

PUC 5-1

Request:

Please explain how Service Company costs are allocated to each of the distribution companies, specifically identifying each cost category, and explaining how each of these cost categories is quantified, allocated, charged, and paid.

Response:

Please see the following excerpts from National Grid's Cost Allocation Manual, a copy of which is provided as Attachment PUC 5-1:

The Service Company renders services to companies in the National Grid USA holding company system. The organization, conduct of business and method of cost allocation of the Service Company are designed to perform services and provide goods economically and efficiently for the benefit of affiliate companies at cost, fairly and equitably allocated among them.

The Cost Allocation Manual (CAM) serves as a guide to charge costs to the National Grid USA client companies by the Service Company or among affiliates in the event of storm restoration and other emergency services. The prevailing premise of these cost allocation guidelines is that allocation methods should not result in subsidization of non-regulated services or products by regulated entities or subsidization of services or products from one regulated entity to another.

The following principles guide the allocation of costs of products or services provided by the Service Companies to the Client or Operating Companies. These principles also apply to transactions among Operating Companies such as storm restoration services.

- a. Direct charging or direct assignment is the preferred allocation methodology and should be used if the cost of providing a product or service can be identified with the specific affiliates receiving the benefit of that product or service. Direct charging should be used only if the cost of providing a product or service to an individual Client Company can be isolated and reported separately from costs to provide other products or services and from costs to provide the same product and service to other Client Companies.
- b. The costs of products and services that cannot be direct charged should be allocated based on cost causative allocation bases representative of the underlying cost drivers of that product or service.
- c. The cost allocation methodology should be comprehensive, transparent, stable and administratively manageable and cost effective.

- d. The calculation of the cost allocation bases should be supported by a clearly defined methodology, model and supporting policy and procedure documentation.
- e. The cost allocation methodology should accommodate changes in the size of the allocation bases from period to period based on changes in the underlying cost drivers; the allocation bases should not vary significantly from period to period for uncontrollable factors not related to the underlying cost drivers. For example, an allocation basis should not fluctuate significantly from period to period based on changes in weather if weather is not a cost driver for that activity.
- f. The calculation of the allocation bases should be performed at least annually, and more frequently if needed, to reflect significant events (e.g., the sale of a significant affiliate).

Costs are defined into four categories for purposes of allocating the costs of Service Company products and services to the Operating Companies. This hierarchy represents the preferred order of methodologies to be used when allocating costs. These four cost categories are:

Directly Assignable – Expenses incurred for activities and services exclusively for the benefit of an affiliate.

Directly Attributable – Expenses incurred for activities and services that benefit more than one affiliate and which can be allocated based on direct measures of cost causation; for example number of employees or number of invoices processed.

Indirectly Attributable – Expenses incurred as a “cost of doing business” that do not relate to the provision of specific products and services. The costs typically benefit all entities within the corporate umbrella. Examples include governance costs, Corporate Secretary costs, and investor relations costs. These costs typically are allocated based on a general measure of cost causation, commonly referred to as the general allocator.

Unattributable – Expenses incurred for activities or services that have been determined as inappropriate for apportionment to the operating company affiliates. These costs relate primarily to activities such as corporate diversification, political or philanthropic endeavors and, as such, are charged directly to the parent company, National Grid USA.

It is expected that the majority of costs charged to an affiliate will be based on the direct assignment or direct attribution of costs and that costs indirectly attributable to an affiliate will represent the smallest category of costs.

As there are several options available for allocation, every attempt should be made to use one of the existing methods. If the business requires a new allocation method (examples of methods are

of employees, # of customers, square footage, etc.), it is required to reach out to the Service Company requesting the new method with a detailed explanation and the documentation providing all necessary support (including the forecasted impact) for the new calculation.

Following Service Company approval, the business should work with their Financial Business Partner to coordinate the required Regulatory approvals with Regulatory and Legal teams.

Subsequent to approval from the various regulatory groups, the implementation of the new method will follow the annual schedule and will be implemented on April 1. The metrics will be also be updated annually in line with the existing methods.

The Cost Allocation Compliance Program was designed to be an internal review of the allocations by monitoring transactions and providing feedback. This process allows the CAM to be updated if the business processes have changed and will need to use additional or existing allocation methods previously not approved for that business area.

For further details, please refer to Attachment PUC 5-1.

National Grid USA

Cost Allocation Manual

Revised, April 2017

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1. Introduction

National Grid, a publicly traded company based in the United Kingdom, is an international Electricity and Gas Company and one of the largest investor-owned energy companies in the world. National Grid USA (Company) is a wholly-owned subsidiary of National Grid which provides energy services in Massachusetts, New York and Rhode Island.

National Grid USA Service Company, Inc. (Service Company), a wholly-owned subsidiary of National Grid USA, is a company engaged primarily in the rendering of services to companies in the National Grid USA holding company system. The organization, conduct of business and method of cost allocation of the Service Company are designed to result in the performance of services and the provision of goods economically and efficiently for the benefit of affiliate companies at cost, fairly and equitably allocated among such companies.

The purpose of the Cost Allocation Manual (CAM) is to serve as a guide as to the manner in which costs should be charged to the National Grid USA client companies (Client Companies) by the Service Company or among affiliates in the event of storm restoration and other emergency services. The prevailing premise of these cost allocation guidelines is that allocation methods should not result in subsidization of non-regulated services or products by regulated entities or subsidization of services or products from one regulated entity to another.

The provision of administrative services to the Client Companies by the Service Company is specified in service agreements filed with the respective utility regulatory commissions (Commissions).

2. Responsibility for Maintaining the CAM

The VP, US Financial Controller, has overall responsibility for the Company's cost allocation policies and procedures. The Service Company Management, has day-to-day responsibility for maintaining the CAM and ensuring that accounting records reflect the policies and procedures described in the CAM. This includes responsibility for maintaining the list of approved cost allocation bases as described in Section 9 of this manual.

3. Definitions

- a. **Act** – Any State or Federal law or regulation providing guidance and requirements related to cost allocations or the pricing of services provided among affiliates.

National Grid is required to comply with the Federal Energy Regulatory Commission's (FERC) Regulations Under the Public Utility Holding Company Act of 2005 (PUHCA 2005) and cross-subsidization restrictions on affiliate transactions. Specifically, these include compliance with: (1) cross-subsidization restrictions on affiliate transactions under 18 C.F.R. Part 35; (2) accounting, recordkeeping, and reporting requirements under C.F.R. Part

366; (3) Uniform System of Accounts (USofA) for centralized service companies under 18 C.F.R. Part 367; and preservation of records requirements for holding companies and service companies under C.F.R. part 368.

In the State of New York, the following sources provide substantive guidance and requirements on cost allocations.

- Public Service Law, §110(3)
 - Case 06-M-0878, Joint Petition of National Grid PLC and KeySpan Corporation for Approval of Stock Acquisition and other Regulatory Authorizations, Merger & Gas Revenue Requirement Joint Proposal (dated July 6, 2007)
 - Cases 12-E-0201 and 12-G-0202, Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Niagara Mohawk Power Corporation d/b/a National Grid for Electric Service and Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Niagara Mohawk Power Corporation d/b/a National Grid for Gas Service, Rate Plan Provisions (Appendix 7 to Joint Proposal adopted by the New York Public Service Commission in its Order dated March 15, 2013)
- b. **Affiliates** – Companies that are related to each other due to common ownership or control. For example, affiliates include National Grid USA Service Company, Niagara Mohawk Power Corporation, Massachusetts Electric, Boston Gas Company, Narragansett Electric Company, Narragansett Gas Company, KeySpan Energy Delivery of New York (KEDNY) and KeySpan Energy Delivery of Long Island (KEDLI). Public Utility Holding Company Act (PUHCA) 2005 defines the term “affiliate” of a company as any company, 5 percent or more of the outstanding voting securities of which are owned, controlled, or held with power to vote, directly or indirectly, by such company.
- c. **Associate Company** – According to PUHCA 2005, the term “associate company” refers to any company in the same holding company system with such company.
- d. **Attributable Cost** – Costs which are incurred for activities and services which benefit the client companies. Some costs are directly attributable to the client companies; other costs such as corporate governance costs are indirectly attributable to the client companies.
- e. **Client Companies** – Affiliates which receive services provided by the Service Companies.
- f. **Cost Causative Allocation Factor** – Methodology used to allocate directly attributable costs based upon measurable cost causing relationships; for example, payroll department costs are allocated on the number of employees for each entity to which the Service Company provides this service.
- g. **Commission** – The State utility regulatory commissions in the states in which National Grid operates. These include the New York Public Service Commission, the Massachusetts Department of Public Utilities and the Rhode Island Public Utilities Commission. National

Grid also provides services which are regulated by the Federal Energy Regulatory Commission.

- h. **Cost Allocation Manual (CAM)** - An indexed compilation and documentation of the Company's cost allocation policies and related procedures.
- i. **Cost Allocations** - The methods or ratios used to apportion costs. A cost allocator can be based on the origin of costs, as in the case of cost drivers; cost-causative linkage of an indirect nature; or one or more overall factors (also known as general allocators).
- j. **Common Costs** - Costs associated with services or products that jointly benefit all regulated and non-regulated business units.
- k. **Cost Driver** - A measurable event or quantity which influences the level of costs incurred and which can be directly traced to the origin of the costs themselves; for example, number of invoices processed is a cost driver for the Accounts Payable department. To the extent possible, the allocation basis should reflect the underlying cost driver if the cost cannot be direct charged.
- l. **Cross-subsidization** – The offering of a competitive product or service by an electric or gas public utility, or an affiliate, which relies in whole or in part on the use of utility employees, equipment or other assets, and for which full compensation (via cost allocation or direct payment), has not been provided resulting in the inappropriate transfer of benefits from the utility ratepayers to the competitive affiliate. See 18 C.F.R. Part 35 (2008) for FERC rules regarding cross-subsidization restrictions on affiliate transactions.
- m. **Direct Costs** - Costs which can be specifically identified with a particular service or product and the Client Company(s) to which that product or service is provided. These costs are charged directly to the Client Company(s).
- n. **Fully Allocated Costs** – The sum of the direct, indirect and other economic costs of all equipment, vehicles, labor, related fringe benefits and overheads, real estate, furniture, fixtures and other administrative resources utilized, and other assets utilized and costs incurred, directly or indirectly in the providing of services from the service company to an affiliate.
- o. **Functions** – Refers to the National Grid internal organizational structures under which National Grid USA conducts business.
- p. **General Allocator** – Methodology used to indirectly allocate attributable costs to entities. For National Grid USA, the general allocator is the ratio of net plant , net margins and net O&M expenses, equally weighted.
- q. **Holding Company** – PUHCA 2005 defines “holding company” as “any company that directly or indirectly owns, controls, or holds, with power to vote, 10 percent or more of the outstanding voting securities of a public-utility company or of a holding company of any public-utility company” and any person who exercises “a controlling influence over the

management or policies of any public-utility company or holding company as to make it necessary or appropriate for the rate protection of utility customers with respect to rates...”

- r. **Indirect Costs** - Costs that cannot be directly identified with the provision of a particular product or service. This includes but is not limited to governance costs, insurance, and taxes as well the cost of services supporting the Service Company such as Service Company accounting and recruiting for Service Company positions.
- s. **Jurisdictions** – Refers to the geographic areas in which National Grid USA operates. Jurisdictions are comprised of one or more utility companies.
- t. **Non-Regulated** – Those entities, products and services which are not subject to regulation by regulatory authorities.
- u. **Operating Companies** – Companies to whom the Service Companies provide products and services. Operating Companies include, but are not limited to, Niagara Mohawk Power Corporation, Massachusetts Electric, and KeySpan Energy Delivery of Long Island (KEDLI). Also referred to as Client Companies.
- v. **PUHCA 2005** – 18 C.F.R. Title 18: Conservation of Power and Water Resources, PART 366 – PUBLIC UTILITY HOLDING COMPANY ACT OF 2005
- w. **Regulated** - That which is subject to regulation by regulatory authorities such as the New York Public Service Commission.
- x. **Service** – Any managerial, financial, legal, engineering, purchasing, marketing, auditing, statistical, advertising, publicity, tax, research, or any other service (including supervision or negotiation of construction or of sales), information or data, which is sold or furnished for a charge. (PUHCA 2005)
- y. **Service Agreement** – Legal agreements between the Service Companies and the Client Companies which describe the services offered, services selected, compensation and billing, terms, and cost accumulation, assignment and allocation methodologies. Also referred to as Service Contracts. The documents are filed with the utility regulatory commissions and serve as the basis for the FERC Form 60 disclosures.
- z. **Service Company** – An affiliate which provides support services to its utility and other affiliates. This includes both the National Grid USA Service Company and the National Grid USA Engineering Services Company.
- aa. **Service Level Agreements (SLAs)** – Non-binding agreements between the functional service providers and jurisdictional presidents that define the services provided and the financial and non-financial attributes of those services.
- bb. **Support Services** – Administrative and support services that do not involve merchant functions; for example: payroll, taxes, shareholder services, insurance, financial reporting,

financial planning and analysis, corporate accounting, corporate security, human resources (compensation, benefits, employment practices), employee records, regulatory affairs, lobbying, legal, and pension management. Support Services typically refers to those services offered by the Service Company.

- cc. **Utility Companies** – Legal entities providing regulated wholesale and retail utility services.

4. Cost Allocation Principles

The following principles guide the allocation of costs of products or services provided by the Service Companies to the Client or Operating Companies. These principles also pertain to transactions among Operating Companies such as storm restoration services.

- a. Direct charging or direct assignment is the preferred allocation methodology and should be used if the cost of providing a product or service can be identified with the specific affiliates receiving the benefit of that product or service. Direct charging should only be used if the cost of providing a product or service to an individual Client Company can be isolated and reported separately from costs to provide other products or services and from costs to provide the same product and service to other Client Companies.
- b. The costs of products and services that cannot be direct charged should be allocated based on cost causative allocation bases representative of the underlying cost drivers of that product or service.
- c. The cost allocation methodology should be comprehensive, transparent, stable and administratively manageable and cost effective.
- d. The calculation of the cost allocation bases should be supported by a clearly defined methodology, model and supporting policy and procedure documentation.
- e. The cost allocation methodology should accommodate changes in the size of the allocation bases from period to period based on changes in the underlying cost drivers; the allocation bases should not vary significantly from period to period for uncontrollable factors not related to the underlying cost drivers. For example, you would not choose an allocation basis that fluctuates significantly from period to period based on changes in weather if weather is not a cost driver for that activity.
- f. The calculation of the allocation bases should be at least annually and more frequently if needed to reflect significant events (e.g., the sale of a significant affiliate).

5. Cost Apportionment Methodology

Costs are defined into the following four categories for purposes of allocating the costs of Service Company products and services to the Operating Companies. This hierarchy represents the preferred order of methodologies to be used when allocating costs. These four cost categories are:

Directly Assignable – Expenses incurred for activities and services exclusively for the benefit of an affiliate.

Directly Attributable – Expenses incurred for activities and services that benefit more than one affiliate and which can be allocated based on direct measures of cost causation; for example number of employees or number of invoices processed.

Indirectly Attributable – Expenses incurred as a “cost of doing business” that do not relate to the provision of specific products and services. The costs typically benefit all entities within the corporate umbrella. Examples include governance costs, Corporate Secretary costs, and investor relations costs. These costs are typically allocated based on a general measure of cost causation, commonly referred to as the general allocator.

Unattributable – Expenses incurred for activities or services that have been determined as not appropriate for apportionment to the operating company affiliates. These costs relate primarily to activities such as corporate diversification, political or philanthropic endeavors and, as such, are charged directly to the parent company, National Grid USA.

It is expected that the majority of costs charged to an affiliate will be based on the direct assignment or direct attribution of costs and that costs indirectly attributable to an affiliate will represent the smallest category of costs.

6. Description and Use of Service Level Agreements

Service level agreements are non-binding agreements between the functional service providers and jurisdictional presidents that define the services provided and the financial and non-financial attributes of those services. The services governed by these agreements are described in Section 6 of this manual.

Jurisdictional objectives are used to determine service provider performance goals. SLAs are a key tool by which the regulated operating companies manage both the cost and performance of services provided by the Service Company.

SLAs are negotiated annually between the functional service providers and the jurisdictions. The SLA renewal process includes a critical review of the cost and performance attributes of the services provided.

The Jurisdictional Presidents will receive reports detailing performance against the attributes agreed to in the SLAs.

7. Services Provided by the Service Company - Description and Allocation Methodology

The following table lists those services provided by the Service Company and the Client Companies to whom these services are provided. These services are provided in accordance with the service agreements filed with the Commissions. In addition, the provision of these services is governed by the Service Level Agreements described above between the functions and the jurisdictions.

**Table 7-1
Services Provided By Service Company**

<i>Function / Department</i>	<i>Description of Services Provided</i>	<i>Client Companies</i>
Operations		
Resource Planning	Prepare resource work plans; Assist on forecasting of capital spend five year plan; Manage scheduling and work coordination; Manage project control and regulatory reporting of operations projects.	Regulated Companies
Emergency Planning PMO	Develop emergency response plans and support storm restoration activities.	Electric and Gas Companies
Maintenance and Construction	Provides electric and gas maintenance of facilities and infrastructure and non-complex construction services; Conduct emergency response activities when necessary.	Electric and Gas Companies
Operations Performance	Provides quality assurance and control services for fieldwork; Manage operations metrics; Provide project management and construction services for complex projects; Develop and report of KPIs.	Regulated Companies
Control Center Operations	Operate gas and electric transmission and distribution networks and provide meter data management services.	Electric and Gas Companies
LNG Operations	Operate and maintain LNG and propane air plants; Ensure adequate regulation, compliance and training related to the LNG facilities.	Regulated Gas Companies
Operations Support	Provide fleet, aviation, materials and logistics, technical labs and testing services; Manage connections process for new gas and electric customers; Provide clerical support to all operations.	Regulated Companies

Function / Department	Description of Services Provided	Client Companies
Asset Management	Develop and deliver asset strategies and policies, procedures and work plans to manage the lifecycle of company assets enabling system performance and the reliable energy supplies; Develop strategies and plans around smart grid technologies; Manage vegetation and maintenance programs.	Regulated Companies
Gas Systems Engineering	Provides engineering and design services for gas distribution to deliver new customers connections and asset investment projects; Analyze data to ensure gas supplies are sufficient to support growth and maintain system reliability.	Regulated Gas Companies
Electric Systems Engineering	Provides planning, engineering and design services for electric transmission and distribution; Work with NERC, FERC and other working committees.	T&D Companies
Investment Planning	Develop capital plans for both electric and gas entities and monitor their long-term investment strategies and work plans; Manage sanctioning process.	Regulated Companies
FERC Operations	Develop strategy impact analyses on assets under FERC jurisdiction.	Companies under FERC Jurisdiction
Standards, Codes and Policies	Develop and communicate work and materials standards for gas and electric transmission and distribution engineering and operations; Provide training of new materials; Write procedures for gas and T&D organizations; Manage third party pole attachments.	Electric and Gas Companies
Regulatory Support and Reporting	Provide Regulatory Rate Case support e.g. technical support, expert witness support and input to discovery questions; Gather information and compile reports for required regulatory reporting.	Regulated Companies

Function / Department	Description of Services Provided	Client Companies
Safety	Manage overall and specific safety programs; ensure field identification of hazards and safety performance; Develop and manage safety communications.	All Companies
Health	Manage the wellness program and related health services; Support the delivery of health services relating to absences due to both occupational (workers comp) and non-occupational illnesses; Provide medical screening services; Administer the drug and alcohol program.	All Companies
Environment	Ensure environmental compliance with all federal, state and local regulations including developing policies and procedures, training, and reporting; Manage licensing and permitting processes; Responsible for all site investigation and remediation activities.	All Companies
Customer		
Energy Solutions Delivery	Responsible for the increase in gas margin and energy efficiency products and solutions sales.	All Companies
Energy Products	Provide product knowledge and technical expertise for all growth programs; Manage the planning and evaluation of electric and gas energy efficiency, demand reduction, and climate change policy initiatives; Design new and manage existing portfolio of customer-focused programs for business and residential markets.	All Companies
Market Strategy and Implementation	Develop and implement market research and intelligence, market strategy, trade marketing, web marketing initiatives and overall communications.	Regulated Companies

Function / Department	Description of Services Provided	Client Companies
Customer and Business Strategy	Design emergency programs for each jurisdiction; Serve as energy efficiency regulatory leader, collecting expenses related to energy efficiency; Manage solar and electric vehicles programs; Conceptualize corporate image; Manage relationships with and supports through economic development activities the local communities in which NG operates.	All Companies
Energy Procurement	Plan for and acquire energy (gas and electric) and related commodities; Manage jurisdictional and seasonal contracts as well as FERC compliance activities including training; Handle RFPs in MA and RI to contract with renewable energy suppliers (Solar, Wind, etc.); Manage long term gas planning processes including planning for peak loads, handling long-haul gas pipeline and market area storage.	Regulated Companies
Lead Intake	Contact center for prospective gas conversion customers.	Regulated Gas Companies
Customer Analytics and Risk Management	Provides market analytics, electricity and gas forecasting; Customer Choice studies and administration of CC program, commercial and wholesale electric market policy services; Perform research trends on energy usage.	All Companies
Customer Care	Manage customer inquiries made either in-person, by telephone, by mail and by email; Manage emergency contact center; Manage outsourcing and move/connect inbound and outbound calls.	All Companies

Function / Department	Description of Services Provided	Client Companies
Customer Operations Support	Manage connections process for new gas and electric customers; Provide clerical support to all operations.	All Companies
US Regulation & Pricing		
Regulatory Strategy	Assess revenue requirements, design pricing structures, and file and defend rate cases. Compile earnings reports, compliance filings, special filings and any other filings required by the PUC on a yearly basis.	Regulated Companies
Pricing and Federal Affairs	Develop long-term regulatory goals and filing plans consistent with business plans, trends, pricing and policy; Manage regulatory relationships; and provide strategic and policy advice to the regulated entities.	Regulated Companies
US Human Resources		
Labor & Employee Relations	Advise and assist the all companies with: <ul style="list-style-type: none"> • Labor contract negotiations and administration • Investigations into specific instances of misconduct or malfeasance • Employee grievances, arbitration and external complaint administration and management • Litigation 	All Companies
US HR Business Partner	Assist with the development of the annual and five-year human resources plan and workforce strategy; Facilitate the succession planning process and organizational design; Drive the performance management process.	All Companies

Function / Department	Description of Services Provided	Client Companies
Recruiting, Inclusion & Diversity	Identify recruitment needs and create regional recruiting strategies to source those needs, including external sourcing management, internal sourcing management and the testing and hiring and testing of union employees; Advise and assist operating companies in the administration of the design and implementation of diversity and EEO programs.	All Companies
HR Operations	Provide overall direction and leadership for the HR function while managing internal HR metrics and performance management.	All Companies
Compensation, Benefits & Pensions	Provide central administration for payroll and employee benefit and pension plans including: <ul style="list-style-type: none"> • Design and implementation of Total Rewards packages • Compliance with requirements of regulatory bodies. 	All Companies
Technical Training	Assist with the design and delivery of technical training programs for Gas, Electric, Safety, Process support and Professional development.	All Companies
US Finance		
Employee Services (SDC)	Provide employee services including: <ul style="list-style-type: none"> • Manage employee data within the HRIS • Provide employees and retirees with information and services related to payroll and year-end tax reporting; medical, dental and life insurance; retirement and pensions • Maintain and administer payments to current and retired employees 	All Companies

Function / Department	Description of Services Provided	Client Companies
Procure to Pay (SDC)	Maintain and administer the non-inventory procurement process; Maintain vendor master files; and administer the P-Card process, processing of invoices and review of expenses.	All Companies
Response Team (SDC)	Responsible for intake of incoming contact center calls for procurement, vendors.	All Companies
Billing Operations (SDC)	Process, review and issue customer invoices for retail and wholesale electric and gas sales; Provide maintenance of customer systems; Process billing exceptions, shared metering and mixed metering; Process special billing related to line extensions, pole rentals, water heaters, DOT work (outside companies).	All Companies
Credit and Collections (SDC)	Process employee services transactions, commercial and industrial credit and collections, and collections invoices; Devise strategy for field collections and residential collections.	All Companies
Business Process Excellence	Develop and implement reporting/communications, quality and benchmarking strategies for Shared Services; Develop and provide Training programs for shared services; Lead all continuous improvement activities; Develop and coordinate the US Service Level Agreement governance process.	All Companies
Property Strategy	Recommend strategies to optimize the use of the property portfolio.	All Companies
Facilities Management	Provide building maintenance services; provide capital improvements to NG USA facilities.	All Companies
Accounting Services	Maintain the general ledger for regulated companies; Carry out specialized accounting; Produce external reports for regulated utilities as well as PSC and FERC	All Companies

Function / Department	Description of Services Provided	Client Companies
	reports; Maintain plant accounting, billing systems, revenue accounting and reconciliations.	
Finance Business Partnering	<p>Provide decision support at the functional level which includes:</p> <ul style="list-style-type: none"> • Provide operating and capital budgets decisions and management reporting activities • Perform economic and financial analysis, and short and long-term financial forecasting • Align financial support functions with strategic plans, policies, procedures and internal controls • Perform benchmarking and monitoring of operations metrics to help the business achieve targeted results • Identify savings and potential efficiencies <p>Provide financial services at jurisdictional level which includes:</p> <ul style="list-style-type: none"> • Provide variance reporting and variance forecasting on income statement • Perform regulatory strategy/rate of return analyses • Perform revenue/margin analysis • Manage PSEG TSA, i.e. financial statements, variance analysis, contract costs and updates to contract profitability when necessary • Provide support to rate filings and rate cases 	All Companies
IS Finance	Provide decision support related to IS initiatives; Manage IS project planning, budgeting, forecasting and accounting; Maintain hardware and ongoing infrastructure services.	All Companies

Function / Department	Description of Services Provided	Client Companies
Corporate Planning and Reporting	Develop corporate Balance Sheets and Cash Flows used to develop forecasts, budget and variance reports; Report on financial statements; Manage business planning process including calendar and deliverables.	Mostly Regulated companies; consolidated US operations and internal customers
US Jurisdictions		
US Jurisdictions (NY, MA, RI, Fed, and LI)	Provide financial services at jurisdictional level which includes: <ul style="list-style-type: none"> • Provide variance reporting and variance forecasting on income statement • Perform regulatory strategy/rate of return analyses • Perform revenue/margin analysis • Manage PSEG TSA, i.e. financial statements, variance analysis, contract costs and updates to contract profitability when necessary • Provide support to rate filings and rate cases 	All Companies
US IS		
Solution Delivery	Provides centralized IS project management, application development and application support services.	All Companies
Service Delivery	Manages all IT infrastructure including data centers and voice and data networks.	All Companies
Relationship Management	Manages the relationships between IS and its internal customers.	All Companies
IS Security	Provides IS security services.	All Companies

<i>Function / Department</i>	<i>Description of Services Provided</i>	<i>Client Companies</i>
US Legal		
Corporate Counsel	Provide advice and support related to financing activity such as debt issuances, mergers and acquisitions, and commercial activities such as contracting and procurement.	All Companies
Litigation, Environment and Employment	Provide legal advice and counsel regarding litigation, environment, labor and employment issues, including issues related to National Grid's TSA with PSEG.	All Companies
Federal and State Regulatory	Provide legal strategic guidance and support on all regulatory issues related to jurisdictional operations on matters before state utility commissions and related regulators, FERC and other federal agencies.	Regulated Companies
Global Human Resources		
Technical Training	Assist with the design and delivery of technical training programs for Gas, Electric, Safety, Process support and Professional development.	All Companies
HR Business Partners	Assist with the development of the annual and five-year human resources plan and workforce strategy; Facilitate the succession planning process and organizational design; Drive the performance management process.	All Companies
Global Finance		
US Treasury	Provide services related to cash management, capital markets and compliance; pension and 401k investment management; and energy risk management and reporting (Regulated entities only).	All Companies

Function / Department	Description of Services Provided	Client Companies
US Tax	Provide income tax compliance; income tax audit defense and controversy resolution; income tax accounting and financial reporting; income tax budgeting and forecasting; and income tax research and planning.	All Companies
US Insurance	Manage the overall purchase and procurement of different types of insurance.	All Companies
Business Resiliency	Devise and implement business resiliency efforts.	All Companies
US Investor Relations	Manage relationship with the investment community including results communications and investor outreach.	All Companies
Global Legal		
Ethics and Business Conduct	Provide advice and counsel related to business ethics and compliance.	All Companies
Records Management	Provides records management services to meet business needs and ensure regulatory compliance.	All Companies
Senior Counsel Corporate		
Real Estate	Provide legal advice and counsel in connection with real property matters affecting National Grid's businesses.	All Companies
Corporate Counsel	Provide advice and support related to financing activity such as debt issuances, mergers and acquisitions, and commercial activities such as contracting and procurement.	All Companies

<i>Function / Department</i>	<i>Description of Services Provided</i>	<i>Client Companies</i>
Global Procurement		
Procurement Strategy	Provide strategic direction and oversight for the procurement function.	All Companies
Sourcing	Responsible for procuring and contracting for goods and services.	All Companies
Corporate Affairs		
Communications and Brand	Formulate and assist with communication programs and administer corporate philanthropic programs.	All Companies
Federal Affairs	Manage relationships with the Federal government, agencies and legislative bodies.	Regulated Entities
Government Relations	Manage relationships with State and local governments, agencies and legislative bodies.	Regulated Companies
Media Relations	Manage the relationship with the media including crisis and risk communications.	All Companies
Audit		
Internal Audit	Periodically conduct operating audits and audits of the accounting records and other records maintained by the operating companies. Issue audit reports and provide recommendations, as appropriate, on improving processes and the internal control framework.	All Companies
Strategy and Business Development		
Business Development	Devise and implement business development efforts (Direct charged to the US Holding Companies).	All Companies
Strategy	Coordinate development of US strategic plan.	All Companies

Table 7-2
Cost Allocation Methodology *Guide* for Services Provided

<i>Function / Department</i>	<i>Cost Allocation Methodologies</i>
Operations	
Resource Planning	<ul style="list-style-type: none"> • Direct Charge • Dollar Value of Property Owned • Total T&D Expenditures • General Allocator
Emergency Planning PMO	<ul style="list-style-type: none"> • Direct Charge • Miles of Overhead Lines • General Allocator
Maintenance and Construction	<ul style="list-style-type: none"> • Direct Charge • Total T&D Expenditures • Capital Expenditures • General Allocator
Operations Performance	<ul style="list-style-type: none"> • Direct Charge • Total T&D Expenditures • Dollar Value of Property Owned • General Allocator
Control Center Operations	<ul style="list-style-type: none"> • Direct Charge • # of Customers/Meters • General Allocator
LNG Operations	<ul style="list-style-type: none"> • Direct Charge • # of Customers/Meters • General Allocator

Function / Department	Cost Allocation Methodologies
Operations Support	<ul style="list-style-type: none"> • Direct Charge • Total T&D Expenditures • # of Customers/Meters • General Allocator
Asset Management	<ul style="list-style-type: none"> • Direct Charge • Dollar Value of Property Owned • Total T&D Expenditures • Capital Expenditures • Miles of Overhead Lines • General Allocator
Gas Systems Engineering	<ul style="list-style-type: none"> • Direct Charge • Capital Expenditures • Total T&D Expenditures • # of Customers • General Allocator
Electric Systems Engineering	<ul style="list-style-type: none"> • Direct Charge • Total T&D Expenditures • Capital Expenditures • General Allocator
Investment Planning	<ul style="list-style-type: none"> • Direct Charge • Dollar Value of Property Owned • Total T&D Expenditures • Capital Expenditures • General Allocator
FERC Operations	<ul style="list-style-type: none"> • Direct Charge • Total T&D Expenditures • General Allocator

Function / Department	Cost Allocation Methodologies
Standards, Codes and Policies	<ul style="list-style-type: none"> • Direct Charge • Total T&D Expenditures • Capital Expenditures • Dollar value of Property Owned • # of Joint Use Poles • General Allocator
Regulatory Support and Reporting	<ul style="list-style-type: none"> • Direct Charge • Total T&D Expenditures • Capital Expenditures • General Allocator
Safety	<ul style="list-style-type: none"> • Direct Charge • # of Employees • Total T&D Expenditures • General Allocator
Health	<ul style="list-style-type: none"> • Direct Charge • # of Employees • General Allocator
Environment	<ul style="list-style-type: none"> • Direct Charge • Dollar value of Property Owned • Total T&D Expenditures • General Allocator

<i>Function / Department</i>	<i>Cost Allocation Methodologies</i>
Customer	
Energy Solutions Delivery	<ul style="list-style-type: none"> • Direct Charge • # of Customers/Meters • General Allocator
Energy Products	<ul style="list-style-type: none"> • Direct Charge • # of Customers/Meters • General Allocator
Market Strategy and Implementation	<ul style="list-style-type: none"> • Direct Charge • # of Customers/Meters • General Allocator
Customer and Business Strategy	<ul style="list-style-type: none"> • Direct Charge • # of Customers/Meters • General Allocator
Energy Procurement	<ul style="list-style-type: none"> • Direct Charge • # of Customers/Meters • General Allocator
Lead Intake	<ul style="list-style-type: none"> • Direct Charge • # of Customers/Meters • General Allocator
Customer Analytics and Risk Management	<ul style="list-style-type: none"> • Direct Charge • # of Customers/Meters • General Allocator

Function / Department	Cost Allocation Methodologies
Customer Care	<ul style="list-style-type: none"> • Direct Charge • # of Inbound and Outbound Collection Calls • # of Bills Rendered • # of Customers/Meters • General Allocator
Customer Operations Support	<ul style="list-style-type: none"> • Direct Charge • # of Customers/Meters • General Allocator
Regulation & Pricing	
Regulatory Strategy	<ul style="list-style-type: none"> • Direct Charge • General Allocator
Pricing and Federal Affairs	<ul style="list-style-type: none"> • Direct Charge • General Allocator
US Human Resources	
Labor & Employee Relations	<ul style="list-style-type: none"> • Direct Charge • # of Employees • General Allocator
US HR Business Partner	<ul style="list-style-type: none"> • Direct Charge • # of Employees • General Allocator
Recruiting, Inclusion & Diversity	<ul style="list-style-type: none"> • Direct Charge • # of Employees • General Allocator

Function / Department	Cost Allocation Methodologies
HR Operations	<ul style="list-style-type: none"> • Direct Charge • # of Employees • General Allocator
Compensation, Benefits & Pensions	<ul style="list-style-type: none"> • Direct Charge • # of Employees • General Allocator
Technical Training	<ul style="list-style-type: none"> • Direct Charge • # of Employees • General Allocator
US Finance	
Employee Services (SDC)	<ul style="list-style-type: none"> • Direct Charge • # of Employees • General Allocator
Procure to Pay (SDC)	<ul style="list-style-type: none"> • Direct Charge • # of Customers/Meters • # of Invoice Lines Processed • # of PO Lines • General Allocator
Response Team (SDC)	<ul style="list-style-type: none"> • Direct Charge • # of Customers/Meters • General Allocator
Billing Operations (SDC)	<ul style="list-style-type: none"> • Direct Charge • # of Customers/Meters • # of Bills • # of Joint Use Poles • General Allocator

Function / Department	Cost Allocation Methodologies
Credit and Collections (SDC)	<ul style="list-style-type: none"> • Direct Charge • # of Inbound Call Minutes • # of Customers/Meters • # of Inbound and Outbound Collection Calls • General Allocator
Business Process Excellence	<ul style="list-style-type: none"> • Direct Charge • Follows SDC direct and cost causative charges • General Allocator
Property Strategy	<ul style="list-style-type: none"> • Direct Charge • Dollar Value of Property Owned • General Allocator
Facilities Management	<ul style="list-style-type: none"> • Direct Charge • Facilities Square Footage • General Allocator
Accounting Services	<ul style="list-style-type: none"> • Direct Charge • # of GL Transactions • Capital Expenditures • Dollar Value of Property Owned • General Allocator
Finance Business Partnering	<ul style="list-style-type: none"> • Direct Charge • Total T & D Expenditures • General Allocator
IS Finance	<ul style="list-style-type: none"> • Direct Charge • General Allocator
Corporate Planning and Reporting	<ul style="list-style-type: none"> • Direct Charge • General Allocator

Function / Department	Cost Allocation Methodologies
US Jurisdictions	
US Jurisdictions (NY, MA, RI, Fed, and LI)	<ul style="list-style-type: none"> • Direct Charge • Total T & D Expenditures • Capital Expenditures • # of Customers/Meters • General Allocator
Total US IS	
Solution Delivery	<ul style="list-style-type: none"> • Direct Charge • Mainframe Profile • Server Profile • # of Employees • General Allocator
Service Delivery	<ul style="list-style-type: none"> • Direct Charge • Mainframe Profile • Server Profile • # of Employees • General Allocator
Relationship Management	<ul style="list-style-type: none"> • Direct Charge • Mainframe Profile • Server Profile • General Allocator
IS Security	<ul style="list-style-type: none"> • Direct Charge • Mainframe Profile • Server Profile • # of Employees • General Allocator

<i>Function / Department</i>	<i>Cost Allocation Methodologies</i>
US Legal	
Corporate Counsel	<ul style="list-style-type: none"> • Direct Charge • General Allocator
Litigation, Environment and Employment	<ul style="list-style-type: none"> • Direct Charge • # of Employees • General Allocator
Federal and State Regulatory	<ul style="list-style-type: none"> • Direct Charge • General Allocator
Global Human Resources	
Technical Training	<ul style="list-style-type: none"> • Direct Charge • # of Employees • General Allocator
HR Business Partners	<ul style="list-style-type: none"> • Direct Charge • # of Employees • General Allocator
Global Finance	
US Treasury	<ul style="list-style-type: none"> • Direct Charge • Average Level of Debt Outstanding • General Allocator
US Tax	<ul style="list-style-type: none"> • Direct Charge • # of Employees • Dollar Value of Property Owned • General Allocator

Function / Department	Cost Allocation Methodologies
US Insurance	<ul style="list-style-type: none"> • Direct Charge • # of Claims Processed • Dollar Value of Property Owned • General Allocator
Business Resiliency	<ul style="list-style-type: none"> • Direct Charge • General Allocator
US Investor Relations	<ul style="list-style-type: none"> • Direct Charge • General Allocator
Global Legal	
Ethics and Business Conduct	<ul style="list-style-type: none"> • Direct Charge • General Allocator
Records Management	<ul style="list-style-type: none"> • Direct Charge • General Allocator
Senior Counsel Corporate	
Real Estate	<ul style="list-style-type: none"> • Direct Charge • General Allocator
Corporate Counsel	<ul style="list-style-type: none"> • Direct Charge • General Allocator
Global Procurement	
Procurement Strategy	<ul style="list-style-type: none"> • Direct Charge • # of PO Lines • General Allocator
Sourcing	<ul style="list-style-type: none"> • Direct Charge • # of PO Lines • General Allocator

<i>Function / Department</i>	<i>Cost Allocation Methodologies</i>
Corporate Affairs	
Communications and Brand	<ul style="list-style-type: none"> • Direct Charge • # of Customers/Meters • General Allocator
Federal Affairs	<ul style="list-style-type: none"> • Direct Charge • General Allocator
Government Relations	<ul style="list-style-type: none"> • Direct Charge • General Allocator
Media Relations	<ul style="list-style-type: none"> • Direct Charge • General Allocator
Audit	
Internal Audit	<ul style="list-style-type: none"> • Direct Charge • Other Allocation Bases Depending on Nature of Audit • # of Employees • General Allocator
Strategy and Business Development	
Business Development	<ul style="list-style-type: none"> • Direct Charge • General Allocator
Strategy	<ul style="list-style-type: none"> • Direct Charge • General Allocator

8. Affiliate Services Provided by Operating Companies – Description and Allocation Bases

On occasion, employees of one operating company provide services to another operating company. This typically happens when providing storm restoration services. In this case, the cost of the provider-company employees is billed to the service-receiving company on a full cost basis.

National Grid has some employees working on behalf of the service company who are on operating company payrolls. In these instances, the cost of these employees is allocated to the operating companies benefitting from their work as if these employees were service company employees. These employees are managed as service company employees; it is only a matter of convenience to the company that these individuals remain on the operating company payroll. The services provided by these employees are not considered to be “affiliate services provided by operating companies” for purposes of this manual.

9. Approved Cost Allocation Bases – SAP Internal Order Code (Allocation Basis Field), Description and Source

SAP Allocation Code ¹	Description	Definition / Source
C-xxx	# of Customers/Meters	Number of retail customers (via count of installed service meters) able to receive utility services by company as a percent of the CYE total. The source for this allocation basis is the SDC (Billing operations Group).
D-xxx	# of Inbound and Outbound Collection Calls	Number of inbound and outbound collection telephone calls by utility as a percent of the total based on call center telephone statistics. The source for this allocation basis is the SDC (Planning and Analysis Group).
E-xxx	# of Joint Use Poles	# of electric poles with 3rd party attachments (joint use poles) by Company as a percent of total joint use poles. The source for this allocation basis is the Network Strategy (Standards Codes and Procedures group).

¹ An Allocation Basis such as the General Allocator will have multiple SAP Allocation Codes. This is required because individual employees may provide services to one, a combination of, or all operating companies.

SAP Allocation Code ¹	Description	Definition / Source
F-xxx	# of Inbound Call Minutes	Number of minutes call center representatives are on the telephone with specific operating companies' customers based on contact center reporting systems as a percent of the total. The source for this allocation basis is the SDC (Planning and Analysis Group).
G-xxx	General Allocator - Net margin, Net plant, & Net O&M expenses	"Net Margins" are Total Operating Revenues less "Cost of Goods Sold" and revenues related to recovery of stranded costs. "Net Plant" is the sum of Net Utility Plant and Net Non-Utility Plant . "Net O&M Expenses" are all non "Cost of Goods Sold" expenses less costs allocated from the Service Company distributed to the Affiliate companies using the general allocator. A Special Report will be created to identify the amount to be excluded for Service Company Charges based on the General Allocator.
GT-xxx	General Allocator- Plus PSEG TSA Billing entity	Net margin, net plant, & Net O&M expenses post LIPA Separation.
H-xxx	# of Bills Rendered	Number of bills issued to customers by utility as a percent of the total bills in a given year. The source for this allocation basis is the SDC (Billing operations Group).
I-xxx	Dollar Value of Property Owned	A ratio based on gross fixed assets, valued at original acquisition costs, and investments owned in other companies, including construction work in progress, at the end of the calendar year, the numerator of which is for a specific client company and the denominator being all recipient client companies. The source for the calculation of this ratio will be based on FERC Form 1 reports and State regulatory Gas Company reports.
J-xxx	Facilities Square Footage	Number of occupied square feet per facility for each department or company using the facility. Periodically done on a facility by facility basis. The source of the most recent data is provided by the Financial Business Partner serving the Facilities organization.

SAP Allocation Code ¹	Description	Definition / Source
K-xxx	Average Level of Debt Outstanding	<p>Average level of long-term debt and short-term borrowing levels for prior CY by Company as a percent of the average level of long-term debt for all companies and short-term borrowing levels for all companies.</p> <ul style="list-style-type: none"> The source for the components of this allocation basis is the US Finance (Treasury group).
L-xxx	Miles of Overhead Lines	<p>Number of miles of overhead transmission and distribution lines by utility as a percent of the total.</p> <p>The source for this allocation basis is the Network Strategy (Standards Policies and Codes)</p>
N-xxx	# of Employees	<p>Total number of employees by company excluding the service company as a percent of the total. Count part time employees the same as full time employees.</p> <p>The source for this allocation basis is the SDC (Employee Services Group).</p>
O-xxx	# of P.O. Lines	<p>Number of purchase order lines for stock and non-stock materials and supplies and services by Company as a percent of the total.</p> <p>The source for this allocation basis is the SDC (Procure to pay/Payment Processing Group).</p>
Q-xxx	# of Claims Processed	<p>Number of claims processed by company based on claims department claims tracking system as a percent of the total.</p> <p>The source for this allocator basis is the US Finance (Claims group).</p>
R-xxx	# of Invoice Lines Processed	<p>Number of individual invoice lines processed by company as a percent of the total. Invoices may contain items purchased; each line represents the purchase of a specific good or service on behalf of a specific company.</p> <p>The source for this allocation basis is the SDC (Procure to Pay/Payment Processing Group).</p>
T-xxx	Total T&D and CapEx Expenditures	<p>Sum of T&D O&M and capital expenditures by Utility as a percent of total Utility T&D capital and O&M expenditures.</p> <p>The source of this allocation basis is the CAPEX based on “Cash Outflows for Plant” from FERC Form 1 Statement of Cash Flows and T&D O&M costs in the FERC reports or other equivalent reports (i.e, NY PSC report)</p>

SAP Allocation Code ¹	Description	Definition / Source
U-xxx	# of RTUs	Allocation to distribute the on going implementation of a new EMS system between the various New England Electric Operations based on the # of RTUs
V-xxx [Effective as of April 1, 2017]	EE \$ Budgets	The Calendar year EE Budgets less Customer and Shareholder Incentives. The sources for this allocation basis are the Approved Regulatory Filings for the Calendar year EE Budgets.
X-xxx	Capital Expenditures	Capital expenditures by company as a percent of the total. The source for this allocation basis is the CAPEX based on "Cash Outflows for Plant" from the FERC Form 1 Statement of Cash Flows.

10. Other Allocation Codes and Charging Bases - are available, but are not currently being used.

Other Allocation Codes

SAP Allocation Code	Description	Definition/Source
P-xxx	Mainframe Profile	Based on Company / Function use of mainframe services. The source for this allocation basis is the US Finance (IS Finance Group). [IT allocation bases subject to change as part of IT Transformation initiative]
S-xxx	Server Profile	Based on Company / Function use of server services. The source for this allocation basis is the US Finance (IS Finance Group). [IT allocation bases subject to change as part of IT Transformation initiative]
Y-xxx	# of General Ledger Transactions	The number of general ledger transactions by Company as a percent of total GL transactions for all companies. The source of this allocation basis will be SAP (still to be developed).

Other Charging Bases

Charging Basis	Definition
Time Study (Fixed Distribution)	Based on periodic time studies of work performed or planned to be performed (Time entered as if direct charged.)
Number of Airplane Trips	Fixed cost per trip calculated outside of SAP.
Number of Vehicles	Used to assign costs to client company transportation clearing accounts with calculation done outside the SAP order number.
Square Feet	Square feet per facility for facilities not covered by a J allocator.
Number of Images Printed	Based on the number of documents copied, bound and printed with the cost of the services provided based on periodic studies.
Number of Training Center Transactions	Cost to provide training billed to users on a per session attended basis.

11. Manual Allocations

There will be instances in which employees will choose to assign costs in a manner that is different from the allocation bases described above in order to ensure that costs are properly allocated among companies. To accomplish this requires a Manual Allocation. When employees choose to use a non-standard cost driver to allocate costs, the basis for that decision and the method used to allocate costs among companies should be thoroughly documented, approved by department supervision and sent to the Service Company Integrity Department in a timely manner for review.

Form to Document Use of Manual Allocations can be found on the U.S. Infonet site. See <http://us2infonet/sites/Finance/Pages/Allocations.aspx>

for reference to the form that has been developed to standardize the information gathered to support instances of “manual allocations”. Anyone using a “Manual” allocation method must complete this form and send it to the Service Company Integrity Department. A copy of the completed form should also be retained by the initiating department.

For example, a manual allocation may be required for costs to provide training in which case the Company’s benefitting from the training are not known prior to the completed enrollment. In this case, the manual allocation may be based on the relative proportion or number of employees by individual company attending the training.

12. Asset Recovery Charge

The Service Company owns assets which are used to provide services to the operating companies. These assets are primarily IT hardware and software and facilities.

The Service Company bills the operating companies a return on and of the assets it owns in a manner similar to that by which a regulated utility includes a return on and of the utility plant included in its rate base. The asset recovery charge is comprised of the following three elements:

- Depreciation
- Equity component of return
- Debt component of return

Depreciation is based on the expected useful life of the asset.

The cost of capital assumes a 50/50 equity/debt capital structure. This capital structure is used because it is representative of the capital structures of the individual operating companies and reflects National Grid's overall internal objectives for funding investments.

For rate regulated operating companies, the equity rate is that company's current, approved return on equity. For non-rate regulated operating companies, the return on equity rate is based on the allowed equity rates for the rate regulated operating companies weighted to reflect current rate bases.

The debt rate is based on the Service Company's actual overall cost of debt.

The calculation of the asset recovery charge can be inquired at ServiceCompanyAccounting@NationalGrid.com

Service Company's Return on Capital - Charged to Affiliates

The service companies own or lease a number of assets that are either used by service company employees to provide services to affiliates or are used by affiliates on a shared basis. When assets are leased by the service companies, the leased assets are charged to the operating affiliates using National Grid's cost allocation methodologies. When the service companies finance and own shared assets, the service companies charge the affiliates a rental fee based on a pre-tax return on the asset (net of deferred taxes) and booked depreciation expense.

13. SAP Service Company Orders and Work Breakdown Structure

National Grid USA uses Service Company Order and Work Breakdown Structure (WBS) elements within SAP as the mechanisms by which the appropriate allocation bases are applied to resources consumed. Individual Orders/WBS have been established for each cost center based on the work performed, the nature of resources consumed (e.g., labor, materials, outside services) in performing that work, and the operating companies benefitting from the work performed. Embedded in the WBS is the allocation code associated with the "operating companies benefitting from the work performed." Master Data Listing of All Orders and WBS Elements can be found on

the U.S. Infonet site directly under the posting of the CAM on the Allocations page. See <http://us2infonet/sites/Finance/Pages/Allocations.aspx>

Due to the complexity of the WBS coding structure and the large number of approved WBS codes, all new Service Company orders are required to be approved by Service Company Accounting prior to use. The Company has provided time entry tools to help employees choose the correct WBS when reporting time and expenses. See **Section 14. Time Reporting Procedures** for additional details.

The unique combinations used within SAP which facilitates the accurate direct charge or allocation of costs to the operating companies, include the following elements:

Order Number	WBS Element
<ul style="list-style-type: none"> • Type • Date Created • Description • Service Company Number • Responsible Cost Center • Cost Sharing 	<ul style="list-style-type: none"> • WBS Description • Object Number • Created By • Company Code • Profit Center • Level Number • Responsible Cost Center • UF 1 WBS • UF 4 WBS

14. Time Reporting Procedures

All employees of the Service Company must positively report time; that is, time reports must be completed by each employee each reporting period that reflect the actual work activities performed during that period. The time report should clearly indicate the work performed during the time reporting period and the companies on whose behalf the work was performed. This is accomplished through the use of the appropriate SAP order number. If employees work on behalf of a specific operating company, an SAP order number should be used which accommodates the direct charging to that operating company.

At the time budgets are developed for the current fiscal year, the cost center manager should review the services provided and activities performed for the upcoming year, and the companies on whose behalf those services are performed, to ensure that Internal Orders have been defined that properly reflect those services and activities. If not, the cost center manager should work with their Financial Business Partner to establish or modify the internal orders expected to be used

by that department. Once established, the cost center manager should meet with the employees in the department to communicate the list of approved, department-specific internal orders.

Throughout the year, it is the responsibility of the cost center manager to ensure the list of internal orders remains up-to-date as services provided or activities performed change or as employees leave or join the department.

However, each employee must understand the order numbers available to be charged and how they relate to the work being performed. If employees find that the existing order numbers do not reflect the work performed, for example, the employee is assigned to a cross-functional project team, they should alert their supervisor. The integrity of the cost allocation process depends on employees correctly charging their time.

To ensure the correct reporting of time, the Company has developed a series of training courses that all employees are required to take. These include courses on making correct choices for cost allocations and inputting time into the SAP Portal. The following is from the “Cost Allocation Quick Reference Guide – Corporate Functions” provided to employees in connection with this training.

Follow the steps to enter your time, expenses, or purchase in the SAP Portal. Then use the **Internal Order Search Tool** to select the appropriate allocation basis and locate the correct Internal Order:

IF...	THEN...
You are Direct Charging	Go to Step A
You are using a Cost Causative Allocator	Go to Step B
You are using a General Allocator	Go to Step C

A. Direct Charge*

*This is the *preferred method* if practical and done consistently.

What does practical and consistent mean? The main goal is to use a regular approach for allocating your costs to prevent charging a company in different ways for the same work over time.

Note: *If direct charging more than one company, be sure to provide documentation that supports the split among companies. Please ask your immediate supervisor or contact your Financial Business Partner for guidance.*

A1. Use the **OPERATING COMPANY Employee Internal Order Search Tool** to locate the correct order for the work you performed.

a. Follow the steps in the SAP Portal to select:

- Your *Department (Cost Cent)*, which is typically provided by your immediate supervisor.
- Your *Company & Segment*.
- The appropriate *Project*.

Note: *For a onetime event such as a storm, a specific order will be set up for multiple groups to use. In this case, certain steps will be necessary to follow that are different than what is described below. For storm accounting, please contact your immediate supervisor or Financial Business Partner for guidance.*

- The *Activity* for the work/service you performed, which is typically provided by your immediate supervisor.

<p>b. Once all selections are accepted, the Internal Order(s) matching your search criteria are displayed in a list at the bottom of the search window.</p> <p>A2. Follow the steps in the SAP Portal to add the correct Internal Order to your timesheet, expense report, or invoice.</p> <p><i>Note: If the correct accounting is not available after entering your search criteria, or if you are unsure which Internal Order to use, please contact your immediate supervisor or Financial Business Partner for guidance.</i></p> <p>A3. Go to step 4: <i>Follow the approved procedure to complete and submit your timesheet, expense report, or invoice.</i></p>
<p>B. Cost Causative Allocator</p> <p>If more than one cost causative allocator is listed for the activity or service provided, choose the allocator that <i>most closely reflects the underlying cost drivers</i> of the product or service, based on the activity/companies identified</p>
<p>B1. Use the SERVICE COMPANY Employee Internal Order Search Tool to locate the correct order for the work you performed.</p> <p>a. Follow the steps in the SAP Portal to select:</p> <ul style="list-style-type: none">• Your <i>Department (Cost Cent)</i>, which is typically provided by your immediate supervisor.• The <i>Activity</i> for the work/service you performed, which is typically provided by your immediate supervisor.• The <i>Allocation Basis</i> that is the Cost Causative Allocator that most closely reflects the underlying cost drivers of the product or service based on the activity/companies identified (see the table of <i>Cost Causative Allocators</i> below).• The <i>Benefitting Comp(s)</i> that is the combination of companies that benefitted from the work or service performed. <p>b. Once all selections are accepted, the Internal Order(s) matching your search criteria are displayed in a list at the bottom of the search window.</p> <p>B2. Follow the steps in the SAP Portal to add the correct Internal Order to your timesheet, expense report, or invoice.</p> <p><i>Note: If the correct accounting is not available after entering your search criteria, or if you are unsure which Internal Order to use, please contact your immediate supervisor or Financial Business Partner for guidance.</i></p> <p>B3. Go to step 4: <i>Follow the approved procedure to complete and submit your timesheet, expense report, or invoice.</i></p>

Cost Causative Allocators – *Cost Causative Allocators examples are illustrated in the chart below . All employees are advised to have a discussion with their Financial Business Partner when determining correct cost causative allocator.*

Type of Allocation	Typically Used By	Used When	Why?
Dollar Value of Property Owned	<ul style="list-style-type: none"> • Insurance • Property Group • Safety, Health & Environment 	When not directly charged: Recommending strategies to optimize the use of the property portfolio, Property Tax calculations, Insurance needs related to the various facilities, and SHES Health and Environmental compliance audits at operating company facilities	<i>The resources required to provide these services, and the benefits derived by the individual Client Companies, are related to the dollar value of property owned.</i>
Number of Customers	<ul style="list-style-type: none"> • Accounting Services (Revenue Accounting) • Credit and Collections • Customer Meter Services • Operations Support • SDC (Customer Care) 	Revenue accounting and reconciliations, Energy Products and Procurement, Energy Solution Delivery, Customer & Market Strategy, Lead Intake, Customer Analytics when not direct charged. Some SDC Customer Care, Credit and Collections, when not direct charged or call related	<i>The level of work is driven by, and the client companies benefit in proportion to, the number of customers or count of service meters by utility company.</i>
Number of Employees	<ul style="list-style-type: none"> • Corporate Affairs (Employee Communications) • Employee Services/Payroll • Human Resources • Finance (Insurance) • Finance (Tax) • IT Desktop Support (of the Payroll systems) • Safety, Health & Environment 	When not directly charged: Employee communications, Payroll tax remittances, Safety and Health programs, communications and compliance audits at company facilities, payroll related activities, employee expense processing, and all HR activities	<i>The level of work is largely driven by, or the client companies benefit in proportion to, the number of employees by Company.</i>

<i>Type of Allocation</i>	<i>Typically Used By</i>	<i>Used When</i>	<i>Why?</i>
Total T&D Expenditures	<ul style="list-style-type: none"> • COO • Finance Business Partners (Finance Strategy) • Network Strategy • Safety, Health & Environment 	<ul style="list-style-type: none"> • Provide operating and capital budget decision support and management reporting activities including economic and financial analysis, and short and long-term financial forecasting • Network Strategy activities other than vegetation management and 3rd party attachments 	<i>The level of effort spent on behalf of, and the benefits received by, the Utilities these functional areas are substantially driven by and proportionate to the combined spend on T&D O&M and Capital.</i>

C. General Allocator

This is typically used for products and services that directly benefit the National Grid USA enterprise, such as governance or business sustaining activities.

- C1.** Use the **SERVICE COMPANY Employee Internal Order Search Tool** to locate the correct order for the work you performed.
- a. Follow the steps in the SAP Portal to select:
 - Your *Department (Cost Cent)*, which is typically provided by your immediate supervisor.
 - The *Activity* for the work/service you performed, which is typically provided by your immediate supervisor.
 - The *Allocation Basis* that is the General Allocator described in the table below.
 - The *Benefitting Comp(s)* that is the combination of companies that benefitted from the work or service performed.
 - b. Once all selections are accepted, the Internal Order(s) matching your search criteria are displayed in a list at the bottom of the search window.
- C2.** Follow the steps in the SAP Portal to add the correct Internal Order to your timesheet, expense report, or invoice.

Note: *If the correct accounting is not available after entering your search criteria, or if*

you are unsure which Internal Order to use, please contact your immediate supervisor or Financial Business Partner for guidance.

C3. Go to step 4: *Follow the approved procedure to complete and submit your timesheet, expense report, or invoice.*

<i>Type of Allocation</i>	<i>Typically Used By</i>	<i>Used When</i>	<i>Why?</i>
General (Indirect)	<ul style="list-style-type: none"> • ALL Service Company departments 	Costs cannot be direct charged or allocated based on underlying cost drivers	<i>The new indirect general allocator is a Modified Massachusetts Formula consisting of Net Plant (1/3), Net Margin (1/3), and Net O&M Expenses (1/3).</i>

15. Mid-Year Changes

If a significant organizational modification occurs in mid-year, allocation pools based on historical usage statistics would be reviewed and modified at that time. In this situation, allocations using predetermined rates would be modified and implemented as soon as the new rates can be revised and uploaded into SAP.

The Asset Recovery Charge is based on allowed returns on equity; consequently, at the time that rate case decisions are issued the new allowed return on equity will be used to update the calculation of the asset recovery charge. Asset Recovery Charges can be inquired at ServiceCompanyAccounting@NationalGrid.com

16. Creation of New Allocation Methods

As there are several options available for allocation, every attempt should be made to use one of the existing methods. If the business requires a new allocation method (examples of methods are # of employees, # of customers, square footage, etc.), they are required to reach out to the Service Company requesting the new method with a detailed explanation and the documentation providing all necessary support (including the forecasted impact) for the new calculation. Following the Service Company approval, the business should work with their Financial Business Partner (FBP) to coordinate the required Regulatory approvals with Regulatory and Legal teams.

Subsequent to approval from the various regulatory groups, the implementation of the new method will follow the annual schedule and will be implemented on April 1. The metrics will be also be required to be updated annually in line with the existing methods.

APPENDIX A

Additional Information & Policies and Procedures.

Additional information related & Policies and Procedures including (1) Sample Service Company Invoice, (2) Calculated Allocation Bases for current Fiscal Year, (3) Service Company Guidelines for Posting Journal Entries, and (4) Cost Allocation Compliance Program (CACP) and required training will be available on the infonet site. See <http://us2infonet/sites/Finance/Pages/Allocations.aspx>

Any related questions regarding the Cost Allocation Compliance Program (CACP) program can be directed to the CACP team at CostAllocationComplianceProgram@nationalgrid.com

PUC 5-2

Request:

Which year or years are used to set the Rate Year allocation of Service Company costs to Narragansett Gas and Narragansett Electric? Are any normalizing adjustments made? If not, why not?

Response:

As explained in the Company's response to PUC 5-1, National Grid USA Service Company, Inc. (the Service Company) allocates costs to affiliates through the use of allocation codes when it is not reasonable to charge costs directly to one or more affiliate companies. These allocation codes are updated each fiscal year based on data from the prior calendar year. When calculating specific Rate Year proforma adjustments, the Company used the Fiscal Year 2018 Service Company allocation codes to set the Rate Year allocation of Service Company costs to the Company, as the Fiscal Year 2018 allocation rates are the most current allocations available. Otherwise, for those costs where inflation was applied to determine Rate Year expense, those Service Company allocations would remain at the level experienced in the Test Year. No other discrete adjustments were made to the Rate Year in relation to Service Company allocations to the Company.

Normalizing adjustments related to Service Company allocation percentages would not be expected barring significant changes in the business that would alter the profile of National Grid companies included in those allocations (i.e., a sale of a company or business segment or the purchase or merger of an additional company). Generally, Service Company allocation percentages do not vary significantly from year to year.

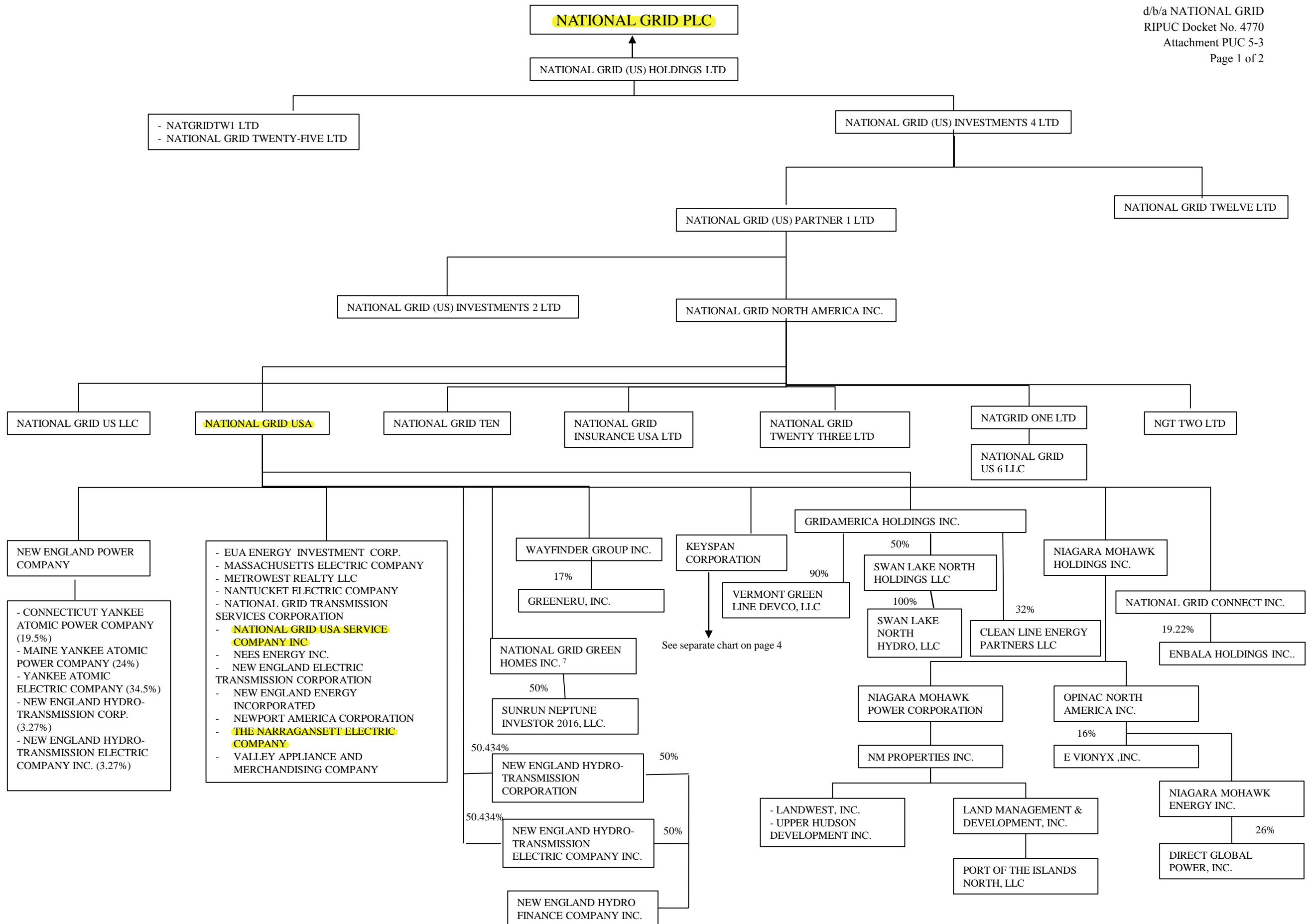
PUC 5-3

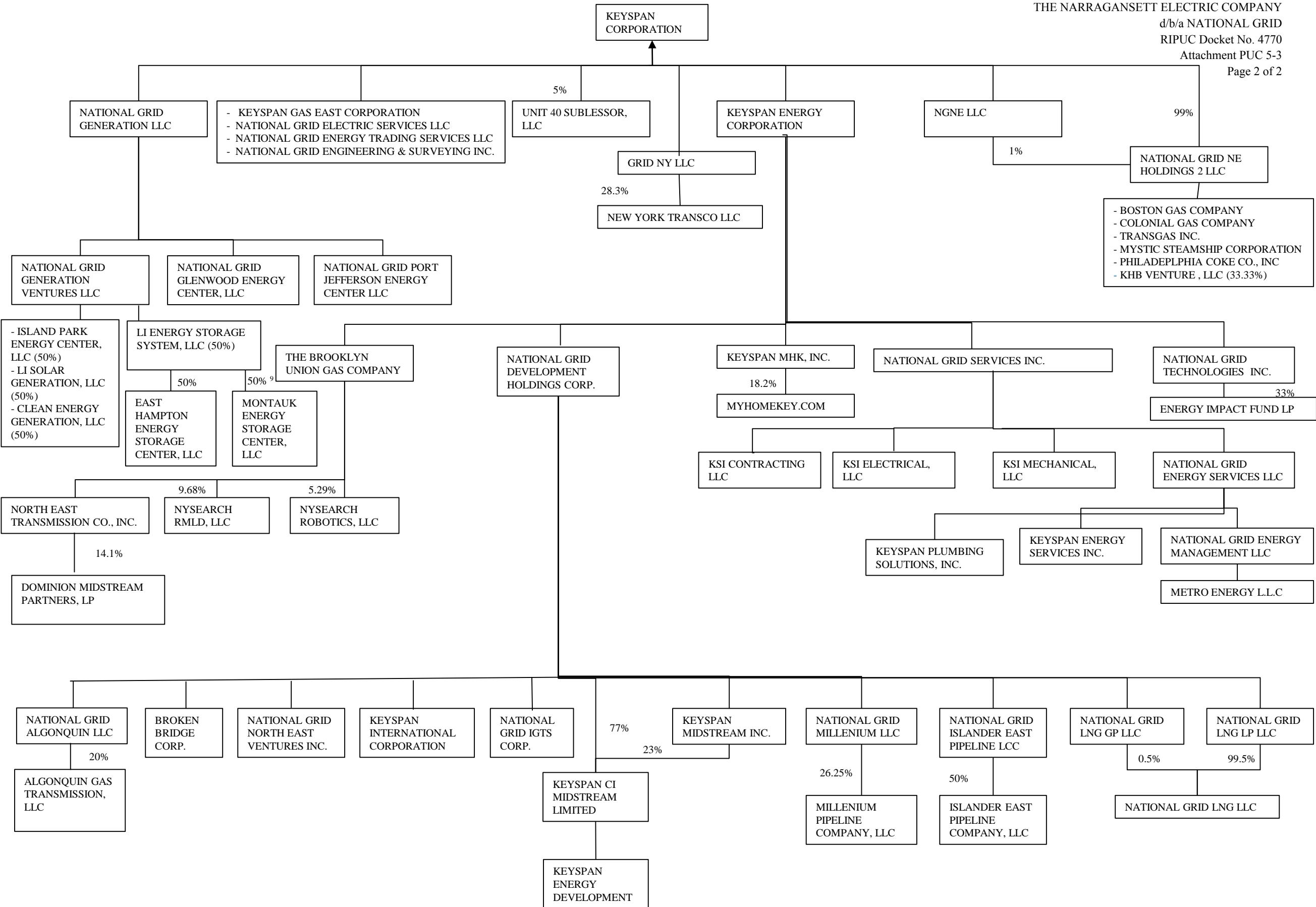
Request:

Referencing PUC-1-81 and referring to the naming conventions contained in the Company's prefiled direct testimony, please show on the organizational chart each entity that corresponds to one of the identified entities in the prefiled testimony.

Response:

Please see Attachment PUC 5-3 for a copy of National Grid plc's organizational chart, previously provided with the Company's response to PUC 1-81 as Attachment PUC 1-81, highlighting each of the following entities identified in the Company's pre-filed direct testimony: The Narragansett Electric Company, National Grid USA, National Grid USA Service Company, Inc., and National Grid plc.





PUC 5-4

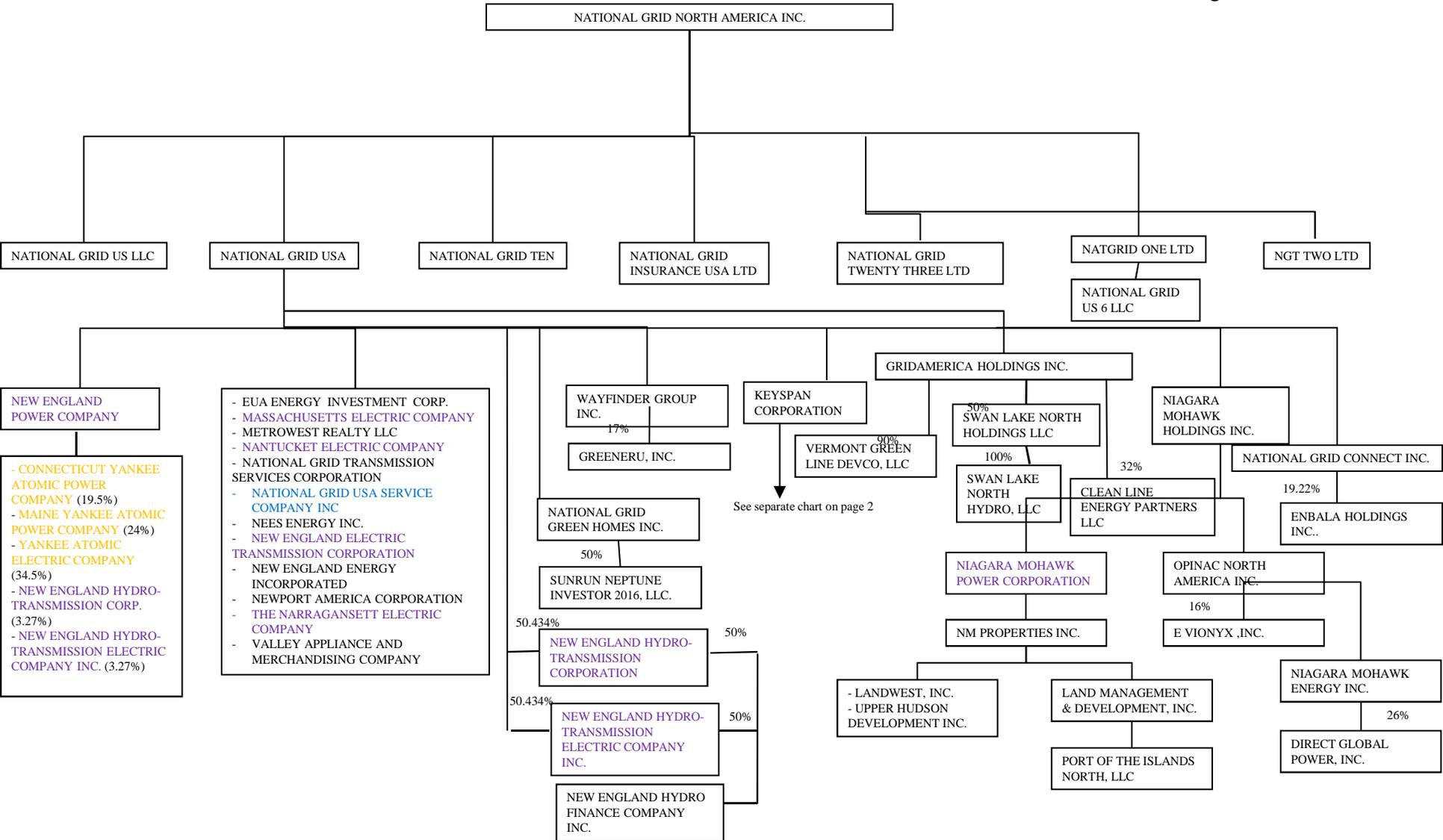
Request:

Please color code PUC-1-81 to show each entity regulated by a state regulatory authority, a United States federal regulatory authority, some other regulatory authority, or unregulated (one color for each type) (please make sure the copy is in color in both hard and electronic).

Response:

Please see Attachment PUC 5-4 for a color coded copy of an organizational chart of National Grid plc's United States entities regulated by a state regulatory authority, a United States federal regulatory authority, some other regulatory authority, or unregulated. The color code is as follows:

- Purple:** Regulated by both a state regulatory authority and the Federal Energy Regulatory Commission
- Red:** Regulated by only a state regulatory authority
- Blue:** Regulated by only the Federal Energy Regulatory Commission
- Green:** Regulated by the United States Department of Transportation (Federal Motor Carrier Safety Administration)
- Orange:** Formerly regulated by the United States Nuclear Regulatory Commission. Please note that all such entities in the chart have been decommissioned.
- Black:** Unregulated



PUC 5-5

Request:

Referencing Johnston and Connolly direct testimony, page 98, lines 20-22 and page 99, lines 7-9, please explain the funding source for the GIS plans for each Narragansett Gas and Narragansett Electric. Please provide the total estimated cost and timeline for implementation.

Response:

National Grid estimated the cost of the Gas Business Enablement Program based on enterprise-wide delivery. The GIS solution is included in the full cost estimate for the program. The ESRI software solution will be deployed to Narragansett Gas only and, therefore, no costs are allocated to Narragansett Electric. The total estimated direct cost to deliver the GIS solution is \$76,824,031. The portion of that cost allocated to Narragansett Gas is \$5,661,931, which is based on the number of retail gas customers relative to National Grid's other jurisdictions.

The first release of the ESRI GIS solution will be in Rhode Island in October 2018 to support delivery of capabilities focusing on Customer Meter Services work. Following the October 2018 release, there will be some enhancements to the GIS application, such as the ability to create leak orders on a mobile device with additional capabilities planned for deployment in April 2020 to coincide with the construction capabilities release. These enhancements will include graphic work design and redline capabilities to complete as-builts for new assets placed into service.

PUC 5-6

Request:

For each updated GIS, once implemented, please indicate how the Company will ensure timely updates to maintain the accuracy of land-based maps and conversion of gas-service records and sketches, available with mobile functionality. Please provide the same information for electric, referencing electric-service records in place of gas.

Response:

The Gas Business Enablement Program includes a new GIS solution in Rhode Island for Narragansett Gas only. The current GIS software application for Narragansett Electric will not change. The existing Narragansett Electric processes for collecting information, updating the assets in GIS, and maintaining the land-based maps also will not change.

The Gas Business Enablement Program will create new functionality for field personnel, including mobile access to maps, and will implement new processes utilizing the systems capabilities to create and transmit work packages digitally with the ability to capture as-built information digitally in the field in near real time, ensuring more efficient processing of the data and delivering improved accuracy as the gas asset information is updated in the GIS.

National Grid's Gas Distribution Support Services department is responsible for updating the gas asset records across all jurisdictions. The current paper-based process, however, is heavily reliant on many individuals across several groups to create, update, and validate the gas asset records information. Gas Distribution Support Services will continue to maintain, update, and validate the land base maps in the new ESRI GIS solution, but there will be new tools available to that group and to field personnel to do so. Part of the deployment of the ESRI GIS application will also include periodic review and update of the land-based maps following the ESRI GIS release in October 2018.

A benefit of the Gas Business Enablement solution will be the improved quality and accuracy of the gas asset records with more timely updates in the GIS. Methods of achieving these benefits will include the ability for a designer or engineer to create a digital graphic work design in the GIS application and the ability for a field employee or contractor to create a digital redline as-built confirming work performed on his or her mobile device as new assets are put into service. This will replace a largely paper-based process in place today, which is prone to timing and accuracy problems. Gas Distribution Support Services personnel will then review and validate the digital as-builts against the initial graphic work design and make the records available in the software application, viewable by all employees who require that information. The benefits of such include more timely updates and greater accuracy of new assets and the availability of those

updated records to employees and contractors with access via field mobile devices much sooner than the manual, paper-based process that exists today.

Conversion of gas service records is a one-time effort to extract, transfer, and load the existing gas service records information into the new GIS solution. The future digital process described for capturing as-built information (i.e. mains and service assets) via mobile device will eliminate the paper-based process and the associated manual conversion of new gas service records into the GIS solution.

PUC 5-7

Request:

Please explain each of the options that were considered in deciding to move forward with the Gas Business Enablement proposal and for each proposal not chosen, explain why. What were the incremental costs and benefits of each option?

Response:

The Gas Business Enablement Program is a discrete initiative to update, streamline and improve effectiveness of the following core operating processes:

- Work Management System (resource deployment)
- Asset Management System (infrastructure management)
- Customer Engagement (customer-side enablement)
- Geospatial (mapping and tracking)

The capabilities inherent in each of these core operating processes could be achieved through several possible alternative strategies for systems development. Each of the options considered in deciding to move forward with the Gas Business Enablement Program is summarized as follows:

Option 1: Tech Stabilization - Rejected

Description: The Tech Stabilization option would continue to extend the life of National Grid's current systems by: (1) sourcing incremental system support, where available, for the systems that are no longer fully supported; and (2) updating the supporting infrastructure and devices where possible.

Project Scope: No existing solutions would be replaced. This option would involve a number of tactical investments.

Project Cost: \$15 – \$20M

Delivery/Time Frame: Stabilization would be on-going until the systems were ultimately replaced.

Reasons Rejected: The Tech Stabilization option would have a limited positive impact on system down time due to the overall age of the current systems, which limits the availability of support and the ability to upgrade infrastructure. There are no anticipated incremental associated

benefits with this option, since no work processes would be upgraded and there would be no improvement in software application functionality. This option would simply defer the necessary investments to upgrade already near obsolete and unsupported systems and would not be a sustainable solution. For these reasons, the Tech Stabilization option was rejected early in the strategic assessment phase of the program (August 2016). Given the “dead-end” nature of this option, only a high-level cost estimate and implementation schedule were developed. The decision to reject this option was not based on a cost or benefit basis. Rather, this option was rejected because it did not result in a sustainable solution and would require continuing investment to replace the aging software applications.

Option 2: Like-for-Like Replacements - Rejected

Description: The Like-for-Like Replacement option is the minimum required investment to upgrade or replace current core unsupported and aging information systems to new, supported equivalents, with no improvement to system capability.

Project Scope/Delivery: The main systems that would be upgraded or replaced for National Grid include Mwork and Storms for work delivery; iScheduler for scheduling, and the Gas Asset Management System (GAMS) for asset management and engineering.

Project Cost: \$221M

Delivery/Time Frame: This option would be delivered over at least four years using waterfall techniques where a solution is not delivered until all business requirements have been designed and developed.

Reasons Rejected: This option would be a pure technology remediation project and would not align processes, increase integration between systems, or address the broader challenges and opportunities that National Grid's gas business faces. There would be a moderate improvement in application availability, but very limited other improvements. Specifically, this option would not address a number of the current gas safety and compliance challenges that require process improvements, systems integration, technical training, and data improvements. As a result, this option was rejected early in the strategic assessment (August 2016) and only a high-level cost estimate and implementation schedule were developed. The decision to reject this option was not based on a cost or benefit basis, but rather on the fact that the option would not deliver any significant business process improvement, nor would it address customer service improvements that are needed today. Lastly, this option would not position National Grid to meet changing customer and regulatory requirements into the future.

Option 3: Backbone – Rejected

Description: The Backbone option is the minimum required investment to address the system requirements to meet the current gas safety and compliance challenges and mitigate key risk. This option would not address all elements of the current gas safety and compliance challenges, nor would it enable many of the improvement opportunities. This option would improve system downtime and data sharing between teams and enable more consistent reporting.

Project Scope: The Backbone option would focus on replacing the multiple legacy work and asset management systems with a core enterprise work and asset management system (EAM). It would deliver process, integration, and capability improvements limited to the work and asset management systems. The main solutions upgraded or replaced for National Grid would be Mwork, Storms, Public Building, and Cascade (gas) for work delivery; iScheduler for resource scheduling; GAMs, Meter Inventory Tracking System (MITS), Pictometry, MapFrame, and Gas Leak Tracking for asset management and engineering; Fortis for document management; and Smallworld for GIS. The legacy systems will be replaced with Maximo for work and asset management, ESRI for GIS, and a Scheduling/Dispatch/Mobile application.

Project Cost: \$273M

Delivery/Time Frame: The Backbone option would be implemented over 3.5 years using the more traditional waterfall implementation method on premise (i.e., no Software as a Service or cloud solutions).

Reasons Rejected: The Backbone option would largely be a technology implementation-focused project. Specifically, it would not fully address the current gas safety and compliance challenges that require behavioral/technical training, data improvements such as mapping of services that are performed with paper-based methods today, and the focus on change management to support the organization through implementation. The Backbone option would not address giving the Customer Contact Center visibility of work or the customer experience elements. It also would not fully integrate asset management and work management solutions including supporting graphical electronic data capture in the field. Other capabilities that would not be delivered include advanced analytics for work and asset management, supply chain, and strategic change, which help to mitigate operational and technical risk of implementation. With the reduced focus on the operating model and change management, it is anticipated that any financial benefits would be offset by inefficient and inconsistent use of the new systems. This option was further developed in terms of timeline and costs leveraging some input from Accenture's model but was ultimately rejected by the Steering Group in December 2016 for the reasons noted above.

Option 4: Value Oriented – Jurisdiction Deployment - Selected

Description: The Value Oriented option was selected as the minimum required investment to address the risk of the legacy systems, current gas pipeline safety and compliance challenges, improvements in business performance, enhancements in the customer experience, and creation of a platform for the future. Specifically, the Value Oriented – Jurisdiction Deployment includes the scope of Option 3 (Backbone) with additional enhanced capabilities such as:

- Advanced asset management capabilities to enable graphical work design and electronic field data capture. This will improve record accuracy and increase the speed to update maps with new assets. It also will link the EAM to an Asset Investment Planning and Management (AIPM) tool to enable prioritizing asset investments across a number of criteria including risk;
- Advanced work management capabilities that include integrating resource management and planning to improve the effectiveness of delivered work;
- A customer interaction layer that places the front line employee, dispatch, the Customer Contact Center and ultimately the customer on the same platform to provide visibility of the work to all stakeholders and enable customers the flexibility to book and reschedule service appointments, and obtain information on appointments using their preferred communication channel. This also includes a new Customer Contact Center front end so that customer service representatives have visibility to the work in the field;
- Change management capabilities reflecting lessons learned from past programs and industry best practices that (1) are delivered throughout the program lifecycle; (2) engage users in the actual process of developing the solution; and (3) involve support from the program team, business leadership, and support organizations such as Supply Chain and Information Services (IS);
- Field training via multiple media (including mobile) to improve employees' technical skills and simplify work methods resulting in enhanced field employees' capabilities to consistently deliver work safely for customers, follow the correct procedures and record the required information accurately;
- Supply chain integration to the EAM to improve effectiveness of the supply chain in supporting capital project delivery;
- Automated testing capabilities that would enable agile development techniques to be used; and
- Cloud and Software as a Service solutions, where available, to move solutions onto modern platforms that will make it easier for National Grid to keep the solutions up-to-date and supported against the latest cyber security threats.

Prepared by or under the supervision of: Anthony Johnston and Christopher Connolly

Project Scope: The main solutions to be upgraded or replaced for National Grid include Mwork, Storms, Public Building, and Cascade (gas) for work delivery; iScheduler for resource scheduling; GAMS; Toolwatch; MITS; Pictometry; MapFrame; Gas Leak Tracking and Gas Valve Inventory for asset management and engineering; Fortis for document management; Smallworld for GIS; and Customer Service System (CSS) for Customer Contact Center terminals only. The solutions will be replaced with integrated versions of Maximo for work and asset management, Copperleaf for asset investment planning and management, ESRI for GIS and Salesforce for scheduling, dispatch, mobility, Customer Contact Center terminals, and customer interaction.

Project Cost: \$458M total (includes \$185M enhanced capabilities)

Delivery/Time Frame: The Value Oriented – Jurisdiction Deployment option will be delivered using predominately cloud solutions and hybrid agile development techniques over five years. Under the agile development methodology, business and IS development teams work collaboratively in short-cycles to prioritize functionality and get to a minimum viable product (i.e., the simplest solution that can be implemented) allowing earlier release of initial functionality and reprioritization of enhancements based on learning. It should be noted that, despite the overall longer five-year implementation timeframe of the enhanced capabilities in this option, implementation of the enhanced capabilities will not extend the 3.5 year timeframe of the backbone capabilities as the focus remains on risk-prioritized replacement of the core systems.

Reasons Selected: This option would be a broader transformation project focused on people, process, and technology designed to address gas pipeline safety and compliance, customer experience, and improved business performance. Solutions will be developed on a modern technical architecture to support the business for a long period of time.

This was the minimum cost solution to deliver the desired program outcomes. For all of the reasons described above, this option was recommended by the Steering Group in December 2016, and includes the most refined timeline and cost modeling. Importantly, National Grid looked at developing the solutions independently for each operating company, rather than consolidated as an enterprise-wide solution, but ruled out that approach because it was more costly (requiring duplicative design and development and testing of core functionality) than implementing an enterprise-wide solution with individual releases across the operating companies as functionality is demonstrated.

Option 5: Value Oriented – Accelerated Deployment – Rejected

Description/Project Scope/Delivery/Time Frame: The Value Oriented – Accelerated Deployment looked to implement the same scope as Option 4 described above, but on an accelerated implementation timeframe for four and a half years.

Project Cost: \$466M total (includes \$193M enhanced capabilities)

Reasons Rejected: Accelerated deployment increased delivery costs as well as implementation risks. This option was further developed similar to Option 4 in terms of timeline and costs utilizing the detailed cost model developed with Accenture. However, the option was ultimately rejected by the Steering Group in December 2016 given higher delivery costs, implementation risk, and recognition that implementation of a complex program such as Gas Business Enablement requires a measured approach, allowing sufficient time for comprehensive change management and system/regression testing.

PUC 5-8

Request:

Please provide a clear definition of Gas Business Enablement.

Response:

Gas Business Enablement is a five-year program that will consolidate and modernize the business operations and systems infrastructure used to deliver gas service to customers to simplify and standardize business and customer transactions needed to serve gas customers across National Grid's U.S. gas distribution operations.

There are three core operating capabilities that will result from this project:

1. **Work Management** – The Gas Business Enablement Program will encompass an enterprise-wide work management system to manage all field work, whether mandated, emergency, or customer driven. The system will be used to track work and assure it is completed in a timely and efficient manner; help prioritize and optimize the use of resources to complete the most appropriate work; enable the bundling of work for efficient execution; and enable work to be transferred and tracked between different departments. Associated with this capability is also the scheduling, dispatch, and mobility capabilities to more effectively get work to front line employees.
2. **Asset Management** – The Gas Business Enablement Program will encompass an enterprise-wide asset management system to provide a single repository for all assets, allowing for management practices that minimize risk and optimize the useful life of asset investments. The system will also enable visibility of the assets in the field through a new Geographic Information System (GIS).
3. **Customer Enablement** – The Gas Business Enablement Program will encompass a customer-enablement system, which will allow front line employees, call center agents, and customers to operate off the same platform. The system will provide much greater visibility into various business transactions and processes to all involved parties, ultimately enabling National Grid to provide an enhanced customer experience.

Around these main capabilities, there are a number of sub-capabilities that will become available to support the successful delivery of front-line operations. There also are a number of support activities included in the program necessary to effectuate successful implementation, including data management, operating models, training, and change management.

To support successful delivery of the program, the following interactive work streams will be conducted:

1. Portfolio Management Office;
2. Work Management;
3. Asset Management;
4. Customer Engagement;
5. GIS;
6. Data Management;
7. Supply Chain;
8. Change Management Office;
9. Change Leadership;
10. Operating Model;
11. Technical Training; and
12. Information Systems Enablement, including Digital Risk and Security.

National Grid selected a modern delivery approach that will include using agile development techniques and cloud-based solutions including software as a service. Also, National Grid will implement the program on a phased basis over five years, rather than implementing the program simultaneously across jurisdictions (as a lesson learned from the past). This approach increases the likelihood of successful implementation and provides the opportunity for adjustments and refinements as the program progresses.

The primary driver for Gas Business Enablement is to replace and consolidate aging systems infrastructure. However, a broad range of both tangible and non-tangible benefits are anticipated as a result of the systems upgrade, including:

Gas Safety and Compliance – By having a holistic view of assets and work, the Company will be able to better prioritize investment and work. The Company will have more robust processes and systems for capturing information from the field. Modern systems also will allow better validation of data at time of entry and give better access to important data for the right people to make it easier for them to do their jobs.

Customer Satisfaction – Giving the call center visibility to the circumstances occurring on actual job sites, giving front-line employees access to relevant customer history and enabling customers to book their own appointments online are all capabilities that will provide a significant enhancement to the level of service the Company is providing today.

Operational Effectiveness – Having use of seamlessly integrated systems, a reduced reliance on paper and local spreadsheets, and mobile devices for front-line employees that can be taken from the truck to the point of work, will help enhance the effectiveness and efficiency of the Company's operation.

PUC 5-9

Request:

Please provide three examples of work functions, how they are currently managed, and how they will be managed at each phase of the Gas Business Enablement rollout.

Response:

Instrumentation and Regulation

Present Day Operations:

The Instrumentation and Regulation group is primarily managed through paper-based processes. There is no work and asset management software application currently available to that group. The group manages pressure-regulating asset data and maintenance information with the support of an existing database that is maintained by the department with no support from the Information Services Group for maintenance, back-up or enhancements. Scheduling and dispatching of work is manual with each supervisor managing their respective resources. Field technician time is captured manually on paper forms, administrative staff manually enters employee time into the SAP time entry system. Field inspections and preventive maintenance activities are captured on paper forms. Validation of work completed and field data captured are performed by a compliance analyst and/or the supervisor. This field completion and asset information is captured and stored as paper records with some information entered into the department database for record keeping. All reporting for the group is manual.

1st Release – March 2018:

A minimum viable product release of the Maximo work and asset management software application integrated with the Salesforce Field Service Lightning software application will be deployed to support the Instrumentation and Regulation Group. All Instrumentation and Regulation field technicians and supervisors will receive the Salesforce Field Service Lightning software application deployed on new modern tablet devices. The base capabilities with this release will allow the creation of asset records within the enterprise asset management software application, from which inspection and preventative maintenance orders will be automatically generated. This release also includes the capability for a supervisor to view available resources, schedule, and dispatch regulator station inspection and preventative maintenance orders to field technicians. All inspection work orders will have associated job plans loaded in Maximo. The Salesforce Field Service Lightning application will be deployed on mobile devices to field technicians to receive the work, retrieve job information, and complete the tasks according to the job plan utilizing the mobile device. Data will be captured electronically and stored with the

asset information through the integration between the Salesforce and Maximo software applications. The applications will have validation rules for inspection work orders to ensure data quality, the compliance analyst and/or supervisor will have the ability to review work completed. Supervisors will have dashboard to manage the inspection work with alerts to highlight upcoming due dates. Supervisors will also be able to view technician/crew locations on a map. Employee time entry does not change with this release. The process to initiate maintenance work orders and remediation work orders resulting from inspections does not change with this release. Basic reporting of inspection work orders will be performed through the work and asset management system, reporting for other work types does not change with this first release.

2nd Release – October 2018:

Enhanced capabilities will be deployed for both the Maximo and Salesforce Field Service Lightning software applications with improved user interfaces to support field technician user experience. Expanded Instrumentation and Regulation work types will be available to initiate, schedule, dispatch, and complete work orders. Supervisors will have visibility to all work order types with the ability to manage due dates more effectively. A new Graphical Information System (ESRI GIS) application will be deployed and integrated with the work and asset management system. The GIS deployment will include a new standardized data model to provide geospatial (i.e. location) information for pressure regulating stations and other gas assets. Field technicians will be able to view the asset information in the GIS application on the mobile devices. An integrated resource management application will be deployed with base capabilities to view employee/crew skills and qualifications to better manage the work. Expanded reporting will be available in Maximo and Salesforce to support all work types and the associated work order lifecycle. Employee time entry will be captured electronically according to the orders worked through integrations between the existing SAP application and the new Maximo and Salesforce software applications.

3rd Release – October 2019:

Fully deployed and integrated work and asset management capability in Maximo with integrated dispatch and scheduling functions in Salesforce necessary to manage and support the field technicians. A further enhanced Salesforce Field Service Lightning user interface for technicians, schedulers, and dispatchers will be included in this release based on feedback from the prior two releases will support optimized work execution including field data capture and order completion. This release includes capabilities for all instrumentation and regulation work types with ability to view and add attachments to the order in Salesforce and save with the asset records in Maximo. This release includes enhanced reporting capabilities for all instrumentation and regulation work types from the new systems to support all regulatory reporting requirements. An enhanced supervisor dashboard allows full visibility to the work order lifecycle and crew/technician information. All available pressure regulating equipment asset data will be

accessible in the work, asset, and GIS software applications. Remaining manual processes will cease; the legacy instrumentation and regulation database will be retired and historical data will be archived.

Corrosion

Present Day Operations:

The Corrosion group is primarily managed through paper-based processes with manual field data collection and manual data entry. The group manages inspection and preventative maintenance activities with the support of the Pipeline Compliance System. The Pipeline Compliance System is a software application the Corrosion Team utilizes to manage cathodic inspection requirements and maintenance with the mains and services assets. All field collected data is manually entered in the system, the Pipeline Compliance System tracks due dates to support compliant operations and is the primary tool the Corrosion Group utilizes for reporting. Scheduling and dispatching of work is manual with each supervisor managing their respective resources. Field technician time is captured manually on paper forms, clerical staff manually enters employee time into the SAP time entry system. Field inspection data and preventive maintenance activities performed are captured on paper forms. Validation of work completed and field data captured is performed by a compliance analyst and/or the supervisor. This field completion and asset information is manually entered into the Pipeline Compliance System that is owned and maintained by the department with limited support from the Information Systems Group for maintenance, back-up or enhancements. All reporting for the group is manual.

1st Release – March 2018:

A minimum viable product release of the Maximo work and asset management software application integrated with the Salesforce Field Service Lightning software application will be deployed to support the Corrosion Group. All Corrosion field technicians and supervisors will receive the Salesforce Field Service Lightning software application deployed on new modern tablet devices. The base capabilities with this release will allow the creation of corrosion asset records within the enterprise asset management software application from which, inspection orders will be automatically generated. This release also includes the capability for a supervisor to view available resources, schedule and dispatch corrosion inspection orders to field technicians. All inspection work orders will have associated job plans loaded in Maximo. The Salesforce Field Service Lightning application will be deployed on mobile devices to field technicians to receive the work, retrieve job information, and complete the tasks according to the job plan utilizing the mobile device. Data will be captured electronically and stored with the asset information through the integration with the work and asset management system. The system will have validation rules for inspection work orders to ensure data quality, the compliance analyst and/or supervisor will have the ability to review work completed. Supervisors will have dashboard to manage the inspection work with alerts to highlight

upcoming due dates. Supervisors will be able to view technician/crew locations on a map. Employee time entry does not change with this release. The process to initiate maintenance work orders and remediation work orders resulting from an inspection does not change with this release. Basic reporting of inspections work orders will be performed through the work and asset management system, reporting for other work types does not change with this first release.

2nd Release – October 2018:

Enhanced capabilities will be deployed for both the Maximo and Salesforce Field Service Lightning software applications with improved user interfaces to support field technician user experience. Expanded Corrosion work types will be available to initiate, schedule, dispatch and complete work orders. Supervisors will have visibility to all work order types with the ability to manage due dates more effectively. A new Graphical Information System (ESRI GIS) application will be deployed and integrated with the work and asset management system. The GIS deployment will include a new standardized data model, to provide geospatial (i.e. location) information for corrosion assets. Field technicians will be able to view the asset information in the GIS application on the mobile devices. An integrated resource management application will be deployed with base capabilities to view employee/crew skills and qualifications to better manage the work. The Salesforce Field Service Lightning application will also deliver in this release the capability for route optimization for field technicians to minimize travel between job locations. Expanded reporting will be available in Maximo and Salesforce to support all work types and the associated work order lifecycle. Employee time entry will be captured electronically according to the orders worked through integrations between the existing SAP application and the new Maximo and Salesforce software applications.

3rd Release – October 2019:

Fully deployed and integrated work and asset management capability in Maximo with integrated dispatch and scheduling functions in Salesforce necessary to manage and support the field technicians. A further enhanced Salesforce Field Service Lightning user interface for field technicians, schedulers, and dispatchers will be included in this release based on feedback from the prior two releases will support optimized work execution including field data capture and order completion. This release includes capabilities for all corrosion work types with ability to view and add attachments to the order in Salesforce and save with the asset records in Maximo. This release includes enhanced reporting capabilities for all corrosion work types from the new systems to support all regulatory reporting requirements. An enhanced supervisor dashboard allows full visibility to the work order lifecycle and crew/technician information. All available pressure regulating equipment asset data will be accessible in the work, asset, and GIS software applications. Remaining manual processes will cease; the legacy Pipeline Compliance System will be retired, and historical data will be archived.

Customer Meter Services

Present Day Operations:

The Customer Meter Services Group currently operates from the mobile work (MWork) field mobile software application to receive orders, access customer and job information, capture field data for the activity performed, and complete orders. The MWork application is deployed to field technicians on a combination of Panasonic Toughbook laptops and Itronix computers. Scheduling and dispatching of work is done within the WWork software by the Dispatching Group. Field technician time entry is primarily captured through the field mobile devices. Supervisors have the ability to view the work dispatched in MWork. The current software application has a number of limitations that prevent optimization of the workforce. Therefore, there are a number of efforts performed outside of the MWork software application to manage customer meter services activities including the scheduling and dispatch of work. Some reporting is available through the software application with additional manual reporting required to satisfy regulatory compliance reporting. The current hardware deployed to field technicians is outdated and obsolete with recurring downtime experienced by the field workforce which is affecting productivity.

1st Release – March 2018:

Salesforce Field Service Lightning application will be deployed to the Dispatch and Scheduling Group, Customer Meter Services collections technicians and supervisors overseeing collections activities on new modern tablet devices as a minimum viable product release with basic field data capture and order completion capabilities to support collections activities. The Salesforce application will be integrated with the Maximo enterprise asset management software application to manage gas meter assets. Scheduling will have the ability to dispatch to available field technicians. Field technicians conducting collections activity will have visibility into customer payment history. Time entry for field technicians performing collections activities will be manually captured and entered into the SAP time entry application. Supervisors will be able to view pending and completed work in the Salesforce application. All other customer meter services work types will continue to follow current processes with existing systems.

2nd Release – October 2018:

Enhanced capabilities will be deployed for both the Maximo and Salesforce Field Service Lightning software applications with improved user interfaces to support field technician user experience. The Salesforce Field Service Lightning software application will be deployed to all gas and electric Customer Meter Services Technicians. This release will include expanded customer meter services work types to initiate, schedule, dispatch and complete work orders. The Salesforce Scheduling tool will allow Dispatchers to see the location of field technicians and pending orders on a map which will drive more timely emergency dispatching. The scheduling

tool also has functionality to assign or recommend assignment of orders to field technicians based on skill and time requirements. The Salesforce Field Service Lightning application will also deliver in this release the capability for route optimization for field technicians to minimize travel between job locations. A common resource capacity management application will be released as a minimum viable product. This tool will integrate with Salesforce to better capture field workers absences, training and meetings and therefore will enhance our appointment scheduling options. Supervisors will have visibility to view all work order types with the ability to manage due dates more effectively. New ESRI GIS software application will be deployed and integrated with the work and asset management system. The GIS deployment will include new standardized data model with customer premise and asset information available in the system. Field technicians will be able to view the premise information including meter and service asset information in the GIS application on the mobile devices. Field technicians will also be able to capture outside readings on a map while on leak investigations. Expanded reporting will be available in Maximo and Salesforce to support all work types and the associated work order lifecycle. Employee time entry will be captured automatically according to the orders worked by the field technician through integrations between the existing SAP application and the new Maximo and Salesforce software applications. This release will also allow the Customer Contact Center to initiate all CMS work (with the exception of collections) through the Salesforce Customer Relationship Management software solution integrated with the Salesforce Field Service Mobile application.

3rd Release – October 2019:

The Company will have fully deployed and integrated work and asset management capability in Maximo with dispatch and scheduling functions in Salesforce necessary to manage and support the field technicians. A further enhanced Salesforce Field Service Lightning user interface for field technicians, schedulers, and dispatchers will be included in this release based on feedback from the prior two releases. The enhancements will support optimized work execution including field data capture and order completion. This release includes capabilities for all customer meter services work types with ability to view and add attachments to the order in Salesforce and save with the asset records in Maximo. A Customer Meter Services field technician will receive new tools to print warning tags and notices in the field to be posted at customer premises. The resource capacity management application will be enhanced with this release allowing schedule optimization of field resources to support customer appointments, emergency response, and non-scheduled activities. Work bundling capability will be available to a Scheduler with visibility to the open and upcoming orders in GIS. This release includes enhanced reporting capabilities for all customer meter services work types from the new systems to support all regulatory reporting requirements. An enhanced supervisor dashboard allows full visibility to the work order lifecycle and field technician information. All available customer premises and associated meter and service asset data will be accessible in the work, asset and GIS software applications. Remaining manual processes will cease; the legacy MWork system will be retired and historical data will be archived.

PUC 5-10

Request:

Please explain whether Gas Business Enablement is comprised of software packages or software as a service. Please explain how software as a service is utilized by the Gas Business Enablement program and the benefits of its use.

Response:

Gas Business Enablement encompasses a combination of Software as a Service (commonly referred to as SaaS), Infrastructure as a Service (commonly referred to as IaaS), and more traditional software packages.

The program's core systems, i.e., those that provide customer and end-user benefit, will function as either Software as a Service (SaaS) or using Infrastructure as a Service (IaaS). SaaS and IaaS have the benefit of shifting the technical complexity of installation, operations, maintenance, and upgrades of the platform from National Grid to a vendor partner having technical expertise for the underlying service. This in turn will allow the Gas Business Enablement Program to focus on delivering business capability more efficiently by being unburdened by deep technical complexity. Further, SaaS and IaaS solutions are highly scalable, meaning that expansion and contraction of use of the service can be accomplished with relative ease as compared with in-house software and infrastructure.

Software as a Service is an arrangement where the technical infrastructure and the software itself is installed, operated, maintained, and upgraded by the service provider. In other words, all technical responsibility for the capability is owned by the SaaS provider.

- The Gas Business Enablement Program is using a SaaS model for Salesforce and Maximo.

Infrastructure as a Service, on the other hand, is an arrangement where the "service" extends to only the underlying technical infrastructure layer and not to the software installed within it. In other words, the customer consumes the infrastructure service, but is responsible for installing, operating, maintaining, and upgrading the software deployed within that infrastructure. Despite having to retain the technical activities related to the software, the consumer of IaaS is relieved of significant technical complexity related to infrastructure. This approach is being used in cases where the software package itself is not available in a SaaS arrangement.

- The Gas Business Enablement Program is using IaaS for ESRI, which is not available in a SaaS model.

Certain traditional software packages are being used by the program for project management, version control, and release management. These software packages tend to be easier to install and maintain, and having these packages installed within the National Grid network allows for integration with other internal National Grid tools.

PUC 5-11

Request:

How does the Gas Business Enablement program address cybersecurity? Is the cybersecurity officer part of the Gas Business Enablement program? If not, why not? Are there cybersecurity experts dedicated to Gas Business Enablement program in RI and/or how is cybersecurity being considered in Gas Business Enablement program? For whom do the cybersecurity employees work?

Response:

Protection of confidential customer information, asset data, and proprietary gas network information is essential to the success of the Gas Business Enablement Program. The program team is committed to meet or exceed National Grid's stringent cybersecurity requirements, which are based on best practices in the utility and other industries. National Grid's Digital Risk and Security department provides cybersecurity guidance in development and testing activities. Digital Risk and Security will also implement device and personnel authentication, monitoring for unauthorized access to information, cloud data security services, malware protection, and identity and access management control.

National Grid has comprehensive cybersecurity requirements that are applied across all programs and projects within the company. To ensure consistency and compliance with those requirements, a centralized function within the Information Services organization is more effective and efficient than an organizational structure in which the cybersecurity function is dispersed among multiple programs and projects.

The Information Services organization is headed by the Chief Information Officer (CIO), who has responsibility for provision of information services globally. Reporting to the CIO is the Chief Information Security Officer, who has responsibility for cybersecurity globally. The Digital Risk and Security department, which reports to the Chief Information Security Officer, provides cybersecurity services to all aspects of the Information Services organization, including programs and projects throughout National Grid. The Gas Business Enablement Program has a dedicated Cyber Security Architect, who reports administratively within the Digital Risk and Security department but reports functionally to the Gas Business Enablement Program.

With respect to the Gas Business Enablement Program specifically, as noted above, the program has a dedicated Cyber Security Architect, who has been assigned to the program since mid-2017. This individual has an administrative reporting line to the Digital Risk and Security department, but reports functionally and has day-to-day accountability to the Gas Business Enablement Program. The Cyber Security Architect plays a key role within the program's governance process, applying National Grid's enterprise cybersecurity requirements to the Gas Business

Enablement Program. The Cyber Security Architect also has the authority to leverage National Grid's wider cybersecurity organization (i.e., Digital Risk and Security) to pull in additional subject matter expertise as needed.

The Gas Business Enablement Program's consulting partner also has a dedicated independent Security Architecture team embedded within the Gas Business Enablement Program, which works closely with National Grid's Cyber Security Architect. The consulting partner team provides cybersecurity expertise and recommendations based on current National Grid cybersecurity requirements with an overlay of outside perspective and cybersecurity best practices.

PUC 5-12

Request:

How would the overall project be affected if cost recovery or any part of the Gas Business Enablement program cost recovery proposals were denied by either the New York Public Service Commission (NYPSC) or the Massachusetts Department of Public Utilities (MADPU)?

Response:

Please see the Company's response to Division 3-63 (Supplemental), a copy of which is provided as Attachment PUC 5-12 for ease of reference.

As discussed in the Company's response to Division 3-63 (Supplemental), National Grid would need to assess the reasons for, and extent of, any decision by New York Public Service Commission or the Massachusetts Department of Public Utilities to deny recovery before it could determine whether and how to proceed with the program. Disallowances will affect National Grid's ability to make the required investment and move forward. However, National Grid is also committed to upgrading the systems it relies on to provide safe, reliable, and efficient service to customers across its operating companies. Therefore, disallowances in New York and Massachusetts (or Rhode Island) would cause National Grid to have to make some difficult choices that can only be made once full consideration is given to the basis for disallowance and the workarounds that may exist, if any, to address those decisions.

Division 3-63 (SUPPLEMENTAL)

Request:

To the extent regulators in New York or Massachusetts do not allow recovery of the one-time implementation expenses allocated to those jurisdictions for the Gas Business Enablement Program, will National Grid modify the program to reduce its scope and costs, or will National Grid move forward with the multi-jurisdictional project as planned?

Response:

As discussed in the Company's response to Division 3-62, the non-recurring implementation expenses are an unavoidable cost component in implementing the Gas Business Enablement Program for the benefit of customers. From a customer perspective, it is irrelevant whether project costs are capitalized or expensed. Customers benefit from the provision of safe, reliable, and efficient gas service. The total project cost will be necessarily incurred to deliver the benefits that will flow from each workstream. Therefore, for the benefits to flow to customers, the costs are appropriately incurred and should be accounted for in the ratemaking process regardless of how those costs must be recorded for accounting purposes.

National Grid is moving forward under the assumption that it will recover program costs that are shown to be reasonably and prudently incurred whether those costs are capitalized or non-capitalized, in all jurisdictions.

Supplemental Response:

The precise ratemaking practices and opportunities for cost recovery differ among Rhode Island, Massachusetts, and New York. However, in each jurisdiction, National Grid is proposing to recover the project cost to implement Gas Business Enablement in the following two steps:

1. Non-recurring operating expenses would be recovered through a jurisdiction-specific solution that follows the jurisdictional ratemaking approach.
2. Capitalized costs would be recovered through the respective capital-cost recovery mechanism, based on actual expenditures.

In all three jurisdictions involved, National Grid expects that the capitalized costs of the Gas Business Enablement Program will be recoverable through customer rates, once a proceeding has occurred determining the costs to be reasonable and prudently incurred.

With respect to non-recurring operating expenses necessarily incurred to implement the Gas Business Enablement Program, National Grid likely would not move forward with the program if no jurisdiction were to allow recovery of any portion of the non-recurring operating expenses. These expenses are estimated at a total of \$164 million across the three operating jurisdictions, or 34 percent of the total program costs. Therefore, National Grid could not reasonably undertake the investment required to implement the Gas Business Enablement Program if 34 percent of project costs are denied before the project even gets started. This would be a statement from regulators that the system is not appropriate for customers.

National Grid expects that it will be authorized to recover 100 percent of its reasonably and prudently incurred project costs and is establishing management procedures to demonstrate conclusively that the costs incurred meet the standard for cost recovery in each jurisdiction. That said, National Grid is proposing recovery of the non-recurring expenses on a jurisdictional basis, which means that there may be slight differences in the timing and amounts of recovery allowed despite the best efforts of National Grid to minimize disallowances. A rejection of the proposal to recover the non-recurring expense portion of the project costs in one jurisdiction will not stop implementation in all jurisdictions. However, rejection of the proposal to recover the non-recurring expense portion of the project cost by a single jurisdiction will have the potential to change the scope of project implementation within that jurisdiction.

Without details as to the magnitude and reason for that rejection, National Grid cannot postulate as to its resulting action. The situation would have to be evaluated from a financial, operational, and customer-service perspective to make a reasoned decision before moving forward. There is no bright-line test for the go/no-go decision or a project modification under these circumstances. For this reason, National Grid is eminently focused on managing the project to rigorous standards so that cost recovery is supported in each jurisdiction.

PUC 5-13

Request:

Referencing Johnston and Connolly direct testimony at page 121, lines 14-18, please explain how the expected cost allocation among the jurisdictions was developed for Gas Business Enablement. Please explain why this allocation methodology is appropriate to Gas Business Enablement.

Response:

The allocator selected for Gas Business Enablement is based on the number of gas retail customers in each jurisdiction, which is shown in the table below.

Description	SAP Alloc. Code	SAP Co./Seg	Jurisdiction	Company Description	Number of Customers	%
All Gas Retails	C-210	5210G	NY	Niagara Mohaw k Pow er Corporation (Gas)	639,493	16.93%
	C-210	5220G	NY	The Brooklyn Union Gas Company (KEDNY)	1,315,562	34.83%
	C-210	5230G	NY	KeySpan Gas East Corporation (KEDLI)	609,071	16.13%
	C-210	5330G	MA	Boston Gas Company	723,122	19.15%
	C-210	5340G	MA	Colonial Gas Company	211,077	5.59%
	C-210	5360G	RI	The Narragansett Electric Company (Gas)	278,403	7.37%
				Totals	3,776,728	100.00%

The customer allocator is the most appropriate for the Gas Business Enablement Program because the benefits of the program are customer focused. The Gas Business Enablement Program will enable simple and effective interactions between National Grid and its customers based on the customers' individual communications preferences by improving the self-service customer experience.

Customers will be able to: (1) schedule appointments with National Grid on their own terms for home or business, (2) change appointments as required to better fit their schedules, (3) receive reminders from National Grid about appointments and other activities, (4) submit photos to National Grid to describe an issue or problem, (5) follow up on the progress and status of work requests and appointments, and (6) view the website and understand if National Grid's crew(s) are in the vicinity.

Additionally, large commercial customers and multi-unit property owners will be able to: (1) bundle appointments to help manage time more effectively, (2) view the status and progress of their requests and appointments, (3) delegate communication and interaction preferences (e.g., delegate point of contact for each property), (4) receive notifications and alerts about an issue at assigned premises assigned, and receive for more efficient and flexible scheduling and service.

Further, National Grid Customer Contact Center employees will have a 360-degree view of customer contacts, interactions, and account history in one place in the Customer Relationship Management (i.e. Salesforce) solution. This allows National Grid Customer Contact Center employees enhanced capabilities to manage customer interactions including the ability to:

- Find information about how to establish gas service, as well as the cost for the service (i.e. CIAC);
- Perform account inquiries, including billing issues, service suspensions, etc.;
- Create and adjust payment arrangements;
- Escalate compliments and/or complaints; and
- View outage statuses and the customers impacted.

With the new solution delivering the capabilities described above, National Grid is able to report customer metrics more efficiently, create dashboards to monitor activities, and perform analytics to more effectively drive business performance.

PUC 5-14

Request:

Please provide the percentage of gas volumes delivered for each of the jurisdictions.

Response:

Please see the table below for the total volume of gas delivered in calendar year 2017 in each jurisdiction by company in millions of Dth.

<u>Jurisdiction</u>	<u>System Sendout</u>	<u>System Sendout</u>
RI - Narragansett Gas	42.131	7.32 %
MA - Colonial Gas Company	26.261	4.56 %
MA - Boston Gas Company	120.448	20.92 %
NY - Niagara Mohawk Power Corporation	121.508	21.10 %
NY - KeySpan Gas East Corporation (KEDLI)	102.374	17.78 %
NY - The Brooklyn Union Gas Company (KEDNY)	163.038	28.32 %
TOTAL	575.760	100.0 %

PUC 5-15

Request:

What would be the effect on the proposed cost recovery of Gas Business Enablement program in Rhode Island if any portion of the proposed cost recovery provisions were denied by either the NYPSC or the MADPU in their review of each of their respective distribution companies?

Response:

There are cost-recovery proposals that will occur both before and after project implementation. Therefore, there are two parts to this response.

Cost Recovery Proposals Necessary to Implement the Gas Business Enablement Program:

Although the precise ratemaking practices and opportunities for cost recovery differ among Rhode Island, Massachusetts, and New York, National Grid is proposing to recover the project cost to implement Gas Business Enablement in the following two steps in all three jurisdictions:

1. Non-recurring operating expenses would be recovered through a jurisdiction-specific solution that follows the jurisdictional ratemaking approach.
2. Capitalized costs would be recovered through the respective capital-cost recovery mechanism, based on actual expenditures.

In all three jurisdictions involved, the Company expects that the capitalized costs of the Gas Business Enablement Program will be recoverable through customer rates, once a proceeding has occurred determining the costs to be reasonable and prudently incurred.

With respect to non-recurring operating expense necessarily incurred to implement the Gas Business Enablement Program, National Grid would not likely move forward with the program if no jurisdiction were to allow recovery of any portion of the non-recurring operating expenses. These expenses are estimated at a total of \$164 million across the three operating jurisdictions, or 34 percent of the total program costs. Therefore, National Grid could not reasonably undertake the investment required to implement the Gas Business Enablement Program if 34 percent of project costs are denied before the project even gets started. This would be a statement from regulators that the system is not appropriate for customers.

National Grid expects that it will be authorized to recover 100 percent of its reasonably and prudently incurred project costs and is establishing management procedures to demonstrate conclusively that the costs incurred meet the standard for cost recovery in each jurisdiction. That said, National Grid is proposing recovery of the non-recurring expenses on a jurisdictional basis,

which means that there may be slight differences in the timing and amounts of recovery allowed despite the best efforts of National Grid to minimize disallowances. A rejection of the proposal to recover the non-recurring expense portion of the project costs in one jurisdiction will not stop implementation in all jurisdictions. However, rejection of the proposal to recover the non-recurring expense portion of the project cost by a single jurisdiction will have the potential to change the scope of project implementation within that jurisdiction. Without details as to the magnitude and reason for that rejection, National Grid cannot postulate as to its resulting action. The situation would have to be evaluated from a financial, operational, and customer-service perspective to make a reasoned decision before moving forward. There is no bright-line test for the go/no-go decision or a project modification under these circumstances. For this reason, National Grid is eminently focused on managing the project to rigorous standards so that cost recovery is supported in each jurisdiction.

Recovery of Final, Total Program Costs

As noted in the joint pre-filed direct testimony of Company Witnesses Anthony Johnston and Christopher Connolly (see, e.g., Bates Pages 120-121 of Book 7), Gas Business Enablement Program costs will be incurred by National Grid USA Service Company, Inc. and will be allocated among the operating affiliates that will share in the utilization of the program using appropriate accounting standards and allocation methodologies. Recovery of final, total program costs that is denied in one jurisdiction will not change or affect the cost allocation to another jurisdiction. Therefore, a loss of cost recovery in one jurisdiction will not increase the amount sought for recovery in other jurisdictions.

PUC 5-16

Request:

Please explain how the pre Rate Year expenditures have been allocated to each of the distribution companies.

Response:

Please refer to Attachment PUC 5-16 for the requested information. The pre-Rate Year expenditures have been broken out into actual spend through December 31, 2017 on Pages 1 through 6 of the attachment, and forecasted spend through September 1, 2018 on Page 7. The majority of expenditures are allocated to all gas retail companies or all gas and electric retail companies based on the number of customers.

Gas Business Enablement
Actual Incremental Operating Costs incurred through December 2017

Fiscal Year / Period - Key	004/2017	005/2017	006/2017	007/2017	008/2017	009/2017	010/2017	011/2017	012/2017
Fiscal Year / Period - Text	JUL 2017	AUG 2017	SEP 2017	OCT 2017	NOV 2017	DEC 2017	JAN 2017	FEB 2017	MAR 2017
(1) Total incremental opex charges	\$ 25,634	\$ 146,436	\$ 1,508,072	\$ 1,341,412	\$ 1,528,999	\$ 1,851,089	\$ 1,485,753	\$ 4,156,187	\$ 3,701,034
(2)									
(3) <u>Allocation Methodology</u>									
(4) Direct Parent Company	\$ 25,634	\$ 146,436	\$ 654,872	\$ 293,252	\$ 106,842	\$ 3,056	\$ 51,350	\$ (1,438,252)	\$ 18,087
(5) 3-point general allocator - All Gas Retails (G210)	\$ -	\$ -	\$ 853,200	\$ 1,048,160	\$ 1,422,157	\$ 1,848,033	\$ 1,434,403	\$ 5,594,439	\$ 3,682,948
(6) Number of customers - All Gas retails (C210)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(7) Number of customers - All Retail Companies (C175)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(8) 3-point general allocator - All Companies (G012)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(9)	\$ 25,634	\$ 146,436	\$ 1,508,072	\$ 1,341,412	\$ 1,528,999	\$ 1,851,089	\$ 1,485,753	\$ 4,156,187	\$ 3,701,035
(10)	\$ 0	\$ 0	\$ (0)	\$ 0	\$ (0)	\$ 0	\$ 0	\$ (0)	\$ 1
(11) <u>Allocation Percentages:</u>									
(12) Direct Parent Co	100%	100%	100%	100%	100%	100%	100%	100%	100%
(13) 3-point general allocator - All Gas Retails (G210)									
(14) Boston Gas Company	23.29%	23.29%	23.29%	23.29%	23.29%	23.29%	23.29%	23.29%	23.29%
(15) Brooklyn Union Gas-KEDNY	30.10%	30.10%	30.10%	30.10%	30.10%	30.10%	30.10%	30.10%	30.10%
(16) Colonial Gas Company	5.21%	5.21%	5.21%	5.21%	5.21%	5.21%	5.21%	5.21%	5.21%
(17) KS Gas East Corp-KEDLI	21.55%	21.55%	21.55%	21.55%	21.55%	21.55%	21.55%	21.55%	21.55%
(18) Narragansett Electric Co	7.41%	7.41%	7.41%	7.41%	7.41%	7.41%	7.41%	7.41%	7.41%
(19) Niagara Mohawk Power Corp	12.44%	12.44%	12.44%	12.44%	12.44%	12.44%	12.44%	12.44%	12.44%
(20) Number of customers - All Gas retails (C210)									
(21) Boston Gas Company									
(22) Brooklyn Union Gas-KEDNY									
(23) Colonial Gas Company									
(24) KS Gas East Corp-KEDLI									
(25) Narragansett Electric Co									
(26) Niagara Mohawk Power Corp									
(27) Number of customers - All Retail Companies (C175)									
(28) Boston Gas Company									
(29) Brooklyn Union Gas-KEDNY									
(30) Colonial Gas Company									
(31) KS Gas East Corp-KEDLI									
(32) Narragansett Gas Company									
(33) Niagara Mohawk Power Corp. - Gas									
(34) Niagara Mohawk Power Corp.- Electric Distr.									
(35) Massachusetts Electric Company									
(36) Nantucket Electric Company									
(37) Narragansett Electric Company									

	004/2017	005/2017	006/2017	007/2017	008/2017	009/2017	010/2017	011/2017	012/2017
	JUL 2017	AUG 2017	SEP 2017	OCT 2017	NOV 2017	DEC 2017	JAN 2017	FEB 2017	MAR 2017
(38) 3-point general allocator - All Companies (G012)									
(39) Boston Gas Company									
(40) Brooklyn Union Gas-KEDNY									
(41) Colonial Gas Company									
(42) KS Gas East Corp-KEDLI									
(43) Narragansett Gas Company									
(44) Niagara Mohawk Power Corp. - Gas									
(45) Niagara Mohawk Power Corp.- Electric Distr.									
(46) Massachusetts Electric Company									
(47) Massachusetts Electric Company - Transmission									
(48) Nantucket Electric Company									
(49) Narragansett Electric Company									
(50) Narragansett Electric Company - Transmission									
(51) National Grid USA Parent									
(52) Keyspan Energy Corp.									
(53) Niagara Mohawk Power Corp. - Transmission									
(54) New England Power Company - Transmission									
(55) NE Hydro - Trans Electric Co.									
(56) New England Hydro - Trans Corp.									
(57) New England Electric Trans Corp									
(58) NG LNG LP Regulated Entity									
(59) Keyspan Generation LLC (PSA)									
(60) Keyspan Glenwood Energy Center									
(61) Keyspan Port Jefferson Energy Center									
(62) Keyspan Energy Trading Services									
(63) Transgas Inc									
(64) Keyspan Energy Development Corporation									
(65) Keyspan Services Inc.									

	004/2017	005/2017	006/2017	007/2017	008/2017	009/2017	010/2017	011/2017	012/2017
	JUL 2017	AUG 2017	SEP 2017	OCT 2017	NOV 2017	DEC 2017	JAN 2017	FEB 2017	MAR 2017
<u>Allocated charges by Receiving Company:</u>									
(66) Direct Parent Co	\$ 25,634	\$ 146,436	\$ 654,872	\$ 293,252	\$ 106,842	\$ 3,056	\$ 51,350	\$ (1,438,252)	\$ 18,087
(67) Boston Gas Company	\$ -	\$ -	\$ 198,710	\$ 244,116	\$ 331,220	\$ 430,407	\$ 334,072	\$ 1,302,945	\$ 857,759
(68) Brooklyn Union Gas-KEDNY	\$ -	\$ -	\$ 256,813	\$ 315,496	\$ 428,069	\$ 556,258	\$ 431,755	\$ 1,683,926	\$ 1,108,567
(69) Colonial Gas Company	\$ -	\$ -	\$ 44,452	\$ 54,609	\$ 74,094	\$ 96,283	\$ 74,732	\$ 291,470	\$ 191,882
(70) KS Gas East Corp-KEDLI	\$ -	\$ -	\$ 183,865	\$ 225,878	\$ 306,475	\$ 398,251	\$ 309,114	\$ 1,205,602	\$ 793,675
(71) Narragansett Electric Co - Gas	\$ -	\$ -	\$ 63,222	\$ 77,669	\$ 105,382	\$ 136,939	\$ 106,289	\$ 414,548	\$ 272,906
(72) Narragansett Electric Co - Elec	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(73) Niagara Mohawk Power Corp	\$ -	\$ -	\$ 106,138	\$ 130,391	\$ 176,916	\$ 229,895	\$ 178,440	\$ 695,948	\$ 458,159
(74) Massachusetts Electric Company	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(75) Massachusetts Electric Company - Transmission	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(76) Nantucket Electric Company	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(77) Keyspan Energy Corp.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(78) Niagara Mohawk Power Corp. - Transmission	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(79) New England Power Company - Transmission	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(80) NE Hydro - Trans Electric Co.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(81) New England Hydro - Trans Corp.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(82) New England Electric Trans Corp	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(83) NG LNG LP Regulated Entity	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(84) Keyspan Generation LLC (PrA)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(85) Keyspan Glenwood Energy Center	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(86) Keyspan Port Jefferson Energy Center	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(87) Keyspan Energy Trading services	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(88) Transgas Inc	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(89) Keyspan Energy Development Corporation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(90) Keyspan Services Inc.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(91) Total incremental operating expense by Receiving Company	\$ 25,634	\$ 146,436	\$ 1,508,072	\$ 1,341,412	\$ 1,528,999	\$ 1,851,089	\$ 1,485,753	\$ 4,156,187	\$ 3,701,035

Gas Business Enablement
Actual Incremental Operating Costs incurred through Dec

Fiscal Year / Period - Key	001/2018	002/2018	003/2018	004/2018	005/2018	006/2018	007/2018	008/2018	009/2018	Grand Total
Fiscal Year / Period - Text	APR 2018	MAY 2018	JUN 2018	JUL 2018	AUG 2018	SEP 2018	OCT 2018	NOV 2018	DEC 2018	
Total incremental opex charges	\$ 688,244	\$ 1,794,194	\$ 2,303,816	\$ 4,400,241	\$ (1,443,070)	\$ 367,679	\$ 1,526,344	\$ 3,246,294	\$ 1,868,208	\$ 30,496,565
<u>Allocation Methodology</u>										
Direct Parent Company	\$ (1,338)	\$ 23,684	\$ 162,697	\$ (66,069)	\$ 4,276	\$ 14,645	\$ (48,704)	\$ 55,818	\$ (898)	\$ 5,388
3-point general allocator - All Gas Retails (G210)	\$ 689,583	\$ 1,770,510	\$ 2,141,120	\$ 4,466,310	\$ (1,447,346)	\$ 353,034	\$ 1,575,048	\$ (5,793,182)	\$ (651,026)	\$ 18,987,391
Number of customers - All Gas retails (C210)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,394,838	\$ 2,297,387	\$ 6,692,225
Number of customers - All Retail Companies (C175)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,046,559	\$ 238,088	\$ 1,284,647
3-point general allocator - All Companies (G012)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,542,262	\$ (15,343)	\$ 3,526,919
	\$ 688,245	\$ 1,794,194	\$ 2,303,817	\$ 4,400,241	\$ (1,443,070)	\$ 367,679	\$ 1,526,344	\$ 3,246,295	\$ 1,868,209	\$ 30,496,570

Allocation Percentages:

Direct Parent Co	100%	100%	100%	100%	100%	100%	100%	100%	100%	
3-point general allocator - All Gas Retails (G210)										
Boston Gas Company	23.08%	23.08%	23.08%	23.08%	23.08%	23.08%	23.08%	23.08%	23.08%	
Brooklyn Union Gas-KEDNY	31.31%	31.31%	31.31%	31.31%	31.31%	31.31%	31.31%	31.31%	31.31%	
Colonial Gas Company	5.19%	5.19%	5.19%	5.19%	5.19%	5.19%	5.19%	5.19%	5.19%	
KS Gas East Corp-KEDLI	21.13%	21.13%	21.13%	21.13%	21.13%	21.13%	21.13%	21.13%	21.13%	
Narragansett Electric Co	7.28%	7.28%	7.28%	7.28%	7.28%	7.28%	7.28%	7.28%	7.28%	
Niagara Mohawk Power Corp	12.01%	12.01%	12.01%	12.01%	12.01%	12.01%	12.01%	12.01%	12.01%	
Number of customers - All Gas retails (C210)										
Boston Gas Company								19.15%	19.15%	
Brooklyn Union Gas-KEDNY								34.83%	34.83%	
Colonial Gas Company								5.59%	5.59%	
KS Gas East Corp-KEDLI								16.13%	16.13%	
Narragansett Electric Co								7.37%	7.37%	
Niagara Mohawk Power Corp								16.93%	16.93%	
Number of customers - All Retail Companies (C175)										
Boston Gas Company								9.80%	9.80%	
Brooklyn Union Gas-KEDNY								17.83%	17.83%	
Colonial Gas Company								2.86%	2.86%	
KS Gas East Corp-KEDLI								8.25%	8.25%	
Narragansett Gas Company								3.77%	3.77%	
Niagara Mohawk Power Corp. - Gas								8.67%	8.67%	
Niagara Mohawk Power Corp.- Electric Distr.								23.28%	23.28%	
Massachusetts Electric Company								18.41%	18.41%	
Nantucket Electric Company								0.19%	0.19%	
Narragansett Electric Company								6.94%	6.94%	

	001/2018 APR 2018	002/2018 MAY 2018	003/2018 JUN 2018	004/2018 JUL 2018	005/2018 AUG 2018	006/2018 SEP 2018	007/2018 OCT 2018	008/2018 NOV 2018	009/2018 DEC 2018	Grand Total
3-point general allocator - All Companies (G012)										
Boston Gas Company								9.03%	9.03%	
Brooklyn Union Gas-KEDNY								12.38%	12.38%	
Colonial Gas Company								2.04%	2.04%	
KS Gas East Corp-KEDLI								8.51%	8.51%	
Narragansett Gas Company								2.85%	2.85%	
Niagara Mohawk Power Corp. - Gas								4.75%	4.75%	
Niagara Mohawk Power Corp.- Electric Distr.								15.72%	15.72%	
Massachusetts Electric Company								20.02%	20.02%	
Massachusetts Electric Company - Transmission								0.17%	0.17%	
Nantucket Electric Company								0.27%	0.27%	
Narragansett Electric Company								6.60%	6.60%	
Narragansett Electric Company - Transmission								1.77%	1.77%	
National Grid USA Parent								0.09%	0.09%	
Keyspan Energy Corp.								0.01%	0.01%	
Niagara Mohawk Power Corp. - Transmission								5.59%	5.59%	
New England Power Company - Transmission								5.00%	5.00%	
NE Hydro - Trans Electric Co.								0.17%	0.17%	
New England Hydro - Trans Corp.								0.11%	0.11%	
New England Electric Trans Corp								0.01%	0.01%	
NG LNG LP Regulated Entity								0.17%	0.17%	
Keyspan Generation LLC (PSA)								4.04%	4.04%	
Keyspan Glenwood Energy Center								0.13%	0.13%	
Keyspan Port Jefferson Energy Center								0.15%	0.15%	
Keyspan Energy Trading Services								0.00%	0.00%	
Transgas Inc								0.08%	0.08%	
Keyspan Energy Development Corporation								0.18%	0.18%	
Keyspan Services Inc.								0.16%	0.16%	

	001/2018 APR 2018	002/2018 MAY 2018	003/2018 JUN 2018	004/2018 JUL 2018	005/2018 AUG 2018	006/2018 SEP 2018	007/2018 OCT 2018	008/2018 NOV 2018	009/2018 DEC 2018	Grand Total
<u>Allocated charges by Receiving Company:</u>										
Direct Parent Co	\$ (1,338)	\$ 23,684	\$ 162,697	\$ (66,069)	\$ 4,276	\$ 14,645	\$ (48,704)	\$ 59,006	\$ (912)	\$ 8,562
Boston Gas Company	\$ 159,156	\$ 408,634	\$ 494,170	\$ 1,030,824	\$ (334,047)	\$ 81,480	\$ 363,521	\$ (73,026)	\$ 311,640	\$ 6,141,582
Brooklyn Union Gas-KEDNY	\$ 215,908	\$ 554,347	\$ 670,385	\$ 1,398,402	\$ (453,164)	\$ 110,535	\$ 493,148	\$ 342,010	\$ 636,895	\$ 8,749,351
Colonial Gas Company	\$ 35,789	\$ 91,889	\$ 111,124	\$ 231,801	\$ (75,117)	\$ 18,322	\$ 81,745	\$ 47,199	\$ 101,132	\$ 1,471,408
KS Gas East Corp-KEDLI	\$ 145,709	\$ 374,109	\$ 452,419	\$ 943,731	\$ (305,824)	\$ 74,596	\$ 332,808	\$ (127,424)	\$ 251,343	\$ 5,564,326
Narragansett Electric Co - Gas	\$ 50,202	\$ 128,893	\$ 155,874	\$ 325,147	\$ (105,367)	\$ 25,701	\$ 114,663	\$ 115,197	\$ 146,985	\$ 2,134,250
Narragansett Electric Co - Elec								\$ 296,487	\$ (1,284)	\$ 295,203
Niagara Mohawk Power Corp	\$ 82,819	\$ 212,638	\$ 257,149	\$ 536,404	\$ (173,826)	\$ 42,399	\$ 189,163	\$ 1,305,774	\$ 382,830	\$ 4,811,238
Massachusetts Electric Company	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 901,832	\$ 40,760	\$ 942,593
Massachusetts Electric Company - Transmission	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,022	\$ (26)	\$ 5,996
Nantucket Electric Company	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 11,553	\$ 411	\$ 11,964
Keyspan Energy Corp.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 354	\$ (2)	\$ 353
Niagara Mohawk Power Corp. - Transmission	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
New England Power Company - Transmission	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 177,113	\$ (767)	\$ 176,346
NE Hydro - Trans Electric Co.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,022	\$ (26)	\$ 5,996
New England Hydro - Trans Corp.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,896	\$ (17)	\$ 3,880
New England Electric Trans Corp	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 354	\$ (2)	\$ 353
NG LNG LP Regulated Entity	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,022	\$ (26)	\$ 5,996
Keyspan Generation LLC (PrA)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 143,107	\$ (620)	\$ 142,488
Keyspan Glenwood Energy Center	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,605	\$ (20)	\$ 4,585
Keyspan Port Jefferson Energy Center	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,313	\$ (23)	\$ 5,290
Keyspan Energy Trading services	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Transgas Inc	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,834	\$ (12)	\$ 2,822
Keyspan Energy Development Corporation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,376	\$ (28)	\$ 6,348
Keyspan Services Inc.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,668	\$ (25)	\$ 5,643
Total incremental operating expense by Receiving Company:	\$ 688,245	\$ 1,794,194	\$ 2,303,817	\$ 4,400,241	\$ (1,443,070)	\$ 367,679	\$ 1,526,344	\$ 3,246,295	\$ 1,868,209	\$ 30,496,570

PUC 5-17

Request:

It does not appear that the Niagara Mohawk Company in New York has requested cost recovery of pre-rate year expenditures, whereas it has in Rhode Island (referencing NYPSC Cases 17-E-0238 and 17-E-0239 Testimony of Staff Gas Business Enablement Panel, page 13, lines 18-24). Please explain why the Company has requested recovery of these expenses in the instant docket.

Response:

As indicated in the Company's initial testimony, the cost-recovery proposals in each state are largely a function of the differing timelines for rate cases and rate-recovery mechanisms in each jurisdiction (see, Testimony of Anthony H. Johnston and Christopher J. Connolly, at page 10, lns. 4-7). Thus, the respective proposals reflect differences in timing and ratemaking practices between the two jurisdictions.

Specifically, the test year for the Niagara Mohawk rate case in New York is the calendar year ending December 31, 2016, with the rate year starting April 1, 2018, pursuant to New York ratemaking practice. Gas Business Enablement Program costs began to be incurred during mid-2016 and into 2017, so that a relatively smaller portion of the overall cost attributable to Niagara Mohawk was incurred in the pre-rate year period than compared to the pre-rate year period cost incurred by Narragansett Gas. Based on Niagara Mohawk's experience with New York ratemaking practices, and considering the need for other proposals made in the filing and the overall size of the New York rate increase, Niagara Mohawk made the decision to forego recovery of the pre-rate year cost and seek instead relative real-time recovery of the forecast rate year expense. In contrast, Narragansett Gas is foregoing real-time recovery and instead proposing to defer amounts into the future to smooth the impact for customers.

Niagara Mohawk recently entered into a settlement of its rate case that provided recovery of the full amount of Gas Business Enablement program costs that were requested, including non-recurring expense and capital cost, subject to a timing adjustment in the rate plan period due to the spending profile in New York. The settlement also includes recovery of incremental run the business costs for each of the three years.

The timing for the Rhode Island test year is different (12-months ending June 30, 2017). Therefore, the non-recurring implementation expense fell squarely within the test year for Narragansett Gas and was included in the total program costs sought for recovery in Rhode Island. As stated above, the Company is proposing to smooth recovery for customers by deferring recovery into the future on an amortized basis, which is not a proposal made in New

York. Thus, the proposals in each jurisdiction follow from the different timing, ratemaking practices and overall context involved in each jurisdictional filing.

PUC 5-18

Request:

If the NYPSC imposes caps on the limit of cost recovery that may be recovered by the Service Company from the distribution company(ies) in New York, how would that affect the cost allocation to Massachusetts and Rhode Island, if at all?

Response:

Gas Business Enablement Program costs will be incurred by National Grid USA Service Company, Inc. and will be allocated among the operating affiliates that will share in the utilization of the program using appropriate accounting standards and allocation methodologies. The disallowance of program costs in one jurisdiction will not change or affect the cost allocation to another jurisdiction. More specifically, a loss of cost recovery in one jurisdiction will not increase the amount sought for recovery in other jurisdictions. Each jurisdiction will be responsible for its own allocated portion of the total project cost incurred.

PUC 5-19

Request:

Please explain what metrics have been recommended by the NYPSC staff and whether Niagara Mohawk has accepted any of them. Please provide details of any agreement on this issue.

Response:

On January 19, 2018, in the Niagara Mohawk Power Corporation (Niagara Mohawk) rate case (Cases 17-E-0238 and 17-G-0239), Niagara Mohawk, the New York Department of Public Service Staff (Staff), and the other parties entered into a Joint Proposal¹ in which Niagara Mohawk agreed to measure the following six key performance indicators that are intended to demonstrate successful delivery of the Gas Business Enablement Program's enhanced capabilities beyond system replacement:

1. The average number of completed Niagara Mohawk Customer Meter Services jobs per worker per day;
2. The average feet of main replaced per Niagara Mohawk Maintenance and Construction worker per day;
3. Niagara Mohawk work orders processed each year per each full-time equivalent engineering clerical employee;
4. Total call volume related to Niagara Mohawk customer moves and non-moves per year;
5. Total number of Niagara Mohawk gas safety non-compliance occurrences per year; and
6. Niagara Mohawk's customer experience (effort) rating based on customers surveys.

¹ The Joint Proposal memorializes the settlement agreement among Niagara Mohawk, Staff, and the other parties in the case and is subject to the New York Public Service Commission's review and approval.

PUC 5-20

Request:

Referencing, Johnston and Connolly direct testimony page 84, lines 5-9, please provide more detail how the Gas Business Enablement program will improve electric operations related to Customer Meter Service, Dispatch and Scheduling, and Customer Contact Center. How will these measures result in quantifiable savings to customers?

Response:

Although the Gas Business Enablement Program is focused on the gas business, the program will deploy a new solution to manage all Customer Meter Services operations in the electric business.

The Salesforce solution includes implementation of two applications, Field Service Lightning and Customer Relationship Management, that are integrated with the Company's customer information system (*i.e.*, CSS) to create a platform for National Grid to manage all customer activities. The Field Service Lightning solution will include functionality that will enable the Dispatch and Scheduling group to schedule and dispatch work to field technicians, who will capture electronically work performed in the field. This functionality is designed to improve data quality regarding completion of field work and to allow supervisors to track field technician activity in real time, including their location on an electronic map. These capabilities will allow National Grid to schedule field work more efficiently, improve visibility to workforce activities and the status of work performed in the field, and create a platform for field technicians and supervisors to solve problems as they arise.

The Salesforce Field Service Lightning solution delivers scheduling and dispatching functionality providing the ability to schedule and dispatch work, perform work bundling, view and update resource assignments, view work and field technician locations on a map, allow for real time work progress tracking, and enable viewing of resource skills and classification. The solution will also provide the capability to view the status of work in real time. This will enable improved scheduling through better monitoring and management of planned work and same day activities to improve productivity, increase the percentage of the work completed on the first visit and respond to emergencies.

Field technicians will have greater visibility to customer premises information and enhanced capabilities for field collections activities, and they will be able to notify customers in advance of their arrival for appointments and have turn-by-turn directions to optimize travel from one work location to another. Paper-based processes will be replaced by the solution, allowing electronic capture of the activities performed at the customer premise with improved data quality and timeliness. Employee time entry will be automated with time assigned to the activity based on

the work information captured on a mobile device at each job. Further, technicians will have greater access to their supervisors through the Salesforce solution, allowing sharing of information and photos to support diagnosis of problems.

The Customer Contact Center will work from a new, front end Customer Relationship Management application to support and manage customer appointments, inquiries, and requests for support. The Salesforce Customer Relationship Management application will be fully integrated with the Salesforce Field Service Lightning application, providing visibility to the work with real time status to support customer inquiries and improving first call resolution. Benefits will include enhanced capabilities to schedule customer appointments and will allow customer service representatives to view the status and progress of collections orders and to provide accurate updates when customers make inquiries.

The Salesforce solution described above will not result in quantifiable savings for customers. Rather, it will improve the effectiveness of the workforce in a number of ways. First and foremost, it will result in much more effective communications with customers, improving the Company's ability to provide timely and accurate information regarding work both at a customer's location and in the surrounding neighborhood. Second, it will increase the real time communications between supervision and field workers, and enhance problem solving through the use of maps, photographs, and online communication channels. Third, because field information will be captured electronically, the accuracy and timeliness of the information will be significantly improved.

PUC 5-21

Request:

Please provide a savings estimate of capital and O&M and Narragansett Electric and Narragansett Gas allocated savings estimates identified in connection with the Gas Business Enablement program analysis similar to that contained in GIOP-12, Schedule 1 of the Johnston Testimony in NYPSC Cases 17-E-0238 and 17-G-0239.

Response:

Please see Attachment PUC 5-21 for information similar to that contained in Exhibit____(GIOP-12), Schedule 1 of the pre-filed direct testimony of the Gas Infrastructure and Operations Panel in the Niagara Mohawk Power Corporation's rate case (Cases 17-E-0238 and 17-G-0239) currently pending before the New York Public Service Commission. Page 1 provides the estimates of total U.S. benefits (Type I and Type II, and capital and operating expense benefits) for the Gas Business Enablement Program. Page 2 provides the estimates for the Company only. These estimates reflect operation and maintenance (O&M) benefits for both Type I and Type II benefit categories. Type I benefits are direct cost savings that the Gas Business Enablement Program is designed to deliver. Type II benefits are defined as indirect savings because they do not result in a direct quantitative cost reduction, but rather increase capacity for work that otherwise would not be completed or reflect increased potential for penalty avoidance. Although the Gas Business Enablement Program benefits will be realized largely in the gas business, there are Customer Contact Center benefits included in the business case that accrue to both Narragansett Gas and Narragansett Electric.

The Narragansett Electric Company d/b/a National Grid
Gas Business Enablement (GBE)
Total Benefits Forecasted as a Result of GBE Implementation
For Fiscal Years Ending March 31, 2019 through 2027

Initiative Description	Benefit Description	Benefit Type	12-Months Ending								
			March 31, 2019	March 31, 2020	March 31, 2021	March 31, 2022	March 31, 2023	March 31, 2024	March 31, 2025	March 31, 2026	March 31, 2027
Asset - Advanced Analytics	Reduction / Redirection in Opex via AIPM	Type I	\$ -	\$ -	\$ 13,750	\$ 1,223,750	\$ 1,980,000	\$ 1,980,000	\$ 1,980,000	\$ 1,980,000	\$ 1,980,000
Engineering, Design, Estimating & Mobility	Reduction in Damages due to Data Quality Errors	Type I	\$ 143,315	\$ 573,259	\$ 573,259	\$ 573,259	\$ 573,259	\$ 573,259	\$ 573,259	\$ 573,259	\$ 573,259
Work Management & Field Enablement	Clerical / Back Office Productivity Improvement	Type I	\$ -	\$ 29,603	\$ 1,835,367	\$ 2,131,393	\$ 2,131,393	\$ 2,131,393	\$ 2,131,393	\$ 2,131,393	\$ 2,131,393
Work Management & Field Enablement	Damage Prevention - Reduced Travel Mileage	Type I	\$ -	\$ 37,275	\$ 49,700	\$ 49,700	\$ 49,700	\$ 49,700	\$ 49,700	\$ 49,700	\$ 49,700
Work Management & Field Enablement	M&C Productivity Improvements - Base	Type I	\$ -	\$ 1,024,595	\$ 7,274,626	\$ 7,377,085	\$ 7,377,085	\$ 7,377,085	\$ 7,377,085	\$ 7,377,085	\$ 7,377,085
Customer Interaction	Reduce Move Call Volume through Self-Service	Type II	\$ -	\$ -	\$ -	\$ -	\$ 642,130	\$ 906,536	\$ 906,536	\$ 906,536	\$ 906,536
Customer Interaction	Reduce Non-Move Call Volume through Self-Service	Type II	\$ -	\$ -	\$ 61,278	\$ 502,480	\$ 588,270	\$ 588,270	\$ 588,270	\$ 588,270	\$ 588,270
Data Management	Reduction in Data Cleansing / Scrubbing Effort - Analysts	Type II	\$ -	\$ 105,749	\$ 750,821	\$ 761,396	\$ 761,396	\$ 761,396	\$ 761,396	\$ 761,396	\$ 761,396
Engineering, Design, Estimating & Mobility	Complex Jobs - Engineering Productivity Improvement	Type II	\$ -	\$ -	\$ 4,886	\$ 302,941	\$ 351,803	\$ 351,803	\$ 351,803	\$ 351,803	\$ 351,803
Engineering, Design, Estimating & Mobility	Complex Jobs - Estimating Accuracy Fine Avoidance	Type II	\$ -	\$ -	\$ -	\$ 45,833	\$ 550,000	\$ 550,000	\$ 550,000	\$ 550,000	\$ 550,000
Engineering, Design, Estimating & Mobility	Reduction in Mappers via Field Data Entry	Type II	\$ -	\$ 8,934	\$ 553,899	\$ 643,238	\$ 643,238	\$ 643,238	\$ 643,238	\$ 643,238	\$ 643,238
Integrated Supply & Demand Planning	Improved Project Delivery - Construction	Type II	\$ -	\$ 35,278	\$ 2,187,222	\$ 2,540,000	\$ 2,540,000	\$ 2,540,000	\$ 2,540,000	\$ 2,540,000	\$ 2,540,000
Customer Interaction	Reduction in Service Quality Penalties	Type II	\$ -	\$ -	\$ -	\$ -	\$ 629,809	\$ 889,142	\$ 889,142	\$ 889,142	\$ 889,142
Regulatory/ Compliance	Reduced Compliance and Gas Safety Penalties	Type II	\$ 876,348	\$ 5,070,300	\$ 9,577,233	\$ 13,207,819	\$ 13,520,800	\$ 13,520,800	\$ 13,520,800	\$ 13,520,800	\$ 13,520,800
Work Management & Field Enablement	CMS Collections Jobs - Reduction in Mileage	Type II	\$ -	\$ -	\$ -	\$ -	\$ 117,384	\$ 165,718	\$ 165,718	\$ 165,718	\$ 165,718
Work Management & Field Enablement	CMS Collections Jobs - Reduction in Travel Time	Type II	\$ -	\$ -	\$ -	\$ -	\$ 561,142	\$ 792,200	\$ 792,200	\$ 792,200	\$ 792,200
Work Management & Field Enablement	CMS Planned Jobs - Reduction in Available Time via Autodispatch	Type II	\$ -	\$ 202,349	\$ 269,798	\$ 269,798	\$ 269,798	\$ 269,798	\$ 269,798	\$ 269,798	\$ 269,798
Work Management & Field Enablement	CMS Planned Jobs - Reduction in Mileage	Type II	\$ -	\$ 83,430	\$ 111,240	\$ 111,240	\$ 111,240	\$ 111,240	\$ 111,240	\$ 111,240	\$ 111,240
Work Management & Field Enablement	CMS Planned Jobs - Reduction in Travel Time	Type II	\$ -	\$ 252,363	\$ 336,484	\$ 336,484	\$ 336,484	\$ 336,484	\$ 336,484	\$ 336,484	\$ 336,484
Work Management & Field Enablement	CMS Planned Jobs - Reduction in UTCs	Type II	\$ -	\$ 38,760	\$ 51,680	\$ 51,680	\$ 51,680	\$ 51,680	\$ 51,680	\$ 51,680	\$ 51,680
Work Management & Field Enablement	Damage Prevention - Reduced Travel Time	Type II	\$ -	\$ 90,007	\$ 120,009	\$ 120,009	\$ 120,009	\$ 120,009	\$ 120,009	\$ 120,009	\$ 120,009
Work Management & Field Enablement	Inspections - Reduced Travel Mileage	Type II	\$ -	\$ -	\$ -	\$ -	\$ 3,718	\$ 5,249	\$ 5,249	\$ 5,249	\$ 5,249
Work Management & Field Enablement	Inspections - Reduced Travel Time	Type II	\$ -	\$ -	\$ -	\$ -	\$ 19,064	\$ 26,914	\$ 26,914	\$ 26,914	\$ 26,914
Work Management & Field Enablement	M&C and CMS Jobs - Reduced Summonses	Type II	\$ -	\$ -	\$ -	\$ -	\$ 2,037,959	\$ 4,446,457	\$ 4,446,457	\$ 4,446,457	\$ 4,446,457
Work Management & Field Enablement	Reduction in Field Tech Communications	Type II	\$ -	\$ 99,566	\$ 265,511	\$ 265,511	\$ 265,511	\$ 265,511	\$ 265,511	\$ 265,511	\$ 265,511
Work Management & Field Enablement	Reduction in Meter Verification Jobs	Type II	\$ -	\$ 121,024	\$ 161,365	\$ 161,365	\$ 161,365	\$ 161,365	\$ 161,365	\$ 161,365	\$ 161,365
Total of Benefits Forecasted as a result of GBE Implementation			\$ 1,019,663	\$ 7,772,492	\$ 24,198,128	\$ 30,674,982	\$ 36,394,237	\$ 39,615,248	\$ 39,615,248	\$ 39,615,248	\$ 39,615,248

The Narragansett Electric Company d/b/a National Grid
Gas Business Enablement (GBE)
Total Benefits Forecasted as a Result of GBE Implementation
For Fiscal Years Ending March 31, 2019 through 2027

Initiative Description	Benefit Description	Benefit Type	12-Months Ending								
			March 31, 2019	March 31, 2020	March 31, 2021	March 31, 2022	March 31, 2023	March 31, 2024	March 31, 2025	March 31, 2026	March 31, 2027
Asset - Advanced Analytics	Reduction / Redirection in Opex via AIPM	Type I	\$ -	\$ -	\$ 773	\$ 68,834	\$ 111,371	\$ 111,371	\$ 111,371	\$ 111,371	\$ 111,371
Engineering, Design, Estimating & Mobility	Reduction in Damages due to Data Quality Errors	Type I	\$ 31,928	\$ 127,713	\$ 127,713	\$ 127,713	\$ 127,713	\$ 127,713	\$ 127,713	\$ 127,713	\$ 127,713
Work Management & Field Enablement	Clerical / Back Office Productivity Improvement	Type I	\$ -	\$ 2,957	\$ 183,329	\$ 212,899	\$ 212,899	\$ 212,899	\$ 212,899	\$ 212,899	\$ 212,899
Work Management & Field Enablement	Damage Prevention - Reduced Travel Mileage	Type I	\$ -	\$ 2,694	\$ 3,592	\$ 3,592	\$ 3,592	\$ 3,592	\$ 3,592	\$ 3,592	\$ 3,592
Work Management & Field Enablement	M&C Productivity Improvements - Base	Type I	\$ -	\$ 44,045	\$ 312,719	\$ 317,124	\$ 317,124	\$ 317,124	\$ 317,124	\$ 317,124	\$ 317,124
Customer Interaction	Reduce Move Call Volume through Self-Service	Type II	\$ -	\$ -	\$ -	\$ -	\$ 37,624	\$ 53,116	\$ 53,116	\$ 53,116	\$ 53,116
Customer Interaction	Reduce Non-Move Call Volume through Self-Service	Type II	\$ -	\$ -	\$ 4,088	\$ 33,524	\$ 39,248	\$ 39,248	\$ 39,248	\$ 39,248	\$ 39,248
Data Management	Reduction in Data Cleansing / Scrubbing Effort - Analysts	Type II	\$ -	\$ 3,860	\$ 27,407	\$ 27,793	\$ 27,793	\$ 27,793	\$ 27,793	\$ 27,793	\$ 27,793
Engineering, Design, Estimating & Mobility	Complex Jobs - Engineering Productivity Improvement	Type II	\$ -	\$ -	\$ 170	\$ 10,536	\$ 12,235	\$ 12,235	\$ 12,235	\$ 12,235	\$ 12,235
Engineering, Design, Estimating & Mobility	Reduction in Mappers via Field Data Entry	Type II	\$ -	\$ 189	\$ 11,702	\$ 13,590	\$ 13,590	\$ 13,590	\$ 13,590	\$ 13,590	\$ 13,590
Integrated Supply & Demand Planning	Improved Project Delivery - Construction	Type II	\$ -	\$ 340	\$ 21,070	\$ 24,468	\$ 24,468	\$ 24,468	\$ 24,468	\$ 24,468	\$ 24,468
Regulatory/ Compliance	Reduced Compliance and Gas Safety Penalties	Type II	\$ 12,129	\$ 70,175	\$ 132,553	\$ 182,801	\$ 187,133	\$ 187,133	\$ 187,133	\$ 187,133	\$ 187,133
Work Management & Field Enablement	CMS Collections Jobs - Reduction in Mileage	Type II	\$ -	\$ -	\$ -	\$ -	\$ 13,847	\$ 19,549	\$ 19,549	\$ 19,549	\$ 19,549
Work Management & Field Enablement	CMS Collections Jobs - Reduction in Travel Time	Type II	\$ -	\$ -	\$ -	\$ -	\$ 65,040	\$ 91,821	\$ 91,821	\$ 91,821	\$ 91,821
Work Management & Field Enablement	CMS Planned Jobs - Reduction in Available Time via Autodispatch	Type II	\$ -	\$ 1,499	\$ 1,999	\$ 1,999	\$ 1,999	\$ 1,999	\$ 1,999	\$ 1,999	\$ 1,999
Work Management & Field Enablement	CMS Planned Jobs - Reduction in Mileage	Type II	\$ -	\$ 6,646	\$ 8,861	\$ 8,861	\$ 8,861	\$ 8,861	\$ 8,861	\$ 8,861	\$ 8,861
Work Management & Field Enablement	CMS Planned Jobs - Reduction in Travel Time	Type II	\$ -	\$ 19,573	\$ 26,098	\$ 26,098	\$ 26,098	\$ 26,098	\$ 26,098	\$ 26,098	\$ 26,098
Work Management & Field Enablement	CMS Planned Jobs - Reduction in UTCs	Type II	\$ -	\$ 1,250	\$ 1,667	\$ 1,667	\$ 1,667	\$ 1,667	\$ 1,667	\$ 1,667	\$ 1,667
Work Management & Field Enablement	Damage Prevention - Reduced Travel Time	Type II	\$ -	\$ 6,534	\$ 8,712	\$ 8,712	\$ 8,712	\$ 8,712	\$ 8,712	\$ 8,712	\$ 8,712
Work Management & Field Enablement	Reduction in Field Tech Communications	Type II	\$ -	\$ 7,551	\$ 20,137	\$ 20,137	\$ 20,137	\$ 20,137	\$ 20,137	\$ 20,137	\$ 20,137
Work Management & Field Enablement	Reduction in Meter Verification Jobs	Type II	\$ -	\$ 6,078	\$ 8,104	\$ 8,104	\$ 8,104	\$ 8,104	\$ 8,104	\$ 8,104	\$ 8,104
Narragansett Electric Company Gas share of GBE Benefits			\$ 44,057	\$ 301,105	\$ 900,695	\$ 1,098,451	\$ 1,269,254	\$ 1,317,229	\$ 1,317,229	\$ 1,317,229	\$ 1,317,229
All Type I Benefits			\$ 31,928	\$ 177,410	\$ 628,128	\$ 730,162	\$ 772,699	\$ 772,699	\$ 772,699	\$ 772,699	\$ 772,699
All Type II Benefits			\$ 12,129	\$ 123,696	\$ 272,567	\$ 368,289	\$ 496,555	\$ 544,530	\$ 544,530	\$ 544,530	\$ 544,530

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Request:

Please explain what qualitative costs and benefits were considered by the Service Company and/or the distribution companies other than direct cost savings.

Response:

The Gas Business Enablement Program business case outlined a number of Type II benefits in addition to the Type I direct cost savings that the program would deliver. The Type II benefits are defined as indirect savings that do not impact National Grid USA Service Company, Inc.'s financial statements. These benefits consist of expenses resulting from reassignment of resources to more effectively manage the work, increased resource capacity due to process efficiencies, and/or future cost avoidance resulting in the ability to complete more work with the same resources. The following Type II benefits were included in the business case:

Initiative	Value Lever	Value Lever Detail	Type of Work
Data Management	Reduction in Data Cleansing / Scrubbing - Analysts	Data Analysts, Supervisors, Engineers – All Departments	All Functions
Asset Management	Improved Engineering Productivity	Gas Process & Engineering	Complex Engineering Jobs
	Automate as-Builts	Distribution Support Services	Maps & Records
Work Management & Field Enablement	Reduced Drive Time	CMS - Non-Emergency, Non-Collections	CMS - Planned Jobs - Appointment and non-Appointment
	Reduced Mileage	CMS - Non-Emergency, Non-Collections	CMS - Planned Jobs - Appointment and non-Appointment
	Reduced Drive Time	CMS - Collections	CMS - Collections Jobs Only
	Reduced Mileage	CMS - Collections	CMS - Collections Jobs Only
	Reduced Available Time / Auto Dispatch	CMS - Non-Emergency, Non-Collections	CMS - Planned Jobs - Appointment and non-Appointment
	Reduce UTCs / Improved Information	CMS - Non-Emergency, Non-Collections	CMS - Non-Emergency, Non-Collections
	Improved Field Data Capture	CMS - Meter Verification	CMS - Meter Verification Jobs Only
	Simplified / Automated Communications	CMS - Non-Emergency, Non-Collections	CMS - Planned Jobs - Appointment and non-Appointment
Customer Interaction	Reduced non-Move Call Volume through Self Service	Customer Contact Center - Non-Move Calls	Call Center - Internal

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d/b/a National Grid
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	Reduced Move Call Volume through Self Service	Customer Contact Center – Move Calls	Call Center - Internal
Integrated Supply & Demand Planning - Construction Planning	Improved Project Delivery - Construction	Field Operations – Maintenance & Construction	Maintenance & Construction - All Construction Jobs
Compliance & Technical Training	Reduced Compliance and Gas Safety Penalties	Field Operations – Maintenance & Construction	All Functions

Additionally, there are significant non-financial operational benefits to be achieved through the implementation of the enhanced capabilities of the Gas Business Enablement Program.

Operational Benefits:

- *Improved System Availability:* Reducing the risk of system failures that require manual workarounds, reduce effectiveness, and increase the risk of human error in the operation.
- *Asset Risk Reduction:* Robust asset investment planning capabilities, tools, and analytics that will enable more effective asset replacement and maintenance prioritization, thus reducing asset risk for each dollar spent.
- *Simplified Planning:* Visibility to all work in one core platform coupled with seamless, electronic integration of work demand with other key platforms (e.g., Human Resources, supply chain), thus reducing planning complexity.
- *Regulatory Relationship:* Simplified regulatory reporting and improved safety and compliance performance, which will enhance our regulatory relationships.
- *Safety:* Advanced and consistent technical training that will improve employee technical skills and simplified work methods that will reduce ambiguity in the field leading to increased safety performance.
- *Employee Engagement and Retention:* Robust software applications and tools, standardized processes, and simplified work methods that will make it easier for employees to do their jobs, thus leading to improved engagement, morale, and retention.

The enhanced capabilities the Program will deliver will also drive non-financial benefits to provide enhanced customer experience utilizing the full capabilities of the solution. In some cases, decisions to increase staff to support greater scheduling capacity for customer appointments may be necessary.

Customer Benefits:

Prepared by or under the supervision of: Anthony Johnston and Christopher Connolly

- *Ability to Convert to Gas:* Increased ability to meet the demand for new gas connections and conversion requests reducing customer energy costs by approximately \$1,500 per year.
- *Customer Engagement Benefits:* Robust self-service platform that will allow customers to interact with the Company via the internet thereby reducing the customer's interaction time with the Company; consolidated customer information to allow us to respond quickly and accurately to customer inquiries. Improved schedule adherence for customer appointments and ability to manage customer expectations through proactive communications and alerts.
- *Customer Service Quality:* Improved scheduling capabilities will allow the potential for customer appointments for more work types and potentially a reduction in customer appointment windows providing the opportunity to save time for customers.

Gas Business Enablement provides tools that support the delivery of the gas main replacement program for Narragansett Gas that provides further benefits to customers.

Tertiary Benefits:

- *Reliability:* Reduced number of leaks and potential disruptions our customers may face.