Before the Public Service Commission

THE BROOKLYN UNION GAS COMPANY d/b/a NATIONAL GRID NY
and KEYSPAN GAS EAST CORPORATION d/b/a NATIONAL GRID

Rebuttal Testimony

of

Gas Infrastructure and Operations Panel

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Case 19-G-0309
Case 19-G-0310

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I. Introduction

Q. Please identify the members of the Gas Infrastructure and Operations Panel.

A. KEDNY and KEDLI's ("Companies") Gas Infrastructure and Operations Panels (collectively, "Panel") consist of Ross W. Turrini, Timothy S. Graham, Caroline Hon, and Srividya Madhusudhan.

Q. Is this the same Panel that testified previously in this proceeding?

A. Yes. Capitalized terms defined in the Panel's direct, supplemental, and corrections and updates testimony have the same meanings here.

Q. What is the purpose of the Panel's rebuttal testimony?

A. The purpose of the Panel's rebuttal testimony is to respond to certain recommendations set forth in the prepared testimony of the Department of Public Service Staff ("Staff") Gas Infrastructure and Operations Panel ("SGIOP"), the Staff Pipeline Safety Panel ("SPSP"), the Staff Policy Panel ("SPP"), the Staff Efficiency and Sustainability Panel ("SESP") (collectively, "Staff"), as well as the New York City Gas Infrastructure and Safety Panel ("NYCGISP") and New York City Policy Panel ("NYCPP") (collectively, "NYC"), the Environmental Defense Fund's witness Joseph Von Fischer ("EDF"), and the New York State Laborers Organizing Fund's witness John Hutchings ("NYSLOF").

Regarding recommendations and proposed adjustments to the Companies' forecast incremental gas capital and operations and maintenance ("O&M") expenditures, the Panel's rebuttal testimony will address:

- The overall presentation of the Companies' capital investment forecast in light of Staff's position that the forecast should assume the Williams' NESE Project will not be in service during the Rate Year;
- Staff's and other parties' proposed adjustments to the Companies' Mandated, Reliability, Customer Connections, and Non-Infrastructure programs;
- Staff's and other parties proposed adjustments to the Companies' O&M programs and incremental FTEs; and
- Other recommendations by Staff and other parties regarding: LNG tank upgrade plans, capital reporting, NYC's proposals for storm hardening and its green infrastructure assets, and hiring practices for contractor labor to support the Companies' capital and O&M programs.

The Companies' Gas Safety Panel addresses the SGIOP's recommendations and proposed adjustments to the LPP metrics and incentives, the Companies' Low Pressure Valves Program, and the Companies' Enhanced Contractor Inspections Program.

Q. Does the Panel sponsor any exhibits as part of its rebuttal testimony?

A. Yes. The Panel sponsors the following exhibits that were prepared under its direction and supervision:

- Exhibit __ (GIOP-1R): KEDNY and KEDLI's capital investment plans with and without the NESE Project in service
- Exhibit __ (GIOP-2R): KEDNY and KEDLI's O&M plans with and without the NESE Project in service

- Exhibit __ (GIOP-3R): KEDNY and KEDLI's proposed incremental FTEs with the NESE Project in service and without the NESE Project in service
- Exhibit __ (GIOP-4R): Corrections and updates to the Companies' No-NESE adjustments to the capital plan
- Exhibit __ (GIOP-5R): Corrections and updates to the Companies' No-NESE adjustments to the O&M and incremental FTE plans
- Exhibit __ (GIOP-6R): Relevant IR responses

II. NESE Impacts and Blanket Adjustments

A. Assumption of Absence of NESE Project

Q. Please describe the Companies' approach to presenting their capital and O&M investment plans for the Rate Year and Data Years considering the current status of the Williams' NESE Project.

A. In its direct testimony, Staff states its position that the Companies' capital and investment plans should be adjusted to assume the NESE Project is not in service because permitting approvals have not yet been granted. As of the date of this filing, final decisions on the NESE Project permits are still pending in New York and New Jersey. While the Companies remain cautiously optimistic that the project will be approved, in consideration of Staff's position and the continued uncertainty, the Companies are presenting their rebuttal testimony assuming that the NESE Project will not be in service in the Rate Year and Data Years. However, the Companies agree with the SPP that the record contains sufficient information on the capital investment plan under either scenario to allow the

Commission to set rates based on any developments with the NESE Project during these proceedings.

Q. What information have the Companies provided in this proceeding regarding the impact on their capital and O&M investment plans should the NESE Project not be available?

A. On June 10, 2019, the Companies submitted Supplemental Testimony that provided the Companies' projected adjustments to their capital plans in the Rate Year and Data Years if the NESE Project was not in service. These adjustments were described in the Supplemental Testimony and presented in the Companies' respective Exhibits __ (GIOP-1S) (direct capital investment plans without NESE), KEDNY Exhibit __ (GIOP-8S) (incremental O&M without NESE), KEDNY Exhibit ___ (GIOP- 9S) (Incremental FTEs without NESE), KEDLI Exhibit __ (GIOP-7S) (incremental O&M without NESE), and Exhibit __ (GIOP-8S) (incremental FTEs without NESE).

Q. Is the Panel presenting any corrections and updates to the Supplemental Testimony regarding the absence of NESE?

A. Yes. The Companies' have identified errors in its Supplemental Testimony that should be corrected as well as an update to labor overhead rates, as provided in the Companies' response to IR DPS-877.

First, as is stated in the Companies' Supplemental Testimony, funding is required in the Rate Year and Data Years to conduct engineering for the LNG Tank Upgrade Projects. For

KEDNY's Tank 2 Upgrade project, the engineering forecast was inadvertently omitted from Data Years 1 and 2, and the construction costs were inadvertently included in Data Year 3. KEDNY is correcting its forecast to add the engineering costs and remove the construction costs.

Second, for the Enhanced Contractor Inspector Program, the Supplemental Testimony sets forth the number of FTEs and the associated capital labor that would be removed because of less capital work in the absence of NESE. KEDNY and KEDLI's Supplemental Testimony mistakenly applied rounding that resulted in imprecise FTE adjustments to remove O&M labor in the Rate Year and Data Years.

Finally, the Supplemental Testimony was prepared in reaction to the denial of the NESE Project's permits in late May, and the Companies have since continued to evaluate the impacts on customer connections. To that end, the Companies have determined that the Customer Connections Install Main, Install Services, and Install Meter/Regulator Programs budgets do not accurately reflect the costs to connect all of the customers who were approved to received service prior to the May 15, 2019, and who are expected to connect to the system over the next three years. The Companies note that all customers expected to connect were included in the revised sales and demand forecasts.

Q. Please describe the updated and corrected exhibits the Panel is presenting regarding the Companies' capital investment forecasts.

A. Exhibit __ (GIOP-1R) restates the Companies' Corrections and Updates capital plans to include two versions of the capital plan for each company – one assuming NESE is in service, and one assuming NESE is not in service for each Company. Similarly, Exhibit __ (GIOP-2R) restates Corrections and Updates O&M forecast with and without NESE in service during the Rate Year and Data Years, and Exhibit __ (GIOP-3R) restates the Companies' Corrections and Updates incremental FTE proposals with and without NESE. The NESE impact adjustments are highlighted in the exhibits and include the above-described corrections and updates to the no-NESE adjustments.

The corrections and updates to the Companies' no-NESE capital adjustments are shown in Exhibit __ (GIOP-4R) as variances to the Supplemental Testimony's projected adjustments. The adjustments to the Enhanced Contractor Inspector Program O&M are shown in Exhibit __ (GIOP-5R).

There are three additional corrections shown in Exhibit __ (GIOP-1R), Exhibit __ (GIOP-2R), and Exhibit __ (GIOP-3R). The first correction is to address an error in KEDNY's IVP program Rate Year forecast (the Data Years are correct) that was identified in Staff's direct filing (discussed in more detail below). The second correction is to include the current estimate of the Newtown Creek project as discussed in the Companies' Future of Heat Panel's rebuttal testimony. The third correction is to accept a reduction of six incremental FTEs to support capital program work that were inadvertently duplicated with FTEs proposed for the Enhanced Contractor Inspector Program.

With the exception of the corrections and updates noted above, all of the information presented in Exhibit __ (GIOP-1R), Exhibit __ (GIOP-2R), and Exhibit __ (GIOP-3R) was previously provided in the Companies' filings in this proceeding. The rebuttal exhibits are intended to consolidate and clarify the Companies' proposals with and without the NESE Project.

Q. How do the Companies' propose to adjust the capital and O&M investment plans in the event the NESE Project is approved after rates are set in this proceeding?

A. The Companies recommend that a final order or rate settlement in this proceeding include a re-opener mechanism to adjust rates in the event that the NESE Project is approved and expected to be in service during either the Rate Year or Data Years. The filed testimony of both Staff and the Companies include capital and O&M investment plan recommendations and sufficient information to support adjustment to the Companies' capital and incremental O&M requirements if the NESE Project is approved.

B. Staff's Blanket Adjustments to Capital Programs

Q. Please summarize the SGIOP's general approach and basis for proposed adjustments to the Companies' capital forecasts.

A. The SGIOP generally supports the Companies capital plans (SGIOP at 32) but proposes adjustments for certain programs in the mandated, non-infrastructure, and customer connections categories, and proposes an overall blanket reduction to the entire Reliability category of spending. The SGIOP offers the following justifications for its proposed adjustments:

- The SGIOP rejects the Companies' higher inflation rates and other known factors that are expected to increase Rate Year and Data Year costs for the CSC and Proactive Main Replacement Programs (*e.g.* increasing contract costs). (SGIOP at 46-52).
- Where the Companies' forecasts were derived using historic averages of spending in FY 2017 and FY 2018, the SGIOP believes that forecasts should be based on "updated" two-year averages or three-year averages to include FY 2019. (SGIOP at 38, 58, 74).
- The SGIOP lacks confidence in the Companies' Reliability Category forecasts because there have been historic variances between the Companies' budgets and actual spending in this category. (SGIOP at 61-65).
- Because of the timing of the Companies' sanctioning process, which occurs closer to the Rate Year, sanction papers are generally not yet available for the Companies' major investments. The SGIOP claims that without sanction papers, it is unable to determine whether proposed projects are truly needed, whether forecasts are reasonable, and whether alternatives were considered. (SGIOP at 28-29).

Q. Have the Companies provided adequate information to the SGIOP to enable a thorough review of the proposed capital investment plan?

A. Yes. The Companies' direct testimony explains the capital budgeting planning and sanction processes including the timing of sanctioning that, as the SGIOP notes, occurs closer to the spending year. Although it is true that sanctioning documentation is not yet available for the Rate Year projects and programs, the Companies' direct testimony and

exhibits provided extensive information for each program and project, including data sheets (Exhibits __ (GIOP-5) that contain the same information that is typically included in sanctioning documentation such as detailed project descriptions, projects needs and justification, forecasting methodologies, cost drivers, applicable regulatory requirements, and alternatives analyses. The Companies also responded to extensive discovery in this proceeding regarding the details of the capital plan.

Q. Does the Panel agree with the SGIOP's methods and justifications for its proposed adjustments?

A. No, the SGIOP's proposed blanket adjustments are not supported by sufficient data and analysis. As discussed below, the SGIOP ignores known, significant cost drivers that will increase costs of CSC and Proactive Main Replacement Programs. Removal of these costs from the budgets for these programs will impair the Companies' ability to deliver high priority capital programs that are needed to meet important reliability, safety, and policy goals, including work to enable New York City and municipal infrastructure projects and to improve safety and reduce methane emissions through replacement of LPP.

Q. Please describe how the Companies determined their proposed capital forecasts.

A. In contrast to the SGIOP's blanket approach, the Companies determined the appropriate basis and methodology for forecasting Rate Year and Data Year investments on a program-by-program basis. Following a detailed analysis of each program, including examination of historic spending, the Companies determined for each program whether an average of historic costs or the HTY represented the best predictor of Rate Year costs. The Companies

also determined the projects for which a project estimate, rather than a forecast based solely on historic costs, was more appropriate. In this way, the Companies carefully considered any anomalies prior to setting its forecasts for each program. The Companies' methodologies for deriving program forecasts are provided in the Companies' testimony and exhibits and in response to IR DPS-761.

Q. How will the SGIOP's proposals impact the Companies' ability to provide safe and reliable service?

A. In general, the SGIOP's attempt to more closely align the Rate Year forecasts with the Companies' average historic costs and spending levels shifts funds away from the Companies' highest priority mandated, safety, and reliability programs. The SGIOP's recommendations will hinder the Companies' ability to deliver on many of the Companies' and the Commission's important policy, environmental, and safety objectives.

More specifically, proposed downward adjustments in the mandated category will challenge the Companies' ability to deliver on aggressive goals for LPP replacement, methane reduction, and programs and projects discussed below that are necessary to reduce overall system risks. Proposed adjustments in the Reliability category will compromise the Companies' ability to replace aging facilities and equipment that are critical to system operations and to add new equipment that enables the Companies to remotely operate and control the gas system. Hampering the Companies' ability to address reliability and gas system reinforcement work is especially concerning considering the possibility that the NESE Project may not be available to deliver additional supply.

The Companies appreciate the SGIOP's concerns for managing increasing costs; however, the reality is that the SGIOP's proposed adjustments will result in the reprioritization of capital investments in a manner that fails to achieve the Companies' and the Commission's goals. This is not the right result from a public policy or safety perspective.

The Panel discusses in more detail the impacts of Staff's and intervenors' recommendations and proposed adjustments to individual capital programs in the sections that follow.

III. Proposed Adjustments to Mandated Programs

A. City State Construction ("CSC") Program

i. The SGIOP's Recommendations

Q. Please explain the SGIOP's adjustments to KEDNY's CSC/Public Works Reimbursable and Non-Reimbursable forecasts.

A. Staff recommends removal of approximately $11 million and $14 million from KEDNY's CSC Reimbursable and Non-Reimbursable forecasts, respectively. Staff explains that it agrees with KEDNY's general methodology for forecasting the CSC program needs based on 20 percent of New York City's expected construction budget but disagrees with KEDNY's additions to the forecast of incremental funding to cover increased restoration and paving costs that are anticipated in the Rate Year and Data Years as "unnecessary." Staff notes that, in FY 2018, KEDNY spent approximately 17 percent of the City's construction budget. Staff also notes that KEDNY has in place a true-up mechanism, which

Staff suggests will make KEDNY whole if actual spending in the Rate Year exceed the rate allowance for this program. (SGIOP at 48-48).

Q. Does KEDNY agree with Staff's adjustments to its CSC Program?

A. No. KEDNY believes that its CSC program forecast appropriately estimate program needs in the Rate Year and Data Years based on recent trends and known cost drivers for this program.

Q. Does the true-up mechanism Staff mentions address KEDNY's concern that the program will be under-funded if Staff's recommendations are accepted?

A. No. Pursuant to the Joint Proposal adopted in the 2016 KEDNY and KEDLI Rate Cases, KEDNY and KEDLI have a reconciliation mechanism for CSC capital expenditures. To the extent that Companies' actual capital spending for CSC, net of reimbursements, differs from the forecast amount in a Rate Year, the Companies can defer the revenue requirement effect (excluding O&M expenses) associated with 90 percent of the difference for future recovery from or return to customers. This mechanism provides some protection against the volatility in the CSC process due to changing New York City plans and the timing lag between rate setting and the City's determinations of project that will be constructed year-to-year. As was stated in KEDNY's direct testimony, however, a partial deferral mechanism is not a substitute for appropriate rate recovery. The Companies must be permitted to recover sufficient amounts in rates to fully fund the necessary work of this mandated program. The Companies' forecasts to set rates are based on known factors that increase costs in the Rate Year; whereas the reconciliation is intended to cover for unknown

cost increases. Therefore, having a reconciliation in place does not blunt the detrimental effects of removing nearly $25 million from KEDNY's CSC program forecasts.

Q. Does Staff agree with the Companies' proposal to modify their current reconciliation mechanism to allow deferral of 100 percent of the difference between forecast and actual expenditures and to add a reconciliation mechanism for non-reimbursable O&M?

A. No. The SGIOP recommends that the capital deferral mechanism be changed from the current 90 percent/10 percent reconciliation to an 80 percent/20 percent reconciliation based on the SGIOP's belief that the Companies need an incentive to effectively manage program aspects and costs that are in the Companies' control. (SGIOP at 89-90). Staff's reasoning is flawed. As stated above, the reconciliation mechanism is intended to manage the aspects of CSC that are *not* within the Companies' control, including the unpredictability of the work that will ultimately be required each year. Not only is the SGIOP's recommendation unjustified, but it is egregious when coupled with the significant reduction to KEDNY's CSC program budget. There is simply no basis for the mechanism to provide less than a full reconciliation, let alone a reduction to the mechanism that already exists.

Moreover, the SGIOP states no justification for disallowing an O&M reconciliation mechanism for KEDNY considering that the Company has demonstrated significant volatility in O&M spending year-on-year. (See Exhibit __ (GIOP-6CU)). Even if KEDNY manages this program to maximize efficiencies and controllable costs to the highest

standard, the inability to predict future program needs would still justify the need for a reconciliation mechanism.

In short, KEDNY's CSC program is unique in its challenges to accurately forecast, and, for that reason, capital and O&M reconciliation mechanisms are appropriate to protect both customers and the Companies.

ii. NYC's Recommendations

Q. What are NYC's recommendations regarding KEDNY's CSC Program?

A. NYC does not support the proposed change to the capital reconciliation mechanism or the addition of an O&M reconciliation mechanism for similar reasons as the SGIOP. Moreover, NYC notes past challenges regarding coordination of the CSC program and requests that KEDNY dedicate executive-level personnel to coordinate with NYC agencies and that the Commission implement a reporting metric to track KEDNY's progress in addressing NYC requests.

Q. How does KEDNY respond to these recommendations?

A. KEDNY's response regarding the reconciliation mechanisms is the same as stated above. Regarding assignment of an executive to coordinate communications with NYC agencies, KEDNY supports opportunities to further improve communications and coordination and is willing to discuss with the City how best to accomplish this.

KEDNY disagrees, however, with NYC's characterization of prior challenges in administration of the CSC program and, in particular, that these issues resulted solely from KEDNY's actions. KEDNY acknowledges that there is room to improve, but NYC's own actions–for example, the extended time NYC takes to process, review, and pay bills–have frustrated the smooth administration of this program. Also, NYC fails to note the significant progress that has been made over the last few years to address many of these issues, including invoicing, as stated in the Companies' responses to IRs DPS-884 and CNY-21. These process enhancements demonstrate KEDNY's willingness to improve coordination and, therefore, Commission involvement and additional reporting is unnecessary.

B. <u>Proactive Main Replacement Program (Leak Prone Pipe)</u>

Q. Please describe the SGIOP's adjustments to the Companies' forecasts for their Proactive Main Replacement Programs.

A. The SGIOP generally agrees with the Companies' forecasting methodology for LPP replacement but recommends adjustments to remove approximately $6 million from KEDNY's program forecast and approximately $10 million from KEDLI's program forecast. The SGIOP disagrees with certain assumptions the Companies made in calculating the unit costs. Specifically, the SGIOP contests the inflation factors the Companies used for the contractor expense components of the unit costs. (SGIOP at 51-52).

Q. Do the Companies agree with these adjustments?

A. No. The Companies' contractor cost inflation factors for LPP replacement work reflect price increases that the Company knows will occur during the Rate Year and Data Years due to the expirations of contractor agreements during that period and changes in terms and conditions that will significantly increase costs (more significantly in KEDLI's service territory) since the existing agreements were executed. This information was provided in the Companies' responses to IRs DPS-494, part 3, DPS-955, part 3, DPS-597, part 3, and DPS-956, part 3. For example, all of KEDLI's mains and services contractor agreements expire in the Rate Year, and KEDLI entered into a new agreement with one of its contractors at the beginning of FY 2020 at significantly increased pricing as compared to the last several years. The Company validated the increased pricing, which is due to a combination of external cost drivers such as increases in dumping costs and changes to the Company's ways of working/process improvements that drive overall safety and customer benefits. Therefore, the Companies' unit cost calculations reasonably account for known cost drivers in the Rate Year and Data Years that differ from the prior period and should be accepted. The SGIOP's adjustments will underfund these programs and jeopardize the Companies' ability to keep pace with targets and goals for LPP removal, and the associated methane reduction.

Q. Are there other recommendations regarding the Proactive Main Replacement Programs?

A. Yes. Staff and NYC provide recommendations regarding the LPP replacement targets, metrics, incentives, and reporting. These recommendations are addressed by the Companies' Gas Safety Panel's Rebuttal Testimony.

C. <u>Transmission Station Integrity Program</u>

Q. Please describe the SGIOP's adjustments to the Companies' Transmission Station Integrity Programs.

A. Staff's adjustments to these programs remove approximately 94 percent of the programs' Rate Year budgets, effectively gutting the programs and compromising the Companies' ability to achieve timely compliance with the PHMSA regulations that will be in place in the Rate Year. The SGIOP's only basis for the reduction is that the Companies have not identified specific station projects, so the design phase funding should be removed until the Companies have completed records evaluation and project identification. (SGIOP at 57).

Q. Why do the Companies need funding for design work in the Rate Year if specific station projects have not yet been identified?

A. As is stated in the Companies' direct testimony, the Transmission Station Integrity Program is similar to the Companies' Integrity Verification Program and is intended to enable timely compliance with PHMSA regulations that will be in place in the Rate Year. The regulations will require records review and verification for transmission station facilities and capital station rehabilitation or replacement projects where records are inadequate or the

Companies are unable to demonstrate that the facilities meet PHMSA's fit for purpose standards. The SGIOP correctly notes that this program is just ramping up; however, based on the initial records review results, the Companies' experience with the transmission pipeline IVP program, and the Companies' knowledge of the vintages, characteristics, and past record keeping systems and practices for its existing transmission station assets, the Companies have reasonably concluded that approximately two stations per year will need either refurbishment or replacement in each year. Based on the pace of records review, design phase will need to begin in the Rate Year, or the Companies will not be positioned to timely complete needed projects. The Companies' forecasts were generically based on conservative estimates for replacing stations but waiting to identify specific projects is not an option considering the pace that will need to be maintained to ensure compliance. Therefore, it is vital that the design costs are included in the Rate Year.

D. Reactive Main and Proactive and Reactive Service Replacement Programs

Q. What adjustments to the Companies' Reactive Main Replacement and Proactive and Reactive Service Replacements does the SGIOP recommend?

A. The SGIOP notes that the Companies' response to IR DPS-761 shows that the forecasts for these programs are based on the average spending over two years (FY 2017 and FY 2018), plus inflation. The SGIOP recommends recalculating the budgets for these programs based on updated two-year averages (FY 2018 and FY 2019) and using a different inflation factor than the Companies applied.

Q. Please comment on the SGIOP's recommendation.

A. The Companies' explanation in DPS-761 of the basis for the forecasts of these programs was incomplete. In addition to averaging two years of historic costs and inflation, these forecasts also reflect the Companies' proposal to capitalize costs for replacements of segments under 50 feet that previously were expensed. Staffs' adjustments do not properly reflect this capitalization change. Additionally, the Companies maintain that FY 2017 and FY 2018 are appropriate proxies for Rate Year costs.

E. KEDLI's Corrosion Program

Q. Is the SGIOP recommending an adjustment to KEDLI's Corrosion Program?

A. Exhibit __ (SGIOP-4) shows removal of $0.73 million from KEDLI's Corrosion Program, but the adjustment is not discussed in the SGIOP's testimony, and therefore is not supported.

F. KEDNY's IVP

Q. Please explain the SGIOP's adjustment to KEDNY's capital budget for the IVP program.

A. Exhibit __ (SGIOP-4) indicates a reduction to KEDNY's IVP program of approximately $0.17 million. KEDNY accepts the correction of this apparent error in the Company's original filing. This correction is included in Exhibit __ (GIOP-1R).

IV. Proposed Adjustments to Reliability Programs

A. Blanket Adjustment to All Reliability Programs

Q. Please explain the SGIOP's blanket reduction to the entire Reliability spending category.

A. The SGIOP determined that KEDNY and KEDLI have typically spent approximately 74 percent and 71 percent, respectively, of their total budgets in the Reliability category. The SGIOP reasons that the Companies' spending in the Rate Year and Data Years for the entire category should be limited to this trend and, therefore, removes 26 percent and 29 percent from the Reliability category total forecast for KEDNY and KEDLI, respectively. Staff performed no program or project specific analysis for any of the forecasts included in the Reliability category of spending, except for the Storm Hardening – Remote Service Shutoff Valves Program and the RNG Interconnections Program.

Q. Do the Companies agree with the SGIOP's recommended blanket adjustment?

A. No. The SGIOP's methodology is flawed, adjustments to the projects and programs included in the category are unsupported, and the adjustment will hinder the Companies' ability to deliver important programs that are needed to enable continued safe and reliable service, including, but not limited to, (i) the Companies' Northwest Nassau and MRI Projects, I&R and Pressure Regulation Programs that are vital to address overpressure risks and to implement best practices in light of the Columbia Gas Merrimack Valley incident; (ii) Heater Installations that are required due to assets reaching the ends of their useful lives, (iii) LNG facility programs and projects, (iv) needed reliability upgrades; and (v) the installation of remote control valves.

A blanket adjustment to a spending category, rather than consideration of the unique factors that influence historic spending variances in each program and factors considered by the Companies when projecting forecasts for each program, is inappropriate. Variances may be experienced for a host of different reasons in each project, and factors outside the Companies' control can also influence variances. For example, the MRI Project experienced delays due to a design change required by a municipality, and, as is stated in KEDNY's GIOP Panel Direct Testimony, the LNG Salt Water Pump House Project experienced delays resulting from unanticipated permit requirements and stipulations imposed by the FDNY.

Moreover, the forecasts for the various projects and programs within the Reliability Category are based on different needs and forecasting methodologies. Historic spending trends do not necessarily reflect Rate Year and Data Year needs. For example, in the Heaters program, heaters must be replaced as they reach the end of their useful lives, so that the program needs can vary significantly depending on the age of assets. Additionally, station refurbishments or replacements are risk-driven, and the work plan is in part dependent on the conditions of the assets as they continue to age. These are the types of factors the Companies consider when setting future project and program budgets, and that are wholly ignored by the SGIOP's attempt to adjust an entire category of spending based on historic trends without sufficient analysis or support.

Q. How would the proposed 26 percent and 29 percent reductions impact the projects and programs in the Reliability Program?

A. There would be a substantial negative impact. The SGIOP does not suggest how the Companies should apply the total reduction among the various programs, but there are no good alternatives. There are programs the Companies cannot deliver if the reduction is applied equally against all programs (reducing each program forecast by 26 percent or 29 percent). For example, the Companies cannot complete the NWN or MRI projects for approximately 70 percent of the budgets. If the Companies divert funding to higher priority projects and programs in the spending category, other projects and programs may need to be deferred altogether, increasing overall safety and reliability risk on the system.

Additionally, the SPSP's proposed reduction fails to consider that forecasts in the Reliability spending category are higher in the Rate Year and Data Years compared to historic spending levels due to incremental work and new programs (*i.e.,* the Distribution Station Over Pressure Protection) that address the identified best practices as well as the recommendations of Staff in the wake of the Columbia Gas Merrimack Valley incident. The SPSP's proposal jeopardizes the Companies' ability to implement industry best practices and needed improvements to I&R, gas system control, and pressure regulation.

B. <u>Storm Hardening – Remote Shutoff Valves</u>

Q. Please explain the SGIOP's and NYC's recommendations for the Companies' Storm Hardening – Remote Shutoff Valves program.

A. The SGIOP recommends deferring the program for one year considering that the remote valve technology is new and recommends that the Companies conduct additional, third-party testing. NYC requests coordination and access to data collected by the devices.

Q. Are the Companies able to defer the program from the Rate Year to Data Year 1?

A. No. The program is in progress, and the Companies are on track to begin installations this year. Contracts are in place with vendors for the valves and for support systems such that capital and O&M spending cannot easily be deferred, and there is work required during the Rate Year on communications network, IT changes to the Companies' customer systems, data security, and other supporting systems that also cannot easily be deferred. For example, installation of communication network routers and pole attachment agreements with other utilities and municipalities take a long time to negotiate and execute. O&M expenses budgeted for the Rate Year largely consist of pole rentals, electric costs, cellular network costs, cloud data storage costs, and network monitoring/maintenance that needs to be in place. The Companies cannot simply cease this ongoing work for one year in the Rate Year and then start it up again. Moreover, the Companies and the manufacturer are conducting extensive testing on the valves that is expected to be complete by the end of December of 2019. While contractual obligations may not allow for complete deferral of the program out of the Rate Year, the Companies are evaluating the possibility of extending this program to phase installations more slowly and allow for additional in-field testing and trouble-shooting and possibly third-party testing.

Q. Does the SGIOP clearly set forth its recommended adjustments to the program budget in support of their recommendation to defer the project out of the Rate Year?

A. No. The SGIOP's testimony does not set forth specific reductions and simply states that the program should be deferred by one year. Exhibit __ (SGIOP-7) and Exhibit __ (SGIOP-8) show removal of the entire O&M budget and FTE to support this program.

On Monday, September 16, 2019, in response to a discovery request, the SGIOP provided a corrected version of Exhibit __ (SGIOP-4) and corrected Reliability category workpapers showing that the SGIOP does not intend to remove all capital spending, but rather applies the blanket Reliability Category percentage reduction to the Companies' FY 2020 budgets for Storm Hardening Remote Valves Program. The corrected Exhibit __ (SGIOP-4) and Reliability category workpapers are provided as Exhibit __ (RRP-5R). There is no justification provided for the amount of the adjustment, and it is unclear why the SGIOP would propose a reduced capex budget for this program in the Rate Year but remove all O&M and the FTEs.

Q. Should any adjustment be made to the forecasts for this program?

A. Not at this time. Considering the uncertainty and lack of support for the SGIOP's proposed adjustments and to allow the Companies to perform contractual work that is needed in the Rate Year to support future installations of the valves, the Rate Year capital and O&M budgets and incremental FTEs should remain as proposed by the Companies.

Q. Please respond to NYC's requests regarding the Storm Hardening – Remote Shutoff Valves Program.

A. The Companies are willing to better coordinate with NYC regarding this program. The Companies are evaluating NYC's request for data sharing and is open to further discussions with NYC regarding whether data sharing is feasible and possible parameters such as uses, frequency of data sharing, and non-disclosure requirements.

C. <u>RNG Interconnection Project</u>

Q. Does Staff support KEDNY's proposed RNG Interconnection Program?

A. Staff supports the program but recommends deferral of KEDNY's program by one year. (SESP at 56-57). KEDNY prefers to begin this program in the Rate Year, as there are several projects currently in development that may benefit from this program. Smoothing the path to bring additional RNG into the Companies' systems supports the Companies' longer-term methane reduction goals.

Additionally, the SESP recommends removal of incremental FTEs proposed for the Future of Heat Engineering group that would support this program. The SESP suggests that removal of the Clean Conversion Program would allow for a reallocation of FTEs intended for that program to support Future of Heat Projects. (SESP at 57). Removal of the proposed FTEs is inappropriate, however, as it would represent a double-count of the Companies' no-NESE adjustments. The Companies' no-NESE adjustments remove all costs, including labor and non-labor capital and O&M expense. Moreover, even if the RNG Interconnections Program were to be deferred by a year, the FTEs proposed as the

Future of Heat Engineering group are being added to broadly cover integration of Future of Heat needs including enhanced integration of non-pipeline alternatives, in addition to the workload increase resulting from ongoing RNG projects in the development pipeline. These positions are needed in the Rate Year even if the capital RNG Interconnection program is delayed. For these reasons, the Companies' Future of Heat Engineering FTEs should remain.

V. Proposed Adjustments to Customer Connections Programs

A. Gas System Reinforcements

Q. Please address the SGIOP's recommendation that the Companies' Gas System Reinforcement Programs in the Rate Year should be adjusted downward by 75 percent in the event that the NESE Project is not approved, rather than by 50 percent as the Companies recommend.

A. The SGIOP's recommendation is not supported and may jeopardize the Companies' ability to ensure reliable service and meet its obligations to serve increasing demand from existing customers. The Companies acknowledge that their proposed 50 percent reduction to this program in reaction to the absence of the NESE Project is a high-level estimate, as the Companies are continuing to evaluate the impacts of capacity constraints against the expected increase in demand from existing customers. The SGIOP's recommendation, however, is not informed by any specific analysis, but by simply assuming that the Companies' needs will be less than the Companies predict due to the moratorium on new connections if the NESE Project is not approved. The Companies are better positioned to estimate their own gas system reinforcement needs, even at a high level. The need for

reinforcements will be increased in some areas where the Companies expected the NESE Project to provide capacity relief, and the risk in accepting the SGIOP's recommendation is that this program will be underfunded, and the effects of the lack of the NESE Project will begin to negatively impact the reliability of firm service to existing customers. The Companies' proposed reduction was a conservative estimate; the SGIOP's reduction simply cuts too deep.

B. Customer Connections Unit Costs

Q. Please summarize the SGIOP's recommended adjustments to the Companies' unit costs for Customer Connections Programs.

A. The SGIOP generally agrees with the Companies' methodology for deriving the forecasts for Customer Connections installations but recommends that the unit costs be calculated based on an updated three-year average (FY 2017 to FY 2019) rather than the two-year average the Companies used (FY 2017 to FY 2018) for the Install Main, Install Services, Install Meter/Regulator, and Automatic Meter Reading programs.

Q. What is the Companies' response to this recommendation?

A. The Companies maintain that for a one-year rate plan, the two-year average of FY 2017 to FY 2018 is an appropriate proxy for setting the forecast for the Rate Year.

The Companies also note that, as stated in Section II (A) above, the units should be adjusted to properly reflect the program forecasts for new connections in the event that the NESE Project is not approved. The correction to the forecasts that are shown in Exhibit __ (GIOP-

1R) reflect the adjusted units and the Companies' methodology for deriving unit costs in the Rate Year and Data Years.

VI. Proposed Adjustments to Non-Infrastructure Programs

Q. Please comment on the proposed adjustments to the Non-Infrastructure Programs.

A. The SGIOP proposes to adjust the forecasts for several Non-Infrastructure programs based on updated or expanded historic averages. Generally, the Companies believe that averages based on FY 2017 and FY 2018 are an appropriate proxy for costs in the Rate Year. Additionally, for the Meter Testing Equipment Programs and KEDLI's Tools & Equipment Program, increases in costs follow the trend of increased capital workload and should not be reduced. For the Telecomm programs, the forecasts for the Rate Year reflect the need to replace facilities that are at or near the end of useful life.

VII. Proposed O&M Adjustments

A. IMP

Q. Please address the SGIOP's proposed downward adjustment to the O&M budget for IMP Inspections.

A. The SGIOP's recommendation is for a 100 percent reduction to the Companies' IMP non-labor O&M budget. The SGIOP's rationale for totally eliminating the incremental funding is that the SGIOP believes there has not been a significant increase to the IMP capital budget. The SGIOP's assumption that IMP O&M is proportionally tied to the capital budget is incorrect. In fact, the O&M budget is not directly tied to the capital IMP program in any given year. Rather, the O&M expense is directed toward conducting mandated inspections

and performing records reviews, not making IMP capital improvements. Each year's O&M budget for the IMP program is zero-based and is highly variable from year to year because different assets of varied size and characteristics might be in the work plan in any given year. By way of illustration, Exhibit __ (GIOP-4R) provides examples of the workplan variability, and the workplan for the Rate Year. The SGIOP's proposed reduction in O&M for IMP inspections and records reviews will not allow the Company to meet its regulatory requirements in the Rate Year.

Q. Is the SGIOP also proposing to reduce incremental FTEs for the IMP/IVP program?

A. Yes. For the same reasons stated above, the FTEs to support IMP/IVP are needed to support the increased O&M workload that is expected in the Rate Years and Data Years.

B. <u>O&M FTEs Supporting CapEx Workload</u>

Q. Does the SGIOP recommend removal of incremental FTEs the Companies proposed to support O&M work driven by increased capital workload?

A. Yes. The SGIOP notes that the Companies have proposed incremental FTEs for O&M in support of the increased capital workload, including additional inspectors, and the Companies have also proposed an enhanced Contractor Inspector program to add FTEs to bring the ratio of inspectors to crews to one-to-one. The SGIOP perceives that there is an overlap between FTEs in these two categories and recommends reduction of O&M FTEs supporting capital workload by nine FTEs for KEDNY and by three FTEs for KEDLI.

Q. Do the Companies agree with these adjustments?

A. In part. Upon further review, the Companies have determined that there is an overlap between six FTEs for KEDNY (five field inspectors and one supervisor) between O&M supporting capital workload and the Enhanced Contractor Inspector Program. Therefore, the Companies accept the reduction of six FTEs for KEDNY. This reduction is reflected in Exhibit __ (GIOP-2R) and Exhibit __ (GIOP-3R); however, the other FTEs are required to support increasing capital workload and do not overlap with the Contractor Inspector Program. The Companies oppose removal of these positions.

C. <u>Research and Development FTE</u>

Q. Does the SGIOP recommend an adjustment to the Companies' proposal of one FTE to be split between KEDNY and KEDLI for the Companies' Research and Development Program?

A. No, the SGIOP does not include this recommendation in its testimony or exhibits; however, removal of the 0.5 FTE for KEDLI is reflected in Staff's Revenue Requirements Panel Exhibit ____ (SRRP-1 and 2), Schedule 7(c). This adjustment is unsupported and unjustified. The Companies have proposed incremental funding for the Research and Development Program that Staff has not opposed. The addition of 0.5 FTE for each Company is reasonable for management of the additional programming. Moreover, the SPSP recommends *adding* certain items to the Companies' Research and Development Plan: (1) management of the Companies' proposed Enhanced High Emitter Methane Detection Program; (2) a plan for development of advanced RMDs; and (3) enhanced tracking and reporting for the Companies' Expanded Residential Methane Detector

Program. In light of these recommendations and increased work in this program, removal of the FTE is not appropriate.

VIII. Other Recommendations

A. LNG Tank Upgrade Plans Without the NESE Project

Q. Please explain the Companies' LNG Tank Upgrade projects and the SGIOP's recommendation to address the Companies' LNG tanks in the event that the NESE Project is not approved?

A. As is stated in the Companies' Supplemental Testimony, the Companies cannot undertake the planned upgrades of the LNG facility tanks if the NESE Project is not approved because the Companies cannot take the tanks out of service absent the additional capacity the NESE Project will provide. The Supplemental Testimony also notes that in the event the NESE Project is not approved, the Companies intend to conduct engineering design work to explore possible alternative projects to make improvements to the tanks without taking them out of service. Engineering and design work can also be done so that the tank upgrades can move forward to construction expediently whenever sufficient capacity is available to allow the tanks to be removed from service. The SGIOP recommends that the Companies file a proposal for addressing "needed tank repairs" by April of 2021. (SGIOP at 71).

Q. What is the Companies' response to this proposal?

A. The Companies are considering acceleration of engineering and design analysis to determine if alternative projects can address external LNG tank condition issues; some analysis work has already begun. To be clear, there is no way to address all needed repairs

to the LNG tanks without being able to access the insides of the tanks to assess the conditions. If the NESE Project is not approved, the Companies will not be able to take the tanks out of service without imposing curtailments of firm service for the duration of time it takes to complete the tank upgrades. Notwithstanding, the Companies believe that exploring external repairs may provide some degree of mitigation of the risk that the tanks will fail while the Companies continue to explore capacity solutions. This engineering and design work, even if accelerated, will take more time than a few months to complete, and the SGIOP's deadline of April of 2020 is unreasonable. The Companies will continue to engage with Staff on this issue and the timing of plans to address the LNG tanks.

B. Capital Reporting

Q. Do the Companies support the SGIOP's recommendations for capital reporting?

A. For purposes of a one-year rate plan, the Companies support capital reporting that is aligned with the reporting structure adopted in the 2016 KEDNY and KEDLI Rate Cases. The Companies are open to discussing modifications to reporting requirements that are not overly burdensome in the event of a multi-year rate plan.

C. New York City's Storm Hardening and Green Infrastructure Proposals

i. Storm Hardening in NYC

Q. What are NYC's other recommendations related to storm hardening of the Companies' gas facilities located in the New York City?

A. NYC makes the following recommendations related to storm hardening:

- Mini-gate stations: accelerate storm hardening of two mini-gate stations that are located in the flood zones, the Clifton Gate and the Citizens Gate stations, to the Companies' five-year capital plan (address by CY 2025);
- Meter set elevations: develop guidelines for standard elevations for new meter set installations in flood zones; and
- Greenpoint LNG: commission a third-party flood vulnerability study of the Greenpoint LNG facility to be completed by the end of the Rate Year.

Q. Have the Companies worked with NYC to address their concerns regarding storm hardening of the Companies' facilities?

A. Yes. As is noted by NYC, the Companies recently hosted a Storm Hardening Collaborative with NYC and other interested parties to develop storm hardening recommendations that are detailed in a report filed on April 26, 2018 in Cases 16-G-0058 and 16-G-0059. The Companies have implemented all of the recommendations in the report and met with NYC and the other collaborative parties to review implementation status early in 2019. Indeed, the Companies' proposed investment plans in this proceeding include specific investments (*e.g.*. LNG projects) that directly resulted from the collaborative.

Q. How do the Companies approach storm hardening of their gas systems?

A. The Companies manage their gas facilities holistically considering all system risks. As is demonstrated in the Companies' rate filing, and in particular the Future of Heat Panel's testimony, the Companies recognize the effects of climate change as a significant factor that increases system risks and is committed to continuously address these risks. However,

climate change impacts are not the only risk the Companies must contend with, and the Companies must allocate available resources in any given year toward projects and programs that meet various needs to ensure safe and reliable service to its customers. The Companies' capital and O&M investment plans filed in this proceeding reflect this balance and include significant projects to address storm hardening including the installation of remote shutoff valves and various LNG facility projects.

Q. Please address each of NYC's recommendations for additional storm hardening investments beyond what the Companies have proposed.

A. The Companies do not believe that additional investments are warranted in the Rate Year and Data Years to ensure system reliability.

- Mini-gate stations: The Companies' 10-year station work plan is risk-based and considers multiple significant factors including the age and current condition of each station. As a result of the Storm Hardening Collaborative, the Companies now specifically consider location in flood zone as a factor in this analysis. However, as NYC states, the Clifton Gate and the Citizens Gate stations, and an additional seven stations located within FEMA flood zones are included in the 10-year plan but are not currently scheduled to be addressed until after year five. This is due to the need to address other stations located outside of the flood zone that score higher from a total overall risk standpoint. To accelerate work on the stations as NYC suggests, either other stations that are riskier would need to be deferred, or the Companies would require significant additional resources to convert its 10-year plan into a 5-year plan for all stations. Even with significant additional funding, however, it is

not clear that such an accelerated plan is even possible given overall levels of qualified resources available to conduct the work. Additionally, the Companies and NYC note that regarding the Clifton Gate and Citizens Gate Stations, there are other system redundancies to mitigate flood risk. The Companies also re-assess all stations and the work plan every three years – so that if total conditions at stations within flood zones warrant, these stations may move up in priority in future iterations of the 10-year plan. In short, the Companies' approach to mini gate station refurbishment and replacements is reasonable and should not be revised based solely on flood zone locations.

- Meter set elevations: In accordance with the recommendations of the Storm Hardening Collaborative, the Companies conducted an analysis of the feasibility of standardizing guidance for meter set elevations in flood zones and do not recommend increasing the standard height design. The Company conducted outreach among other utilities via a survey regarding the feasibility and practices for increasing standard height design for meter sets and regulators among its peers. A majority of the respondents were not increasing the height of the meter sets or regulators. The Company also considered the geography of its service territory and found that the flood baseline varies drastically, which creates a significant challenge for determining an alternate standard design height. The Company is not recommending increasing the standard height design for regulators and meters sets for new installations. The Company is actively pursuing Remotely Operated Service Shutoff Valves for the services in the flood plains that will automatically shut off the gas service in the event of the flooding to mitigate risk for customers

and communities located within flood plains. This information was provided in the Companies' response to IR CNY-14.

- Greenpoint LNG: As NYC notes in its testimony, the Companies conducted a flood study in response to the Storm Hardening Collaborative. The study identified the critical components and facilities at the Greenpoint LNG site and used an overlay map that included flood risk data NYC provided. Several of the projects planned for the LNG sites in the Rate Year and Data Years address the risks identified. In short, the Companies are aware that the Greenpoint LNG site is subject to flooding and climate change impacts and are now targeting specific critical assets to address flooding risk. The Companies will continue to evaluate their 10-year capital investment plans for opportunities to make further improvements that address climate change impacts at this site. NYC's recommendation to conduct a third-party study that is more detailed could be considered in the later years of a multi-year rate plan (for example, in Data Year 3) to better inform future investments but would have limited value for Rate Year planning.

ii. NYC's Green Infrastructure Assets

Q. What are NYC's recommendations regarding their Green Infrastructure Assets?

A. NYC states concerns that the Companies' construction work is performed without adequate consideration of NYC's Green Infrastructure Assets. NYC recommends that the Companies install their facilities six feet from the curb rather than three feet, that the Companies provide notice to NYC agencies prior to street openings, and that the Companies attend additional training related to the Green Infrastructure Assets.

Q. What is the Companies' response to these recommendations?

A. The Companies are willing to coordinate with NYC on this issue and can discuss additional training that the Companies assume would be provided by NYC. Regarding installation set-backs, the Companies are unable to commit to a standard six-foot clearance for installations. The Companies' construction work is varied, and the Companies must operate within existing rights-of-ways, avoid conflicts with other infrastructure, and comply with other permit stipulations and municipal code requirements. The Companies are open to further discussions with NYC on this issue.

D. <u>NYSLOF's Union Hiring Recommendation</u>

Q. What is NYSLOF's recommendation regarding hiring of contractors?

A. NYSLOF recommends that the Companies hire only union labor from construction trade locals affiliated with the Building and Construction Trades Council of Greater New York.

Q. Please comment on NYSLOF's recommendation.

A. The Companies value the expertise and dedication that their large number of contracted employees bring to their jobs, the Companies' customers, and the communities in which they work, including the vast number of employees represented by organized labor. However, the Companies note that NYSLOF's recommendation is self-interested. NYSLOF states that it is affiliated with the Laborers International Union of North America and that, in New York, its members primarily work in the construction industry and are organized into more than 24 local unions and five district councils. (NYSLOF at 1).

Substantively, the Companies disagree with a proposal to limit their contractor work force to *only* union laborers. Such a restriction would remove market competition for labor resources, impairing the Companies' ability to obtain qualified contractor services at the least cost, and risking cost increases that customers would ultimately bear.

As NYSLOF notes, the Companies already employ many of its union members; indeed, most of the Companies' contracted labor are unionized. Notwithstanding, the Companies have a long and productive partnership with both organized labor and non-union contractors and vendors, as well as employment terms and approaches that balance the needs of employees, are best for customers, and meet the standards for quality, performance, safety and cost competitiveness. Although the majority of the Companies' contract work is performed by union labor – quality, safety and compliance are not mutually exclusive to either a union or non-union workforce.

The Companies' union and non-union labor force is heavily vetted, as NYSLOF acknowledges. (NYSLOF at 4). The Companies endeavor to contract only with companies that conduct their operations lawfully, safely and ethically and in compliance with all applicable laws and regulations, irrespective of whether they are represented by organized labor associations. All contractors that bid on the Companies' projects must meet ISN safety standards whether they are union or not. In addition, all contractors performing work on gas pipelines must have the associated Operator Qualifications for the tasks they are performing. Operator Qualifications are required per 49 CFR 192 & 195 to work on

gas pipelines and are not exclusive to union contractors. In addition to maintaining Operator Qualifications, welders are required to perform challenge testing to qualify to weld on the Companies' pipelines. Prior to being placed on the Companies' bid lists contractor vetting includes a review of their safety and technical training.

Additionally, as noted in the Panel's Direct and Corrections and Updates testimony, the Companies are implementing improvements to their contractor inspection, quality control and quality assurance, and operator qualification and training programs. Therefore, restricting hiring to union-only labor is not necessary and may lead to increased costs.

Q. Does that conclude your testimony?

A. Yes.

INDEX OF EXHIBITS

Exhibit ___ (GIOP-1R)

KEDNY and KEDLI's capital investment plans with the NESE Project in service and without the NESE Project in service

The Brooklyn Union Gas Company d/b/a National Grid NY
Direct Capital Expenditures (CAPEX and COR)
Rebuttal Filing with NESE Projects Included

	FY20	FY21	FY22	FY23	FY24
Customer Connections					
Customer Connections - Install Main	21,146,720	21,729,722	22,538,940	22,989,719	23,449,513
Customer Connections - Install Services	24,785,380	25,488,092	27,925,611	28,484,123	29,053,806
Customer Connections - Customer Contributions	(2,307,000)	(2,352,000)	(2,403,000)	(2,456,000)	(2,503,000)
Build it Back Program	-	-	-	-	-
LGA Delta Reconstruction	-	-	-	-	-
Gateway Development Brooklyn	-	-	-	-	-
Customer Connections - Meter Purchases	1,811,750	1,847,990	1,884,950	1,922,640	1,961,100
Customer Connections - Install Meter/Regulator	1,232,673	1,257,700	1,336,904	1,363,642	1,390,915
Customer Connections - Automatic Meter Reading (AMR)	1,042,000	1,062,090	1,083,330	1,105,000	1,127,100
Gas System Reinforcement	45,382,000	13,641,000	61,716,000	84,342,000	64,031,000
LTNY11751 - Kew Gardens Gate - PM	4,806,891	17,937,000	-	-	-
LTNY12025 - Belmont Gate Station - PM	-	-	180,000	720,000	25,514,000
Total Customer Connections	97,900,413	80,611,594	114,262,735	138,471,124	144,024,433
Mandated					
CSC/Public Works - Non Reimbursable	122,011,065	125,897,715	132,501,150	134,914,950	125,596,350
CSC/Public Works - Reimbursable	149,124,635	153,874,985	161,945,850	164,896,050	153,506,650
Flatlands - SE853 Phase 2 - Trans Offset Louisiana Ave & Georgia Ave .	69,416,000	-	-	-	-
SE856 Phase 2 Trans. Offset Sheffield & New Jersey Ave. - Trans Work	1,609,000	26,590,000	26,980,000	27,590,000	4,000,000
SE856 Phase 2 Trans. Offset Sheffield & New Jersey Ave. - Dist Work	-	14,400,000	14,400,000	-	-
SE-851 -E.108 St Transmission Offse	-	-	-	-	-
SE851-Flatlands Ave Ph 1	-	-	-	-	-
SE851-Flatlands Ave Ph 2	-	-			
SE851-Flatlands Ave Ph 3	-	-	-	-	-
SE851-Flatlands Ave Ph 4	-	-	-	-	-
SE851-Flatlands Ave Ph 5	-	-	-	-	-
SE852-Flatlands Ave Ph 4	-	-	-	-	-
LaGuardia Redevelopment	654,382	164,382	-	-	-
CSC/Public Works - Reimbursements	(42,285,161)	(33,399,619)	(34,102,677)	(35,788,913)	(36,452,974)
Main Replacements - (Proactive) - Leak Prone Pipe	196,552,000	250,061,000	304,804,000	347,927,000	407,571,000
CISBOT	5,236,499	5,336,499	5,400,000	5,500,000	5,600,000
Large Diameter Main Rehabilitation	13,620,628	14,088,000	14,376,000	14,671,000	14,975,000
Cross Bore Remediation	396,839	150,000	153,000	156,060	159,181
Latent Damage Inspections	408,000	416,000	424,000	432,000	440,640
Main Replacements - (Reactive) - Maintenance	5,336,797	6,941,127	7,184,715	7,348,454	7,497,927
Service Replacements - Proactive	1,961,847	2,053,847	2,239,000	2,275,000	2,320,500
Service Replacement (Reactive) - Leaks	5,049,905	5,148,762	5,350,989	5,469,719	5,574,019
Service Replacement (Reactive) - Non-Leaks - Other	5,116,495	5,216,717	5,424,897	5,545,267	5,651,008
Atmospheric Corrosion Inside Inspections	100,000	650,000	104,000	106,000	108,000
Restrictions for Elevated Gas Infrastructure	336,000	373,000	381,000	388,000	396,000
Buried Vent Lines	108,000	111,000	113,000	115,000	117,000
Plastic Fusion QA/QC Re-Digs	3,260,000	3,250,200	3,391,704	3,459,538	3,528,728
Plastic Fusion - In Process Inspections	301,500	307,530	313,680	319,954	326,353
Low Pressure Main Valve Installation	-	2,460,000	2,723,000	2,956,000	3,196,000
High Density Polyethylene Services	-	2,458,800	2,520,270	2,583,277	2,647,859
Contractor Safety Inspections	-	5,370,628	16,363,614	27,786,267	28,182,040
Operator Qualification Program		909,361	519,653	529,827	541,029
Local Law 30	37,200,000	11,400,000	-	-	-
Inactive Accounts	268,924	274,924	287,000	293,000	299,000
Corrosion	927,028	1,004,571	994,571	983,769	1,066,059
Pipeline Integrity - IMP	-	500,000	1,501,350	-	-
Pipeline Integrity - IMP - Jamaica Bay Line ILI	-	2,000,000	10,000,000	10,000,000	10,000,000
Pipeline Integrity - IMP - Southern Line Robotic ILI	3,002,700	3,000,000	10,000,000	10,000,000	18,000,000
Pipeline Integrity - IVP	2,238,083	3,050,000	4,700,000	4,000,000	5,000,000
Pipeline Integrity - IVP Reactive Main Replacement	-	500,000	510,000	520,000	530,604
5.0.0.0.0.1 Launcher - Clove Lakes	-	-	-	-	-
5.0.0.0.0.2;3;4 Receiver - Clove La	-	-	-	-	-
Valve Installations/Replacements	142,000	142,000	146,000	146,000	149,000
Meter Changes	4,328,998	4,437,998	4,593,000	4,708,000	4,825,000
Purchase Meters (Replacements)	3,662,544	3,736,114	3,826,940	3,903,480	3,981,550
Transmission Station Integrity	180,000	3,000,000	17,000,000	17,340,000	17,687,000
Complex Capital Delivery Initiative - Savings	-	(577,500)	(2,663,850)	(1,367,000)	(1,784,350)
Total Mandated	590,264,707	625,298,042	724,405,857	769,707,698	795,236,172
Reliability					
I&R - Reactive	514,743	524,484	527,241	538,940	549,217

I&R - Training and Test Lab	-	800,000	1,000,000	-	-
Gas System Control	114,852	117,182	121,120	123,540	126,010
Gas System Control - Telemetry Upgrade 3G to 4G	198,977	-	-	-	-
Gas System Control - M2M Upgrade	-	-	-	-	-
Gas System Reliability - Gas Control (Training Simulator)	-	-	-	-	-
Heater Installation Program	-	500,000	2,500,000	750,000	750,000
Pressure Regulating Facilities	1,400,000	7,050,000	10,100,000	7,175,000	10,450,000
System Automation	1,394,307	1,394,307	1,700,000	1,734,000	1,734,000
Bay Ridge Gate Station Refurbishmnt	-	-	-	-	-
Shafer Narrows	200,000	-	-	-	-
Bowery Bay Station Upgrade	100,000	500,000	3,500,000	300,000	-
Canarsie Gate Refurbishment	-	-	-	-	-
Floyd Bennett Field M&R ROV's	-	-	-	-	-
McGuiness Mini Gate	-	-	250,000	3,500,000	250,000
Kings Plaza Mini Gate	-	-	250,000	3,500,000	500,000
Bush Terminal (IF-09)	-	-	-	250,000	3,600,000
Tetco Relief Valve Replacement	6,400,000	-	-	-	-
Citizens Gate - Bulkhead	7,060,000	3,100,000	-	-	-
Sheepshead Bay Mini Gate	-	-	-	200,000	3,600,000
PRE-Fresh Kills Methane Recovery					
GOV 110	149	-	150,000	3,200,000	-
Hyman station	-	300,000	3,500,000	250,000	-
Varick Reg Station Retirement	1,624,000	-	-	-	-
North Brooklyn Mini Gate	2,100,000	3,800,000	300,000	-	-
PRE-Coney Island Heater + Mini Gate	-	-	-	-	-
Jamaica Gate	-	-	-	-	250,000
Kennedy Gate	-	-	-	-	250,000
Distribution Station Over Pressure Protection	922,000	928,000	263,000	269,000	276,000
PRE-SP-Maspeth St Decommissioning..	-	-			
Gas System Reliability - Gas Planning /RCV Program	1,662,000	5,132,000	2,547,000	8,327,000	6,597,000
Water Intrusion	217,921	222,142	228,476	233,545	237,999
Storm Hardening - Remote Service Shutoff Valves	3,136,000	7,368,000	8,497,000	7,921,000	7,995,000
LTNY10240 - Grasmere Reliability - PM	49,664	100,000	5,142,000	-	-
LTNY11690 - LGA Backfeed - PM	-	50,000	328,000	8,654,000	-
LTNY12314 - Spring Creek - PM	4,070,467	213,467	-	-	-
LTNY10205 - MRI - PM - Main Phase 1-4	88,940,732	35,425,601	-	-	-
LTNY10205 - MRI - PM - Main Phase 5	-	39,574,399	20,729,685		
LTNY12058 - Elmhurst Reliability - PM	-	-	-	1,000,000	35,000,000
LTNY13231 - Marine Park Regulator Station - PM	99,327	999,327	22,769,000	-	-
LTNY11165 - Northern Queens Gas T&D - PM	513,312	13,312	-	-	-
LTNYXXXXX - Northern Line - PM	-	-	-	-	500,000
LTNYXXXXX - Northern Queens Extension - PM	-	-	-	-	100,000
Citizens Tunnel - Upgrade	1,071,545	21,545	-	-	-
Newtown Creek	14,010,000	869,403	-	-	-
CNG - KEDNY Blanket	497,806	497,806	500,000	500,000	500,000
CNG - KEDNY Contract Closeout	-	400,000	-	-	-
CNG - NY KEDNY - New Mobile Compressor and Storage systems	-	-	-	-	-
CNG - NY Brooklyn (Canarsie) - Compressor Upgrade, New Controls	-	50,000	2,200,000	500,000	-
CNG - NY Brooklyn (Greenpoint) - Fueling Island Access	-	1,200,000	946,000	-	-
CNG - NY Brooklyn (Greenpoint) - New Compressors, Panels, and Controls	1,088,000	996,643	-	-	-
LNG - Blanket	2,599,086	2,648,113	2,653,763	2,712,646	2,764,373
LNG - Greenpoint LNG	-	-	-	-	-
LNG - Vaporizers 7 & 8 Replacement	100,000	500,000	10,200,000	10,127,000	3,000,000
LNG - Barge Piping Decommissioning	-	-	-	-	-
LNG - Ice Shield	-	-			
LNG - Bulkhead Upgrade	-	700,000	-	700,000	-
LNG - Controls System Upgrade	19,865	769,865	978,000	1,712,000	-
LNG - Vaporizers 3 & 4 Replacement	21,183,000	2,000,000	-	-	-
LNG - Relocate Maintenance Area & New Control Building	-	1,406,000	6,000,000	3,000,000	1,250,000
LNG - Truck Load/Unload Station	1,865,000	2,100,000	12,265,000	510,000	-
LNG - Salt Water Pump House Upgrade	996,000	9,634,000	36,482,000	162,000	-
LNG - Geoweb Dike Replacement	1,800,000	-	-	-	-
LNG - Tank 2 Upgrade	-	-	100,000	1,500,000	1,500,000
LNG - Solar Panels	-	-	100,000	1,000,000	-
LNG - Liquefaction Critical Spares	49,664	949,664	-	-	-
LNG - Sub M-Sub L Interconnect	-	-	100,000	1,000,000	-
LNG - Instrument Air System Replacement	-	-	-	100,000	3,000,000
LNG - Stormwater Drainage	-	-	-	10,000	3,000,000
LNG - Hydrant & Deluge Piping Upgrade	1,800,000	4,700,000	1,500,000	-	-
LNG - Tank 1 Upgrade	-	-	50,000	1,500,000	500,000
LNG - Tank 1 Painting	-	-	-	-	-
LNG - Generators Upgrade	-	-	-	-	-
LNG - Hi Ex Foam System	49,664	892,664	2,349,000	500,000	-
LNG - Security System Upgrades	-	-	-	100,000	2,000,000
LNG - Nitrogen System Refurbishment	-	-	-	10,000	5,000,000
LNG - Tail Gas Compressor Upgrade	669,000	100,000	5,331,000	-	-
LNG - RNG Blanket	-	200,000	200,000	200,000	200,000
LNG - Piping Insulation Replacement & Inspection	-	499,664	500,000	500,000	500,000

LNG - Boiloff Heaters/Steam Boiler Upgrade	9,933	499,933	3,000,000	3,000,000	-
LNG - Plant Outlet Drip Leg	-	10,000	500,000	-	-
LNG - Vaporizers 9 & 10 Replacement	-	-	-	-	-
LNG - ReGen Heater Replacements	-	-	-	-	-
Renewable Natural Gas (RNG) Interconnections	-	900,000	900,000	900,000	900,000
Total Reliability	168,527,012	140,657,519	171,257,285	78,169,671	96,879,598
Non-Infrastructure					
Telecomm - Radio Capital Expenditures	44,226	45,176	49,420	50,410	51,420
Telecomm - Comm site upgrades	44,089	45,039	49,420	50,410	51,420
Telecomm - Damaged Failure	11,602	11,852	13,010	13,270	13,530
Tools & Equipment - All	3,566,122	3,639,064	3,948,226	4,035,831	4,112,789
Special project	-	-	-	-	-
Learning and Development - Materials, Tools and Equipment	-	375,000	250,000	187,500	187,500
AMR Installation	2,934,873	2,334,873	-	-	-
Meter Testing Equipment	103,441	105,441	106,000	108,000	110,000
Automatic Meter Reading (AMR) - Replacement	3,315,998	3,385,738	3,628,460	3,701,250	3,775,270
Total Non-Infratructure	10,020,351	9,942,183	8,044,536	8,146,671	8,301,929
Total Capital Including Cost of Removal	866,712,483	856,509,338	1,017,970,413	994,495,164	1,044,442,132
Cost of Removal	86,584,577	85,565,283	101,695,244	99,350,067	104,339,769
Total Capital (Net of Removal)	780,127,906	770,944,055	916,275,169	895,145,097	940,102,363

The Brooklyn Union Gas Company d/b/a National Grid NY
Direct Capital Expenditures (CAPEX and COR)
Rebuttal Filing with NESE Projects Excluded

	FY20	FY21	FY22	FY23	FY24
Customer Connections					
Customer Connections - Install Main	6,986,000	7,136,724	4,438,305	4,806,476	5,434,459
Customer Connections - Install Services	14,689,275	10,807,320	9,494,755	9,664,075	10,067,229
Customer Connections - Customer Contributions	(2,307,000)	(4,440,896)	(4,679,482)	(5,290,954)	(6,028,063)
Build it Back Program	-	-	-	-	-
LGA Delta Reconstruction	-	-	-	-	-
Gateway Development Brooklyn	-	-	-	-	-
Customer Connections - Meter Purchases	1,811,750	250,454	255,464	260,573	265,784
Customer Connections - Install Meter/Regulator	715,923	348,082	304,241	287,144	286,528
Customer Connections - Automatic Meter Reading (AMR)	1,042,000	160,148	163,351	166,618	169,951
Gas System Reinforcement	40,843,800	6,895,500	15,879,000	37,751,250	16,007,750
LTNYXXXXX - Jamaica Inlet - PM	100,000	520,000	9,913,000		
LTNY11751 - Kew Gardens Gate - PM	4,806,891	17,937,000	-	-	-
LTNY12025 - Belmont Gate Station - PM	-	-	180,000	720,000	25,514,000
Total Customer Connections	68,688,639	39,614,332	35,948,634	48,365,182	51,717,638
Mandated					
CSC/Public Works - Non Reimbursable	122,011,065	125,897,715	132,501,150	134,914,950	125,596,350
CSC/Public Works - Reimbursable	149,124,635	153,874,985	161,945,850	164,896,050	153,506,650
Flatlands - SE853 Phase 2 - Trans Offset Louisiana Ave & Georgia Ave .	69,416,000	-	-	-	-
SE856 Phase 2 Trans. Offset Sheffield & New Jersey Ave. - Trans Work	1,609,000	26,590,000	26,980,000	27,590,000	4,000,000
SE856 Phase 2 Trans. Offset Sheffield & New Jersey Ave. - Dist Work	-	14,400,000	14,400,000	-	-
SE-851 -E.108 St Transmission Offse	-	-	-	-	-
SE851-Flatlands Ave Ph 1	-	-	-	-	-
SE851-Flatlands Ave Ph 2	-	-			
SE851-Flatlands Ave Ph 3	-	-	-	-	-
SE851-Flatlands Ave Ph 4	-	-	-	-	-
SE851-Flatlands Ave Ph 5	-	-	-	-	-
SE852-Flatlands Ave Ph 4	-	-	-	-	-
LaGuardia Redevelopment	654,382	164,382	-	-	-
CSC/Public Works - Reimbursements	(42,285,161)	(33,399,619)	(34,102,677)	(35,788,913)	(36,452,974)
Main Replacements - (Proactive) - Leak Prone Pipe	196,552,000	250,061,000	304,804,000	347,927,000	407,571,000
CISBOT	5,236,499	5,336,499	5,400,000	5,500,000	5,600,000
Large Diameter Main Rehabilitation	13,620,628	14,088,000	14,376,000	14,671,000	14,975,000
Cross Bore Remediation	396,839	150,000	153,000	156,060	159,181
Latent Damage Inspections	408,000	416,000	424,000	432,000	440,640
Main Replacements - (Reactive) - Maintenance	5,336,797	6,941,127	7,184,715	7,348,454	7,497,927
Service Replacements - Proactive	1,961,847	2,053,847	2,239,000	2,275,000	2,320,500
Service Replacement (Reactive) - Leaks	5,049,905	5,148,762	5,350,989	5,469,719	5,574,019
Service Replacement (Reactive) - Non-Leaks - Other	5,116,495	5,216,717	5,424,897	5,545,267	5,651,008
Atmospheric Corrosion Inside Inspections	100,000	650,000	104,000	106,000	108,000
Restrictions for Elevated Gas Infrastructure	336,000	373,000	381,000	388,000	396,000
Buried Vent Lines	108,000	111,000	113,000	115,000	117,000
Plastic Fusion QA/QC Re-Digs	3,260,000	3,250,200	3,391,704	3,459,538	3,528,728
Plastic Fusion - In Process Inspections	301,500	307,530	313,680	319,954	326,353
Low Pressure Main Valve Installation	-	2,460,000	2,723,000	2,956,000	3,196,000
High Density Polyethylene Services	-	2,458,800	2,520,270	2,583,277	2,647,859
Contractor Safety Inspections	-	5,282,922	16,096,309	27,332,266	27,721,425
Operator Qualification Program		909,361	519,653	529,827	541,029
Local Law 30	37,200,000	11,400,000	-	-	-
Inactive Accounts	268,924	274,924	287,000	293,000	299,000
Corrosion	927,028	1,004,571	994,571	983,769	1,066,059
Pipeline Integrity - IMP	-	500,000	1,501,350	-	-
Pipeline Integrity - IMP - Jamaica Bay Line ILI	-	2,000,000	10,000,000	10,000,000	10,000,000
Pipeline Integrity - IMP - Southern Line Robotic ILI	3,002,700	3,000,000	10,000,000	10,000,000	18,000,000
Pipeline Integrity - IVP	2,238,083	3,050,000	4,700,000	4,000,000	5,000,000
Pipeline Integrity - IVP Reactive Main Replacement	-	500,000	510,000	520,000	530,604
5.0.0.0.0.1 Launcher - Clove Lakes	-	-	-	-	-
5.0.0.0.0.2;3;4 Receiver - Clove La	-	-	-	-	-
Valve Installations/Replacements	142,000	142,000	146,000	146,000	149,000
Meter Changes	4,328,998	4,437,998	4,593,000	4,708,000	4,825,000
Purchase Meters (Replacements)	3,662,544	3,736,114	3,826,940	3,903,480	3,981,550
Transmission Station Integrity	180,000	3,000,000	17,000,000	17,340,000	17,687,000
Complex Capital Delivery Initiative - Savings	-	(577,500)	(2,663,850)	(1,367,000)	(1,784,350)
Total Mandated	590,264,707	625,210,335	724,138,552	769,253,697	794,775,557
Reliability					

I&R - Reactive	514,743	524,484	527,241	538,940	549,217
I&R - Training and Test Lab	-	800,000	1,000,000	-	-
Gas System Control	114,852	117,182	121,120	123,540	126,010
Gas System Control - Telemetry Upgrade 3G to 4G	198,977	-	-	-	-
Gas System Control - M2M Upgrade	-	-	-	-	-
Gas System Reliability - Gas Control (Training Simulator)	-	-	-	-	-
Heater Installation Program	-	500,000	2,500,000	750,000	750,000
Pressure Regulating Facilities	1,400,000	7,050,000	10,100,000	7,175,000	10,450,000
System Automation	1,394,307	1,394,307	1,700,000	1,734,000	1,734,000
Bay Ridge Gate Station Refurbishmnt	-	-	-	-	-
Shafer Narrows	200,000	-	-	-	-
Bowery Bay Station Upgrade	100,000	500,000	3,500,000	300,000	-
Canarsie Gate Refurbishment	-	-	-	-	-
Floyd Bennett Field M&R ROV's	-	-	-	-	-
McGuiness Mini Gate	-	-	250,000	3,500,000	250,000
Kings Plaza Mini Gate	-	-	250,000	3,500,000	500,000
Bush Terminal (IF-09)	-	-	-	250,000	3,600,000
Tetco Relief Valve Replacement	6,400,000	-	-	-	-
Citizens Gate - Bulkhead	7,060,000	3,100,000	-	-	-
Sheepshead Bay Mini Gate	-	-	-	200,000	3,600,000
PRE-Fresh Kills Methane Recovery					
GOV 110	149	-	150,000	3,200,000	-
Hyman station	-	300,000	3,500,000	250,000	-
Varick Reg Station Retirement	1,624,000	-	-	-	-
North Brooklyn Mini Gate	2,100,000	3,800,000	300,000	-	-
PRE-Coney Island Heater + Mini Gate	-	-	-	-	-
Jamaica Gate	-	-	-	-	250,000
Kennedy Gate	-	-	-	-	250,000
Distribution Station Over Pressure Protection	922,000	928,000	263,000	269,000	276,000
PRE-SP-Maspeth St Decommissioning..	-	-			
Gas System Reliability - Gas Planning /RCV Program	1,662,000	5,132,000	2,547,000	8,327,000	6,597,000
Water Intrusion	217,921	222,142	228,476	233,545	237,999
Storm Hardening - Remote Service Shutoff Valves	3,136,000	7,368,000	8,497,000	7,921,000	7,995,000
LTNY10240 - Grasmere Reliability - PM	49,664	100,000	5,142,000	-	-
LTNY11690 - LGA Backfeed - PM	-	50,000	328,000	8,654,000	-
LTNY12314 - Spring Creek - PM	4,070,467	213,467	-	-	-
LTNY10205 - MRI - PM - Main Phase 1-4	88,940,732	35,425,601	-	-	-
LTNY10205 - MRI - PM - Main Phase 5	-	39,574,399	20,729,685		
LTNY12058 - Elmhurst Reliability - PM	-	-	-	1,000,000	35,000,000
LTNY13231 - Marine Park Regulator Station - PM	99,327	-	-	-	-
LTNY11165 - Northern Queens Gas T&D - PM	513,312	13,312	-	-	-
LTNYXXXXX - Northern Line - PM	-	-	-	-	500,000
LTNYXXXXX - Northern Queens Extension - PM	-	-	-	-	100,000
Citizens Tunnel - Upgrade	1,071,545	21,545	-	-	-
Newtown Creek	14,010,000	869,403	-	-	-
CNG - KEDNY Blanket	497,806	497,806	500,000	500,000	500,000
CNG - KEDNY Contract Closeout	-	400,000	-	-	-
CNG - NY KEDNY - New Mobile Compressor and Storage systems	-	-	-	-	-
CNG - NY Brooklyn (Canarsie) - Compressor Upgrade, New Controls	-	50,000	2,200,000	500,000	-
CNG - NY Brooklyn (Greenpoint) - Fueling Island Access	-	1,200,000	946,000	-	-
CNG - NY Brooklyn (Greenpoint) - New Compressors, Panels, and Controls	1,088,000	996,643	-	-	-
LNG - Blanket	2,599,086	2,648,113	2,653,763	2,712,646	2,764,373
LNG - Greenpoint LNG	-	-	-	-	-
LNG - Vaporizers 7 & 8 Replacement	100,000	500,000	10,200,000	10,127,000	3,000,000
LNG - Barge Piping Decommissioning	-	-	-	-	-
LNG - Ice Shield	-	-			
LNG - Bulkhead Upgrade	-	700,000	-	700,000	-
LNG - Controls System Upgrade	19,865	769,865	978,000	1,712,000	-
LNG - Vaporizers 3 & 4 Replacement	21,183,000	2,000,000	-	-	-
LNG - Relocate Maintenance Area & New Control Building	-	1,406,000	6,000,000	3,000,000	1,250,000
LNG - Truck Load/Unload Station	1,865,000	2,100,000	12,265,000	510,000	-
LNG - Salt Water Pump House Upgrade	996,000	9,634,000	36,482,000	162,000	-
LNG - Geoweb Dike Replacement	1,800,000	-	-	-	-
LNG - Tank 2 Upgrade	-	-	100,000	1,500,000	-
LNG - Solar Panels	-	-	100,000	1,000,000	-
LNG - Liquefaction Critical Spares	49,664	949,664	-	-	-
LNG - Sub M-Sub L Interconnect	-	-	100,000	1,000,000	-
LNG - Instrument Air System Replacement	-	-	-	100,000	3,000,000
LNG - Stormwater Drainage	-	-	-	10,000	3,000,000
LNG - Hydrant & Deluge Piping Upgrade	1,800,000	4,700,000	1,500,000	-	-
LNG - Tank 1 Upgrade	-	-	50,000	1,500,000	-
LNG - Tank 1 Painting	-	-	-	-	-
LNG - Generators Upgrade	-	-	-	-	-
LNG - Hi Ex Foam System	49,664	892,664	2,349,000	500,000	-
LNG - Security System Upgrades	-	-	-	100,000	2,000,000
LNG - Nitrogen System Refurbishment	-	-	-	10,000	5,000,000
LNG - Tail Gas Compressor Upgrade	669,000	100,000	5,331,000	-	-
LNG - RNG Blanket	-	200,000	200,000	200,000	200,000

LNG - Piping Insulation Replacement & Inspection	-	499,664	500,000	500,000	500,000
LNG - Boiloff Heaters/Steam Boiler Upgrade	9,933	499,933	3,000,000	3,000,000	-
LNG - Plant Outlet Drip Leg	-	10,000	500,000	-	-
LNG - Vaporizers 9 & 10 Replacement	-	-	-	-	-
LNG - ReGen Heater Replacements	-	-	-	-	-
Renewable Natural Gas (RNG) Interconnections	-	900,000	900,000	900,000	900,000
Total Reliability	168,527,012	139,658,192	148,488,285	78,169,671	94,879,598
Non-Infrastructure					
Telecomm - Radio Capital Expenditures	44,226	45,176	49,420	50,410	51,420
Telecomm - Comm site upgrades	44,089	45,039	49,420	50,410	51,420
Telecomm - Damaged Failure	11,602	11,852	13,010	13,270	13,530
Tools & Equipment - All	3,566,122	3,639,064	3,948,226	4,035,831	4,112,789
Special project	-	-	-	-	-
Learning and Development - Materials, Tools and Equipment	-	375,000	250,000	187,500	187,500
AMR Installation	2,934,873	2,334,873	-	-	-
Meter Testing Equipment	103,441	105,441	106,000	108,000	110,000
Automatic Meter Reading (AMR) - Replacement	3,315,998	3,385,738	3,628,460	3,701,250	3,775,270
Total Non-Infratructure	10,020,351	9,942,183	8,044,536	8,146,671	8,301,929
Total Capital Including Cost of Removal	837,500,708	814,425,042	916,620,007	903,935,221	949,674,721
Cost of Removal	83,666,321	81,361,062	91,570,339	90,303,129	94,872,505
Total Capital (Net of Removal)	753,834,387	733,063,980	825,049,669	813,632,093	854,802,217

Keyspan Gas East Corporation d/b/a National Grid
Direct Capital Expenditures (CAPEX and COR)
Rebuttal Filing with NESE Projects Included

	FY20	FY21	FY22	FY23	FY24
Customer Connections					
Customer Connections - Install Main	23,597,400	21,494,500	18,535,950	14,940,144	15,238,947
Customer Connections - Install Services	26,073,660	26,454,725	26,731,610	27,266,250	27,811,570
Install Services Bare Main Replacement Program	-	-	-	-	-
Customer Connections - Clean Choice Program - Main	23,125,000	20,790,000	18,314,100	15,730,848	13,036,940
Customer Connections - Clean Choice Program - Services	5,582,240	4,768,560	4,197,879	3,602,464	2,981,553
Customer Connections - Customer Contributions	(9,219,000)	(4,300,000)	(2,500,000)	(2,500,000)	(2,500,000)
Build it Back Program	-	-	-	-	-
Avalon Bay Huntington Station	-	-	-	-	-
The Meadows at Yaphank	-	-	-	-	-
Lindenhurst School District	-	-	-	-	-
Customer Connections - Meter Purchases	1,398,726	1,429,086	1,579,450	1,611,040	1,643,260
Customer Connections - Install Meter/Regulator	826,059	860,997	1,067,141	1,104,491	1,143,148
Customer Connections - Automatic Meter Reading (AMR)	933,289	953,319	989,990	1,009,790	1,029,980
Gas System Reinforcement	24,989,500	21,439,000	20,344,000	31,498,000	17,225,000
LTLI10860 Riverhead Transmission Main - PM	-	-	195,000	1,000,000	23,700,000
LTLI10985- Southeast Suffolk Infrastructure - Phase 1	600,000	20,000,000	21,600,000	-	-
LTLI10985- Southeast Suffolk Infrastructure - Phase 2	-	-	-	100,000	300,000
Total Customer Connections	97,906,874	113,890,187	111,055,120	95,363,027	101,610,398
Mandated					
CSC/Public Works - Non Reimbursable	5,246,398	5,360,398	5,536,000	5,647,000	5,686,000
CSC/Public Works - Reimbursable	5,401,132	5,517,132	5,583,000	5,694,000	5,735,000
CSC/Public Works - Reimbursements	(1,081,000)	(1,102,000)	(1,124,000)	(869,400)	(886,790)
Main Replacements (Proactive) - Leak Prone Pipe	220,251,003	235,190,918	241,070,691	247,097,458	253,274,895
Cross Bore Remediation	1,301,779	101,779	103,814	105,891	108,009
Latent Damage	504,842	514,842	530,000	540,000	550,800
Large Diameter Main Rehabilitation	6,365,669	6,505,000	6,592,000	6,724,000	6,858,000
Main Replacements (Reactive) - Maintenance	2,240,277	2,609,202	2,710,606	2,771,361	2,826,705
Service Replacement (Reactive) - Leaks	1,854,298	1,892,745	2,081,084	2,127,260	2,167,824
Service Replacement (Reactive) - Non-Leaks - Other	4,610,230	4,705,606	5,162,539	5,277,087	5,377,715
Restrictions for Elevated Gas Infrastructure	476,000	485,000	495,000	505,000	515,000
Buried Vent Lines	313,000	319,000	325,000	332,000	338,000
Plastic Fusion QA/QC Re-Digs	955,000	974,100	993,582	1,013,454	1,033,723
Plastic Fusion - In Process Inspections	598,500	610,470	622,679	635,132	647,834
Low Pressure Main Valve Installation	-	50,000	51,000	52,000	53,000
Contrator Safety Inspection	-	3,613,536	11,018,676	18,470,783	18,756,036
Operator Qualification Program		652,822	461,820	470,695	480,499
Atmospheric Corrosion Inside Inspections	-	650,000	100,000	102,000	104,000
Corrosion	983,624	972,495	991,945	1,043,830	1,032,020
Pipeline Integrity - IMP	6,736,344	7,400,365	7,350,000	7,000,000	7,000,000
Pipeline Integrity - IVP	250,000	250,000	-	4,000,000	4,000,000
Pipeline Integrity -IVP - GM 9 Stewart Ave to	-	-	2,520,000	2,000,000	25,000,000
Pipeline Integrity - IVP Reactive Main Replacement	-	500,000	510,000	520,000	530,604
Valve Installations/Replacements	109,000	111,000	113,000	116,000	118,000
Meter Pitts	1,100,064	1,121,344	1,107,390	1,129,530	1,152,130
Meter Changes	2,783,685	2,861,185	3,170,000	3,249,000	3,331,000
Purchase Meters (Replacements)	3,344,407	3,411,987	3,515,400	3,585,710	3,657,420
Transmission Station Integrity	180,000	3,000,000	15,000,000	19,380,000	19,768,000
Complex Capital Delivery Initiative - Savings	-	(914,000)	(1,167,000)	(994,000)	(988,000)
Total Mandated	264,524,251	287,364,926	315,424,227	337,725,792	368,227,424
Reliability					
Gas System Reliability - Gas Planning/RCV Program	1,314,350	2,339,350	1,000,000	1,000,000	1,700,000
LTLI10652- Lynbrook- RCV QL-04	75,000	1,750,000	-	-	-
LTLI11985- Farmingdale- RCV 032583255 - PM	25,000	75,000	1,650,000	-	-
LTLI11032-Westbury- RCV 023123400 - PM	25,000	50,000	1,650,000	-	-
LTLI11715- Westbury- RCV 023123413 - PM	25,000	50,000	1,500,000	-	-
LTLI12020- Deer Park- RCV 040632167-PM	-	25,000	50,000	1,650,000	-
LTLI12021- Deer Park- RCV 040632133-PM	-	25,000	50,000	1,500,000	-
LTLI12022- Pinelawn- RCV 041025722-PM	-	25,000	50,000	1,650,000	-
LTLI10676 Elmont- RCV 007646335	-	-	25,000	50,000	1,685,000
LTLI12023- Engineering costs 2025 projects	-	-	-	-	150,000
Northwest Nassau Transmission Main & Control Valve - Phase 1	4,504,000	-	-	-	-
Northwest Nassau Transmission Main & Control Valve - Phase 2	30,705,000	79,239,000	38,000,000	2,500,000	-
Northwest Nassau Transmission Main & Control Valve - Phase 3	1,500,000	25,000,000	70,000,000	80,000,000	49,000,000
Storm Hardening - Install Remote Service Shutoff Valves	7,199,000	15,579,000	17,679,000	15,582,000	15,732,000
Water Intrusion	206,441	210,404	214,507	219,266	223,447
Gas System Control	154,530	157,430	160,130	163,750	167,770

Gas System Control - Telemetry Upgrade 3G to 4G	200,000	-	-	-	-
Gas System Control - M2M Upgrade	-	-	-	-	-
Gas System Reliability - Gas Control (Training Simulator)	-	-	-	-	-
I&R - Reactive	265,834	270,652	260,799	266,585	271,669
I&R - Training and Test Lab	-	800,000	400,000	-	-
Heater Installation Program	-	1,504,957	1,600,000	1,600,000	1,600,000
Pressure Regulating Facilities	2,836,312	8,690,855	8,850,440	3,750,000	9,300,000
South Commack Take Station Overhaul	1,421,363	400,000	-	-	-
Rockville Centre Take Station Overhaul	100,000	4,500,000	500,000	-	-
Bay Shore Take Station Overhaul	-	400,000	2,750,000	2,500,000	-
Long Beach Gate Station Overhaul	1,200,000	-	-	-	-
ND 45	-	-	100,000	2,750,000	-
ND 02	130	-	-	-	150,000
ND 16	-	-	100,000	2,750,000	-
Riverhead Take Station	-	-	200,000	2,700,000	750,000
SL 54	2,000,000	350	-	-	-
Stewart Ave	-	-	-	200,000	3,500,000
SL 74 SL 75 Holtsville	-	-	-	-	250,000
Distribution Station Over Pressure Protection	496,000	1,746,000	1,500,000	1,500,000	276,000
Northport M&R Station Refurbishment	-	-			
System Automation	868,980	1,142,980	1,181,340	1,204,780	1,228,880
microCHP Demonstration	-	-	-	-	-
CNG - NY Hewlett - New Compressor, Controls, Storage	1,032,000	-	-	-	-
CNG - NY Brentwood - New Compressor, Controls, Storage, Dispensing	490,096	3,190,096	-	-	-
CNG - NY Riverhead - Retirement	-	500,000	500,000	-	-
CNG - NY Hicksville - Retirement	-	500,000	500,000	-	-
CNG - KEDLI Contract Closeout	-	400,000	-	-	-
CNG - KEDLI Blanket	-	500,000	500,000	500,000	500,000
LNG - Blanket	1,054,792	1,075,085	1,098,436	1,122,808	1,144,219
LNG - Holtsville	-	-	-	-	-
LNG - Controls System Upgrade	1,527,000	6,594,000	-	-	-
LNG - AESD System	1,434,000	2,000,000	-	-	-
LNG - Storage Building	2,850,000	-	-	-	-
P-20 Pump Upgrade	-	-	-	-	-
LNG - Security System Upgrade	-	-	-	10,000	891,000
LNG - Solar Panel Farm	-	-	-	-	150,000
LNG - Mol Sieve Refurbishment	-	-	10,000	600,000	-
LNG - Liquefaction Critical Spares	990,000	-	-	-	-
LNG - Odorant System Replacement	-	-	-	20,000	1,000,000
LNG - ReGen Heater Replacement	-	-	-	-	20,000
LNG - Boiloff Compressor System	500,000	75,000	1,000,000	1,000,000	15,292,000
LNG - SST1 & SST2 Replacement	-	-	-	-	10,000
LNG - Cyber Security Enhancements	100,000	500,000	-	-	-
LNG - Tank Upgrade	700,000	900,000	4,113,000	22,039,000	36,483,000
LNG - Analyzer Replacement 1	10,000	200,000	-	-	-
LNG - Power Center Upgrade	-	-	100,000	2,000,000	6,000,000
LNG - Power Breaker Replacement					
LNG - 4KV Cable Replacement	-	-	-	-	20,000
LNG - Nitrogen System Refurbishment	-	-	-	-	10,000
LNG - Emergency Generator Upgrade	-	-	50,000	300,000	5,000,000
LNG - Hi Ex Foam System	50,000	893,000	2,349,000	500,000	-
LNG - Liquefaction System Refurbishment	-	-	-	50,000	3,000,000
Renewable Natural Gas (RNG) Interconnections	-	450,000	450,000	450,000	450,000
Total Reliability	65,859,828	161,758,159	160,141,651	152,128,190	155,954,985
Non-Infrastructure					
Telecomm - Comm site upgrades	47,500	48,450	49,420	50,410	51,420
Telecomm - Damaged Failure	12,500	12,750	13,010	13,270	13,530
Telecomm - Radio Capital Expenditures	48,871	49,841	50,410	51,420	52,440
Tools & Equipment - All	2,422,669	2,468,455	2,478,314	2,533,304	2,581,610
Meter Testing Equipment	198,741	208,931	216,030	227,750	240,350
Learning and Development - Materials, Tools and Equipment	-	375,000	250,000	187,500	187,500
Automatic Meter Reading (AMR) - Replacement	1,370,204	1,397,204	1,402,000	1,431,000	1,459,000
Total Non-Infratructure	4,100,485	4,560,631	4,459,184	4,494,654	4,585,850
Total Capital Including Cost of Removal	432,391,439	567,573,904	591,080,182	589,711,662	630,378,657
Cost of Removal	29,402,618	38,595,025	40,193,452	40,100,393	42,865,749
Total Capital (Net of Removal)	402,988,821	528,978,878	550,886,730	549,611,269	587,512,908

Keyspan Gas East Corporation d/b/a National Grid
Direct Capital Expenditures (CAPEX and COR)
Rebuttal Filing with NESE Projects Excluded

	FY20	FY21	FY22	FY23	FY24
Customer Connections					
Customer Connections - Install Main	12,115,000	1,571,993	900,851	513,637	277,640
Customer Connections - Install Services	13,180,820	5,199,459	5,408,076	4,874,315	4,958,423
Install Services Bare Main Replacement Program	-	-	-	-	-
Customer Connections - Clean Choice Program - Main	5,920,000	-	-	-	-
Customer Connections - Clean Choice Program - Services	3,101,710	-	-	-	-
Customer Connections - Customer Contributions	(4,219,000)	(4,919,432)	(5,057,083)	(5,198,351)	(5,303,003)
Build it Back Program	-	-	-	-	-
Avalon Bay Huntington Station	-	-	-	-	-
The Meadows at Yaphank	-	-	-	-	-
Lindenhurst School District	-	-	-	-	-
Customer Connections - Meter Purchases	1,398,726	-	-	-	-
Customer Connections - Install Meter/Regulator	826,059	138,165	141,908	100,084	76,666
Customer Connections - Automatic Meter Reading (AMR)	933,289	-	-	-	-
Gas System Reinforcement	22,490,550	8,777,500	3,494,000	5,642,250	3,931,250
LTLI10860 Riverhead Transmission Main - PM	-	-	-	-	-
LTLI10985- Southeast Suffolk Infrastructure - Phase 1	600,000	20,000,000	21,600,000	-	-
LTLI10985- Southeast Suffolk Infrastructure - Phase 2	-	-	-	-	-
Total Customer Connections	56,347,154	30,767,685	26,487,752	5,931,935	3,940,975
Mandated					
CSC/Public Works - Non Reimbursable	5,246,398	5,360,398	5,536,000	5,647,000	5,686,000
CSC/Public Works - Reimbursable	5,401,132	5,517,132	5,583,000	5,694,000	5,735,000
CSC/Public Works - Reimbursements	(1,081,000)	(1,102,000)	(1,124,000)	(869,400)	(886,790)
Main Replacements (Proactive) - Leak Prone Pipe	220,251,003	235,190,918	241,070,691	247,097,458	253,274,895
Cross Bore Remediation	1,301,779	101,779	103,814	105,891	108,009
Latent Damage	504,842	514,842	530,000	540,000	550,800
Large Diameter Main Rehabilitation	6,365,669	6,505,000	6,592,000	6,724,000	6,858,000
Main Replacements (Reactive) - Maintenance	2,240,277	2,609,202	2,710,606	2,771,361	2,826,705
Service Replacement (Reactive) - Leaks	1,854,298	1,892,745	2,081,084	2,127,260	2,167,824
Service Replacement (Reactive) - Non-Leaks - Other	4,610,230	4,705,606	5,162,539	5,277,087	5,377,715
Restrictions for Elevated Gas Infrastructure	476,000	485,000	495,000	505,000	515,000
Buried Vent Lines	313,000	319,000	325,000	332,000	338,000
Plastic Fusion QA/QC Re-Digs	955,000	974,100	993,582	1,013,454	1,033,723
Plastic Fusion - In Process Inspections	598,500	610,470	622,679	635,132	647,834
Low Pressure Main Valve Installation	-	50,000	51,000	52,000	53,000
Contrator Safety Inspection	-	2,985,709	9,104,197	15,217,802	15,555,946
Operator Qualification Program		652,822	461,820	470,695	480,499
Atmospheric Corrosion Inside Inspections	-	650,000	100,000	102,000	104,000
Corrosion	983,624	972,495	991,945	1,043,830	1,032,020
Pipeline Integrity - IMP	6,736,344	7,400,365	7,350,000	7,000,000	7,000,000
Pipeline Integrity - IVP	250,000	250,000	-	4,000,000	4,000,000
Pipeline Integrity -IVP - GM 9 Stewart Ave to	-	-	2,520,000	2,000,000	25,000,000
Pipeline Integrity - IVP Reactive Main Replacement	-	500,000	510,000	520,000	530,604
Valve Installations/Replacements	109,000	111,000	113,000	116,000	118,000
Meter Pitts	1,100,064	1,121,344	1,107,390	1,129,530	1,152,130
Meter Changes	2,783,685	2,861,185	3,170,000	3,249,000	3,331,000
Purchase Meters (Replacements)	3,344,407	3,411,987	3,515,400	3,585,710	3,657,420
Transmission Station Integrity	180,000	3,000,000	15,000,000	19,380,000	19,768,000
Complex Capital Delivery Initiative - Savings	-	(914,000)	(1,167,000)	(994,000)	(988,000)
Total Mandated	264,524,251	286,737,099	313,509,748	334,472,811	365,027,334
Reliability					
Gas System Reliability - Gas Planning/RCV Program	1,314,350	2,339,350	1,000,000	1,000,000	1,700,000
LTLI10652- Lynbrook- RCV QL-04	75,000	1,750,000	-	-	-
LTLI11985- Farmingdale- RCV 032583255 - PM	25,000	75,000	1,650,000	-	-
LTLI11032-Westbury- RCV 023123400 - PM	25,000	50,000	1,650,000	-	-
LTLI11715- Westbury- RCV 023123413 - PM	25,000	50,000	1,500,000	-	-
LTLI12020- Deer Park- RCV 040632167-PM	-	25,000	50,000	1,650,000	-
LTLI12021- Deer Park- RCV 040632133-PM	-	25,000	50,000	1,500,000	-
LTLI12022- Pinelawn- RCV 041025722-PM	-	25,000	50,000	1,650,000	-
LTLI10676 Elmont- RCV 007646335	-	-	25,000	50,000	1,685,000
LTLI12023- Engineering costs 2025 projects	-	-	-	-	150,000
Northwest Nassau Transmission Main & Control Valve - Phase 1	4,504,000	-	-	-	-
Northwest Nassau Transmission Main & Control Valve - Phase 2	30,705,000	79,239,000	38,000,000	2,500,000	-
Northwest Nassau Transmission Main & Control Valve - Phase 3	1,500,000	25,000,000	70,000,000	80,000,000	49,000,000
Storm Hardening - Install Remote Service Shutoff Valves	7,199,000	15,579,000	17,679,000	15,582,000	15,732,000
Water Intrusion	206,441	210,404	214,507	219,266	223,447
Gas System Control	154,530	157,430	160,130	163,750	167,770

Gas System Control - Telemetry Upgrade 3G to 4G	200,000	-	-	-	-
Gas System Control - M2M Upgrade	-	-	-	-	-
Gas System Reliability - Gas Control (Training Simulator)	-	-	-	-	-
I&R - Reactive	265,834	270,652	260,799	266,585	271,669
I&R - Training and Test Lab	-	800,000	400,000	-	-
Heater Installation Program	-	1,504,957	1,600,000	1,600,000	1,600,000
Pressure Regulating Facilities	2,836,312	8,690,855	8,850,440	3,750,000	9,300,000
South Commack Take Station Overhaul	1,421,363	400,000	-	-	-
Rockville Centre Take Station Overhaul	100,000	4,500,000	500,000	-	-
Bay Shore Take Station Overhaul	-	400,000	2,750,000	2,500,000	-
Long Beach Gate Station Overhaul	1,200,000	-	-	-	-
ND 45	-	-	100,000	2,750,000	-
ND 02	130	-	-	-	150,000
ND 16	-	-	100,000	2,750,000	-
Riverhead Take Station	-	-	200,000	2,700,000	750,000
SL 54	2,000,000	350	-	-	-
Stewart Ave	-	-	-	200,000	3,500,000
SL 74 SL 75 Holtsville	-	-	-	-	250,000
Distribution Station Over Pressure Protection	496,000	1,746,000	1,500,000	1,500,000	276,000
Northport M&R Station Refurbishment	-	-			
System Automation	868,980	1,142,980	1,181,340	1,204,780	1,228,880
microCHP Demonstration	-	-	-	-	-
CNG - NY Hewlett - New Compressor, Controls, Storage	1,032,000	-	-	-	-
CNG - NY Brentwood - New Compressor, Controls, Storage, Dispensing	490,096	3,190,096	-	-	-
CNG - NY Riverhead - Retirement	-	500,000	500,000	-	-
CNG - NY Hicksville - Retirement	-	500,000	500,000	-	-
CNG - KEDLI Contract Closeout	-	400,000	-	-	-
CNG - KEDLI Blanket	-	500,000	500,000	500,000	500,000
LNG - Blanket	1,054,792	1,075,085	1,098,436	1,122,808	1,144,219
LNG - Holtsville	-	-	-	-	-
LNG - Controls System Upgrade	1,527,000	6,594,000	-	-	-
LNG - AESD System	1,434,000	2,000,000	-	-	-
LNG - Storage Building	2,850,000	-	-	-	-
P-20 Pump Upgrade	-	-	-	-	-
LNG - Security System Upgrade	-	-	-	10,000	891,000
LNG - Solar Panel Farm	-	-	-	-	150,000
LNG - Mol Sieve Refurbishment	-	-	10,000	600,000	-
LNG - Liquefaction Critical Spares	990,000	-	-	-	-
LNG - Odorant System Replacement	-	-	-	20,000	1,000,000
LNG - ReGen Heater Replacement	-	-	-	-	20,000
LNG - Boiloff Compressor System	500,000	75,000	1,000,000	1,000,000	15,292,000
LNG - SST1 & SST2 Replacement	-	-	-	-	10,000
LNG - Cyber Security Enhancements	100,000	500,000	-	-	-
LNG - Tank Upgrade	700,000	900,000	-	-	-
LNG - Analyzer Replacement 1	10,000	200,000	-	-	-
LNG - Power Center Upgrade	-	-	100,000	2,000,000	6,000,000
LNG - Power Breaker Replacement					
LNG - 4KV Cable Replacement	-	-	-	-	20,000
LNG - Nitrogen System Refurbishment	-	-	-	-	10,000
LNG - Emergency Generator Upgrade	-	-	50,000	300,000	5,000,000
LNG - Hi Ex Foam System	50,000	893,000	2,349,000	500,000	-
LNG - Liquefaction System Refurbishment	-	-	-	50,000	3,000,000
Renewable Natural Gas (RNG) Interconnections	-	450,000	450,000	450,000	450,000
Total Reliability	65,859,828	161,758,159	156,028,651	130,089,190	119,471,985
Non-Infrastructure					
Telecomm - Comm site upgrades	47,500	48,450	49,420	50,410	51,420
Telecomm - Damaged Failure	12,500	12,750	13,010	13,270	13,530
Telecomm - Radio Capital Expenditures	48,871	49,841	50,410	51,420	52,440
Tools & Equipment - All	2,422,669	2,468,455	2,478,314	2,533,304	2,581,610
Meter Testing Equipment	198,741	208,931	216,030	227,750	240,350
Learning and Development - Materials, Tools and Equipment	-	375,000	250,000	187,500	187,500
Automatic Meter Reading (AMR) - Replacement	1,370,204	1,397,204	1,402,000	1,431,000	1,459,000
Total Non-Infratructure	4,100,485	4,560,631	4,459,184	4,494,654	4,585,850
Total Capital Including Cost of Removal	390,831,719	483,823,575	500,485,336	474,988,589	493,026,144
Cost of Removal	26,576,557	32,900,003	34,033,003	32,299,224	33,525,778
Total Capital (Net of Removal)	364,255,162	450,923,572	466,452,333	442,689,365	459,500,366

Exhibit ___ (GIOP-2R)

KEDNY and KEDLI's O&M plans with the NESE Project in service and without the NESE Project in service

The Brooklyn Union Gas Company d/b/a National Grid NY
Gas Safety and Gas Infrastructure and Operations Panels
Incremental Operating Expenses
Rebuttal Filing - No NESE

	Rate Year 2021			Data Year 2022		
Panel / Program / Position	**Labor**	**Non-labor**	**Total**	**Labor**	**Non-labor**	**Total**
Gas Safety						
Plastic Fusion Inspection	0	102,510	102,510	0	104,560	104,560
Inside Service Line Inspection	355,447	5,973,180	6,328,627	362,560	6,150,180	6,512,740
Contractor Safety Inspection	**339,765**	**223,860**	**563,625**	**1,247,370**	**649,145**	**1,896,515**
Enhanced Inactive Accounts	3,338,549	266,450	3,604,999	6,624,004	17,082,837	23,706,841
I&R Improvements						
I&R - O&M regulator station training simulators	0	75,000	75,000	0	75,000	75,000
I&R - Site Specific Procedures	318,655	0	318,655	325,032	0	325,032
I&R - Survey & GPS map regulator station control lines	0	1,496,000	1,496,000	0	0	0
I&R - Station As-built Drawing Review	0	1,123,000	1,123,000	0	1,123,000	1,123,000
I&R Improvements Total	318,655	2,694,000	3,012,655	325,032	1,198,000	1,523,032
Enhanced Pipeline Safety Mgmt and Damage Prevention						
Damage Prevention- Damage Prevention Advisor Program	0	1,404,000	1,404,000	0	1,542,240	1,542,240
Damage Prevention FTE's - Supervisor	141,590	0	141,590	157,357	0	157,357
Damage Prevention- Markout Increases	0	980,246	980,246	0	1,232,771	1,232,771
Field Operaitons - Markout Turn Backs	0	0	0	0	0	0
Pipeline Safety Management (API 1173 Implementation)	604,351	0	604,351	616,445	0	616,445
Enhanced Pipeline Safety Mgmt and Damage Prevention Total	745,940	2,384,246	3,130,186	773,802	2,775,011	3,548,813
Materials Testing Lab	35,243	0	35,243	35,916	0	35,916
Single Meter Inspection	170,607	780,000	950,607	173,865	780,000	953,865
Gas Control SOP Training	276,618	0	276,618	282,154	0	282,154
Training (1st Responder & Field)						
Training - First Responder	235,973	50,000	285,973	240,695	50,000	290,695
Training - Field Evaluator	235,973	50,000	285,973	240,695	50,000	290,695
Training (1st Responder & Field) Total	471,945	100,000	571,945	481,390	100,000	581,390
Expanded Residential Methane Detection						
Residential Methane Detectors	0	1,674,000	1,674,000	0	1,674,000	1,674,000
Residential Methane Detectors- Education / Outreach	0	221,998	221,998	0	221,998	221,998
Expanded Residential Methane Detection Total	0	1,895,998	1,895,998	0	1,895,998	1,895,998
Enhanced High Emitter Methane Detection	43,201	250,000	293,201	44,066	255,000	299,066
Operator Qualification Program	611,616	561,597	1,173,212	623,855	675,637	1,299,492
Gas Safety Total	**6,707,586**	**15,231,840**	**21,939,427**	**10,974,014**	**31,666,367**	**42,640,381**
GIOP						
OpEx Support for Capital	314,084	0	314,084	508,107	0	508,107
D&R's related to Capital	0	1,252,867	1,252,867	0	3,114,729	3,114,729
IMP/IVP OpEx						
IVP Program PHMSA Compliance	0	0	0	0	0	0
Pipeline Integrity Support (IMP/IVP)	188,981	0	188,981	192,589	0	192,589
Pipeline Integrity- IMP (PHMSA Rules)	0	4,285,238	4,285,238	0	(853,906)	(853,906)
Pipeline Integrity- IVP (PHMSA Rules)	0	2,893,126	2,893,126	0	2,950,424	2,950,424
Capital IMP/IVP Projects Engineer (PHMSA Rules)	9,643	0	9,643	16,934	0	16,934
IMP -- ILI / ECDA (PHMSA Rules)	73,686	0	73,686	112,896	0	112,896
IMP Program Risk Model (PHMSA Rules)	32,087	0	32,087	56,349	0	56,349
IMP/IVP OpEx Total	304,396	7,178,364	7,482,760	378,768	2,096,518	2,475,286
Station Integrity						
Support PHMSA Rulemaking	142,012	0	142,012	144,854	0	144,854
Pressure Reg Engineering- Trans Station Integrity Testing	0	146,000	146,000	0	796,000	796,000
Station Integrity Total	142,012	146,000	288,012	144,854	796,000	940,854
Storm Hardening						
Storm Hardening Program	0	520,629	520,629	0	708,697	708,697
Investigate alarms, Maintain valve components	29,733	0	29,733	30,301	0	30,301
System Monitoring, valve loccation, investigate alarms	24,973	0	24,973	33,933	0	33,933
Storm Hardening Total	54,706	520,629	575,335	64,234	708,697	772,931
Fixed Factor Inspection	393,948	0	393,948	401,470	0	401,470
Research and Development	140,067	1,768,159	1,908,226	142,870	1,460,169	1,603,039

GIOP Total	**1,349,213**	**10,866,019**	**12,215,232**	**1,640,303**	**8,176,113**	**9,816,417**

The Brooklyn Union Gas Company d/b/a National Grid NY
Gas Safety and Gas Infrastructure and Operations Panels
Incremental Operating Expenses
Rebuttal Filing - No NESE

	Data Year 2023			Data Year 2024		
Panel / Program / Position	**Labor**	**Non-labor**	**Total**	**Labor**	**Non-labor**	**Total**
Gas Safety						
Plastic Fusion Inspection	0	106,651	106,651	0	108,784	108,784
Inside Service Line Inspection	369,583	6,377,180	6,746,763	377,330	6,543,180	6,920,511
Contractor Safety Inspection	**2,117,622**	**1,057,437**	**3,175,059**	**2,160,363**	**1,008,987**	**3,169,350**
Enhanced Inactive Accounts	6,746,856	17,082,837	23,829,693	6,882,654	17,082,837	23,965,491
I&R Improvements						
I&R - O&M regulator station training simulators	0	85,000	85,000	0	85,000	85,000
I&R - Site Specific Procedures	331,328	0	331,328	338,274	0	338,274
I&R - Survey & GPS map regulator station control lines	0	0	0	0	0	0
I&R - Station As-built Drawing Review	0	1,123,000	1,123,000	0	0	0
I&R Improvements Total	331,328	1,208,000	1,539,328	338,274	85,000	423,274
Enhanced Pipeline Safety Mgmt and Damage Prevention						
Damage Prevention- Damage Prevention Advisor Program	0	1,797,888	1,797,888	0	1,948,404	1,948,404
Damage Prevention FTE's - Supervisor	160,405	0	160,405	163,767	0	163,767
Damage Prevention- Markout Increases	0	1,560,845	1,560,845	0	1,986,728	1,986,728
Field Operaitons - Markout Turn Backs	0	0	0	0	0	0
Pipeline Safety Management (API 1173 Implementation)	628,386	0	628,386	641,559	0	641,559
Enhanced Pipeline Safety Mgmt and Damage Prevention Total	788,791	3,358,733	4,147,524	805,326	3,935,132	4,740,458
Materials Testing Lab	36,579	0	36,579	37,312	0	37,312
Single Meter Inspection	177,074	780,000	957,074	180,623	780,000	960,623
Gas Control SOP Training	287,619	0	287,619	293,649	0	293,649
Training (1st Responder & Field)						
Training - First Responder	245,358	50,000	295,358	250,501	50,000	300,501
Training - Field Evaluator	245,358	50,000	295,358	250,501	50,000	300,501
Training (1st Responder & Field) Total	490,715	100,000	590,715	501,002	100,000	601,002
Expanded Residential Methane Detection						
Residential Methane Detectors	0	1,674,000	1,674,000	0	1,674,000	1,674,000
Residential Methane Detectors- Education / Outreach	0	221,998	221,998	0	221,998	221,998
Expanded Residential Methane Detection Total	0	1,895,998	1,895,998	0	1,895,998	1,895,998
Enhanced High Emitter Methane Detection	44,919	260,100	305,019	45,861	265,302	311,163
Operator Qualification Program	635,940	692,527	1,328,467	649,271	709,840	1,359,111
Gas Safety Total	**12,027,027**	**32,919,463**	**44,946,491**	**12,271,664**	**32,515,061**	**44,786,725**
GIOP						
OpEx Support for Capital	636,157	0	636,157	769,955	0	769,955
D&R's related to Capital	0	5,046,918	5,046,918	0	7,256,212	7,256,212
IMP/IVP OpEx						
IVP Program PHMSA Compliance	0	0	0	0	0	0
Pipeline Integrity Support (IMP/IVP)	196,144	0	196,144	200,075	0	200,075
Pipeline Integrity- IMP (PHMSA Rules)	0	(2,290,322)	(2,290,322)	0	2,984,646	2,984,646
Pipeline Integrity- IVP (PHMSA Rules)	0	3,009,732	3,009,732	0	3,069,967	3,069,967
Capital IMP/IVP Projects Engineer (PHMSA Rules)	17,262	0	17,262	17,624	0	17,624
IMP -- ILI / ECDA (PHMSA Rules)	115,083	0	115,083	117,495	0	117,495
IMP Program Risk Model (PHMSA Rules)	57,440	0	57,440	58,644	0	58,644
IMP/IVP OpEx Total	385,930	719,410	1,105,340	393,839	6,054,612	6,448,451
Station Integrity						
Support PHMSA Rulemaking	147,660	0	147,660	150,755	0	150,755
Pressure Reg Engineering- Trans Station Integrity Testing	0	771,000	771,000	0	787,000	787,000
Station Integrity Total	147,660	771,000	918,660	150,755	787,000	937,755
Storm Hardening						
Storm Hardening Program	0	740,655	740,655	0	903,473	903,473
Investigate alarms, Maintain valve components	30,860	0	30,860	31,479	0	31,479
System Monitoring, valve loccation, investigate alarms	34,590	0	34,590	35,315	0	35,315
Storm Hardening Total	65,450	740,655	806,105	66,794	903,473	970,267
Fixed Factor Inspection	408,881	0	408,881	417,075	0	417,075
Research and Development	145,637	1,345,602	1,491,240	148,690	1,373,819	1,522,509

GIOP Total	**1,789,716**	**8,623,586**	**10,413,302**	**1,947,108**	**16,375,117**	**18,322,225**

The Brooklyn Union Gas Company d/b/a National Grid NY
Gas Safety and Gas Infrastructure and Operations Panels
Incremental Operating Expenses
Rebuttal Filing - Including NESE

	Rate Year 2021			Data Year 2022		
Panel / Program / Position	**Labor**	**Non-labor**	**Total**	**Labor**	**Non-labor**	**Total**
Gas Safety						
Plastic Fusion Inspection	0	102,510	102,510	0	104,560	104,560
Inside Service Line Inspection	355,447	5,973,180	6,328,627	362,560	6,150,180	6,512,740
Contractor Safety Inspection	**345,079**	**227,500**	**572,579**	**1,266,874**	**659,700**	**1,926,574**
Enhanced Inactive Accounts	3,338,549	266,450	3,604,999	6,624,004	17,082,837	23,706,841
I&R Improvements						
I&R - O&M regulator station training simulators	0	75,000	75,000	0	75,000	75,000
I&R - Site Specific Procedures	318,655	0	318,655	325,032	0	325,032
I&R - Survey & GPS map regulator station control lines	0	1,496,000	1,496,000	0	0	0
I&R - Station As-built Drawing Review	0	1,123,000	1,123,000	0	1,123,000	1,123,000
I&R Improvements Total	318,655	2,694,000	3,012,655	325,032	1,198,000	1,523,032
Enhanced Pipeline Safety Mgmt and Damage Prevention						
Damage Prevention- Damage Prevention Advisor Program	0	1,404,000	1,404,000	0	1,542,240	1,542,240
Damage Prevention FTE's - Supervisor	141,590	0	141,590	157,357	0	157,357
Damage Prevention- Markout Increases	0	980,246	980,246	0	1,232,771	1,232,771
Field Operaitons - Markout Turn Backs	0	0	0	0	0	0
Pipeline Safety Management (API 1173 Implementation)	604,351	0	604,351	616,445	0	616,445
Enhanced Pipeline Safety Mgmt and Damage Prevention Total	745,940	2,384,246	3,130,186	773,802	2,775,011	3,548,813
Materials Testing Lab	35,243	0	35,243	35,916	0	35,916
Single Meter Inspection	170,607	780,000	950,607	173,865	780,000	953,865
Gas Control SOP Training	276,618	0	276,618	282,154	0	282,154
Training (1st Responder & Field)						
Training - First Responder	235,973	50,000	285,973	240,695	50,000	290,695
Training - Field Evaluator	235,973	50,000	285,973	240,695	50,000	290,695
Training (1st Responder & Field) Total	471,945	100,000	571,945	481,390	100,000	581,390
Expanded Residential Methane Detection						
Residential Methane Detectors	0	1,674,000	1,674,000	0	1,674,000	1,674,000
Residential Methane Detectors- Education / Outreach	0	221,998	221,998	0	221,998	221,998
Expanded Residential Methane Detection Total	0	1,895,998	1,895,998	0	1,895,998	1,895,998
Enhanced High Emitter Methane Detection	43,201	250,000	293,201	44,066	255,000	299,066
Operator Qualification Program	611,616	561,597	1,173,212	623,855	675,637	1,299,492
Gas Safety Total	**6,712,899**	**15,235,480**	**21,948,380**	**10,993,518**	**31,676,922**	**42,670,440**
GIOP						
OpEx Support for Capital	314,084	0	314,084	508,107	0	508,107
D&R's related to Capital	0	1,252,867	1,252,867	0	3,114,729	3,114,729
IMP/IVP OpEx						
IVP Program PHMSA Compliance	0	0	0	0	0	0
Pipeline Integrity Support (IMP/IVP)	188,981	0	188,981	192,589	0	192,589
Pipeline Integrity- IMP (PHMSA Rules)	0	4,285,238	4,285,238	0	(853,906)	(853,906)
Pipeline Integrity- IVP (PHMSA Rules)	0	2,893,126	2,893,126	0	2,950,424	2,950,424
Capital IMP/IVP Projects Engineer (PHMSA Rules)	9,643	0	9,643	16,934	0	16,934
IMP -- ILI / ECDA (PHMSA Rules)	73,686	0	73,686	112,896	0	112,896
IMP Program Risk Model (PHMSA Rules)	32,087	0	32,087	56,349	0	56,349
IMP/IVP OpEx Total	304,396	7,178,364	7,482,760	378,768	2,096,518	2,475,286
Station Integrity						
Support PHMSA Rulemaking	142,012	0	142,012	144,854	0	144,854
Pressure Reg Engineering- Trans Station Integrity Testing	0	146,000	146,000	0	796,000	796,000
Station Integrity Total	142,012	146,000	288,012	144,854	796,000	940,854
Storm Hardening						
Storm Hardening Program	0	520,629	520,629	0	708,697	708,697
Investigate alarms, Maintain valve components	29,733	0	29,733	30,301	0	30,301
System Monitoring, valve loccation, investigate alarms	24,973	0	24,973	33,933	0	33,933
Storm Hardening Total	54,706	520,629	575,335	64,234	708,697	772,931
Fixed Factor Inspection	393,948	0	393,948	401,470	0	401,470
Research and Development	140,067	1,768,159	1,908,226	142,870	1,460,169	1,603,039

GIOP Total	**1,349,213**	**10,866,019**	**12,215,232**	**1,640,303**	**8,176,113**	**9,816,417**

The Brooklyn Union Gas Company d/b/a National Grid NY
Gas Safety and Gas Infrastructure and Operations Panels
Incremental Operating Expenses
Rebuttal Filing - Including NESE

	Data Year 2023			Data Year 2024		
Panel / Program / Position	**Labor**	**Non-labor**	**Total**	**Labor**	**Non-labor**	**Total**
Gas Safety						
Plastic Fusion Inspection	0	106,651	106,651	0	108,784	108,784
Inside Service Line Inspection	369,583	6,377,180	6,746,763	377,330	6,543,180	6,920,511
Contractor Safety Inspection	**2,150,728**	**1,074,631**	**3,225,360**	**2,194,133**	**1,025,394**	**3,219,526**
Enhanced Inactive Accounts	6,746,856	17,082,837	23,829,693	6,882,654	17,082,837	23,965,491
I&R Improvements						
I&R - O&M regulator station training simulators	0	85,000	85,000	0	85,000	85,000
I&R - Site Specific Procedures	331,328	0	331,328	338,274	0	338,274
I&R - Survey & GPS map regulator station control lines	0	0	0	0	0	0
I&R - Station As-built Drawing Review	0	1,123,000	1,123,000	0	0	0
I&R Improvements Total	331,328	1,208,000	1,539,328	338,274	85,000	423,274
Enhanced Pipeline Safety Mgmt and Damage Prevention						
Damage Prevention- Damage Prevention Advisor Program	0	1,797,888	1,797,888	0	1,948,404	1,948,404
Damage Prevention FTE's - Supervisor	160,405	0	160,405	163,767	0	163,767
Damage Prevention- Markout Increases	0	1,560,845	1,560,845	0	1,986,728	1,986,728
Field Operaitons - Markout Turn Backs	0	0	0	0	0	0
Pipeline Safety Management (API 1173 Implementation)	628,386	0	628,386	641,559	0	641,559
Enhanced Pipeline Safety Mgmt and Damage Prevention Total	788,791	3,358,733	4,147,524	805,326	3,935,132	4,740,458
Materials Testing Lab	36,579	0	36,579	37,312	0	37,312
Single Meter Inspection	177,074	780,000	957,074	180,623	780,000	960,623
Gas Control SOP Training	287,619	0	287,619	293,649	0	293,649
Training (1st Responder & Field)						
Training - First Responder	245,358	50,000	295,358	250,501	50,000	300,501
Training - Field Evaluator	245,358	50,000	295,358	250,501	50,000	300,501
Training (1st Responder & Field) Total	490,715	100,000	590,715	501,002	100,000	601,002
Expanded Residential Methane Detection						
Residential Methane Detectors	0	1,674,000	1,674,000	0	1,674,000	1,674,000
Residential Methane Detectors- Education / Outreach	0	221,998	221,998	0	221,998	221,998
Expanded Residential Methane Detection Total	0	1,895,998	1,895,998	0	1,895,998	1,895,998
Enhanced High Emitter Methane Detection	44,919	260,100	305,019	45,861	265,302	311,163
Operator Qualification Program	635,940	692,527	1,328,467	649,271	709,840	1,359,111
Gas Safety Total	**12,060,134**	**32,936,657**	**44,996,791**	**12,305,435**	**32,531,467**	**44,836,902**
GIOP						
OpEx Support for Capital	636,157	0	636,157	769,955	0	769,955
D&R's related to Capital	0	5,046,918	5,046,918	0	7,256,212	7,256,212
IMP/IVP OpEx						
IVP Program PHMSA Compliance	0	0	0	0	0	0
Pipeline Integrity Support (IMP/IVP)	196,144	0	196,144	200,075	0	200,075
Pipeline Integrity- IMP (PHMSA Rules)	0	(2,290,322)	(2,290,322)	0	2,984,646	2,984,646
Pipeline Integrity- IVP (PHMSA Rules)	0	3,009,732	3,009,732	0	3,069,967	3,069,967
Capital IMP/IVP Projects Engineer (PHMSA Rules)	17,262	0	17,262	17,624	0	17,624
IMP -- ILI / ECDA (PHMSA Rules)	115,083	0	115,083	117,495	0	117,495
IMP Program Risk Model (PHMSA Rules)	57,440	0	57,440	58,644	0	58,644
IMP/IVP OpEx Total	385,930	719,410	1,105,340	393,839	6,054,612	6,448,451
Station Integrity						
Support PHMSA Rulemaking	147,660	0	147,660	150,755	0	150,755
Pressure Reg Engineering- Trans Station Integrity Testing	0	771,000	771,000	0	787,000	787,000
Station Integrity Total	147,660	771,000	918,660	150,755	787,000	937,755
Storm Hardening						
Storm Hardening Program	0	740,655	740,655	0	903,473	903,473
Investigate alarms, Maintain valve components	30,860	0	30,860	31,479	0	31,479
System Monitoring, valve loccation, investigate alarms	34,590	0	34,590	35,315	0	35,315
Storm Hardening Total	65,450	740,655	806,105	66,794	903,473	970,267
Fixed Factor Inspection	408,881	0	408,881	417,075	0	417,075
Research and Development	145,637	1,345,602	1,491,240	148,690	1,373,819	1,522,509

GIOP Total	**1,789,716**	**8,623,586**	**10,413,302**	**1,947,108**	**16,375,117**	**18,322,225**

Keyspan Gas East Corporation d/b/a National Grid
Gas Safety and Gas Infrastructure and Operations Panels
Incremental Operating Expenses
Rebuttal Filing - No NESE

	Rate Year 2021			Data Year 2022		
Panel / Program / Position	**Labor**	**Non-labor**	**Total**	**Labor**	**Non-labor**	**Total**
Gas Safety						
Plastic Fusion Inspection	0	203,490	203,490	0	207,560	207,560
Inside Service Line Inspection	152,129	199,814	351,943	155,121	203,864	358,985
Contractor Safety Inspection	**142,127**	**123,000**	**265,127**	**434,464**	**362,280**	**796,744**
Enhanced Inactive Accounts	218,967	44,350	263,317	334,617	412,275	746,892
I&R Improvements						
I&R - O&M regulator station training simulators	0	75,000	75,000	0	75,000	75,000
I&R - Site Specific Procedures	311,628	0	311,628	317,757	0	317,757
I&R - Survey & GPS map regulator station control lines	0	500,000	500,000	0	0	0
I&R - Station As-built Drawing Review	0	685,000	685,000	0	685,000	685,000
I&R Improvements Total	311,628	1,260,000	1,571,628	317,757	760,000	1,077,757
Enhanced Pipeline Safety Mgmt and Damage Prevention						
Damage Prevention- Damage Prevention Advisor Program	0	779,520	779,520	0	894,456	894,456
Damage Prevention FTE's - Supervisor	138,439	0	138,439	153,803	0	153,803
Damage Prevention- Markout Tickets	0	224,751	224,751	0	324,820	324,820
Field Operaitons - Markout Turn Backs	0	441,673	441,673	0	733,664	733,664
Pipeline Safety Management (API 1173 Implementation)	291,264	0	291,264	296,993	0	296,993
Enhanced Pipeline Safety Mgmt and Damage Prevention Total	429,702	1,445,944	1,875,647	450,796	1,952,940	2,403,736
Materials Testing Lab	34,053	0	34,053	34,692	0	34,692
Single Meter Inspection	2,771,164	4,000,000	6,771,164	2,823,315	4,000,000	6,823,315
Gas Control SOP Training	249,095	0	249,095	253,995	0	253,995
Training (1st Responder & Field)						
Training - First Responder	230,721	50,000	280,721	235,259	50,000	285,259
Training - Field Evaluator	230,721	50,000	280,721	235,259	50,000	285,259
Training (1st Responder & Field) Total	461,443	100,000	561,443	470,519	100,000	570,519
Expanded Residential Methane Detection						
Residential Methane Detectors	0	1,116,000	1,116,000	0	1,116,000	1,116,000
Residential Methane Detectors- Education / Outreach	0	147,999	147,999	0	147,999	147,999
Expanded Residential Methane Detection Total	0	1,263,999	1,263,999	0	1,263,999	1,263,999
Enhanced High Emitter Methane Detection	63,398	350,000	413,398	64,645	357,000	421,645
Operator Qualification Program	543,641	331,903	875,544	554,334	390,201	944,534
Gas Safety Total	**5,377,348**	**9,322,500**	**14,699,848**	**5,894,254**	**10,010,118**	**15,904,372**
GIOP						
OpEx Support for Capital	57,487	0	57,487	62,649	0	62,649
D&R's related to Capital	0	596,440	596,440	0	529,053	529,053
IMP/IVP OpEx						
IVP Program PHMSA Compliance	28,734	0	28,734	50,445	0	50,445
Pipeline Integrity Support (IMP/IVP)	272,993	0	272,993	278,117	0	278,117
Pipeline Integrity- IMP (PHMSA Rules)	0	2,133,855	2,133,855	0	678,294	678,294
Pipeline Integrity- IVP (PHMSA Rules)	0	2,219,292	2,219,292	0	2,267,983	2,267,983
Capital IMP/IVP Projects Engineer (PHMSA Rules)	8,620	0	8,620	15,134	0	15,134
IMP -- ILI / ECDA (PHMSA Rules)	65,872	0	65,872	100,890	0	100,890
IMP Program Risk Model (PHMSA Rules)	28,734	0	28,734	50,445	0	50,445
IMP/IVP OpEx Total	404,954	4,353,148	4,758,102	495,031	2,946,277	3,441,308
Station Integrity						
Support PHMSA Rulemaking	138,852	0	138,852	141,583	0	141,583
Pressure Reg Engineering- Trans Station Integrity Testing	0	517,000	517,000	0	505,000	505,000
Station Integrity Total	138,852	517,000	655,852	141,583	505,000	646,583
Storm Hardening						
Storm Hardening Program	0	876,542	876,542	0	1,308,684	1,308,684
Investigate alarms, Maintain valve components	76,639	0	76,639	78,077	0	78,077
System Monitoring, valve loccation, investigate alarms	56,000	0	56,000	76,066	0	76,066
Storm Hardening Total	132,639	876,542	1,009,181	154,144	1,308,684	1,462,828
Fixed Factor Inspection	117,958	0	117,958	120,172	0	120,172
Research and Development	136,950	956,081	1,093,031	139,643	801,846	941,489
GIOP Total	**988,839**	**7,299,211**	**8,288,050**	**1,113,222**	**6,090,860**	**7,204,082**

Keyspan Gas East Corporation d/b/a National Grid
Gas Safety and Gas Infrastructure and Operations Panels
Incremental Operating Expenses
Rebuttal Filing - No NESE

	Data Year 2023			Data Year 2024		
Panel / Program / Position	**Labor**	**Non-labor**	**Total**	**Labor**	**Non-labor**	**Total**
Gas Safety						
Plastic Fusion Inspection	0	211,711	211,711	0	215,945	215,945
Inside Service Line Inspection	158,069	208,036	366,105	161,332	212,333	373,665
Contractor Safety Inspection	**722,437**	**589,380**	**1,311,817**	**736,818**	**574,691**	**1,311,509**
Enhanced Inactive Accounts	340,678	412,275	752,953	347,403	412,275	759,678
I&R Improvements						
I&R - O&M regulator station training simulators	0	85,000	85,000	0	85,000	85,000
I&R - Site Specific Procedures	323,796	0	323,796	330,479	0	330,479
I&R - Survey & GPS map regulator station control lines	0	0	0	0	0	0
I&R - Station As-built Drawing Review	0	685,000	685,000	0	0	0
I&R Improvements Total	323,796	770,000	1,093,796	330,479	85,000	415,479
Enhanced Pipeline Safety Mgmt and Damage Prevention						
Damage Prevention- Damage Prevention Advisor Program	0	1,115,136	1,115,136	0	1,240,848	1,240,848
Damage Prevention FTE's - Supervisor	156,726	0	156,726	159,961	0	159,961
Damage Prevention- Markout Tickets	0	442,790	442,790	0	583,792	583,792
Field Operaitons - Markout Turn Backs	0	1,083,175	1,083,175	0	1,500,620	1,500,620
Pipeline Safety Management (API 1173 Implementation)	302,636	0	302,636	308,883	0	308,883
Enhanced Pipeline Safety Mgmt and Damage Prevention Total	459,362	2,641,101	3,100,463	468,844	3,325,260	3,794,104
Materials Testing Lab	35,321	0	35,321	36,018	0	36,018
Single Meter Inspection	2,874,587	4,000,000	6,874,587	2,931,461	4,000,000	6,931,461
Gas Control SOP Training	258,821	0	258,821	264,164	0	264,164
Training (1st Responder & Field)						
Training - First Responder	239,730	50,000	289,730	244,679	50,000	294,679
Training - Field Evaluator	239,730	50,000	289,730	244,679	50,000	294,679
Training (1st Responder & Field) Total	479,460	100,000	579,460	489,357	100,000	589,357
Expanded Residential Methane Detection						
Residential Methane Detectors	0	1,116,000	1,116,000	0	1,116,000	1,116,000
Residential Methane Detectors- Education / Outreach	0	147,999	147,999	0	147,999	147,999
Expanded Residential Methane Detection Total	0	1,263,999	1,263,999	0	1,263,999	1,263,999
Enhanced High Emitter Methane Detection	65,874	364,140	430,014	67,234	371,423	438,657
Operator Qualification Program	564,868	399,956	964,824	576,528	409,955	986,482
Gas Safety Total	**6,283,274**	**10,960,597**	**17,243,870**	**6,409,637**	**10,970,880**	**17,380,517**
GIOP						
OpEx Support for Capital	63,805	0	63,805	65,087	0	65,087
D&R's related to Capital	0	574,039	574,039	0	673,919	673,919
IMP/IVP OpEx						
IVP Program PHMSA Compliance	51,404	0	51,404	52,465	0	52,465
Pipeline Integrity Support (IMP/IVP)	283,155	0	283,155	288,744	0	288,744
Pipeline Integrity- IMP (PHMSA Rules)	0	1,414,802	1,414,802	0	1,385,838	1,385,838
Pipeline Integrity- IVP (PHMSA Rules)	0	2,313,260	2,313,260	0	2,333,037	2,333,037
Capital IMP/IVP Projects Engineer (PHMSA Rules)	15,421	0	15,421	15,739	0	15,739
IMP -- ILI / ECDA (PHMSA Rules)	102,807	0	102,807	104,930	0	104,930
IMP Program Risk Model (PHMSA Rules)	51,404	0	51,404	52,465	0	52,465
IMP/IVP OpEx Total	504,191	3,728,061	4,232,253	514,343	3,718,874	4,233,217
Station Integrity						
Support PHMSA Rulemaking	144,273	0	144,273	147,251	0	147,251
Pressure Reg Engineering- Trans Station Integrity Testing	0	1,057,000	1,057,000	0	1,078,000	1,078,000
Station Integrity Total	144,273	1,057,000	1,201,273	147,251	1,078,000	1,225,251
Storm Hardening						
Storm Hardening Program	0	1,381,934	1,381,934	0	1,821,948	1,821,948
Investigate alarms, Maintain valve components	79,492	0	79,492	81,061	0	81,061
System Monitoring, valve loccation, investigate alarms	77,512	0	77,512	79,112	0	79,112
Storm Hardening Total	157,004	1,381,934	1,538,938	160,173	1,821,948	1,982,121
Fixed Factor Inspection	122,349	0	122,349	124,764	0	124,764
Research and Development	142,297	750,953	893,251	145,234	707,629	852,863
GIOP Total	**1,133,920**	**7,491,987**	**8,625,907**	**1,156,852**	**8,000,370**	**9,157,222**

Keyspan Gas East Corporation d/b/a National Grid
Gas Safety and Gas Infrastructure and Operations Panels
Incremental Operating Expenses
Rebuttal Filing - Including NESE

	Rate Year 2021			Data Year 2022		
Panel / Program / Position	**Labor**	**Non-labor**	**Total**	**Labor**	**Non-labor**	**Total**
Gas Safety						
Plastic Fusion Inspection	0	203,490	203,490	0	207,560	207,560
Inside Service Line Inspection	152,129	199,814	351,943	155,121	203,864	358,985
Contractor Safety Inspection	**113,702**	**98,400**	**212,102**	**347,571**	**289,824**	**637,395**
Enhanced Inactive Accounts	218,967	44,350	263,317	334,617	412,275	746,892
I&R Improvements						
I&R - O&M regulator station training simulators	0	75,000	75,000	0	75,000	75,000
I&R - Site Specific Procedures	311,628	0	311,628	317,757	0	317,757
I&R - Survey & GPS map regulator station control lines	0	500,000	500,000	0	0	0
I&R - Station As-built Drawing Review	0	685,000	685,000	0	685,000	685,000
I&R Improvements Total	311,628	1,260,000	1,571,628	317,757	760,000	1,077,757
Enhanced Pipeline Safety Mgmt and Damage Prevention						
Damage Prevention- Damage Prevention Advisor Program	0	779,520	779,520	0	894,456	894,456
Damage Prevention FTE's - Supervisor	138,439	0	138,439	153,803	0	153,803
Damage Prevention- Markout Tickets	0	224,751	224,751	0	324,820	324,820
Field Operaitons - Markout Turn Backs	0	441,673	441,673	0	733,664	733,664
Pipeline Safety Management (API 1173 Implementation)	291,264	0	291,264	296,993	0	296,993
Enhanced Pipeline Safety Mgmt and Damage Prevention Total	429,702	1,445,944	1,875,647	450,796	1,952,940	2,403,736
Materials Testing Lab	34,053	0	34,053	34,692	0	34,692
Single Meter Inspection	2,771,164	4,000,000	6,771,164	2,823,315	4,000,000	6,823,315
Gas Control SOP Training	249,095	0	249,095	253,995	0	253,995
Training (1st Responder & Field)						
Training - First Responder	230,721	50,000	280,721	235,259	50,000	285,259
Training - Field Evaluator	230,721	50,000	280,721	235,259	50,000	285,259
Training (1st Responder & Field) Total	461,443	100,000	561,443	470,519	100,000	570,519
Expanded Residential Methane Detection						
Residential Methane Detectors	0	1,116,000	1,116,000	0	1,116,000	1,116,000
Residential Methane Detectors- Education / Outreach	0	147,999	147,999	0	147,999	147,999
Expanded Residential Methane Detection Total	0	1,263,999	1,263,999	0	1,263,999	1,263,999
Enhanced High Emitter Methane Detection	63,398	350,000	413,398	64,645	357,000	421,645
Operator Qualification Program	543,641	331,903	875,544	554,334	390,201	944,534
Gas Safety Total	**5,348,922**	**9,297,900**	**14,646,822**	**5,807,361**	**9,937,662**	**15,745,024**
GIOP						
OpEx Support for Capital	57,487	0	57,487	62,649	0	62,649
D&R's related to Capital	0	596,440	596,440	0	529,053	529,053
IMP/IVP OpEx						
IVP Program PHMSA Compliance	28,734	0	28,734	50,445	0	50,445
Pipeline Integrity Support (IMP/IVP)	272,993	0	272,993	278,117	0	278,117
Pipeline Integrity- IMP (PHMSA Rules)	0	2,133,855	2,133,855	0	678,294	678,294
Pipeline Integrity- IVP (PHMSA Rules)	0	2,219,292	2,219,292	0	2,267,983	2,267,983
Capital IMP/IVP Projects Engineer (PHMSA Rules)	8,620	0	8,620	15,134	0	15,134
IMP -- ILI / ECDA (PHMSA Rules)	65,872	0	65,872	100,890	0	100,890
IMP Program Risk Model (PHMSA Rules)	28,734	0	28,734	50,445	0	50,445
IMP/IVP OpEx Total	404,954	4,353,148	4,758,102	495,031	2,946,277	3,441,308
Station Integrity						
Support PHMSA Rulemaking	138,852	0	138,852	141,583	0	141,583
Pressure Reg Engineering- Trans Station Integrity Testing	0	517,000	517,000	0	505,000	505,000
Station Integrity Total	138,852	517,000	655,852	141,583	505,000	646,583
Storm Hardening						
Storm Hardening Program	0	876,542	876,542	0	1,308,684	1,308,684
Investigate alarms, Maintain valve components	76,639	0	76,639	78,077	0	78,077
System Monitoring, valve loccation, investigate alarms	56,000	0	56,000	76,066	0	76,066
Storm Hardening Total	132,639	876,542	1,009,181	154,144	1,308,684	1,462,828
Fixed Factor Inspection	117,958	0	117,958	120,172	0	120,172
Research and Development	136,950	956,081	1,093,031	139,643	801,846	941,489
GIOP Total	**988,839**	**7,299,211**	**8,288,050**	**1,113,222**	**6,090,860**	**7,204,082**

Keyspan Gas East Corporation d/b/a National Grid
Gas Safety and Gas Infrastructure and Operations Panels
Incremental Operating Expenses
Rebuttal Filing - Including NESE

	Data Year 2023			Data Year 2024		
Panel / Program / Position	**Labor**	**Non-labor**	**Total**	**Labor**	**Non-labor**	**Total**
Gas Safety						
Plastic Fusion Inspection	0	211,711	211,711	0	215,945	215,945
Inside Service Line Inspection	158,069	208,036	366,105	161,332	212,333	373,665
Contractor Safety Inspection	**589,883**	**478,362**	**1,068,245**	**601,634**	**574,691**	**1,176,325**
Enhanced Inactive Accounts	340,678	412,275	752,953	347,403	412,275	759,678
I&R Improvements						
I&R - O&M regulator station training simulators	0	85,000	85,000	0	85,000	85,000
I&R - Site Specific Procedures	323,796	0	323,796	330,479	0	330,479
I&R - Survey & GPS map regulator station control lines	0	0	0	0	0	0
I&R - Station As-built Drawing Review	0	685,000	685,000	0	0	0
I&R Improvements Total	323,796	770,000	1,093,796	330,479	85,000	415,479
Enhanced Pipeline Safety Mgmt and Damage Prevention						
Damage Prevention- Damage Prevention Advisor Program	0	1,115,136	1,115,136	0	1,240,848	1,240,848
Damage Prevention FTE's - Supervisor	156,726	0	156,726	159,961	0	159,961
Damage Prevention- Markout Tickets	0	442,790	442,790	0	583,792	583,792
Field Operaitons - Markout Turn Backs	0	1,083,175	1,083,175	0	1,500,620	1,500,620
Pipeline Safety Management (API 1173 Implementation)	302,636	0	302,636	308,883	0	308,883
Enhanced Pipeline Safety Mgmt and Damage Prevention Total	459,362	2,641,101	3,100,463	468,844	3,325,260	3,794,104
Materials Testing Lab	35,321	0	35,321	36,018	0	36,018
Single Meter Inspection	2,874,587	4,000,000	6,874,587	2,931,461	4,000,000	6,931,461
Gas Control SOP Training	258,821	0	258,821	264,164	0	264,164
Training (1st Responder & Field)						
Training - First Responder	239,730	50,000	289,730	244,679	50,000	294,679
Training - Field Evaluator	239,730	50,000	289,730	244,679	50,000	294,679
Training (1st Responder & Field) Total	479,460	100,000	579,460	489,357	100,000	589,357
Expanded Residential Methane Detection						
Residential Methane Detectors	0	1,116,000	1,116,000	0	1,116,000	1,116,000
Residential Methane Detectors- Education / Outreach	0	147,999	147,999	0	147,999	147,999
Expanded Residential Methane Detection Total	0	1,263,999	1,263,999	0	1,263,999	1,263,999
Enhanced High Emitter Methane Detection	65,874	364,140	430,014	67,234	371,423	438,657
Operator Qualification Program	564,868	399,956	964,824	576,528	409,955	986,482
Gas Safety Total	**6,150,719**	**10,849,579**	**17,000,298**	**6,274,453**	**10,970,880**	**17,245,333**
GIOP						
OpEx Support for Capital	63,805	0	63,805	65,087	0	65,087
D&R's related to Capital	0	574,039	574,039	0	673,919	673,919
IMP/IVP OpEx						
IVP Program PHMSA Compliance	51,404	0	51,404	52,465	0	52,465
Pipeline Integrity Support (IMP/IVP)	283,155	0	283,155	288,744	0	288,744
Pipeline Integrity- IMP (PHMSA Rules)	0	1,414,802	1,414,802	0	1,385,838	1,385,838
Pipeline Integrity- IVP (PHMSA Rules)	0	2,313,260	2,313,260	0	2,333,037	2,333,037
Capital IMP/IVP Projects Engineer (PHMSA Rules)	15,421	0	15,421	15,739	0	15,739
IMP -- ILI / ECDA (PHMSA Rules)	102,807	0	102,807	104,930	0	104,930
IMP Program Risk Model (PHMSA Rules)	51,404	0	51,404	52,465	0	52,465
IMP/IVP OpEx Total	504,191	3,728,061	4,232,253	514,343	3,718,874	4,233,217
Station Integrity						
Support PHMSA Rulemaking	144,273	0	144,273	147,251	0	147,251
Pressure Reg Engineering- Trans Station Integrity Testing	0	1,057,000	1,057,000	0	1,078,000	1,078,000
Station Integrity Total	144,273	1,057,000	1,201,273	147,251	1,078,000	1,225,251
Storm Hardening						
Storm Hardening Program	0	1,381,934	1,381,934	0	1,821,948	1,821,948
Investigate alarms, Maintain valve components	79,492	0	79,492	81,061	0	81,061
System Monitoring, valve loccation, investigate alarms	77,512	0	77,512	79,112	0	79,112
Storm Hardening Total	157,004	1,381,934	1,538,938	160,173	1,821,948	1,982,121
Fixed Factor Inspection	122,349	0	122,349	124,764	0	124,764
Research and Development	142,297	750,953	893,251	145,234	707,629	852,863
GIOP Total	**1,133,920**	**7,491,987**	**8,625,907**	**1,156,852**	**8,000,370**	**9,157,222**

Exhibit ___ (GIOP-3R)

KEDNY and KEDLI's proposed incremental FTEs with the NESE Project in service and without the NESE Project in service

The Brooklyn Union Gas Company d/b/a National Grid NY
Incremental FTE's
Gas Safety and Gas Infrastructure and Operations Panels
Rebuttal Filing - No NESE

Panel	Program	Position	Rate Year 2021	Data Year 2022	Data Year 2023	Data Year 2024
Gas Safety	Service Line Inspection	Analyst	0.5	-	-	-
		Field Inspector	3.0	-	-	-
	Service Line Inspection Total		**3.5**	-	-	-
	Contractor Safety Inspection	**Mechanic**	**21.6**	**43.2**	**43.2**	**-**
		Supervisor	**3.0**	**6.0**	**6.0**	**-**
	Contractor Safety Inspection Total		**24.6**	**49.2**	**49.2**	**-**
	Enhanced Inactive Accounts	Call Center Representative	2.0	12.0	-	-
		Manager	-	1.0	-	-
		Mechanic	14.0	-	-	-
		Meter Service Representative	35.0	35.0	-	-
		Supervisor	2.0	1.0	-	-
	Enhanced Inactive Accounts Total		**53.0**	**49.0**	**-**	**-**
	I&R Improvements	Analyst	0.5	-	-	-
		Engineer	1.0	-	-	-
		Field Trainer	1.0	-	-	-
	I&R Improvements Total		**2.5**	**-**	**-**	**-**
	Gas Pipeline Safety	Pipeline Safety Management Specialist	10.0	-	-	-
		Regulatory Specialist	0.4	-	-	-
		Sr. Supervisor	1.0	-	-	-
	Gas Pipeline Safety Total		**11.4**	**-**	**-**	**-**
	Materials Testing Lab	Senior T&D Lead Man	0.5	-	-	-
	Materials Testing Lab Total		**0.5**	**-**	**-**	**-**
	Single Meter Inspection	Meter Service Representative	3.0	-	-	-
	Single Meter Inspection Total		**3.0**	**-**	**-**	**-**
	Gas Control SOP Training	Engineer	0.3	-	-	-
		SOP Coordinator	2.0	-	-	-
	Gas Control SOP Training Total		**2.3**	**-**	**-**	**-**
	Training (1st Responder & Field)	First Responder Instructor	2.0	-	-	-
		Instructor/Field Evaluator	2.0	-	-	-
	Training (1st Responder & Field) Total		**4.0**	**-**	**-**	**-**
	Enhanced High Emitter Methane Detection	Engineer	0.4	-	-	-
	Enhanced High Emitter Methane Detection Total		**0.4**	**-**	**-**	**-**
	Operator Qualification Program	Technical Inspector	11.0	-	-	-
	OQ Program Total		**11.0**	**-**	**-**	**-**
Gas Safety Total			**116.2**	**98.2**	**49.2**	**-**
GIOP	OpEx Support for Capital	Analyst	1.0	-	-	-
		Contract Oversight Analysts	2.0	-	-	-
		Engineer	3.0	4.0	3.0	4.0
		Inspector	2.0	1.0	1.0	1.0
		Mechanic	2.0	2.0	-	-
		Supervisor	1.0	-	-	-
		Welder	1.0	-	-	-
	OpEx Support for Capital Total		**12.0**	**7.0**	**4.0**	**5.0**
	IMP/IVP OpEx	Engineer	2.5	-	-	-
		Helper	1.0	-	-	-
		Sr. Technician	1.0	-	-	-
	IMP/IVP OpEx Total		**4.5**	**-**	**-**	**-**
	Station Integrity	Integrity Management Engineer	1.0	-	-	-
		Manager - Records Management	0.5	-	-	-
		Manager - Station Integrity	0.5	-	-	-
	Station Integrity Total		**2.0**	**-**	**-**	**-**
	Storm Hardening	Analyst	0.3	-	-	-
		Field Technician	0.3	-	-	-
	Storm Hardening Total		**0.6**	**-**	**-**	**-**
	Fixed Factor Inspection	Instrument Mechanic	3.0	-	-	-
	Fixed Factor Inspection Total		**3.0**	**-**	**-**	**-**
	Research and Development	Data Analyst	0.5	-	-	-
		Lead Engineer	0.5	-	-	-
	Research and Development Total		**1.0**	**-**	**-**	**-**
GIOP Total			**23.1**	**7.0**	**4.0**	**5.0**
		Grand Total Incremental	139.31	105.20	53.20	5.00
		Grand Total Cumulative Incremental	139.31	244.51	297.71	302.71

The Brooklyn Union Gas Company d/b/a National Grid NY
Incremental FTE's
Gas Safety and Gas Infrastructure and Operations Panels
Rebuttal Filing - Including NESE

Panel	Program	Position	Rate Year 2021	Data Year 2022	Data Year 2023	Data Year 2024
Gas Safety	Service Line Inspection	Analyst	0.5	-	-	-
		Field Inspector	3.0	-	-	-
	Service Line Inspection Total		**3.5**	-	-	-
	Contractor Safety Inspection	**Mechanic**	**22.0**	**44.0**	**44.0**	**-**
		Supervisor	**3.0**	**6.0**	**6.0**	**-**
	Contractor Safety Inspection Total		**25.0**	**50.0**	**50.0**	**-**
	Enhanced Inactive Accounts	Call Center Representative	2.0	12.0	-	-
		Manager	-	1.0	-	-
		Mechanic	14.0	-	-	-
		Meter Service Representative	35.0	35.0	-	-
		Supervisor	2.0	1.0	-	-
	Enhanced Inactive Accounts Total		**53.0**	**49.0**	**-**	**-**
	I&R Improvements	Analyst	0.5	-	-	-
		Engineer	1.0	-	-	-
		Field Trainer	1.0	-	-	-
	I&R Improvements Total		**2.5**	**-**	**-**	**-**
	Gas Pipeline Safety	Pipeline Safety Management Specialist	10.0	-	-	-
		Regulatory Specialist	0.4	-	-	-
		Sr. Supervisor	1.0	-	-	-
	Gas Pipeline Safety Total		**11.4**	**-**	**-**	**-**
	Materials Testing Lab	Senior T&D Lead Man	0.5	-	-	-
	Materials Testing Lab Total		**0.5**	**-**	**-**	**-**
	Single Meter Inspection	Meter Service Representative	3.0	-	-	-
	Single Meter Inspection Total		**3.0**	**-**	**-**	**-**
	Gas Control SOP Training	Engineer	0.3	-	-	-
		SOP Coordinator	2.0	-	-	-
	Gas Control SOP Training Total		**2.3**	**-**	**-**	**-**
	Training (1st Responder & Field)	First Responder Instructor	2.0	-	-	-
		Instructor/Field Evaluator	2.0	-	-	-
	Training (1st Responder & Field) Total		**4.0**	**-**	**-**	**-**
	Enhanced High Emitter Methane Detection	Engineer	0.4	-	-	-
	Enhanced High Emitter Methane Detection Total		**0.4**	**-**	**-**	**-**
	Operator Qualification Program	Technical Inspector	11.0	-	-	-
	OQ Program Total		**11.0**	**-**	**-**	**-**
Gas Safety Total			**116.6**	**99.0**	**50.0**	**-**
GIOP	OpEx Support for Capital	Analyst	1.0	-	-	-
		Contract Oversight Analysts	2.0	-	-	-
		Engineer	3.0	4.0	3.0	4.0
		Inspector	2.0	1.0	1.0	1.0
		Mechanic	2.0	2.0	-	-
		Supervisor	1.0	-	-	-
		Welder	1.0	-	-	-
	OpEx Support for Capital Total		**12.0**	**7.0**	**4.0**	**5.0**
	IMP/IVP OpEx	Engineer	2.5	-	-	-
		Helper	1.0	-	-	-
		Sr. Technician	1.0	-	-	-
	IMP/IVP OpEx Total		**4.5**	**-**	**-**	**-**
	Station Integrity	Integrity Management Engineer	1.0	-	-	-
		Manager - Records Management	0.5	-	-	-
		Manager - Station Integrity	0.5	-	-	-
	Station Integrity Total		**2.0**	**-**	**-**	**-**
	Storm Hardening	Analyst	0.3	-	-	-
		Field Technician	0.3	-	-	-
	Storm Hardening Total		**0.6**	**-**	**-**	**-**
	Fixed Factor Inspection	Instrument Mechanic	3.0	-	-	-
	Fixed Factor Inspection Total		**3.0**	**-**	**-**	**-**
	Research and Development	Data Analyst	0.5	-	-	-
		Lead Engineer	0.5	-	-	-
	Research and Development Total		**1.0**	**-**	**-**	**-**
GIOP Total			**23.1**	**7.0**	**4.0**	**5.0**
		Grand Total Incremental	139.71	106.00	54.00	5.00
		Grand Total Cumulative Incremental	139.71	245.71	299.71	304.71

Keyspan Gas East Corporation d/b/a National Grid
Incremental FTE's
Gas Safety and Gas Infrastructure and Operations Panels
Rebuttal Filing - No NESE

Panel	Program	Position	Rate Year 2021	Data Year 2022	Data Year 2023	Data Year 2024
Gas Safety	Service Line Inspection	Analyst	0.5	-	-	-
		Field Inspector	1.0	-	-	-
	Service Line Inspection Total		**1.5**	**-**	**-**	**-**
	Contractor Safety Inspection	**Inspector**	**10.4**	**20.8**	**20.8**	**-**
		Supervisor	**1.6**	**3.2**	**3.2**	**-**
	Contractor Safety Inspection Total		**12.0**	**24.0**	**24.0**	**-**
	Enhanced Inactive Accounts	Technician	2.0	1.0	-	-
	Enhanced Inactive Accounts Total		**2.0**	**1.0**	**-**	**-**
	I&R Improvements	Analyst	0.5	-	-	-
		Engineer	1.0	-	-	-
		Field Trainer	1.0	-	-	-
	I&R Improvements Total		**2.5**	**-**	**-**	**-**
	Gas Pipeline Safety	Pipeline Safety Management Specialist	5.0	-	-	-
		Regulatory Specialist	0.1	-	-	-
		Sr. Supervisor	1.0	-	-	-
	Gas Pipeline Safety Total		**6.1**	**-**	**-**	**-**
	Materials Testing Lab	Senior T&D Lead Man	0.5	-	-	-
	Materials Testing Lab Total		**0.5**	**-**	**-**	**-**
	Single Meter Inspection	Supervisor	1.0	-	-	-
		Technician	24.0	-	-	-
	Single Meter Inspection Total		**25.0**	**-**	**-**	**-**
	Gas Control SOP Training	Engineer	0.2	-	-	-
		SOP Coordinator	2.0	-	-	-
	Gas Control SOP Training Total		**2.2**	**-**	**-**	**-**
	Training (1st Responder & Field)	Field Evaluator	2.0	-	-	-
		First Responder Instructor	2.0	-	-	-
	Training (1st Responder & Field) Total		**4.0**	**-**	**-**	**-**
	Enhanced High Emitter Methane Detection	Engineer	0.6	-	-	-
	Enhanced High Emitter Methane Detection Total		**0.6**	**-**	**-**	**-**
	Operator Qualification Program	Technical Inspector	10.0	-	-	-
	OQ Program Total		**10.0**	**-**	**-**	**-**
Gas Safety Total			**66.4**	**25.0**	**24.0**	**-**
GIOP	OpEx Support for Capital	Contract Oversight Analysts	2.0	-	-	-
		Welder	3.0	-	-	-
	OpEx Support for Capital Total		**5.0**	**-**	**-**	**-**
	IMP/IVP OpEx	Engineer	3.5	-	-	-
		Sr. Technician	2.0	-	-	-
	IMP/IVP OpEx Total		**5.5**	**-**	**-**	**-**
	Station Integrity	Integrity Management Engineer	1.0	-	-	-
		Manager - Records Management	0.5	-	-	-
		Manager - Station Integrity	0.5	-	-	-
	Station Integrity Total		**2.0**	**-**	**-**	**-**
	Storm Hardening	Analyst	0.7	-	-	-
		Field Technician	0.7	-	-	-
	Storm Hardening Total		**1.4**	**-**	**-**	**-**
	Fixed Factor Inspection	Tester A	1.0	-	-	-
	Fixed Factor Inspection Total		**1.0**	**-**	**-**	**-**
	Research and Development	Data Analyst	0.5	-	-	-
		Lead Engineer	0.5	-	-	-
	Research and Development Total		**1.0**	**-**	**-**	**-**
GIOP Total			**15.9**	**-**	**-**	**-**
		Grand Total Incremental	82.31	25.00	24.00	-
		Grand Total Cumulative Incremental	82.31	107.31	131.31	131.31

Keyspan Gas East Corporation d/b/a National Grid
Incremental FTE's
Gas Safety and Gas Infrastructure and Operations Panels
Rebuttal Filing - Including NESE

Panel	Program	Position	Rate Year 2021	Data Year 2022	Data Year 2023	Data Year 2024
Gas Safety	Service Line Inspection	Analyst	0.5	-	-	-
		Field Inspector	1.0	-	-	-
	Service Line Inspection Total		**1.5**	**-**	**-**	**-**
	Contractor Safety Inspection	**Inspector**	**13.0**	**26.0**	**26.0**	**-**
		Supervisor	**2.0**	**4.0**	**3.0**	**-**
	Contractor Safety Inspection Total		**15.0**	**30.0**	**29.0**	**-**
	Enhanced Inactive Accounts	Technician	2.0	1.0	-	-
	Enhanced Inactive Accounts Total		**2.0**	**1.0**	**-**	**-**
	I&R Improvements	Analyst	0.5	-	-	-
		Engineer	1.0	-	-	-
		Field Trainer	1.0	-	-	-
	I&R Improvements Total		**2.5**	**-**	**-**	**-**
	Gas Pipeline Safety	Pipeline Safety Management Specialist	5.0	-	-	-
		Regulatory Specialist	0.1	-	-	-
		Sr. Supervisor	1.0	-	-	-
	Gas Pipeline Safety Total		**6.1**	**-**	**-**	**-**
	Materials Testing Lab	Senior T&D Lead Man	0.5	-	-	-
	Materials Testing Lab Total		**0.5**	**-**	**-**	**-**
	Single Meter Inspection	Supervisor	1.0	-	-	-
		Technician	24.0	-	-	-
	Single Meter Inspection Total		**25.0**	**-**	**-**	**-**
	Gas Control SOP Training	Engineer	0.2	-	-	-
		SOP Coordinator	2.0	-	-	-
	Gas Control SOP Training Total		**2.2**	**-**	**-**	**-**
	Training (1st Responder & Field)	Field Evaluator	2.0	-	-	-
		First Responder Instructor	2.0	-	-	-
	Training (1st Responder & Field) Total		**4.0**	**-**	**-**	**-**
	Enhanced High Emitter Methane Detection	Engineer	0.6	-	-	-
	Enhanced High Emitter Methane Detection Total		**0.6**	**-**	**-**	**-**
	Operator Qualification Program	Technical Inspector	10.0	-	-	-
	OQ Program Total		**10.0**	**-**	**-**	**-**
Gas Safety Total			**69.4**	**31.0**	**29.0**	**-**
GIOP	OpEx Support for Capital	Contract Oversight Analysts	2.0	-	-	-
		Welder	3.0	-	-	-
	OpEx Support for Capital Total		**5.0**	**-**	**-**	**-**
	IMP/IVP OpEx	Engineer	3.5	-	-	-
		Sr. Technician	2.0	-	-	-
	IMP/IVP OpEx Total		**5.5**	**-**	**-**	**-**
	Station Integrity	Integrity Management Engineer	1.0	-	-	-
		Manager - Records Management	0.5	-	-	-
		Manager - Station Integrity	0.5	-	-	-
	Station Integrity Total		**2.0**	**-**	**-**	**-**
	Storm Hardening	Analyst	0.7	-	-	-
		Field Technician	0.7	-	-	-
	Storm Hardening Total		**1.4**	**-**	**-**	**-**
	Fixed Factor Inspection	Tester A	1.0	-	-	-
	Fixed Factor Inspection Total		**1.0**	**-**	**-**	**-**
	Research and Development	Data Analyst	0.5	-	-	-
		Lead Engineer	0.5	-	-	-
	Research and Development Total		**1.0**	**-**	**-**	**-**
GIOP Total			**15.9**	**-**	**-**	**-**
		Grand Total Incremental	85.31	31.00	29.00	-
		Grand Total Cumulative Incremental	85.31	116.31	145.31	145.31

Exhibit ___ (GIOP-4R)

Corrections and updates to the Companies' No-NESE adjustments to the capital plan

NESE Changes by Project - KEDNY
($ in thousand)

	Per Supplemental Filing 6/10/19					Per Rebuttal Filing 9/18/19					Variance				
	FY20	**FY21**	**FY22**	**FY23**	**FY24**	**FY20**	**FY21**	**FY22**	**FY23**	**FY24**	**FY20**	**FY21**	**FY22**	**FY23**	**FY24**
Customer Connections															
Customer Connections - Install Main	(14,161)	(17,837)	(18,239)	(18,183)	(18,015)	(14,161)	(14,593)	(18,101)	(18,183)	(18,015)	-	3,244	138	-	-
Customer Connections - Install Services	(10,096)	(16,437)	(18,592)	(18,861)	(19,133)	(10,096)	(14,681)	(18,431)	(18,820)	(18,987)	-	1,756	161	41	147
Customer Connections - Customer Contributions	-	(2,089)	(2,276)	(2,835)	(3,525)	-	(2,089)	(2,276)	(2,835)	(3,525)	-	-	-	-	-
Customer Connections - Meter Purchases	-	(1,598)	(1,629)	(1,662)	(1,695)	-	(1,598)	(1,629)	(1,662)	(1,695)	-	-	-	-	-
Customer Connections - Install Meter/Regulator	(517)	(992)	(1,065)	(1,085)	(1,106)	(517)	(910)	(1,033)	(1,076)	(1,104)	-	82	32	9	1
Customer Connections - Automatic Meter Reading (AMR)	-	(902)	(920)	(938)	(957)	-	(902)	(920)	(938)	(957)	-	-	-	-	-
Gas System Reinforcement	(4,538)	(6,746)	(45,837)	(46,591)	(48,023)	(4,538)	(6,746)	(45,837)	(46,591)	(48,023)	-	-	-	-	-
LTNYXXXXX - Jamaica Inlet - PM	100	520	9,913	-	-	100	520	9,913	-	-	-	-	-	-	-
	(29,212)	**(46,080)**	**(78,646)**	**(90,156)**	**(92,455)**	**(29,212)**	**(40,997)**	**(78,314)**	**(90,106)**	**(92,307)**	**-**	**5,082**	**332**	**50**	**148**
Mandated															
Contractor Safety Inspections	-	(88)	(267)	(454)	(461)	-	(88)	(267)	(454)	(461)	-	-	-	-	-
	-	**(88)**	**(267)**	**(454)**	**(461)**	**-**	**(88)**	**(267)**	**(454)**	**(461)**	**-**	**-**	**-**	**-**	**-**
Reliability															
LTNY13231 - Marine Park Regulator Station - PM	-	(999)	(22,769)	-	-	-	(999)	(22,769)	-	-	-	-	-	-	-
LNG - Tank 2 Upgrade	-	-	(100)	(1,400)	-					(1,500)	-	-	100	1,400	(1,500)
LNG - Tank 1 Upgrade	-	-	(50)	(1,500)	(500)					(500)	-	-	50	1,500	-
	-	**(999)**	**(22,919)**	**(2,900)**	**(500)**	**-**	**(999)**	**(22,769)**	**-**	**(2,000)**	**-**	**-**	**150**	**2,900**	**(1,500)**
Total Capital Including Cost of Removal	**(29,212)**	**(47,167)**	**(101,832)**	**(93,510)**	**(93,416)**	**(29,212)**	**(42,084)**	**(101,350)**	**(90,560)**	**(94,767)**	**-**	**5,082**	**482**	**2,950**	**(1,352)**
Cost of Removal	**(2,918)**	**(4,712)**	**(10,173)**	**(9,342)**	**(9,332)**	**(2,918)**	**(4,204)**	**(10,125)**	**(9,047)**	**(9,467)**	**-**	**508**	**48**	**295**	**(135)**
Total Capital (Net of Removal)	**(26,294)**	**(42,455)**	**(91,659)**	**(84,168)**	**(84,083)**	**(26,294)**	**(37,880)**	**(91,226)**	**(81,513)**	**(85,300)**	**-**	**4,575**	**434**	**2,655**	**(1,217)**

NESE Changes by Project - KEDLI
($ in thousand)

	Per Supplemental Filing 6/10/19					C&U Adjs. 7/3/19	Per Rebuttal Filing 9/18/19					Variance				
	FY20	FY21	FY22	FY23	FY24	FY20	FY20	FY21	FY22	FY23	FY24	FY20	FY21	FY22	FY23	FY24
Customer Connections																
Customer Connections - Install Main	(4,831)	(21,235)	(18,272)	(14,671)	(14,964)	6,651	(11,482)	(19,923)	(17,635)	(14,427)	(14,961)	-	1,313	637	244	3
Customer Connections - Install Services	(12,893)	(21,620)	(22,003)	(22,405)	(22,853)		(12,893)	(21,255)	(21,324)	(22,392)	(22,853)	-	365	680	13	-
Customer Connections - Clean Choice Program - Main	(17,205)	(20,790)	(18,314)	(15,731)	(13,037)		(17,205)	(20,790)	(18,314)	(15,731)	(13,037)	-	-	-	-	-
Customer Connections - Clean Choice Program - Services	(2,481)	(4,769)	(4,198)	(3,602)	(2,982)		(2,481)	(4,769)	(4,198)	(3,602)	(2,982)	-	-	-	-	-
Customer Connections - Customer Contributions	-	(619)	(2,557)	(2,698)	(2,803)	(5,000)	5,000	(619)	(2,557)	(2,698)	(2,803)	-	-	-	-	-
Customer Connections - Meter Purchases	-	(1,429)	(1,579)	(1,611)	(1,643)		-	(1,429)	(1,579)	(1,611)	(1,643)	-	-	-	-	-
Customer Connections - Install Meter/Regulator	-	(799)	(1,003)	(1,037)	(1,074)		-	(723)	(925)	(1,004)	(1,066)	-	76	77	33	7
Customer Connections - Automatic Meter Reading (AMR)	-	(953)	(990)	(1,010)	(1,030)		-	(953)	(990)	(1,010)	(1,030)	-	-	-	-	-
Gas System Reinforcement	(2,499)	(12,662)	(16,850)	(25,856)	(13,294)		(2,499)	(12,662)	(16,850)	(25,856)	(13,294)	-	-	-	-	-
LTLI10860 Riverhead Transmission Main - PM	-	-	(195)	(1,000)	(23,700)		-	-	(195)	(1,000)	(23,700)	-	-	-	-	-
LTLI10985- Southeast Suffolk Infrastructure - Phase 2	-	-	-	(100)	(300)		-	-	-	(100)	(300)	-	-	-	-	-
	(39,909)	**(84,876)**	**(85,961)**	**(89,721)**	**(97,679)**	**1,651**	**(41,560)**	**(83,123)**	**(84,567)**	**(89,431)**	**(97,669)**	**-**	**1,754**	**1,394**	**290**	**10**
Mandated																
Contractor Safety Inspections	-	(628)	(1,914)	(3,253)	(3,200)		-	(628)	(1,914)	(3,253)	(3,200)	-	-	-	-	-
	-	**(628)**	**(1,914)**	**(3,253)**	**(3,200)**	-	**-**	**(628)**	**(1,914)**	**(3,253)**	**(3,200)**	**-**	**-**	**-**	**-**	**-**
Reliability																
LNG - Tank Upgrade			(4,113)	(22,039)	(36,483)				(4,113)	(22,039)	(36,483)	-	-	-	-	-
	-	-	**(4,113)**	**(22,039)**	**(36,483)**	-	-	-	**(4,113)**	**(22,039)**	**(36,483)**	**-**	**-**	**-**	**-**	**-**
Total Capital Including Cost of Removal	**(39,909)**	**(85,504)**	**(91,989)**	**(115,013)**	**(137,362)**	**1,651**	**(41,560)**	**(83,750)**	**(90,595)**	**(114,723)**	**(137,353)**	**-**	**1,754**	**1,394**	**290**	**10**
Cost of Removal	**(2,714)**	**(5,814)**	**(6,255)**	**(7,821)**	**(9,341)**	**112**	**(2,826)**	**(5,695)**	**(6,160)**	**(7,801)**	**(9,340)**	**-**	**119**	**95**	**20**	**1**
Total Capital (Net of Removal)	**(37,195)**	**(79,690)**	**(85,733)**	**(107,192)**	**(128,022)**	**1,539**	**(38,734)**	**(78,055)**	**(84,434)**	**(106,922)**	**(128,013)**	**-**	**1,635**	**1,299**	**270**	**9**

Exhibit ___ (GIOP-5R)

Corrections and updates to the Companies' No-NESE adjustments to the O&M and incremental FTE plans

Keyspan Gas East Corporation
The Brooklyn Union Gas Company
d/b/a National Grid NY
NESE Corrections and Updates for Rebuttal
O&M and Incremental FTE's

	Supplemental Filing				Rebuttal Filing				Variance			
Company/Program/Cost Type ($000)	**RY2021**	**DY2022**	**DY2023**	**DY2024**	**RY2021**	**DY2022**	**DY2023**	**DY2024**	**RY2021**	**DY2022**	**DY2023**	**DY2024**
KEDNY												
Contractor Safety Inspection												
Incremental FTE's												
Inspector	22	43	43	0	21.6	43.2	43.2	0	(0.4)	0.2	0.2	0.0
Supervisor	3	6	6	0	3	6	6	0	0.0	0.0	0.0	0.0
Total	24.6	49.2	49.2	0	24.6	49.2	49.2	0	24.6	49.2	49.2	0.0
Total O&M Expense												
Labor & OH's *	$537.1	$1,624.3	$2,772.4	$2,817.1	$339.8	$1,247.3	$2,117.6	$2,160.4	($197.3)	($377.0)	($654.8)	($656.7)
Non-labor	$223.9	$649.1	$1,057.4	$1,009.0	$223.9	$649.1	$1,057.4	$1,009.0	$0.0	$0.0	$0.0	$0.0
Total	$761.0	$2,273.4	$3,829.8	$3,826.1	$563.7	$1,896.4	$3,175.0	$3,169.4	($197.3)	($377.0)	($654.8)	($656.7)
KEDLI												
Contractor Safety Inspection												
Incremental FTE's												
Inspector	10	21	21	0	10.4	20.8	20.8	0	0.4	(0.2)	(0.2)	0.0
Supervisor	2	3	3	0	1.6	3.2	3.2	0	(0.4)	0.2	0.2	0.0
Total	12	24	24	0	12	24	24	0	12.0	24.0	24.0	0.0
O&M Expense												
Labor & OH's *	$217.2	$664.9	$1,138.7	$1,156.4	$113.7	$347.6	$589.9	$601.6	($103.5)	($317.3)	($548.8)	($554.8)
Non-labor	$98.4	$289.8	$478.4	$574.7	$98.4	$289.8	$478.4	$574.7	$0.0	($0.0)	$0.0	$0.0
Total	$315.6	$954.8	$1,617.1	$1,731.1	$212.1	$637.4	$1,068.3	$1,176.3	($103.5)	($317.4)	($548.8)	($554.8)

Notes

* The variance includes the impact of changes to labor overhead rates provided in the Company's Corrections and Updates filing and in response to IR DPS-877

Exhibit__(GIOP-5R)
Page 1 of 1

Exhibit ___ (GIOP-6R)

Relevant IR responses

Date of Request: July 15, 2019 Request No. DPS-877
Due Date: July 25, 2019 NG Request No. NG-1177

KEYSPAN GAS EAST CORPORATION d/b/a NATIONAL GRID
THE BROOKLYN UNION GAS COMPANY d/b/a NATIONAL GRID NY
Case Nos. 19-G-0309 & 19-G-0310
Gas Utilities Rates

Request for Information

FROM: DPS Staff, Sarah E. Keymel

TO: National Grid, Revenue Requirements Panel (KEDNY & KEDLI)

SUBJECT: Other Initiatives - FTEs

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

Referring to the Companies' response to IR DPS-393, question 3, the Companies stated that calculating the overhead rates based on the Rate Year labor and benefits is a more reasonable forecast and that the Companies would make this update in their Corrections and Updates filings.

Explain why the amounts used to calculate the overhead rates in the Companies' Corrections and Updates filing do not tie to the Rate Year figures.

Response:

The overhead (OH) rates used to calculate OH burdens on incremental FTEs in Exhibit (RRP-3CU), Schedule 27 Other Initiatives, in the Company's Corrections and Updates (C&U) filing were applied before all updates were made to the associated Rate Year benefits amounts that are the basis for those OH rates (i.e. the update to inflation rates was not reflected in the OH rates). OH rates based on the final Rate Year benefits amounts in the Company's C&U filing would result in reductions to incremental FTE expense of $0.173 million for KEDNY and $0.140 million for KEDLI.

Name of Respondent: Date of Reply:
Mark Stiner July 23, 2019

Date of Request: July 1, 2019 Request No. DPS-761
Due Date: July 11, 2019 NG Request No. NG-990

KEYSPAN GAS EAST CORPORATION d/b/a NATIONAL GRID
THE BROOKLYN UNION GAS COMPANY d/b/a NATIONAL GRID NY
Case Nos. 19-G-0309 & 19-G-0310
Gas Utilities Rates

Request for Information

FROM: DPS Staff, Mark Tintera

TO: National Grid, Gas Infrastructure and Operations Panel

SUBJECT: KEDNY/KEDLI CapEx

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

Reference the response to IR DPS-440.

1. Referring to KEDNY and KEDLI Exhibit___(GIOP-1), for each line item, provide the methodology used to calculate the rate year forecast (unit cost, historical spend, project estimate, or other).

Response:

See Attachment 1.

Name of Respondent: Date of Reply:
Patty McVeigh July 10, 2019

The Brooklyn Union Gas Company d/b/a National Grid NY
Direct Capital Expenditures (CAPEX and COR)

Investment	Methodology
Customer Connections	
Customer Connections - Install Main	Unit/ Unit Cost
Customer Connections - Install Services	Unit/ Unit Cost
Customer Connections - Customer Contributions	Program Estimate
Customer Connections - Meter Purchases	Unit/ Unit Cost
Customer Connections - Install Meter/Regulator	Program Estimate
Customer Connections - Automatic Meter Reading (AMR)	Units/Historical Spend plus Inflation
Gas System Reinforcement	Program Estimate
LTNY11751 - Kew Gardens Gate - PM	Project Estimate
LTNY12025 - Belmont Gate Station - PM	Project Estimate
Total Customer Connections	
Mandated	
CSC/Public Works - Non Reimbursable	City Budget Ratio/Estimate
CSC/Public Works - Reimbursable	City Budget Ratio/Estimate
Flatlands - SE853 Phase 2 - Trans Offset Louisiana Ave & Georgia Ave .	Project Estimate
SE856 Phase 2 Trans. Offset Sheffield & New Jersey Ave. - Trans Work	Project Estimate
SE856 Phase 2 Trans. Offset Sheffield & New Jersey Ave. - Dist Work	Project Estimate
LaGuardia Redevelopment	Project Estimate
CSC/Public Works - Reimbursements	Estimates of Reimbursable Projects
Main Replacements - (Proactive) - Leak Prone Pipe	Unit/ Unit Cost
CISBOT	Program Estimate
Large Diameter Main Rehabilitation	Program Estimate
Cross Bore Remediation	Program Estimate
Latent Damage Inspections	Program Estimate
Main Replacements - (Reactive) - Maintenance	2 Year Average Historical Spend Plus Inflation
Service Replacements - Proactive	2 Year Average Historical Spend Plus Inflation
Service Replacement (Reactive) - Leaks	2 Year Average Historical Spend Plus Inflation
Service Replacement (Reactive) - Non-Leaks - Other	2 Year Average Historical Spend Plus Inflation
Atmospheric Corrosion Inside Inspections	Program Estimate

The Brooklyn Union Gas Company d/b/a National Grid NY
Direct Capital Expenditures (CAPEX and COR)

Investment	Methodology
Restrictions for Elevated Gas Infrastructure	Program Estimate
Buried Vent Lines	Program Estimate
Plastic Fusion QA/QC Re-Digs	Program Estimate
Plastic Fusion - In Process Inspections	Program Estimate
Low Pressure Main Valve Installation	Unit/ Unit Cost
High Density Polyethylene Services	Program Estimate
Contractor Safety Inspections	Program Estimate
Local Law 30	Unit/ Unit Cost
Inactive Accounts	Program Estimate
Corrosion	Unit/ Unit Cost
Pipeline Integrity - IMP	Program Estimate
Pipeline Integrity - IMP - Jamaica Bay Line ILI	Project Estimate
Pipeline Integrity - IMP - Southern Line Robotic ILI	Project Estimate
Pipeline Integrity - IVP	Project Estimate
Pipeline Integrity - IVP Reactive Main Replacement	Project Estimate
Valve Installations/Replacements	Program Estimate
Meter Changes	Unit/ Unit Cost
Purchase Meters (Replacements)	Program Estimate
Transmission Station Integrity	Program Estimate
Complex Capital Delivery Initiative - Savings	Project Estimate
Total Mandated	
Reliability	
I&R - Reactive	Historical Spend Plus Inflation
I&R - Training and Test Lab	Project Estimate
Gas System Control	Historical Spend Plus Inflation
Gas System Control - Telemetry Upgrade 3G to 4G	Program Estimate
Gas System Control - M2M Upgrade	Program Estimate
Gas System Reliability - Gas Control (Training Simulator)	Unit/ Unit Cost
Heater Installation Program	Program Estimate

The Brooklyn Union Gas Company d/b/a National Grid NY
Direct Capital Expenditures (CAPEX and COR)

Investment	Methodology
Pressure Regulating Facilities	Program Estimate
System Automation	Program Estimate
Bay Ridge Gate Station Refurbishmnt	Project Estimate
Shafer Narrows	Project Estimate
Bowery Bay Station Upgrade	Project Estimate
Canarsie Gate Refurbishment	Project Estimate
Floyd Bennett Field M&R ROV's	Project Estimate
McGuiness Mini Gate	Project Estimate
Kings Plaza Mini Gate	Project Estimate
Bush Terminal (IF-09)	Project Estimate
Tetco Relief Valve Replacement	Project Estimate
Citizens Gate - Bulkhead	Project Estimate
Sheepshead Bay Mini Gate	Project Estimate
PRE-Fresh Kills Methane Recovery	Project Estimate
GOV 110	Project Estimate
Hyman station	Project Estimate
Varick Reg Station Retirement	Project Estimate
North Brooklyn Mini Gate	Project Estimate
PRE-Coney Island Heater + Mini Gate	Project Estimate
Jamaica Gate	Project Estimate
Kennedy Gate	Project Estimate
Distribution Station Over Pressure Protection	Program Estimate
PRE-SP-Maspeth St Decommissioning..	Project Estimate
Gas System Reliability - Gas Planning /RCV Program	Program Estimate
Water Intrusion	Historical Spend Plus Inflation
Storm Hardening - Remote Service Shutoff Valves	Program Estimate
LTNY10240 - Grasmere Reliability - PM	Project Estimate
LTNY11690 - LGA Backfeed - PM	Project Estimate
LTNY12314 - Spring Creek - PM	Project Estimate

The Brooklyn Union Gas Company d/b/a National Grid NY
Direct Capital Expenditures (CAPEX and COR)

Investment	Methodology
LTNY10205 - MRI - PM - Main Phase 1-4	Project Estimate
LTNY10205 - MRI - PM - Main Phase 5	Project Estimate
LTNY12058 - Elmhurst Reliability - PM	Project Estimate
LTNY13231 - Marine Park Regulator Station - PM	Project Estimate
LTNY11165 - Northern Queens Gas T&D - PM	Project Estimate
LTNYXXXXX - Northern Line - PM	Project Estimate
LTNYXXXXX - Northern Queens Extension - PM	Project Estimate
LTNY10074 - Clove Lakes Uprate - PM	Project Estimate
Citizens Tunnel - Upgrade	Project Estimate
Newtown Creek	Project Estimate
CNG - KEDNY Blanket	Program Estimate
CNG - KEDNY Contract Closeout	Project Estimate
CNG - NY KEDNY - New Mobile Compressor and Storage systems	Project Estimate
CNG - NY Brooklyn (Canarsie) - Compressor Upgrade, New Controls	Project Estimate
CNG - NY Brooklyn (Greenpoint) - Fueling Island Access	Project Estimate
CNG - NY Brooklyn (Greenpoint) - New Compressors, Panels, and Controls	Project Estimate
LNG - Blanket	Program Estimate
LNG - Greenpoint LNG	Project Estimate
LNG - Vaporizers 7 & 8 Replacement	Project Estimate
LNG - Barge Piping Decommissioning	Project Estimate
LNG - Ice Shield	Project Estimate
LNG - Bulkhead Upgrade	Project Estimate
LNG - Controls System Upgrade	Project Estimate
LNG - Vaporizers 3 & 4 Replacement	Project Estimate
LNG - Relocate Maintenance Area & New Control Building	Project Estimate
LNG - Truck Load/Unload Station	Project Estimate
LNG - Salt Water Pump House Upgrade	Project Estimate
LNG - Geoweb Dike Replacement	Project Estimate
LNG - Tank 2 Upgrade	Project Estimate

The Brooklyn Union Gas Company d/b/a National Grid NY
Direct Capital Expenditures (CAPEX and COR)

Investment	Methodology
LNG - Solar Panels	Project Estimate
LNG - Liquefaction Critical Spares	Project Estimate
LNG - Sub M-Sub L Interconnect	Project Estimate
LNG - Instrument Air System Replacement	Project Estimate
LNG - Stormwater Drainage	Project Estimate
LNG - Hydrant & Deluge Piping Upgrade	Project Estimate
LNG - Tank 1 Upgrade	Project Estimate
LNG - Tank 1 Painting	Project Estimate
LNG - Generators Upgrade	Project Estimate
LNG - Hi Ex Foam System	Project Estimate
LNG - Security System Upgrades	Project Estimate
LNG - Nitrogen System Refurbishment	Project Estimate
LNG - Tail Gas Compressor Upgrade	Project Estimate
LNG - RNG Blanket	Project Estimate
LNG - Piping Insulation Replacement & Inspection	Project Estimate
LNG - Boiloff Heaters/Steam Boiler Upgrade	Project Estimate
LNG - Plant Outlet Drip Leg	Project Estimate
LNG - Vaporizers 9 & 10 Replacement	Project Estimate
LNG - ReGen Heater Replacements	Project Estimate
Renewable Natural Gas (RNG) Interconnections	Project Estimate
Total Reliability	
Non-Infrastructure	
Telecomm - Radio Capital Expenditures	Program Estimate
Telecomm - Comm site upgrades	Program Estimate
Telecomm - Damaged Failure	Program Estimate
Tools & Equipment - All	Historical Spend Plus Inflation
Learning and Development - Materials, Tools and Equipment	Project Estimate
AMR Installation	Unit/Historical Spend Review/Inflation
Meter Testing Equipment	Unit/ Unit Cost

The Brooklyn Union Gas Company d/b/a National Grid NY
Direct Capital Expenditures (CAPEX and COR)

Investment	Methodology
Automatic Meter Reading (AMR) - Replacement	Unit/Historical Spend Review/Inflation
Total Non-Infratructure	

Keyspan Gas East Corporation d/b/a National Grid
Direct Capital Expenditures (CAPEX and COR)

Investment	Methodology
Customer Connections	
Customer Connections - Install Main	Unit/ Unit Cost
Customer Connections - Install Services	Unit/ Unit Cost
Install Services Bare Main Replacement Program	Unit/ Unit Cost
Customer Connections - Clean Choice Program - Main	Unit/ Unit Cost
Customer Connections - Clean Choice Program - Services	Unit/ Unit Cost
Customer Connections - Customer Contributions	Program Estimate
Customer Connections - Meter Purchases	Unit/ Unit Cost
Customer Connections - Install Meter/Regulator	Program Estimate
Customer Connections - Automatic Meter Reading (AMR)	Units/Historical Spend plus Inflation
Gas System Reinforcement	Program Estimate
LTLI10860 Riverhead Transmission Main - PM	Project Estimate
LTLI10985- Southeast Suffolk Infrastructure - Phase 1	Project Estimate
LTLI10985- Southeast Suffolk Infrastructure - Phase 2	Project Estimate
Total Customer Connections	
Mandated	
CSC/Public Works - Non Reimbursable	Historical Spend Plus Inflation
CSC/Public Works - Reimbursable	Historical Spend Plus Inflation
CSC/Public Works - Reimbursements	Estimates of Reimbursable Projects
Main Replacements (Proactive) - Leak Prone Pipe	Unit/ Unit Cost
Cross Bore Remediation	Program Estimate
Latent Damage	Program Estimate
Large Diameter Main Rehabilitation	Program Estimate
Main Replacements (Reactive) - Maintenance	2 Year Average Historical Spend Plus Inflation
Service Replacement (Reactive) - Leaks	2 Year Average Historical Spend Plus Inflation
Service Replacement (Reactive) - Non-Leaks - Other	2 Year Average Historical Spend Plus Inflation
Restrictions for Elevated Gas Infrastructure	Program Estimate
Buried Vent Lines	Program Estimate
Plastic Fusion QA/QC Re-Digs	Program Estimate

Keyspan Gas East Corporation d/b/a National Grid
Direct Capital Expenditures (CAPEX and COR)

Investment	Methodology
Plastic Fusion - In Process Inspections	Program Estimate
Low Pressure Main Valve Installation	Unit/ Unit Cost
Contrator Safety Inspection	Program Estimate
Atmospheric Corrosion Inside Inspections	Program Estimate
Corrosion	Unit/ Unit Cost
Pipeline Integrity - IMP	Program Estimate
Pipeline Integrity - IVP	Program Estimate
Pipeline Integrity -IVP - GM 9 Stewart Ave to	Project Estimate
Pipeline Integrity - IVP Reactive Main Replacement	Project Estimate
Valve Installations/Replacements	Program Estimate
Meter Pitts	Program Estimate
Meter Changes	Unit/ Unit Cost
Purchase Meters (Replacements)	Program Estimate
Transmission Station Integrity	Program Estimate
Complex Capital Delivery Initiative - Savings	Project Estimate
Total Mandated	
Reliability	
Gas System Reliability - Gas Planning/RCV Program	Program Estimate
LTLI10652- Lynbrook- RCV QL-04	Project Estimate
LTLI11985- Farmingdale- RCV 032583255 - PM	Project Estimate
LTLI11032-Westbury- RCV 023123400 - PM	Project Estimate
LTLI11715- Westbury- RCV 023123413 - PM	Project Estimate
LTLI12046- Glenwood Interconnect- Transmission - PM	Project Estimate
LTLI12020- Deer Park- RCV 040632167-PM	Project Estimate
LTLI12021- Deer Park- RCV 040632133-PM	Project Estimate
LTLI12022- Pinelawn- RCV 041025722-PM	Project Estimate
LTLI10676 Elmont- RCV 007646335	Project Estimate
LTLI12023- Engineering costs 2025 projects	Project Estimate
Northwest Nassau Transmission Main & Control Valve - Phase 2	Project Estimate
Northwest Nassau Transmission Main & Control Valve - Phase 3	Project Estimate

Keyspan Gas East Corporation d/b/a National Grid
Direct Capital Expenditures (CAPEX and COR)

Investment	Methodology
Storm Hardening - Install Remote Service Shutoff Valves	Program Estimate
Water Intrusion	Historical Spend Plus Inflation
Gas System Control	Historical Spend Plus Inflation
Gas System Control - Telemetry Upgrade 3G to 4G	Program Estimates
Gas System Reliability - Gas Control (Training Simulator)	Program Estimates
I&R - Reactive	Historical Spend Plus Inflation
I&R - Training and Test Lab	Project Estimate
Heater Installation Program	Program Estimate
Pressure Regulating Facilities	Program Estimate
South Commack Take Station Overhaul	Project Estimate
Rockville Centre Take Station Overhaul	Project Estimate
Bay Shore Take Station Overhaul	Project Estimate
Long Beach Gate Station Overhaul	Project Estimate
ND 45	Project Estimate
ND 02	Project Estimate
ND 16	Project Estimate
Riverhead Take Station	Project Estimate
SL 54	Project Estimate
Stewart Ave	Project Estimate
SL 74 SL 75 Holtsville	Project Estimate
Distribution Station Over Pressure Protection	Program Estimate
System Automation	Program Estimate
CNG - NY Hewlett - New Compressor, Controls, Storage	Project Estimate
CNG - NY Brentwood - New Compressor, Controls, Storage, Dispensing	Project Estimate
CNG - NY Riverhead - Retirement	Project Estimate
CNG - NY Hicksville - Retirement	Project Estimate
CNG - NY KEDLI - New Mobile Compressor and Storage systems	Project Estimate
CNG - KEDLI Contract Closeout	Project Estimate
CNG - KEDLI Blanket	Program Estimate
LNG - Blanket	Program Estimate

Keyspan Gas East Corporation d/b/a National Grid
Direct Capital Expenditures (CAPEX and COR)

Investment	Methodology
LNG - Controls System Upgrade	Project Estimate
LNG - AESD System	Project Estimate
LNG - Storage Building	Project Estimate
LNG - Security System Upgrade	Project Estimate
LNG - Solar Panel Farm	Project Estimate
LNG - Mol Sieve Refurbishment	Project Estimate
LNG - Liquefaction Critical Spares	Project Estimate
LNG - Odorant System Replacement	Project Estimate
LNG - ReGen Heater Replacement	Project Estimate
LNG - Boiloff Compressor System	Project Estimate
LNG - SST1 & SST2 Replacement	Project Estimate
LNG - Cyber Security Enhancements	Project Estimate
LNG - Tank Upgrade	Project Estimate
LNG - Analyzer Replacement 1	Project Estimate
LNG - Power Center Upgrade	Project Estimate
LNG - 4KV Cable Replacement	Project Estimate
LNG - Nitrogen System Refurbishment	Project Estimate
LNG - Emergency Generator Upgrade	Project Estimate
LNG - Hi Ex Foam System	Project Estimate
LNG - Liquefaction System Refurbishment	Project Estimate
Renewable Natural Gas (RNG) Interconnections	Project Estimate
Total Reliability	
Non-Infrastructure	
Telecomm - Comm site upgrades	Program Estimate
Telecomm - Damaged Failure	Program Estimate
Telecomm - Radio Capital Expenditures	Program Estimate
Tools & Equipment - All	Historical Spend Plus Inflation
Meter Testing Equipment	Unit/ Unit Cost
Learning and Development - Materials, Tools and Equipment	Project Estimate
Automatic Meter Reading (AMR) - Replacement	Unit/Historical Spend Review/Inflation

Keyspan Gas East Corporation d/b/a National Grid
Direct Capital Expenditures (CAPEX and COR)

Investment	Methodology
Total Non-Infratructure	

Date of Request: July 16, 2019 Request No. DPS-884
Due Date: July 26, 2019 NG Request No. NG-1184

KEYSPAN GAS EAST CORPORATION d/b/a NATIONAL GRID
THE BROOKLYN UNION GAS COMPANY d/b/a NATIONAL GRID NY
Case Nos. 19-G-0309 & 19-G-0310
Gas Utilities Rates

Request for Information

FROM: DPS Staff, Ron Calkins

TO: National Grid, Gas Infrastructure Operations Panel – KEDNY

SUBJECT: City State Construction Reimbursements

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

The Gas Infrastructure and Operations Panel testimony, at p. 47, discusses how KEDNY is addressing the increasing costs of the city state construction (CSC) workplan and reimbursements. The Company indicates that with respect to invoicing and payments, KEDNY recently adopted process improvements to improve the timeliness of Company invoices to the City of New York and is actively negotiating with the City regarding payment backlog and other process issues related to the administration of the CSC program.

1. Provide copies of all documentation associated with identified issues and the process improvements recently adopted, including, but not limited to, all analyses, summaries, communication with the City of New York, etc.

2. Explain in detail the issues associated with the timeliness of Company invoices to the City of New York.

3. Explain in detail how the Company is actively negotiating the payment backlog with the City and the circumstances of how the backlog came to be.

4. Explain in detail how the Company is addressing with the City of New York the process issues related to the administration of the CSC program.

5. Explicitly show where in the rate case filing the impact of the process improvements have been reflected in Rate Year estimates of CSC reimbursements, and timing of such reimbursements, and addressing the payment backlog. If the impact has not been reflected, explain why not.

Response:

1., 2. & 4. Prior to March 2018, invoices to the City of New York (NYC) for City State Construction (CSC) work under the Cost Sharing Agreement were the responsibility of Downstate New York (DNY) CSC in the Gas Business Unit. DNY CSC is also responsible for completing the CSC workplan. In October 2017, the Company launched a formal process improvement initiative involving DNY CSC and Non-Utility Billing (NUB, which is currently referred to as SAP Billing). See Attachment 1. From this process improvement initiative, several changes were made to improve the timeliness of invoicing NYC.

i. Invoicing responsibility moved to NUB –NUB already prepared similar invoices for New England Program Managers for reimbursable construction work for the New England Department of Transportation. NUB taking over the invoicing of NYC created efficiencies. Additional Associate Analysts were hired to work the invoice backlog and to cover the anticipated increase in NYC projects.

ii. DNY CSC created a Program Manager and CSC Analyst roles (See Attachment 2) – This team is the liaison between the field crews and billing team. CSC Analysts are responsible for tracking NYC reimbursable projects and maintaining the supporting documentation. The Program Manager manages the CSC Analysts and serves as the main point of contact to NUB, NYC and other third parties.

iii. Improved Communication, Governance and Monitoring – Informal touch points were put in place between the DNY CSC Program Manager and NUB Supervisor to monitor the daily work load. New metrics covering the end to end process were developed that were shared with all relevant internal stakeholders during bi-weekly HUB meetings. These metrics include cost of project and associated anticipated reimbursement for invoices in various stages of the creation process. The metrics also include the volume of invoices in each stage of the NYC approval process, including any invoices in dispute (Attachment 3). Meeting attendees included the VP of Gas Field Operations, VP of Revenue Cycle Management, and representatives from DNY CSC, NUB, Credit & Collections, the NY Jurisdiction, and Customer groups.

iv. Process documentation – Process documentation including standard operating procedures (SOPs) (Attachment 4), process flows (Attachment 5), and Responsible, Accountable, Consulted and Informed (RACI) charts (Attachment 6), were created and shared between teams.

In March 2018, a National Grid core team met with NYC officials to both acknowledge the opportunities to enhance the process and request NYC to increase their CSC funding for prior year billings, as well as for the dramatically increased volume of gas facility reimbursable projects (see Attachment 7). The Company's VP of Gas Field Operations and the NYC CFO were in attendance. Since this first meeting, National Grid's DNY CSC Program Manager and

NUB Supervisor have met bi-weekly with representatives from the NYC Department of Design and Construction (DDC) and the NYC Department of Environmental Protection (DEP) (approx. 30 meetings in 2018 and 2019). There is no set agenda for these meetings and instead both parties bring topics to discuss which may be related to the end to end process, specific invoices or questions about provided supporting documentation. Additionally, Company and NYC officials have held four meetings (two in 2018 and two in 2019). In the most recent meeting in May 2019, takeaways were documented in an email that was shared with the larger team (Attachment 8). The conversations between the Company and NYC are focused on the forecast, the process to review invoices and the payment backlog. These topics were also specifically addressed in a meeting between the Company's DNY CSC Program Manager and NUB Supervisor and representatives from the DEP. Refer to meeting notes provided by the DEP (Attachment 9).

3. The backlog was originally created due to an increase in the DDC public works capital work plan beginning in 2017, which resulted in increased CSC construction cost and therefore increased requested reimbursements. Another factor in the increased backlog was increased productivity of the NUB/CSC invoice creation due to internal process improvements discussed above which led to more invoice creation. The payment backlog has also increased due to a new DEP audit process which began in early 2019. This DEP audit review is conducted in addition to the existing DDC review process prior to payment. Please see the Company's response to DPS-402 that discusses this additional step. Regarding how the company is actively negotiating the backlog, refer to the response to questions 1, 2, and 4, above.

5. As reflected in Attachment 7, the historic NYC DEP reimbursements received were approximately $10 million in FY15, $8 million in FY16, $14 million in FY17, and $20 million in FY18. Additionally, the Company received approximately $12 million in FY19. Over the last 3 years the volume of Gas Facility reimbursable projects has dramatically increased, resulting in higher annual invoice totals. As a result, these payment levels for the cost sharing program have not been sufficient to reflect the volume of reimbursable work the Company performed in those years.

Through the Company's process improvement efforts along with working with the NYC DDC and DEP, the DEP has recently approved $50 million to be paid the Company in FY20, as well as including an additional $10 million in their FY20 budget. As a result, the Company has included the $60 million anticipated payments in the forecast of the CSC Accounts Receivable balance in Exhibit (RRP-7), Schedule 7.

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Financial Services Opportunity Execution

Implement Stage Gate Appendix

Process Area Lead Sign-off

<<< delete content below this line and replace >>>

1. embed meeting invitation for stage gate meeting
2. embed email sign off from Process Area lead based on decision rights matrix
How to embed a PDF on a PowerPoint slide

Downstate DOT Billing

Contact: Lynda Scannell and Michael Stirpe

October 11, 2017, @8am

Meeting Objective and Attendees

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- **Meeting Objective** *(based on Opportunity Execution Playbook)*
  - The goal of this meeting is to collect formal sign-off on the Implement Stage Gate before proceeding to Go-Live
  - This document should be reviewed alongside the Readiness Assessment Checklist as it contains approvals and/or artifacts for the stage gate criteria

- **Attendees**
  - RCM/NUB: Jody Allison, Lynda Scannell, Michael Stirpe, John Perla, Christine Seubert, Vasso Dusoe-Galanis
  - KPMG: Mariana Souza, Kelly Stephenson, Chris Darmon, Chris Poole

- Note: This document references the following shorthand:
  - **FS** to refer to **"**future-state", such as work performed post-implementation
  - **CS** to refer to current-state, such as work performed pre-implementation

Agenda

Readiness Assessment Checklist – Implement Stage Gate

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1. People & Training
   - *Training*
   - *Human Resources*
2. Change Management & Communications
   - *Communications*
3. Business Process & Controls
4. Risk Management
   - *Business Continuity Plan*
   - *Disaster Recovery Plan*
   - *Go-Live risks mitigation plans*
5. Technology & Infrastructure
   - *System access for in-scope resources*
   - *Access rights (SOD) confirmed*
   - *Employee hardware*
   - *Infrastructure requirements*
6. Financial & Performance Measures
   - *Budget transfers*
   - *Service level reporting*
7. Project Management
   - *Steady-state meeting cadence*
   - *Lessons learned*

1. People & Training

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Training

- **Knowledge transfer materials uploaded to repository**
  - Process documentation is uploaded to NUB SharePoint

- **Knowledge transfer sign off received (IN PROGRESS)**
  - Knowledge Transfer Matrix uploaded to USBS SharePoint
  - Document will be used to track training and KT for new employees

- **Technology & systems training completed (IN PROGRESS)**
  - To be conducted on an ongoing basis

Human Resources

- **HR transfer formalities completed for existing employees (IN PROGRESS)**
  - Lynda Scannell will track status of downstate employees to ensure that HR formalities are addressed

2. Change Management & Communications

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- **Go-Live communication completed (National Grid) (IN PROGRESS)**
- **Go-Live communication completed (3rd parties) (IN PROGRESS)**
- **Internal stakeholders notified of changes and timing (IN PROGRESS)**

See next slides for CM&C planning documents

Go-Live Communication Approach

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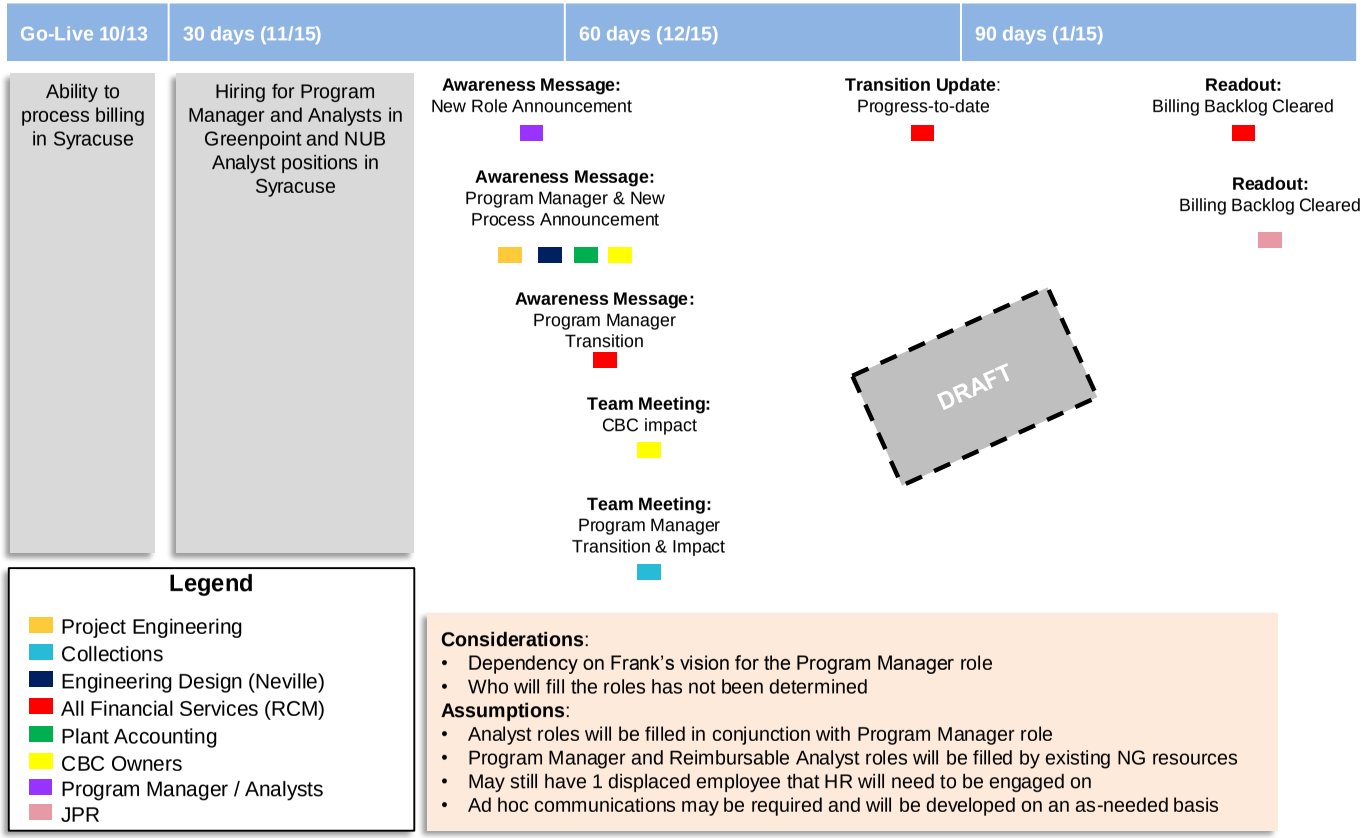

Considerations:
- Dependency on Frank's vision for the Program Manager role
- Who will fill the roles has not been determined

Assumptions:
- Analyst roles will be filled in conjunction with Program Manager role
- Program Manager and Reimbursable Analyst roles will be filled by existing NG resources
- May still have 1 displaced employee that HR will need to be engaged on
- Ad hoc communications may be required and will be developed on an as-needed basis

2. Change Management & Communications

Stakeholders & Key Messages

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Stakeholder Name / Group	Key Messages
Program Manager / CSC Analysts	• New processes will be implemented to drive standardization across billing • You comprise the team that will process invoices and serve as a point of contact with the business • Program Managers will serve as main point of contact, analysts will process payments
Project Engineering	• New processes will be implemented to drive standardization across billing • Your point of contact is changing. Program Manager will be your point of contact for billing requests • As a result of the new processes, we will begin enforcing policies that will address audit findings
Credit & Collections	• New processes will be implemented to drive standardization across billing • Introduce the Program Manager / CSC Analyst team members • We will partner with you to improve our ability to collect against outstanding invoices.
Engineering Design (Neville)	• New processes will be implemented to drive standardization across billing • Introduce the Program Manager / CSC Analyst team members • Explain the connection between 10 day notifications and the new billing model
All Financial Services (RCM)	• New processes will be implemented to drive standardization across billing • Introduce the Program Manager / CSC Analyst team members • Provide updates to ensure the process is achieving its desired benefits
Plant Accounting	• New processes will be implemented to drive standardization across billing • Introduce the Program Manager / CSC Analyst team members • NUB is taking ownership of invoicing and will work with you to ensure validity of entries
CBC Owners	• New processes will be implemented to drive standardization across billing • Introduce the Program Manager / CSC Analyst team members • Explain how the process is changing
JPR	• New processes will be implemented to drive standardization across billing • Keep informed of billing backlog and when it is cleared

3. Business Process & Controls

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- **NEW – Process documentation updated**
  - Syracuse team completed reviews of all SOPs completed, 10/10
  - Stabilization process
    - Downstate team will review billing SOPs (or combing with CSC Billing Playbook)
    - Syracuse team tests billing SOPs (e.g. create an invoice using the procedure)
    - NUB Manager reviews and approves of all SOPs
    - Subsequent updates will be made to SOPs during stabilization based on process improvements, audit findings, and NUB standardization

4. Risk Management

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- **Business Continuity Plan and Disaster Recovery Plan documented**
  - Updated and approved by Emergency Planning, 9/8/17

- **All Go-Live risks reviewed and mitigation plans established**

	Risk Management Task/Issue	Planned Approach Towards Resolution (updated 10/17)
1	Document In-Scope Material Weaknesses	• Pending Internal Audit (est. release: October 2017) and PWC Financial Audit (est. completion: September 2017) findings and recommendations. Will revise process according to those findings.
2	Evaluate control frameworks for new delivery model and process designs	• Implementing NUBs current process with NE DOT will mitigate this risk. • Meet with NYC DDC Agency to discuss potential opportunities to improve invoice formatting.
3	Determine Controls Excellence Team (CET) involvement/requirements	✓ Met with Controls Excellence team. CET does not have any concerns with this transition at this time
4	Confirm Segregation of Duties and related technology/system access considerations	• Implementing NUBs current process with NE DOT will mitigate SOD risk • Upstate team gained access to MicroStrategy and participated in KT with the Downstate Analysts
5	Review BCP/DR plan (if applicable)	✓ Implemented addendum to NUB BCP to include downstate team. Approved by Emergency Planning on 9/18/17
6	Invoice Completion for In-Flux Invoices in Process at Go-Live Date	• Outlined in Stabilization Plan. In-Flux invoices will be completed by Downstate Analysts. Once moved from group, upstate team will convert any remaining in-flux invoices to new billing format.
7	Access Database Ownership Transfer	✓ Lynda Scannell and Mike Stirpe have access, with a plan to eventually retire use of Databases entirely
8	Databases, Supporting Documentation all found on a Shared Drive	• Supporting docs and calculations will be uploaded into SAP once the intake is completed
9	Timeliness of Invoice Creation and NYC DEP Payment Submittal	• Implementing NUBs current process with NE DOT model will mitigate this risk

5. Technology & Infrastructure

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Technology

- **System access for in-scope resources confirmed**
  - Complete
- **Access rights (e.g. segregation of duties) confirmed**
  - Profiles for new hired have been documented

Infrastructure & Facilities

- **Employee hardware received and fully functional**
  - Part of standard onboarding process
- **Infrastructure requirements met**
  - Cubicles reserved

6. Financial & Performance Measures

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Financial Measures

- **Budget transfer confirmed**
  - Not required

- **NEW – Business case update** (IN PROGRESS)
  - Zack Singer and Kevin Cargill will provided updated business case on 10/12
  - Updated business case reflects re-leveling of employees and a staggered hiring plan of associate analysts (1 hired by 11/1, 2 additional hired by 12/1, 1 additional hired by 1/1/18)

Performance measures

- **Service level reporting operationalized** (IN PROGRESS)
  - To be developed during stabilization period and in connection with Tom Bennet's end-to-end review

7. Project Management

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- **Steady-state meeting cadence operationalized**
  - Opportunity will be tracked from Go-Live (10/13) through stabilization and steady-state via the following mechanisms.
    - Michael Stirpe has scheduled monthly stabilization reviews with Lynda Scannell. Attendees of this Stage Gate will be provided with a status update via email.
    - Michael Stirpe will include NUB-DOT stabilization status to weekly NUB meetings (Thursdays at 10am)
      - Based on discussions in the weekly NUB meeting, Michael will send weekly NUB DOT email to Change & Comms and schedule ad hoc meetings as needed.
    - Michael Stirpe will schedule steady-state meeting & deliverables review with John Perla to archive the NUB-DOT opportunity

- **Lessons learned from Implement documented**
  - KT training matrix was helpful / used as a reference guide
  - Concerned about the RACI breakdown with staggered new hires
  - Working group sessions helpful – involving other members in the team of a small focus group to set strategy

Opportunity Stabilization Plan

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Stage Gate Categories	30 days *(Completed by 11/15)*	60 days *(Completed by 12/15)*	90 days *(Completed by 1/15/18)*	Steady State Criteria
1. People & Training	✓ 1 assoc. analyst hired	• Downstate employees in new roles within NG • 2 additional assoc. analysts hired	• Syracuse team in training • 1 final assoc. analyst hired	• Submit final KT and training log
2. Change Mgmt/Comms	*Reference Change Management and Communication slides*			
3. Business Process & Controls	✓ **PM:** CSC/NUB agree to PM model (get sign off on BDN) • Agreement with DDC to new billing format	• **PM:** NUB hands over processes (e.g. field sketches, disputes, gather billing info, forecasting) • Develop/test new billing format	• **PM:** Sign-off on PM/NUB detailed roles and responsibilities • Test new billing format	• DOT process docs updated and approved by NUB • New billing format operationalized/trained
4. Risk Mgmt	*Reference Risk Mitigation slides*			
5. Technology & Infrastructure	• Manager and Supervisor have access to all Access Databases	• Remove downstate employee's access to billing systems		• Plan developed to retire databases and Micro Strategy
6. Financial & Performance Measures	• Service level reporting • Reconcile deferral account	• Develop/test service level metrics	• Soft-launch of service level metrics • Address deferral account • Clear billing backlog	• SL metrics reporting to RCM
7. Project Management	• Stabilization status meetings	• Stabilization status meetings	• Stabilization status meetings	• Steady state meeting & deliverables review
NEW – In flux bills	• Downstate employees work down 30% of active bills in queue	• Downstate employees work down 60% of active bills in queue	• Downstate employees complete active bills in their queue	• Aged bills converted to new billing model

Process Improvement Plan

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Full process improvement tracker – including value statements, investment, timing, lead – available on:
https://teams.nationalgrid.com/sites/USBS/OpIntake/SitePages/Home.aspx

Category	Sample Process Improvements
Process	• Improve dispute management process with dispute tracking, standards/thresholds for resolution • Utilize 'Quotes' functionality in SAP for DDC approval • Update NYC CSC billing format • Send timely "10-day Letter" to DDC • Replace Project Tracking (Access Database) • Convert NUB-DOT opportunity process documentation into the new NUB Taxonomy • Develop NUB policy that outlines standard billing practices for each team (e.g. DOT) • Improve 'Gas Facility Forecasting' process • Develop process to move open items to single active work order
Technology	• Move NYC CSC billing into SAP • Eliminate 'Deferred Liability' journal entry • Replace Invoice Tracking, NYC Billing System, Support and Protect (Access Databases) • Replace Micro Strategy
Controls	• Create role-based SAP access profiles

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Downstate Gas CSC Reimbursement
Program Manager BDN
October 2017

NYC CSC Gas Reimbursement Process

Program Manager(s) Implementation

Business Case Summary:
Project originally launched to resolve $42M aged balance in collections for Downstate gas CSC reimbursable projects; balance is now $32.9M. Project will enable timely billing in accordance with customer agreement to meet budget for reimbursable dollars. Project will also prevent a recurrence of backlogged collections and an unreconciled deferred account. Project will enable proper end-to-end project tracking.

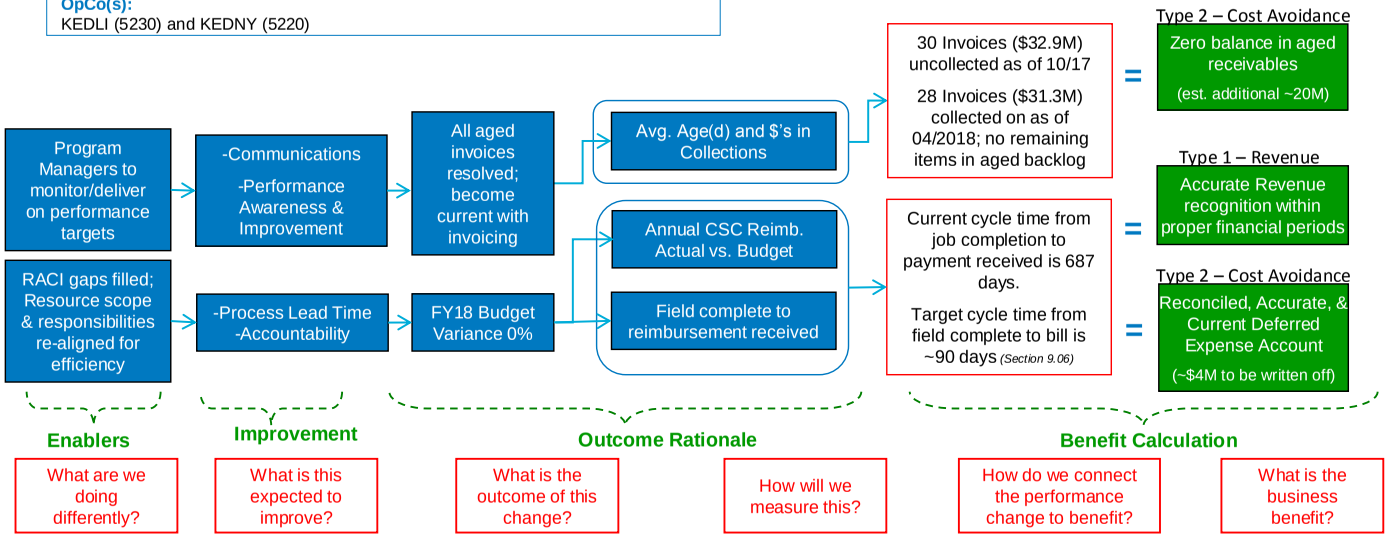
Cost Summary:
4 FTE for Program Manager roles (3.5 KEDNY, 0.5 KEDLI) – ($ TBD)

Benefit Summary:
Type 1: Timely invoice creation (reduce bill cycle time) and payment receipt to clear (current) $32.9M in collections, and remain current on future payment(s).
Type 2: Avoid bad debt reserve, incorrect deferred liability recognition and potential subsequent write-offs.
Type 3: Increased Customer satisfaction and internal employee engagement.

OpCo(s):
KEDLI (5230) and KEDNY (5220)

Business Case Sign-Off:

Name	Role	Agreed (Y/N)
Ken Daly	SVP President NY Jurisdiction	Y/N
Brian Gehm	Director – Performance	Y – 8/30/17
Casey Giambrone	Manager – City/State Construction B	Y – 8/30/17
Frank Prost	Director – Construction NY	Y – 9/7/17
Lynda Scannell	Manager – Misc. & Special Billing (NUB)	Y – 8/30/17
Mary Genoy	Director – NY Performance & Strategy	Y – 8/30/17



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Program Manager BDN Breakdown

	# of projects	Average Cost per project	Average $ invoiced per project
NE Gas	40/year	$270k	$110k
NYC CSC	80 active*	$4.75M	$950k

	# of PMs	Workload per PM
NE Gas	1	40/year/PM
NYC CSC *Proposed**	4	10-15/year/PM

***Proposed NYC CSC PM headcount reflects:**

1. Larger invoice values
2. Expectation that CSC DEP expense budget will double beginning in 2018
3. National Grid goal to cut the billing timeline in half within two years.

DRAFT – For Discussion Purposes Only

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Roles and Responsibilities

***Bold items indicate new tasks not being completed today**

Activity Category	Program Manager	CSC Construction Analysts	(Non-Utility) Billing
Compile Supporting Documents	• Contractor Management	• Gather EP7 , Sketches, Contractor Service Logs • Identify duplicate and out of scope permits • Verify addresses and active service for work orders • **Notify PM of missing service logs** • **Reconcile service logs to work orders**	• Pull Permits and file w/ Invoice
Validate Materials and Labor	• **Support labor charges transfers as needed (ex. correct time charged)** • Document out of scope and upsizing	• **Prepare report of materials (from field sketches)** • Age of Main Calculations	• **Run materials/labor financials per FP (weekly)** • Balance Labor to EP7 Sheets • **Track & Report Discrepancies in Labor/Materials**
Vendor Mgmt	• **Support vendor relationship management (ex. Hallen)**	• **Support engineers on vendor payments** • Gather invoices for S&P and outside services	
Support For Final Bill	• Collect certifications and answer questions on final bill • Resolve engineering-related disputes	• Complete Tasks on Job Checklist when CSC Reimbursable Project is Completed.	• Forward completed bill to PM for certification
Billing	• Notify NUB when Construction is completed, and when Inspection is completed.		• Complete Bill in System(s) • **Scan Backup into SAP** • Send Completed Bill and Certifications to DEP/DDC • Initial Point of Contact for Disputes • **Compare/communicate invoice difference(s) from dispute resolution**
Project Tracking & Close Out	• **Retrieve Funding Project Number(s) for new CSC Jobs.** • **Monitor and Manage entirety of Project Life Cycle** • Conduct forecasting and budgeting • Review invoices for Gas Facility Reconciliation	• **Retrieve Work Orders for Engineer(s)** • **Support monitoring of projects and provide status (weekly)** • Monitor As Built status/change reporting • Compile listing of WO Numbers for each CSC Job.	• Prepare Journal Entries • Balance Deferred Account • **Store all approvals in SAP** • Gas Facility Reconciliation (including Accrual) • Notify Program Managers and Stakeholders of Invoice creation, new disputed amount invoiced and/or payment receipt.

Metrics to Track

- Overall project cycle time – Project Initiation to Payment Received (days)
- Program Manager metrics
  - 10-day notification letter to project complete (days)
  - Field complete to date last charged (days)
  - Financial impact of disputes and disallowed items ($)
    - Inaccurate timesheets, charges, out of scope work, duplicate permits, sketches, Hallen logs
- Billing metrics:
  - Date last charged to bill complete (days)
  - Bill complete to DDC approval (days)
  - DDC approval to DEP (days)
  - DEP bill to payment received (days)
  - Customer balance (total $, aged $)

CSC Reimbursement Overview

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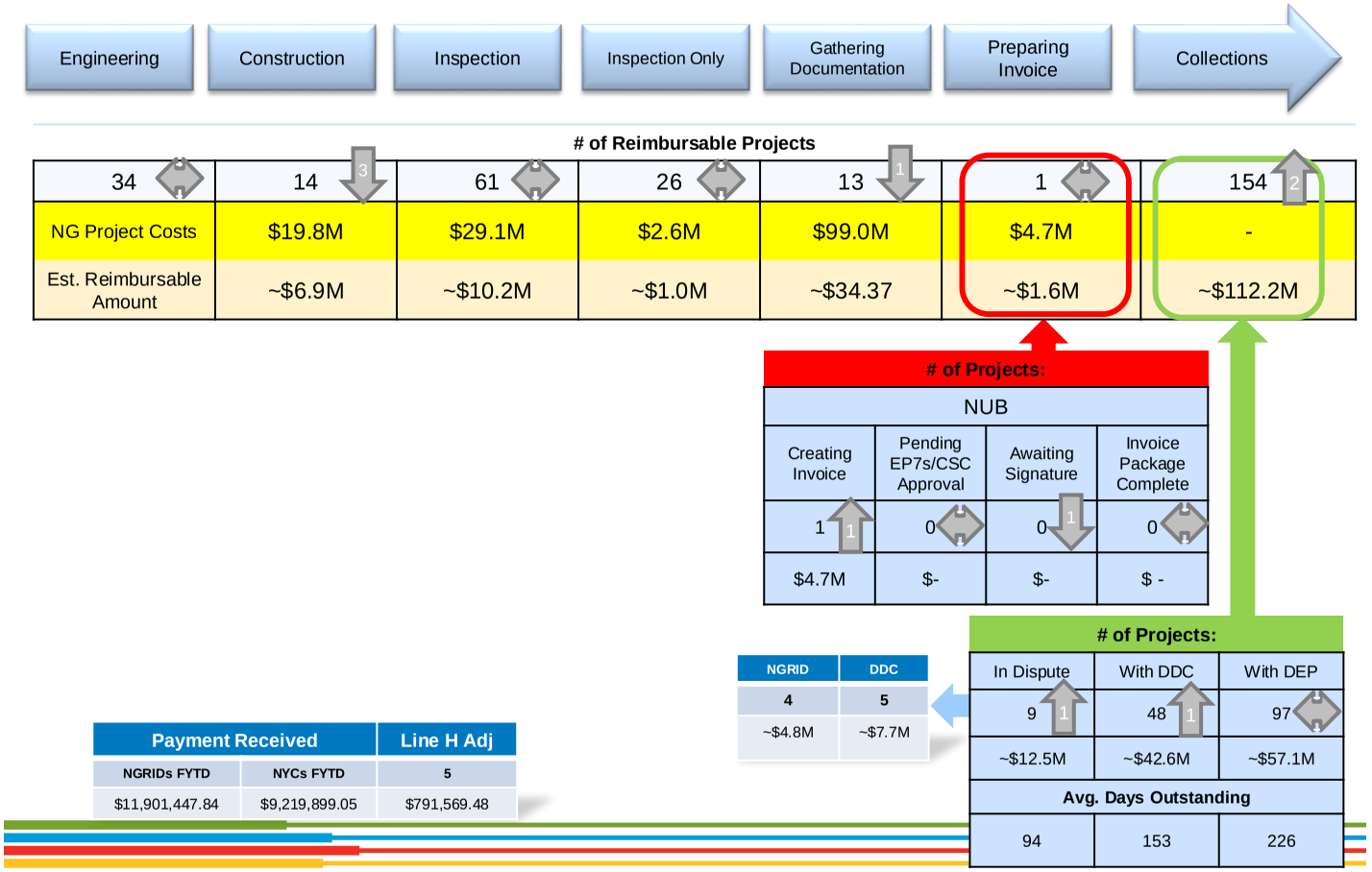


nationalgrid THE POWER OF ACTION	Standard Operating Procedure
	NUB.2.01.A Gather Information for Billing (CSC)
Level 1 Process: NUB.0 Non-Utility Billing	**Revision Date:** 09/28/2017
Level 2 Activity: NUB.02.0 NUB DOT Billing	**Created By:** KPMG
Task Owner: NUB Manager	

Contents

I. Purpose & Scope

This document summarizes the processes, roles and responsibilities, and other important overarching information as it relates to gathering information for billing the Department of Environmental Protection in downstate NY. The scope of this billing effort is also referred to as "downstate DOT" or "CSC billing". Per agreements with the jurisdiction, invoices require specific supporting documents for billing.

The scope of the "Gather information for Billing (CSC)" SOP is downstate New York. Details that apply to MA and RI will be addressed in the "Gather information for Billing (DOT)" SOP. Upstate New York uses the DP90 report and is out of scope for this documentation.

This document addresses the creation of four invoice categories: (1) Emergency, (2) Planned, (3) Inspection only, and (4) Support and Protect. Uses and components of each invoice type are outlined below.

Invoice type	Why is it used?	Invoice components	Special considerations
Emergency projects	NG has completed all work associated with a specific emergency contract (e.g. SEQ 201 BN7) with DEP.	• 'Relocation of main' (capital) • 'Support and Protect' (O&M)	• Inspector is responsible for documenting which contract the work is associated with • Offsets less than 50 feet are charged as rate items

Planned projects	NG is responsible for prerequisite relocation of main to accommodate a project planned by the DEP.	• 'Relocation of main' (capital) • 'Support and Protect' (O&M)	• Invoice should include single funding project when work is complete
Inspection only	NG inspector has to stay on site as DEP completes planned project. Invoice only includes inspection line item as the work was billed on the associated 'Planned project' invoice.	• 'Support and Protect' (O&M)	• Capital work was already invoiced in the associated planned project • Inspection hours charged based on rate schedule • All work is reimbursable • Never includes materials
Support and protect projects	Contractor (hired by DEP) invoices NG for EP-7 items in excess of agreement of the city.	• Invoice from vendor/contractor • Backup of vendor/ contractor charges • 'Support and Protect' (O&M)	• This invoice requires a different Access Database. Rosemarie is the only user • Contractor invoices NG at 1.25% of what was agreed to between contractor and DEP • Rate schedule is applied to materials in the vendor backup • All work is reimbursable

II. Roles & Responsibilities

RACI Matrix	Role	Responsibilities
RESPONSIBLE	NUB Analyst	- Collect all materials required for CSC billing and save to a shared repository/drive - Pull and analyze all required Micro Strategy reports - Upload Micro Strategy reports to Access Databases to generate a CSC Invoice
ACCOUNTABLE	NUB Manager	- Provide oversight over the process
CONSULTED	City-State Construction (CSC) team	- Provide billing team with requisite materials when a job is ready to be billed. Materials include, but are not limited to, field sketches, labor logs, work order numbers, agreements/contracts
	<Provide Role Name>	- Provide bulleted list of responsibilities - Provide bulleted list of responsibilities
INFORMED	PE Licensed Engineer	- Provide sign-off on completed invoice before distribution to DDC
	Jurisdictional Business Partner VP	- Provide sign-off on completed invoice before distribution to DDC

III. Documentation Requirements (Process Inputs)

Before beginning this process, the NUB Analyst or Supervisor collects the following documents:

- Work order number(s) associated with the job to be billed
- Access to Micro Strategy
- "Gas Cost Sharing: Upsizing Reduction Worksheet"
- Gavult tool or other materials-pricing tool
- Rate Schedule for year invoice/project number was registered
- **(Emergency and Planned)** SAP GUI for the KOB1 and CADO reports; EP-7 logs
- **(Inspection only)** Watchguard provides EP-7
- **(Support and Protect)** Contractor provides invoices and backup

V. Detailed Steps

This process begins when a project engineer alerts the billing team that a CSC project is complete and is ready to be billed. The billing analyst is responsible for collected requisite data for billing and loading that data into the NYC Billing Database to generate an invoice. The billing analyst is also responsible for collecting sign-offs on the certification letter, the cover page of the invoice, before distributing the invoice package NYC DDC.

Step 0. Collect engineering data

0.1. Get EP-7 sheets from project engineer or inspectors, also known as WatchGuard
0.2. Get field sketches from project engineer

Step 1. Download Micro Strategy reports

1.1. Reference the 'CSC Billing Playbook' for specific instructions for pulling the following reports:
  1.1.1. Datamart Wk Order 1 (FWMS)
  1.1.2. Datamart Wk Order 2 (FWMS)
  1.1.3. Datamart Permits report (Engineering-Current Analysis)
  1.1.4. Pull the Datamart CCH (Contractor Charges)
1.2. Drop reports into billing template

Step 2. Populate remaining Datamart tables

2.1. **(Emergency only)** Verify contract numbers. Use the 'task order list' from DEP to confirm that all locations are tied to correct contract. Work orders need to be reassigned to another contract in Maximo if a locations does not appear on the task list. Re-run Micro Strategy reports or delete work order rows from Excel when re-assignment is complete.
2.2. Verify the services are accurate and complete
  2.2.1. Confirm that all T numbers have size, material and pressure. If sizes do not appear, the Engineer has to move the work order to CASBUILT status. Rerun the reports.
  2.2.2. Review install/retire per location. Is it a real location? Do install/retire match? Is install/retire listed on field sketch? Confirm footages and verify pressure. Use service logs if available.
  2.2.3. Check that work is done. DPMS/DIS tells you if gas is on. You can also check to see if surrounding addresses were complete.
2.3. Verify vouchers are accurate and complete
  2.3.1. Look for blank voucher numbers on Datamart CCH. Engineer should provide status on payment to contractor (that the payment will or will not be issued). Remove voucher number row from Datamart CCH if it will not be paid by National Grid.
2.4. Confirm permits by location. Remove any duplicate permits.
2.5. Populate "**Datamart Invoices**" worksheet
  2.5.1. Generate a pivot table from Datamart CCH to summarize invoice costs. Pivot should summarizes values for Project, Work Order Number, Invoice Number, and Invoice Cost.
  2.5.2. Exclude all New York Paving (NYP) invoices.
    2.5.2.1. Put "Vendor Name" in the Filter section of the pivot sidebar. Uncheck NYP.
  2.5.3. Manually populate 'Datamart Invoices' worksheet from the pivot table.
2.6. Populate **"Datamart Paving"** worksheet: Manually populate from CCH pivot table (NYP only)
2.7. Populate Datamart Labor and Datamart Labor-Employee
  2.7.1. Run KOB1 (SAP GUI) on each work order to get the names and hours worked.

2.7.2. Run CADO (SAP GUI) on each work order for the labor charges.
2.7.3. Summarize the values from KOB1 and CADO to populate Labor table with dates, names, hours, charges.
2.7.3.1. ***Note on labor rates***: Installation labor is based on the actual charges from Micro Strategy. The Access Database will apply Age of Main calculation to find the value of reimbursable labor. Retirement and inspection labor is rate schedule.
2.8. Populate "**Datamart Materials**" worksheet: manually populate with field sketches or KOB1
2.8.1. Review field sketch and record types and quantities of materials and footage.
2.8.1.1. Engineer provides a field sketch with the installation/retirement footage amounts. Send field sketch back to engineer if document is missing the footage details.
2.8.1.2. Add installation footage amounts to 'Datamart Materials' in the 'Item Description' column. Update quantities.
2.8.1.3. Review field sketch and tally up other materials (e.g. couplings, elbows). Work with engineer to clarify any shapes that you do not recognize.
2.8.1.4. Add materials into 'Datamart Materials' in the 'Item Description' column. Update quantities and costs. Use gavult tool for costs as needed.
2.9. AGM (Age of Main) worksheet
2.9.1. Send retirement WO's, sizes, materials, pressure, footage to Plant Accounting. Plant Accounting sends back installation year for each work order. Input into age of main table and recalculate.
2.10. Datamart Wk Order Total: Manually populate from summarized Invoices, Labor, Materials worksheets

Step 3. [OPTIONAL] Run excel workbook through Access Database to split lump sum items
3.1. Run through Access DB to split out the paving and contractor labor charges. NOTE: Lump sum item includes the contractor labor, paving. Access DB automatically splits the lump sum item into pieces (contractor labor, paving, and sometimes 'purchased services').

Step 4. Apply modifications to Excel, as required
4.1. Apply out of scope
4.1.1. Identify out of scope locations. Engineer should provide information about locations that are out of scope and the impact on the field sketches and footages by location.
4.1.2. Calculate out of scope percentage per work order
4.1.2.1. (Out of scope percentage = [out of scope footage] / [total footage])
4.1.3. Identify charges that are tied to the out of scope locations on 'Datamart Wrk Order 1'
4.1.4. Per work order: Create new line items in Excel workbook to apply out of scope percentage to appropriate paving, contractor labor, purchased services. These line items will appear in the 'Details' pages of the final invoice. If a service is out of scope, delete the line item from 'Datamart Wrk Order 1'.
4.1.5. If an <u>entire</u> permit or service is out of scope, remove the line item. Do not apply percentages to fully out of scope permits or services.
4.2. Apply upsizing reduction
4.2.1. Divide Datamart Wrk Order 1 by location. Review to find any mismatched retirement and install pipe sizes by location (e.g. 6" retired and 12" installed). Mismatches indicate that an upsizing reduction, also known as upgrade, may be required.
4.2.2. Validate list of potential upgrades with the engineer.

4.2.3. Input retire/install data (per work order) into Section 3 of the *Gas Cost Sharing: Upsizing Reduction Worksheet*. Upgrade percentage will display in Section 1. This calculation is based on an agreement between New York City and National Grid.
4.2.4. Section 2 indicates which charges (e.g. labor, materials, paving) need to be updated with an upsize reduction.
4.2.5. Create new line items to back out the upsizing reduction percentages against charges on a work order.
4.2.5.1. ***Note:*** *Reference the Sample Document invoice (SEQ200560) for examples on pages 71, 73, 74 and 115.*
4.2.6. Include a printout of the 'Upsizing reduction worksheet' directly behind the Replace/Install details sheet.

Step 5. Run updated excel workbook through Access Database (NYC Billing System)

5.1. <>

Step 6. Create final bill and print pages

6.1. Run updated excel workbook through Access Database (NYC Billing System)
6.2. Print bill components from NYC Billing System Access Database based on invoice type. The following reports were pulled for the "SEQ200560" sample invoice references in the VIII. Exhibits section of this document:
6.2.1. Create billing_Summary of project cost rpt
6.2.2. Create Billing_O&M reports > Schedule Report-O+M
6.2.3. Create Billing_O&M reports > Activity reports > Retire main detail reports
6.2.4. Create Billing_O&M reports > Activity reports > Services detail reports
6.2.5. Create billing_capital reports > Step 6. Paving reports > CCH paving - All Wk orders
6.2.6. Create billing_capital reports > Step 2. Schedule_Capital
6.2.7. Create billing_capital reports > Step 1. Schedule_Summary
6.2.8. Create billing_capital reports > Step 3. Detail of capital work orders
6.2.9. Create billing_capital reports > Step 4. Labor reports
6.2.10. Create billing_capital reports > Step 5. Invoice Reports > Capital Invoices - all items
6.2.11. Create billing_capital reports > Step 6. Paving Reports > Summary report
6.2.12. Create billing_capital reports > Step 7. Additional capital Rept > Material report
6.2.13. Create billing_capital reports > Step 7. Additional capital Rept > Permits (all inclusive)

Step 7. Organize invoice from printed components

7.1. Use the table below to organize the invoice.

Section	Contents	Emergency	Planned	Inspection	Support & Protect
Part 1	Certification Letter	Y	Y	Y	Y
Part 2	Summary of Gas Facility Costs	Y	Y	Y	Y
Part 2	Notification and As Builts	Y	Y	-	-
Part 3	Schedule of Support and Protect	Y	Y	Y	Y
	Individual Support and Protect Rate Items *For S&P: only vendor charges details, EP7*	Y	Y	Y	Y

Part 4	Schedule of Relocate and Replacement	Y	Y	-	-
	Summary of Relocate and Replacement	Y	Y	-	-
Part 5	Detail of Relocate and Replacement *Per WO/T number (e.g. summary 1, backup 1, summary 2, backup 2, summary 3, backup 3). Backup includes any charges associated, e.g. labor, materials, permits, etc.*	Y	Y	-	-
Part 6	Weighted Average Remaining Life of Main	Y	Y	-	-

Step 8. Collect certifications on bill

8.1. Bring completed invoice document to PE-Licensed Engineer and Jurisdictional Business Partner VP for certification.

Step 9. Distribute to DDC

9.1. <text>

VI. Key Control Activities

N/A

Control Ref	Control Description	Frequency
<Control ID>	<Provide detailed control descriptions>	<Provide controls frequency (e.g., annual, semi-annual, monthly)>

VII. Glossary

Term	Definition
Actuals	Any prices associated with labor, materials, or services that are not based on National Grid's rate schedule.
BPI	National Grid construction team that performs construction work that is more complex than 'Maintain', but less complex than Hallen.
Item number	Reference to line item description. Code is based on rate schedule
Hallen	National Grid contractor. Conducts complex construction projects.
"Maintain"	Maintenance and Construction (aka Maintain) is a National Grid construction team that works on leaks and some services, such as cut and cap until a crew is available to do full replacement.
Upsize reduction	<> National Grid may increase the size of a pipe when doing a replace/install due to business need. A portion of the costs associated with this 'upsizing' are out of scope for New York City reimbursable costs. These portions are defined by the 'Upsizing Reduction Worksheet'
Voucher number	Reference number for invoice from a non-NG entity

VIII. Exhibits

Description	File
SIPOC/RACI for *Gather Information for Billing CSC*	
Sample invoice templates	<>
Summarized table of contents for Sample Invoice Document (SEQ200560)	
Gas Cost Sharing Agreement with New York City	As of August 2017: R:\CostGroup\NYC Billing Program\Manager Folder\Seamus Sullivan\Original Folders\NYC Billing Program\Other\Cost Sharing Documents\Cost Sharing Agreement
National Grid Rates for NYC Gas Cost Sharing	<>

IV. Key Policy References

<Provide reference to Policies associated with the task (e.g., Jurisdiction policies, other supporting policies as is applicable). Name embedded files corresponding to the Level 3 task name with description of the policy.>

X. Frequently Asked Questions

1.0 - <Write Question>
<Provide written response / answer to question. Provide reference or other materials (embedded if needed) in this box>
2.0 - <Write Question>
<Provide written response / answer to question. Provide reference or other materials (embedded if needed) in this box>

XI. Revision and Approval History

Version	Author	Date	Description of Revision	Task Owner Signoff
1.0	KPMG	09/28/2017	First draft of SOP	
<1.0>	FName LName	##/##/20##	<Provide description of update made to the SOP>	

nationalgrid THE POWER OF ACTION	**Standard Operating Procedure**
	NUB.02.02 Create Invoice
Level 1 Process: NUB.0 Non-Utility Billing Department	**Revision Date:** 08/24/2017
Level 2 Activity: NUB.02.0 DOT Billing	**Created By:** Michael Stirpe
Task Owner: Manager, Non-Utility Billing	

Contents

I. Purpose & Scope

The purpose of this documentation is to summarize the processes, roles and responsibilities, and other important information as it relates to the *Create Invoice* process for Non-Utility Billing (NUB).

The scope of this document applies to NUB's general billing practices in SAP. This document also includes descriptions of alternative processes for (1) Massachusetts' and Rhode Island's Departments of Transportation (DOT) billing, collectively known as 'NE DOT', and (2) New York City's City-State Construction billing, referred to as 'CSC downstate'.

II. Roles & Responsibilities

RACI Matrix	Role	Responsibilities
RESPONSIBLE	NUB Analyst	- Confirm supporting documents provided by billing owner are sufficient to support the billing process - Create sales order and invoices in SAP or NUB Portal - Provide invoice and supporting documentation to Program Manager (NE DOT) or Billing Clerks
	CSC Analyst	- Create supporting documents to support the billing process. Contents of the invoice package are defined by

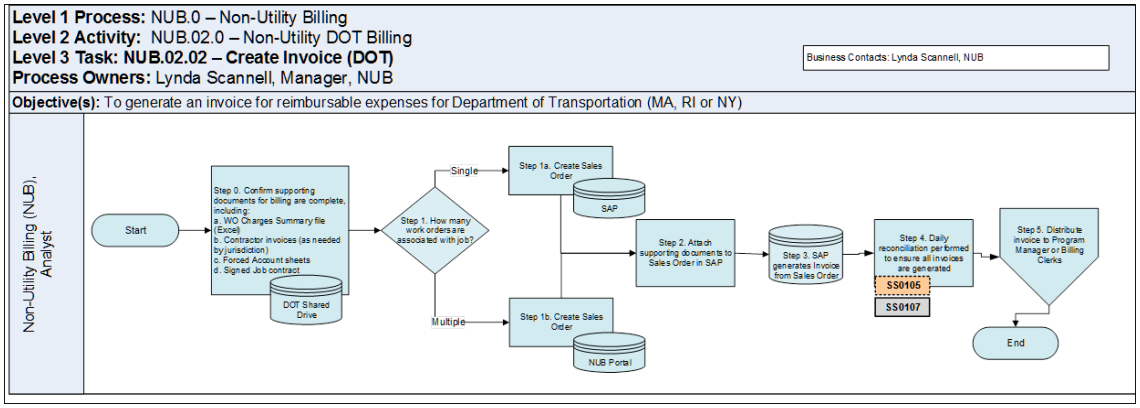
		agreements between National Grid and the New York City DDC and DEP. - Create sales order in NUB Portal - Create invoice in 'Invoice Tracking System' - Distribute invoices packages to DDC, collect approvals from DDC, send approved invoice packages to DEP
ACCOUNTABLE	NUB Manager	- Provide oversight over the NUB and DOT billing process - Validate invoice packages and supporting documentation - Identify and implement process improvements
CONSULTED	CSC Project Engineer	- Provide supporting documentation required by each funding project to generate invoices
	Program Manager (NE DOT)	- Provide supporting documentation required for billing. Documentation may differ by state or Agreement(s)
INFORMED	NUB Billing Clerks	- Mail bills as needed
		-

III. Documentation Requirements (Process Inputs)

1. DOT Shared Drive access and the included supporting document folder for jobs to be invoiced
   - NE: folders under HIGHWAY Shared Drive titled: *RI DOT Electric, RI DOT Gas, MA DOT Electric, or MA DOT Gas*
   - CSC: folder in CostGroup Shared Drive titled *NYC Billing Program*
2. SAP GUI system access is provided to NUB Analysts during onboarding process.
3. NUB Portal access is provided to NUB Analysts during onboarding process.
4. 'Save to SAP Solution' is requested via the SAP Helpdesk.
5. CSC: Invoice Tracking System (Access Database). System no longer supported in 2018.

IV. Process Map

This process map (Visio file) is also embedded in the VIII. Exhibits section of this document.



V. Detailed Steps

Step 0 – Confirm supporting documents for billing are complete

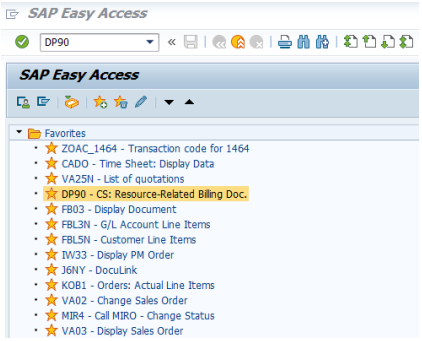
Each DOT (MA, RI or NY) requires specific content to back up invoices. This content is commonly referred to as 'supporting documents' and differ by jurisdiction:

Supporting Documents Required ***(as of August 2017)***	**MA DOT**	**RI DOT**	**NY DOT (upstate)**	**NYC DOT (CSC downstate)**
WO Charges Summary file (Excel)	X	X	X	X
Contactor invoices	X	X	X	X
Forced account sheets	X	X	X	X
Permits				X

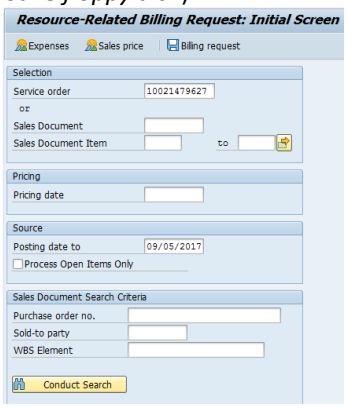
Step 1 – Create sales order

This step has two variations based on the number of work orders assigned to the job to be billed.

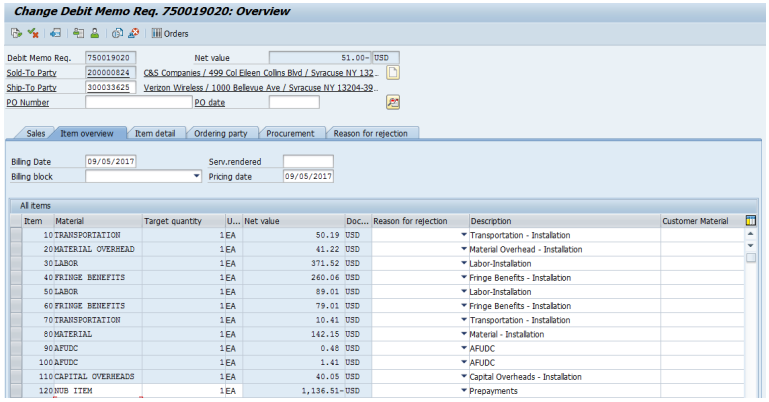
1. Single work order: Use DP90
    a. Enter DP90 Transaction into SAP GUI and click 'Enter'



    b. Enter the work order number into the 'Service Order' text box and click the 'Billing Request' button (this looks like a *Save floppy disk*).



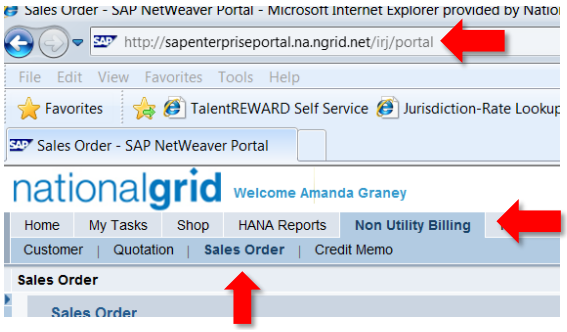
    c. Verify the costs associated with the WO. Double click the dollar amount for each line item that needs to be adjusted. Under the "Conditions" tab, add/use the ZADJ Line Item if making an adjustment to the total, or use the ZNGS to remove National Grid's Cost Share Amount (i.e. – 50% for RI DOT Invoices)



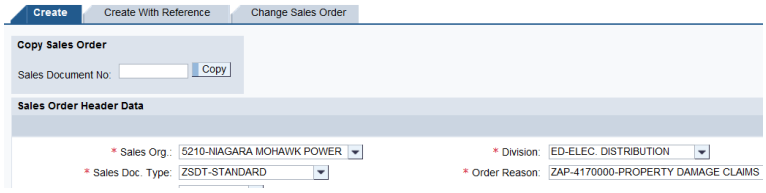
d. Click the 'Save' (Floppy Disk Icon) at the top of the screen to finalize and create the Sales Order when the amounts are accurate.

e. The Sales Order Number that is created with this process will be found at the bottom left of the screen.

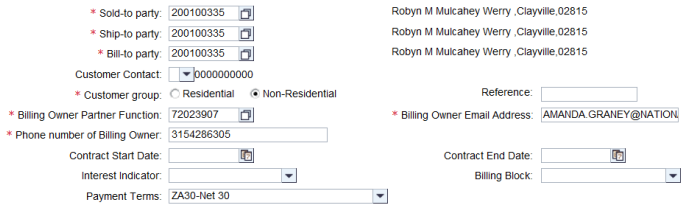
2. Multiple work orders: Use NUB Portal
   a. **Please note:** Analyst can copy an existing Sales Order by entering in a previous Sales Order number into portal. Copy over all partner functions and sales information into the new Sales order.
   b. Go to the SAP Portal and select Non-Utility Billing then select Sales Order.



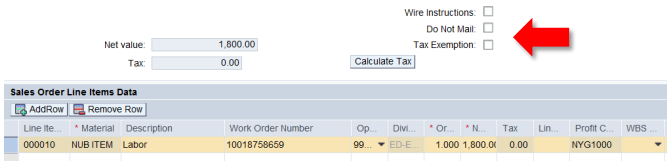
   c. Begin entering the information by selecting from the drop down options. The Order Reason is what will link the sales order being created to a specific GL account.



d. Enter in the partner function information which contains the customer name, billing owner information and payments terms. The billing owner must have a telephone number associated with their name.



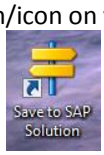
e. Enter information for the invoice in the Sales Order Line Items Data box.
   i. The description field describes what the items are that you want to associate charges with. Examples include: Labor, Material, Fringes etc.
   ii. Enter the Work Order number in Work Order number field.
   iii. Assign one of the following operations:
      1. 9901= Capital
      2. 9902= Removal
      3. 9903= Expense
      4. 9904= Gas Expense
      5. 9906= Jobbing
   iv. Net price is the value of the charges.
   v. Profit center will be populated based on which profit center the work order is associated with.
   vi. Notes for Non-Utility Billing are internal notes that only the analyst approving the sales order will see. Header text to print will appear on the bill.
   vii. *Optional:* Select 'Do Not Mail' if applicable
   viii. *Optional:* Select 'Tax Exemption' if applicable



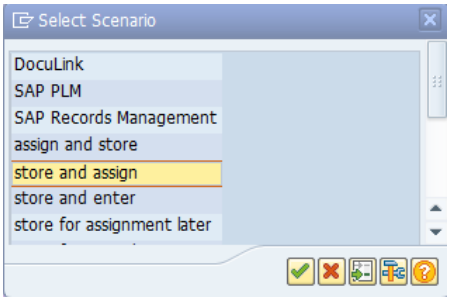
3. Select 'Create' when all the information is populated. If approved, this will generate a sales order in SAP.

Step 2 – Attach supporting documents to sales order

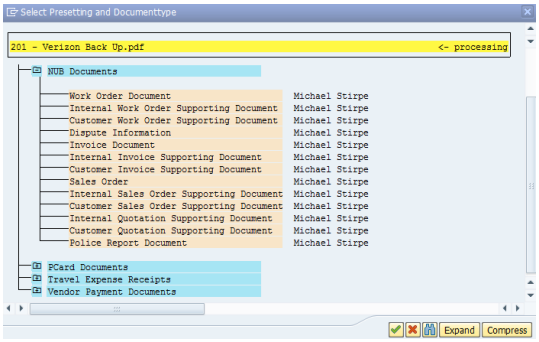
1. Ensure that you have the following program/icon on your desktop or request via SAP HelpDesk:



2. Click the document file that should be uploaded into SAP as supporting documentation, drag and drop the file on the "Save to SAP Solution" Icon. The following screen should come up, enter SAP user name password, and click OK.
3. Select "Store and Assign" and click the green check mark to continue.

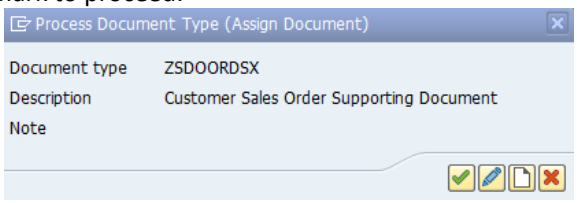


4. Select the appropriate customer line item that you would like to upload the document under (Invoice Number, Sales Order Number, or Quotation Number) and click the green check mark to continue:

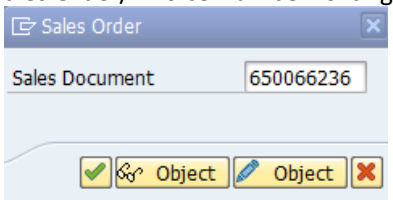


   a. *OpenText Imaging of the document being uploaded will automatically open

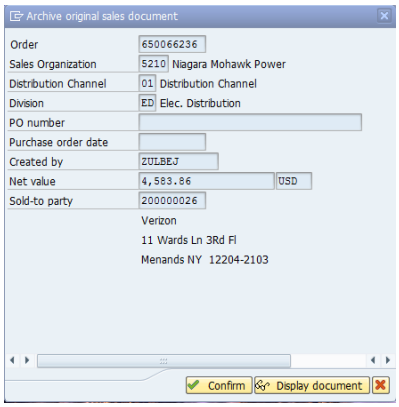
5. Click the green check mark to proceed:



6. Enter appropriate SAP Quote/Sales Order/Invoice Number. Click green check mark to proceed:



7. Validate the information found on the “Archive Original Sales Document” screen for accuracy. If accurate, click “Confirm” and a screen will pop up to notify you that the document has been properly uploaded into SAP.



Step 3 – SAP generates invoice from sales order
This is an automatic process that occurs overnight. However, an expedited process is available if the invoice is required immediately. INSERT PROCESS.

Step 4 – Daily reconciliation of SAP invoices
NUB team member conducts a daily reconciliation of the invoices that printed, emailed, cancelled, etc. A NUB supervisor will use that reconciliation to confirm which printed invoices should be mailed. See the VI. Key Control Activities section of this document for additional details.

Step 5 – Distribute invoice
Invoices will be distributed to the Program Manager or Billing Clerks based on the daily reconciliation. Invoices that should be emailed are sent back to the Program Manager. Any invoices that should be mailed are provided to billing clerks.
CSC: Invoices require certifications by a PE-licensed engineer and the jurisdictional Business Partner VP before distribution to the DDC.

VI. Key Control Activities

Control Ref	Control Description	Frequency
SS0105	An invoice reconciliation process is performed daily to make sure all invoices scheduled to print the previous night had printed and to identify all invoices types (email generated invoices, mailed invoices, cancelled invoices, etc.). Reconciliation is performed by Team Lead.	Daily
SS0107	The NUB Analyst runs a report using Transaction Code VFO5N with selection criteria Open Billing documents to verify that Accounting documents were created for all billing documents. This ensures that data transferred between NUB interface and SAP ledger are complete as part of the month end close activities. This report is reviewed and approved on a monthly basis by the NUB Manager or Lead Analyst.	Monthly

VII. Glossary

Term	Definition
<Term>	<Provide detailed definition of term>

VIII. Exhibits

NUB0202_SIPOC-RACI_v01.xlsx

NUB0202_ProcessMap_v01.xlsx

IV. Key Policy References

N/A

X. Frequently Asked Questions

1.0 - <Write Question>
<Provide written response / answer to question. Provide reference or other materials (embedded if needed) in this box>
2.0 - <Write Question>
<Provide written response / answer to question. Provide reference or other materials (embedded if needed) in this box>

XI. Revision and Approval History

Version	Author	Date	Description of Revision	Task Owner Signoff
1.0	KPMG	08/16/2017	First draft of SOP	
<1.0>	Fname Lname	##/##/##17		

nationalgrid

National Grid / DEP Meeting

Friday, March 23rd



Objectives

nationalgrid

- Walk through the information / data shared with Commissioner Sapienza along with our concerns with the current short term and program funding.
  - A listing of all open invoices with DDC & DEP
  - A listing of all invoices “in process”

- How can National Grid support the annual NYC budgeting process
- Insight to the current DEP budget for FY19, FY20 & FY21
- Insight to the remaining FY18 budget
- Insight to the Gas Facility Cost Sharing Program balance
- Insight to the FY19 NYC Capital Budget

Cost Sharing Summary

nationalgrid

Invoice & Payment Activity	FY15	FY16	FY17	FY18
Total $ Invoiced	$8M	$23M	$20M	$29.5M (YTD)
Total $ Received *includes $ invoiced from prior FYs	$10M	$8M	$14M	$20.2M (YTD) **($8.1M since 2/7)**

Open Receivables

NYC Agency	Status	Total # of Invoices	Total $ of Invoices
DDC	Review in Process	32 **(7 new invoices since 2/7)**	$28.8M
DEP	Approved / Awaiting Payment	8 **(3 new invoices since 2/7)**	$4.03M

Current DEP Budget

	FY18	FY19	FY20	FY21	FY22
DEP Cost Sharing	$20M	$20M	$10M	$5M	$10M

Cost Sharing Summary

nationalgrid

Forecast	FY19	FY20	FY21
National Grid CSC Spend subject to Reimbursement	$200M	$225M	$250M
Billable Amount (40% of Total)	$80M	$90M	$100M

Requested FY18 Payments

by March 31st	$10M **($8.1M since 2/7)**
by June 30th	$15M

Proposed NYC Budget

	FY19	FY20	FY21
Annual Cost Sharing Budget	**$100M**	**$130M**	**$160M**
Gas Facility Costing Sharing Program	Increase by **$350M** (spend thru FY21)		

~Total Reimbursable Dollars thru FY21		NYC Budget Impact
Invoices currently sitting with NYC	**$32.8M**	FY18 & FY19
Invoices in Process	**$70M**	FY19
NG Reimbursable Projects CWIP	**$120M**	FY19 & FY20
NG Projected CSC FY19	$80M	FY20 & FY21
NG Projected CSC FY20	$90M	FY21 & FY22
NG Projected CSC FY21	$100M	FY21 & FY22

nationalgrid

Appendix

Invoices with NYC DDC & DEP

nationalgrid

DDC		DDC		DDC		DDC		DEP	
HD161C	$21,725.98	QED1017	$109,605.92	SEK201BS2	$1,316,070.65	SEQ201BS6	$1,549,415.77	CONISPH01	$164,116.79
HD161D	$319,407.34	QED1025	$3,102,560.11	SEQ200332	$68,213.31	SER002274	$107,862.69	HWCSCH4B1	$825,691.65
HWPLZ008Q	$452,805.30	REDA001	$625,357.20	SEQ200560	$508,264.92	SER200196	$1,113,892.91	QED1006	$812,018.70
HWPLZ009Q	$466,742.12	SE798	$3,056,104.32	SEQ200560W	$18,391.58	SER200220	$1,161,366.24	QED989W	$289,779.45
HWQ121B4	$940,175.03	SE854	$1,645,487.12	SEQ200568	$57,703.56	SER200232	$339,483.51	RED369	$1,043,844.85
HWQ411B	$5,033,227.16	SEC20004R	$504,284.15	SEQ201BN5	$668,753.72	SER200239	$378,023.75	SEQ200527	$84,909.00
MIBBNC001	$141,926.80	SEC20004S	$192,764.56	SEQ201BN6	$648,682.05	SER200241	$592,246.88	SEQ200580	$198,814.05
QED1005	$932,932.73	SEK201BN4	$723,657.51	SEQ201BS5	$1,595,408.74	SER200272	$453,652.14	SER002284	$611,872.44

In Process Invoices

nationalgrid

NG		NG		NG		NG	
542C	$25,061.02	QED1005W	$24,133.34	SEQ200524	TBD	WP169 CSJABBS	TBD
BEDA001	$1,568,008.82	QED1021	$383,347.20	SEQ200527	$16,358.04		
CSJABWR	TBD	RED376	$1,130,298.65	SEQ201BN7	$94,988.46		
GE354	TBD	RED377	$1,715,256.62	SEQ201BS7	$478,670.09		
HWPLZ008Q	TBD	SE734	$318,264.32	SER200208	TBD		
HWPLZ009Q	TBD	SEK201BN5	$1,116,883.71	SER200240	TBD		
P502WIL2	TBD	SEK201BS5	$752,632.45	SER200241/HWR919	$479,585.27		
PS312KR	$43,499.79	SEQ002699	TBD	SER201X	TBD		

In Process Invoices

nationalgrid

NG		NG		NG		NG	
CONISP01 (Insp Only)	TBD	RED376	$1,133,124.89	SEK20065	$11,607,826.62		
CONISPH02A	$2,475,008.84	RED377	$1,723,090.42	SEK201BS5	$779,159.30		
GE352	$654,377.50	SE848	$2,364,444.26	SER002311 (Insp Only)	TBD		
HWD005K01	$414,577.99	SE851	$23,825,910.46	SER201Y	$542,209.19		
HWD10105	$3,074,892.56	SECBRPQ04	TBD				
HWK1048A	$256,084.62	SECBRPQ05	TBD				
HWR1132B	$4,610,726.90	SECBRPQ07	TBD				
QEDA001	$1,605,426.18	SECBRPQ09	$717,981.79				

Cost Sharing Overview

nationalgrid

- The current Gas Facility Cost Sharing agreement has been in place since 1988 between New York City and National Grid (formally Brooklyn Union Gas).

- Historically DEP funding for the cost sharing program has been adequate, allowing National Grid to recover costs timely. Over the last 3 years the volume of Gas Facility reimbursable projects have dramatically increased, resulting in higher annual invoice totals. The current DEP funding levels for the cost sharing program aren't sufficient for the short term, let alone the duration of the contract. Note: Additional program funding ($190M) was approved in 2013 / 2014.

- There is an opportunity for collaboration between National Grid and the DEP to right size the short term budget (FY18 / FY19) and improve the budgeting process moving forward. The Gas Facility Cost Sharing agreement has been a critical driver to infrastructure improvements within our service territory. National Grid views this agreement as a partnership and is committed to improving all aspects of the current process. Therefore National Grid respectfully requests:
  - Increase Annual Cost Sharing Budget: FY19 **$100M** / FY20 **$130M** / FY21 **$160M**
  - Increase Gas Facility Cost Sharing Program Budget by **$350M** (spend thru FY21)

Sutcliffe, Gretchen

From: Lahey, Christopher
Sent: Friday, July 19, 2019 11:49 AM
To: Sutcliffe, Gretchen
Subject: FW: Today's meeting

Eileen's May 6th email

Chris Lahey
nationalgrid
Lead Engineer
Engineering Project and Program Manager
Phone: [redacted]

From: Cifone, Eileen
Sent: Monday, May 06, 2019 3:30 PM
To: De Marinis, Robert A. <Robert.DeMarinis@nationalgrid.com>; Stirpe, Michael <Michael.Stirpe@nationalgrid.com>; Lahey, Christopher <Christopher.Lahey@nationalgrid.com>
Subject: Today's meeting

Here are my notes summarizing the meeting. Let me know if anything should be added.

- The process being created among DDC, DEP and National Grid should be memorialized to ensure consistency of future workforces and different administrations – within 2 weeks (maybe we should stretch to a month?)
- Continue Implementation and maintenance of Phase billing (more timely discussions on stips and dis-allowances) - ongoing
- Budget Methodology – (describe future forecasting and do overlay with NYC) – a few weeks?
- Passport Reconciliation – by end of this week
- Timeline – should see $600,000 over next couple of weeks (20 invoices processed totally $20 million that should be paid out over the coming few months?)

Thoughts??

Best,

Eileen

MEETING MINUTES

Meeting Title:	National Grid Payment Meeting	**Day/Date:**	5/29/19
Location:	19th Floor - Fishbowl	**Time:**	10:30 a.m.

1. Introductions

2. Line "h" Deduction Protocol

- A line "h" deduction was taken on Partial Payment (PP) 3423 due to the issue with the out of scope calculation performed by National Grid (NG)
- DEP issued a line "h" deduction memo for PP 3423 in order to move the payment along so the second payment can be issued. A line "h" deduction allows for the payment to be processed with a temporary deduction that can be released at a later date.
- This process is being performed in order to keep the DEP commitment of one payment a week.
- DEP to send NG a copy of a line "h" summary table to track deductions.

3. Out of Scope Calculations

- For emergency invoices, DDC identifies the locations of work being performed from the invoice. Then, DDC sends a request to DEP-BWSO for a copy of the as-built drawings. If the as-built drawings cannot be provided, DDC verifies the location and the dates of work performed and approves of the work based on this limited information. When as-built drawings have been provided by BWSO, DDC reviews the NG final sketch against the as-built drawings and looks at the retirement and relocation lengths for approval.
- For planned invoices, NG attends the alignment meeting and reviews the draft bid documents. The EP-7 package is prepared and sent to DDC to incorporate into the final bid documents. The EP-7 package includes the anticipated retirement and installation lengths for the contracts along with the EP-7 items to be included in the bid package. The invoiced NG lengths for retirement and relocation may differ from the submitted EP-7 package due to field obstructions, etc.
- A question was raised regarding the time it takes for payments to be processed from NG submittal to DDC review and then to DEP for final signoff. DDC has acknowledged that the increased load, size of projects and back and forth between DDC and NG has delayed the DDC review and approval process.
- Moving forward, the NG final sketches will include a highlighted portion for out of scope length along with the associated work order number. NG provided an example sketch.
- In regard to out of scope work, NG includes 50 feet from the curb line as part of the covered scope when a replacement/relocation is required. This has been approved by DDC in the past.

- The out of scope calculation is as follows:

$$\frac{\text{Total length of out of scope pipe per work order}}{\text{Total length of installed pipe per work order}}$$

- The NG field engineer typically determines the out of scope length in the field.
- DEP to reevaluate the out of scope lengths based on this meeting with NG and will provide a marked up set of drawings to NG for further discussion.

4. Miscellaneous Payment Items

- The 214ER Form will need to be signed in order to process PP 3424. DEP confirmed that signing the next 214ER does not bar NG from revisiting the line "h" deduction for PP 3423. NG confirmed that they will be submitting the 214ER Form to process the next payment.
- Standby time and overhead billing are being shown on the 2018 invoices. However, the values are only shown for tracking purposes and are not included in the City Share payment. The separate tracking is being performed until a determination as to whether standby and overhead billing are allowed as per the contract.
- NG to provide a response to invoice 2018-012 (PP 3458) pre-audit questions regarding the overhead and standby time question.
- Upsizing was discussed again, including the Contract stipulations versus the upsizing reduction table being used by NG. DDC and NG to look back into their records to see if this upsizing table was approved or memorialized anywhere.
- The NYC inspection cost was discussed as DEP wanted to confirm the percentage being utilized for the calculation. NG to provide the equation that they are currently using for the calculation.

5. Payment Processing

- DEP is continuing to pre-audit payments and asks that NG submit an additional 10 for review. NG confirmed that payments were sent yesterday.
- Payment 3423 was entered into FMS and NG to check the payment system to see if the payment has been entered.
- PP 3424 to be processed as soon as the DEP-214ER form is received from NG.

6. Miscellaneous

- DEP to assist DDC in receiving as-built drawings in order to perform a thorough payment review.

Dae of Request: June 10, 2019 Request No. CNY-21
Due Date: June 20, 2019 NG Request No. NG-471

KEYSPAN GAS EAST CORPORATION d/b/a NATIONAL GRID
THE BROOKLYN UNION GAS COMPANY d/b/a NATIONAL GRID NY
Case Nos. 19-G-0309 & 19-G-0310
Gas Utilities Rates

Request for Information

FROM: City of New York, Justin J. Fung

TO: National Grid, KEDNY and KEDLI Gas Infrastructure and Operations Panels

SUBJECT: Gas Operations / Maintenance

Request:

21. Aside from coordination and synergies with the Leak Prone Pipe replacement program, what processes or methods do the Companies employ to reduce the costs of City/State Construction?

    a. Provide the inputs and methodology the Companies use to evaluate whether those processes or methods achieve the desired results.

    b. If the Companies do not have these processes or methods, explain why not.

Response:

21. See the Companies' response to CNY-19.

    As discussed in the response to CNY-19, coordinating with the City of New York and other municipalities during the design phase of projects provides the best opportunity to mitigate CSC costs by identifying opportunities to mitigate interference work through project design.

    KEDNY has also implemented two key process improvements to mitigate costs through timely project delivery and avoid delay costs and/or penalties. First, KEDNY CSC has implemented a targeted project management process that creates a single point of accountability throughout the entire life cycle of each CSC project. Each project is assigned an Engineer/Project Manager who is solely responsible for the design, project management, cost tracking, and closeout. By creating a single point of accountability with knowledge of the project, the Company is better able to follow the City's work schedule requirements and manage frequent City-driven project scope and process changes.

Second, when feasible, KEDNY CSC will coordinate with NYC Department of Design and Construction contractors to incorporate gas relocation work into the City's scope of work. The goal of this process is to streamline schedules and ensure that key City milestones are met within the required timeframe. This process can also lessen the impact to the community by reducing the overall duration of construction.

Date of Request: June 13, 2019 Request No. DPS-494
Due Date: June 24, 2019 NG Request No. NG-646

KEYSPAN GAS EAST CORPORATION d/b/a NATIONAL GRID
THE BROOKLYN UNION GAS COMPANY d/b/a NATIONAL GRID NY
Case Nos. 19-G-0309 & 19-G-0310
Gas Utilities Rates

Request for Information

FROM: DPS Staff, Sean Walters

TO: National Grid, Gas Infrastructure and Operations Panel

SUBJECT: Capex – Mandated Category – Proactive Main Replacement – Leak Prone Pipe – KEDNY

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

Provide the following information regarding KEDNY's Proactive Main Replacement Program – Leak Prone Pipe (LPP).

1. Provide the average unit price per linear foot or mile for this program each year during the following fiscal years: 2015, 2016, 2017, 2018, and 2019.

2. Provide any workpapers KEDNY has developed to support the proposed unit prices shown on page 32 of its GIOP testimony and Exhibit___(GIOP-2).

3. Explain how KEDNY developed the budget for the LPP main replacement program for Data Years 1-3. In addition to added mileage, explain if any other costs are included in these projections.

4. Provide the percentage and mileage of the LPP program that KEDNY has performed by contractors vs the percentage and mileage that KEDNY performs using Company resources.

5. Provide the unit price for LPP main replacement experienced when using Company resources vs the unit price experienced when using contractors each year during the following fiscal years: 2015, 2016, 2017, 2018, and 2019.

6. Explain any efforts KEDNY uses to mitigate rising contractor costs and explain the methods used to obtain the lowest cost when contractors perform LPP work.

Response:

1. Please see table below:

DPS-494 (1)	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Installation Costs ($000)	56,687	37,797	76,090	135,579	167,233
Feet installed	92,289	79,014	120,699	160,273	162,177
Unit Cost	$ 614	$ 478	$ 630	$ 846	$ 1,031

* FY 2016 unit prices do not reflect costs to replace 10, 12, and 14 inch cast iron main that were separately recorded in that year, but are included in leak prone pipe unit prices in other years. Minor differences to previously reported quantities may exist due to post submittal work package reconciliation.

2. Attachment 1 provides the workpaper supporting the forecast unit cost shown on page 32 of the testimony. Attachment 2 is the workpaper supporting Exhibit __ (GIOP-2).

3. The Data Year 1, 2, and 3 forecasts are based on FY18 Unit Costs increased annually for inflation by 2.5% except for Contractor Costs, which were inflated at 3% to reflect recent trends in contractor cost inflation. FY 18 costs are indicative of KEDNY's costs to complete this work in the Rate Year and Data Years because prior years do not fully reflect the increased paving and restoration costs resulting from new requirements, arborist enforcement, increased permit stipulations, increased traffic plate regulations, larger service diameters, and increased pressures. Contractor prices were increased at a higher rate to reflect the impacts of new unit pricing, specifications, work requirements, and contract terms and conditions that are anticipated when contracts are re-negotiated during the rate plan.

4. The below table represents the estimated percentage of LPP replacement projects closed by contractor crews vs. in-house crews.

LPP Replacement by Resource					
Resource	FY15	FY16	FY17	FY18	FY19
Contractor	79%	84%	82%	91%	87%
In-House	21%	16%	18%	9%	13%

5. The Company has not calculated a unit price for LPP using contractor resources vs. in-house crews.

6. See the Company's response to CNY-33, which provides general cost mitigation strategies for LPP replacement. Regarding contractor resources, KEDNY's Resource Scheduling & Coordination group is responsible for optimizing use of contractor resources based on both the fiscal and calendar year work plan that is reviewed weekly. Some examples of ways that Resource Scheduling & Coordination optimizes contractor resources includes regular review of:

   a. Program progress and status based on footage complete, footage in progress, footage received and footage remaining.

b. Timing of shovel ready work (reduces over ordering of permits and overtime)

c. Project specific constraints (number of services, LP to HP upgrades, number of connection points, temp. restrictions, permit stipulations, Community board requests, city embargos)

Name of Respondent:
Mitch Hoffmann
Patty McVeigh
Victor A. Vientos
Muhammad Atiq

Date of Reply:
June 24, 2019

Date of Request: July 30, 2019 Request No. DPS-955
Due Date: August 9, 2019 NG Request No. NG-1272

KEYSPAN GAS EAST CORPORATION d/b/a NATIONAL GRID
THE BROOKLYN UNION GAS COMPANY d/b/a NATIONAL GRID NY
Case Nos. 19-G-0309 & 19-G-0310
Gas Utilities Rates

Request for Information

FROM: DPS Staff, Sean Walters

TO: National Grid, Gas Infrastructure and Operations Panel

SUBJECT: DPS-494 Follow-up – Leak Prone Pipe - KEDNY

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

1. Referring to the Companies' response to Staff's IR DPS-494, Question 1, the table shown below includes installation costs and feet installed of Leak Prone Pipe for fiscal years 2015 – 2019.

1. Please see table below:

DPS-494 (1)	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Installation Costs ($000)	56,687	37,797	76,090	135,579	167,233
Feet installed	92,289	79,014	120,699	160,273	162,177
Unit Cost	$ 614	$ 478	$ 630	$ 846	$ 1,031

* FY 2016 unit prices do not reflect costs to replace 10, 12, and 14 inch cast iron main that were separately recorded in that year, but are included in leak prone pipe unit prices in other years. Minor differences to previously reported quantities may exist due to post submittal work package reconciliation.

Further, in the Companies' response to DPS-494, Question 2, the Companies provided DPS-494, Attachment 1 which, as stated in the response is meant to supports the forecasted unit cost for the Rate Year.

Explain why the costs and feet installed presented in the table for Question 1 do not match the costs and feet installed presented in Attachment 1, provided in response to Question 2, and reconcile the differences between these two figures.

2. Referring to the table in Attachment 1 provided in the Companies' response to DPS-494, provide a description and breakdown of the capital overheads line item. Include a description of the costs associated with this line item, and the job titles and number of employees that are associated with this line item.

3. Referring to the Companies' response to question 3 in DPS-494 explains KEDNY's methodology for projecting the rate year costs for Leak prone pipe replacement, based on

fiscal year 2018 costs and annual inflation factors. KEDNY states it uses a 2.5% annual inflation for all unit costs associated with Leak Prone Pipe replacement except contractor costs, which the company inflates by 3% each year. Explain why KEDNY uses these inflation factors which are different from Exhibit___(RRP-3CU), p. 4, which shows the Company is increasing "Contractors" expense, and other O&M cost elements by 3.975% from the test year to reflect conditions in the rate year. This inflation rate is also shown on Exhibit___(RRP-8CU) for the time period between the test year and the rate year.

Response:

1. As shown in the table below, the Companies' response to DPS-494 question 1 provided Leak Prone Pipe installed footage whereas the response to question 2 provided abandoned footage.

	FY 2017	**FY 2018**
DPS-494 Question 1, Feet Installed	160,273	162,177
DPS-494 Question 2, Feet abandoned	96,506	117,173

Additionally, the FY 2017 capital costs reflected a credit of $165,000 related to Hurricane Sandy recovery that was included in question 1 but inadvertently excluded from question 2. The difference of $64,000 in FY 2018 is related to the Avenue U project included in question 2 but excluded in question 1.

$000	**FY 2017**	**FY 2018**
DPS-494 Question 1	76,090	135,579
DPS-494 Question 2	76,256	135,643
Difference	(166)	(64)

2. Attachment 1 provides the breakdown of capital overheads by Fiscal Year associated with Leak Prone Pipe. Attachment 2 provides a listing of employee job titles and the number of employees associated with capital overheads. This represents all employees charging the overhead account and is allocated to all programs in GIOP-1 based on applicable cost elements and set burden rates.

3. The Revenue Requirement Panel exhibits reflect a compound rate from the Historic Test Year to the Rate Year. The inflation applied to GIOP-1 was equivalent to the increase applied in the last rate case. The increase noted in this question of three percent for contractor charges is due to changes in New Terms & Conditions, Specification, Pricing Units and Unit Definitions.

Name of Respondent: Date of Reply:
Patricia McVeigh August 8, 2019

Date of Request: June 20, 2019 Request No. DPS-597
Due Date: July 1, 2019 NG Request No. NG-783

KEYSPAN GAS EAST CORPORATION d/b/a NATIONAL GRID
THE BROOKLYN UNION GAS COMPANY d/b/a NATIONAL GRID NY
Case Nos. 19-G-0309 & 19-G-0310
Gas Utilities Rates

Request for Information

FROM: DPS Staff, Sean Walters

TO: National Grid, Gas Infrastructure and Operations Panel

SUBJECT: Capex - Mandated Category – Proactive Main Replacement – Leak Prone Pipe - KEDLI

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

Provide the following information regarding KEDLI's Proactive Main Replacement Program – Leak Prone Pipe (LPP).

1. Provide the average unit price per linear foot or mile for this program each year during the following fiscal years: 2015, 2016, 2017, 2018, and 2019.
2. Provide any workpapers KEDLI has developed to support the proposed unit cost for LPP replacement shown on page 32 of its GIOP testimony and Exhibit___(GIOP-2).
3. Explain how KEDLI developed the budget for the LPP main replacement program for Data Years 1-3.
4. Provide the percentage and mileage of the LPP program that KEDLI had performed by contractors vs the percentage and mileage that KEDLI performed using Company resources for each of the following calendar years: 2014, 2015, 2016, 2017, and 2018.
5. Provide the unit price for LPP main replacement experienced when using Company resources versus the unit price experienced when using contractors each year during the following fiscal years: 2015, 2016, 2017, 2018, and 2019.
6. Explain any efforts KEDLI uses to mitigate rising contractor costs and explain the methods used to obtain the lowest cost when contractors perform LPP work.

Response:

1. Please see table below:

DPS-597 (1)	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Installation Costs ($000)	46,074	84,366	124,828	146,330	213,372
Feet installed	202,804	406,700	499,056	538,039	652,503
Unit Cost	$ 227	$ 207	$ 250	$ 272	$ 327

2. Attachment 1 provides the workpaper supporting the proposed unit cost for LPP replacement shown on page 32 of the testimony. Attachment 2 is the workpaper supporting Exhibit __ (GIOP-2).

3. The Data Year 1, 2, and 3 forecasts are based on FY18 Unit Costs increased annually for inflation by 2.5% except for contractor costs, 60% of which were inflated at 10.5% to reflect the impacts of new unit pricing, specifications, work requirements, and contract terms and conditions that are anticipated when contracts are re-negotiated during the rate plan. FY 18 costs are indicative of KEDLI's costs to complete this work in the Rate Year and Data Years because prior years do not fully reflect the increase for DEP Dumping Requirements, larger service diameters, and increased pressures.

   Note, in preparing the response to this information request, the Company identified a calculation error in its forecast for LPP unit costs. Attachment 2 to the Company's response to DPS-602 reflects the updated unit costs for LPP. The updated LPP unit costs will also be addressed in the Company's Corrections & Updates testimony.

4. The below table represents the estimated percentage of LPP replacement projects closed by contractor crews vs. in-house crews.

LPP Replacement By Resource					
Resource	CY14	CY15	CY16	CY17	CY18
Contractor	57.2%	72.8%	67.1%	64.4%	78.8%
In-House	42.8%	27.2%	32.9%	35.6%	21.2%

5. Because the Company does not separately track unit costs for LPP main replacements performed by contractor vs. in-house crews, the unit cost comparison is not available.

6. Please refer to the Company's response to CNY-33, which provides general cost mitigation strategies for LPP replacement. Regarding contractor resources, KEDLI's Resource Scheduling & Coordination group is responsible for optimizing use of contractor resources based on both the fiscal and calendar year work plan that is reviewed weekly. Some examples of ways that Resource Scheduling & Coordination optimizes contractor resources includes regular review of:

a. Program progress and status based on footage complete, footage in progress, footage received and footage remaining,

b. Timing of shovel ready work (reduces over ordering of permits and overtime)

c. Project specific constraints (number of services, LP to Hp upgrades, number of connection points, temp. restrictions, permit stipulations, Community board requests, city embargos)

Name of Respondent:
Muhammad Atiq
Patty McVeigh
Melissa Mancini

Date of Reply:
July 1, 2019

Date of Request: July 30, 2019 Request No. DPS-956
Due Date: August 9, 2019 NG Request No. NG-1273

KEYSPAN GAS EAST CORPORATION d/b/a NATIONAL GRID
THE BROOKLYN UNION GAS COMPANY d/b/a NATIONAL GRID NY
Case Nos. 19-G-0309 & 19-G-0310
Gas Utilities Rates

Request for Information

FROM: DPS Staff, Sean Walters

TO: National Grid, Gas Infrastructure and Operations Panel

SUBJECT: DPS-597 Follow-up – Leak Prone Pipe - KEDLI

Request:

Note: In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

1. Referring to the Companies' response to DPS-597, Question 1, the table shown below includes installation costs and feet installed of Leak Prone Pipe for fiscal years 2015 – 2019.

1. Please see table below:

DPS-597 (1)	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Installation Costs ($000)	46,074	84,366	124,828	146,330	213,372
Feet installed	202,804	406,700	499,056	538,039	652,503
Unit Cost	$ 227	$ 207	$ 250	$ 272	$ 327

Further, in the Companies' response to DPS-597, Question 2, the Companies provided Attachment 1 which as stated in the response is meant to support the forecasted unit cost for the Rate Year.

Explain why the costs and feet installed presented in the table for Question 1 do not match the costs and feet installed presented in Attachment 1, provided in response Question 2, and reconcile the differences between these two figures.

2. Referring to the table in Attachment 1 provided in the Companies' response to DPS-597, provide a description and breakdown of the capital overheads line item. Include a description of the costs associated with this line item, and the job titles and number of employees that are associated with this line item.

3. Referring to the Companies' response to DPS-597, Question 3, explain KEDLI's methodology for projecting the rate year costs for Leak prone pipe replacement, based on fiscal year 2018 costs and annual inflation factors. KEDLI states it uses a 2.5% annual

inflation for all unit costs associated with Leak Prone Pipe replacement except contractor costs, 60% of which were inflated by 10.5% each year. Explain why KEDLI uses these inflation factors which are different from Exhibit___(RRP-3CU), p. 4, which shows the Company is increasing "Contractors" expense, and other O&M cost elements by 3.975% from the test year to reflect conditions in the rate year. This inflation rate is also shown on Exhibit__(RRP-8CU) for the time period between the test year and the rate year.

Response:

1. As shown in the table below, the Companies' response to DPS-597 Question 1 provided Leak Prone Pipe installed footage whereas the response to Question 2 provided abandoned footage.

	FY 2017	**FY 2018**
DPS-597 Question 1, Feet Installed	499,056	538,039
DPS-597 Question 2, Feet abandoned	466,118	528,792

Additionally, the difference of $11,000 in FY 2018 capital costs is related to Superstorm Sandy recovery inadvertently excluded in Question 1 but included in Question 2.

$000	**FY 2018**
DPS-494 Question 1	146,330
DPS-494 Question 2	146,341
Difference	(11)

2. Attachment 1 provides the breakdown of capital overheads by Fiscal Year associated with Leak Prone Pipe. Attachment 2 provides a listing of employee job titles and the number of employees associated with capital overheads. This represents all employees charging the overhead account and is allocated to all programs in GIOP-1 based on applicable cost elements and set burden rates.

3. The Revenue Requirement Panel exhibits reflect a compound rate from the Historic Test Year to the Rate Year. The inflation applied to GIOP-1 was equivalent to the increase applied in the last rate case. The increase noted in this question of 10.5 percent for 60 percent of the contractor charges was due to New Terms & Conditions, Specification, Pricing Units and Unit Definitions.

Name of Respondent:
Patricia McVeigh

Date of Reply:
August 8, 2019

Date of Request: June 10, 2019 Request No. CNY-14
Due Date: June 20, 2019 NG Request No. NG-464

KEYSPAN GAS EAST CORPORATION d/b/a NATIONAL GRID
THE BROOKLYN UNION GAS COMPANY d/b/a NATIONAL GRID NY
Case Nos. 19-G-0309 & 19-G-0310
Gas Utilities Rates

Request for Information

FROM: City of New York, Justin J. Fung

TO: National Grid, KEDNY Gas Infrastructure and Operations Panel:

SUBJECT: Storm / Emergency Preparedness and Response

Request:

14. Please refer to the "2017 Storm Hardening Collaborative Report" dated April 16, 2018 from Case Nos. 16-G-0058 and 16-G-0059 (the "Storm Hardening Report").

    a. Has KEDNY integrated the Future 2050s Floodplain into the prioritization formula for the storm hardening work plan for existing regulator stations?

    b. If the answer to (a) is yes, please explain what impact the integration of the Future 2050s Floodplain has had on the work plan.

    c. If the answer to (a) is no, please explain why not.

    d. Has KEDNY added a flood impact score to its regulator station risk assessment process, as identified in the Storm Hardening Report?

    e. If the answer to (d) is yes, please explain how the addition of the flood impact score has impacted KEDNY's regulator station work plan for the Rate Year and each Data Year.

    f. If the answer to (d) is no, please explain why not.

    g. Please explain how KEDNY has added existing storm hardening and water-proofing guidance and practices to formal written policies and procedures.

    h. For the 13 mini-gate and take stations that are located within the Future 2050s Floodplain:

        i. Please identify and explain any design changes to telemetry cabinets for the 13 mini-gate and take stations that are located within the Future 2050s Floodplain that KEDNY has adopted based upon New York City's climate resilience design guidelines.

ii. Please identify and explain any design changes to vent posts that KEDNY has adopted based upon New York City's climate resilience design guidelines.

iii. Please identify and explain any design changes that KEDNY has adopted in order to mitigate water intrusion into the station heaters.

i. Please explain how the LPP workplan for 2019 was impacted by inclusion of the FEMA 100 Year and 500 Year Floodplains (*e.g.*, please identify how much additional LPP in the floodplain, if any, was targeted for removal as a direct result of inclusion of the FEMA 100 Year and 500 Year Floodplains within the risk ranking algorithm).

j. Please provide the results of the analysis that was conducted to determine the feasibility of a proposal to increase the standard height design for regulators and meters sets for new installations located in floodplains.

k. Please provide a copy of the Greenpoint LNG plant flood study.

l. Please identify and explain all instances where KEDNY has incorporated field guidance and existing operations practice that mitigate flooding and climate-based impacts into written processes and procedures.

Response:

14.

a. KEDNY has integrated the Future 2050s Floodplain into the station risk assessment process used to develop and prioritize the storm hardening work plan for existing regulator stations.

b. Station risk assessments are performed every three years. The next round of risk assessments for the KEDNY regulator station work plan will take place in calendar year 2020. The Company will make note of impacts to the work plan at that time.

c. N/A

d. KEDNY has added a flood impact score to its regulator station risk assessment process.

e. See the Company's response to part b, above.

f. N/A

g. The Company is finalizing development of a Storm Hardening Guidance Document that documents the work being done to storm harden stations in the floodplain. Language has been included regarding consideration of Future 2050s Floodplain when designing stations or replacing existing stations. This guidance document is currently undergoing final review before being published.

h.

i. The Company's new Storm Hardening Guidance Document that is referenced in part g, above includes consideration of NYCs climate resilience design guidelines when determining the height of telemetry cabinets for new and rehabilitated stations.

ii. The Company's new Storm Hardening Guidance Document that is referenced in part g, above includes consideration of NYCs climate resilience design guidelines when determining the height of vent poles for new and rehabilitated stations.

iii. The Company discussed water intrusion of heaters with its heater consultant and has confirmed that existing equipment deployed in NYC is rated for outdoor use per the consultant's advice. The consultant advised that equipment not rated for outdoor use would be a point of water intrusion. The Company also has expanded its heater maintenance program to enhance prevention of water intrusion, including checking effectiveness of gaskets and ensuring screen covers and drains are in place and functional.

i. An additional 2.9 miles of main is scheduled to be replaced in fiscal year 2020 as a direct result of including the FEMA100yr and FEMA500yr flood plains within the risk ranking algorithm.

j. The Company conducted outreach among other utilities via a survey regarding the feasibility and practices for increasing standard height design for meter sets and regulators among its peers and collected. The survey results are provided in Attachment 1. A majority of the respondents were not increasing the height of the meter sets or regulators. The Company also considered the geography of its service territory and found that the flood baseline varies drastically, which creates a significant challenge for determining an alternate standard design height. The Company is not recommending increasing the standard height design for regulators and meters sets for new installations. The Company is actively pursuing Remotely Operated Service Shutoff Valves for the services in the flood plains that will automatically shut off the gas service in the event of the flooding to mitigate risk for customers and communities located within flood plains.

k. Attachment 1 to CNY-13 provides the Greenpoint LNG plant flood study.

l. The Company's new Storm Hardening Guidance Document that is referenced in part g, above states that the operations team is responsible to discuss with engineering any stations that continue to be affected by flooding as noticed during monthly station inspections.

The Brooklyn Union Gas Company
d/b/a National Grid NY
Case 19-G-0309/0310
Attachment 1 to CNY-14
Page 1 of 1

Company Name	Serve FEMA Flood Zone	Height of meters set increase beyond flood base line	Inside/Outside
Utility 1	Yes	N/A	Both
National Grid	Yes	N/A	Both
Utility 2	Yes	N/A	Both
Utility 3	Yes, we have customers within the 100 year flood zone.	It depends on the meter fit location within the flood zone.	Outside meter sets
Utility 4	No	N/A	N/A
Utility 5	Did Not Respond	Did Not Respond	Did Not Respond
Utility 6	Yes	N/A	Both
Utility 7	Yes	N/A	Both
Utility 8	No	N/A	Outside
Utility 9	Yes	N/A	Both
Utility 10	No	N/A	NO
Utility 11	Yes I believe we do	N/A	We have both, but are not aware of any inside meter sets that are inside the flood plain. We are actively trying to eliminate inside meter sets and have very strict requirements that make installation of new inside meter sets very onerous on the property owner.
Utility 12	Yes	Generally 6-12 inches – Case by Case determination	Both
Utility 13	Yes	N/A	Outside
Utility 14	Yes	Specific to premises	Both. We are in the process of replacing all inside meter sets with outside meter sets.
Utility 15	Yes	N/A	Both
Utility 16	Yes	N/A	Both
Utility 17	Yes	N/A	Both
Utility 18	Yes	N/A	Outside
Utility 19	Yes	N/A	Both (vast majority outside)