

**STATE OF NEW YORK
PUBLIC SERVICE COMMISSION**

**Cases 17-E-0459, 17-G-0460 - Proceeding on Motion of the Commission as to the Rates, Charges,
Rules and Regulations of Central Hudson Gas & Electric Corporation for Electric & Gas Service**

**Central Hudson Gas & Electric Corporation's Non-Tariff
Implementation Plan & Compliance Filing for
Non-Pipe Alternatives: Three Transportation Mode Alternatives**

June 21, 2019

**CENTRAL HUDSON GAS & ELECTRIC CORPORATION
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Non-Pipes Alternatives: Three Transportation Mode Alternatives

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1. Background/Description of Need

A Non-Pipes Alternative (“NPA”) is a project designed to displace the need for a traditional gas infrastructure investment. Central Hudson originally proposed to incorporate NPA projects into its distributed system planning process within its Rate Case¹. The proposed strategies were granted approval in the most recent Rate Plan Order². This implementation plan describes the key design parameters and planned execution of three NPA projects, including requirements established within the Rate Plan Order. It also serves as the compliance filing required to establish the NPA incentive associated with the projects.

Central Hudson envisions the potential for multiple types of NPA projects that address various gas infrastructure needs. This implementation plan specifically addresses the displacement of costly replacements of leak-prone pipe. Leak-prone pipe (“LPP”) is considered to be any natural gas distribution piping that is not made of either plastic or “protected”³ steel pipe. Common leak-prone materials are wrought iron, cast iron, and unprotected steel. In most cases, these sections of pipe are essential components of the gas system and must be replaced with new plastic or protected steel pipe. The Company is currently replacing approximately 15 miles of LPP per year in order to improve safety and reduce ongoing maintenance costs. LPP replacement is costly; the Company estimates that it will cost approximately \$1.9 million per mile on average in 2019.⁴

The Company has identified three separate project locations throughout the service territory where it is likely feasible and cost-effective to permanently retire non-essential sections of LPP. This type of NPA project, referred to as “Transportation Mode Alternative,” requires the conversion of existing natural gas users to alternate forms of energy sources, such as electric, so that the LPP asset is no longer in use.

¹ Order: <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={9E4F3908-1FBC-4F49-AB00-FDFE18D5586F}>

Attachments: <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={13CED81C-066E-48ED-A795-9D7300C4587F}>

² Case 17-G-0460 Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Central Hudson Gas & Electric Corporation for Gas Service

³ Pipelines are protected either physically with coatings or with cathodes and sacrificial anodes to prevent corrosion.

⁴ Case 17-G-0460 Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Central Hudson Gas & Electric Corporation for Gas Service, p. 22

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For this initiative to be successful, an alternate heating fuel would need to be utilized by all customers that are currently being served with natural gas within the identified sections of LPP (i.e. 100% participation). There are 22 residential customers being served by the targeted infrastructure, making up 3 separate projects, also referred to as cases, in the Newburgh and Saugerties areas.

2. Compliance Requirements

New procedures for NPA tracking, reporting, and cost recovery of such projects have been set forth within the Order Adopting Terms of Joint Proposal and Establishing Electric and Gas Rate Plan (“Rate Order”).⁵ The Company has been ordered to submit a detailed implementation plan for each NPA, to include the following:

- Detailed measurement and verification procedures;
- Solutions
- The anticipated costs of the NPA
- A demonstration of whether the costs of the NPA projects are incremental to the Company’s revenue requirement or will be displacing a project subject to the Net Plant Reconciliation Mechanism
- A customer and community outreach plan
- The BCA results when available.

The Rate Order also institutes the mechanism by which the Company may earn incentives associated with NPA projects, and sets forth a requirement for the Company to make a compliance filing to establish that incentive for each project.

Central Hudson held a stakeholder technical conference on Wednesday September 19th, 2018 in our Lake Katrine office. There were 45 stakeholders who either physically or virtually attended. Topics that were presented and discussed include NPA projects, the Natural Gas Avoided Distribution Cost of Service study, a system wide demand response program, and NPA incentive mechanism.

⁵ Case 17-G-0460 *Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Central Hudson Gas & Electric Corporation for Gas Service*

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3. Project Timeline

The Company plans to begin deployment of these projects soon after the filing of this implementation plan. An annual NPA Implementation Plan update will be filed in December 2019, which will further the solutions that were deployed. Central Hudson is prepared for a project kickoff in June 2019.

Transportation Mode Alternatives Schedule	2019											
	January	February	March	April	May	June	July	August	September	October	November	December
BCA Analysis												
Develop Implementation Plan												
Planning Discussions with Staff												
File the Implementation Plan												
Project Kickoff												
Customer Acquisition												
Install Measures												
Measurement & Evaluation												
Report Results												

4. Solution

The Company utilized a third party evaluation consultant to determine viable technologies that could cost-effectively eliminate the usage of natural gas in the identified homes. A quantitative and qualitative analysis of these solutions was performed to arrive at the best alternative. Based on the results of the analysis, the Company plans to utilize high efficiency cold climate air-source heat pumps and electric heat pump water heaters to replace the primary natural gas end uses. Other appliances such as ranges may be replaced where applicable.⁶

In 2018, Central Hudson conducted a request for proposals to implement multiple energy efficiency programs. After a rigorous analysis of proposals, ICF was selected to implement these programs. ICF has several years of experience implementing energy efficiency programs for Central Hudson and is currently contracted to implement the residential HVAC energy

⁶ Customers will be educated and have the option to install a geothermal system by covering the incremental cost above the incentive provided for air-source heat pumps.

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efficiency programs through 2021. The Company will utilize ICF along with its existing Trade Ally network to deliver these NPA project solutions. Due to the small number of customers and the need for 100% participation within each area, the Company plans to utilize a direct install approach, where the project team develops a comprehensive conversion proposal for each customer and performs the installation. The standard conversion package will be offered at no cost to the customer.⁷

5. Measurement & Verification

Measurement & Verification (M&V) will consist of confirmation that all gas services have been retired and the main has been removed from service. The Company will retire the gas infrastructure in accordance with the Gas Operating and Maintenance Procedures. Any updates to the M&V protocol will be included within Central Hudson's December 1, Annual NPA Implementation Plan. More details are provided within Appendix 1.

6. Outreach & Education

Outreach & education efforts will be targeted at the identified 22 residential customers only. To educate the customers about this initiative, educational efforts may include direct mailers, in person meetings, and phone and/or email outreach. ICF will be primarily responsible for education, sales, installation, and logistical efforts, with Central Hudson support where necessary.

7. Benefit Cost Analysis (BCA)

Central Hudson primarily evaluated the economics of this project based on the Societal Cost Test prescribed within the Company's BCA Handbook.⁸ All relevant benefits and costs have been included in a detailed BCA analysis, developed with support of third party consultants. The Company estimates this NPA to have a Benefit Cost Ratio (BCR)⁹ greater than 1.0 based on the three tests included in the BCA Handbook, indicating that it is beneficial to move forward with the project.

⁷ There may be cases where customers desire an "upgraded" appliance, the incremental cost of which would be borne by the customer.

⁸ Central Hudson Gas & Electric Benefit-Cost Analysis (BCA) Handbook, Version 2.0, Revised July 31st, 2018.

⁹ Benefit cost ratio, primarily determined by the societal cost test.

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Test	BCR
SCT	3.37
UCT	2.15
RIM	2.34

8. Incentive Structure

Per the Rate Order, “The Company will establish an initial incentive equal to 30% of the present value of net benefits”, detailed costs and benefits, BCA analysis, and incentive calculation for each of the three projects are included in Confidential Appendix 3. This implementation plan serves as the compliance filing to establish the initial incentive associated with each of the transportation mode alternatives NPAs. Unlike Central Hudson’s Non-Wire Alternative (“NWA”) program where the shareholder incentive is activated upon procuring 70% of the project targets, the NPA incentive would be earned once full participation in an individual case is reached. Program costs and incentives are amortized over a ten year period and will commence upon the conclusion of the project. More details on the incentive calculation are provided within Appendix 1.

9. Reporting

In December 2019, the Company will file an updated Annual NPA Implementation Plan including:

- NPA expenditures and all relevant details with respect to project costs for each project
- A description of the NPA activities for each project
- NPA cost and incentive recoveries for each project
- Operational savings or other benefits for each project

10. Recovery of Project Expenditures

The costs incurred by the Company for development and implementation of this NPA, including the overall pre-tax rate of return on such costs, will be recovered in accordance with the detailed accounting procedure in Appendix 2 of this filing.

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11. Impact to Net Plant

The avoidance of planned leak prone pipe replacement projects will not impact the Company's Net Plant target within the term of the current rate agreement. This Non-Pipe Alternative is expected to be incremental to the Rate Order target of replacing approximately 15 miles of LPP per year through the capital program. If the Company does not meet this target, a true up of the net plant target will only be evaluated if the Company does not replace 15 miles of LPP through the capital program.

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Appendix 1- Operating Procedure

Operating Procedure for Transportation Mode Alternative (“TMA”) type Non-Pipes Alternative (“NPA”) Projects and Incentive Calculations:

Version 1.0

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1. Non-Essential Gas Asset Retirement

Central Hudson's TMA projects are designed to strategically retire high-cost natural gas infrastructure¹ by seeking high efficiency electric alternatives to replace natural gas end uses in customer's homes. For each identified area, performance will be measured based on the retirement of all prescribed gas services and mains. The conversion approach will vary by customer based on existing baseline condition, but will primarily focus on high efficiency cold climate air-source heat pumps and electric heat pump water heaters. Other appliance types will be considered based on the existing natural gas end uses for each home.

2. Measurement & Verification

Measurement & Verification (M&V) will consist of confirmation that all gas services have been retired and the main has been removed from service. The Company will retire the gas infrastructure in accordance with the Gas Operating and Maintenance Procedures.² Any updates to the M&V protocol will be included within Central Hudson's December 1, Annual NPA Implementation Plan.

3. Reporting

Central Hudson will file an updated implementation plan annually by December 1st. The filing will include:

- Expenditures for each project
- Description of each project's activities
- Each project's cost and incentive
- Operational savings and benefits for each project

¹ The primary target of TMA projects is leak prone pipe that is currently planned for replacement.

² Central Hudson's Operations & Maintenance Procedures contains trade secrets, confidential commercial information, and critical infrastructure information, and is therefore protected material. Specifically, the protected material consists of confidential gas O&M procedure(s) for maintaining safe and reliable service to customers. If it is necessary for a specific referenced procedure to be reviewed, Central Hudson will file the appropriate paperwork with the Records Access Officer in accordance with Matter 17-02562, Request for Confidential Treatment.

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4. Incentive Calculation

Per the Rate Plan Order³ Central Hudson's incentives will be determined as a share of the individual project net NPA program benefits. Central Hudson's incentive for deferring capital expenditures will equal 30% of the NPA initial net benefits. The transportation mode alternatives within the NPA portfolio are comprised of distinct targeted areas that are completed on an individual basis. Incentives will be calculated individually for each area once full participation is achieved within that area. Full participation is defined as transitioning all identified customers in each area off of the natural gas distribution network.

Individual project net NPA program benefits and initial project incentives are calculated as follows:

NPA Project Benefits_{net} =

Benefits_{Avoided Gas Infrastructure Costs}

+ Benefits_{Avoided LBMP}

+ Benefits_{Avoided Generation Capacity Costs}

+ Benefits_{Avoided Electric T&D Costs}

+ Benefits_{Net Avoided CO2}

+ Benefits_{Avoided Natural Gas Supply Costs}

+ Benefits_{Avoided Ancillary Retail Fuel Costs}

- Costs_{Program Administration}

NPA Project Incentives = NPA Project Benefits_{net} x 30%

³ Order: <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={9E4F3908-1FBC-4F49-AB00-FDFE18D5586F}>

Attachments: <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={13CED81C-066E-48ED-A795-9D7300C4587F}>

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Benefits_{Avoided Gas Infrastructure Costs} have been provided to Staff by Central Hudson in Appendix 3 of the implementation plan. These values will be fixed for the purposes of this analysis throughout the NPA program period. This includes all future infrastructure replacement, operation, and maintenance costs that are avoided by decommissioning existing natural gas distribution lines and are calculated for each location. These benefits will be fixed assumptions; not to be updated when computing the final incentive amounts.

Benefits_{Avoided LBMP} are costs that reflect changes in electricity supply valued at the Locational Based Marginal Price (LBMP) for the Hudson Valley region consistent with the BCA Handbook guidance. This benefit is negative due to the increased electricity consumption associated with fuel switching to electricity. These benefits will be fixed assumptions; not to be updated when computing the final incentive amounts.

Benefits_{Avoided Generation Capacity Costs (AGCC)} are costs that reflect changes in coincident system peak demand due to electrification. AGCC costs are calculated by NYISO zone consistent with the BCA Handbook guidance. This benefit is negative due to the increased demand associated with fuel switching to electricity. These benefits will be fixed assumptions; not to be updated when computing the final incentive amounts.

Benefits_{Avoided Electric T&D Costs} are costs that reflect changes to the location-specific load valued at the marginal cost of transmission and distribution (T&D) infrastructure equipment, consistent with BCA Handbook guidance. In some cases, this benefit could be negative due to the increased demand associated with fuel switching to electricity. These benefits will be fixed assumptions; not to be updated when computing the final incentive amounts.

Benefits_{Net Avoided CO₂ Costs} account for carbon dioxide emissions impacts due to changes in system load levels. These benefits are valued using the Social Cost of Carbon (SCC), net of the expected Regional Greenhouse Gas Initiative (RGGI) allowance values, as provided by Department of Public Service Staff.⁴ These benefits will be fixed assumptions; not to be updated when computing the final incentive amounts.

Benefits_{Avoided Natural Gas Supply Costs} include the wholesale natural gas supply costs that are avoided as a result of electrification, valued as the CARIS 2018 forecasted natural gas prices. These benefits are calculated at the end use level for each project participant. These benefits will not be updated when computing the incentive impacts.

⁴ Case 15-E-0751 – Value of Distributed Energy Resources, Updated Environmental Value

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Benefits_{Avoided Ancillary Retail Fuel Costs} include the retail fuel oil and propane fuel costs that are avoided as a result of electrification, valued as the 2017-2018 NYSEERDA Hudson regional averages for each respective fuel type. These benefits are calculated at the end use level for each project participant. These benefits will be fixed assumptions; not to be updated when computing the final incentive amounts.

Costs_{Administration} include all fees paid to program providers and customers, including fixed program support fees, incentives for purchasing new electric based equipment. Actual costs of each project will be utilized to calculate the final incentive amount at the time the projects is deemed completed.⁵ Additionally, **Costs**_{Administration} include costs internal to Central Hudson to manage the program, as well as third party program evaluation and consulting support that is procured as needed. All program costs will be trued-up to actual expenditures at the conclusion of each project for the purposes of incentive calculation. In some cases, customers may choose to pay the incremental cost for an upgraded appliance or HVAC system that is more costly than the standard conversion offer. Incremental participant costs will not be included in the BCA analysis.

Many assumptions used in calculating the BCA of the individual projects will be consistent with the BCA Handbook Version 2.0 filed on July 31, 2018. The BCA Handbook is designed specifically for electrical projects, but many aspects of the BCA framework apply to natural gas. Other assumptions utilized in the development of the BCA, including the WACC, have been utilized in a manner consistent with the BCA Handbook.⁶ These assumptions will not be updated throughout the term of these NPA projects for the purposes of calculating the utility incentives.

Central Hudson will record and amortize the incentive payout as detailed in the accounting procedure which has been filed confidentially in Appendix 2 of the Implementation Plan. The incentive and expense recovery mechanism will commence once Central Hudson has deemed all projects completed. This will be collected in the Gas Miscellaneous Charge on Central Hudson customer gas bills. The incentive will be calculated on a case by case basis and will contingent upon full participation in each area. This differs from the Non-Wire's Alternative ("NWA") projects where incentives commence at the 70% attainment level.

⁵ A portion of these costs are currently set within the Master Services Agreement between Central Hudson and its implementation vendor.

⁶ Central Hudson Gas & Electric Benefit-Cost Analysis (BCA) Handbook, Version 2.0, Revised July 31st, 2018.

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Appendix 2- NPA Accounting Procedure

Non-Pipe Alternative – #A30.63 Deferral and amortization of NPA

As prescribed in the 2018 Rate Order, Central Hudson is authorized to defer the revenue requirement effect of development and implementation of Non-Pipe Alternative (“NPA”) projects. Specifically, Central Hudson will maintain appropriate accounting to adjust net plant targets by removing the effect of the capital project not implemented. To the extent the Company implements a NPA that results in the displacement of a capital project reflected in the average gas net utility plant, the balance(s) will be reduced to exclude the forecast net plant associated with the displaced project. The carrying charge, or a portion thereof, as warranted, on the reduction of the average gas net utility plant that would otherwise be deferred for customer benefit will instead be applied as a credit against the recovery of the NPA.

WO#7341A Transp. Mode Alt. (Abandonment) has been set up within PSC account 182.44 to track expenditures related to this initiative. Financial Reporting will monitor charges on a monthly basis and record associated deferred taxes. Once the program is completed, program cost and incentive will be recovered via the Gas Miscellaneous Charge over a ten year period. Carrying charges at the Pretax WACC will be assessed on deferred balances. In accordance with 2018 Rate Order, each December total accumulated CC are moved via non-standard offset JV to the Regulatory Adjustment Mechanism (“RAM”) work order for collection/refund to customer from July – June in each subsequent rate year).

To record deferred taxes related to NPA (JV 399)

Dr. 41550-2-930 (410.12)	Def FIT – Non Pipe Alternative
Cr. 28359-3-970	Def FIT – Non Pipe Alternative (182.44)
Dr. 41552-2-930 (410.16)	Def SIT – Non Pipe Alternative
Cr. 28459-3-970	Def SIT – Non-Pipe Alternative (182.44)
Dr. 28340-3-970	Def FIT – SIT Contra
Cr. 41186-2-930 (410.12)	Def FIT – SIT Contra

To record carrying charges on the NPA (JV388)

Dr. W.O. #6469A (182.39)	CC – Transp Mode Alt (Aband)
Cr. 42152-3-970 (421.52)	CC – NPA
Dr. 41044-3-970 (410.44)	Def FIT – CC – NPA
Cr. 28301-3-970	Def FIT – CC – NPA
Dr. 41045-3-970 (410.45)	Def SIT – CC – NPA
Cr. 28401-3-970	Def SIT – CC – NPA
Dr. 28352-3-970	Def FIT – SIT Contra
Cr. 41134-3-970 (411.34)	Def FIT – SIT Contra

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Appendix 3- Benefit Cost Analysis



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