Long-Term Planning to Support the Transition of New York's Gas Utility Industry

Prepared for Natural Resources Defense Council

April 30, 2021

AUTHORS

Tim Woolf
Alice Napoleon
Asa Hopkins, PhD
Kenji Takahashi

Synapse Energy Economics, Inc.

485 Massachusetts Avenue, Suite 3
Cambridge, Massachusetts 02139

617.661.3248 | www.synapse-energy.com

CONTENTS

EXECUTIVE SUMMARY

Background

New York will need to drastically reduce all fossil fuel use in order to achieve the Climate Leadership and Community Protection Act's (CLCPA) economy-wide goals of achieving 40 percent emissions reductions from 1990 levels by 2030 and net zero emissions by 2050. These goals apply to the entire economy and will have dramatic implications for the conventional natural gas (fossil gas) utilities.

Recognizing that gas utilities need to adjust to new energy and climate policy, the Public Service Commission (PSC or Commission) recently instituted a new proceeding to "establish planning and operational practices that best support customer needs and emissions objectives while minimizing infrastructure investments and ensuring the continuation of reliable, safe, and adequate service to existing customers."[1] The proceeding also aims to improve the transparency and inclusiveness of gas planning, supply and demand analysis, and management of supply constraints. As required by the PSC, the New York Department of Public Service (DPS) filed its Gas System Planning Process Proposal (DPS Proposal) on February 12, 2021.[2] While the proposal recommends important improvements to the current process, the proposal's overall vision for achieving CLCPA and other state policy goals over the long term is far too limited.

This white paper describes the planning practices necessary to guide and support the transition from today's gas industry to one that complies with the CLCPA, maintains essential energy services, manages costs, protects all customers, and promotes energy justice.[3] We recommend two overlapping but different types of plans for this purpose: (a) statewide gas transition plans, and (b) gas utility resource plans. The statewide transition plans should establish a vision for how the industry must evolve over the long-term, and the gas utility resource plans should identify the specific actions, resource investments, and infrastructure investments that each utility will undertake to achieve that long-term vision.

[1] New York Public Service Commission. Case 20-G-0131 - *Proceeding on Motion of the Commission in Regard to Gas Planning Procedures,* Order Instituting Proceeding, at 4 (Mar. 19, 2020).

[2] Simultaneously with issuing the Staff Gas System Planning Process Proposal, the DPS also filed the Staff Moratorium Management Proposal on February 12, 2021. This paper focuses on the Planning Process Proposal.

[3] We use the term "energy justice" to refer to a concept similar to environmental justice. Energy justice pertains specifically to energy-related benefits and burdens. According to the Initiative for Energy Justice, "[e]nergy justice refers to the goal of achieving equity in both the social and economic participation in the energy system, while also remediating social, economic, and health burdens on those disproportionately harmed by the energy system." Further, "[e]nergy justice aims to make energy accessible, affordable, clean, and democratically managed for all communities." (The Initiative for Energy Justice, https://iejusa.org.) Energy justice analyses should consider the same types of customers and communities as environmental justice analyses; the main difference between the two is the scope of impacts considered.

Long-term gas planning principles and practices

The economic analyses needed to develop statewide gas transition plans will have to be broader and more comprehensive than traditional utility integrated resource plans because of the extent of change required of the gas industry itself. Therefore both statewide transition and utility resource plans should adhere to the following principles and practices:

- Design all scenarios to comply with the CLCPA.
- Integrate gas and electricity planning.
- Assess impacts on gas and electricity sales.
- Use appropriate asset lives and depreciation schedules.
- Articulate greenhouse gas (GHG) constraints.
- Apply a high threshold for approving new gas infrastructure investments.
- Assess multiple gas utility business models.
- Develop comprehensive non-pipeline alternatives (NPA) screening frameworks.
- Adopt practices for strategic asset retirement.
- Update gas load forecasting practices.
- Account for customer actions.
- Account for risk.
- Articulate an action plan.
- Update plans periodically.

The statewide transition plans

These plans should indicate how the state as a whole will achieve New York's long-term industry goals, including emissions reductions as required under the CLCPA and other key regulatory goals. Because of the need for fundamental structural changes in the fossil gas industry, this statewide plan should include considerations of different gas utility business models, as well as enhanced consideration of rate and bill impacts particularly on low-income and moderate-income customers. These statewide transition plans should include the following elements:

- Benefit-cost analyses (BCA) to identify least cost and low risk ways of achieving the statewide transition plan and other regulatory goals.
- Rate and bill analyses of the gas and electricity utilities to identify how different strategies will affect different customer classes.
- Energy justice analyses to identify how low-income and moderate-income customers, captive customers, and disadvantaged communities will be affected by the transition plan.
- Utility financial analyses to identify how different transition scenarios will affect utility financial viability and ability to serve customers.
- Macroeconomic analyses to identify how different transition scenarios will affect economic development in New York state.

The gas utility resource plans

These utility-specific plans should indicate how each gas utility will achieve the vision and the outcomes identified in the statewide gas transition plans. The gas utility resource plans that we recommend here would be consistent with the long-term utility plans described in the DPS Proposal but would be enhanced using the long-term gas planning principles and practices described here.

The statewide transition plans and the gas utility resource plans will have some areas of overlap and some differences. Table 1 compares the two different types of plans.

Table 1. Statewide Transition Plans and Utility Resource Plans

	Statewide Transition Plan	Utility Resource Plan
Geographic scope	New York	each gas utility
Frequency of plan	five years	three years
Study period	2050 or 20 years, whichever is longer	2050 or 20 years, whichever is longer
Long-term gas industry goals	✓	✓
Long-term gas planning principles	✓	✓
Benefit-cost analysis	✓	✓
Rate and bill analysis	✓	✓
Utility financial analysis	✓	✓
Energy justice analysis	✓	✓
Integrate gas and electricity planning	✓	✓
Macroeconomic analysis	✓	–

1. STATEWIDE GAS TRANSITION PLANS

1.1. Statewide Planning

The DPS Proposal includes a gas utility resource planning process to meet new and evolving gas industry goals. This proposal represents a significant improvement over current gas planning practices. However, the DPS Proposal lacks a long-term vision for how the New York fossil gas industry will need to evolve over time to ensure that the state can meet the goals of CLCPA, as well as other important goals such as availability of service and customer equity. Further, the DPS Proposal does not recommend a planning process to develop a long-term vision for how the industry should evolve across the entire state.

The importance of statewide planning to develop a vision and roadmap for the gas industry cannot be overstated. The changes that will be required to transform the gas industry are so broad that it would be very inefficient and unwieldy to try to address those changes on a utility-by-utility basis. Some issues, such as coordination with electric utilities, coordination with other industries in complying with the CLCPA, innovative ideas about new business models, and creative proposals for protecting consumers and ensuring energy justice, have important implications across the entire state and should not be addressed in the isolated silos of each utility. In addition to being very inefficient, this approach would likely allow many important issues to fall through the cracks between the different utilities.

Further, the changes required to transform the gas industry are so broad that they will affect many parties throughout the state, including gas and electric utilities, gas and electric utility customers, third-party providers of electric and gas products and services, consumer advocates, environmental advocates, municipalities, gas and electric utility investors, trade allies that provide energy efficiency and demand response services, and state agencies responsible for environmental protection and economic development. These parties' perspectives and interests typically span the entire state and it would be infeasible for all these parties to provide meaningful input into each of the nine utility-specific resource plans that are conducted every three years on a staggered basis, as proposed by the DPS.[4]

Finally, statewide planning is necessary to establish GHG goals for each gas utility, which is a foundational planning criterion for developing each utility's resource plan.

1.2. Long-Term Gas Industry Goals

The DPS, PSC, and the New York State Energy Research and Development Authority (NYSERDA) should lead a stakeholder process to develop a plan for transitioning from today's fossil gas industry to an industry that achieves New York's decarbonization goals, where fossil gas is completely phased out by 2050, which should incorporate sector-specific goals recommended by the Climate Action Council.[5] This statewide transition plan should help define the long-term gas utility industry structure and goals and should outline the actions necessary to achieve those goals. Such goals could include, for example:

- Continue to provide reliable energy services to all electric and gas customers. The fuel types used to provide energy services might change over time, but all customers should have access at least the level of services they have access to today.
- Keep the cost of energy services as low as reasonably possible. This goal can be pursued through sound economic analyses, as described below. It can also be pursued by animating markets and third-party providers of energy services where warranted.
- Achieve the emission reduction goals of the CLPCA.
- Ensure customer equity and energy justice for disadvantaged communities. This should be a key objective embodied in all aspects of the transition plan.
- Manage the financial health of the current electric and gas utilities to ensure that they can continue to provide low-cost reliable services where warranted, can adopt new business models, or can phase out business lines with as little disruption in energy service delivery as possible.

[4] DPS Proposal, p. 7.

[5] The CLCPA creates a Climate Action Council charged with developing a scoping plan of recommendations to meet these targets and place New York on a path toward carbon neutrality. The scoping plan will inform the State Energy Planning Board's adoption of a state energy plan, which will provide official policy guidance for meeting the climate targets.

The DPS Proposal mentions some of these concerns. It states, "[t]he long-term gas system planning process will help the utilities plan where, when, and how to deploy capital to ensure reliability in the future at reasonable cost and in line with State policies."[6] However, it does not clearly lay out all relevant goals. For example, customer equity and energy justice for disadvantaged communities is clearly a goal of the CLCPA but is not mentioned in the DPS Proposal.

1.3. Long-Term Gas Planning Principles and Practices

The economic analyses needed to develop statewide gas transition plans will have to be broader and more comprehensive than traditional utility integrated resource plans because of the extent of change required to the gas utility industry itself. Consequently, the following principles and practices should be adopted to ensure that the statewide gas transition plans will achieve long-term statutory and regulatory goals for the industry.

Design all scenarios to comply with the CLCPA

The GHG emission reduction requirements in the CLCPA should be assumed as a constraint in designing the scenarios to be analyzed in the long-term gas planning process. In other words, all scenarios should comply with the statutory GHG emission requirements. The GHG emissions described in the PSC 2016 BCA Order as "externalities," i.e., costs external to the monetary transactions of the utility, actually become "internal" costs to the extent they are addressed by the CLCPA.[7] They become costs that will be incurred by utilities and ultimately collected from customers. Therefore, these costs of compliance with the CLCPA should be included in all scenarios, and in all elements of the BCA: the Societal Cost test, the Utility Cost test, and the bill impact analysis.[8]

The DPS Proposal notes that the costs and benefits in the BCA should include external costs and benefits (page 22) and should properly account for GHG emissions associated with all solutions (page 26). The gas long-term plans must do more than simply estimate the amount of emissions and put a dollar value on them; they must include reference cases and scenarios that comply with the CLCPA. This approach eliminates the need to monetize GHG emissions because the monetary value of GHG emissions will be implicitly accounted for in the estimates of the costs of the scenarios that comply with the CLCPA.[9] This approach will lead to the most accurate assessment of what is needed to comply with the CLCPA. Using an administratively-determined social cost of carbon, for example, for the value of reducing GHG

[6] DPS Proposal, p. 7.

[7] While the CLCPA internalizes much more of the cost of GHG emissions than previous policy did, some externalities will remain even assuming full compliance with the CLCPA.

[8] Utilities might choose to conduct a sensitivity analysis where they do not comply with the CLCPA, for the purpose of identifying the costs of complying with the CLCPA. But this would be just a sensitivity; it would not be seen as a viable scenario, and it would not be used to determine the optimal long-term mix of gas resources.

[9] There may be additional, external, societal costs of GHG emissions, beyond those required to comply with the CLCPA. If so, then these impacts should be treated as externalities.

emissions will provide a different result than using the actual resources and actions that are required to comply with the CLCPA. If the administratively-determined estimate of the value of GHG emissions is too low, then the gas transition plans will not comply with the CLCPA; if it is too high, then customers will pay too much for compliance with the CLCPA.

Integrate gas and electricity planning

Complying with the provisions of the CLCPA will likely require the electrification of many end-uses, including the conversion of many fossil gas end-uses to electric end-uses. The electric local distribution companies (LDCs), local governments, and state agencies also have programs to support electrification of fossil gas end-uses. Thus, it is critical to consider electric and gas consumption, technology options, prices, and sales in an integrated manner. Each gas utility has a different relationship with the electric utility or utilities that serve its customers. In some cases, the utilities are part of the same corporate entity, in other cases not. The gas utility resource plans should incorporate and reflect each utility's situation and demonstrate how the utilities are working together.

Assess impacts on gas and electricity sales

Achieving the goals of the CLCPA will require a significant reduction in fossil gas sales over time, and perhaps the eventual elimination of fossil gas sales. As fossil gas sales begin to decline, either through electrification or other measures to comply with the CLCPA, it may become necessary for gas utilities to increase prices to recover historical, sunk costs for capital assets. This increase in prices might encourage additional fossil gas customers to switch to alternative sources of energy, creating further upward pressure on fossil gas prices, potentially leading to a death spiral for the fossil gas utilities. Such an outcome obviously has dramatic consequences for fossil gas utilities and their customers, and therefore should be accounted for in long-term planning.

Use appropriate asset lives and depreciation schedules

We agree with the DPS Proposal that asset depreciation schedules are a key input into the economic analyses of gas resources. However, the DPS treatment of depreciation schedules does not go nearly far enough.

The DPS Proposal requires that the long-term gas resource plans should include "a scenario that assumes that the full value of any new gas assets will be depreciated by 2050."[10] Assessing only one scenario, or even a set of scenarios or sensitivities, will not sufficiently capture the requirements of the CLCPA. The CLCPA establishes statutory mandates for reducing GHG emissions, therefore e*very scenario and every sensitivity* should be compliant with the CLCPA. The gas utilities' long-term plans should not include any scenarios where new gas assets are not depreciated by 2050—unless the utilities can demonstrate that such a scenario will comply with the CLCPA.

[10] DPS Proposal, pages 22-23.

Further, there might be scenarios where some gas assets should be phased out or retired before 2050 to achieve the GHG goals in the CLCPA. If this is the case, then depreciation schedules that are longer than the actual operating life of an asset will unduly reduce the cost of that asset and result in a skewed economic analysis in favor of that asset. This might also result in stranded costs that will have to either be recovered from customers (at a time when prices are increasing for other reasons) or by utility shareholders (at a time when they are facing increased pressures due to lower sales).

Appropriate depreciation schedules should be applied to both existing and new gas assets alike.

Articulate annual GHG constraints

Long-term gas plans should articulate all GHG constraints, including goals for 2025, 2030, 2035, 2040, 2045, and 2050. Also including GHG guidelines for each year will help ensure that the 5-year goals will be achieved and will provide clarity for the actions that need to be taken in the short- and medium-term to achieve those 5-year goals.

Apply a higher threshold for approving new gas infrastructure

Where the gas utility resource plan includes specific infrastructure investments, the plan should fully document how those investments meet the standards set in the statewide transition plan. Such documentation should include quantitative analysis of benefits, costs, and risks associated with alternatives; should demonstrate that NPAs were considered before proposing fossil gas assets; and should show that any new gas asset's useful life will end by 2050 at the latest. The higher threshold for approving gas infrastructure should reflect the risk of failing to meet the requirements of the CLCPA, as well as the cost associated with locking into large conventional investments (a negative option value).

Assess multiple gas utility business models

Compliance with the CLCPA might require fundamental shifts in gas utility business models. Therefore, long-term gas plans should assess a variety of different gas utility business models, including establishing district heating systems. Other options, such as the use of biomethane, renewably produced hydrogen, and/or synthetic natural gas could also be assessed; but these studies should be grounded in realistic assumptions about potential feedstock constraints, reflect how these fuels will be used, consider impacts to health and the environment, and properly account for the risk of perpetuating fossil gas use and increasing stranded costs associated with system infrastructure.[11] Also, it should consider the relationship between electric and gas utility business models, an assessment of gas utilities' obligation

[11] Alternative forms of fossil gas are sometimes supported with tradable emission credits or renewable credits that represent the positive environmental attributes associated with the alternative gas supply. If such alternative forms of gas are used by the utility to lower the carbon intensity of its operations to comply with the CLCPA, then the utility must demonstrate that any such credits are retained for the benefit of its customers and in no way "double-counted" by another entity. If the credits are not retained by the utility, then the alternative forms of fossil gas should be treated the same as fossil gas for the purpose of the BCA because the environmental attributes are not being used to lower the carbon intensity of the utility's operations.

to serve customers, and the level of return on equity that should be applied to new business models given a potentially different risk profile.[12]

Develop a comprehensive NPA screening framework

Per the DPS Proposal, NPAs should be evaluated for cost-effectiveness consistent with the PSC 2016 BCA Order,[13] which requires assessment from the societal perspective and at the portfolio level. We agree and recommend that the NPA screening framework account for impacts from NPAs and demand-side measures over their useful measure lives, accounting for the potential need to retire some fossil gas assets prior to 2050. In addition, the framework should consider option value (e.g., value of the flexibility to make smaller investments until more is known about the extent of the need). Further, gas utilities should periodically update their assessments of the capacity shortfalls and the evaluations on the status and performance of each NPA project.[14]

Adopt practices for strategic asset retirement

Each utility resource plan should identify where the utility plans to retire assets, and its specific plans for customer transition. In order to keep gas rates low enough to avoid mass, unmanaged defection away from gas service, the gas LDCs should adopt a strategic gas asset retirement approach under which the LDCs would geographically target customers served by a particular distribution line, and then develop a plan to retire that line by offering electrification or other alternative energy services. This approach is particularly needed for the gas lines that are aging, leaking, are due to be replaced, or have other characteristics that make retirement more cost-effective, feasible, or desirable (e.g., lines with clusters of non-heating gas customers or areas vulnerable to climate change). Although the DPS Proposal considers this strategy, more detail is needed on how it would be implemented.[15]

Update gas load forecasting practices

Each utility resource plan should include utility-specific load forecasts developed consistent with modernized statewide forecasting principles, with the necessary level of location-specific and customer class-specific forecasts required to understand geographic and financial analyses. Gas load forecasting should be aligned with and incorporate the impacts of state and local climate policies. To this end, the modeling should use the most up-to-date assumptions (e.g., on fuel-switching) and provide sufficient

[12] For more information, see Synapse Energy Economics, *Gas Regulation for a Decarbonized New York*, prepared for Natural Resources Defense Council, June 2020, Section 8.

[13] New York Public Service Commission. 2016 (January 21). *Order Establishing the Benefit Cost Analysis Framework*. Case 14-M-0101 (2016 BCA Order).

[14] Synapse Energy Economics, *Gas Regulation for a Decarbonized New York*, prepared for Natural Resources Defense Council, June 2020, Section 4.

[15] DPS Proposal, p. 19.

granularity and lead time to allow implementation of NPAs.[16] Gas load forecasting should also develop long-term load forecasts leading to the long-term GHG reduction targets, which will enable the state and utilities to find policy and program gaps that they need to address for meeting the emission targets.[17]

Account for customer actions

Electricity and gas customer decisions are likely to play a critical role in the transition of the gas utility industry, especially as gas and electricity prices increase and technologies for substituting gas with electricity become more available and more economic. The long-term gas plans should consider the customer-facing economics in each scenario, differentiating customer classes as necessary, and explicitly identify policies or programs to make the adoption of efficient end-use technologies more economic for customers.

Account for risk

There are many uncertainties and unknowns about how the gas utility industry should evolve over time to comply with the CLCPA. This introduces even more risk and uncertainty than is typically addressed in utility planning processes. Long-term gas plans should acknowledge and, wherever possible, model risk of failure along different pathways. They should also account for the option value of different decisions, i.e., the path dependence that limits the ability to change course in the event of failure.[18]

Articulate an action plan

The transition of the gas utility industry will likely require multiple actions by multiple parties. It is therefore especially important that long-term gas plans articulate the major steps needed to transition from the current fossil gas utility industry to a new industry that meets the requirements of the CLCPA and other regulatory goals.

Update plans periodically

There are still many unknowns about how the gas utility industry transition will unfold, and there will likely be important new developments and information regarding technology options, fuel options, customer preferences, financial issues, customer protection issues, and more. Therefore, long-term gas plans should be updated periodically to address changing circumstances. We recommend that the statewide gas transition plans be developed every five years and the utility resource plans be developed every three years.

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[16] Likewise, DPS Staff recommends inclusion of NPAs in load forecasts and a geographical analysis with enough granularity to clearly identify locations of anticipated localized demand growth to allow for adequate planning. (Id., p. 15).

[17] Synapse Energy Economics, *Gas Regulation for a Decarbonized New York*, prepared for Natural Resources Defense Council, June 2020, Section 4.

[18] Many of these recommendation in this section draw upon a similar analysis conducted by Synapse Energy Economics for the Conservation Law Foundation, filed in Massachusetts Department of Public Utilities Docket 20-80, and available at https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/13118067.

1.4. Comprehensive Economic Assessments

The statewide gas transition plan should be grounded in a comprehensive economic assessment using the same economic principles and concepts that would be applied in similar regulatory contexts. The economic assessment should be used to identify the lowest-cost path for decarbonizing each fossil gas utility's system, while meeting other policy goals such as provision of energy services, compliance with CLPCA, customer equity, and energy justice.

BCA should be the core of the economic assessment but is not the only component. There are several important factors that cannot or should not be included in a BCA but should nonetheless be considered as part of the economic assessment using separate analyses. These include rate and bill analysis, energy justice analysis, utility financial analysis, macroeconomic analysis, and consideration of other qualitative factors.

These different analyses are necessary because they serve different purposes, provide different outputs, and consider impacts on different parties. The outputs of different analyses cannot simply be added together into a single formulaic decision-making metric. Instead, the outputs of each of the analyses need to be considered to identify the best transition plan for all parties involved.

These different types of analyses are presented in Table 2 and discussed in more detail below.

Table 2. Overview of comprehensive economic assessment

Type of Analysis	Purpose	Parties Considered	Key Outputs
Benefit-Cost Analysis	To assess cost-effectiveness by indicating whether the benefits of the transition pathway exceed the costs	All customers on average	Present value (PV) of costs, PV of benefits, PV of net benefits, benefit-cost ratios
Rate and Bill Analysis	To assess customer equity by indicating the impact on customers' rates and bills	All customers, by customer class	change in ¢/kWh and $ per therm, change in $/month and year, by customer class
Energy Justice Analysis	To assess energy justice issues by focusing on specific customer segments and community-level impacts	Vulnerable customers[19] and disadvantaged communities	bills, energy burden, distributed energy resource participation rates, environmental and health impacts
Financial Analysis	To assess the financial viability of current and proposed utility business models	Utility management and investors	retail sales, customers, earned ROE, gross profit, net profit, earnings per share
Macroeconomic Analysis	To assess impacts on state's economy	Workforce in the state	number of jobs, state gross domestic product
Other Considerations	To account for factors that are not addressed in the other analyses	Customers, utilities, society	metrics for factors not considered above

[19] Vulnerable customers may include low-income customers, moderate-income customers, customers who are medically dependent on heating, cooling, electricity for equipment, and customers vulnerable to climate change.

The DPS Proposal discusses some of these elements, including BCA and rate and bill impact analysis. In these cases, we offer recommendations for enhancing these analyses. Other elements, such as the energy justice, financial, and macroeconomic analyses, are not included in the DPS Proposal but should be incorporated into statewide gas transition plans.

Benefit-Cost Analysis

We agree with the DPS Proposal's requirement that utilities should continue to use the practices required in the PSC 2016 BCA order and the utilities' BCA Handbooks. Further, we agree with the DPS Proposal's recommendation to improve upon current practices by (a) providing better estimates of upstream fixed and variable costs, (b) including avoided gas distribution costs, and (c) investigating the costs of renewable gas alternatives to fossil gas. Below we provide several additional enhancements to current BCA practices.

Costs and Benefits to Include

We recommend adding several items to the list of costs and benefits presented in the DPS Proposal.[20] First, the costs and benefits should include the wholesale market price suppression effects for both the electricity markets and the gas markets. In light of the potential for significantly declining fossil gas sales for compliance with the CLCPA, demand-side gas resources and electrification practices could have a substantial dampening effect on wholesale fossil gas prices.[21] Reduced gas demand could also depress the cost of increased electrification, if electricity production costs decline due to the gas price suppression effects.

We recognize that the PSC BCA order concluded that the wholesale price suppression effect should not be accounted for in the Societal Cost test because the changes in prices are essentially a transfer payment between electricity generators and customers.[22] We do not agree with this determination. The wholesale market price effects are not transfer payments; they are utility system impacts, and they should be included in the Utility Cost test and the Societal Cost test.[23]

[20] DPS Proposal, page 22.

[21] There are several components of fossil gas price suppression effects, sometimes called Demand Reduction Induced Price Effects (DRIPE). Basis DRIPE (how changes in fossil gas consumption in New York changes local basis), and cross-DRIPE (how change in consumption affects changes in electricity prices) may be sizable. Supply DRIPE (how a change in fossil gas consumption in New York affects Henry Hub) may be smaller. The components of fossil gas DRIPE are described in Synapse Energy Economics 2018, AESC, chapter 9, available at: https://www.synapse-energy.com/sites/default/files/AESC-2018-17-080-Oct-ReRelease.pdf.

[22] PSC 2016 BCA Order, 2016, page 24.

[23] For more discussion on these points, see *The National Standard Practice Manual for Assessing the Cost-Effectiveness of Distributed Energy Resources*, 2020, Appendix F, Section F.6.

Second, the costs and benefits of methane leaks should be accounted for in the BCA. These leaks have important implications for (a) the cost of delivering gas, and (b) the ability to comply with the CLCPA, and (c) environmental impacts even after the utilities comply with the CLCPA.

Third, the costs and benefits of indoor air quality should be accounted for in the BCA. There is increasing evidence that indoor combustion of fossil gas can have negative health impacts on the building occupants, and these impacts should be accounted for in the Societal Cost test.

Utility Cost Test

The DPS Proposal reiterates the requirement from the 2016 BCA Order that the Utility Cost test and Bill Impact analysis be used as secondary checks on the Societal Cost test, which should be the primary test for assessing cost-effectiveness. We fully support this requirement.

To the extent that the Utility Cost test is used in long-term gas plans, it is important that a societal discount rate is used rather than a discount rate based on the utilities' weighted average cost of capital.[24] A societal discount rate is consistent with the goals of the long-term gas plans. A societal discount rate also reflects the regulatory perspective, which is more appropriate in this context than the utility investors' perspective.[25] The utility investors' perspective is addressed in the utility financial analysis discussed below. Further, since the Utility Cost test will be used as a check on the Societal Cost test, using the same discount rate is necessary in order to make meaningful comparisons across the two tests.

Rate Impact Measure Test

The 2016 BCA Order directs the utilities to use the Ratepayer Impact Measure (RIM) test as a secondary check to indicate the implications of utility plans on customer rates. The DPS Proposal, however, notes that a full bill impact analysis provides better information to assess the implications on customers rates and bills.[26] We agree with this conclusion of the DPS Proposal and recommend that the rate and bill impact analysis be used instead of the RIM test. This means that utilities should no longer conduct or present the results of the RIM test in their BCAs.

Bill Impact Analyses

We agree with the DPS Proposal's framing of the use and the design of the bill impact analyses. These analyses will clearly be an important complement to the BCA because the gas and electricity bill impacts

[24] Note that the discount rate used in a BCA has no bearing on the utility's ability to recover its capital costs. The recovery of capital costs should be included in the costs and the benefits included in the BCA. The only impact that the discount rate has is to give different weight to the short-term versus long-term costs and benefits in the BCA.

[25] See National Energy Screening Project, *The National Standard Practice Manual for Assessing the Cost-Effectiveness of Distributed Energy Resources*, Appendix G, 2020 for more detail.

[26] DPS Proposal, page 22.

of the fossil gas transition are likely to be significant and therefore should inform some of the key decisions.

All the inputs and assumptions that are common to both the BCA and the rate and bill analyses should be the same in both analyses. For example, all scenarios in the bill impact analyses should be consistent with the scenarios in the BCA. As noted above, all of these scenarios should comply with the GHG requirements of the CLCPA.

In addition, the bill impact analyses should account for the reduction in fossil gas sales as a result of electrification of gas end-uses and other means of fuel switching. These changes in the fossil gas market will have critical implications for bill impacts. The bill impact analysis should also account for the electricity bill impacts for those customers that switch from gas to electric end-uses.

Further, the bill impact analyses should explicitly identify any changes in the number and type of fossil gas customers, as well as the number of customers who decide to switch out their gas space or water heating end-uses for other fuels. This information will be critical to understanding how the gas utility industry is transforming over time in light of CLCPA and other industry trends.

Finally, the rate and bill impact analysis should account for the number and types of customers that participate in distributed energy resource programs or otherwise install distributed energy resources. This is important to indicate the extent to which customers will experience lower bills as a result of distributed energy resources and industry changes.

Energy Justice Analysis

The energy justice analysis should build off of the rate and bill impact analysis but with a focus on low-income, moderate-income,[27] disadvantaged communities, and Environmental Justice areas.[28] This analysis should identify and quantify, to the extent possible, impacts on these groups. Metrics could include: energy efficiency and distributed energy resource participation rates for residential customers, low-income customers, moderate-income customers, and customers in disadvantaged communities and Environmental Justice Areas; energy burden for residential customers by census block; capital costs for

[27] Low-income and moderate-income customers both face barriers to managing energy bills and energy burdens that call for policy intervention; however, combining these segments into one group may result in policies that effectively address the needs of moderate-income customers but do not go far enough to lower barriers faced by low-income customers. Thus, we list both groups to emphasize that policies should be designed to address both groups distinctly.

[28] Per the CLCPA, the Climate Justice Working Group is to establish criteria for defining disadvantaged communities; however, the criteria have not been set yet. Interim criteria for disadvantaged communities include those located within New York State Opportunity Zones or communities located within census block groups that meet the HUD 50% AMI threshold and that are also located within the DEC Potential Environmental Justice Areas (NYSERDA, "Disadvantaged Communities." https://www.nyserda.ny.gov/ny/disadvantaged-communities). New York City's environmental justice law, enacted in 2017, requires city government to conduct a comprehensive study that determines which neighborhoods are considered "Environmental Justice Areas". (NYC Climate Policy & Programs. "Environmental Justice: New York City's Environmental Justice for All Report." https://www1.nyc.gov/site/cpp/our-programs/environmental-justice-study.page).

space and water heating equipment; and outdoor and indoor environmental quality impacts affecting disadvantaged communities and Environmental Justice areas.

This analysis should begin with a comprehensive assessment of current energy justice conditions in New York, using the metrics developed. It should then project these metrics into the future under different gas transition scenarios to see how they will improve upon today's conditions and make progress towards New York's energy affordability policy.[29]

Utility Financial Analysis

The utility financial analysis should forecast the fundamental financial metrics of the electric and gas utilities to monitor how well they fare under different scenarios and utility business models. A variety of different gas utility business models should be considered, including district heating systems. To the extent that other options are considered, such as the use of biomethane, renewably produced hydrogen, and/or synthetic natural gas, there should first be assessment of their potential, cost, and environmental and health impacts.

This analysis should be as quantitative as possible, using metrics such as: retail sales, number of customers, allowed return on equity (ROE), earned ROE, earnings per share, gross profit margin, net profit margin, working capital, and operating cashflow. All the inputs and assumptions that are common to both the BCA and the Utility Financial Analysis should be the same in both analyses. For example, the depreciation rates used in the BCA should be the same as those used in the Utility Financial Analysis.[30]

This assessment should consider declining fossil gas sales and increased gas prices necessary to keep utilities financially viable, and the implications this has for the business model. The new and evolving business models must be able to support the gas transition goals outlined above, including net zero carbon emissions, reliability of services, customer equity, and energy justice.

Macroeconomic Analysis

A macroeconomic analysis of gas transition scenarios should assess the job impacts of the expected increases or decreases in the investments in and operations of all energy infrastructure and energy-consuming equipment, as well as re-spending effects of potential changes in customer bills.

Macroeconomic impacts should be presented separately from the monetary values in the BCA. This is primarily because there is a great deal of overlap between the costs and benefits in the macroeconomic impact analysis and the BCA, so adding the two monetary results together can be misleading. In

[29] New York State's Energy Affordability Policy limits energy costs for low-income New Yorkers to no more than 6 percent of household income. (Governor Andrew M. Cuomo. "Governor Cuomo Announces New Energy Affordability Policy to Deliver Relief to Nearly 2 Million Low-Income New Yorkers" https://www.governor.ny.gov/news/governor-cuomo-announces-new-energy-affordability-policy-deliver-relief-nearly-2-million-low).

[30] If a discount rate is used in the utility financial analysis, it may be appropriate to use the utility weighted average cost of capital for that purpose, while the BCA should use a societal discount rate.

addition, there is no single monetary value for macroeconomic impacts that can represent economic development goals.[31] Therefore, the best indication of macroeconomic impacts from different energy scenarios is the number of job-years created in each scenario. These job-years should be presented alongside the BCA results but cannot be added onto them.

Other Qualitative Considerations

Any other non-monetary or qualitative considerations should be fully described so that they can be incorporated into the gas transition plan decisions as warranted. These might include, for example, market animation and customer satisfaction.

1.5. Process to Develop the Statewide Gas Transition Plan

In the proposal, DPS Staff have described a gas system planning process that includes substantial opportunities for stakeholder engagement and education.[32] We appreciate and support this approach. Below we make some additional process-related recommendations for the development of the more comprehensive analyses for the statewide gas transition plan.

The gas transition has substantial implications for many stakeholders, including utilities, regulators, policymakers, residents, businesses, and advocates of different varieties. The plan should therefore be developed transparently and with full participation of these different perspectives. The DPS, however, sits in a unique and central role, and should be the guide for this process with assistance from NYSERDA. We therefore frame these recommendations to the DPS to establish a process for developing the plan that solicits input, maintains transparency, and ensures that all stakeholders have access to the data and analysis they require to inform and understand the plan and how it evolves over time.

In order to reduce barriers to participation, we first recommend that the DPS establish and announce that the process will be open and collaborative. The process should include both written comments and live workshops (virtual and in person, preferably at different locations statewide and at different times of the day, to allow different modes of participation for different communities). The DPS can set the frame and tone for this process by formalizing shared principles to guide the process. These principles should include equity, transparency, open-mindedness, and dependence on evidence and analytical rigor.

The process for developing the gas transition plan should be iterative, with early stakeholder input on goals (as discussed in Section 1.2) to select or refine the specific set of analyses to be conducted. In a joint effort, the DPS, NYSERDA, and the utilities should develop and propose an open, transparent set of methodologies and assumptions, to be provided to stakeholders for review and feedback. The resulting analyses would support the DPS and stakeholders in identifying the critical choices to make in shaping

[31] Some studies use the state gross domestic product as a monetary value to indicate economic development goals. This metric is problematic for several reasons and should be used only with caution.

[32] DPS Proposal p. 10.

the transition plan, making those decisions, and beginning plan implementation. The DPS should be explicit, and all stakeholders should be aware, that it will likely be necessary to select a path forward and begin implementation even in the face of uncertainty, since there are clear economy-wide goals that provide adequate direction to guide decision-making in the near term. The limited timeline between now and 2050 does not allow indefinite study prior to action.

2. GAS UTILITY RESOURCE PLANS

2.1. Gas Utility Resource Planning Process

As noted above, the DPS Proposal includes a gas utility resource planning process that represents a significant improvement over current gas planning practices. However, there are several ways that the DPS Proposal can be enhanced to be consistent with the statewide planning process and ensure that gas utility resource plans meet New York's CLCPA and other regulatory goals.

First and foremost, the gas utility resource plans should be designed to follow the vision and roadmap outlined in the statewide gas transition plans. Further, the analytical practices, including methodologies, assumptions, and inputs, used in the statewide transition plans should be applied in the gas utility resource plans as well. This means that the long-term gas planning principles and practices recommended above in Section 1 should be applied to the gas utility resource plans as well. This will help ensure coordination and consistency across the state.

The gas utility resource plans should be explicitly designed to achieve the state's short-, medium-, and long-term emission reduction requirements of the CLCPA. There are several ways that the DPS Proposal can be enhanced to achieve this outcome. Several of the principles for the statewide gas transition planning process are especially important to translate to the utility-specific plans, as summarized below.

2.2. Gas Utility Resource Plan Contents

Both LDC-specific and statewide long-term gas plans should include the following elements.

- The long-range vision for the industry as a whole
- Load forecasts
- Supply resource forecasts
- Resource and capacity gap analysis for system constraints and meeting the long-term GHG targets
- Assessment of impacts of switching to electricity on electric load, in conjunction with electric utilities
- Options for meeting system capacity constraints
- Long-term scenario analysis:

- Options for achieving the long-term vision, including gas supply options, gas alternative options, electricity alternative options, and demand-side options
- Scenarios for using the options to achieve the long-term vision, including scenarios with fossil gas completely replaced by non-fossil gas alternatives or electricity
- Description of how the different scenarios are evaluated and optimized
- A preferred scenario
- An assessment of customer impacts, including bill impacts, customer fuel-switching, and customer equity

- An action plan for meeting system capacity constraints and the long-term state GHG targets

The DPS Proposal has a section on filing requirements, which appears to address many of the items above.[33] However, it does not go far enough to articulate a long-range vision, or to standardize the specific elements that LDCs need to include in their filings.

2.3. Gas Utility Resource Plans Compared to Statewide Transition Plans

The statewide transition plans and the gas utility resource plans will have some overlap and some differences. Table 3 compares the two different types of plans.

Table 3. Statewide Transition Plans and Utility Resource Plans

	Statewide Transition Plan	Utility Resource Plan
Geographic scope	New York	each gas utility
Frequency of plan	five years	three years
Study period	2050 or 20 years, whichever is longer	2050 or 20 years, whichever is longer
Long-term gas utility industry goals	✓	✓
Long-term gas planning principles	✓	✓
Benefit-cost analysis	✓	✓
Rate and bill analysis	✓	✓
Utility financial analysis	✓	✓
Energy justice analysis	✓	✓
Integrate gas and electricity planning	✓	✓
Macroeconomic analysis	✓	-

3. RELATED REGULATORY POLICIES

In addition to the gas planning practices described above, the DPS should adopt several related policies regarding gas connection rules and cost recovery of gas assets. These policy changes will be critical for informing the state transition plans and the utility resource plans. These related regulatory policies

[33] DPS Proposal, p. 13.

should be adopted as soon as practical because they can have immediate implications for gas utility decision-making.

3.1. Gas Connection Rules

New York's obligation to serve dictates that customers can be asked to pay for new gas service connections only if the connection is over 100 feet long.[34] This burdens other customers with the risk that the cost of the connection will not be fully recovered through the new customer's rates. The State should reconsider the obligation to serve in light of gas's high costs to health and the environment, as well as the socialized costs to customers. We recommend the following:

- Require statewide, standard definitions and consistent reporting on interconnections.
- Remove incentives to gas connections by minimizing socialized costs of new connections.
- Remove or reduce the allowance of "free" line extension costs to new customers.
- Consider shifting the risk of under-collection of the line costs from customers as a whole to the new customer.
- Weigh the obligation to serve in light of socialized costs to customers, health impacts, and policy goals.

3.2. Cost Recovery

Providing regulatory guidance on cost recovery will allow utilities to take steps immediately to address this long-term issue. To this end, the PSC should:

- Provide guidance as soon as possible about how gas asset depreciation schedules should be consistent with the requirements of the CLPCA,[35] and
- Provide guidance as soon as possible about how stranded costs from gas assets will be treated for cost recovery purposes.[36]

[34] PSL Section 31.

[35] Synapse Energy Economics, *Gas Regulation for a Decarbonized New York*, prepared for Natural Resources Defense Council, June 2020, Section 7.

[36] Ibid.