, and heat pumps are more efficient than many other heating and cooling methods. As the electric system evolves to a low-carbon generation mix, electrification of heating and cooling becomes a critically important way to reduce GHG emissions.

¹ Order Instituting Proceeding – Item #1 - 102_20-G-0131.pdf – page 2 http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=20-G-0131&submit=Search accessed 2020 04 24

² CASE 18-M-0084 - In the Matter of a Comprehensive Energy Efficiency Initiative. ORDER ADOPTING ACCELERATED ENERGY EFFICIENCY TARGETS – Issued and Effective, December 13, 2018 – Item #77 http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?Mattercaseno=18-M-0084 – Accessed 2020 40 24

Heat pumps can also be one of the most cost-effective means of achieving TBtu reductions. NYSERDA estimates that heat pumps can deliver carbon reduction at a cost of approximately \$30 per ton.

The 100-foot rule reinforces New York's historic policy of promoting gas expansion, set in place before heat pumps were as market-ready as they are today, and when other heating fuels such as propane and fuel oil were seen as far inferior relative to the environment and public health. While propane and oil are still dirtier fuels for particulate matter and other criteria pollutants than gas, the CLCPA throws into question the notion that burning gas produces lower GHG emissions than oil or propane.

The CLCPA includes a more accurate way of measuring the Global Warming Potential of fossil fuels by measuring their impact over a 20-year period and counting all the leaked methane from drilling, producing, transmitting, compressing and delivering gas to our homes.³

This more scientific, comprehensive and accurate way of measuring climate impacts means that burning gas to heat our homes may actually cause *more* climate warming than heating with oil or propane. For example, Cornell scientist Robert Howarth stated in testimony in the ongoing NYSEG/RG&E rate case.⁴ "…The total emissions for natural gas are 119 g CO2-e per MJ compared to total emissions of 81 g CO2-e for fuel oil and propane. The emissions for natural gas are almost 50% greater".

Heat Pumps are now a market-ready alternative to gas expansion that produce no onsite emissions and are declared by the Commission to be a "critically important way to reduce GHG emissions". The CLCPA treatment of GHGs makes it clear that replacing oil or propane with gas heating can no longer be considered a step forward for the climate. Incentivizing gas expansion through the 100-foot rule is an obsolete practice that distorts the market and creates an unlevel playing field. When a homeowner looks to install a geothermal system, there is no 100-foot rule that supplies a guaranteed, ratepayer-funded loop field.

If the Legislature and the Governor are to consider changing the 100-foot rule, it is inevitable that the actual cost to ratepayers and the degree of the subsidy will be part of the discussion. The transparency called for in the Commission's order should dictate that the cost of this driving element of gas expansion in New York state be quantified in a Commission sanctioned manner and exposed to the light of day.

For the past year NY-GEO has endeavored to find or develop accurate data on the cost to ratepayers of the 100-foot rule defined in Article 2, Sections 30 and 31 of New York's

³ S6599 https://www.nysenate.gov/legislation/bills/2019/s6599 - see definition 2 for the 20 year term and 13 for leak sources - accessed 2019 09 05

⁴ 2019 09 20 – Testimony on behalf of Fossil Free Tompkins in the NYSEG/RGE rate case – page 19 https://cdn.shopify.com/s/files/1/0326/2837/files/2019_09_20_Howarth_NYSEG_testimony.pdf?625 Accessed 2019 10 18

Public Service law. NY-GEO has extensively investigated the data, requested accurate data in rate cases, and worked with Department of Public Service staff to uncover cost data. We have not succeeded in finding accurate, complete, apples-to-apples, consensus data.

In this document we present the data we have found and believe to be relevant, both to illustrate the difficulty of presenting an accurate picture of the costs and to provide our input to those we hope will be tasked with compiling a good data set under this proceeding.

In the chart below we present a model for a 5-year projection of the cost of the 100-foot rule. This chart includes our best estimate of the costs based on the data points we present in this report. It shows a total 5-year cost to ratepayers of more than \$961 million. There are weaknesses in the data used to prepare the chart that prevent it from being a good, apples to apples comparison and we challenge the utilities and DPS staff to do better.

	Total Spent or	Forecast in Th	ousands of Do	llars			
Utility	2015	2016	2017	2018	2019	Average	Total
CHG&E 2019-23	12,588	12,964	12,685	13,238	13,448	12,985	64,923
Con Edison	49,377	54,639	81,923	62,761	58,860	61,512	307,560
Corning Natural Gas (annual estimate)	3,931	3,931	3,931	3,931	3,931	3,931	19,655
National Fuel Gas (annual estimate)	10,190	10,190	10,190	10,190	10,190	10,190	50,950
NGRID Upstate 2021-25	39,922	44,557	38,226	35,870	37,080	39,131	195,655
NGRID Downstate	58,170	58,170	58,170	58,170	58,170	57,858	290,850
NYSEG	3,386	4,335	3,653	3,602	3,602	3,716	18,578
O&R (annual estimate)	650	650	650	650	650	650	3,250
RG&E	1,739	2,094	1,960	2,053	2,053	1,980	9,899
Total/Average						191,951	961,319

Rough Estimate of the 5-Year Cost of the 100-Foot Rule:

Ideally, an official NYS report on the cost of the 100-foot rule would include at least a 5year table similar to the one above with at least 3 years of historical data and at least 2 years of budgeted data, as well as a table showing current average costs per installation for each utility. Data on current average costs per installation are currently so scattered that we won't venture to produce even an illustrative, per installation table at this point.

Among the weaknesses in the table above that we request to see addressed are:

- The cost data we were able to find is on a scattered timeline. It would be important for the same years to be presented for each utility
- There is no report we are aware of that integrates a common language, common format, and common parameters to accurately describe the full cost of the 100-foot rule.

The PSC accepted the settlement of National Grid's upstate rate case in March of 2018. The breakout of capital expenses by "Growth", "Mandated" and

"Reliability" in the capital budget⁵ of the settlement offered some promise that the Growth segment includes the correct cost figures, but we were unable to find any text that would provide assurance that this is the case. We also then searched for a similar "Growth" category in other rate case capex data and were unable to find it.

The table for the most part does not include major capital expenses that are dependent on the obligation that the 100-foot rule creates. For example, the proposed NESE pipeline is projected by National Grid to cost \$1 Billion ⁶. Actually, as explained in National Grid's filing, the expense to rate payers will be more like \$2.895 billion, as National Grid will be paying the Williams Company \$193 million per year over a 15-year term. This pipeline is meant to help meet a projected peak downstate gas demand caused at least in part by the 11,000+ new customers National Grid projects they will add annually. How many of these customers would be switching to gas if they had to pay the full cost of infrastructure to bring gas to their home or business? How would the loss of those customers impact the rationale for the NESE proposal?. Similarly, Orange and Rockland (ORU) has proposed to use ratepayer funds to bring gas infrastructure to a 494-unit housing development known as Tuxedo Farms. In testimony, NY-GEO projected the cost to bring gas to those 494 homes to total \$10.196.122.7 It was not clear to us from the testimony in that case if the developer would be required to pay any of the costs associated with lines and mains outside the 100-200 foot range. Neither the cost of Tuxedo Farms nor other large gas expansion projects are included in the conservative

estimates we used to calculate ORU's contribution to total 100-foot costs in the table above. To the degree that the developer would be unwilling to proceed with this project if responsible for its full costs, those costs should be included.

- Another cost that ratepayers will be picking up will be the life cycle cost of the gas infrastructure, including maintaining or replacing meters and other equipment, as well as the cost of reading meters an expense that is eliminated with alternative technology such as heat pumps.
- Marketing costs should be included if they are employed to encourage growth that is made possible by the ratepayer incentive provided by the 100-foot rule.
- We don't believe the negative salvage value is included in any of the figures in the table. We look forward to the Commission's treatment of this cost in valuing the cost of the 100-foot rule. These are funds collected from ratepayers in anticipation of the removal costs of infrastructure minus the anticipated salvage

⁵ Attachments to order in cases 17-E-0238, 17-g-0239 – March 15, 2018 – pdf page 226 of 861 http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={34A11C2D-2B19-4460-AC8C-8C744E4F8A60} Accessed 2020 04 19

⁶ National Grid - Natural Gas Long-Term Capacity Report for Brooklyn, Queens, Staten Island and Long Island ("Downstate NY") February 2020 page 61-

https://millawesome.s3.amazonaws.com/Downstate_NY_Long-

Term_Natural_Gas_Capacity_Report_February_24_2020.pdf?d=1582744315651 Accessed 2020 04 19 ⁷ Testimony of the New York Geothermal Energy Organization – Item 36 in case 18-e-0067 – page 6 http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={9B53E7B7-B5A6-458D-8029-06F27FC27288} – accessed 2020 04 19

value of the infrastructure. As an example, in the Orange & Rockland rate case⁸, Bob Wyman, as a party to the case, filed testimony noting:

...using Account 380 – Services as an example, the company estimates that the cost of removing or decommissioning services will be 80% of the initial nominal dollar cost of installing those assets. The company also expects there to be little actual salvage value since the bulk of retired services are simply left in the ground and not salvaged. *Thus, for every dollar invested in new services, at least \$1.80 is added to the depreciation base,* and thus to the rate base.

Wyman went on to note that the 80% figure was actually *low* compared to historic performance.

As we have noted, we have done extensive research in an attempt to uncover the cost of the 100-foot rule. We have made progress but we have not succeeded. Our best estimate is that almost \$1 billion will be spent in a 5-year period to incentivize gas expansion at precisely the point when New York has come to realize that burning fossil fuels to heat buildings can no longer be supported.

We are the first to admit that this \$1 billion figure is no more than an educated estimate. But most of the weaknesses listed in the data above would indicate the number might be far higher. In any case, times are crying out for a truly accurate number, unassailable from any quarter.

The data we present here, while extensive and fully documented, is not clear, comprehensive or comparable. It is better described as a series of data points framed by data gaps and incompatible methodology. We present it to make clear that Commission intervention is required to develop accurate cost data on the 100-foot rule.

⁸ Direct Testimony of Bob Wyman - Case 18-G-0068 – May 25, 2018 – pp 48-51 http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={BE297296-9267-48A0-B02D-55974E3EBF99} Accessed 2020 04 19

Gas Utilities in New York State:

Below is a listing of gas utilities regulated by the NY Public Service Commission taken from the Commission's website, with ones that were not included in this report highlighted in yellow.⁹ We anticipate these utilities would add to total ratepayer contributions attributable to the 100-foot rule. It would be helpful to have their data included in the report called for by this filing.

Company Bath Electric, Gas & Water System Central Hudson Gas & Electric Corporation Chautaugua Utilities, Inc. Consolidated Edison Company of N Y, Inc. Corning Natural Gas Corporation **Empire State Pipeline** Filmore Gas Company, Inc. Keyspan Energy Delivery (Long Island) Keyspan Energy Delivery (New York) N.E.A. Cross of New York, Inc. National Fuel Gas Distribution Corporation New York State Electric & Gas Corporation Niagara Mohawk Power Corporation Orange and Rockland Utilities, Inc. Reserve Gas Company, Inc. **Rochester Gas & Electric Corporation** St. Lawrence Gas Company, Inc. Valley Energy, Inc. Woodhull Municipal Gas Company

⁹ Natural Gas Utilities Regulated by the PSC

http://www3.dps.ny.gov/W/PSCWeb.nsf/All/AF91A30E4F00289785257687006F3A53?OpenDocument – Accessed 2020 04 19

Data Points on the Cost of the 100-Foot Rule

Central Hudson Gas & Electric

Central Hudson – General - Data Point 1

In the PSC's Expansion of Gas Service proceeding (Case 12-G-0297), which started in 2012, Central Hudson Gas & Electric testified: "Often times the tariff requirement of installing 100 feet of main and 100 feet of service is not supported by the revenue received on such an extension."¹⁰

Central Hudson – Per Installation - Data Point 1

Central Hudson's website is still promoting the switch to natural gas. The slide below, from a downloadable "*Community Presentation*" on the *Switch to Natural Gas/How to Switch* page, pegs the value of a free gas service line at a minimum of \$4,500.¹¹ The slide notes that in addition to a minimum of a \$4,500 service line "Central Hudson Covers" a rough grade finish, the installation of a meter and the maintenance of the meter and service line.



¹⁰ Proceeding on Motion of the Commission to Examine Policies Regarding the Expansion of Natural Gas Service Case 12-G-0297 – Comment of Central Hudson Gas & Electric Corporation 2013 08 05 http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7BE01CC4C0-F448-411C-8FAE-EF9CC08A696B%7D Accessed 2020 03 29

¹¹ https://www.cenhud.com/globalassets/pdf/simply-better-presentation.pdf page 16 of 24 – Accessed 2020 03 29

Central Hudson – Total Cost - Data Point 1

In July of 2018, Central Hudson published their annual Corporate Capital Forecast for 2019-2023 that contains the following:¹² We have not seen it made explicit in any of the utility filed materials which expenses are directly required by the 100-foot rule. In the case of the materials below it would seem to be a combination of "new business and meters" – a total of \$64,922,000 over 5 years or an average of \$12.984,400 per year.

Gas Capital Forecast – Ad	lditions					
	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	TOTAL
Production	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Transmission	1,707	1,505	2,375	2,437	2,360	10,385
Regulating Stations	2,100	2,434	2,594	2,552	2,012	11,692
New Business	9,559	9,971	10,020	10,483	10,584	50,616
Distribution Improvements	40,363	38,796	40,829	41,709	42,737	204,434
Meters	3,029	2,993	2,665	2,755	2,864	14,306
Total	\$ 56,758	\$ 55,698	\$ 58,483	\$ 59,936	\$ 60,558	\$ 291,433

Central Hudson – Total Cost - Data Point 2

The graph below,¹³ from the same document, shows New Business spending at more than \$60 Million, indicating they may be including meters used in new installations. The difference in the new business figure is not explained.



¹² Central Hudson Gas & Electric 2019-2023 Corporate Capital Forecast July 1, 2018 – page 25 http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7B3ABF98B7-65C5-4743-8562-D7337AC7B5AF%7D accessed 2020 04 01

¹³ Ibid., page 26

In addition, the term "Study Based Load Growth" was not defined in a pdf search of the document, but in tables at the end of the document it appears to refer to expansion into new areas or neighborhoods. This would appear to add approximately another \$15 million to the \$64.9 million number resulting in average costs of more than \$15.98 M per year.

The forecast provides the following level of detail in tables excerpted here from pages 484 and 485.¹⁴

	GAS ADDITIONS					W/ AFU	IDC, Inflated &	OH Adjustmer	nts	
CAT.	Description	Discretion Level	Investment Type	Preliminary In- Service Date	2019	2020	2021	2022	2023	5-Year Total
New Business	Residential Conversion	System Enhancements	New Business	Multiple	3.329	3.516	3,590	3.620	3.655	17710
New Business	Commercial Conversion	System Enhancements	New Business	Multiple	1,133	1,050	1,072	1,081	1,091	5426
New Business	Traditional NB Res/Comm	Non Discretionary	New Business	Multiple	1,802	1,994	2,143	2,161	2,182	10283
New Business	URD	Non Discretionary	New Business	Multiple	3,296	3,411	3,215	3,620	3,655	17197
New Business	Subtotal New Business				9,559	9,971	10,020	10,483	10,584	50,616
	- · - ·		l		· · · ·		. '			
Distribution	West Point by Pass	Maintain Standards	Study Based Load Growth	2019	4,961	-	-	-	-	4961
Distribution	Westbrook/Windwood	Maintain Standards	Study Based Load Growth	2019	2,041	-	-	-	-	2041
Distribution	Downing West of Grand	Maintain Standards	Study Based Load Growth	2020	-	782	-	-	-	782
Distribution	TV Line	Maintain Standards	Study Based Load Growth	2020	-	1,558	-	-	-	1558
Distribution	Reinforcement Place Holder	Maintain Standards	Study Based Load Growth	2021	-	-	917	-	-	917
Distribution	Marys Avenue Tie - Reserve for Spring Street	Maintain Standards	Study Based Load Growth	2021	-	-	533	-		533
Distribution	TV Line - Lourdes to PN	Maintain Standards	Study Based Load Growth	2022	-	-	-	2,172		2172
	Youth Ore Maters	N. Di vi	N. D. J.		1 500	1 007	1 000	1 505	4 800	2054
Meters	X081A - Gas Meters	Non Discretionary	New Business		1,598	1,637	1,389	1,565	1,762	7951
Meters	X084A - Special Meter Installation	Non Discretionary	New Business		1,431	1,356	1,277	1,190	1,101	6355
Meters	Subtotall Gas Meters				3,029	2,993	2,665	2,755	2,864	14,306

The document defines New Business and Meters as follows¹⁵:

New Business & Meters

The New Business section of the Gas Capital Budget is based primarily on the projected customer growth from the corporate forecast. The forecasted expenditure level is significantly reduced from the prior forecast based on the changing strategy of less focus on gas expansion The Gas New Business has forecast over \$51 million over the 5-year period for residential and commercial additions.

The Gas Meters capital forecast is based on the projected customer growth from the corporate forecast. The forecasted expenditure level is based on the updated forecasted customer growth rates. The meter forecast is based on the annual needs for non-load related meter installations (Meter Testing Program or ERT meter requests) approximately 2,800 meters during the forecast period, and the forecast level based on the customer growth, peak, and sales forecast.

As a positive, it should be noted that CHG&E's 2018 report contains lower growth forecast numbers than the 2017 report, explained by the company as follows¹⁶:

The Gas New Business plan reflects a significant reduction from the prior forecast recognizing the fact that the Company is dramatically reducing its gas expansion program.

¹⁴ *Ibid.* – pages 484-5

¹⁵ *Ibid.* – page 29

¹⁶ *Ibid.* – page 7

Consolidated Edison

Con Edison – General - Data Point 1

Con Edison – Per Installation Data Point 1

In the most recent Con Edison rate case that was settled in January of 2020, the company filed data that NY-GEO member Bob Wyman analyzed, which indicates an average cost of \$33,000 that ratepayers are required to pay to install a "free" service line to new customers.¹⁷ Customers rehabbing buildings paid considerably more (\$87,286) in the #4/#6 Oil to Gas Program and less (\$26,513) in the #2 oil to gas program.

	2013		2014		2015	2016		2017		2018		Average	Total 2014-'18	
w Business not c	overed by fo	orm	al oil-to-ga	as p	rograms									Notes:
Services #	2.618		1.992		1.726	1.975		1.673		1.941		1.988	9,307	From DPS-1-138-Supp1-Att-1 (2013)
Cost (\$000)														
Services		\$	32,724	\$	41,377	\$ 49,745	\$	44,024	\$	42,698	\$	42,114	210,568	From DPS-1-138-Supp1-Att-1
Mains		\$	16,653	\$	13,262	\$ 27,405	\$	18,071	\$	16,162	\$	18,311	91,553	From DPS-1-138-Supp1-Att-1
Meters														
Regulators						\$ 4,773	\$	666			\$	2,720	5,439	From DPS-1-123-Supp1-Att
Total		\$	49,377	\$	54,639	\$ 81,923	\$	62,761	\$	58,860	\$	61,512	307,560	
Cost/Service (\$)	\$	24,788	\$	31,656	\$ 41,480	\$	37,514	\$	30,325	Ş	33,046		Average Cost/Service **
/#4 Oil to Gas Pro	ogram													
Services #	789		861		888	609		268		201		603	2,827	
Cost (\$000)														
Services		\$	27,998	\$	33,833	\$ 23,528	\$	11,634	\$	8,317	\$	21,062	105,310	
Mains		\$	29,082	\$	36,041	\$ 37,837	\$	21,821	\$	16,667	\$	28,290	141,448	
Total		\$	57,080	\$	69,874	\$ 61,365	\$	33,455	\$	24,984	\$	49,352	246,758	
Cost/Service (\$)	\$	66,295	\$	78,687	\$ 100,764	\$	124,832	\$	124,299	\$	87,286		Average Cost/Service (118) **
Oil to Gas Progra	m													
Services #			674		910	1,060		596		551		758	3,791	
Cost (\$000)														
Services		\$	11,914	\$	18,117	\$ 22,133	\$	14,102	\$	14,328	\$	16,119	80,594	
Mains		\$	548	\$	2,337	\$ 8,661	\$	5,367	\$	3,004	\$	3,983	19,917	
Total \$	- 6	\$	12,462	\$	20,454	\$ 30,794	\$	19,469	\$	17,332	\$	16,752	100,511	
Cost/Service (\$)	\$	18,490	\$	22,477	\$ 29,051	\$	32,666	\$	31,456	\$	26,513		Average Cost/Service (125) **
Total		\$	118,919	\$	144,967	\$ 174,082	\$	115,685	\$	101,176	\$	127,615	\$ 654,829	
														** Weighted Average
							To	tai installa	itic	ns			15,925	

Note from Mr. Wyman¹⁸

The weighted average cost per new service, based on partial data, not including cost of meters, some regulators, etc. was:

¹⁷ Calculated by Bob Wyman, a party to the Con Ed rate case, who worked from this document filed by the company https://drive.google.com/drive/folders/1cB7eFUKqmdzrYgmCNsY1tYjmDLOIFBaZ accessed 2019 09 05

¹⁸ 2019 06 02 Email from Bob Wyman (NY-GEO member)

- **\$87,286 for #6/#4 Oil to gas conversions**. These are mostly large buildings addressed by the Clean Heat Program.
- **\$26,513 for #2 Oil to gas conversions**. These are also large buildings, but not those addressed in Clean Heat Program.
- \$33,046 for all other new gas services. These include small residential buildings (i.e. single family as well as 2 to 5 family, etc.) that were not part of the Clean Heat programs. Note: ConEd doesn't provide very detailed cost breakdowns. Thus, we can't see the cost for a single category of buildings such as "single-family." In general, ConEd has very little information on the characteristics of their customers... This causes many issues with analyses.

This data was culled from ConEd responses to discovery: DPS-1-138 Supp 1 and DPS-1-123 Supp 1.

If we assume that a new geothermal heat pump installation will cost about \$35,000 before incentives and tax credits, the cost of the geothermal installation is similar to the subsidy required of ratepayers under the 100-foot rule.

Con Edison – Per Installation Data Point 2

The chart below from Con Ed's 2019 annual capital expense report to the Public Service Commission details replacement costs for cast iron and steel mains in 4 locations – Manhattan, the Bronx Queens and Westchester.¹⁹ For new business, they range from \$135,700 per hundred feet in Manhattan to \$47,800 per hundred feet in Westchester with an average of \$66,200.

There is no indication in the report of how expenses compare between installations of mains and service lines. Nor is there a way of delineating how much of the footage documented is required under the 100-foot rule.

				C	ONSOLID	ATED EDISC Gas Ra Main I 12 Mo. F	ON COMPAN Ite Case 16-0 Replacement	VY OF NE 5-0061 t Cost 11.2019	W YORK, IN	С					Appendix J Form 6 of 13
		м			х			Q			w			Total	
	Cost	Footage	Cost/Foot	Cost	Footage	Cost/Foot	Cost	Footage	Cost/Foot	Cost	Footage	Cost/Foot	Cost	Footage	Cost/Foot
MRP	\$65,669,000	46,778		\$43,229,000	96,766		\$71,963,674	100,454		\$139,650,355	220,453		\$320,512,029	464,451	\$690
Cast Iron	\$46,894,414	41,645	\$1,126	\$32,883,656	73,786	\$917	\$22,991,034	20,694	\$1,111	\$62,033,625	75,375	\$823	\$164,802,728	211,500	\$779
Steel	\$18,774,586	5,133	\$3,658	\$10,345,344	22,980	\$814	\$48,972,640	79,760	\$614	\$77,616,730	145,078	\$535	\$155,709,301	252,951	\$616
Other															
Public Improvement	\$71,107,000	17,052		\$24,334,975	13,900		\$8,638,688	5,609		\$7,744,284	4,522		\$111,824,947	41,083	\$2,722
Cast Iron	\$59,827,125	14,347	\$4,170	\$22,766,332	13,004	\$1,751	\$3,958,179	2,570	\$1,540	\$6,970,198	4,070	\$1,713	\$93,521,834	33,991	\$2,751
Steel	\$11,279,875	2,705	\$4,170	\$1,568,643	896	\$1,751	\$4,680,509	3,039	\$1,540	\$774,086	452	\$1,713	\$18,303,113	7,092	\$2,581
System Reinforcement	\$87,346	116		\$224,684	218		\$678,281	1,470		\$2,321,960	3,325		\$3,312,271	5,129	\$646
Cast Iron	\$62,498	83	\$753	\$171,089	166	\$1,031	\$4,614	10	\$461	\$170,393	244	\$698	\$408,595	503	\$812
Steel	\$24,848	33	\$753	\$53,594	52	\$1,031	\$673,667	1,460	\$461	\$2,151,567	3,081	\$698	\$2,903,677	4,626	\$628
GNB/OTG (New Business)	\$2,416,625	1,781		\$1,006,472	1,015		\$134,776	197		\$321,076	672		\$3,878,949	3,665	\$1,058
Cast Iron	\$2,291,791	1,689	\$1,357	\$864,673	872	\$992	\$65,678	96	\$684	\$27,234	57	\$478	\$3,249,376	2,714	\$1,197
Steel	\$124,834	92	\$1,357	\$141,798	143	\$992	\$69,098	101	\$684	\$293,842	615	\$478	\$629,573	951	\$662
*Unit Cost Calculations are ba *Total Cost for LPP is based of	ased on year en on year end unit	d installed fo cost * 2019	iotages LPP removal f	ootages											

¹⁹ Gas Capital Expenditures 2019 – filed 2020 02 28 - DMM 19-G-0066 – page 17 http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={FB37DF2C-02B1-4707-94BA-8F5FD8E04FAB} Accessed 2020, 04 13

Con Edison – Per Installation Data Point 3

The Chart below, from the same Capital Expense Report, shows "Actual Capital/Mile" figures that translate into a range of \$152,594 per hundred feet in Manhattan to \$85,020 in Westchester. The difference between these two charts is not explained. The "Actual" figures are substantially higher, especially in Queens (134% more) and Westchester (178% more).

CONSOLIDATED EDIS Gas Ra Safety and Reliabilit <u>12 Mo.</u>	ON C ate Ca / Surc Ending I	OMPANY OF ase 16-G-006 charge Me <mark>cha December 31, 2017</mark>	NE 1 nisr	W YORK, INC	:				Appendix J Form 11 of 13
Targets		<u>Manhattan</u>		Queens		Bronx	1	<u>Westchester</u>	<u>Total</u>
Target Mileage		11.10		13.34		16.50		39.01	79.95
Target Capital	\$	101,797,140	\$	47,923,394	\$	80,425,888	\$	121,344,133	\$ 351,490,555
\$Capital/Mile Cap	\$	9,173,731	\$	3,591,500	\$	4,875,024	\$	3,110,255	
Target O&M	\$	7,298,734	\$	1,058,338	\$	2,747,403	\$	1,864,546	\$ 12,969,021
\$O&M/M Cap	\$	657,746	\$	79,314	\$	166,534	\$	47,791	
LPP MAC Factor		7%		2%		3%		2%	
Actuals		<u>Manhattan</u>		Queens		Bronx		<u>Westchester</u>	Total
Actual Mileage		8.86		19.03		18.33		41.75	87.96
Actual Capital	\$	71,375,816	\$	91,833,754	\$	113,402,170	\$	187,428,868	\$ 464,040,608
Actual Capital/Mile	\$	8,056,443	\$	4,826,908	\$	6,187,746	\$	4,489,049	
Incremental Miles		(2.24)		5.68		1.83		2.74	8.01
Incremental Cost Spent over Target Capital			\$	43,910,360	\$	32,976,282	\$	66,084,735	\$ 142,971,377
Actual cost of incremental mileage (Incremental miles X actual capital/mile) (A)			\$	27,425,614	\$	11,319,591	\$	12,292,174	
Inremental Cost at cost/mile cap (B)			\$	20,406,248	\$	8,918,154	\$	8,516,680	
Recoverable Capital (The lessor of A or B)	\$	-	\$	20,406,248	\$	8,918,154	\$	8,516,680	\$ 37,841,082

Con Edison – Total Cost - Data Point 1

From Mr. Wyman's spreadsheet, \$599,864,000 over 5 years comes out to an average of \$119,973,000 per year

Corning Natural Gas

Corning Natural Gas – Per Installation Data Point 1

In its current rate fining, Corning Natural Gas has presented the following table of additions to its system in 2019.²⁰

Corping	Natural Gao	I		1		
DPS-24	Natural Clas 5 Undated with FY 2019 additions	I				
01 0-24		1				
		MONTHAYEAR				
VO OB	VOBK OBDEB DESCRIPTION	Mar-19	Jul-19	Aug-19	Sep-19	Grand Total
150011	BUEFALO ST-CITY OF COBNING	4 984	oario	ridgilo	00010	4 984
150012	MOUNTAINBROV APTS-CITY OF COBNING	1,001				1,001
150012	BIRD CREEK RD. TOWN OF SOUTHPORT	1360				1360
150020	S ELM ST. VILLAGE DE S COBNING	1899				1899
150027	UNE 6-TOWN OF CATON	234				234
150028	EOX LANE-TOWN OF EBVIN	5 430				5 430
150031	SPRUCE ST, 900ET OF 314 " MED PIPE DENSITY 11 SERVICES.CITY OF COBMING	1585				1585
150035	BIVER BOAD STATION-TOWN OF COBNING	25.013				25.013
160017	FOX LANE 18000' OF 2.4.6" MORE 144 SEBVICES TOWN OF FRVIN	172				172
160018	FOREST DR 4000' OF 41'M DRE MAIN 16 SERVICES, TOWN OF ERVIN	1867				1867
160028	TAFT BD.100' OF 2" I SERVICE TOWN OF CAMPBELL	1034				1034
160020	I AMPHEAR COURT (MEADOWREDOK REGISTATION),1100' OF A'' 600' OF 2", CI	Y OF COBNING	171 206	19 74 9		199 953
160020	OLD CORNING HOSPITAL 22001 OF 8" 2501 OF 2"-CITY OF CORNING		11,200	10,140	57	57
170002	BLANKET SHORT MAIN REPLACEMENT, ALL MUNICIPALITIES	297				297
170010		201			22.092	201
170010	ONEF IT STELIDEN ST. MAIN DEDI. 20' OF 9", CITY OF CODNING	2 100			33,003	2 100
170012		2,100				2,100
170014		920				920
170010	COUNTY DOUTE 115 250' OF 2" DE MAIN TOVIN OF LINDLEY	320				21.177
170010	VATACUA, AVE (500) OF 21 FEIMAIN-TOWN OF LINDLET	41,100				21,177
170018		I,383				1,393
170020	ALLET C-1600 OF 6 MIDPE 19 SERV-CITY OF COMMING	38,138				08,138
170021	RIVER RD-2000 OF 6 MIDPE 12 SERV-1 OWN OF CORNING	0.005				1,015
170023	LINE IS-5800 OF 5" STEEL-TOWN OF WOODHOLL	2,005			040.004	2,005
170024		2.055			242,084	242,084
170026	W. WATER ST-1600 OF 6" MUPE 11 SERVICES-TOWN OF ERVIN	7,355				7,355
170027	NEW HAVEN RD-520° OF 2" MDPE 9 SERVICES- TOWN OF ERVIN	299				299
170029	CRUSSTOWN PULTENEY LEVEE-INSTALL 940' OF 12" MAIN SERVICES-CITY OF	165				165
170030	LAMPHEAR CT-1150" OF 2" MAIN 20 SERVICES-CITY OF CORNING		112,596			112,596
170031	CROSSTOWN-5000' OF 12"-VILLAGE OF SOUTH CORNING	1,032			1,117	2,149
170034	CORNING HIGH SCHOOL METER SET-CITY OF CORNING	1,402				1,402
170035	BEARTOWN RD-1800' OF 4" AND 15 SERVICES-TOWN OF ERVIN	22				22
170037	BRADLEY NYSEG STATION REBUILD-500° OF 12"-TOWN OF SOUTHPORT	72				72
170040	GOFF RD-300' OF 2" 3 SERVICES-TOWN OF CORNING	17,981				17,981
170041	THURBER RD-2076' OF 2" 1042' OF 1/2" 12 SERVICES- TOWN OF CATON	76,767				76,767
170042	SPRUCE ST-659' OF 4" 11 SERVICES-CITY OF CORNING	59,110				59,110
180002	BLANKET SHORT MAIN REPLACEMENT-ALL MUNICIPALITIES	7,973				7,973
180003	BLANKET- OFFICE FURNITURE AND MACHINE	23,645			12,059	35,704
180004	BLANKET- MISC TOOLS W/COST OVER 250	2,395				2,395
180005	BLANKET-REGULATOR STATIONS-ALL MUNICIPALITIES	1,451				1,451
180006	BLANKET -VEHICLE REPAIR	1,800				1,800
180007	BLANKET-VEHICLE PURCHASES	367				367
180008	BLANKET-BUILDING IMPROVEMENTS	26,938				26,938
180009	BLANKET-COMPUTERS ETC	62,664				62,664
180010	BLANKET-SAFETY	6,953				6,953
180011	ADDISON BACK ROAD-REPLACE 6000' OF 4" 1000' OF 2" 12 SERVICES-TOWN OF	178,692				178,692
180012	HILLSIDE DR-MAIN AND SERVICE-TOWN OF CORNING	10,089		72,477		82,566
180014	UNLOCATABLE MAINS AND SERVICES				5,953	5,953
180015	LINE 6-3400' OF 8" HDPE-TOWN OF CATON			238,240		238,240
180017	HART ST-340' OF 6"MDPE 2400' OF 2"MDPE 15 SERVICES-VILLAGE OF PAINTED	DPOST	123,320			123,320
180018	CLARK ST-1400' OF 2' MDPE 14 SERVICES-VILLAGE OF RIVERSIDE		125,450	793		126,243

²⁰ Case 20-G-0101 - Corning Natural Gas Corporation Responses to Department of Public Service Staff Interrogatories DPS-245 Update

	1					
180019	CRESCENT DR-1300' OF 8" MDPE 1600' OF 4 36 SERVICES-TOWN OF ERWIN			275,222		275,222
180020	CLARK HOLLOW RD-600' OF 2" HDPE-TOWN OF SOUTHPORT		43,835			43,835
180021	TUSCARORA CREEK-1400' OF 4" MDPE_SERVICE-TOWN OF TUSCARORA			48,119		48,119
180022	COUNTY RD 5-7000' OF 4" MDPE 8 SERVICES-TOWN OF TUSCARORA			163,166		163,166
180023	LINE 15-11 000'OF 6"-TOWN OF RATHBONE			83,255		83,255
180026	CANADA RD-6350' OF 4" MDPE 13 SERVICES-TOWN OF ERWIN	211,569				211,569
180027	STATE ROUTE 352-750' OF 4" 4800' OF 8" 1600' OF 2" 45 SERVICES-TOWN OF CC	RNING		122,718	427,234	549,952
180028	MERCURY AIRCRAFT-960' of 4" -VIL OF HAMMONSPORT				30,959	30,959
180029	ALLEY A-340' OF 6" 6 SERVICES-CITY OF CORNING	142,362			4,494	146,856
180033	SERVICE-SADDLE				18,834	18,834
180034	SOUTHPORT FLOODING-DRY RUN-40' OF 2" SERVICE-TOWN OF SOUTHPORT				43,243	43,243
180035	HAMILTON RD-425' of 1 1/4 180' of 2" 181' of 1/2" for services				35,714	35,714
180037	CATON FEED FROM THURBER RD-4000' OF 4"-1 SERVICES-TOWN OF CATON				140,632	140,632
2E+06	BLANKET METER INSTALLATION-ALL MUNICIPALITIES	19,716				19,716
2E+06	BLANKET HOUSE REG PURCHASES	4,032				4,032
2E+06	BLANKET SERVICE REPLACEMENT-ALL MUNICIPALITIES	200,024				200,024
2E+06	BLANKET PURCHASE METERS	57,940			31,108	89,048
2E+06	BLANKET SHORT MAIN REPLACEMENT-ALL MUNICIPALITIES	20,072				20,072
2E+06	BLANKET NEW MAIN INSTALL-ALL MUNICIPALITIES	138				138
2E+06	BLANKET-CORROSION MAIN-ALL MUNICIPALITIES	26,055				26,055
2E+06	BLANKET-CORROSION SERVICE-ALL MUNICIPALITIES	4,823				4,823
		1,305,411	576,406	1,022,737	1,026,573	3,931,127

This table is one of the more detailed and transparent examples of gas expansion filed by a utility. At the same time, it raises several questions. For the additions where footage is listed, the cost per 100 feet ranges from 95 cents to \$43,193, an improbable difference. The average of the 40 additions for which footage is listed comes to \$4,995 per 100-feet.

Corning Natural Gas – Total Cost Data Point 1

For the purposes of a total to enter into the Rough Estimate Cost table on page 5, we have used the \$3.931 M figure in the table above.

National Fuel Gas

National Fuel Gas - General - Data Point 1

National Fuel Gas (NFG) is fairly unique among New York's utilities. There are several other gas utilities that aren't also coupled with an electric utility, but all are far smaller than NFG. In addition, NFG Distribution is a division of the larger National Fuel Gas Company which includes gas exploration and production companies in Pennsylvania, New York and California. The chart below from a 2012 presentation to investors²¹ shows utility operations contribute around a quarter of the company's earnings before interest, taxes, depreciation and amortization.



²¹ National Fuel Gas Company – Investor Presentation – AGA Financial Forum MAY 6-8, 2012 – Slide 5 of Exhibit #99 https://www.sec.gov/Archives/edgar/data/70145/000119312512211878/d346799dex99.htm Accessed 2020 04 27



Lastly, National Fuel operates as a gas utility in both New York and Pennsylvania.²²

National Fuel Gas – Per Installation - Data Point 1

NFG files quarterly New Service Install Reports, redacted to hide the address of new installs. In the latest full year report the company shows 219 non-residential and 1818 residential new installations from April 1, 2018 to March 31, 2019.²³. These reports simply list installations and contain no cost data.

National Fuel Gas - Total Cost - Data Point 1

²² *Ibid.* slide 22

²³ New Service Install Report Q4 2018 Redacted – filed 2019 05 15 – Item 239 http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={02DA3707-ABB6-44BA-8149-324A6A7941B8} Accessed 2020 04 27

Shown below is NFG's FY2019 Capital Budget Summary by Program.²⁴

		NAT FY2	TIONAL FUEL (N 019 CAPITAL I	GAS DISTRII EW YORK D CASE 16-G BUDGET SU	BUTION CORPORATION NVISION -0257 IMMARY BY PROGRAM
Plant Account	Budget	Actual	Variance	Variance %	Explanation for Variances > 10%
Production Plant					
Account 325 - Land & Land Rights	\$0				
Account 332 - Production Mains	\$20,000				Lower than expected spending for replacement of production mains.
Account 333 - Field Compressor Station Equipment	\$0				
Account 334 - Measuring & Regulating Stations	\$200,000				Timing of replacement meter and corrector purchases for production facilities.
Transmission Plant					
Account 365 - Land & Land Rights	\$0				
Account 367 - Transmission Lines	\$415,000				Carry-over FY18 spending for environmental inspection and pipe inventory inspection; offset by pipe transfer and reimbursement for FY18 project, unanticipated spending to repair rectifier and replace exosed/shallow cable: and greater than exoected spending on transmission line cathodic protection.
Account 369 - Measuring & Regulating Stations	\$55.000				Customer prepayment on project with planned FY20 spending and construction in-service.
Distribution Plant	+,				
Account 374 - Land & Land Rights	\$460.000				Lower than expected spending for distribution rights of way acquisitions.
Account 375 - Structures & Improvements	\$50,000				Greater than expected spending on distribution M&R station structures.
Account 376 - Distribution Mains	\$24,155,000				
Account 378 - Measuring & Regulating Stations	\$525,000				
Account 380 - Services	\$17,850,000				
Account 381 - Measuring & Regulating Equipment	\$1,700.000				
Account 385 - Industrial M&R Stations	\$640.000				Timing of payments received from customers vs spending for industrial meter sets.
General Plant					
Account 390 - Structures and Improvements	\$653,000				Unanticipated spending for shelving repairs, greater than expected spending for fuel tank replacement, and FY18 carry-over spending for backup generator and MSW facility improvements.
Account 391 - Office Furniture and Equipment	\$1,902,000				Lower than expected spending for server replacements.
Account 392 - Transportation Equipment	\$1,800,000				Greater than expected spending due to additional vehicle purchases.
Account 394 - Tools, Shop & Garage Equipment	\$311,000				Greater than expected spending on small tools and unanticipated spending for peelers.
Account 396 - Power Operated Equipment	\$750,000				Lower than expected spending due to power operated equipment trade in value greater than anticipated.
Account 397 - Communications Equipment	\$350,000				Lower than expected spending due to planned telemetric projects placed on hold.
Special Projects					
Account 365 - Land & Land Rights	\$375,000				Lower than expected spending due to the timing of the finalization of transmission pipeline route.
Account 367 - Transmission Lines	\$9,000,000				Lower than expected construction costs for completion of transmission leak-prone pipe replacement project.
Account 376 - Distribution Mains	\$5,700,000				Lower than expected construction costs to execute leak-prone pipe replacement plan.
Account 380 - Services	\$900,000				
Account 390 - Structures and Improvements	\$1,150,000				
Account 391 - Office Furniture and Equipment	\$1,662,000				Lower than expected cost due to timing of progress payments on Vision Project - PFI with carry-over budgeted in FY20; Distribution Risk System project delayed and rebudgeted in FY20.
Account 397 - Communications	\$369,000				over budgeted in FY20.

The Actual spending is redacted, but the budgeted figures for account 380 – Services are \$17,850,000 in Distributions Plant and \$900,000 in Special Projects. The total of \$18,750,000 might be the amount budgeted for new services installed with ratepayer funds under the 100-foot rule. Without further explanation it is impossible to tell and it would certainly be more accurate to be using actual spending figures.

National Fuel Gas - Total Cost - Data Point 2

Given the limitations of using the filed capital report noted above, a more conservative approach might be to take the 2018-19 number of 2,038 installations and multiply them by \$5,000 as an estimate derived from National Grid's 2013 upstate estimate of \$3,500 updated for inflation, combined with Central Hudson's recent estimation of a minimum of \$4,500. We settled on the resulting number of \$10.19 million per year for the estimate used in our total cost table in the opening section of this document. However, this, like so much of the data we've uncovered, is at best an inexact substitute for uniform, Commission ordered reporting designed to reflect the true costs of the 100-foot rule.

²⁴ NFGDC FY2019 Capital Budget Summary by Program Redacted – Item 258 http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={9B0736B4-CD4A-4136-A7EE-D5A33C0DB347} Accessed 2020 04 27

National Grid

National Grid has a bifurcated structure in New York State. Upstate it operates as Niagara Mohawk Power Corporation (NMPC) with a huge electric service territory running from the Albany area west to Syracuse and north to cover most of the Adirondacks, along with a substantial swath of Western New York.



NMPC's gas territory is much smaller and runs from the Albany area in a narrower band west to Syracuse and then north to Watertown in another narrow band.



National Grid's downstate territory is further bifurcated into KEDNY – Brooklyn Union Gas (serving Brooklyn, Queens and Staten Island), and KEDLI – KeySpan Gas East (serving Long Island). 25



For the purpose of this document, we will combine National Grid's Upstate and Downstate operations for general data and per installation data points and examine them separately for total cost data points.

National Grid – General - Data Point 1

In the State's "Expansion of Natural Gas Service" proceeding, started in 2012, National Grid stated:

In National Grid's territories, the 100-foot entitlement of main to connect a new residential customer is **not cost-justified by the typical residential customer's delivery revenue**. The issue is especially true with respect to residential non-heating applicants who provide little revenue to cost-justify the 100 feet. Nevertheless, National Grid supports providing 100 feet of main to each applicant as a means to foster expansion and access to gas. National Grid believes it is good public policy to provide entitlements even though some of the costs may be socialized because all customers benefit from the expansion of gas, including economic development benefits, indirect environmental benefits associated with increased natural gas usage and the retirement of inefficient heating equipment, and enhanced security of supply realized from developing the gas system.²⁶

²⁵ National Grid - Natural Gas Long-Term Capacity Report for Brooklyn, Queens, Staten Island and Long Island ("Downstate NY") February 2020 page 22-

https://millawesome.s3.amazonaws.com/Downstate_NY_Long-Term_Natural_Gas_Capacity_Report_February_24_2020.pdf?d=1582744315651 Accessed 2020 04 19 ²⁶ 2013 08 05 Letter from National Grid in 12-G-0297 - Proceeding on Motion of the Commission To Examine Policies Regarding the Expansion of Natural Gas Service - page 2

National Grid – Per Installation - Data Point 1

In 2013, National Grid testified:

...the average cost of service of \$5,000 (in KEDNY and KEDLI's service territories) and \$3,500 (in NMPC's service territory) for a residential customer is **often not justified by customer revenue**. Because the average service cost itself is not cost justified, and all customers will require service, National Grid is typically not able to cost-justify any of the first 100 feet of main to residential customers.²⁷

(Note: this testimony was filed in 2013. Costs have undoubtedly risen since then.)

National Grid Upstate – Total Cost - Data Point 1

In March of 2020, National Grid posted their Annual Capital Plan Report for NMPC, which contains this chart:²⁸

		Niag d/b/a Case FY2 Pag	ara Mohawk a National G e 17-G-0239 1 LPP Priorit e 4 of 5	Power Corrid	poration Capital Plan	Report
	NMPC Capital Plan - C	Gas				
		FY2021	FY2022	FY2023	FY2024	FY2025
Classification	Category					
Sustomer Connection	ons					
Mains & Svc	Customer Connections - Install Main	7,653,383	7,480,210	8,181,532	8,371,028	8,515,04
Mains & Svc	Customer Connections - Install Services	9,784,219	10,826,020	10,763,478	11,185,689	11,618,97
Mains & Svc	Customer Connections - Neighborhood Expansion Program - Main	-	-	-	-	-
Mains & Svc	Customer Connections - Neighborhood Expansion Program - Services	-	-	-	-	-
Mains & Svc	Customer Connections - Customer Contributions	(1,946,464)	(1,987,340)	(2,029,670)	(2,072,293)	(2,116,22
Mains & Svc	Customer Connections - Install Meter/Regulator	3,079,858	3,144,535	3,211,514	3,278,955	3,348,46
Mains & Svc	Customer Connections - Fitting	5,435,077	5,549,213	5,667,411	5,786,427	5,909,09
Mains & Svc	Customer Connections - Special Projects	1,489,725	-	-	-	-
Meters/Hse Reg	Customer Connections - Meter Purchases	2,103,000	2,145,000	2,188,000	2,567,000	2,617,00
Mains & Svc	Gas System Reinforcement	5,839,278	3,436,158	8,620,067	5,168,520	5,571,80
Mains & Svc	LTUN12247_Rexford_Rt 146_New Main and Regulator	2,300,000	6,000,000	70,000	-	-
Mains & Svc	LTUN12350_Altamont_St Rt146_New Main	500,000	6,440,000	-	-	-
Mains & Svc	LTUN12375_Scehenctady_Uprate PL E36	1,560,722	-	-	-	-
Mains & Svc	PE Stamps Cost - Customer Connections	1,493,000	1,522,860	1,553,317	1,584,384	1,616,07
	Subtotal	39 291 798	44 556 657	38 225 649	35 869 709	37 080 23

http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7B7B1F6ADF-4111-4DB1-80CD-B797C72CF6D9%7D – accessed 2019 09 05

http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7B7B1F6ADF-4111-4DB1-80CD-B797C72CF6D9%7D accessed 2019 09 06

²⁸ Annual LPP, Type 3 Leak and Capital Plan Report – page 4 of 5

http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={4367F267-1B3A-4311-8776-27AC4E842367} accessed 2020 04 01

²⁷ 2013 08 05 Letter from National Grid in 12-G-0297 - Proceeding on Motion of the Commission To Examine Policies Regarding the Expansion of Natural Gas Service - page 4

National Grid Upstate – Total Cost - Data Point 2

The capital budget adopted as part of the 2018 PSC ordered settlement of National Grid's rate case²⁹ lists "Growth" as a category in the Capex budget. This category seems to include many of the expenses related to the 100-foot rule, but as noted above, it is never explicitly identified as covering all of those expenses.

	Niagara Mohawk Power Corporat PSC Case 17-E-0238 & Summary of Planned Investme FY18 - FY (\$000)	ion d/b/a Nat 2 17-G-0239 nt for Gas Pr 21	ional Grid ograms			
Classification	Rate Case Category		FY'18	FY'19 Rate Year	FY'20 Rate Year	FY'21 Rate Year
Growth	Base Growth - Install Main	\$	6,176	\$ 7,208	\$ 7,359	\$ 7,514
	Base Growth - Install Services	\$	11,855	\$ 12,911	\$ 13,643	\$ 14,417
	Base Growth - Neighborhood Expansion Program - Main	\$	623	\$ 679	\$ 693	\$ 708
	Base Growth - Neighborhood Expansion Program - Services	\$	375	\$ 489	\$ 499	\$ 510
	Base Growth - Customer Contributions	\$	(2,048)	\$ (1,494)	\$ (1,525)	\$ (1,558)
	Base Growth - Fitting	\$	4,614	\$ 3,558	\$ 3,633	\$ 3,709
	Base Growth - Install Meter/Regulator	\$	2,302	\$ 3,245	\$ 3,313	\$ 3,383
	Base Growth - Meter Purchases	\$	1,145	\$ 1,926	\$ 1,966	\$ 2,008
	Gas System Reinforcement	\$	3,322	\$ 6,185	\$ 7,857	\$ 10,200
	Marcy Nano Tech Center (MV Edge)	\$	9,559	\$ 500	s -	\$-
	Marcy Nano Tech Center (MV Edge) CIAC	\$	(9,559)	\$ (500)	s -	\$ -
	Global Foundries	\$	-	\$ -	\$ -	\$ -
	Global Foundries CIAC	\$	-	\$ -	s -	\$ -
Subtotal Growth		\$	28,364	\$ 34,707	\$ 37,438	\$ 40,891

National Grid Downstate - Total Cost - Data Point 1

National Grid's 2020 Downstate Capacity Report³⁰ contains the following data relative to gas expansion:

Regarding the obligation to provide gas service per the sections of law that govern the 100-foot rule:³¹

4.4 Our Service Obligations

In general, gas utilities have an affirmative duty to provide service to qualifying applicants in their service territories. This obligation is set forth in the New York State Public Service Law §31 and the Transportation Corporations Law §12, and further defined in the New York Public Service Commission's regulations and each utility's tariff. Therefore, for both residential and non-residential applicants, National Grid is required to connect and service all customers that request gas service in Downstate NY unless precluded by certain conditions, such as the incomplete construction of necessary facilities, insufficient supply, or considerations for public safety.

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²⁹ Attachments to order in cases 17-E-0238, 17-g-0239 – March 15, 2018 – pdf page 226 of 861 http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={34A11C2D-2B19-4460-AC8C-8C744E4F8A60} Accessed 2020 04 19

³⁰ National Grid - Natural Gas Long-Term Capacity Report for Brooklyn, Queens, Staten Island and Long Island ("Downstate NY") February 2020 page 22-

https://millawesome.s3.amazonaws.com/Downstate_NY_Long-

Term_Natural_Gas_Capacity_Report_February_24_2020.pdf?d=1582744315651 Accessed 2020 04 19 ³¹ *Ibid.* page 26

Regarding the number of new gas installations:³² "Over the last 10 years, the number of natural gas customers that National Grid serves has grown by more than 115,000, and gas demand during peak usage periods has grown by 2.4%/year."

From Section 5. Projected Natural Gas Demand Through 2035 in Downstate New York:

The number of customers grew 0.6% (11,634 customers) per year, driven by population growth, business and economic growth, and continued conversions from oil to gas. Within the specific customer categories, the greatest increases have come from residential heat and multi-family, offset by reductions in residential non-heat and temperature-controlled customers as these customers switched to firm gas heat.³³

	Average Change Per	r Year, 2010 - 2019
Customer type	# of Customers	%
Residential non-heat	(7,023)	-1.0%
Residential heat	17,436	1.8%
Commercial	865	0.8%
Multi-family	497	2.8%
Temperature controlled	(141)	-4.4%
Total	11,634	0.6%

Source: National Grid analysis

If we assume the bulk of National Grid's residential non-heat and temperature-controlled gas customers did not need new infrastructure under the 100-foot rule to convert to gas heat, we are left with 11,634 customers converting and receiving ratepayer funded infrastructure each year.

The passage below appears to break down the 17,436 figure but accounts for only 12,400 of those customers and repeats the trope, which evidence suggests is no longer true under the terms of NY's Climate Leadership and Community Protection Act, that gas produces less GHG emissions than oil. ³⁴

Continued conversions from oil to gas – ~5,400 new customers per year join National Grid by converting from non-gas fuels to gas, in addition to an existing ~7,000 non-heat customers becoming heat customers. These conversions from oil to gas were fueled by significant gas advantages over oil when it comes to commodity cost (~50% cheaper), convenience and environmental advantages (estimated 43% less GHG emissions8). These advantages have made gas a fuel of choice for new construction and retrofits, resulting in gas

³² Ibid. page 27

³³ *Ibid.* page 29

³⁴ *Ibid.* page 30

heating increasing its space heating market share from 64.5% to 67.5% between 2012 and 2019.

In the Baseline Demand scenario, this conversion trend is expected to continue, with almost 33% of building space in the Downstate NY area still heated by non-gas sources – 23% from oil heating and 10% from electric resistance, propane and other fuels.

This chart shows the room for growth in National Grid's downstate territory within existing building stock.³⁵



Going forward, National Grid cites a 2018 McKinsey report that projects a slight decrease in total number of customers added each year through 2035, without explanation of how this trend could square with New York's greenhouse gas reduction goal of an 85% reduction in emissions by 2050.³⁶

	2010-2019		2020-2035	6 Baseline
Driver	#/yr.	%/yr.	#/yr.	%/yr.
aseline # of Customers	11,634	0.64%	11,259	0.57%
Residential Non-heat	(7,023)	-1.0%	(7,614)	-1.3%
Residential Heat	17,436	1.8%	17,909	1.5%
Commercial & Industrial	865	0.8%	509	0.4%
Multi-family	497	2.8%	594	2.4%
Temperature Controlled	(141)	-4.4%	(140)	-13.1%

⁹ McKinsey Global Energy Perspective: Accelerated Transition November, 2018

³⁵ Ibid. page 31

³⁶ Ibid. page 33

Despite the wealth of data shown here from National Grid's 2020 Downstate Long-Term Capacity report on the number and type of gas conversions projected, we were unable to find a dollar figure connected to these conversions. But if we use the minimal 2013 figure (cited in per installation data point 1 above) of \$5,000 per system – not adjusted for inflation – times the 11,259 annual conversions from page 33 of the 2020 report, it is possible to project \$56,295,000 per year going forward and using the historical 2010-2019 average of 11,634 customers per year, \$57,180,000 for recent years.

NYSEG & RG&E

NYSEG & RG&E- General - Data Point 1

In Plattsburgh, NYSEG proposed a gas expansion project costing \$8,222,908 for 443 new customers ³⁷– an average of \$18,562 per new customer. In addition to this, NYSEG proposed to charge customers an \$850 per year, 10-year surcharge, totaling \$8,500. In addition, the customer would spend an average of \$8,700 for the equipment conversion cost to switch to natural gas.

In this scheme, customers would pay \$17,200 and ratepayers would pay \$18,561 – a total \$35,762 investment for a greenhouse gas spewing system. With dollars to spare, the same investment in Plattsburgh, which receives clean hydropower from the NYPA project at Massena, could have brought zero emission geothermal heating and cooling to 443 homes.

NYSEG & RG&E – Per Installation - Data Point 1

In a February 12 2020 response to a Request for Information in Rate Case 19-E-0378, 19-G-0379, 19-E-380, 19-G-381 (NYSEG/RG&E rate case) from The Alliance for a Green Economy, Mike Purtell from the companies stated:

Question:

For each of the gas companies, please provide the number of new gas connections (or new gas customers), by service class and by year, over the last 5 years.

Response:

Please see below.

NYSEG Customer Counts	2015	2016	2017	2018	2019	15/16 Change	16/17 Change	17/18Change	18/19 Change
SC 1S	187,327	193,309	198,037	209,075	216,755	5,982	4,729	11,038	7,680
SC 2S	18,957	19,758	20,505	22,001	22,081	801	747	1,496	80
SC 3S	9	7	7	7	6	(2)	-	(0)	(1)
SC 5S	1	2	0	1	1	2	(2)	0	1
SC 9S	2	1	1	1	1	(1)	-	-	(0)
SC 1T	89	87	87	89	90	(2)	0	2	1
SC 2T	29	29	28	27	26	-	(1)	(2)	(1)
SC 5T	372	366	359	353	346	(5)	(8)	(6)	(7)
SC 7T	9	9	8	8	7	(1)	(1)	(0)	(1)
SC 13T	45,595	40,617	37,014	27,273	21,170	(4,978)	(3,603)	(9,741)	(6,103)
SC 14T	11,070	10,635	10,300	9,053	8,313	(435)	(335)	(1,247)	(740)
SC 16T	2	2	2	3	3	0	0	1	-

NYSEG NYSEG & RG&E – Per Installation - Data Point 2

³⁷ April 17, 2013 filing in Case 12-G-0499 – Petition of New York State Electric & Gas Corporation for Authority to Exercise a Gas Franchise in the Town of Plattsburgh http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7B32E54817-6418-47F5-8C63-8DF68C76E12C%7D – accessed 2019 09 05

Bob Wyman submitted several Information Requests as part of the NYSEG RG&E rate case, with the one below yielding relevant data for consideration here:

Requesting Party:	Bob Wyman
Request No.:	NYRC-1327 (Wyman-1)
Date of Request:	September 30, 2019
Response Due Date:	October 7, 2019
Date of Reply:	October 4, 2019
Witness:	Yvette LaBombard
Subject:	Cost of Gas Connections

Question:

Unless otherwise indicated, each of the following questions should be read as applying to each of NYSEG and RGE separately.

For both new residential gas customers and new commercial gas customers (separately broken out), and for each of the last five calendar or fiscal years, as applicable, please provide:

- a. The number, average length, and average installed cost of gas service lines.
- b. The number, average length, and average installed cost of main extensions.
- c. The number and average installed cost of gas meters.
- d. The number and average installed cost of gas regulators.

Response:

- a. Please refer to pre-filed Requests for Information NYRC-0135 (DPS-135) and NYRC-0136 (DPS-136) (included here as Attachments 1 and 2 respectively).
- b. c. d. This information is not available.

The Attachments referred to are included the spreadsheet below.

NYRC-0135 (DPS	-135 Pre-File	ed)	Requested	by DPS staff
Average Length	of a new Sei	rvice by O	pCo & Year	
0 0	2015	2016	2017	2018
NYSEG (9301)	98	92	87	93
RGE (9302)	107	88	50	78
Average Cost Pe	r New Servi	ce by OpC	o & Year	
NYSEG (9301)	2015	2016	2017	2018
Commercial	\$2,947	\$4,573	\$5,341	\$4,879
Residential	\$2,191	\$2,848	\$2,937	\$2,765
RGE (9302)				
Commercial	\$2,178	\$2,908	\$3,410	\$3,361
Residential	\$1,039	\$1,219	\$1,179	\$1,183
Number of New	Services by	Year & Op	Co	
	2015	2016	2017	2018
NYSEG				
Commercial	218	225	183	176
Residential	1252	1161	911	992
RGE				
Commercial	170	138	148	167
Residential	1317	1389	1234	1261

Multiplying the Average Cost of New services by OpCo & Year by the Number of New services by OpCo & Year, results in the table in the NYSEG – Total Cost Data Point 1 below.

NYSEG NYSEG & RG&E – Per Installation - Data Point 3

In a February 14 2020 response to a Request for Information in Rate Case 19-E-0378, 19-G-0379, 19-E-380, 19-G-381 (NYSEG/RG&E rate case) from The Alliance for a Green Economy (AGREE), Yvette Labombard from the companies stated:

Question:

For each of the gas Companies, what is the average cost of connecting a new customers under the 100 foot rule. Please include the cost of both the main and the service line. Alternatively, please provide the average cost per foot of connecting new gas customers under the 100 foot rule.

Response:

```
The average cost of a new residential, ½" service – 100 feet is:
NYSEG $2460
RGE $1840
The average cost of a new 2" main – 100 feet is:
NYSEG $2440
RGE $1550
```

Clean energy parties to this case found these numbers to be very low. In parallel with AGREE's request NY-GEO had submitted an IR seeking to ensure data on the cost of the 100-foot rule is complete, by naming each of the elements that would be part of a complete number. NYSEG responded that these cost elements are neither tracked nor available at this level of detail. We believe utilities should accurately track this data and request the Commission to correct this deficiency in this proceeding by setting a protocol for reporting this data, with the first report due no later than December 31, 2020.

	New York State Electric & Gas Corporation Rochester Gas and Electric Corporation			
19-E-0378, 19-G-0379, 19-E-0380 & 19-G-0381 Rate Cases <u>Request for Information</u>				
Requesting Party:	Bwak, John Ciovacco			
Request No.:	NYRC-1376 (NY-GEO 2)			
Date of Request:	February 7, 2020			
Response Due Date:	February 14, 2020			
Date of Reply:	February 9, 2020			
Witness:	Yvette Labombard			
Subject:	Gas Operations - Cost of 100 foot rule			
Question:				
For each of the com number of ratepayer with their average le possible by main lir landscaping/grade f the cost to ratepayer	apanies, please provide the most recent 5 year data showing annually the r funded services installed, broken down by residential and commercial, ength and total cost to ratepayers including and broken down where he, service line, service connections, appurtenant facilities, permits, risers, inishing, meters, regulators, labor and any other relevant data impacting rs of the companies providing this service.			
Answer:				
Service costs are no	either tracked nor available at the level of detail requested in this IR.			

NYSEG NYSEG & RG&E – Total Cost - Data Point 1

Average Cost Pe	er New Servic				
NYSEG (9301)	2015	2016	2017	2018	Total
Commercial	\$642,446	\$1,028,925	\$977,403	\$858,704	\$3,507,478
Residential	\$2,743,132	\$3,306,528	\$2,675,607	\$2,742,880	\$11,468,147
NYSEG Total	\$3,385,578	\$4,335,453	\$3,653,010	\$3,601,584	\$14,975,625
RGE (9302)					
Commercial	\$370,260	\$401,304	\$504,680	\$561,287	\$1,837,531
Residential	\$1,368,363	\$1,693,191	\$1,454,886	\$1,491,763	\$6,008,203
RG&E Total	\$1,738,623	\$2,094,495	\$1,959,566	\$2,053,050	\$7,845,734

From Installation Cost Data Point 2 above:

Orange & Rockland

Orange & Rockland – General - Data Point 1

Orange & Rockland – Per Installation - Data Point 1

In May of 2018, the New York Geothermal Energy Organization (NY-GEO) presented testimony in the Orange & Rockland rate case³⁸ regarding Tuxedo Farms, a 494-unit new housing project the company was looking to provide gas for. NY-GEO used company data to project \$37,000 per home in ratepayer investments. NY-GEO also projected "\$5,000 for the purchase and installation of the furnace, \$1,500 for the purchase and installation of the furnace, \$1,500 for the purchase and installation of a water heater and \$3,500 for a central air conditioner, to add another \$10,000 the homeowner would be responsible for. NY-GEO concluded it would be far less expensive to provide geothermal heating and cooling to the Tuxedo Farm homes. The fact that the developer would be responsible for only a fraction of the costs, while ratepayers would be footing the rest, provides an unlevel playing field between the gas and geothermal technologies.

Orange & Rockland – Per Installation - Data Point 2

The Company's February 2019 Annual Report on Strategic Plan for Gas Conversions³⁹ lists 130 gas conversions from November of 2017 through October of 2018, 11 of which were commercial and 119 residential. For each conversion, the table lists type of fuel replaced, several dates, including the service initiation date and the customer contribution, which totaled \$20,295 for the 13 conversions where the customer paid a share. Missing is the footage and the cost of each conversion – data which would have been very helpful for this analysis.

Orange & Rockland – Total Cost - Data Point 1

Orange and Rockland's 2019 Capex report⁴⁰ uses an entirely different format than National Grid's or Central Hudson' which lay out a level of detail related to new installations.

It may be logical to assume that most installations required by the 100-foot Law are included under "Blankets", but there is no indication what percentage of those Blanket expenses would be those required by the Law. Blankets are defined by ORU as "an

³⁹ Annual Report on Strategic Plan for Gas Conversions 2019 02 26 http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={151725AE-A6A8-4E13-9364-A62E0F5217C2} accessed 2020 04 08

³⁸ Testimony of the New York Geothermal Energy Organization 2019 05 29 – item 278 pp. 6-10 http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=18-E-0067&submit=Search accessed 2019 09 03

⁴⁰ Cases 18-E-0067 and 18-G-0068 – Orange & Rockland Electric & Gas Rate Cases – Annual Capital Expenditure Report RY1 Page 13 0f 19

http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={D501389D-3089-479C-B4EA-230A7673A5D6} Accessed 2020 04 06

accounting convention, long accepted by the Commission and its Staff, whereby for the sake of convenience, the costs of certain recurring labor and equipment are grouped together." ⁴¹ If gas installations required under the 100-foot law are not included under blankets, where else are they accounted for in the capital report?

Orange and Rockland Utilities, Inc. Gas Rate Case 18-G-0068 Gas Plant Additions Twelve Months Ending December 31, 2019						
	<u>Twelve Months</u> <u>Rate Year 1</u>					
Project Description	Agreement	<u>Actual</u>	Variance			
Blankets and Other Projects Under \$500k	36,670.1	51,046.9	(14,376.8)			
Regular Projects Over \$500k	5,102.8	11,473.6	(6,370.8)			
AMI Program - NY Gas	5,102.8	7,876.0	(2,773.2)			
MR-AA-Lancaster Lane, Monsey	-	1,186.8	(1,186.8)			
MR-AA-Maple Drive, Middletown	-	685.4	(685.4)			
MR-BS-Route 284 Phase 6, Westtown	-	679.6	(679.6)			
MR-CI-Orange St, Port Jervis	5 102 8	1,045.8	(1,045.8)			
Total	<u> </u>	\$ 62 520 5	(0,370.8) \$ (20.747.6)			
Iotai			y (20,141.0)			

For the Total 5 Year Cost chart at the beginning of this document, the lack of clarity and detail in ORU's data led us to merely multiply the 130 installations detailed in the installation data point 2 by \$5,000, resulting in an annual cost of \$650,000. The \$5,000 figure uses the "minimal" figure of \$4,500 from Central Hudson's installation data point and rounds up to include the riser, meter and rough grade finish. This figure is likely to be low, and the total cost figure is likely to be very low as it doesn't include substantial main work the company is doing per the charts below, that New York's utilities also interpret as mandated by PSL Article 2 Section 30.

⁴¹ Item # 2 in DMM for Case 14-G-0494 – Filing letter & Testimony - OR Gas Testimony 2014 page 37 http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={52C443F8-9C32-48B0-BF03-95E21CD8A60B} accessed 2020 0408

<mark>Rate Year 4 (1/2019 – 12/2019)</mark>					
Project	Project Description	Location Description	<u>GESPG</u>		
Edgemere Ave	1500' gas main extension, residential community	Greenwood Lake, NY	1, 2, 5, 6		
Decker Drive	1650' gas main extension, residential community	Washingtonville, NY	1, 2, 5, 6		
Rolling Meadows	1800' gas main extension, residential community (40-50 yrs. old)	Middletown, NY	1, 2, 3, 5, 6		
Greeves Road	2300' gas main extension, residential community	New Hampton, NY	1, 2, 5, 6		
Cottage Lane	1500' gas main extension, residential community	Suffern, NY	1, 2, 5, 6		
"On- main Targets"	Homes and Businesses within 200' of an existing gas main and services with a main available without extension.	Orange and Rockland Counties, NY	1, 2, 6		

Rate Year 5 (1/2020 – 12/2020)						
Project	Project Description	Location Description	<u>GESPG</u>			
Hubshop Road	2500' gas main extension, residential community	Chester, NY	1, 2, 5, 6			
Grey Court Road	3100' gas main extension, residential community	Chester, NY	1, 2, 5, 6			
Hampton Meadows Drive	475' gas main extension, residential community	New Hampton, NY	1, 2, 5, 6			
Normandy Court	3250' gas main extension, residential community (15-20 yrs. old)	New Hampton, NY	1, 2, 5, 6			
Bianca Blvd	1500' gas main extension, residential community (20-30 yrs. old)	Chester, NY	1, 2, 5, 6			
Scandell Road	2200' gas main extension, residential community	Tomkins Cove, NY	1, 2, 5, 6			
"On- main Targets"	Homes and Businesses within 200' of an existing gas main and services with a main available without extension.	Orange and Rockland Counties, NY	1, 2, 6			

Rate Year 6 (1/2021 – 12/2021)

Project	Project Description	Location Description	GESPG
Sturr Lane	2390' gas main extension, residential community	Florida, NY	1, 2, 5, 6
Indian Ridge Road / Arrow Head Lane	5500' gas main extension, residential community	Westtown, NY	1, 2, 5, 6
Middletown- Todd, Keats, Frederick, Disco, Rondack	4,037' gas main extension, residential community (30-40 yrs. old)	Middletown, NY	1, 2, 5, 6
Poplar Lane	450' gas main extension, residential community	Middletown, NY	1, 2, 3, 5, 6
Gilchrest Road	720' gas main extension, residential community	Congers, NY	1, 2, 5, 6
Dussenbury Lane	1650' gas main extension, residential community	Florida, NY	1, 2, 5, 6
"On- main Targets" Homes and Businesses within 200' of an existing gas main and services with a main available without extension.		Orange and Rockland Counties, NY	1, 2, 6

The Law and Its Interpretation

Section 31.4 below is the key language. After the text below we include the example of National Fuel Gas Company's policy set under the law and attendant PSC regulations.

Public Service Law Article 2 – Sections 30 and 31 – aka the 100-Foot Rule

PBS § 30. Residential gas, electric and steam service policy

This article shall apply to the provision of all or any part of the gas, electric or steam service provided to any residential customer by any gas, electric or steam and municipalities corporation or municipality. It is hereby declared to be the policy of this state that the continued provision of all or any part of such gas, electric and steam service to all residential customers without unreasonable qualifications or lengthy delays is necessary for the preservation of the health and general welfare and is in the public interest.

PBS § 31. Applications for service

1. Every gas corporation, electric corporation or municipality shall provide residential service upon the oral or written request of an applicant, provided that the commission may require that requests for service be in writing under circumstances as it deems necessary and proper as set forth by regulation, and provided further that the applicant:

(a) makes full payment for residential utility service provided to a prior account in his name; or

(b) agrees to make payments under a deferred payment plan of any amounts due for service to a prior account in his name and makes a down payment based on criteria to be established by the commission. No such down payment shall exceed one-half of any money due from an applicant for residential utility service, or three months average billing, whichever is less; or

(c) is a recipient of public assistance, supplemental security income or additional state payments pursuant to the social services law, or is an applicant for such assistance, income or payments, and the utility corporation or the municipality receives payment from, or is notified of the applicant's eligibility for utility payments by the social services official of the social services district in which such person resides for amounts due for service to a prior account in the applicant's name, together with guarantee of future payments to the extent authorized by the social services law.

2. In the event a utility corporation or municipality denies an applicant's application for service it shall provide prompt written notice to such applicant of its reasons for denying service, specify what the applicant must do to qualify for service, and advise the applicant of his right to investigation and review of the denial of service by the department if the applicant considers such denial to be without justification. Any such notice denying service shall be sent to an applicant within three business days after either a completed oral or written application for service is received, provided however, the commission may specify a different period for good cause. The commission may also establish such additional notice requirements upon a utility corporation or municipality as it believes necessary to assure reasonable notification and protection for applicants.

3. Subject to the requirements of subdivisions four and five of this section, whenever a residential customer moves to a new residence within the service territory of the same utility corporation or municipality, he shall be eligible to receive service at the new residence and such service shall be considered a continuation of service in all respects, with any deferred payment agreement honored, and with all rights of such customer and such utility corporation provided by this article unimpaired.

4. In the case of any application for service to a building which is not supplied with electricity or gas, a utility corporation or municipality shall be obligated to provide service to such a building, provided however, that the commission may require applicants for service to buildings located in excess of one hundred feet from gas or electric transmission lines to pay or agree in writing to pay material and installation costs relating to the applicant's proportion of the pipe, conduit, duct or wire, or other facilities to be installed.

5. A utility corporation or municipality shall institute service to any applicant who meets the requirement of subdivision one of this section, within five business days after such applicant applies for service, provided however, such requirement shall not apply where the institution of service within five business days is prevented by adverse weather conditions, serious physical impediments, construction requirements, labor disputes or law. A utility corporation or municipality shall initiate service promptly to applicants, and any such corporation or municipality which fails to provide timely service to an applicant as required by this subdivision without good cause as determined by the commission, shall forfeit and pay to such applicant the sum of twenty-five dollars per day for each day that such service is not supplied. The chairman shall designate such officers and employees as he deems necessary to act on complaints relating to applications for service.

6. In the event the service sought in applications submitted pursuant to this section is comprised of the provision of gas or electricity commodity only, nothing in this section shall require the provision of such service to any and all such applicants; provided,

however, that nothing in this subdivision shall prevent or preclude the commission or a court from ordering the provision of such service to all such applicants if such order is authorized pursuant to or required to implement a provision of law other than this article.

Example – NFG 100-Foot Rule Policy:42

Received: 04/28/2017

Status: EFFECTIVE Effective Date: 05/01/2017

PSC NO: 9 GASSECTION: 0 LEAF:21NATIONAL FUEL GAS DISTRIBUTION CORPORATIONREVISION:1INITIAL EFFECTIVE DATE: 05/01/2017SUPERSEDING REVISION:0ISSUED IN COMPLIANCE WITH ORDER IN CASE NO. 16-G-0257 DATED 04/20/170

GENERAL INFORMATION (Cont'd)

II.3.B. - Cont'd

- c. Furnished reasonable security as to the performance of his or her agreement, if required to do so by the Company.
- (3) The Company will furnish, place and construct all mains, service lines, service connections and appurtenant facilities necessary to render the service requested. The cost and expense which the Company will bear shall include: The amounts paid to governmental authorities for permits to do the work required and all paving charges that are legally imposed by any governmental authority for the repair or replacement of any street or sidewalk disturbed in the course of such installation.

Residential Non-Heating Applicant:

The material and installation costs relating to a total of up to 100 feet of main and service line measured from the centerline of the public right-of- way (or the main if it is closer to the customer and development will be limited to one side of the right-of- way for at least 10 years), service connections and appurtenant facilities, but not less than 100 feet of main (if necessary) plus the length of service line necessary to reach the edge of the public right-of- way.

Residential Heating Applicant:

The material and installation costs relating to:

- a. up to 100 feet of main and appurtenant facilities; and
- b. up to 100 feet of service line measured from the centerline of the public right-of-way (or the main if it is closer to the customer and development will be limited to one side of the right-of- way for at least 10 years), service connections and appurtenant facilities; but not less than the length of service line necessary to reach the edge of the public right-of-way.

Non-Residential Non Dual-Fuel Applicant:

The material and installation costs relating to:

- a. up to 100 feet of main and appurtenant facilities; and
- any service line, service connections and appurtenant facilities located in the public rightof-way.

Non-Residential Dual-Fuel Applicant:

The cost and expense which the Company shall bear shall be an amount the Company determines to be appropriate given the anticipated volume of the customer, the assurances made by the customer regarding anticipated purchases of the Company's service, and any other

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⁴² National Fuel Gas Distribution Company – Schedule for Gas Service Applicable in the Entire Territory Pdf page 21 of 253 https://www.natfuel.com/marketers/nyrates/current.pdf Accessed 2020 04 26

PSC NO: 9 GASSECTION: 0LEAF:22NATIONAL FUEL GAS DISTRIBUTION CORPORATIONREVISION:1INITIAL EFFECTIVE DATE: 05/01/2017SUPERSEDING REVISION:0ISSUED IN COMPLIANCE WITH ORDER IN CASE NO. 16-G-0257 DATED 04/20/1704/20/17

GENERAL INFORMATION (Cont'd)

II.3.B. - Cont'd

relevant considerations.

- C. Charges for Additional Facilities
- (1) If, in order to provide service to an applicant, the Company must install mains and appurtenant facilities in addition to those required to be provided without charge under General Information Section 3.B. above, the Company shall impose a surcharge subject to the following provisions.
 - а The surcharge relating to mains and appurtenant facilities including return, depreciation, taxes and maintenance shall not exceed 20 percent per year of the actual reasonable cost of such facilities that exceeds the portion which the Company is required to install without charge to an applicant, if the Company lays a main of 4 inches or less in nominal diameter (in the case of low pressure distribution) or of 2 inches or less in nominal diameter (in the case of high pressure distribution). If the Company lays a main greater than 4 inches in nominal diameter (in the case of low pressure distribution) or greater than 2 inches in nominal diameter (in the case of high pressure distribution), the surcharge shall not exceed 20 percent per year of the estimated reasonable cost of a 4inch main (in the case of low pressure distribution), or a 2-inch main (in the case of high pressure distribution) unless the estimated consumption of the proposed customer(s) requires the installation of a larger-sized main, in which event the surcharge shall not exceed 20 percent per year of the actual reasonable cost of such main. The surcharge shall commence when gas service is first available to an applicant and shall be paid ratably for each billing period.
 - b. The surcharge shall be reduced by 50 percent of adjusted gas revenues, but the credit shall not exceed the amount of the surcharge as determined above.
 - c. Whenever more than one customer is connected to a main extension, the surcharge shall be so adjusted that the Company shall not receive in any one calendar year a greater percentage from all customers served from the main extension than that applicable to such extension. The surcharge shall also be reasonably allocated among the customers being served from the main extension, taking into account the portion of mains and appurtenant facilities which the Company is required to provide without charge to each customer served from such facilities.
 - d. Each surcharge shall cease:
 - whenever the length of a main extension required to be provided without charge to all customers served from such extension shall equal or exceed the total length of such extension;
 - ii. whenever the total adjusted gas revenue from all customers served from a main extension shall equal or exceed 40 percent of the cost of such extension in excess of that required to be provided without charge, in each of any two

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PSC NO: 9 GASSECTION: 0 LEAF:23NATIONAL FUEL GAS DISTRIBUTION CORPORATIONREVISION:1INITIAL EFFECTIVE DATE: 05/01/2017SUPERSEDING REVISION:0ISSUED IN COMPLIANCE WITH ORDER IN CASE NO. 16-G-0257 DATED 04/20/1704/20/17

GENERAL INFORMATION (Cont'd)

II.3.C. – Cont'd

consecutive calendar years; or

- iii. after a period of ten years following its commencement.
- e. Should the adjusted gas revenue from all customers served from a main extension exceed the carrying cost of the entire extension, any surcharges (or contributions) paid by such customers during the preceding five years shall be refunded to such customers.
- f. No surcharge shall be imposed if the total adjusted gas revenue from all customers served from a main extension is estimated to exceed 40 percent of the actual reasonable cost of such extension in each of the two consecutive calendar years.
- (2) If, in order to provide service to an applicant, the Company must install service lines, service connections and appurtenant facilities in addition to those required to be provided without charge under General Information Section 3.C, the Company may impose a charge for material and installation costs.
- D. Furnishing of Rights of Ways or Agreement to Pay Costs
- (1) Each applicant or customer shall execute and deliver to the Company, free from cost, satisfactory permanent easements or rights-of- way to permit the Company to provide service.
- (2) The Company shall not be obligated to provide service to any applicant or customer which has neither:
 - a. delivered to the Company satisfactory permanent easements or rights-of-way; nor
 - b. requested that the Company obtain such easements or rights-of-way, agreed to pay any costs which the Company incurs in obtaining them and furnished reasonable security as to the performance of his or her agreement.
- E. Installation Before Service Required

Whenever the Company installs service lines, service connections or appurtenant facilities at the request of an applicant who does not immediately desire service, the applicant shall bear the entire reasonable expense of providing, placing and constructing such facilities but shall be entitled to a refund whenever gas service is begun for such part of the expense as the Company is hereinbefore required to assume. The refund shall be the cost of the service lines and appurtenances, less depreciation at the rate of 3 percent per year.

F. High Pressure Service

A main shall be considered as high pressure when a governor (or regulator) is required to be installed between the service connection to the main and the customer's meter.

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Data Points From Beyond New York State:

Ontario

In 2016, the Ontario Energy Board initiated a generic proceeding to consider natural gas community expansions in Ontario. The Ontario Geothermal Association (OGA) challenged this proceeding. From OGA's testimony:⁴³

The essence of this proceeding is that the utilities, and perhaps some other parties, propose that a longstanding policy of the Board prohibiting cross-subsidization of natural gas community expansion projects should be overturned. Those parties believe – with other parties disagreeing - that the government of Ontario has asked the Ontario Energy Board to authorize subsidies by existing ratepayers of uneconomic community expansion projects (called "UCE projects" throughout these Submissions) by the natural gas distributors. The Board in this proceeding is considering whether to amend its current community expansion framework to allow such subsidies, and, if so, on what terms.

Further, these issues are being considered against the backdrop of a supervening event: the government's announcement of an aggressive, forward-thinking Climate Change Action Plan3 that will affect every aspect of the use of carbon-based fuels in this province. Among other things, the Action Plan contemplates a shift away from fossil fuels in space heating.

The transcript below is of Jay Shepherd, Counsel for the Ontario Geothermal Association, questioning Steve McGill, Sr. Manager Business Development for Enbridge Gas Distribution.⁴⁴

⁴³ ONTARIO ENERGY BOARD - IN THE MATTER OF the Ontario Energy Board Act, 1998, S.O. 1998, c. 15, Sch.B, as amended; AND IN THE MATTER OF a proceeding on the motion of the Ontario Energy Board to consider amendments to the framework for expansion of natural gas service into new communities FIRST ROUND SUBMISSIONS OF THE ONTARIO GEOTHERMAL ASSOCIATION June 20, 2016 JAY SHEPHERD PROFESSIONAL CORP. page 3

⁴⁴ EB-2016 -0004 pp. 204-205 Transcript_Generic Volume 1_20160505 http://www.rds.oeb.ca/HPECMWebDrawer/Record?q=CaseNumber%3Deb-2016-

MR. SHEPHERD: So if I could ask you to turn to BOMA 25, which is at page 21 of our materials, this says the average cost to connect the homes in your proposal is \$25,625; right?

MR. MCGILL: Yes.

MR. SHEPHERD: And that's just the cost of the pipe; right?

MR. MCGILL: No. That's the all-in cost, including an allocation of overheads for the transmission main and, in the case of the LNG communities, the LNG facilities, the gas distribution mains, the services and the meters.

MR. SHEPHERD: It's up to the customers --

MR. MCGILL: Up to the wall of the house.

MR. SHEPHERD: The wall, yes. And then, after that, they still have to have more money

they have to spend; right?

MR. MCGILL: Yes.

MR. SHEPHERD: So, typically, it's going to be \$30,000 or more to have gas service?

MR. MCGILL: No.

MR. SHEPHERD: Well, \$25,600 plus a furnace plus a water heater.

MR. MCGILL: Okay. Yes. If you are including -- yes, the capital cost of the distribution system.

MR. SHEPHERD: And, of course, if they already had -- if right now they had resistance heat, duct work too; right?

MR. MCGILL: Possibly. There's different solutions that wouldn't require duct work.

MR. SHEPHERD: So if you went to these customers and said to them, "The bill is \$30,000, and you can have gas all in," would any of them choose gas? MR. MCGILL: I don't know. We haven't asked the question.

0004%20And%20WebDocumentType%3Dtranscripts&sortBy=recRegisteredOn-&pageSize=400 Accessed 2020 04 09

Rocky Mountain Institute

RMI has produced a study⁴⁵ that was also inconclusive yielding gas service extension costs ranging from 1K to 24K, with a median value of \$8,800:

ELECTRIFICATION IS MORE COST-EFFECTIVE THAN EXPANDING GAS INFRASTRUCTURE TO MORE HOMES - Extending gas service to more homes is expensive. These costs can vary widely depending on a building's proximity to existing gas mains and other factors. We compiled utility-provided cost data from regulatory filings or customer guotes in 12 cases across five states, ranging from \$1,000 to more than \$24,000 per single-family home, with a median value of \$8,800. In Figure 26 we include this cost in comparing two Oakland retrofit scenarios: natural gas and electrification with default TOU for a home that does not already have gas service, showing that the heat pump scenario becomes more cost-effective than natural gas expansion. Note that a portion of the gas distribution cost is covered by the customer's gas bill payments (45% of gas bills, or \$1,400 over 15 years based on PG&E's 2016 revenue requirement29), so we only show the incremental cost above this amount: \$7,400. In the electrification scenario, there may be additional electric distribution infrastructure costs not shown here. While customer-specific factors will vary, we expect in most cases that heating electrification will cost less than extending gas service to homes not yet served by gas, and that electrification of newly constructed homes will become even more attractive when developers and ratepayers can avoid the cost of gas mains and services.



⁴⁵ The Economics of Electrifying Buildings – Rocky Mountain Institute age 48 https://rmi.org/wpcontent/uploads/2018/06/RMI_Economics_of_Electrifying_Buildings_2018.pdf accessed 2020 04 06

UC Davis Study on Gas Transmission Costs

Nathan Parker of the Institute of Transportation Studies at the University of California at Davis published a study entitled *Using Natural Gas Transmission Pipeline Costs to Estimate Hydrogen Pipeline Costs.*⁴⁶ While transmission pipeline costs may vary from distribution pipeline costs, Parker's data provides us with a look into how the costs break down in the transmission sector:

In this report, I use construction cost projections for over 20,000 miles of natural gas, oil, and petroleum product pipelines in 893 projects in the US over 13 years° to produce an acceptable equation estimating costs of the construction of a pipeline of a given length and diameter...The construction costs are broken into four categories. Materials costs account for approximately 26% of the total construction costs on average. Labor, right of way, and miscellaneous costs make up 45%, 22%, and 7% of the total cost on average, respectively. Miscellaneous costs are all costs not included in labor, material, or right of way. They generally include surveying, engineering, supervision, contingencies, allowances, overhead, and filing fees. There is significant scatter in the cost breakdown. The labor cost consistently averages between 40 and 50% while rest vary greatly depending on diameter.

Page 24 of the document shows a chart that includes this section related to smaller pipes like those used in service lines.

Pipe dia.	Materials*	Labor*	Misc.*	Right of	Total*
				Way*	
4" mean	\$60,017/mi	\$268,585/mi	\$101,668/mi	\$56,222/mi	\$486,492/mi
median	\$30,570/mi	\$232,980/mi	\$63,414/mi	\$38,301/mi	\$364,523/mi
%	15%	45%	21%	19%	
6"	\$57,863/mi	\$239,916/mi	\$115,264/mi	\$54,364/mi	\$467,407/mi
	\$46,086/mi	\$182,299/mi	\$65,610/mi	\$36,519/mi	\$333,601/mi
	16%	52%	23%	9%	
8"	\$93,436/mi	\$208,658/mi	\$139,034/mi	\$36,947/mi	\$478,076/mi
	\$55,278/mi	\$146,203/mi	\$85,832/mi	\$26,011/mi	\$306,925/mi
	22%	42%	28%	8%	

At the high end \$486,492 translates to \$92 per foot or \$9,200 per 100 feet. At the low end, \$306,925 translates to \$58 per foot or \$5,800 per 100 feet.

⁴⁶ Using Natural Gas Transmission Pipeline Costs to Estimate Hydrogen Pipeline Costs, Nathan Parker

https://mail.google.com/mail/u/0/#search/UC+Davis/WhctKJVqttSIKXtLwLClSgDLggShZlqQGzvdhzCmbT tbrcMkbkXGDHsPgmNRFWCQvWdfZBL?projector=1&messagePartId=0.1 accessed 2020 04 10

2nd National Analysis

A different national analysis, using data compiled from submissions to the Federal Energy Regulatory Commission, found pipeline costs averaging \$765 million per mile, which translates to \$144,886 per 100 feet. Presumably these are interstate pipelines of larger diameter, using expensive materials, but the difference in costs from the UC Davis study are so significant that we include them here for perspective. From the Hanging H Company website:⁴⁷

What Does Natural Gas Pipeline Construction Cost per Mile?

Running a Natural Gas (NG) pipeline is a time intensive and expensive undertaking. Before starting any project, care must be taken to determine whether or not the project will be profitable. Large projects are calculated on a cost per mile basis, and this data is submitted to the Federal Energy Regulatory Committee, otherwise known as FERC.

So what does natural gas pipeline construction cost per mile? The Oil and Gas Journal compiled the data submitted to FERC and found that the cost of running a mile of onshore pipeline between 2015 and 2016 was \$7.65 million per mile.

How Is the Cost per Mile Determined?

To determine the cost per mile of a NG pipeline, a calculation of inches per mile must be done first. This is accomplished by multiplying the distance of the pipe by the diameter of the pipe. For instance, a pipeline with a diameter of 30-inches will cost less than one with a diameter of 36-inches.

According to NaturalGas.org, the average diameter of an interstate pipeline is between 24 inches and 36 inches, or an average of 30 inches. If you divide the \$7.65 million per mile by the 30-inch average diameter, you'll find that this puts the average cost per mile of NG pipeline construction at \$255,000 per inch of diameter.

The Dictating Cost Factors

There are many factors that dictate the cost of installing a natural gas pipeline. Material and labor typically account for only 60% - 70% of the total costs. However, depending on legal factors, materials and labor

⁴⁷ Hanging H describes themselves "As an experienced pipeline construction company, we at Hanging H have decades of experience installing and maintaining all diameters of pipeline in all types of terrain. For more information on our pipeline construction services, we invite you to visit https://hanginghco.com/pipeline-construction-services/. https://hanginghco.com/natural-gas-pipeline-construction-cost-per-mile/ Accessed 2020 04 26

might even account for less than half of the total cost of running a mile of NG pipeline.

Here are the factors that dictate the cost of constructing a mile of natural gas pipeline:

- Materials and Labor
- Rights of Way
- Professional Services
- Nature's Challenges

Let's take a closer look at each of these factors:

Cost of Materials and Labor

The American Petroleum Institute sets standards for interstate pipeline construction materials. To meet these standards, interstate pipelines are created from a strong carbon steel material. Carbon steel works great for pipeline projects because it can be heat-treated to increase its durability, tensile strength, and impact resistance.

Labor costs consist of any costs associated with physically placing the pipeline in place. This can include excavation costs, inspections, and any risk mitigation work that must be done. It also includes the costs associated with making sure the environment is well taken care of.

These costs can often vary by state and locality. For instance, it may cost more to hire an excavation crew in Boston, Massachusetts than it would cost to hire one in Portland, Maine.

Cost for Attaining Rights-Of-Way

Another element that plays a role in the final cost of running a pipeline is right of way, otherwise known as ROW. ROW is the legal right to run the pipeline through property that is owned by someone else.

A pipeline may run through state, local, or federal land as well as land owned by private citizens and businesses. The company running the pipeline will need to get legal permission to run through these lands before any pipeline project can even be approved. Frequently the company running the pipeline will need to pay a fee to the landowner in exchange for using their property.

Costs of Professional Services

To accomplish all of this, a lot of planning and preparation must be done. Teams of lawyers, accountants, surveyors, and engineers will be employed at various stages of the project.

Costs Affected by Nature's Challenges

Nature can also play a significant role in how much it costs to run a mile of pipeline. For example, it requires more money to operate in areas that are hard to access. Materials and equipment may need to be flown into the construction site, roads may have to be built, and harsh environments may need to be navigated.

The weather can also be a cost factor. Hurricanes, tropical storms, and blizzards can all slow projects down and cause cost overruns. When projecting costs, estimators and project cost controllers must factor in these variable circumstances.

Costs Associated with Environmental Protection

Additionally, steps must be taken to protect the natural environment. The installation of the pipeline may cause changes to the surrounding landscapes.

For example, the flow of water in the area may change. Engineers will have to create plans to ensure the water flow is returned to its natural state. Alternatively, they may need to establish a new route and ensure this does not cause any adverse effects. They may do this by restoring the natural terrain consulting with geo-engineers, by installing drainage ditches, living walls, and other devices to slow, stop, restore or change the flow of water.

Another example would be slip or landslide mitigation. Landslides and other natural disasters can destroy pipelines, and it's always best to take measures to prevent them before this happens. Cut slopes, fill slopes, and retaining walls can all be employed to take care of the natural grades surrounding the newly installed pipeline.

Profitability of a Natural Gas Pipeline

Once costs are projected, it stands to reason that the company will want to know what the profitability of the pipeline will be. This will be important to the company's stakeholders as well as to the government agencies that will need to approve the pipeline project. It is obvious why stakeholders have an interest in the profitability of the project. However, the reason for the government wanting to know if the project will be profitable may not be so apparent.

A government's interest in the profitability of the project comes from their need to ensure that the pipeline project will ultimately be maintained. Governments want to know that the company will have the resources to protect and maintain the pipeline for the rest of its lifespan.

Utah: Ratepayer Funding of Gas Expansion

From the Salt Lake Tribune - published 2020 04 22⁴⁸ See the full article here.

Utah energy group says rate hike will help bring natural gas to rural towns

For years, leaders in the historic Utah mining town of Eureka have sought natural gas service, hoping it would stabilize residents' energy costs, while attracting businesses, spurring growth and possibly helping to resurrect mining operations.

Thanks to a new state-backed program that spreads the high capital costs for such projects to existing customers across Utah, Dominion Energy may soon be serving the town of 360 homes to the delight of Mayor Nick Castleton, who believes it "will change the future for the city."...

The program is intended to benefit Utah's out-of-the-way rural pockets, but the propane industry is challenging the premise, arguing that the costs far outweigh the benefits. It says the undertaking amounts to an unfair subsidy that penalizes small businesses that deliver propane by truck to residential tanks around the state...

Getting gas to Eureka will require running a buried pipe, 6 inches in diameter, 9 miles from the Juab County town of 700 residents to an interconnection tapping the Kern River interstate transmission line near Goshen, in Utah County, as well as installing another nine miles of distribution lines around the town at a total tab of about \$20 million...

Under two recent pieces of legislation facilitating the extension of natural gas service to rural communities, Dominion would recoup most of the cost through rate hikes on existing customers. Under 2018's HB422, Eureka's share would be covered by a surcharge on residents' monthly bills. Adopted last session without a single nay vote, HB129 expanded the program to include service lines in addition to extending main lines to unserved towns...

The propane industry sees the idea much differently, of course, arguing it gives an unfair advantage to a major corporation. Its benefits are being

⁴⁸ Utah energy group says rate hike will help bring natural gas to rural towns 2020 04 22 https://www.sltrib.com/news/environment/2020/04/22/program-would-bring/ Accessed 2020 04 24

exaggerated, while its true costs are being buried, the Rocky Mountain Propane Association wrote in an April 2 filing with the PSC...

The Utah Division of Public Utilities has yet to be convinced that the project is in the public interest, citing numerous deficiencies in the information provided by the utility. For starters, the division insists Eureka residents be fully informed of the costs and risks they face by switching to natural gas...

Is it worth spending \$20 million so Eureka's 700 residents and its businesses can have access to natural gas? The answer to this big question, now pending before Utah utility regulators, depends on many factors, but it has already been determined who would pay: Everyone in Utah who uses natural gas.

Note \$20 million for Eureka's 360 homes = \$55,556 per home.

NY Utility Distribution Pipe Data

The charts below are extracted from a spreadsheet available on the American Gas Association website.⁴⁹ These charts don't directly impact the calculations in this report but are included as background indicating the status of pipes for NY's utilities. The charts delineate installation service pipes by decade by utility, main pipes by decade by utility and material and sizes of pipes by utility. Together they show historic trends and the relative status of the state's gas utility's pipe infrastructure.

Company	Main - Total Miles	Services - Total #	Miles of Services	Average Service Length in	Number of Service Installed -										
				feet	Unknown	Pre-1940	1940-1949	1950-1959	1960-1969	1970-1979	1980-1989	1990-1999	2000-2009	2010-2016	Total
BATH ELECTRIC GAS & WATER SYSTEMS	37	1,915	27	74	-	358	86	180	135	120	220	333	241	242	1,915
KEYSPAN ENERGY DELIVERY - NY CITY	4,158	570,669	4,864	45	-	5,124	1,454	14,997	99,812	102,293	89,004	102,451	64,910	90,624	570,669
CENTRAL HUDSON GAS & ELECTRIC CORP	1,300	64,270	913	75	3,284	3,934	414	2,598	4,131	4,409	7,800	8,327	11,318	18,055	64,270
CONSOLIDATED EDISON CO OF NEW YORK	4,372	376,306	3,309	46	-	27,064	7,599	12,230	10,900	47,532	62,658	71,548	67,633	69,142	376,306
CORNING NATURAL GAS CORP	431	14,206	159	59	1,567	457	-	259	734	664	1,181	1,783	2,841	4,720	14,206
FILLMORE GAS CO INC	74	1,318	25	100	799	-	-	-	-	-	137	209	53	120	1,318
KEYSPAN ENERGY DELIVERY - LONG ISLAND	8,309	555,519	6,839	65	-	20,531	7,584	14,430	45,084	42,366	49,171	120,703	119,235	136,415	555,519
NATIONAL FUEL GAS DISTRIBUTION CORP - NEW YORK	9,738	460,898	4,485	51	9	18.779	4.753	12.859	42,300	56,408	70.608	90,963	79.304	84.915	460.898
NEW YORK STATE ELECTRIC & GAS CORP	4,827	245,725	3,583	77	21.176	721	408	9.057	21.750	15.021	32,703	59.937	45,549	39.403	245.725
NIAGARA MOHAWK POWER CORP	8.868	568.370	7.887	73		29 775	4 183	40 407	86 591	73 489	88 134	113 274	63 726	68 791	568 370
ORANGE & ROCKLAND UTILITY INC	1.870	106,197	1.710	85	510	95	86	1 105	14 533	16 634	17 023	18 657	17 723	19.831	106 197
BOCHESTER GAS & FLECTRIC CORP	4 890	282 347	4 195	78	43	1 937	317	14 916	44 938	39.070	49 694	55 340	47 943	28 149	282 347
	380	16 423	222	75		1,557	517	14,510	5 242	2 404	2 020	2 692	1 50/	1 20,145	16 / 22
	15	204	233	100		-	-		3,342	2,404	2,020	3,065	1,354	1,500	10,423
	15	594	/	208	-	-	-	-	-	-	-	-	300	39	394
	0	8	0	308	-	-	-	1	-	2	-	3	2	-	8
VILLAGE OF HAMILTON MUNICIPAL GAS UTILITY	15	191	4	116	-	-	-	-	-	-	-	-	-	191	191
NATIONAL FUEL GAS SUPPLY CORP	17	-	-	0	-	-	-	-	-	-	-	-	-	-	-
VALLEY ENERGY, INC.	35	1,885	29	81	-	-	-	1	150	330	337	314	402	351	1,885
COLUMBIA GAS TRANSMISSION, LLC	-	29	0	25	-	1	-	2	2	21	1	1	1	-	29
· · · · · · · · · · · · · · · · · · ·	49,340	3,266,670	38,269	81	27,388	108,776	26,884	123,042	376,402	400,763	470,691	647,526	522,830	562,368	3,266,670

Service Pipes by utility:

⁴⁹ Distribution Pipe by Company Annual Data 1990-2016 - American Gas Association https://www.aga.org/research/data/distribution-pipe-bycompany-annual-data-1990--2016/ Accessed 2020 04 09

Company	Miles of Main										
	Unknown	Pre-1940	1940-1949	1950-1959	1960-1969	1970-1979	1980-1989	1990-1999	2000-	2010-2016	Total
BATH ELECTRIC GAS & WATER SYSTEMS	-	3	1	8	4	7	3	5	3	3	37
KEYSPAN ENERGY DELIVERY - NY CITY	-	1,110	173	274	395	316	305	401	454	730	4,158
CENTRAL HUDSON GAS & ELECTRIC CORP	-	146	6	71	141	102	166	216	220	231	1,300
CONSOLIDATED EDISON CO OF NEW YORK	-	1,266	104	214	212	282	343	570	534	847	4,372
CORNING NATURAL GAS CORP	8	13	4	54	71	23	38	47	60	112	431
FILLMORE GAS CO INC	41	-	-	-	-	-	13	14	1	5	74
KEYSPAN ENERGY DELIVERY - LONG ISLAND	-	772	412	1,068	1,357	608	464	809	1,417	1,401	8,309
NATIONAL FUEL GAS DISTRIBUTION CORP - NEW YORK	0	795	158	578	1,691	1,085	1,505	1,560	1,116	1,252	9,738
NEW YORK STATE ELECTRIC & GAS CORP	346	26	56	669	886	275	477	1,137	540	414	4,827
NIAGARA MOHAWK POWER CORP	-	300	40	1,585	1,623	697	1,212	1,712	877	822	8,868
ORANGE & ROCKLAND UTILITY INC	7	4	3	81	397	207	248	327	297	301	1,870
ROCHESTER GAS & ELECTRIC CORP	2	12	12	534	1,088	601	692	762	641	546	4,890
ST LAWRENCE GAS CO INC	-	-	-	-	123	20	19	78	27	113	380
CHAUTAUQUA UTILITIES INCORPORATED	-	-	-	-	-	-	-	-	14	1	15
CORNING INCORPORATED	-	-	3	0	-	0	0	2	0	0	6
VILLAGE OF HAMILTON MUNICIPAL GAS UTILITY	-	-	-	-	-	-	-	-	-	15	15
NATIONAL FUEL GAS SUPPLY CORP	-	9	-	-	0	0	-	2	5	-	17
VALLEY ENERGY, INC.	-	-	-	-	7	6	5	4	9	4	35
COLUMBIA GAS TRANSMISSION, LLC	-	-	-	-	-	-	-	-	-	-	-
	404	4,457	971	5,136	7,995	4,230	5,490	7,644	6,216	6,796	49,340

Main pipes by utility by decade:

Company	Services -	Services -	Services -	Services -	Services -	Services -	Services -	Services -	Services -	Services -	Services -	Services -	Services -	Services -
	Steel -	Copper -	Cast/wrought	Plastic PVC -	Plastic PE -	Other Plastic	Other -	Total -						
	Diameter	Diameter	iron - Diameter	Diameter Total	Diameter	Diameter	Diameter	Diameter	Diameter <	Diameter	Diameter	Diameter	Diameter	Diameter
	Iotai	Iotai	Iotai	70	Iotai	Iotai	Iotai	Unknown	1	1 - 2	2 - 4	4 - 8	>8	Iotai
BATH ELECTRIC GAS & WATER SYSTEMS	792	40	-	79	1,004	-	-	-	//3	1,126	13	3	-	1,915
KEYSPAN ENERGY DELIVERY - NY CITY	55,349	96,795	-	-	418,525	-	-	-	307,904	246,184	15,509	1,057	15	570,669
CENTRAL HUDSON GAS & ELECTRIC CORP	14,061	52	2,987	-	47,170	-	-	431	54,400	9,071	344	24	-	64,270
CONSOLIDATED EDISON CO OF NEW YORK	81,439	14,555	-	-	280,179	-	133	-	160,028	188,673	22,667	4,634	304	376,306
CORNING NATURAL GAS CORP	1,853	-	-	-	11,545	-	808	2,608	10,524	1,032	38	4	-	14,206
FILLMORE GAS CO INC	239	-	-	-	1,079	-	-	-	1,026	289	3	-	-	1,318
KEYSPAN ENERGY DELIVERY - LONG ISLAND	109,652	4,076	-	-	441,791	-	-	-	485,006	66,432	2,735	1,346	-	555,519
NATIONAL FUEL GAS DISTRIBUTION CORP - NEW YORK	82,101	-	-	-	378,797	-	-	22	116,317	342,501	1,871	181	6	460,898
NEW YORK STATE ELECTRIC & GAS CORP	44,709	-	-	-	196,277	-	4,739	12,256	194,666	37,644	1,040	116	3	245,725
NIAGARA MOHAWK POWER CORP	136,743	5,750	468	-	425,409	-	-	-	484,956	79,686	3,324	381	23	568,370
ORANGE & ROCKLAND UTILITY INC	17,660	-	-	-	88,537	-	-	510	103,235	2,416	32	4	-	106,197
ROCHESTER GAS & ELECTRIC CORP	74,724	7,141	183	-	200,276	-	23	23	273,812	7,828	618	62	4	282,347
ST LAWRENCE GAS CO INC	6,868	-	-	-	9,555	-	-	-	15,574	810	34	5	-	16,423
CHAUTAUQUA UTILITIES INCORPORATED	-	-	-	-	394	-	-	-	394	-	-	-	-	394
CORNING INCORPORATED	6	-	-	-	2	-	-	-	-	1	7	-	-	8
VILLAGE OF HAMILTON MUNICIPAL GAS UTILITY	-	-	-	-	191	-	-	-	183	7	-	1	-	191
NATIONAL FUEL GAS SUPPLY CORP	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VALLEY ENERGY, INC.	211	-	-	-	1,674	-	-	-	1,048	828	9	-	-	1,885
COLUMBIA GAS TRANSMISSION, LLC	27	-	_	_	-	2	-	-	29	-	-	-	-	29
,	626,434	128,409	3,638	79	2,502,405	2	5,703	15,850	2,209,875	984,528	48,244	7,818	355	3,266,670

Material and size of pipes by utility: