

Chapter 18. Gas System Transition

18.1 Overview

All the information before the Climate Action Council (Council) indicates that achievement of the emission limits will entail a substantial reduction of fossil natural gas use and strategic downsizing and decarbonization of the gas system. The integration analysis scenarios and Advisory Panel recommendations also show a greatly diminished use of fossil natural gas. To achieve Climate Act targets, the integration analysis scenarios identified the vast majority of current fossil natural gas customers (residential, commercial, and industrial) will transition to electricity by 2050 and identified fossil natural gas use reductions statewide by at least 33% by 2030 and by 57% by 2035. The existing gas system was developed to meet current demand for fossil natural gas and will need to be strategically downsized as this transition proceeds. A well-planned and strategic transition of the gas system will require coordination across multiple sectors. This coordination will include integrated planning with the decarbonization of the power generation sector and buildout of local electric transmission and distribution systems to meet anticipated increases in electricity demand throughout the State. The integrated planning will ensure the transition is equitable for workers and equitable and cost-effective for consumers without compromising reliability, safety, energy affordability, and resiliency.

It is important that the strategic transition to a decarbonized gas system in New York State does not impose undue cost burdens on customers who currently rely on this fuel for home heating, especially those who can least afford cost increases. Demand reduction measures that reduce customer reliance on fossil natural gas, including energy efficiency and demand response programs, must be increased. New York State must explore whether full electrification of heating load in the near term is the most cost-effective and technically feasible solution for all customers, for instance steam heating customers in New York City, customers in areas with extreme cold climates where cold climate air source heat pumps are installed and supplemental heat may be used, or space heating customers in regions of the State where current electric capacity constraints may be more significant. These studies, combined with strategies described elsewhere in this Scoping Plan, will be used to leverage existing, emerging, and new technology to rapidly reduce and eventually eliminate the need for fossil natural gas in New York State, while taking into consideration impacts on jobs and industry as referenced in *Chapter 7. Just Transition* and *Chapter 14. Industry*.

Unlike other sectors, such as electricity generation, transportation, and energy efficiency, the gas system does not have a long history of analysis and policy development on emissions reductions to inform the

strategies in the Scoping Plan. New York State will need to implement an ongoing effort to plan for and manage the strategic downsizing and decarbonization of the gas system as the transition to greater electrification proceeds. That ongoing effort should include identification of strategic opportunities to retire existing pipelines as demand declines and exploration of the safest, most reliable, resilient, and least expensive approaches for an orderly transition. One scenario that should be considered is seeking to move whole streets or neighborhoods at a time from gas infrastructure to a community-based thermal energy network that supports heat pumps. A utility could own and run the thermal energy network, which would support heat pumps in individual buildings, with the heat pumps owned by the building owner. During the transition to the decarbonized systems, some investments in traditional infrastructure will still be necessary to maintain reliability and safety for remaining fossil natural gas customers, but greater scrutiny of such investments is warranted to minimize the level of stranded assets that make it more expensive to fully decarbonize the fossil natural gas sector. Similarly, workforce retention plans as well as efforts described in *Chapter 7. Just Transition* to support a workforce to install, inspect, maintain, and operate energy system infrastructure is necessary to ensure a safe and reliable system throughout the transition.

The Council has reviewed the potential use of alternative fuels such as renewable natural gas (RNG) and green hydrogen in the gas system for space heating or process use where electrification is not yet feasible or to decarbonize the gas system as it transitions.³⁰² While there may be a strategic role for the system to transport RNG, the potential in-state availability and resource size of RNG is currently small as compared with current levels of fossil natural gas use. As for green hydrogen, the existing gas system was not designed to handle any substantial quantity of blending of hydrogen, so the safety and durability of the system must be addressed before hydrogen is introduced into existing infrastructure. The Council notes that additional analysis is needed to determine the feasibility and the climate impact; the analysis should include an evaluation of the full life cycle greenhouse gas (GHG) and co-pollutant emissions impacts, health impacts, impacts on energy affordability, and safety and reliability considerations for the use of RNG and green hydrogen prior to investments in alternative fuels for use in gas system planning as described in the Gas System Transition Plan Framework below.

³⁰² See Appendix G: Integration Analysis Technical Supplement. Scenario 2 (called “Strategic Use of Low-Carbon Fuels”) modeled in the integration analysis. In this scenario, renewable natural gas (RNG) is used in the buildings sector, assuming a 9% RNG blend in gas pipelines by 2030 and 100% RNG to meet dramatically reduced gas demand in buildings by 2050. Green hydrogen use is limited mostly to transportation, industrial purposes, and electricity reliability in this scenario, though a small amount of hydrogen is used to power the Con Ed district system by 2050, with steam demand reduced by about 66% as many existing customers electrify in whole or in part.

While the managed transition away from fossil natural gas proceeds, it remains important to reduce methane emissions from the gas sector. The speed of the transition is amplified because of the Climate Act’s use of a 20-year global warming potential (GWP) and the inclusion of upstream emissions, including those associated with imported electricity and the extraction and transmission of imported fossil fuels. A significant amount of methane emissions associated with the use of fossil natural gas in New York occurs outside of the State. However, the State and the utilities have taken steps to reduce the methane emissions that occur within State boundaries through programs to reduce the quantity of leak-prone pipes. Current reporting indicates higher fugitive emissions are associated in areas of the State with higher quantities of leak-prone pipes in need of replacement or potential retirement. System repair will provide near-term reductions in these emissions. The New York State Public Service Commission’s (PSC) existing policy is to require utilities to remove leak-prone pipes from service and the aggressive reduction of known leaks on gas systems. Much of the leak-prone pipe replacement is necessary for safety reasons and will continue to produce real reductions in emissions, while additional replacements may be necessary for further emission reductions. In 2022, New York State Department of Environmental Conservation (DEC) adopted a new rule (6 NYCRR Part 203 – “Oil and Natural Gas Sector”) to address methane leakage from the oil and gas sector. In addition to rigorous leak detection and repair requirements, the regulation aims to reduce or prohibit the venting of fossil natural gas at wells, compressor stations, storage sites, and metering and regulating stations.³⁰³ The regulation is projected to reduce 1.2 million metric tons carbon dioxide equivalent (CO₂e) of methane emissions, the equivalent of taking 236,753 cars off the road.³⁰⁴ This regulation is a major step forward in reducing methane emissions from the gas infrastructure within the State, but there is still much to be done to fully reduce emissions as New York strategically downsizes and decarbonizes the gas system.

Key Stakeholders

Decarbonizing the gas system in New York State will be a complicated undertaking affecting a broad range of stakeholders: the utilities that need to transform their business models; gas utility customers who may need to retrofit heating, hot water, and cooking appliances in their homes and businesses; local governments that need to consider building code changes; commercial and industrial gas customers who

³⁰³ New York State Department of Environmental Conservation. “Proposed Part 203 Oil and Natural Gas Sector.” Accessed at <https://www.dec.ny.gov/regulations/122829.html>.

³⁰⁴ New York State Department of Environmental Conservation. 2021. “DEC Announces Proposed Regulations to Reduce Methane Emissions from Oil and Natural Gas Sector.” Accessed November 2021 at <https://www.dec.ny.gov/press/122850.html>.

need to consider changes to their business operations; regulators who will need to equitably and legally balance shareholder, workforce, and consumer and public interests when deciding, for example, how to prevent the stranding of assets tied to fossil fuels that are no longer able to generate an economic return because of changes associated with decarbonizing the economy. Accordingly, key stakeholders for transitioning the gas system will also include federal and State regulators (Federal Energy Regulatory Commission [FERC], Pipeline and Hazardous Materials Safety Administration, DEC, New York State Department of Public Service [DPS], and PSC), affected workers and unions, New York State Department of Labor (DOL), gas infrastructure owners, power plant owners, the New York State Energy Research and Development Authority (NYSERDA), municipalities that adopt and enforce building codes, and industrial, commercial, and residential gas customers. The adoption of measures to transition the gas system will be heavily dependent on end-use customer adoption of enhanced energy efficiency, demand response, electrification, geothermal, energy storage, potential use of alternative fuels such as RNG and green hydrogen, and future innovation strategies. Utilities have an obligation to provide safe and reliable service, so the speed of end-user adoption of fossil natural gas alternatives will affect the speed with which the utility will be able to transition its own infrastructure.

18.2 Key Considerations

Transition Away from Gas

The transition away from fossil natural gas should be carefully managed, phased, and adhere to the labor standards consistent with *Chapter 7. Just Transition*, while maintaining safety and reliability for those who still depend on the energy being delivered. The transition should take place as quickly as possible and to the maximum extent possible and include the production, transmission, and distribution components of the system, while limiting negative impacts on the workforce.

The State has already taken action toward this transition. The PSC has initiated the Gas Planning Proceeding (Case 20-G-0131) to ensure safe and reliable long-term fossil natural gas planning, which will also require consideration of achieving the GHG emission limits required by the Climate Act.

Furthermore, utility rate case proceedings that appear before the PSC are now required to incorporate a demonstration of how the cases comply with the requirements of the Climate Act, including some of the emerging strategies contained within the Scoping Plan, such as no marketing of fossil natural gas and positive marketing of electrification including geothermal heat pumps and other technologies and strategies to reduce GHG emissions. Additional regulatory actions by PSC will likely be necessary to effectuate the required transition away from gas with the condition that displaced, trained workers should be prioritized for new transitional work.

There are, however, limits to the action the PSC as regulator of gas utilities can take toward this transition under current law. For instance, existing Public Service Law states that it is “policy of this state that the continued provision of all or any part of such gas, electric and steam service to all residential customers without unreasonable qualifications or lengthy delays is necessary for the preservation of the health and general welfare and is in the public interest.” Transportation Corporations Law § 12 also requires that gas and electricity service be supplied on application of a building owner or occupant. The State should review and consider modifications to statutory provisions that may seem to be in conflict with the requirements of the Climate Act, including a review of impacts on the electric and gas systems safety, reliability, and workforce, and, if appropriate, update these provisions to bring them into alignment with the Climate Act to ensure that regulators and utilities do not have conflicting directives from the Legislature and have the clear authority required to take action consistent with the State’s climate goals and requirements.

The Climate Justice Working Group (CJWG) supports the transition away from gas infrastructure and stresses the need for cost-effectiveness and equity to ensure the transition is just. The CJWG recommends that progress be prioritized in Disadvantaged Communities, where co-pollutants pose a high cumulative burden, and supports the denial of fossil natural gas infrastructure permits in order for progress to be made in reducing GHG and co-pollutant emissions. The strategy of prioritizing Disadvantaged Communities may drive the cost of the transition higher due to the scattered placement of these communities on the gas system and the need to maintain system integrity, reliability, and the sequence of deconstructing supply assets.

Regardless, the CJWG recommends that any transition is carefully planned, detailed, and clearly communicated to ensure that expectations are aligned across stakeholders; the electric transmission and distribution system has sufficient capacity to accommodate the increased electric load due to electrification of building heating and transportation; and that meaningful contractions of the gas system (and associated operations and maintenance cost savings) can be realized. Without this level of planning, the transition will likely be more challenging, take longer to implement, be more costly than it would have otherwise been, and result in customers using other fossil fuels such as oil or propane. The Council supports the transition away from fossil natural gas use and strategic downsizing and decarbonization of the gas system in a way that is cost-effective, equitable, and just. The Council notes the coordinated plan the State develops for the gas system transition should address the concerns raised by the CJWG in a way that maintains the safety and reliability of both the gas and electric systems while prioritizing emissions

and co-pollutant reductions in Disadvantaged Communities and mitigating negative impacts on the workforce.

The following strategies will help navigate a reasonable transition away from fossil natural gas.

- **Analysis and planning:** Develop a detailed analysis to determine the most equitable and cost-effective strategy for transitioning from the use of fossil natural gas while maintaining affordable, safe, and reliable service and while considering job protection and workforce development actions. Strategic downsizing and decarbonization of substantial portions of the gas system will require significant planning due to the complexity of the system, the need to coordinate with building electrification, and the pace of required local electric transmission capacity and delivery system buildout, all while maintaining reliable and safe service. To ensure grid reliability needs are met, the transition should be completed in parallel with the New York Independent System Operator's (NYISO) Reliability Needs Assessment. The analysis should inform a detailed and strategic approach to downsizing and the contraction of the gas system while considering end-use customers who are highly reliant on gas and considering the economic impacts, feasible alternatives, and growth in the power generation sector with electrification (including the Consolidated Edison Steam System).
 - The strategy for transitioning away from fossil natural gas usage must include energy efficiency and demand response programs, which, to date, have mainly been used specifically in gas-constrained areas within existing gas service territories. Commercial and industrial customers who can shift fossil natural gas usage away from peak periods of consumption without using another fossil fuel presents an untapped opportunity. Research must be done on other demand response programs, such as utility control of large commercial water heaters that could shift fossil natural gas usage away from peak periods. The capture of waste heat from water heated for industrial or commercial purposes could reduce fossil natural gas load. Use of the proper incentives could ensure that these programs are pursued in an extremely cost-effective manner.
 - An emphasis and focus needs to be placed on permanent load reduction measures that can significantly reduce fossil natural gas usage and demand in the short term, while also providing benefits for the end users if and when buildings are electrified in the mid- to long-term. Building envelope sealing and weatherization measures provide these benefits (in the form of improved comfort by reducing drafts, cold surfaces, and noise pollution and in reducing the risk of pests and mold) and must be implemented efficiently and effectively.

Point-of-use energy storage and advanced metering could also be used to help control consumer energy bills during the transition away from fossil natural gas. This will require coordination on various levels across the State from the agencies and entities that provide support for low- to moderate-income (LMI) customers, weatherization programs, building electrification programs, other energy efficiency programs, and workforce support to develop a comprehensive approach.

- This analysis must be a continuous process to strategically manage the transition away from the use of fossil natural gas and decarbonization of the gas system. Future adjustments should be considered in response to technological, scientific, and economic developments.
- **Inclusion of LMI households and the gas industry workforce:** The State should develop a comprehensive equity strategy to prioritize the needs of LMI households and Disadvantaged Communities in the transition, ensuring they are not left behind. This will require meaningful engagement of LMI households and residents of Disadvantaged Communities in the transition process and prioritizing technical and financial assistance to enable these households to make energy efficiency upgrades and electrify affordably. Special consideration will need to occur for the workforce at gas utilities and its qualified contractors, many of whom are members of Disadvantaged Communities, including the development and implementation of an equitable transition plan for the gas industry workforce that includes a detailed timeline so the workforce can properly prepare and considers leveraging gas utility worker's skillsets for the transition of the gas system. The plan should also include protections, retraining and training that leverages transferrable skills, and job transition opportunities, including for the buildout and operation of district thermal energy systems, with attention to opportunities at dual-commodity utilities. In addition, the plan should include workforce development actions that are responsive to industry needs, outline job placement opportunities, and include services to support job retention, consistent with *Chapter 7. Just Transition*. This requires both a comprehensive system-wide equity strategy and utility-level equity strategies that include adequate accountability and oversight. Electric utilities benefitting from the increased revenue of electrification of heating load should absorb some of the potential burden of the stranded costs. The recent amendment to the Public Service Law in the enactment of the Utility Thermal Energy Networks and Jobs Act to allow gas and combined gas and electric utilities to become holistic thermal energy providers will provide ongoing jobs for displaced workers and a pathway for decarbonizing and transitioning the gas system, including new business models for utilities inclusive of community-scale geothermal systems.

- **Regulation development and emissions reduction targets:** The State should support the implementation of current DEC regulations to decrease methane emissions from gas infrastructure, as well as the promulgation of additional regulations to reduce GHG emissions associated with this infrastructure and, in coordination with the PSC, develop specific emission reduction targets (including interim targets) for transmission, storage, and gas distribution utilities upstream of the customer meter. These targets are necessary to guide utility gas system planning. The Climate Act requires upstream out-of-state emissions from the extraction and transmission of fossil natural gas be included in the statewide GHG emissions inventory and therefore this significant amount of methane emissions must be reduced to achieve the statewide GHG emission limits. One policy lever the State has to lower the contribution from these emissions toward achievement of the emission limits is to reduce our consumption of fossil natural gas.
- **Permitting and service requirements:** The State should enact legislation to amend the Public Service Law and the Transportation Corporations Law to move away from promoting gas system expansion by marketing fossil natural gas to prospective customers or providing gas service lines and extensions of gas mains at no cost to new customers (such as the “100-foot rule”) aiming to ensure continued employment of displaced workers. As soon as possible, the legislation should eliminate the existing requirement that gas service be supplied on application of a building owner or occupant and have each utility regularly file a proposal for how it will meet the State’s emission-free by 2040 (100x40) electricity generation requirement and 2030 and 2050 emissions limits within its customer base. Incentives and rebates for gas equipment offered by utilities or NYSERDA should be ended immediately, particularly for sectors and building typologies where electrification is a near-term solution. To the extent consistent with reliability and safety and applicable laws, the State should deny as inconsistent with the Climate Act additional gas infrastructure permits that would interfere with the attainment of the statewide GHG emission limits. Furthermore, the State should advocate to FERC for denial of unnecessary and unjustified gas infrastructure projects that will exacerbate GHG emissions.

 - Revisions to building codes and standards should be among the first measures undertaken. New building codes must limit the use of fossil natural gas and other fossil fuels in new construction, as laid out in *Chapter 12. Buildings*.
 - The PSC has jurisdiction over the rates and operations of a number of electric and gas municipal energy systems and can direct the entities to implement decarbonization measures. In addition, the PSC has jurisdiction over the State’s privately owned water utilities. While many water utilities have fewer than 50 customers, some could be ordered to implement water usage reduction measures that would translate to reductions in both energy usage and

emissions. The PSC also has jurisdiction over community-based heat exchange systems and other approaches for providing heating and cooling to buildings at neighborhood scales. In addition, the PSC promotes and encourages funding mechanisms for beneficial electrification of heating and cooling systems.

Reduce Fugitive Emissions from Gas Infrastructure

The transition from oil and gas will take time and, during that time, the State will continue to rely on oil and gas infrastructure to deliver safe and reliable energy. To help reduce methane emissions during this period, the State should develop systems to minimize these losses. Below are a set of actions that could be implemented to achieve meaningful reductions in fugitive emissions from the system.

- **Regulatory action:** In addition to DEC's existing oil and gas methane regulations, the State should support future efforts from DEC to further control, reduce, and eliminate methane emissions from gas infrastructure. This may include implementing the use of innovative leak detection and repair technology, developing an inventory of all infrastructure and sources of methane emissions potentially subject to State regulation, and establishing operation and maintenance requirements that result in reduced methane emissions. DEC should coordinate with the PSC to develop specific targets to guide utility system planning in this regard that would be incremental to existing regulations. This should include consideration of methane leaks resulting from excavator damage and whether the current fines for damages are sufficient. The PSC Gas Planning Proceeding, Case 20-G-0131, will address long-term gas utility planning.
- **Prioritize leak prone pipes:** State agencies should prioritize repair or replacement of leak-prone pipes to reduce emissions and identify strategic opportunities to retire existing pipelines as demand declines, in addition to prioritizing measures to ensure safety. Some actions to reduce methane leakage from gas pipelines can be costly. Expending funds to reduce methane emissions from pipelines may not be justified in cases where the infrastructure could be decommissioned within the next several years. In these instances, consideration should be given to using those funds to speed the transition away from gas and the strategic decommissioning of these smaller branch pipelines that serve individual streets and neighborhoods. While it is important to address methane emissions from pipeline systems within the State, it is also critical to keep in perspective that a significant part of the emissions from our use of fossil natural gas occur outside of the State, and that these out-of-state emissions also count as statewide GHG emissions under the Climate Act.
- **Research and development:** The State should continue conducting research and development of emission measurement technologies, including continuous monitoring technologies and survey

(aerial or land) for the production, transmission, and storage of fossil natural gas. This should include working to improve emission estimates from outside the boundaries of New York that are associated with our use of fossil natural gas within the State, as these emissions are part of statewide GHG emissions under the Climate Act and are both large and uncertain.

- **Reporting and inventory:** The State should develop a program to accurately characterize gas infrastructure components through information requests to better estimate emissions and improve inventory reporting. DEC should develop an online registry to collect and organize data and information in a manner that informs and directs the strategic downsizing of infrastructure. The online registry should have a transparent planning and reporting process, include emissions from the gas industry (from wells to end of distribution network pipes) and lists of fugitive methane from sources such as landfills and wastewater treatment. The registry should track and collect data needed for interim targets. The registry should account for, report, and track environmental attributes of any alternative fuel project or fugitive methane avoidance project that ensures that all environmental impacts are identified with no double-counting of reductions or environmental benefits. In addition, the PSC should ensure that all rate orders it reviews comply with the Climate Act, and its proceeding focused on modernizing gas planning (PSC Gas Planning Proceeding [Case 20-G-0131]) should require gas utilities to monitor and report emissions as well as develop strategies for reducing emissions within their individual service territories.
- **Leakage detection and repair and orphaned wells:** The State should develop an integrated plan and coordinate efforts with utilities, gas producers, infrastructure owners, and local municipalities to deploy advanced leak detection technology and to repair leaks in remaining gas infrastructure while maintaining affordable, safe, and reliable service. The program should be designed with measures to limit leakage to the extent feasible, particularly with regard to higher-emitting infrastructure and should identify appropriate funding sources to locate and cap orphaned wells. The PSC Gas Planning Proceeding (Case 20-G-0131) should require utilities to identify leak-prone pipe for replacement, quantify leakage, consider Non-Pipe Alternatives, and maintain safe and reliable service. To cap abandoned wells, the CJWG suggests that public funds be used as a last resort and that the State consider ways the oil and gas industry could contribute to reducing emissions from these sources. To address the CJWG concerns, the State should remove the financial security dollar amounts the oil and gas industry companies are required to provide under the Environmental Conservation Law (ECL) and allow DEC to establish financial security requirements in regulation (as it does for mines) to cover the true cost of plugging and abandoning known orphaned wells. Public funds, including potential federal funding for

orphaned wells through the federal Inflation Reduction Act of 2022, will also be necessary to cover costs for plugging unmapped wells with unknown ownership.³⁰⁵

18.3 Process Going Forward

The Council has developed a framework through which agencies can develop a coordinated plan for the reduction of fossil natural gas use and the strategic downsizing and decarbonization of the gas system through an orderly transition that is equitable, cost-effective, and maintains system safety and reliability (see Table 18). Development of the plan should be led by DPS and supported by NYSERDA, Long Island Power Authority (LIPA), New York Power Authority (NYPA), and DEC. The plan should be developed in consultation with other State entities including the Office of Just Transition and other Council agencies, utilities, environmental justice groups, electric generation owners, unions, and sectoral experts and draw upon successful plans in other jurisdictions. This plan should also include a mechanism through which it can be adapted as technology and system conditions change and as New York increasingly electrifies end use applications such as transportation and space heating.

Table 18. Gas System Transition Plan Framework

Key Principles	Strategies and Guidance
Ensure gas transition plan meets greenhouse gas (GHG) emission reduction targets	<ul style="list-style-type: none"> • Develop plans for how individual gas utilities and the State’s gas system overall will reduce GHG emissions by 2030 and by 2050, as required to contribute to achieving the statewide GHG emission limits established in the Climate Act. • Include utility-specific and system-wide forecasts for the reduction in gas sales and decreasing numbers of gas customers connected to the gas system over time, as large numbers of customers transition to electrification and community thermal for heating, hot water, and other energy end uses. • Require gas utilities to publicly file annual GHG emissions reports.
Reduce energy burdens and address energy affordability concerns	<ul style="list-style-type: none"> • Identify ways to mitigate impacts on remaining gas customers as customers transition to electrification and away from use of the gas system, with a particular focus on low-income consumers. • Include a review of the costs and benefits associated with both the transition to electrification and potential adoption of alternative fuels (renewable natural gas [RNG], hydrogen) for decarbonizing the gas system to evaluate the impact on overall affordability. This should include a review of electric grid and related electric transmission and delivery system buildout costs; avoided costs of appliance electrification; gas system investments and appliance modifications to enable use of alternative fuels; fuel production costs; and costs at the homeowner/business level. • Prioritize and target public financial support of energy efficiency upgrades and electrification initiatives for distressed housing, LMI households, affordable and public housing, and buildings in disadvantaged communities in advance of or paired with electrification of heating and in a manner that lessens cost burdens on customers who currently rely on gas for home heating and who can least afford energy cost increases. Further consider prioritization and targeting of initiatives to support energy efficiency and dual-fuel solutions for subsets of

³⁰⁵ ECL § 23

Key Principles	Strategies and Guidance
	<p>New York’s building stock that will be unaffordable to electrify or where full electrification is not yet feasible.</p> <ul style="list-style-type: none"> • Further define energy affordability (e.g., New York State Public Service Commission [PSC] Energy Affordability Policy’s target energy burden is set at or below 6% of household income for all low-income households).
<p>Prioritize continued and improved safety and reliability</p>	<ul style="list-style-type: none"> • Include an analysis on what technologies will be necessary to maintain the safety and reliability of the energy systems as the State transitions the gas system including, but not limited to, zero-emission dispatchable generation. • Ensure both energy supply and demand are considered in parallel. • Ensure the buildout of the electric system can accommodate additional electrification needs in a way that ensures energy affordability and considers regional differences.
<p>Consider role of alternative fuels and technologies in future gas system planning</p>	<ul style="list-style-type: none"> • Consider strategic use of alternative fuels, aligned with the integration analysis scenarios, to meet customer needs for space heating or process use where electrification is not yet feasible or to decarbonize the gas system as it transitions. • Before considering using alternative fuels in the gas system, ensure that safety considerations are addressed and that there are demonstrated air quality, health, and GHG benefits before implementation, including requirements to avoid localized pollution in Disadvantaged Communities. • Evaluation of the use of alternative fuels should include an analysis of how these fuels contribute to achieving the overarching emissions reduction requirements of Climate Act or recommendations of the Scoping Plan on the need to significantly decarbonize the building sector. • Consider the use of non-wire and non-pipe alternatives (microgrids, energy storage, district thermal energy systems, heat pumps, dual/hybrid heat solutions, etc.) and demand management and load reduction for customer space heating and electricity needs to reduce current and future constraints on the electric grid as the State, utilities, and private developers, including electric generation owners, make significant upgrades to the transmission and distribution system, and in development of clean electric generation assets. • Ensure that any use of alternative fuels, including green hydrogen and renewable natural gas, does not result in increased leaks and emissions within the entire life cycle of the development and use of alternative fuels. • Prior to the consideration of pilots for use of alternative fuels, evaluate the technical, environmental, and financial feasibility of the pilots, including for consistency with the Climate Act. Where feasible and subject to any required state, local, and/or federal approvals, these pilots can serve as a means for testing the impacts of the use of these fuels in gas system planning.
<p>Ensure close coordination with electric system expansion</p>	<ul style="list-style-type: none"> • To ensure grid reliability needs are met, ensure the transition is completed in parallel with the New York Independent System Operator (NYISO) Reliability Needs Assessment. This should include a detailed, strategic, and coordinated approach to optimization of the electric and gas systems, and that any contracting of the gas system considers end-use customers who are highly reliant on gas, economic impacts, feasible alternatives, and growth in the power generation sector with electrification. • Coordinate the statewide gas planning processes with the electric system planning processes at the NYISO to ensure grid readiness at the wholesale power generation, transmission, and distribution levels for electrification efforts in a given region or area of the gas system. • Consider a strategic and coordinated approach to electrification and gas system transition that includes a review of different regions, timeframes, electric system readiness (generation, transmission, and local distribution capacity and supply including coordination with other transmission and distribution level proceedings) to meet electricity demand with widespread electrification, economic development efforts, and utility investments needed to inform efforts to transition customers from gas to electric heating.

Key Principles	Strategies and Guidance
	<ul style="list-style-type: none"> • Include a focus on innovation, including pilots with industry, necessary to transform the electric grid alongside the transition of the gas system.
Ensure a just transition for gas industry workforce	<ul style="list-style-type: none"> • Include a clear plan for the just transition of the gas industry workforce including what the current workforce can expect as part of the transition and the opportunities associated with it and to mitigate negative workforce impacts. • Include consideration of leveraging gas utility workers' and other workers reliant on the gas industry skillsets for the decarbonization and operation of the gas delivery system with alternative fuels, build out and operation of district thermal energy systems, and for support of dual or hybrid heating pathways. • Leverage the work of the Just Transition Working Group (JTWG) to evaluate and provide gas workforce needs to meet the demand of the future heating industry and safely transition the existing gas system, including prioritizing reemployment of displaced workers and bridging gaps for retirement eligibility. In addition, the plan should identify potential funding sources and support for programs focused on workforce development, retention of the gas industry workforce by providing financial incentives while the gas system transitions, and training including for individuals in Disadvantaged Communities. • Include workforce development actions and support for displaced workers consistent with the discussion in <i>Chapter 7. Just Transition</i>. • Include development of health and safety standards and protocols both for the decarbonization of the existing system and for the use of new technologies. • Ensure strong communication with labor and employers as new technologies are adopted or considered.
Ensure equitable access to alternative heating options in Disadvantaged Communities	<ul style="list-style-type: none"> • Prioritize technical and financial assistance to enable households in Disadvantaged Communities make energy efficiency upgrades and electrify and decarbonize affordably. • Ensure that as new technologies, including in energy efficiency, and funding opportunities become available, benefits to and suitable programs for disadvantaged communities are prioritized. • Address the concern that investments in building decarbonization may increase the rental cost of housing, particularly for low-income customers and Disadvantaged Communities.
Prioritize emissions and co-pollutant reductions in Disadvantaged Communities and ensure no disproportionate burden	<ul style="list-style-type: none"> • Ensure that GHG emissions reductions and co-pollutant reductions are prioritized in Disadvantaged Communities. • Ensure no disproportionate burden for Disadvantaged Communities including when considering infrastructure project locations and emissions and co-pollutant impacts. • Utilize the statewide GHG inventory data, the Disadvantaged Communities criteria analysis, air monitoring data, and other research to be able to track progress toward reducing GHG and co-pollutant emissions. Review of how this data can inform current GHG emissions levels and enforcement of the GHG emissions limits.
Consider health benefits and cumulative impacts, including historical burdens	<ul style="list-style-type: none"> • Include analysis to determine the feasibility, climate impacts, and health impacts of current infrastructure, new technologies, and alternative fuels prior to infrastructure investment. • Coordinate with New York State Department of Health (DOH) on data for health impacts.
Consider use of existing gas infrastructure	<ul style="list-style-type: none"> • Investments in traditional infrastructure will still be necessary to maintain reliability and safety and to achieve emissions reduction targets using a decarbonized gas system. • The plan should require greater scrutiny of investments in infrastructure that will be necessary to maintain reliability and safety for remaining customers of the existing gas delivery system, to ensure they do not result in stranded assets and make it more expensive to decarbonize the gas system. This scrutiny should include a determination of the need for investments to ensure safe and

Key Principles	Strategies and Guidance
	reliable service, cost impacts of additional investments to stranded asset costs, compliance with Climate Act, and the technical feasibility of the investment.
Identify needed changes to laws & regulations for alignment with Climate Act	<ul style="list-style-type: none"> Review the creation of new or modifications to existing statutory provisions or regulations needed to accomplish the decarbonization of the gas system and potential use of alternative fuels like renewable natural gas and green hydrogen.
Identify additional analyses needed	<ul style="list-style-type: none"> Independent analysis of alternative fuels, including green hydrogen and renewable natural gas, should include impacts on affordability; life cycle GHG emissions impacts; emissions controls that reduce/eliminate emissions; safety and reliability considerations (including pipeline safety and gas system impacts); engineering and environmental considerations; potential air quality and health impacts and best practices to minimize these impacts; workforce impacts, and safeguards to avoid continued reliance on gas and impede decarbonization and electrification efforts. Comprehensive evaluation of practical cost impacts and benefits of the implementation of the State's energy transformation on individuals, businesses, workforce, and industries in New York. Identify innovative uses of capital and alternative funding mechanisms, including federal funding, for building electrification, energy efficiency, decarbonization of the gas system, and workforce impacts analysis.
Include a communications strategy and customer education plan	<ul style="list-style-type: none"> Include a communication strategy of benefits and associated costs (inclusive of societal cost impacts, health benefits and impacts, environmental and economic benefits, etc.) from the transition to cleaner alternatives and away from use of fossil natural gas to consumers. Include a detailed strategy to educate the workforce on the benefits of the transition to cleaner alternatives and job opportunities associated with it. Include opportunities for significant public comment and engagement in the development of the gas transition plan. Include a review of current policies to ensure better public engagement and robust stakeholder participation processes. Outline how this communication strategy and customer education plan will be executed. Provide information on how the transition of the gas system will expand consumer choice; increase utility energy offerings and business model reforms; and enhance resiliency with increased energy-efficient electrification, energy storage, reduced price volatility due to less reliance on fossil fuels, and potential consideration of alternative fuels.
Include a detailed timeline for transition	<ul style="list-style-type: none"> Include a clear timeline for the gas system transition that aligns with the Scoping Plan's recommendations while assuring grid and energy delivery reliability is met. For example, the plan should align with the target dates included in the integration analysis and Buildings chapter of the Scoping Plan related to building electrification. The timeline should include information for labor, local governments, utilities, power producers, community groups, Disadvantaged Communities, etc., on what this transition means and when.