



The New York Geothermal Energy Organization (NY-GEO) appreciates the opportunity for its members to comment on New York's Gas System Planning Process (20-G-0131) with respect to non-pipe alternatives (NPA's). Several virtual meetings were held discussing various questions and comments made in response to DPS questions. This correspondence is a summary of input from our members, many of whom are involved on a day to day basis designing, installing and monitoring systems and understand how policy can impact industry advancement.

FOR NON-LDC STAKEHOLDERS:

22. Have you or any group you are affiliated with actively suggested or discussed NPAs with an LDC? (LOCAL DISTRIBUTION COMPANY; The utility company that provides the distribution, customer and energy services for natural gas and electricity.) If so, in what way did you submit your suggestion (e.g., in the context of a rate case, one-on-one interaction with the LDC), what response did you receive, and what was the outcome?

Earth Sensitive Solutions, NY-GEO member: was awarded a NPA Contract with NYSEG for the Lansing Community. It was a response to an RFP issued by NYSEG. We are currently a little more than half way through our 3rd year contract and have reached 35% of our goal of 427 Therm/Hr of removed equipment.

Dandelion, NY-GEO member: has worked with National Grid-NY on an NPA contract to install geothermal heat pumps in 3 homes on one road in Gansevoort, NY. Geothermal installations were completed as part of full electrification conversions of the homes to replace farm taps.

Dandelion, NY-GEO member: has also informally asked about the possibility of NPAs to other New York LDCs in order to avoid gas line extensions to proposed new neighborhood developments, but these conversations have not progressed beyond initial discussion.

Joanne Coons, NY-GEO member: I have presented in writing and verbally to the Town of Clifton Park to network their heating and cooling at our Town Hall complex which includes Town Hall, Highway Department, Senior Center and Building and grounds. I have involved National Grid representatives with this plan and spelled out the benefits both comfort wise and financially.

I also presented to the school board a similar plan for our large school district (10,000 students) which sits on one large campus; this would become a micro grid and be non-fossil fuel and add to health and security. I had a letter to the editor published with this idea as well.

NY-GEO staff: As a party to many recent rate cases, NY-GEO representatives have brought up NPA's as a viable alternative to expansion of gas sales, gas supply infrastructure, and what we deemed as unnecessary leak prone pipe replacements (LPP's). NY-GEO has also had LDC representatives speak at our annual conferences regarding NPA's. In general, LDC's seem to be interested in exploring the idea of

NPA's as a means to expand/supplement their business and meet CLCPA goals, however they consistently defer any commitments on the joint proposal until the Commission makes a ruling through the Long-Term Gas Plan proceeding. Also, the LDC's state the "obligation to serve" and "safe and reliable service mandates" as reasons they must defer more aggressive NPA program implementation until ordered by the Commission. In NY-GEO's opinion, LDC's need both statutory and regulatory motivation to more actively pursue NPA's on a much larger scale.

23. What criteria makes a particular area of an LDC's service territory favorable for an NPA? What information is required to determine if a particular geographic area, cluster of customers, customer class, or use of natural gas is suitable for an NPA? Be specific in what would make an NPA especially beneficial in those locations, for a group of customers, or customer class. How should those benefits be measured?

Earth Sensitive Solutions, NY-GEO member: From what we have seen, the driver from the LDC perspective is minimizing the risk of dropping below a required minimum operating pressure on a peak demand day. In other words, the existing infrastructure is insufficient to meet the demand and a pipeline investment would be their conventional approach to resolving this capacity constraint.

Dandelion, NY-GEO member: We could suggest that the LDCs use an approach similar to what HEET developed in partnership with MA gas LDCs - measuring leaks to make a map of leaky pipes, overlaying with LDCs plans for gas expansion and replacement (e.g. Leak Prone Pipe replacement plans), and create maps of opportunities for NPAs. <https://www.heet.org/blog-items/new-maps-gas-leaks-plans-for-new-gas-pipes-in-ma>

Dandelion, NY-GEO member: Almost any set of buildings along an existing leak prone pipeline, or in an area of planned gas pipeline expansion, could be transitioned to geothermal heat pumps instead. If gas is needed for some specific end use of the building (e.g. a restaurant, or industrial processes), propane tank gas is always an option. LDCs could pay for installation.

NY-GEO Staff: In NY-GEO's opinion, the benefits of any NPA include significant progress toward the CLCPA goals of greenhouse gas reduction. Additional benefits include lower operating costs to customers, lower safety risks to the public, fewer repairs and maintenance due to longer useful lives of pipes and equipment when comparing ground source to other systems, increased customer satisfaction, and good alternate employment for existing fossil fuel workers and future generations. Measurement should be aligned with CLCPA decarbonization and greenhouse gas emission reduction goals including reduction in peak demand time periods. Given the variety of types of NPA's (single borehole and GHP, Thermal Energy Network) plus the variety of applicable building types (single family residential, multi-family, high rise residential, small commercial etc.) there are few scenarios where NPA's would not be cost effective and more environmentally friendly over the systems lifetime. Buildings with ducted distribution systems anywhere in NYS would be especially good candidates for NPA's. Also, areas where peak heating and cooling days put the greatest strain on fuel supplies and existing gas infrastructure, while having available electric capacity, are favorable areas for NPA's.

24. What are the largest barriers to developing NPAs as an alternative to investing in gas distribution infrastructure?

Earth Sensitive Solutions, NY-GEO member: As is typical with the HVAC market, only 3-5% of the target market is "in play" in any given year. The extra financial incentive from the gas utility, combined with

Clean Heat Rebates, is helpful to raise the “in play” number to perhaps 6-9%. Getting homeowners to undertake a major change in their HVAC System when they are content with what they have is a huge barrier to market transformation.

Although more data is insightful, the main barrier in the residential market, as cited earlier, is motivating individual homeowners. Our proposals based on a 25% market penetration in a 3 year period, and are a bit optimistic based on our experience in Lansing.

Dandelion, NY-GEO member: There is a perceived barrier often raised in discussions about NPAs related to the need for consensus or collective action - e.g. all homeowners/building owners in a proposed NPA area needing to agree to remove gas usage from their properties. In reality, this is not a true barrier, because any ‘hold out’ building owners who do not want to transition to electric equipment and want to continue to use gas on their property could be transitioned to propane tank gas supply, with funding for the installation of the propane tanks provided by the gas LDC. Building owners who prefer electrification could be transitioned to heat pumps and other electric appliances, with funding for electrification provided by the gas LDC.

Joanne Coons, NY-GEO member: Public awareness, willingness to change, education of the value of NPA's are barriers. We need to realign our funding to be focused on NPA's; funding needs to be more efficiently distributed. Make it easier not harder to access support. Simultaneously improving or updating the building code is essential to every kind of energy use. (best way to save energy is not to use it)

From “Let’s Talk”: NY-GEO’s bi-weekly member discussion: The Public Service Law’s obligation to serve is a large barrier.

There are no current policies in place that consider the use of municipal waste water/treatment or other water sources that could serve as a source or sink.

There is a serious lack of outreach to contractors, consumers, the public by DPS and the utilities. Utilities are not incentivized to pursue these types of projects. Serious marketing/promotion on a large scale (i.e. I love NY) is needed. Also, there is no oversight of the communications (mandated and non-mandated) from utilities.

The common understanding of “heat pump” is an air source heat pump. Public facing materials should always reference both air and ground source heat pumps unless the intention for some reason is to reference only one of these types.

From Groundheat, NY-GEO member: A cost analysis (LPP replacement versus NPA) is not done nor communicated to ALL stakeholders to show whether the cost of a gas hookup is more or less expensive than installing NPP’s. And there should be an existing borehole available for each potential NPA customer in a location that would allow for immediate and easy hookup. These existing hookups/boreholes would not have be in an easement/right of way.

25. Does the current Benefit-Cost Analysis (BCA) framework undervalue alternatives to traditional infrastructure? If so, what changes, and/or additional data, tests or measures could supplement the BCA framework to improve the analysis? CASE 20-G-0131-4

Earth Sensitive Solutions, NY-GEO member: Unfortunately, the process to arrive at a consensus on the BCA methodology will perpetually be out of date. It's like trying to drive your car by only looking in the rear-view mirror. As I stated in our recent RG&E NPA proposal:

"For example, what is the Cost of Carbon and other externalities? From a recent New York Times article:

"The higher the number, the greater the government's justification for compelling polluters to reduce the emissions that are dangerously heating the planet. During the Obama administration, White House economists calculated the social cost of carbon at \$42 a ton. The Trump administration lowered it to less than \$5 a ton. Under President Biden, the cost was returned to Obama levels, adjusted for inflation and set at \$51.

The new estimate of the social cost of carbon, making its debut in a legally binding federal regulation, is almost four times that amount: \$190 a ton."^[1]

Additionally, from an August 2023 NYS DEC Publication:

Table 1: Social cost of carbon dioxide (CO₂), 2020-2050 (in 2020 dollars per metric ton CO₂)

Year	Recommended Discount Rates			
	3%	2%	1%	0%
2020	53	130	420	2,200
2025	59	130	430	2,200
2030	64	140	450	2,200
2035	70	150	460	2,100
2040	76	160	470	2,100
2045	81	170	480	2,100
2050	88	180	490	2,000

From the same publication:

"...the selection of the discount rate has a large effect on the estimate of the value of carbon, and there is no consensus or uniform scientific basis for the selection of a discount rate."^[2]

[1] Biden Administration Unleashes Powerful Regulatory Tool Aimed at Climate, New York Times 12/2/2023 - <https://www.nytimes.com/2023/12/02/climate/biden-social-cost-carbon-climate-change.html>

[2] Establishing A Value of Carbon Guidelines For Use By State Agencies, NYS DEC updated August 2023 - https://extapps.dec.ny.gov/docs/administration_pdf/vocguide23final.pdf

Dandelion, NY-GEO member: The BCA for gas NPAs should be adjusted to account for the differential impact on the grid of additional electric load, both peak load and annual load, resulting from electrification accomplished with ground source heat pumps vs. air source heat pumps. If gas LDCs implement electrification via NPAs that involve ASHP rather than GSHP, the extra costs to the grid will be significant, and avoidable. The [U.S. Department of Energy report](#), published in December 2023, states in the executive summary “GHPs have traditionally been viewed as a building energy technology. The most notable result of this study, however, is the demonstration that GHPs coupled with weatherization in SFHs are primarily a grid-cost reduction tool and technology that, when deployed at a national scale, also substantially reduces CO2 emissions, even in the absence of any other decarbonization policy”

FOR ALL STAKEHOLDERS (LDCs AND OTHERS):

26. What sort of process, if any, should be available for a customer, group of customers, municipality, town, or other entity to propose a managed transition towards full electrification from traditional utility gas service?

- What set of information is necessary to compile a complete proposal?

Salas O’Brien, NY-GEO member: Primarily we would need the # of buildings which would have connections to the system and the site map of the locations. A good run down of the building metrics would also be helpful. Things like age, Square Footage, HVAC systems, electrical system size, etc. Also have some idea of where the thermal assets would be located. Is the town or muni working with land access agreements on locations for bore fields, etc.? It would be great to work with the utilities to get 3-years’ worth of gas and electric bills for each customer.

- What information should LDCs make available to customers regarding who might wish to develop such a proposal?

Salas O’Brien, NY-GEO member: See above answer

Joanne Coons, NY-GEO member: Quality and uniformity are important. There should be a template created with prescribed steps so all interested parties can follow it. Wherever possible a Manual J should be mandated. A similar template process has been successful in the solar industry.

- How far in advance is the information needed?

Salas O’Brien, NY-GEO member: I would say 3-4 week in advance to put a proposal together.

- Do interested stakeholders need professional assistance in developing proposals? In your response, be as detailed as possible about the type and granularity of data needed from the LDC, including data related to time-to-construction, how the LDC can confirm the participants, etc.

Salas O’Brien, NY-GEO member: Generally yes, but maybe this is where NY-GEO or NYSERDA or someone can come in and help with a template to use for stakeholders? They should all be relatively similar except the building stock and type of thermal assets.

Most full designs from Schematic through construction documents take 1-year from start date. Construction timelines usually start 2-3 months after final design is complete and bidding is done. I am not as familiar with the participant level information. We are only experts in the design and do not generally participate in working with potential participants on engagement and interest etc.

The last big piece is who will manage the construction, who will be paying for the system installation, and who will own and operate it after it is up and running. Is this all the same group, or will there be 3rd parties involved. Those financial and ownership questions are really the main issues to get from design to implementation

Dandelion, NY-GEO member: Again, we could reference the work that HEET has done on the Kickstart MA grant program. <https://www.heet.org/Kickstart-Massachusetts>

They have a sign-up sheet for people who would like to see gas to geo transition in their community, which already includes a number of NY communities who have expressed interest:
<https://survey123.arcgis.com/share/2b55787e45bf4dec94b54e41c188d0f7>

From “Let’s Talk”: NY-GEO’s bi-weekly member discussion: There needs to be a boilerplate for the entire state and avoid utility by utility inconsistencies.

Utilize the Hubs much more to help customers/developers create a proposal. That’s what they were created for. Ask Hubs what barriers they are facing.

The public needs to feel they are being encouraged to develop and submit proposals.

27. How should NPA Suitability and Screening Criteria be applied by an LDC seeking to justify development of a gas transmission or distribution project?

a. Should an LDC be required to identify all projects in its current capital plan that meet the NPA Suitability and Screening Criteria, including when a NPA solicitation will likely be issued for those projects? What information about these projects and associated NPAs should be provided?

Dandelion, NY-GEO member: Yes! LDCs should absolutely be required to review all projects in their capital plans in order to identify those that could be addressed with NPAs, and they should be reporting on the outcomes of these assessments at least annually, if not more frequently. Rather than creating NPA Suitability and Screening Criteria, the LDCs should flip the script and create Pipeline Alternative Suitability and Screening Criteria - in other words, the project should be assumed by default to be suitable for NPAs, and the burden of proof should be on the LDCs to claim that a Pipeline Alternative is needed/justified in any given situation. In other words, LDCs should be asking ‘why is this project not suitable as an NPA? Why would a pipeline solution be required?’

b. Should an LDC include NPA Suitability and Screening Criteria information as part of the rate case process?

For example, should an LDC include such information in capital expenditure workpapers, and, as part of the justification for a traditional utility plant, explain the

process and decision to move b.forward with a traditional project or NPA for projects that pass the Suitability and Screening Criteria?

Dandelion, NY-GEO member: See above, default assumption should be NPA. Pipeline solutions should have to be justified]

NY-GEO staff: Yes NPA discussions, forecasts assumptions etc. should be part of rate cases similar to the current detailed discussions of leak prone pipes (LPP's)

c. How should NPA Suitability and Screening Criteria be a standard part of each LDC's gas system long-term plan, and thus be reviewed, updated, and approved as Appropriate?

Dandelion, NY-GEO member: [See above, default assumption should be NPA. Pipeline solutions should have to be justified]

Joanne Coons, NY-GEO member: I always thought that adding NPA's should be like "complete streets" adding bike lanes when updating roads. When digging new water or sewer lines, NPA should be installed while the ground is open to start setting up the infrastructure needed.

d. What is the most efficient and effective process to update the NPA Suitability and Screening Criteria?

Dandelion, NY-GEO member: [See above, default assumption should be NPA. Pipeline solutions should have to be justified. LDC should have to submit Suitability and Screening Criteria for Pipeline Solutions, with the default system planning switching to NPA solutions]

28. Should an LDC's NPA solicitations involve proactive outreach to local municipalities and/or public interest groups about how NPAs in particular areas might be designed to help meet public policy objectives?

Dandelion, NY-GEO member: Yes, and this might be a function that the LDCs should be required to outsource to local community outreach organizations. In other words, LDCs could contract for 1-2 year periods with local community organizations who could do the proactive outreach to local municipalities and/or public interest groups. LDCs could work with the existing network of NYSERDA Clean Energy Communities for this function. <https://www.nyserda.ny.gov/All-Programs/Clean-Energy-Communities/Find-a-Participating-Contractor>

Or with the Local Community Organizations like Sustainable Westchester
<https://sustainablewestchester.org/energysmarthomes/>

NY-GEO staff: Dandelion's approach can and should apply to individual requests for gas service. LDC's should post phone numbers or web listings for gas service requests that connect with the local Clean Energy Hub, whose intake personnel would be trained in explaining non-gas options to consumers. Customers would then be given a list of contacts, including both the gas and electric LDCs and local Clean Heat program contractors, to choose from for their next step.

- Are there specific elements of outreach and communication, including specified timeframes, that should be standardized to effectuate the best outcome for ratepayers?
CASE 20-G-0131-5-

Dandelion, NY-GEO member: Yes, LDCs approach to outreach should leverage the expertise of existing community outreach organizations (see above) and operate under established best practices, e.g.

<https://www.nrel.gov/docs/fy22osti/82937.pdf>;

<https://www.nrel.gov/docs/fy23osti/87113.pdf>

<https://www.cleanenergytransition.org/post/a-framework-for-justice-best-practices-for-equitable-energy-development>

<https://www.cfra.org/sites/default/files/publications/Best%20Practices%20for%20Community%20Engagement%20WEB.pdf>

Joanne Coons, NY-GEO member: Definitely be proactive. We should have a division of LDC's actively doing this. A go to department to help implement, it isn't just left to chance.

29. How should an LDC communicate eligibility requirements, or restrictions, to potential NPA providers in NPA Solicitations?

Dandelion, NY-GEO member: NPA Solicitations and technology selections should incorporate a Cost Benefit Assessment that values the grid impacts of various electrification technologies. (see links to answer 28 above).

Joanne Coons, NY-GEO member: Suggest incorporating a simple checklist and flow chart to illustrate the process.

30. Should information about projects that meet NPA Suitability and Screening Criteria be made available in a common, publicly accessible repository as well as on the website of the LDC in whose service territory the NPA might be developed? What entity should maintain that common repository? How often should it be updated?

From "Let's Talk": NY-GEO's bi-weekly member discussion: At a minimum, utilities, municipalities and Hubs should have current information. There should be a statewide repository allowing statewide access to all LDC information and a budget should be allocated for maintenance of this data base.

Joanne Coons, NY-GEO member: Yes, make public for transparency and information sharing. This would raise awareness which is needed since NPA's are in their infancy stage.

31. If an LDC develops an NPA that enables complete avoidance (i.e., not just deferral) of replacement of an LPP segment, should the LDC be allowed to recover costs up to the total cost of that LPP segment's replacement but no higher? If the LDC should instead be allowed to recover more than that amount, explain what the proper amount should be and why

Bob Wyman, NY-GEO member: LDC's should recover only actual costs, not the costs of the "Highest Cost Alternative (HCA)." If it is deemed necessary to explicitly incentivize the LDC to pursue cost-saving

alternatives, such incentives should be provided via Earnings Adjustment Mechanisms, not via the artificial inflation of costs.

NY-GEO staff: Maximum success in neighborhood electrification will require a very high percentage of homeowner electrification costs - ideally 100% - to be provided through the NPA process. Very attractive financing, based on the benefits of peak reduction and greenhouse gas reduction, should be available for any upfront costs left to the homeowner and should feature a long payback term. Supplementary funding may be necessary.

32. If an LDC proposes an NPA that would enable deferral but not necessarily complete avoidance of LPP segment replacement, how should the deferral be valued and what costs should the LDC be authorized to recover?

- How should incentives be structured and what cost elements associated with new or expanded service should be included?
- Should such an incentive structure also include revenues or consider upward or downward pressure on rates?

Be as specific as possible and identify how that incentive structure benefits Ratepayers.

Bob Wyman, NY-GEO member: LDC's cost-recovery should be based only actual costs, not the costs of the "Highest Cost Alternative (HCA)." If it is deemed necessary to explicitly incentivize the LDC to pursue cost-saving alternatives, such incentives should be provided via Earnings Adjustment Mechanisms, not via the artificial inflation of costs.

During a time of declining demand, it is not possible to both preserve LDC revenues and to avoid increased rates. The deployment of NPA's and other efforts to reduce gas demand will inevitably result in reduced LDC revenue. No incentives can avoid that consequence of ensuring a healthy environment. As we address the requirements of the CLCPA, the focus of rate making should be on ensuring that the LDCs enjoy adequate ROE to support their continued operations-- not that LDC revenues remain unchanged.

33. For the purpose of valuing an NPA, should the assumed amortization period for the non-NPA solution to which the NPA is compared be the shorter of the solution's engineering useful life or 2050, i.e., the year set by the CLCPA for the reduction of economy wide emissions to net zero?

Dandelion, NY-GEO member: The amortization period for the non-NPA solution should be the solution's engineering useful life. For geothermal heat pump systems, the useful life of the exterior ground loop equipment should be amortized on a 50-80 year time period, while the interior heat pump equipment should be amortized for 25 years.

34. How should the quantity of expected emissions reduction resulting from an NPA be estimated? Should that quantity be valued using the Social Cost of Carbon recommended by the Department of Environmental Conservation, by the allowance price assigned by the New York Cap and Invest program, or in some other way?

Bob Wyman, NY-GEO member: The DEC's Social Cost of Carbon should be used exclusively when calculating costs of emissions addressed by the CLCPA.

35. Should all current gas customers fund all NPA incentives to avoid new customer connections?

Dandelion, NY-GEO member: Current gas customers should fund NPA incentives that address leak prone pipelines, farm taps, and other aspects of the existing gas system that can be decommissioned with NPA. Current gas customer should fund NPA incentives that add customers to the gas utility rate base via thermal energy networks that are owned and run by the gas utilities. Integrated planning across electric and gas utilities should be undertaken to ensure an appropriate allocation of rate-based incentives across electric and gas rate payers for projects that avoid expansion of the gas system and/or transition a higher percentage of the gas rate base to electric-only customers.

Joanne Coons, NY-GEO member: This would be a contentious approach from a gas customer viewpoint. Both gas and electric customers should incur this cost

36. Should there be a threshold below which a project which avoids extending gas service should not be designated as an NPA?

Dandelion, NY-GEO member: No. Why would there be a minimum size threshold for NPAs? As noted above the onus should be on gas LDCs to provide sufficient reason why pipeline alternatives should be pursued instead of NPAs.

37. The Commission received very few comments in response to the JLDC's filing regarding the share of net benefits that should be provided to the LDC as an incentive and an appropriate cap on the amount of that incentive. CASE 20-G-0131 -6-requests additional comments on the specifics and merits of the JLDC proposal including, but not limited to:

a. Should the share of net benefits allocated to shareholders/ratepayers match the 30%/70% allocation established for non-wires alternatives?

b. Should net benefits consider the full revenue requirement of a project, environmental externality values, or both?

c. How should an LDC calculate a cap on the total net benefits?

For example, should a cap only apply to environmental externalities but not to the deferred or eliminated revenue requirement for capital projects? If a cap only applies to environmental externality values, should that cap be a percentage of the total environmental externality value?

Bob Wyman, NY-GEO member: If ratepayer benefits are to be shared with the LDC, those benefits should include only the actual financial benefits from reduced or deferred costs. The benefits related to externalities, which do not involve actual LDC costs, should not be monetized by or shared with the LDC

NY-GEO staff: NY-GEO believes this question has many complicated aspects and would best be resolved via collaborative discussions with subject matter experts possessing rate design, financial/audit, energy modeling/planning, and public health expertise.

38. Should the recovery of NPA costs and any applicable incentives during the term of an LDC's gas rate plan be collected through some type of monthly distribution rate surcharge until such costs are incorporated into base rates when base gas delivery rates are next reset?

Alternatively, should NPA costs be deferred, i.e., treated as a regulatory asset, until such time that they are reflected in base rates when the LDC's rates are next reset.

- Explain how your recommendation best benefits ratepayers and provide specific details supporting your explanation.

Bob Wyman, NY-GEO member: The recovery of NPA costs should follow the same procedures as recovery of pipe-based alternatives.

39. What should be the amortization period for NPAs that fully eliminate the need for an infrastructure project?

- Explain how your recommendation is best for ratepayers and provide specific details supporting your explanation.

Dandelion, NY-GEO member: Amortization periods should be equal to the lifetime of the equipment that is installed.

40. Are there any infrastructure projects that should not be considered for NPA treatment? Please provide specific examples.

NY-GEO staff: NY-GEO currently knows of no infrastructure projects that should not be considered for NPA treatment, especially as the technology continues to advance and innovations will bring even better benefits. Immediate emergency situations lacking time for NPA analysis/design may be acceptable for traditional infrastructure consideration but should require DPS staff/Commission review and approval.