JAVIER BONILLA

PROFESSIONAL EXPERIENCE

IBERDROLA USA 2011–Present
2011 – Present VP Engineering & Delivery

- Responsible for Gas planning, Engineering and Delivery
- Responsible for Electric Engineering and Delivery
- Responsible for Standardization

IBERDROLA NETWORK SPAIN
2005-2010 Chief of Substations

- Responsible for local Substation Operation group in Madrid Region
- Responsible for Substation Maintenance in Madrid Region
- Responsible for Substation Delivery Program in Madrid Region

2000-2005 Chief of Secondary Substations and Distribution lines

- Responsible for local Operation group in Madrid Area
- Responsible for Secondary Substation and lines Maintenance in Madrid Area
- Responsible for Secondary Substation and lines Delivery Program in Madrid Area

EDUCATION

- **5 years Mining Engineering degree**, Polytechnic University, Madrid, Spain, 2013
- **MBA, Nebrija Universtiy,** Madrid, Spain, 2006
- **6 years Industrial Engineering degree**, Polytechnic University, Madrid, Spain, 1999

LANEY W. BROWN

PROFESSIONAL EXPERIENCE

Iberdrola USA Management Corporation

12/12 – Present **Director, Smart Grid Planning and Programs**

- Responsible for developing and implementing the IUSA's enterprise strategy for Smart Grid solutions.
- Lead for Iberdrola USA in the New York PSC's "Reforming the Energy Vision" (REV) proceeding
- Develop and support Iberdrola USA's Future Utility Model strategy

Central Maine Power, affiliate of Iberdrola USA

7/10 – 12/12 **Director, Advanced Metering Infrastructure (AMI) Program**

- Led the on-time, on-budget delivery of the AMI program
- Led the successful execution of the Department of Energy (DOE) Smart Grid Investment Grant application with an award value of $96m
- Led the vendor selection and contract negotiations for key Smart Meter vendors
- Responsible for full compliance with the DOE grant obligations

5/04 – 7/10 **Manager, Marketing**

- Led the business case development of Advanced Metering Infrastructure
- Project lead for the implementation of enhanced payment options products ensuring the on-time delivery of the expanded payment options for web, call center and IVR
- Planned and developed marketing and communication strategy for the enhanced payment options based on unique customer and channel segments
  Responsible for the development and implementation of the marketing strategy and communication plan to all residential and small business customers;

4/00-4/04 **LinxTelecom, Amsterdam, Netherlands**

Director of Marketing

- Responsible for the strategic assessment of LinxTelecom's target market to determine viability of the business plan; assessment included defining the addressable market size, product strategy, and projected market share
- Presented the company's strategy, positioning and market assessment to financial institutions in New York, London, Paris, Berlin, and Amsterdam
- Conducted due diligence on regional telecom-related companies to identify acquisition opportunities
- Developed and maintained the pricing structure and strategy for the LinxTelecom product portfolio

6/99-4/00 **Qwest, Denver, CO**
Director, International Product Management
- Launched Qwest/KPNQwest product portfolio within one year of the joint venture
- Led a cross-functional team of managers in defining and documenting order-to-bill processes for all international products
- Developed ongoing product and market strategy based on financial and market analysis
- Responsible for the end-to-end product management of Qwest's International Data products

4/95-6/99 **Global One, Reston, VA**
9/97-6/99 **Senior Manager, Marketing Strategy**
- Participated in the 15-member team from Global One, Sprint, Deutsche Telecom and France Telecom to develop Global One's 5-year business model
- Coordinated the market analysis and product strategy for 15 major countries through Europe, Asia, Middle East and South America
- Designed and managed revenue reporting for the company's global marketing campaigns to measure major indicators such as revenue, ROI, churn and retention
- Responsible for the launch and maintenance of Global Calling Card marketing campaigns worldwide targeting over 2 million customers in 13 languages

4/95-9/97 **Marketing Program Manager for Russia, India, Middle East, Africa**
- Projected and achieved specific revenue and retention rate goals by targeted direct mail communications to the existing customer base; increased incremental revenue by over $2M and decreased attrition by 3%
- Responsible for the region's annual revenue forecasting process
- Managed on-going sales programs for all marketing channels within the region

9/93-4/95 **International Seminar Design, Inc., Washington, DC**
Senior Program Director
- Established in-house marketing and design programs which directly increased client base by over 150%
- Oversaw logistics and contractual agreements with international vendors

EDUCATION:

University of Strathclyde Business School, Glasgow, Scotland
University Pontificas Comillas ICADE, Madrid, Spain
Double MBA with a focus on the Global Energy Industry
Expected completion, November 2015

Colby College, Waterville, ME, 1990
BA awarded in English and American Studies
Cum Laude with Honors Distinction in English and American Studies

Harvard Executive Program on Negotiation, 2008

Iberdrola Leadership Essentials Program, 2011

BOARD MEMBERSHIP:

Chair, University of Southern Maine Applied Energy Education Advisory Council
PowerHouse Advisory Committee, Gulf of Maine Research Institute

RECOGNITION

2012 Top National Smart Grid Professional, IntelligentUtility Magazine
2015 Smart Grid Pioneer, Smart Grid Today

HUGH J. IVES

PROFESSIONAL EXPERIENCE

IBERDROLA USA MANAGEMENT CORPORATION, June 2014 – Present: Director (April 2015) / Directing Manager (June 2014), Substation and Hydro Operations and Automation, Central Maine Power Company (CMP), New York State Electric and Gas Corporation (NYSEG) and Rochester Gas and Electric Corporation (RG&E).

- Responsible for safe and reliable operation and maintenance of 850 substations at CMP, NYSEG and RG&E, 14 generating plants/associated facilities (i.e., dams) across NY with an installed capacity of approximately 133 MW; RG&E's Beebee Station and Russell Station decommissioned coal-fired generating plants (currently being demolished and remediated), and CMP, NYSEG and RG&E Line and Substation Automation programs.
- Responsible for day-to-day Administration, Operations, Maintenance and execution of Regulatory/Hydro license and environmental compliance related to substations, hydro and automation programs; Employee, Facility, and Public Safety Programs; Procedures and Processes; Employee Training; Capital Improvements, Capital and O&M Budget planning and management, Electric Reliability and Plant Performance, Growth and Economics, and Human Resource-related administrative matters such as employee/labor relations issues, employee appraisals and new hires.

ROCHESTER GAS AND ELECTRIC CORPORATION, April 2008 – May 2014: Manager, New York State Electric and Gas Corporation (NYSEG) and Rochester Gas and Electric Corporation (RG&E), Fossil/Hydro Operations

- Full oversight responsibility of NYSEG and RG&E Fossil/Hydro Operations; 18 generating plants and associated facilities (i.e., dams) across NY with an installed capacity of 220 MW.
- Responsible for the following key areas: Administration, Engineering, Operations, Maintenance, Hydro Regulatory/License and Environmental Compliance, Employee, Facility and Public Safety Programs, Generation Procedures and Processes, Employee Training, Capital Improvements, Growth, Capital and O&M Budget planning and management, Plant Performance, Plant Economics, and Human Resource-related administrative matters such as employee/labor relations issues, employee appraisals and new hires.
- Responsible for day-to-day operations and maintenance of RG&E's Beebee Station and Russell Station decommissioned coal-fired generating plants as well as managing Fossil/Hydro engineering support to demolish and remediate of those plants/sites.
- Expert witness in major rate proceedings for the 2009 NYSEG and RGE Electric rate cases.

November 2006 to April 2008 - Manager, Fossil Hydro Operations

- Responsible for day-to-day operations of NYSEG and RG&E fossil and hydro generating plants
- Responsible for hydro license/regulatory and environmental compliance
- Responsible for establishing and managing Operating budgets
- Responsible for plant/unit performance
- Responsible for providing modification direction and support to four NYSEG supervisors assigned to fossil/hydro plants.

November 2001 to November 2006 - Project Engineer and Hydro Coordinator, Fossil/Hydro Engineering.

- Responsible for project and construction management, conceptual and detailed designs, specification and procedure developments, equipment procurement, system commissioning and budgets of assigned generation system projects, with the primary focus on electrical, control, instrumentation and hydro SCADA systems, as well as providing support to Generation operations and maintenance business areas.
- Responsible for oversight and execution of FERC Hydro License/Regulatory Compliance. Responsibilities included coordinating hydro related matters with local, state and federal agencies.
- In March 2003, resulting from merger with Energy East Corporation, assigned Technical Coordinator duties for NYSEG generation.
- Responsibilities and duties included coordinating all engineering support; developing and managing O&M and capital budgets; supporting and directing hydro supervisors in operation, maintenance and minor modification work; managing hydro regulatory licensing and compliance matters; and managing miscellaneous administrative matters as assigned by the Vice-President of F/H Operations, such as the generation component of the 2005 NYSEG rate case and various administrative matters.

July 2000-November 2001 – Project Electrical Engineer, Energy Systems Development - Substations

- Assigned Project lead for the RG&E Distribution and Substation Automation initiative.
- Responsible for project and construction management, conceptual and detailed designs, specification and procedure developments, equipment procurement, system commissioning with the primary and budgets of assigned electric transmission and distribution system projects, as well as providing support to electric T&D operations and maintenance business areas.

September 1990-July 2001 – Project Electrical Engineer and Hydro License Coordinator, Fossil/Hydro Engineering

- Responsible for project and construction management, conceptual and detailed designs, specification and procedure developments, equipment procurement, system commissioning and budgets of assigned generation system projects, with the primary focus on high and low voltage distribution electrical systems, switchgear, control, instrumentation, protective relaying and SCADA systems, as well as providing technical support to Generation operations and maintenance business areas.
- Responsible for providing the engineering duties listed above for RG&E Common Facilities/Service Centers from 1990 to 1995.
- Responsible for oversight and execution of FERC Hydro License/Regulatory Compliance (assigned in July 1999). Responsibilities included coordinating hydro related matters with local, state and federal agencies.

December 1989-September 1990 - Technical Instructor, Production Division Training.

- Responsible to develop and implement technical courses related to operator and electrical disciplines at the RG&E Ginna Nuclear power plant.

April 1982-December 1989 - Substation/Power Plant Maintenance Technician, Electric Substations Maintenance/Production Departments.

- Responsible to perform preventative maintenance, failure analysis and corrective maintenance of generation and substation equipment.
- Responsible to construct new system modifications and perform miscellaneous design/field modifications.
- Responsible to attain and maintain skills and safety training qualifications for working on substation and electric production equipment and facilities.

July 1981-April 1982 - Meter Reader, Meter Reading Department

ROCHESTER INSTITUTE OF TECHNOLOGY, September 1988 – May 1991 (evenings). Instructor, Adjunct Faculty. Instructed Machines and Power Systems, a second year college level course.

MILITARY

United States Army, Air Defense Artillery, Electromechanical Technician: February 1978 to April 1981.

- Responsible to maintain electrical, electronic, pneumatic, hydraulic and mechanical equipment for Hawk air defense radar, missiles, launchers and loaders.
- Attained Specialist E-5 rank in 1980
- Duty assignments: Fort Bliss, Texas, Fort Lewis Washington, and South Korea

EDUCATION

- **BS, Applied Arts and Sciences,** Business Management, Rochester Institute of Technology, Rochester, NY; Projected graduation: 2016.
- **BS, Electrical Engineering,** Rochester Institute of Technology, Rochester, NY; 146 credit hours completed;
- **AAS, Electrical Engineering,** Rochester Institute of Technology, Rochester NY, 1990.
- **Master Electrician,** 1993 - 2015

COMMUNITY SERVICE / VOLUNTEER

- Chair, Board of Management, YMCA, Maplewood Branch, Sept. 2003 – 2008

ARTHUR E. KRUPPENBACHER

PROFESSIONAL EXPERIENCE

IBERDROLA USA (IUSA) 1981–Present
2010 – present Manager of Asset Management

- Established an Asset Management group at IUSA
- Applying asset management principles to assets across IUSA in order to more effectively use the existing assets, better understand the health of the fleet of assets, and provide recommendations to manage the assets

2004-2010 Director, NY Electric Distribution Engineering

- Managed the electric distribution functions at NYSEG and RG&E including field design, distribution planning, distribution standards, and street lighting
- Additional responsibilities included supervision of the mapping and master data groups as well as the R&D group for part of this period

1997-2004 East Region Managing Director

- Managed the field functions in 5 of NYSEG's 13 divisions
- Functions included electric and gas field crews, field design, field customer service and collections activities, and public outreach

1994-1997 East Region Operations & Construction Manager

- Managed the field operating functions in 6 of NYSEG's 13 divisions
- Functions included electric line and gas construction field crews

1993-1994 Regional Operations Manager

- Managed the gas operations and gas engineering functions of the Binghamton gas group
- Tasked with integrating the group which had been acquired from Columbia Gas of NY into the NYSEG operational structure

1991-1993 Gas Manager

- Initially managed the gas field design, marketing, and gas construction functions in the Auburn division of NYSEG
- Reassigned temporarily to assume responsibility for integrating the gas field employees from Columbia Gas of NY into the NYSEG

1991-1991 Gas Operating Superintendent

- Managed the gas field design and gas construction field crews in the Geneva division

1988-1991 Division Operating Superintendent

- Managed the electric line and gas crews, the right-of-way group, field design staff, substation maintenance and construction, system protection and control, and transportation functions within the Liberty division

1985-1988 Local Operating Superintendent

- Supervised the electric line, field design, and garage mechanic functions for the Hamburg and Gowanda areas within the Lancaster division of NYSEG

1983-1985 Field Engineer

- Supervised electric field design as well as data and mapping functions in the Brewster division

1981-1983 Agricultural Engineer

- Performed marketing functions, addressed customer concerns, investigated stray voltage issues, and worked on outreach to the agricultural community in the Mechanicville division

EDUCATION

BS, Agricultural Engineering, Cornell University, Ithaca, NY, 1981

PROFESSIONAL AFFILIATIONS

Professional Engineer, New York State, License # 064997-1

JEFFREY L. MCKINNEY

PROFESSIONAL EXPERIENCE

IBERDROLA USA (IUSA) 2012-Present
Director – Investment & Distribution Planning

- Manage the IUSA capital budget process and administer its control
- Direct the distribution planning, reliability reporting, and GIS and mapping functions
- Expert witness in rate and transmission proceedings
- Responsible for ensuring effective capital projects are assessed, prioritized, and funded

NEW YORK STATE ELECTRIC & GAS CORPORATION 1982–2012
2009-2012 Manager – System Planning

- Responsible for system planning for NYSEG and RG&E
- Planning liaison to New York Independent System Operator and NPCC.
- Expert witness in major rate and transmission proceedings

1995-2009 Manager – Transmission Services & Regulatory Matters

- Coordinated Northeast RTO development and ITC strategic analysis and development plans
- Expert witness in FERC rate proceedings
- Coordinated all aspects of FERC jurisdictional issues including NYISO transmission policies
- Administered all wholesale negotiations including agreements for the construction and operation of FACTS and SVC facilities, IPP interconnections, and generation divestiture.

1993-1995 Lead Engineer – System and Interconnection Planning

- Technical supervision and approval of all regional planning/operation studies and associated projects.
- Expert witness in transmission proceedings
- Responsibility for transmission-related revenue and expense forecasts

1990-1993 Lead Engineer – Regional Planning

- Technical supervision and approval of all regional planning/operation studies and associated projects.
- Expert witness in transmission proceedings
- Planning liaison to New York Independent System Operator and NPCC.

1982-1990 Various Engineering Planning Positions – Regional Planning

- Developed construction and operation alternatives for transmission reinforcements.
- Responsibility for transmission system simulation studies for four operating divisions.

EDUCATION

MBA, Whitman School of Management, Syracuse University, Syracuse, NY, 1999
Power Systems Engineering Course, General Electric Corporation, Schenectady, NY, 1987
BS, Electrical Engineering, Pennsylvania State University, University Park, PA, 1982

PROFESSIONAL AFFILIATIONS

IEEE – Power & Energy Society
EEI – Transmission Policy Task Force
EEI - Reliability Executive Advisory Committee

ELLEN J. MILLER

PROFESSIONAL EXPERIENCE

CENTRAL MAINE POWER COMPANY
2011 – Present Director – Electric Capital Delivery

- Responsible for transmission, distribution capital and manufactured gas plant projects for IUSA Networks investment budget over three years over $600M and O&M Budget 2014 $68M
    - Oversight and Management of New York State Electric and Gas, Rochester Gas & Electric and Central Maine Power Company programs related to Initiation, Planning, Execution and Closure of electric capital projects, with manufactured gas plants and generation added within the last two years.
    - Analyze, Measure and Control project performance using key performance indicators.
    - Focus on resource safety, quality and execution of the work
    - Implement of common standards and procedures across operating companies
    - Ensure resource assignments are aligned with project plans and delivery requirements
    - Emphasis on continual improvement and maintaining ISO 9001:2008 certification.
    - Prepare and review regulatory filings
    - Administration of capital and operation and maintenance budgets

2010-2011 Manager – Electric Capital Delivery

- Manage the delivery of $60-$100 million in annual capital budget related to the electric transmission system
    - Oversight and Management of New York State Electric and Gas, Rochester Gas & Electric and Central Maine Power Company programs related to Initiation, Planning, Execution and Closure of electric capital projects, with manufactured gas plants and generation added within the last two years.
    - Analyze, Measure and Control project performance using key performance indicators.
    - Focus on resource safety, quality and execution of the work
    - Implement of common standards and procedures across operating companies
    - Ensure resource assignments are aligned with project plans and delivery requirements
    - Emphasis on continual improvement and maintaining ISO 9001:2008 certification.
    - Prepare and review regulatory filings
    - Administration of capital and operation and maintenance budgets

2008-2010 Manager – Programs/Projects

- Project manager of 200 mile, $625 Million capital transmission project – Maine Power Connection
    - Responsible for financial and performance reporting to executive management team
    - Development and coordination of regulatory filings including Maine Public Utility Commission, Maine Department of Environmental Protection, Army Corps of Engineers and local municipalities
    - Participation in state and community forums to educate the public
    - Additional project responsibility including Project Manager for 39 mile $32 Million capital transmission project

1994-2000 Senior Purchasing Agent / Senior Buyer / Buyer

- Day-to-day responsibility for inventory management of assets valued in excess of $4 million and procurement activity in excess of $21 million including the following tasks
    - Planned, coordinated and executed procurement strategies
    - Procured materials and services at the lowest total cost of ownership
    - Established vendor performance measurements and reporting capabilities

UTILITY SHARED SERVICES CORPORATION
2006-2008 Fleet & Stores

- Manager responsible for 9.5 million fleet assets and material inventory budget
    - Attain key performance metrics for fleet and inventory while meeting operational requirements

- Implement and support of policies and procedures regarding vehicle acquisition, maintenance, safety and regulatory compliance
- Coordinate and support other business areas of the company to manage emergency storm restoration activities

2000-2006 <u>Contracts Administrator/Senior Purchasing Agent</u>

- Responsibility for procurement of telecommunications and information technology (IT) software required to support the Energy East operating companies with average spend of $16 million dollars annually.
  - Work with Managers and Directors to understand business requirements and opportunities for sourcing activities
  - Develop and execute procurement strategies
  - Demonstrate leadership during major projects including NYSEG Mobile Radio Project by developing team objectives, determining baseline requirements, identifying project deliverables, establishing and coordinating sub-team activities
  - Lead negotiations and determine and administer performance standards with suppliers

EDUCATION

Master Business Administration, Thomas College, Waterville, ME (May 2015)
BS, Business Administration, University of Maine, Orono, ME (1984)

Educational Courses
Fundamentals of Substations Equipment and Control Systems – University of Wisconsin (2014)
Principles of Substation Design and Construction – University of Wisconsin (2013)

FRANKLYN D. REYNOLDS

PROFESSIONAL EXPERIENCE

IBERDROLA USA, Rochester, NY
2013–Present Vice President, Asset Management & Planning

- Responsible for executive and administrative functions of the company, including Capital Planning, Transmission and Distribution Planning, GIS and Mapping, Master Data and Records, Asset Management, Maintenance Engineering, Vegetation Management and Reliability Reporting

2010-2013 Vice President, General Services

- Responsible for all aspects of Iberdrola USA's General Services including Transportation, Real Estate, Facilities, and Materials Management & Support Services.
- Established General Services organization across IUSA
- Integrated global best practices in each functional area of General Services

2010-2010 Director, Electric T&D Support

- Direct and manage the construction of the major capital projects for Iberdrola USA electric utilities utilizing an internal mobile workforce and outside contractors as necessary. Responsible for the Transmission and Distribution Infrastructure and Reliability Program construction activity, NY/MDOT betterment projects and the associated major capital budget of more than $100M. Manage specialty facilities to repair and refurbish capital components.

ROCHESTER GAS & ELECTRIC, Rochester, NY
2009-2010 Director, Regional Operations

- Responsible for department of management and IBEW personnel engaged in electric, gas and field customer service operations in Rochester and surrounding region. Provide high-level leadership across the organization and foster a strong team environment to deliver safe, reliable and efficient service to 360,000 electric and 297,000 gas customers. Develop objectives and implement procedures to achieve business and financial performance targets.
- Sponsored for business transformation efforts developed by McKinsey & Co. for Iberdrola USA Electric T&D. Identified key stakeholders, established cross-functional teams and developed rapid results goals.
- Chaired negotiating committees for union work rules and job descriptions to enhance operational efficiency.
- Implemented behavior based safety programs across region in support of combined safety index goal.

IBERDROLA USA, Rochester, NY
2004-2009 Director, Supply Chain Materials Management

- Responsible for all aspects of materials management organization across six electric and gas utility companies with 3 million customers in New York, Massachusetts, Connecticut and Maine.
- Established fully integrated logistics management/supply chain function consolidating inventory, warehousing, staffing and material distribution channels across all operating companies; eliminated $6.2M in operating and capital costs.
- Managed corporate investment recovery program; generated $1.5M in annual revenues.
- Managed $70M annual spend across department of 100 bargaining unit and management employees.

CONNECTICUT NATURAL GAS & SOUTHERN CONNECTICUT GAS, Hartford, CT
2002-2004 Director, Operations Support Services

- Responsible for management of $10M budget and 80 employees in support of field operations; laid the groundwork for integration of two Connecticut gas utilities.
- Integrated CNG and SCG Operations Support Services. Merged meter reading, meter shop, fleet, inventory, environmental and safety departments. This resulted in the elimination of $1.2M in operating expenses.
- Implemented Automated Meter Reading system for CNG Greenwich division; saved $1M, reduced staff by 75% and improved customer satisfaction service quality measure.

UNITED TECHNOLOGIES CARRIER CORPORATION, Farmington, CT
2001-2001 Leadership Associate

- Prepared and analyzed financial discounted cash flow models for potential food services acquisition targets.

SOUTHERN CONNECTICUT GAS, Bridgeport, CT
2000-2001 Director, Systems Engineering & Protection

- Developed long-range system distribution strategy and improved quality of system network. Managed $6.5M budget and 20 bargaining unit and management employees.
- Aggressively negotiated contracts for facility locating, leak survey and corrosion control services.
- Led team of engineers and contractors on installation of $2M gate station for 500MW Milford Power plant.

1999-2000 Assistant to the Chairman of the Board

- Researched and recommended non-regulated business opportunities and business divestitures. Monitored industry M&A activity and reviewed potential merger candidates.
- Participated in merger related regulatory hearings, assisted in preparation of interrogatories and staff briefs.
- Developed corporate innovation project resulting in new marketing initiatives. Spearheaded development of company web page and e-service strategy.

1996-1999 Manager, Contractor Installations

- Successfully managed installation of numerous multimillion-dollar projects to include eleven-mile natural gas supply line for Bridgeport Energy merchant power plant. Managed regulatory and customer relationships.
- Implemented construction “turn-key” contract and outsourced 90% of large diameter main installations.
- Established partnerships with municipalities and reduced paving restoration costs by $250K.
- Developed customer complaint prevention and recovery program; improved DPUC satisfaction ranking.

1994-1996 Project Engineer

- Participated in management development program. Rotated through Marketing, Corporate Engineering, Customer Service, Finance, Construction and Gas Supply.
- Streamlined new business installation process improving efficiency 30% and reducing operating expense.

ADDITIONAL EXPERIENCE

EASCO ALUMINUM, Berlin, CT
1993-1994 General Forman

UNITED TECHNOLOGIES RESAERCH CENTER, East Hartford, CT
1991-1993 Manufacturing Engineer

MILITARY

Major (Ret.), Army National Guard

EDUCATION

MBA, Finance, University of New Haven, 1998
Bachelor of Science, Industrial Technology (Power Transmission), Central Connecticut State University, 1992
Certified Supply Chain Professional, Association for Operations Management (APICS)

PROFESSIONAL DEVELOPMENT

Coursework included: International Leadership Program, IMD (Lausanne, Switzerland), University of Michigan Executive Education Program, Gas Distribution Operations: NEGA/GTI, Incident Command Course: Department of Homeland Security, General Industry Safety & Health: OSHA, Hazardous Materials Training & Testing: DOT

PROFESSIONAL AFFILIATIONS

Urban League of Rochester: Board of Directors, Executive Committee
Consumer Credit Counseling Services: Board of Directors, Executive Committee
Roberts Wesleyan College: Executive Advisory Board

AWARDS

Rochester Business Journal 40 under 40 Award recipient, 2006

NYSEG and RG&E Capital Investment Plan 2015-2019

IBERDROLA USA

April 1, 2015

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Attachment 7 List of Gas Projects/Programs included in Mandatory

Attachment 8 List of Gas Projects included in Distribution Mains – System Capacity

Attachment 9 Description of the Most Significant Gas Projects

EXECUTIVE SUMMARY

This document presents a comprehensive Capital Investment Plan for the electric transmission, distribution, generation, and gas businesses of Iberdrola USA New York operating companies, New York State Electric & Gas ("NYSEG") and Rochester Gas and Electric ("RG&E"), for the period 2015 through 2019 (the "Plan"). This Plan positions NYSEG and RG&E (the "Companies") to continue to provide safe and reliable service to customers and is consistent with the vision expressed in the Code of Ethics of Iberdrola and its group of companies and the mission of Iberdrola USA, as adopted by NYSEG and RG&E, both shown below:

Iberdrola Code of Ethics:

> "We aspire to be the preferred global energy company because of our commitment to the creation of value, quality of life, the safety of people and of supply, the protection of the environment and customer focus."

Iberdrola USA Mission:

> "Iberdrola USA is a team of dedicated individuals working as one to deliver value to our customers, employees and shareholders. By providing outstanding customer service and exceptional reliability, while holding safety and the environment in high regard, we aspire to be a world-class energy company."

This Plan is a continuation of meeting the Iberdrola USA mission. To that end, the Companies propose investing $2.07 billion in the electric delivery and generation systems and $0.68 billion in the gas delivery system over the five year period.

The projects and programs proposed in this Plan are what the Companies have determined today is needed to deliver safe and reliable service to customers. The Companies continually reevaluate and reprioritize projects and system needs due to the continually changing environment in which the Companies operate. One of the potentially most impactful items that will require the Companies to reevaluate and reprioritize capital spending is the NYPSC Reforming the Energy Vision (REV) proceeding and its related proceedings (e.g. Net Metering, Distribution Level Demand Response, Community Choice Aggregation).

Many electric projects are designed and implemented to reduce the risk of service outages in the event of contingency situations. The gas projects continue to include replacement of leak prone mains and services and automation and modernization projects. In addition, investments are included to optimize the process of grid of both the electric and gas grid by installing modern equipment, employing software and IT platforms and expanding the automation of the network, which will help achieve system efficiencies and move toward a Distribution System Platform (DSP) as envisioned by the REV proceeding.

This Five Year Plan contains programs and projects that will help support the following six strategic objectives of NYSEG and RG&E:

1. Improve safety and security
2. Meet the electrical and natural gas needs of our customers
3. Achieve service reliability and quality targets
4. Optimize replacement of obsolete equipment and facilities
5. Improve system effectiveness and efficiency
6. Sustain the environment

This Plan will remain flexible to meet the changing needs of our customers, regulators, and other stakeholders.

TABLES

FIGURES

This Plan contains projects and programs needed for the Companies to deliver safe and reliable electric and gas service to customers. Reassessing needs and reprioritizing projects to ensure that investments support the strategic objectives in a cost effective manner, is a continuous process.

Table 1.1 Capital Investment Plan by Year ($000)*
*Includes the allocation of Common Investments

	2015	2016	2017	2018	2019	Total
NYSEG-E	167,871	241,105	229,502	240,508	250,999	1,129,984
RGE-E	93,866	91,878	150,382	159,127	139,341	634,593
RARP	18,324	19,178	28,604	40,776	48,464	155,346
GRTA	20,200	110,770	18,680	0	0	149,650
Subtotal - Electric	**300,261**	**462,931**	**427,167**	**440,410**	**438,803**	**2,069,572**
NYSEG-G	50,599	70,651	76,072	96,238	81,766	375,326
RGE-G	37,303	54,437	70,181	67,569	75,890	305,380
Subtotal - Gas	**87,902**	**125,088**	**146,253**	**163,807**	**157,656**	**680,707**
Total - NY	**388,163**	**588,019**	**573,420**	**604,217**	**596,460**	**2,750,279**

The capital investment level for 2015 has been approved by the Iberdrola USA Networks Board of Directors, as well as approved by the respective NYSEG and RG&E Boards of Directors. Over the five year period, NYSEG expects to invest approximately $262 per customer per year in its electric system and $284 per customer per year in its gas delivery system, while RG&E expects to invest approximately $508 per customer per year in its electric system and $198 per customer per year in its gas delivery system.

The plan is driven by ongoing review and assessment of the electric and gas delivery systems and a determination of the prioritization of projects and programs. For periods after 2015, the amounts reflect projected capital investment needs known at this time and will be adjusted appropriately based on continued review and assessment of the electric and gas delivery systems as well as the outcome of the upcoming rate cases and any additional state or federal regulatory requirements or legislation, including the REV-related proceedings.

The structure of this Plan is as follows:

Chapter 2 describes the **STRATEGIC OBJECTIVES OF THE PLAN** which are to:

1. Improve system safety and security,
2. meet the electric and gas needs of our customers,
3. achieve reliability and service quality targets,
4. replace obsolete and aged equipment and facilities,
5. improve the effectiveness and efficiency of the electric and gas systems through modernization, and
6. sustain the environment.

Chapter 3 describes the **IBERDROLA USA NETWORKS CAPITAL INVESTMENT PRIORITIZATION STRATEGY** to allow the Companies to effectively and efficiently accomplish the key strategic objectives of the plan

Chapter 4 of the Plan presents the electric and gas **TRANSMISSION AND DISTRIBUTION SYSTEMS AND GENERATION FACILITIES**, which contains information about the Companies' infrastructure.

Chapter 5 presents the **ELECTRIC CAPITAL INVESTMENT PLAN** – the projects and programs necessary to support the strategic objectives. There are a number of significant projects that the Companies are undertaking or plan to undertake during the Plan term. These projects are high priority projects that result from a prioritization approach that considers, among other inputs, the number of customers, system load, and hours of exposure as metrics. In addition, the Companies plan to invest in modernization of its delivery systems and in network automation, in order to operate more effectively and efficiently, provide added benefits to customers and promote the safe operation of the network. The modernization investments include:

- new standards in equipment and substation schemes.
- improvements in network infrastructure to reduce the exposure of outages, due to potential failures in transformers at substations and circuits, (N-1, N-1-1).
- replacement of obsolete and aged equipment at substations and poor condition poles, wires, and other line devices.

Chapter 6 presents the **GENERATION FACILITIES CAPITAL INVESTMENT PLAN** – the projects and programs necessary to support the strategic objectives. There are a number of significant projects that the Companies are undertaking or plan to undertake during the Plan term

Chapter 7 presents the **GAS CAPITAL INVESTMENT PLAN** – the projects and programs necessary to support the strategic objectives. There are a number of significant projects that the Companies are undertaking or plan to undertake during the Plan term. The Companies key gas business strategies are:

- Safely operate the delivery system
- Achieve all New York State Public Service Commission gas service quality performance measures
- Minimize leaks through corrosion control, leak repair, and replacement of leak prone mains and services, including an enhanced replacement effort
- Provide innovative, cost-effective, and timely planning, engineering and design services that meet or exceed customer expectations

Chapter 8 presents the **COMMON CAPITAL INVESTMENT PLAN** – the projects and programs that are used by and support more than one of the Companies' businesses and are necessary to support the strategic objectives.

Common Capital Investments include:

- Building Projects and Space Management
- Fleet
- Information Technology Infrastructure
- Operation Technologies
- Customer Service

1.1 OPPORTUNITIES AND CHALLENGES

The Companies have the following opportunities and face certain challenges as they implement this Plan:

1. Enhanced asset management capabilities: The Companies continue to develop enhanced competencies in asset management, which reflect, in part, recommendations made in the

Companies' recent Management Audit. Improvements have been made and continue to be made to the ways in which the Companies determine asset replacements and the methods used to optimize the portfolio of projects and programs. A capital investment prioritization strategy has been implemented in order to develop this Plan. The Companies will regularly reassess needs and reprioritize projects using these improved asset management approaches. The Companies are currently exploring the use of a quantifiable risk methodology for project prioritization. A description of this methodology is provided in Chapter 3.

2. Asset Management and Planning continues to be responsible for developing the capital investment plan, providing recommendations for replacing assets or infrastructure based upon the asset management methodologies noted above, and asset maintenance programs. The Companies look to continually improve the capital investment planning approach and processes.

3. Engineering and Project Delivery [ISO 9001 certified] continues to be responsible for the project management, engineering, and effective delivery of all of the larger capital investment projects. The group has developed enhanced project and program tracking processes that enable more effective management of projects. In addition, a structured Project Management Office has been implemented which provides a consistent approach to the management of capital investment projects. The Companies continue to supplement their internal project management resources with owners' engineer project management services to help execute this Plan.

4. The Companies have undertaken a focused review of the worst performing distribution circuits. These circuits were reviewed for betterments and opportunities to better isolate faults in order to lessen the number of customers out during an outage event. The Companies plan to continue this process and undertake priority betterments during the term of this Plan.

5. FERC Brightline: Under FERC's Order No. 773, issued December 20, 2012, there has been a change in the definition of the Bulk Electric System. The Companies will need to meet more stringent reliability criteria, thus requiring mitigation actions and upgrades in facilities, particularly 115 kV facilities, not currently considered part of the Bulk Electric System. The

specific projects at these facilities are being determined and defined. The order of magnitude and timing of the cash flows included in the plan are the best estimates currently available, and subject to change as the Companies continue to review the requirements.

6. Technological advancements: The Companies are making technological changes and innovations, including standardization, modernization and automation of the Companies facilities. These investments are foundational to the REV-envisioned Distribution System Platform (DSP) and will also support increased levels of visibility and monitoring of the system.
   - Standardization of design and equipment will result in:
     - Reduction resources needed for project design and construction. For instance, the implementation of the IEC 61850 protocol or equivalent in new substations and substation renovations will reduce the time needed for engineering and wiring the protection systems of the equipment.
     - Use of advanced technology, quality, and standardized equipment will improve service quality and reduce the need for spares. For example, new breakers, with SF6 insulating medium will require less maintenance than conventional oil-filled breakers.
     - As a result, the number of hours to construct greenfield substations potentially could be reduced by more than 10%. The number of hours to construct brownfield substations potentially could be reduced by more than 5%.

   - Improvements to system control: The Companies have included system control, substation and other system automation projects to provide operational benefits by bringing the Companies' electric system up to modern day standards. These include:
     - A new Energy Control Center at NYSEG and RG&E which will be equipped to address expected additional NERC and FERC requirements. This system will be in service in 2015.
     - Increased numbers of remote terminal units (RTUs).
     - Increasing telecommunications capability for remote control of devices on the system, particularly the distribution system.
     - System automation will be compatible with the future implementation of foundational REV-supportive investments, including Advanced Metering Infrastructure (AMI) and smart grid..
     - Increase distribution automation through reclosers and SCADA Mate Switches

- All new substations and renovations to existing substations will be done in accordance with new standards. These standards include voltage monitoring, measures of power quality and oil containment.

6. Rochester 11kV system: Today, the 11kV system in Downtown Rochester is operated as a transmission system. By upgrading to currently available technology, it will be possible to operate the system as a distribution system with the same reliability. We plan to install new digital relays, integrated system controls and new software that will enable RG&E to operate the network more efficiently. A system assessment to evaluate the different improvement opportunities is in progress.
7. The Companies are putting in place new framework agreements with various Iberdrola-wide equipment manufacturers and suppliers. With these types of multi-year agreements in place, the Companies expect to better manage the cost of purchasing equipment.
8. Generator Retirement: The Companies continue to address the numerous reliability concerns associated with past and current generation retirement and mothball notices. Cooperation continues with the NYISO and other neighboring utilities in studying and determining the most efficient and effective reinforcements needed to address the generation reductions. Planning studies can also evaluate concerns on the system due to *potential* retirement and mothball notices as well.
9. Reforming the Energy Vision (REV). The Companies believe that the REV proceeding has the potential to substantially improve the range of functions and the efficiency of the electric distribution system in New York State and to provide added value to the state's electricity consumers and economy. The Companies have anticipated a number of the key areas being covered by REV and have already made significant investments in modernization and automation that are supportive of and foundational to the DSP. To continue to support the DSP development, this plan includes additional investment in automation, network communications, a REV demonstration project as well as the start of full deployment of AMI. The proposed Smart Energy Community REV demonstration project will serve as a test-bed for many aspects of the REV vision. The proposed demonstration project will serve 10,000 to 15,000 customers within one specific geographical area. It will provide a test bed to investigate the best ways to engage customers. It will also provide an opportunity for the Companies to demonstrate its technical and operational capabilities as the DSP and to

demonstrate the value of the foundational investments including advanced metering, a high-bandwidth communications network, and grid automation. The Smart Energy Community project will provide a platform to demonstrate market development and products/services innovation to validate the value of the platform to enable the market.

1.2 SUMMARIES

This section contains various summaries of the Capital Investment Plan. In addition, a detailed list is included in Attachment 1.

The following table and chart provide a summary of the Plan by Type of Investment for the period 2015-2019.

Table 1.2 Summary of Capital Investment Plan by Type of Investment 2015-2019

($000)

	Transmission	Distribution	Gas	Generation	Common	Total
NYSEG	444,924	486,573	330,301	28,079	215,433	**1,505,310**
RGE	573,604	246,586	265,096	44,585	115,098	**1,244,969**
Total	**1,018,528**	**733,160**	**595,397**	**72,664**	**330,530**	**2,750,279**

Below is a chart depicting the above categorization.

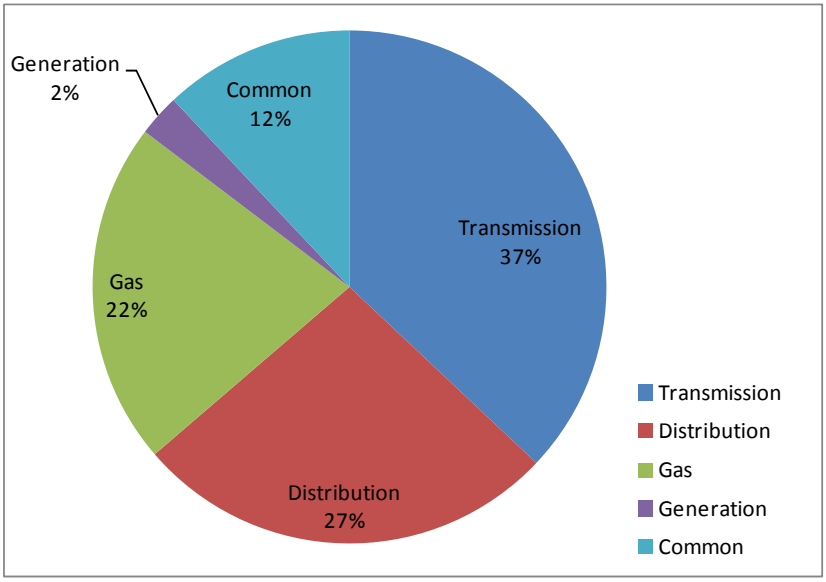


Figure 1.1 Summary of Capital Investment Plan by Type of Investment 2015-2019

1.2.1 Electric Summary

This section contains various summaries of the electric portion of the Capital Investment Plan.

Table 1.3 Summary of Electric Capital Investment Plan by Category (dollars in 000s)

		2015	2016	2017	2018	2019
Mandatory	Transmission	93,211	211,621	80,343	52,314	20,500
	Distribution	58,152	47,308	48,512	50,259	52,150
	Generation	6,104	8,142	13,234	5,019	9,666
	Common	8,765	17,863	18,452	14,978	12,776
	Total Mandatory - Electric	**166,232**	**284,934**	**160,542**	**122,571**	**95,092**
System Capacity	Transmission	21,757	6,556	20,284	12,627	20,824
	Distribution	6,375	16,484	20,127	22,580	25,071
	Generation	150	800	1,924	7,633	7,076
	Total System Capacity - Electric	**28,283**	**23,840**	**42,335**	**42,840**	**52,971**
Reliability Risk	Transmission	39,619	39,537	64,762	81,964	92,595
	Distribution	9,176	11,650	11,109	11,427	11,754
	Generation	160	550	700	1,950	2,375
	Common	482	587	520	701	479
	Total Reliability Risk - Electric	**49,437**	**52,324**	**77,091**	**96,042**	**107,203**
Group Initiatives	Common	5,519	867	815	2,125	838
	Total Group Initiative - Electric	**5,519**	**867**	**815**	**2,125**	**838**
Efficiency	Transmission	626	4,000	9,996	14,714	18,172
	Distribution	1,320	5,350	8,061	10,343	9,762
	Common	1,443	11,202	8,608	7,562	8,267
	Total Efficiency - Electric	**3,389**	**20,552**	**26,666**	**32,619**	**36,201**
Asset Condition Replacement	Transmission	8,409	19,133	22,024	26,732	27,689
	Distribution	26,251	35,818	40,330	41,004	42,347
	Generation	1	750	3,850	2,580	0
	Common	12,740	17,305	25,648	30,128	30,718
	Total Asset Condition - Electric	**47,401**	**73,006**	**91,853**	**100,444**	**100,754**
Strategic	Distribution	0	6,000	24,836	42,788	45,333
	Common	0	1,407	3,030	982	411
	Total Strategic - Electric	**0**	**7,407**	**27,866**	**43,770**	**45,744**
	TOTAL - Electric	**300,261**	**462,931**	**427,167**	**440,410**	**438,803**

The chart below depicts the above categorization.

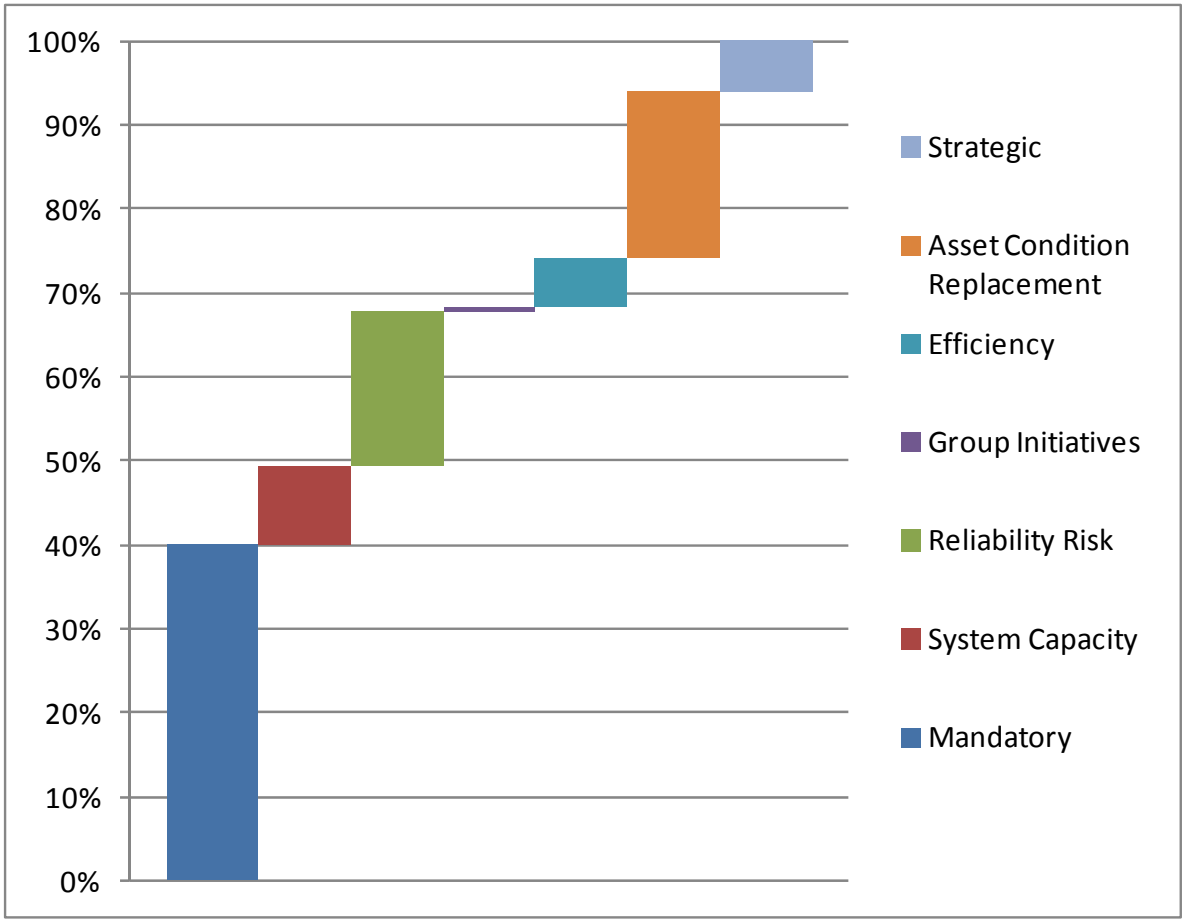


Figure 1.2 Summary of Electric Capital Investment by Category

1.2.2 Gas Summary

This section contains various summaries of the natural gas portion of the Capital Investment Plan. In addition, a detailed list is included in Attachment 1.

Table1.4 Summary of Gas Capital Investment Plan by Category ($000)

		2015	2016	2017	2018	2019
Mandatory	Gas	69,540	91,703	82,286	81,661	79,300
	Common	3,363	6,040	6,158	5,537	3,710
	Total Mandatory	**72,903**	**97,742**	**88,443**	**87,199**	**83,010**
System Capacity	Gas	6,310	11,477	17,272	9,996	8,130
	Total System Capacity - Gas	**6,310**	**11,477**	**17,272**	**9,996**	**8,130**
Reliability Risk	Gas	420	2,978	18,140	36,959	34,340
	Common	191	253	200	244	171
	Total Reliability Risk - Gas	**611**	**3,231**	**18,340**	**37,203**	**34,511**
Group Initiatives	Common	1,913	276	262	715	265
	Total Group Initiatives - Gas	**1,913**	**276**	**262**	**715**	**265**
Efficiency	Gas	0	175	600	600	2,600
	Common	544	3,533	2,727	2,384	2,826
	Total Efficiency - Gas	**544**	**3,708**	**3,327**	**2,984**	**5,426**
Asset Condition Replacement	Gas	620	1,591	4,732	2,598	1,165
	Common	5,001	6,575	9,030	10,428	10,601
	Total Asset Condition - Gas	**5,621**	**8,166**	**13,762**	**13,026**	**11,766**
Strategic	Gas	0	0	3,664	12,213	14,328
	Common	0	489	1,183	472	221
	Total Strategic - Gas	**0**	**489**	**4,847**	**12,685**	**14,549**
	Total - Gas	**87,902**	**125,088**	**146,253**	**163,807**	**157,656**

The chart below depicts the above categorization.

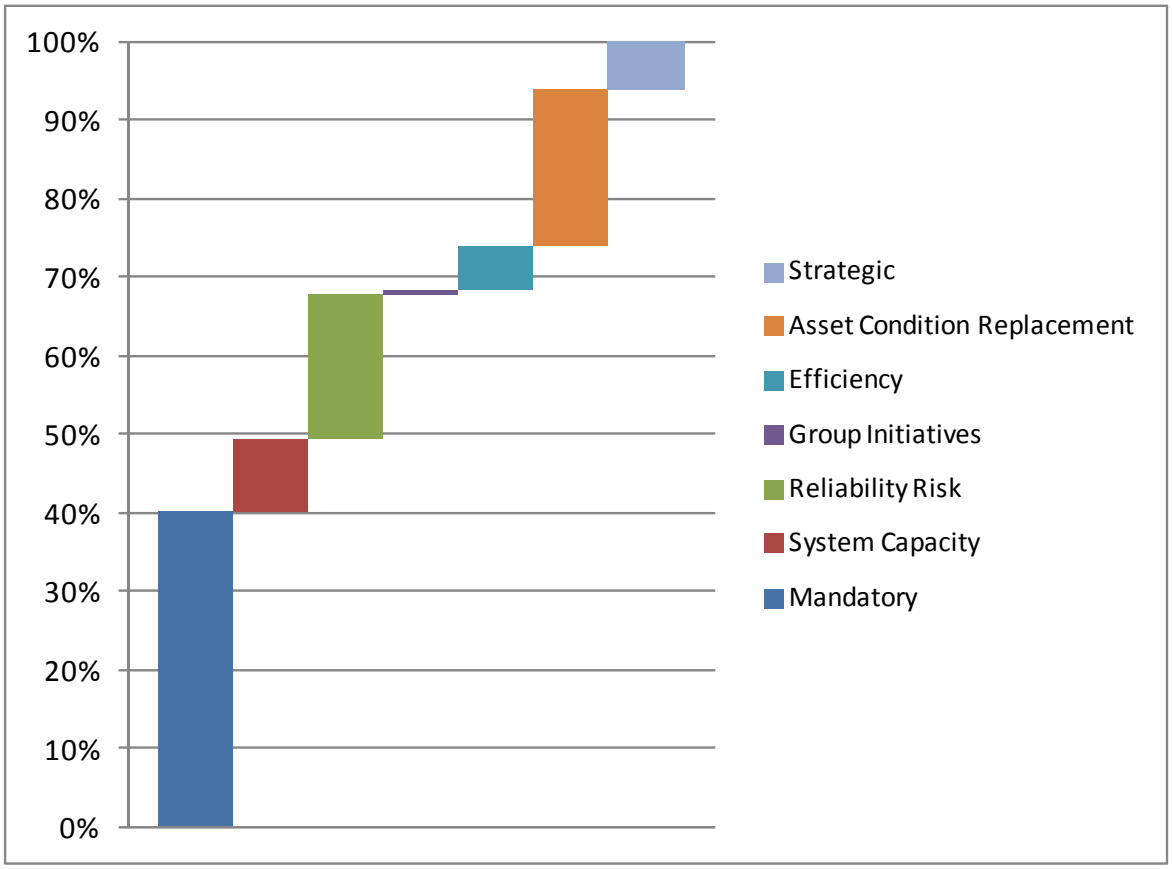


Figure 1.3 Summary of Gas Capital Investment by Category

2.0 STRATEGIC OBJECTIVES OF THE PLAN

The Companies will deliver this Capital Investment Plan effectively and efficiently, while accomplishing the following strategic objectives:

Objective 1: Safety and Security

Safety is the Companies' number one priority. The Companies place much emphasis on the safety of their employees and the public. The Companies operate a zero accident culture and will continue to make investments in order to assure the safe and reliable operation of the system.

No aspect of the Companies' operations is more important than accident prevention. Safety is a value that does not change. There is no job so important that established safety rules are ever compromised. Management strives to provide a hazard-free work environment, to comply with all applicable health and safety laws and regulations, and to educate employees, customers and the public about health and safety hazards associated with our operations. Further, management is committed to the recognition, assessment, and control of health and safety hazards related to our facilities and operations.

In order to keep our employees safe, ensure the integrity of our systems and provide reliable service to our customers, the Companies continue to upgrade the physical security at and around our facilities as well as the cyber security infrastructure. These upgrades include improved access control, video surveillance and alarming capabilities. More stringent NERC standards require the company to improve and expand their security capabilities to protect critical system infrastructure. Further, the challenges the Companies face to ensure data protection, privacy and ensuring compliance with regulatory and legal mandates continue to grow as threats evolve and grow increasingly more sophisticated.

Objective 2: Meet the electrical and natural gas needs of our customers

The Companies have an obligation to meet the energy needs of customers. The rate of growth in electrical usage and natural gas usage has decreased from that experienced during more robust economic times. The Companies' continue to experience increases in the number of customers, and the Companies expect usage per electric customer to increase by 0.5% to 1.0% per year and usage per gas customer to remain at current levels.

The Companies typically provide electric service to approximately 4,500 new electric customers and 1,500 new natural gas customers, annually. The Companies also need to provide reliable and dependable service to larger commercial and industrial customers, often requiring the upgrading of facilities, the costs of which in certain cases may be all, or partially, offset by contributions from customers pursuant to the Companies tariffs and NYPSC guidelines. The Companies must interconnect large and small generation projects to its transmission and distribution system. In addition, NYSEG plans to add an additional natural gas pipeline in order to mitigate the volatility of the natural gas commodity costs to customers.

Objective 3: Achieve service reliability and quality targets

The Plan supports this strategic objective by the following actions:

- Reduce problems of overloads in lines and transformers under normal operating conditions at peak demand;
- Reduce problems under contingency situations (N-1) and (N-1-1); and
- Enhance operation and restoration of the system through replacement and modernization of end of life equipment.

Objective 4: Replace equipment and facilities based on condition - modernization

During the period 2015-2019, the Companies propose to continue to replace aged equipment and facilities. The Companies continue to enhance their asset management competencies to allow for a risk adjusted prioritization methodology in conjunction with the following:

- Equipment and facilities with high failure rates,
- Technological obsolescence (inability to obtain spare parts),
- Facilities that are in poor condition, and maintenance of such equipment is no longer cost effective;
- Equipment with high maintenance costs;
- Risk of failure on safety, reliability, and the environment; and
- Other indicators of asset health.

The Companies expect such replacements may well increase as the Companies continue their enhanced distribution inspection program whereby 20% of all distribution line facilities will be inspected annually and equipment prioritized for replacement. Further the Companies have in place a transmission line wood pole inspection and treatment program that extends the life of

wooden poles. The Companies also inspect their transmission circuits by helicopter. Such inspection methods can show crossarm, insulator and other wear that is not visible from the ground. The Companies continue rigorous analyses of failed equipment to aid improving maintenance practices and asset replacement practices.

Objective 5: Improve effectiveness and efficiency of the network

The Companies continually look for ways to make operations more effective and efficient. One of those ways is through network automation. The Companies continue to modernize the operations of their systems, enhancing the effectiveness with which we serve customers, enhance reliability and help the Companies become more efficient.

Automation is used to control the substation switches, breakers, transformers, and other equipment of the electric system, providing real time information to the Energy Control Center regarding voltages, loads, oil temperature in transformers, on or off positions of breakers and sectionalizers and use of alarms to indicate a failure in the system.

The primary customer benefit resulting from automation is that the Companies will be able to respond more quickly and effectively to outages resulting from problems in distribution circuits. The crews restoring service can receive notification of an outage sooner than with the current system of notification (typically a call from one or more customers notifying us of the outage). Adding reclosers on distribution lines is intended to reduce the number of customers whose service is impacted during an outage and will facilitate information about the location of the outage causing issue. The remote control of breakers will also increase the efficiency of the crews by reducing their travel time. This Automation effort will also improve storm recovery time for many customers who are able to be appropriately sectionalized and/or restored remotely.

Investments in automation will be compatible with technologies required for the future development of a smart grid.

Investments in automation in the Plan include:

1. NYSEG and RG&E Energy Control Center Project: This project consists of design and installation of a fully integrated EMS/SCADA/DMS/OMS system that replaces the existing EMS/SCADA systems and current "Smartmap" Outage Management System.

   The Energy Control Center Project will address the following issues and will result in the following benefits:

- One integrated control center platform for NYSEG and RG&E
  - Improved efficiency with a single system that is deployed across all of the Companies' systems.
  - An integrated Energy Management System, SCADA, distribution management system, and outage management system
  - Deployment across 100% of the transmission and distribution network.
- The integration of the EMS/SCADA system with the OMS provides real time transmission, substation, and distribution situational awareness for dispatchers and operators:
  - Improves the identification of interrupted equipment/circuits
  - Decreases outage restoration times
  - Improves accuracy of outage analysis engine
  - Increases general public and utility crew safety
- New infrastructure that facilitates increased automation on the transmission and distribution system while providing a robust foundation for additional automation of the system.
  - Supports substation and distribution automation:
    - ❖ Capability to monitor many more data points
    - ❖ Simplifies new RTU additions
- Better visibility of the growing penetration of distributed generation, requiring better coordination of distribution-transmission to manage distributed generation upstream power flows.
- Stronger demand-side participation as electric vehicles potentially gain popularity.
- Outage management based on a variety of integrated inputs, including customer calls, SCADA and other devices.
- Enterprise Geographic Information System (GIS) Integration:
  - Provide customers a web-based customer information portal providing full interactive services for outage management information.
  - Customer data available to operators and dispatchers
  - Decrease data entry errors and database reconciliation delays
  - Safe & secure operation and maintenance of the bulk power and sub-transmission systems in full compliance with all FERC/NERC/NPCC /ISO and State regulations.
  - Accommodates FERC's Bright Line ruling

All these systems will be combined and integrated into one Energy Control Center system that will be compliant with NREC Critical Infrastructure Protections Standards (CIPS). This project will replace the current system at NYSEG and upgrade the current Siemens system at RG&E to the Siemens Spectrum system.

2. Modernization and automation of substations: The substation modernization program will prepare substations for automation through new standards of design and equipment. New controls with microprocessor based relays and high speed connections to the Energy Control Center will allow for immediate indication of system disturbances and outages, reducing outage detection time by up to 30 minutes, and maintenance cycles for some equipment may be extended. In addition to the reduced outage duration time, the microprocessor based relaying will have remote connections so that employees will have access to event reports and system data in a few minutes rather than traveling to the station to investigate events. This may further reduce overall restoration time depending on the event that occurred. Microprocessor relays and new breakers will have faster fault clearing times, as compared to the existing equipment, which enhances the safety of the crews and public. The Companies are standardizing the design and equipment in substations that will ultimately result in reduced construction costs. As mentioned previously, the Companies are implementing the IEC 61850 protocol (or equivalent) in new substations and substation renovations which will reduce the time needed for wiring the protection systems of the equipment. The Companies are using advanced technology, quality and standardized equipment which will improve service quality and reduce the need for spares. For example, new breakers, with SF6 insulating medium, will require less maintenance than those utilizing conventional oil-filled breakers. As a result, the number of hours to design and construct brownfield substations could be reduced by more than 5%.

3. Remote Terminal Unit (RTU). Additional and upgraded RTU communication connectivity with substations and switching devices to resolve the following issues:
   - Provides the ability to remotely monitor and control substation devices.
   - Reduces outages and improves response time through increased real time situational awareness.
   - Current radio RTUs have no additional capacity, are outdated and must be replaced to accommodate automation projects.

This project, together with the telecommunications infrastructure below, will provide the backbone to remotely operate sectional devices and reduce outage times. At RG&E additional radio RTUs will be installed on switching equipment at customer substation locations so there will be better visibility of the stations' operations.

4. Telecommunications for remote control: The Companies plan to build or lease the telecommunications infrastructure necessary for the projects described in this section. This involves the strategic addition of fiber optic, microwave links and digital radio capability, depending on security and cost effectiveness. This will include erection of towers needed to communicate from remote locations to the Energy Control Center. The Companies will work with telecommunication providers to determine the least cost approaches to achieving the objectives. These communication links are vital to realize the benefits from automating the substations and distribution system as described in this section.

5. Reclosers: The Companies plan to continue to add electronic reclosers to increase the ability to sectionalize more of the distribution system. These reclosers will reduce the number of customers out of service and facilitate the location of faults in the lines.

7. Gas SCADA System: NYSEG's Gas SCADA System (GSS) monitors and controls the primary gate stations for the gas distribution systems for NYSEG and RG&E. The system is critical to safe and reliable gas operations and requires periodic replacement. The current GSS was purchased in 2010. The industry standard life expectancy for this type of system is five to eight years, therefore a replacement project is planned during the term of this plan.

   - The current server hardware, operating systems, software and security patches are unavailable because they are no longer manufactured or supported by the respective vendors.

7. SCADA Mate Switches: The Companies plan to improve system reliability by adding remote control switches that will allow for earlier isolation of outages and restoration of service.

Objective 6: Sustain the environment

The Companies comply with all environmental laws and regulations in carrying out its electric and gas delivery services.

NYSEG and RG&E will make decisions today to deliver positive long term results. Operating in an ethical manner and demonstrating a respect for the environment are pillars of the business.

The details described in the Plan support this statement. Reducing the amount of leak prone natural gas mains and services will reduce methane emissions, a known greenhouse gas. Replacing outdated and aged electrical equipment presents opportunities to recycle both the metal and oil while minimizing the use of landfills. New electrical equipment purchased will be more energy efficient than present equipment and will also reduce the risk of an oil spill caused by equipment failure. The tasks in this Plan will take into account environmentally sensitive areas, from the selection of new right-of-ways to the restoration of disturbed areas.

Finally, improvements to the hydro generation facilities will allow the Companies to continue to provide a source of clean, renewable, green electric energy to our customers.

3.0 IBERDROLA USA NETWORKS CAPITAL INVESTMENT PRIORITIZATION STRATEGY

The companies have developed a prioritization strategy that is utilized in determining the "next dollar invested". The following categories are utilized in the strategy and are listed in order of priority. This strategy has been utilized to develop the plan:

- Mandatory Compliance – Statutory, regulatory, code, safety and environmental requirements
- System Capacity – Organic demands to serve customers
- Reliability Risk – Continuity and quality of service to meet service targets
- Group Initiatives – Business-driven projects/programs reflecting best practices
- Efficiency – Improvements in the delivery of energy, and business processes
- Asset Condition Replacement – replacement of obsolete and aged equipment as well as addressing risk based assessments of equipment
- Strategic – Business growth and other strategic areas

The Companies continue to refine and clarify the definitions of each of the categories as conditions warrant. The definition of Mandatory Compliance was previously not clear across the Companies. To address this lack of clarity, the definition has been refined to more specifically identify what projects are to be categorized as Mandatory Compliance, including the specific requirements regarding what justification is necessary to show that the project is mandatory, with examples based on circumstances that have arisen in the past.

The current definition of Mandatory Compliance is:

> *Required justification for projects in this category must include the specific reference to the regulatory order, tariff leaf (in NY), section of the Terms and Conditions (in ME), executed contract or other associated legal document (i.e. citation of a Federal, State, County or City Law). In addition, the timing requirements of when such requirements must be met shall be included.*
>
> *Projects and programs identified as Mandatory Compliance will be the base of the capital investment plans for all Companies. Eminent safety, security and environmental compliance lead this classification. Meeting formal and codified legal and regulatory requirements, thereby protecting the Companies against violations, are in this category. Examples include projects needed to meet the National Electric Safety Code (NESC), North American Electric Reliability Corporation (NERC), and other State and/or Federal requirements.*

Projects associated with regulatory orders and market conditions, such as generation retirements, fall under the mandatory classification. Other examples include facility relocations related to public works projects such as highway relocations, any project required and defined in the Tariffs (NY) or the Terms and Conditions (ME) (i.e. requests for new gas or electric service, installation of street lighting, storm repair, etc), generator interconnects, and projects required by fully executed contractual agreements.

If additional work is being planned in conjunction with a project that is deemed Mandatory, and the additional work is not within the scope of the Mandatory project, the entire project is not to be deemed Mandatory. Only that portion of the project that is required under the above definition is deemed Mandatory. The additional work to be performed will be defined as one of the other six prioritization categories and prioritized as a separate project.

In addition, the Companies continue to explore other methodologies to use in prioritizing projects. One such methodology currently being developed and defined is the calculation of a degree of risk in determining investment priority. This method utilizes a bifurcated measure of risk; the probability of failure, measurement is based on the Asset Health, and a criticality measure, the impacts that would likely be experienced if the asset were to fail. The combination of these two measures would provide the quantifiable degree of risk measure. This risk quantity would then be compared to all other risk quantities in the project portfolio. Those projects with highest risk quantity would receive priority for the “next dollar invested”.

4.0 TRANSMISSION AND DISTRIBUTION SYSTEM AND GENERATION FACILITIES

TABLES

FIGURES

New York State Electric and Gas Corporation is a combination electric and gas utility serving approximately 862,000 electric customers and 264,000 gas customers in an area of approximately 18,400 square-miles and a population of 2.5 million people in New York State. Rochester Gas and Electric Corporation is a combination electric and gas utility serving approximately 370,000 electric customers and 308,000 gas customers within a 2,700 square-mile service territory with a population of approximately 1.0 million people in upstate New York.

4.1 ELECTRIC SYSTEM

NYSEG and RG&E provide electric delivery services to over 1.2 million customers in New York State. In 2014, the Companies delivered over 25.4 billion kWh of electricity to these customers. The highest combined peak demand experienced by the Companies was 5,117 MW which occurred in the summer of 2011. The 2014 seasonal peaks was 3,152 MW for NYSEG, and 1,521 MW for RG&E. The growth in customer demand over the next five years is estimated to be slightly above 1% per year. The growth in customer demand may be dampened as REV evolves and increased customer utilization of Distributed Energy Resources may offset some of the demands on the electric system.

Figure 4.1 on the next page is a map of the areas in which the Companies provide electric service in New York State.

Table 4.1 provides information on the Electric Service Areas, Customers and load:

Table 4.1 Electric Service Areas and Customers

	Area (sq mi)	# Cities (>20K population)	# Customers (000)	MWh 2014	MW peak load (2014)
NYSEG	18,359	6	862	17,733,963	3,152
RG&E	2,700	3	370	7,692,298	1,521
TOTAL	**21,059**	**9**	**1,253**	**25,426,261**	**4,673**

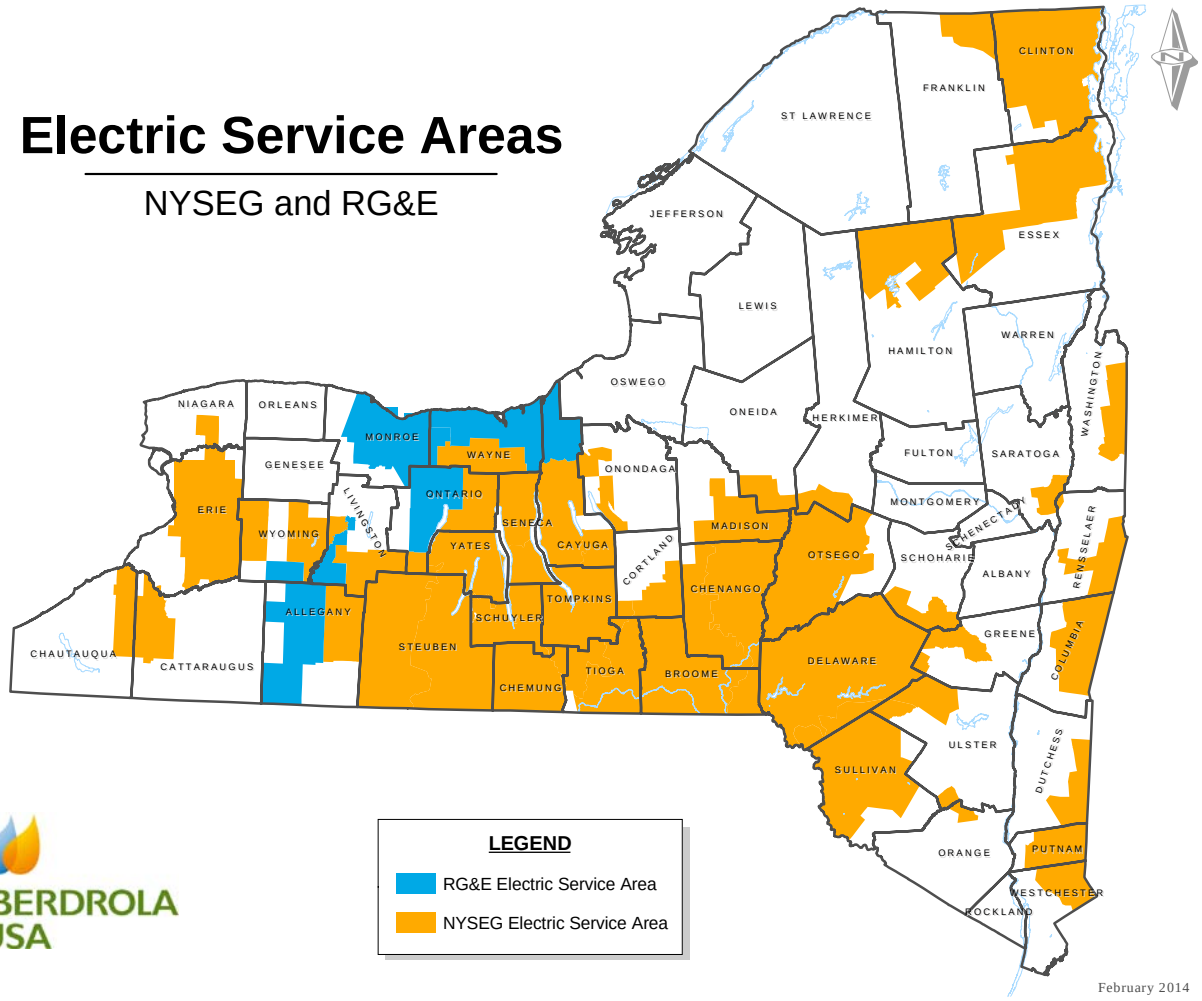


Figure 4.1 Electric Service Areas

4.1.1 Electric System Infrastructure

The Companies electric system infrastructure is summarized below by system - transmission and distribution.

Table 4.2 Transmission Infrastructure

	NYSEG	RGE	Total
Lines (Circuit Miles)	4463	1025	5488
Substations #	88	23	108
- Transformers #	180	51	349
- MVA	12106	4765	17836
Switching Stations	96	66	162
Breakers (T/D)#	2294	1628	3922
Circuits #	430	220	650
RTU's	100	59	159
Poles (#000)	82	19	101

Table 4.3 Distribution Infrastructure

	NYSEG	RGE	Total
Lines (Circuit Miles)	35,136	8,953	44089
Substations #	348	130	481
- Transformers #	1003	268	1154
- MVA	5381	3131	7498
- Reclosers	100	14	114
RTU's	229	301	530
Circuits #	1,415	698	2113
Reclosers #	695	203	898
Line Transformers (#000)	319	81	400
Poles (#000)	810	223	1028

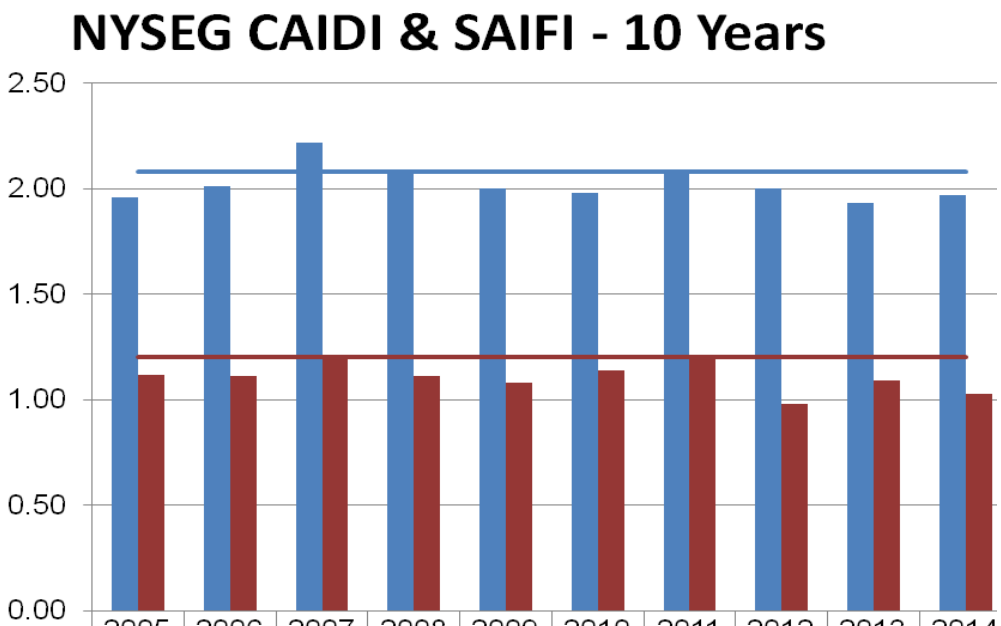
NYSEG

The NYSEG electric system consists of 13 divisions that are supplied from 345 kV, 230 kV, and 115 kV transmission facilities with a total capability of approximately 11,000 MW, including approximately 71 MW of NYSEG operated generation (61.4 MW of hydroelectric, 7.3 MW natural gas unit; 1.8 MW diesel unit). The historical all-time peak load for NYSEG is 3,352 MW reached in the summer of 2011.

NYSEG is a member of the New York Independent System Operator (NYISO). Facilities designated in the NYISO-Transmission Owners Agreement filed and approved in FERC Docket No. ER97-1523-000 are under the operational control of the NYISO, and NYISO provides transmission services on all NYSEG transmission facilities pursuant to the NYISO Open Access Transmission Tariff.

The reliability results for NYSEG since 2005 are included in Figure 4.2 below, as measured by the System Average Interruption Frequency Index ("SAIFI") and Customer Average Interruption Duration Index ("CAIDI").

Figure 4.2 NYSEG Service Area Quality



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
CAIDI	1.96	2.01	2.22	2.08	2.00	1.98	2.07	2.00	1.93	1.97
SAIFI	1.12	1.11	1.19	1.11	1.08	1.14	1.20	0.98	1.09	1.03
SAIFI Goal	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.2	1.20
CAIDI Goal	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08

RG&E

The Rochester electric system is supplied by three sources that provide a total transmission system capability of approximately 2,507 MW and by RG&E's hydroelectric plants having a rating of approximately 58MW. The transmission sources are:

- Four bulk power transformers at Station 80, which connect to the NYPA-owned 345 kV bulk transmission system, providing approximately 1,221 MW.
- Three bulk power transformers at Station 122, which connect to the NYPA-owned 345 kV bulk transmission system, providing approximately 670 MW.
- Ginna Station, owned by Constellation Energy Nuclear Group, which can supply up to 610 MW, connects into several local RG&E 115 kV substations and directly into the 345 kV bulk transmission system at Station 122.

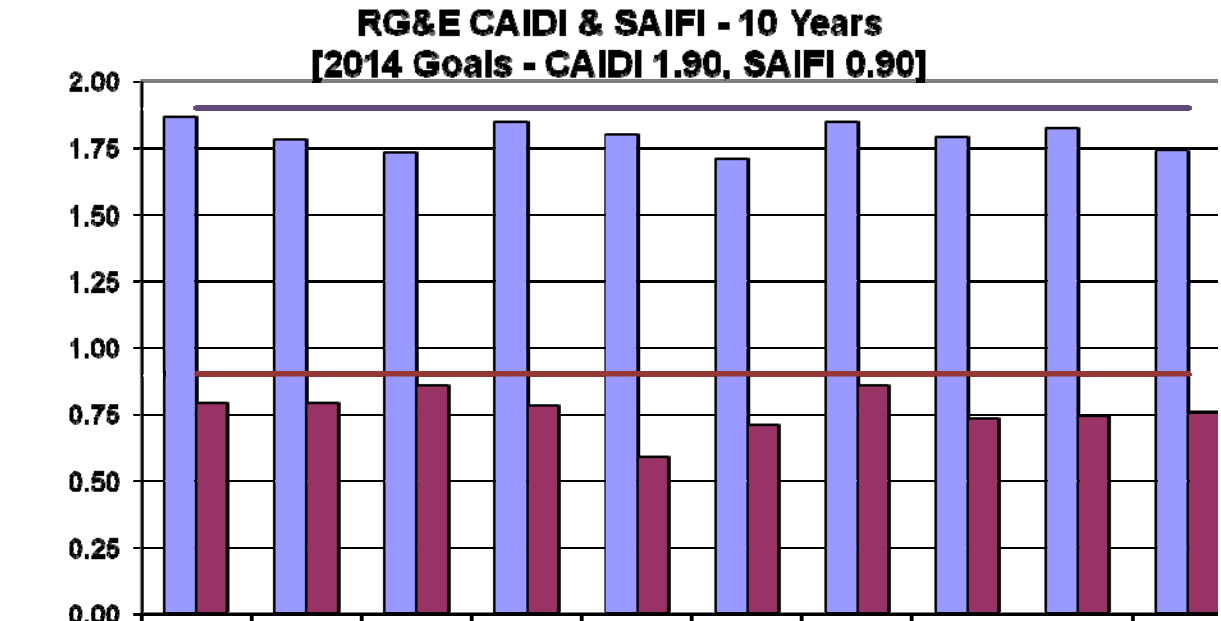
The historical all-time peak load for RG&E is 1,765 MW reached in the summer of 2011.

The above bulk transmission sources supply the 115 kV and 34.5kV sub-transmission system that, in turn, feed vast local distribution systems and the 11 kV network transmission system within the City of Rochester.

RG&E is a member of the NYISO. Facilities designated in the NYISO- Transmission Owners Agreement filed and approved in FERC Docket No. ER97-1523-000 are under the operational control of the NYISO, and the NYISO provides transmission services on all RG&E transmission facilities pursuant to the NYISO Open Access Transmission Tariff.

The reliability results for RG&E since 2005 are included in Figure 4.3 below, as measured by SAIFI and CAIDI.

Figure 4.3 RG&E Service Area Quality



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
CAIDI	1.87	1.78	1.73	1.85	1.80	1.71	1.85	1.79	1.82	1.74
SAIFI	0.79	0.79	0.86	0.78	0.59	0.71	0.86	0.73	0.74	0.76
CAIDI Goal	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90
SAIFI Goal	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90

Maps of the Companies' transmission electric systems, showing lines and substations, are provided below in Figure 4.4 and Figure 4.5, with the Rochester City Area provided in Figure 4.6.

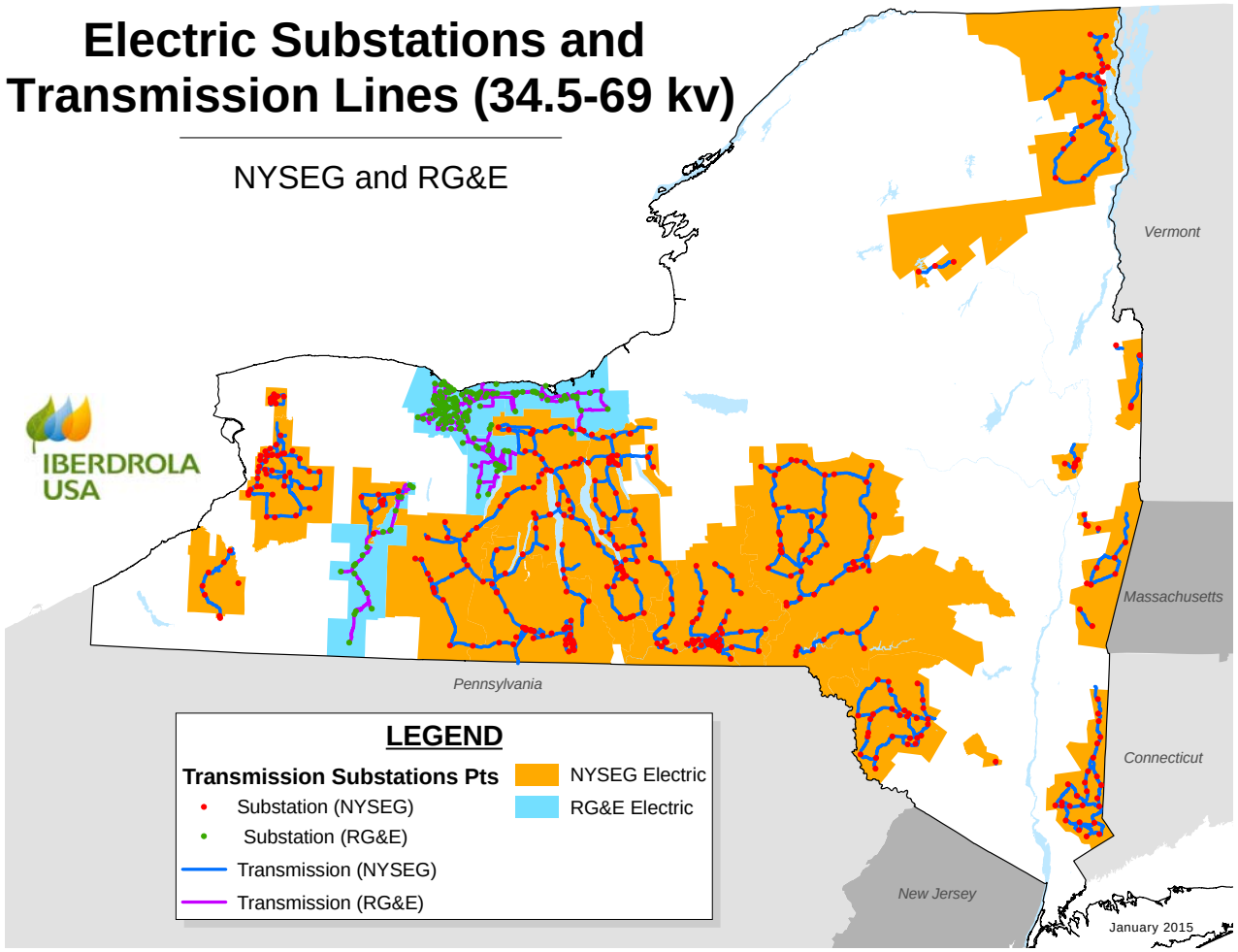


Figure 4.4 Electric Substations and Transmission Lines (34.5kV-69 kV)

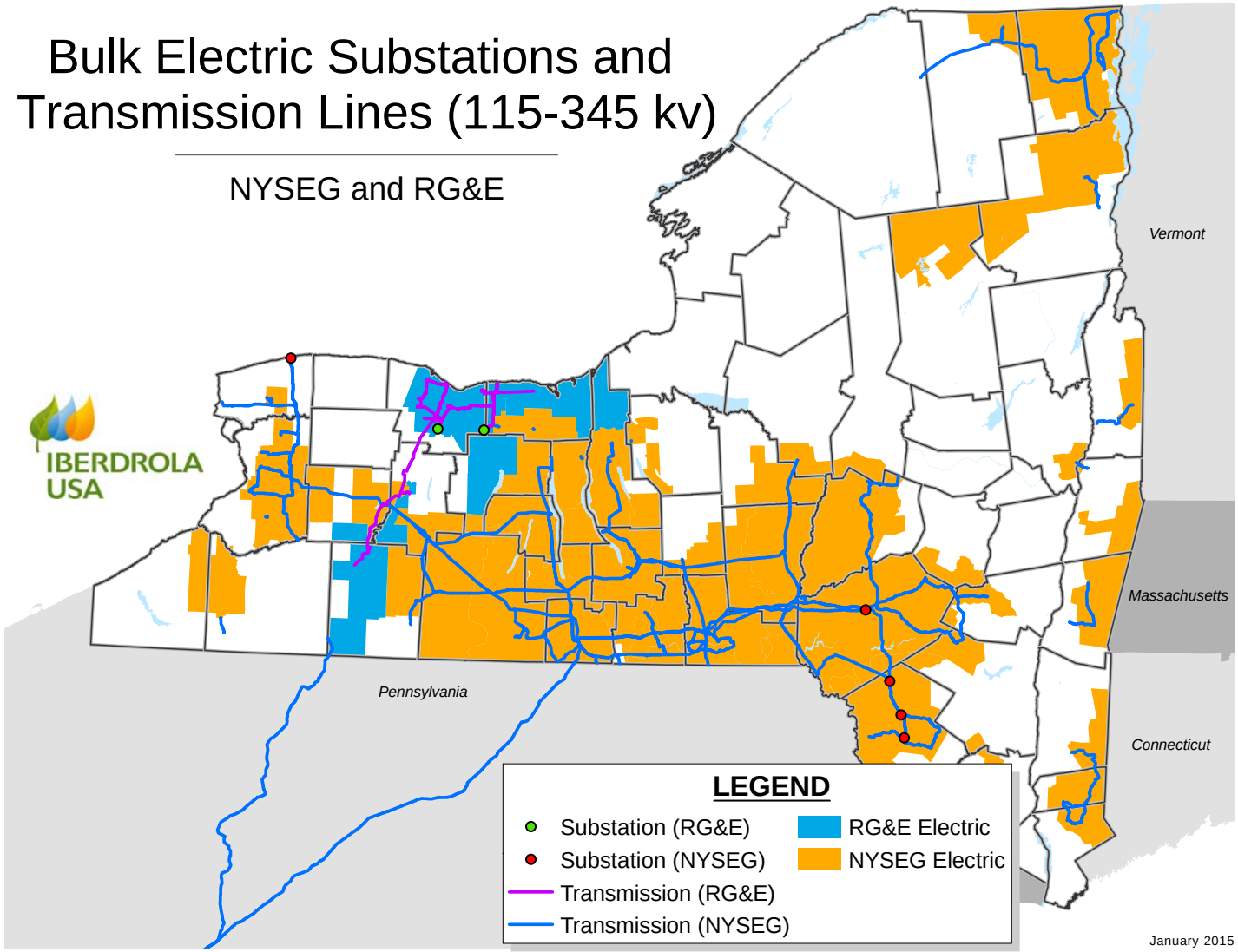


Figure 4.5 Electric Substation and Transmission Lines (115-345 kV)

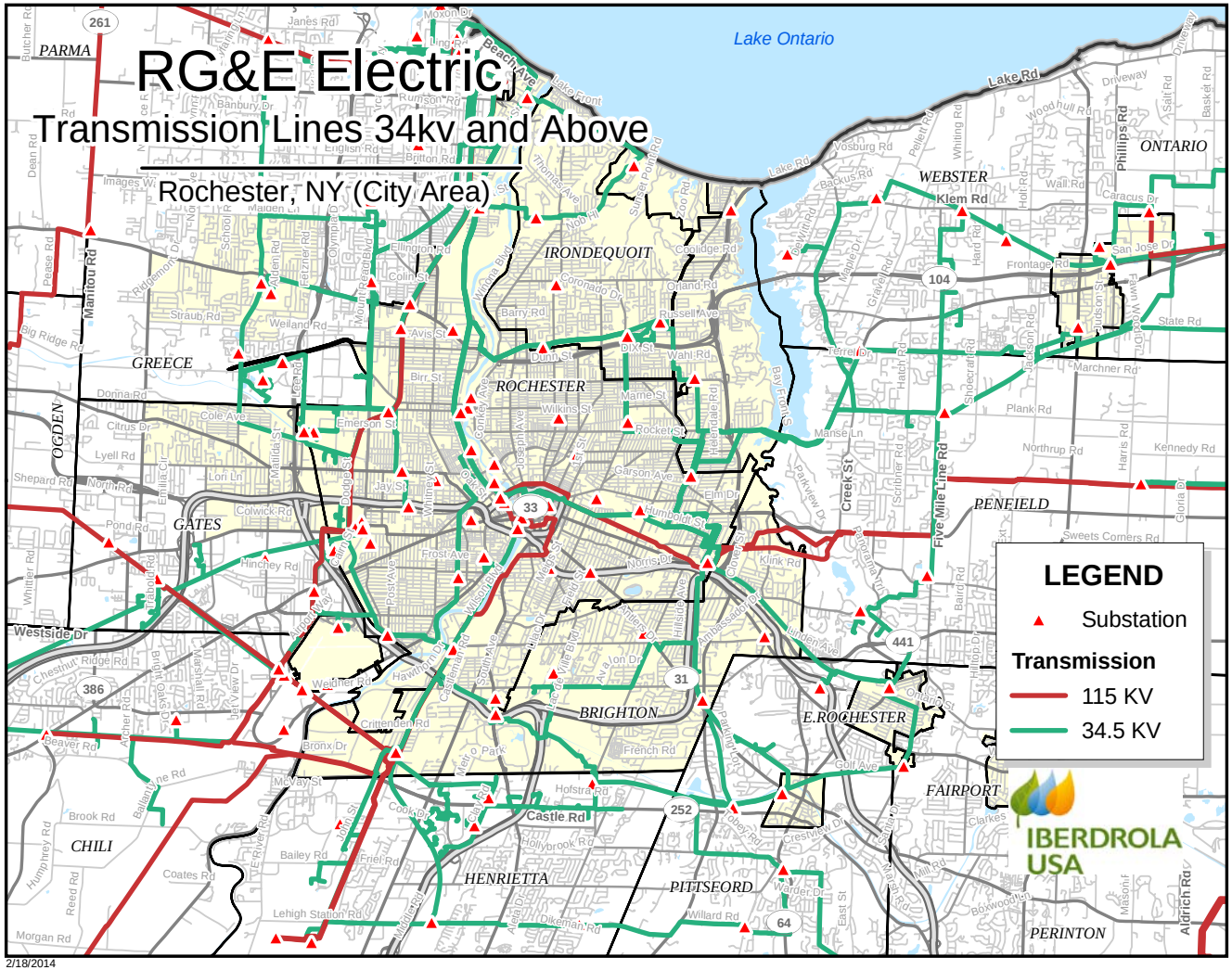


Figure 4.6 Electric Substations and Transmission Lines in Rochester City Area

4.2 GENERATION FACILITIES

The NYSEG and RG&E generating plants located throughout New York State are shown in Figure 4.7, which include twelve (12) hydroelectric and two (2) small fossil-fueled facilities. The hydroelectric plants are located from Plattsburgh in the northeast through the southern tier and in the City of Rochester, and include a total of 24 generating units with individual unit capacities ranging from 0.4 MW to 18.0 MW. They all are run-of-the-river hydroelectric facilities. These facilities have the capacity to produce approximately 600,000 MWh of renewable energy annually.

NYSEG's two fossil fueled generating plants are a 7.3 MW natural gas-fired simple cycle (leased) unit in Auburn and a standby diesel generator located at the Harris Lake Substation in the Adirondack State Park having a nameplate capacity of 1.8 MW. This latter unit produces electric energy to serve local customers only in the event of a 46 kV transmission line outage. In 2013, the existing 1960's vintage diesel-generator was proposed to be replaced with a new larger unit in order to serve this local load center more reliably, when needed. This current plan reflects the addition of a second unit at this site.

The Companies strive to maximize the hydroelectric energy produced for our customers from the water that is available in the respective watershed as well as to maintain the fossil units so they are available when required to support local load centers and networks as dispatched by the NYISO according to the State's electric system load requirements and/or to provide energy needs during certain T&D network outages.

The Companies' investment strategy is to implement betterment projects that cost-effectively improve unit/station reliability and efficiency, increase capacity, replace aging or obsolete infrastructure/assets, protect the environment and safeguarding of employees and the public. Moreover, all of the hydroelectric facilities are under the jurisdiction of the Federal Energy Regulatory Commission (FERC) or the New York Department of Dam Safety. As a result, the Companies also make investments in order to fulfill regulatory obligations.

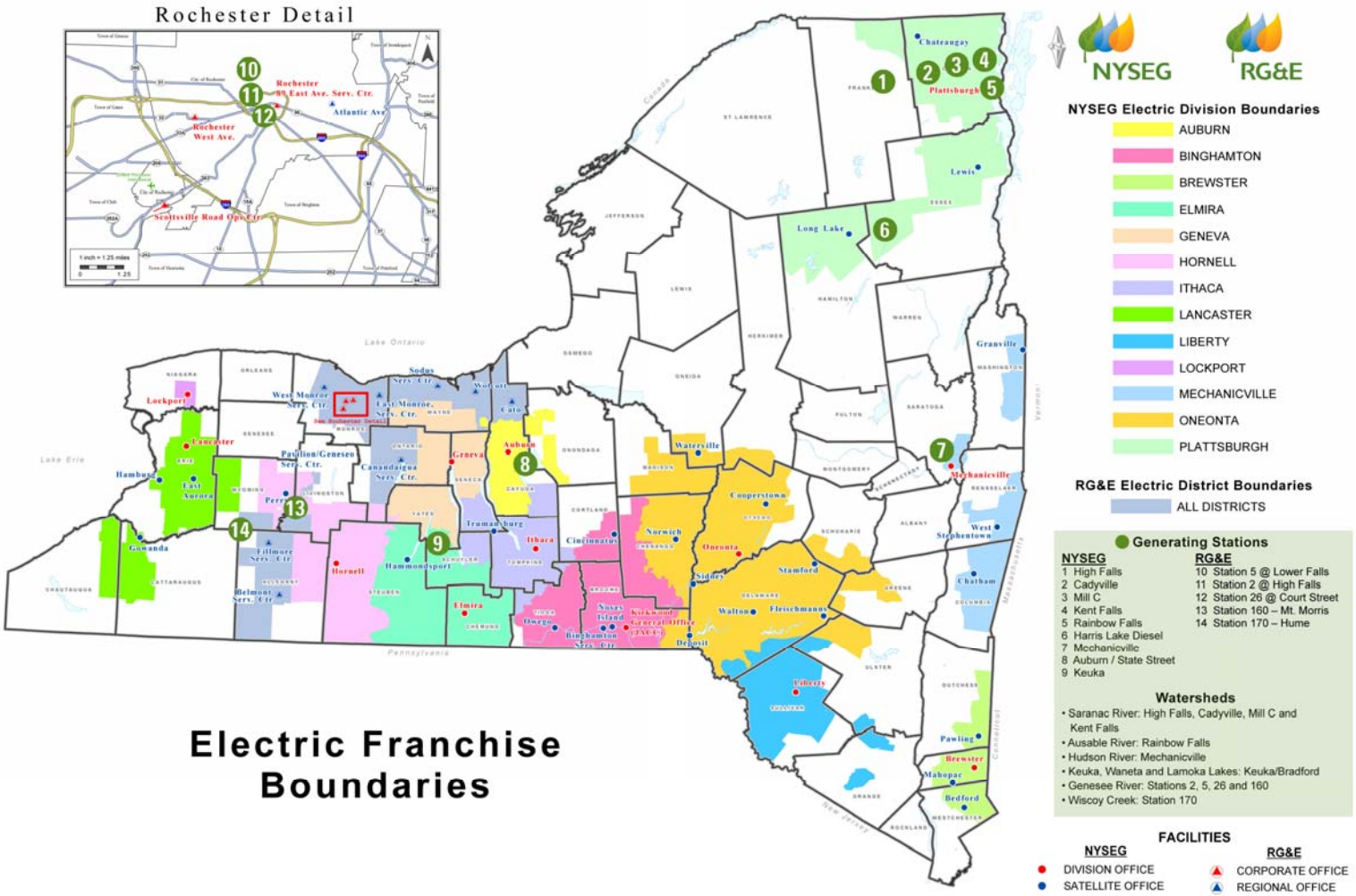


Figure 4.7 Generation Facilities

4.3 NATURAL GAS SYSTEM

Figure 4.8 is a map of the areas in which the Companies provide natural gas service in New York State. NYSEG and RG&E provide gas delivery service to over 572,000 customers in New York State. In 2013, the Companies delivered over 108 million dth of natural gas to these customers, 56 million dth in NYSEG and 52 million dth in RG&E. The growth in overall customer demand over the next several years is estimated to be approximately 1% per year.

The majority of gas is purchased from interstate gas transmission pipelines and received at system gate stations, where gas flow is metered and regulated and the ownership or custody of the gas transfers from the delivering pipeline to the Companies. Gas is odorized at these facilities. The city gate stations reduce the pressure to system pressure. The Companies also receive gas from local well producers at various locations along its infrastructure. The Companies' system transports gas from the system gate stations to the district regulator stations and field regulators where the pressure is further reduced, controlled, and monitored to meet customer needs. Service laterals connect the local distribution system to customers' meters.

4.3.1 Gas System Infrastructure

Table 4.4 contains information about the Companies' natural gas transmission and distribution system as of the end of 2014.

Table 4.4 Gas System Infrastructure

	NYSEG	RG&E	Total
Pipeline Type/Materials (miles)			
Transmission Pipeline	15	105	120
Distribution Pipeline	4,743	4,788	9,531
Regular Stations	619	323	942
Steel – Protected	2,200	2,474	4,674
Steel – Unprotected	246	287	533
Cast Iron / Wrought Iron	22	65	87
Plastic	2,275	1,962	4,237
Total DISTRIBUTION PIPELINE	4,743	4,788	9,531
Number of Services by Material Type			
Steel – Protected	32,792	76,777	109,569
Steel – Unprotected	19,569	18,016	37,585
Plastic	173,244	173,004	346,248
Other	7,634	9,792	17,426
Total SERVICES	233,239	277,589	510,828

A map of the Companies' gas systems, showing transmission mains and supply points, is included as Figure 4.8.

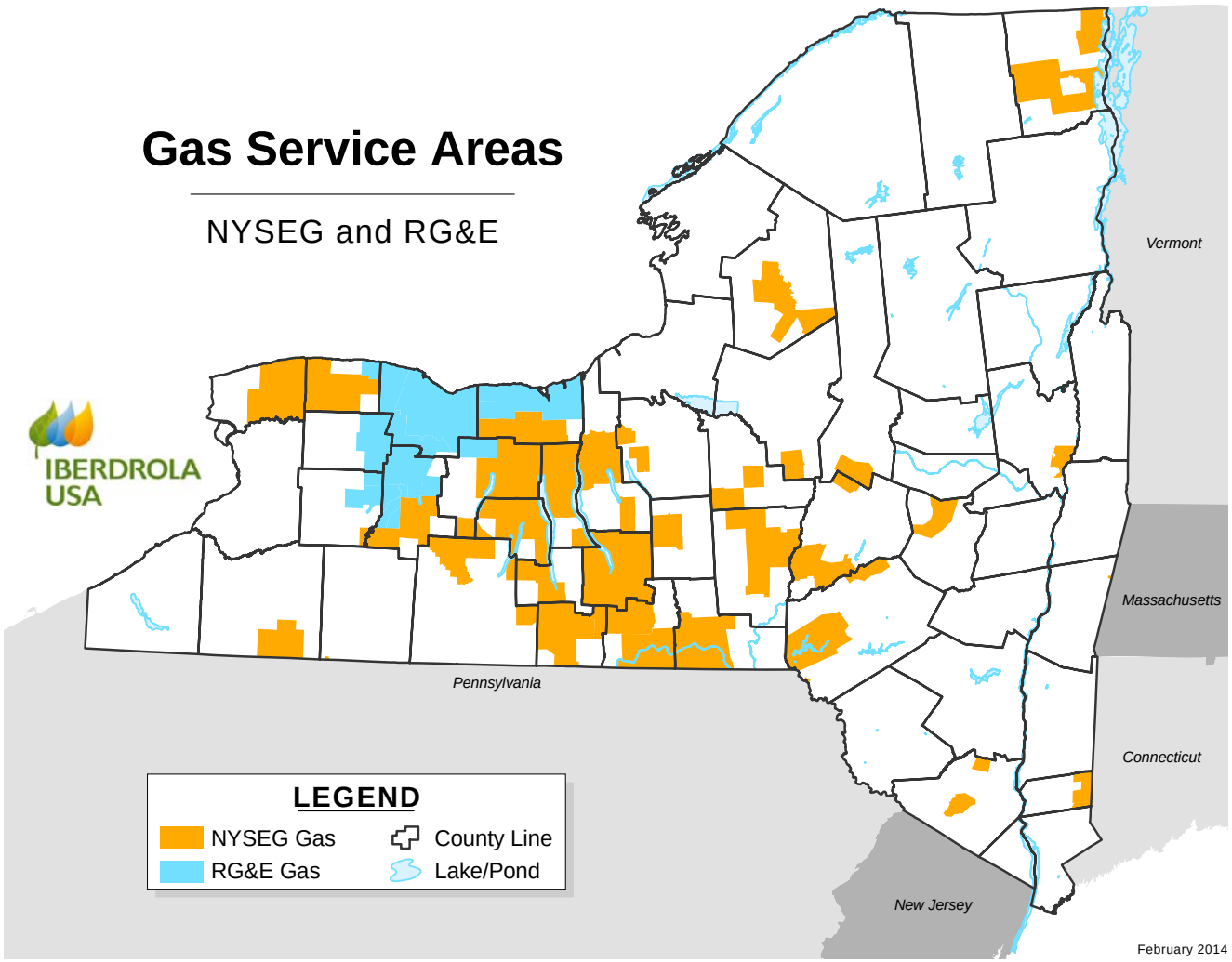


Figure 4.8 Gas Service Areas

Table 4.5 contains safety and reliability metrics for NYSEG and RG&E for 2014.

Table 4.5 Gas Safety and Reliability Metrics

Measurements - Operations		NYSEG	RG&E
Emergency Response:			
Natural Gas Leak Response =< 30 min.	Actual	80.78%	87.42%
	Target	75.00%	75.00%
Natural Gas Leak Response =< 45 min.	Actual	95.71%	97.65%
	Target	90.00%	90.00%
Natural Gas Leak Response =< 60 min.	Actual	98.85%	99.55%
	Target	95.00%	95.00%
Leak Management:			
Pending Leak Measure: Total # of all pending leaks (Type 1, 2, 2A and 3) NYSEG = ≤ 100 RG&E = ≤ 200	Actual	49	68
	Target	100	200
Damage Prevention:			
Overall Damages per 1000 Tickets	Actual	1.86	1.56
	Target	2	2
Mismarks per 1000 Tickets	Actual	0.42	0.37
	Target	0.5	0.5
Co Damages per 1000 Tickets	Actual	0.09	0.13
	Target	0	0.2
Achieve Gas Regulatory Safety and Reliability Targets			
Bare Steel & Leak Prone Main - miles	Actual	25.72	24.7
	Target	24	24
Bare Steel & Leak Prone Services - #	Actual	1,917	1,055
	Target	1,200	1,000

A map of the Companies' gas systems, showing transmission mains and supply points, is included as Figure 4.9.

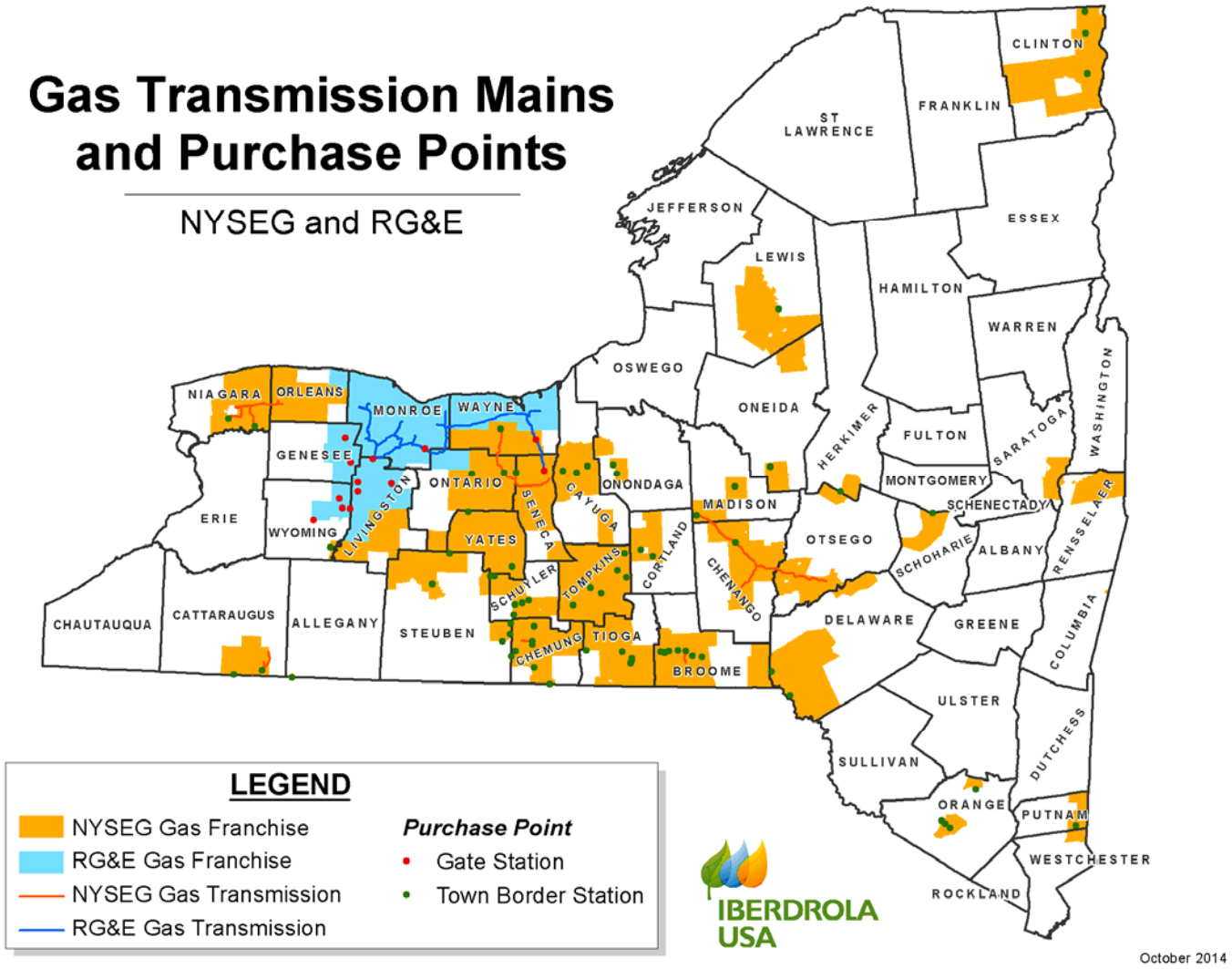


Figure 4.9 Natural Gas System

5.0 ELECTRIC CAPITAL INVESTMENT PLAN

TABLES

This section contains descriptions of the capital projects and programs necessary to support the strategic objectives for the electric line of business. The hydro generation projects and common projects are included in Sections 6 and 8, respectively. The following table summarizes the electric projects and programs capital investment plan for the Companies.

Table 5.1 Electric Projects and Programs Capital Investment Plan by Year (Dollars in Millions)
Generation and Common not included

NY Electric	2015	2016	2017	2018	2019
NYSEG Transmission	80,987	124,480	84,124	78,056	77,277
NYSEG Distribution	66,874	78,639	98,289	118,286	124,485
Total NYSEG	**147,860**	**203,119**	**182,413**	**196,343**	**201,762**
RG&E Transmission	87,799	157,191	114,118	111,139	103,357
RG&E Distribution	29,237	43,147	53,854	59,270	61,079
Total RG&E	**117,036**	**200,338**	**167,972**	**170,409**	**164,436**
Total Electric	**264,896**	**403,458**	**350,385**	**366,751**	**366,198**

The investment amount for 2015 has been approved by the Iberdrola USA Networks Board of Directors. The objective of the Plan is to improve system reliability by reducing risks in the system by increasing system capacity, redundancy, and power quality.

5.1 MANDATORY COMPLIANCE

This category is related to meeting the electrical requirements of new customers or load additions for specific customer and for projects required by municipalities or other statutory reasons. Also, it is related to Objectives 1 and 6: Improve safety and security and sustain the environment.

The following categories are used to define projects that are to be included in Mandatory:

- Safety and Environmental
- PSC/NERC/FERC
- Contractual
- Customer Driven

The Companies propose to invest in this category during the 2015 through 2019 as is shown in Table 5.2, which divides the investment into Transmission (T) and Distribution (D):

Table 5.2 Electric – Mandatory ($000)

NY Electric	2015	2016	2017	2018	2019
NYSEG Transmission	67,127	95,851	35,663	22,314	10,500
NYSEG Distribution	42,442	28,277	29,105	30,467	31,905
TOTAL NYSEG	**109,569**	**124,128**	**64,768**	**52,781**	**42,405**
RG&E Transmission	26,084	115,770	44,680	30,000	10,000
RG&E Distribution	15,709	19,031	19,407	19,792	20,245
TOTAL RG&E	**41,794**	**134,801**	**64,087**	**49,792**	**30,245**
Total Mandatory Electric	**151,363**	**258,929**	**128,855**	**102,573**	**72,650**

Table 5.3 shows projects for each company in the Mandatory Category

Table 5.3 Electric – Mandatory Projects ($000)

NYSEG Project	2015	2016	2017	2018	2019
Columbia County Tranmission Project	6,147	792	13,982	11,814	-
Auburn Transmission Project (Auburn 345kV Source)	15,796	48,868	11,181	-	-
Perry Center Area Install New 34.5kV Substation	2,235	100	2,319	-	-
Eelpot New Transformer	4,376	100	100	4,349	-
RGE Project	2015	2016	2017	2018	2019
Ginna Retirement Transmission Alternative	20,200	110,770	18,680	-	-

A list of projects and programs included in Mandatory is provided in Attachment 3.

Division projects are also included in this category. These projects are portfolios of projects costing less than $200K with projects in the electric distribution, transmission and substations areas of the companies. Projects that are included in this category are: streetlight replacements and installations, establishing services for individual customers, underground distribution installations for residential developments, repairs identified by distribution line inspections, installation of commercial services, relocation of electric facilities as requested by municipalities and storm restoration. Also included in this category are meters, capacitors, and voltage regulators.

5.1.1 FERC Bright Line Bulk Electric System

As mentioned in the Introduction, FERC (Federal Energy Regulatory Commission) has directed NERC (North American Electric Reliability Corporation) to develop a revised definition of the Bulk Electric System (BES) to further ensure the reliable operation of the US interconnected transmission network. FERC has eliminated the regional discretion in determining what is considered Bulk and has ordered NERC to adopt a definition of the BES that includes all non-radial facilities at 100 kV and above (a so-called "bright-line" approach). On November 18, 2010, FERC issued Order 743 requiring NERC to revise its definition of BES to:

- "Eliminate the regional discretion in the current definition"
- "Maintain the Bright Line threshold that includes facilities operated at and above 100 kV"
- "Establish an exception process and criteria for excluding facilities that are not necessary for operating the interconnected transmission network" (e.g., radial facilities).

NERC filed a revised BES definition and transition plan with FERC on January 2012. FERC then issued Order 773 on December 20, 2012, establishing the "Bright Line" as the new BES definition. This FERC order will greatly expand the scope of facilities in New York State subject to the NERC reliability standards and the associated risk of compliance sanctions. NERC submitted a revised "Phase 2" BES Definition for FERC approval in December 2013, and FERC approved the revised definition on March 20, 2014. The revised BES Definition became effective on July 1, 2014, and all entities must be in full compliance by July 2016. The following table shows the anticipated impact this revised BES definition will likely have on the NYSEG and RG&E system as of March, 2015:

Table 5.4 FERC Bright Line Facility Impacts

	NYSEG	RG&E
Facilities already defined as BES	19 Substations	2 Substations
	38 lines	0 lines
Facilities defined as BES under new "Bright Line"	95 Substations	31 Substations
	135 lines	47 lines

The Companies are continuing to assess the impact of the new BES definition on its system and the scope of work it will cause to become compliant with NERC's reliability standards.

A preliminary estimate of capital costs due to work necessary in the 2015 to 2019 period to advance toward compliance with FERC Order 773 is included in Table 5.5. These costs include work to conduct a planning study of NYSEG's and RG&E's BES system (referred to as the TPL Study), install Physical Security Systems at BES substations and conduct relay upgrades. The TPL Study, is being conducted to determine what projects are required to make the BES system fully compliant with NERC reliability standards. It will identify additional capital projects for substations and transmission lines.

Table 5.5 FERC Bright Line Planned Expenditures ($000)

	2015	2016	2017	2018	2019
NYSEG	377	4,000	10,000	10,000	10,000
RG&E	2,015	5,000	10,000	10,000	10,000
Total Brightline	**2,392**	**9,000**	**20,000**	**20,000**	**20,000**

5.2 SYSTEM CAPACITY

This category is related to Objective 2: Meet the electrical and natural gas needs of our customers.

The Companies propose to invest in this category during the 2015 through 2019 as shown in Table 5.6, which divides the investment into Transmission (T) and Distribution (D):

Table 5.6 Electric - System Capacity ($000)

NY Electric	2015	2016	2017	2018	2019
NYSEG Transmission	3,842	424	0	0	200
NYSEG Distribution	2,351	9,306	11,077	17,263	17,051
TOTAL NYSEG	**6,193**	**9,729**	**11,077**	**17,263**	**17,251**
RG&E Transmission	17,915	6,133	20,284	12,627	20,624
RG&E Distribution	4,024	7,178	9,050	5,316	8,020
TOTAL RG&E	**21,939**	**13,311**	**29,335**	**17,943**	**28,644**
Total System Capacity Electric	**28,133**	**23,040**	**40,411**	**35,207**	**45,895**

Table 5.7 shows a partial list of projects included in this category.

Table 5.7 Electric – System Capacity Projects

NYSEG Project	2015	2016	2017	2018	2019
Line 807, Convert to 115kV Operation, Brewster	1,500	424	-	-	-
Line 601 Raylinski Tap to Coons Crossing Rebuild	1,630	-	-	-	-
Line 879	712	-	-	-	-
Dingle Ridge - 2nd Bank and 13.2kV Conversion	500	1,045	4,555	-	-
Glenwood - Replace Substation Transformers	450	1,000	-	-	-
Stillwater Substation- Upgrade Transformer to 14MVA	200	2,454	5,910	-	-
Old Fall substation - Install 2nd LTC Transformer	500	3,738	6,542	-	-
West Davenport Sub - Replace sub transformer	-	-	-	2,827	3,575
Orchard Park - Add a 2nd Transformer Bank	-	-	-	4,136	4,484
Holland Transformer Replacement	-	-	-	115	3,359
RGE Project	2015	2016	2017	2018	2019
Station 218 to Clyde New 34.5kV Transmission Line	6,122	-	-	-	-
Station 23 - New Downtown 115kV Source	9,994	5,964	17,885	12,556	20,552
Station 23 - Transformer & 11kV Switchgear	1,800	100	2,329	-	-
Station 56 Additional 12kV Source	4,024	-	-	-	-
Station 192 transformer/facilities upgrade	-	-	2,678	2,265	-
Station 117 - Replace #1 Trans. Bank, convert 3 circuits to 12kV	-	-	5,000	6,406	9,000
Station 43 - Replace #3 and #4 Transformer Banks.	-	2,500	4,785	-	-
Station 51 transformer/facilities upgrade and 2nd source add	-	4,000	4,127	1,189	-
Station 46 - Replace #1 and #3 Transformer Banks	-	-	1,000	1,709	1,920

A detailed list of projects included in Transmission Projects and Distribution Projects is included in Attachment 4 and Attachment 5, respectively. A description of the most significant projects in this category is included in Attachment 2.

5.3 RELIABILITY RISK

This category is related to Objective 3: Achieve service reliability and quality targets.

The Companies propose to invest the amounts shown in Table 5.8 in this category during the 2015 through 2019:

Table 5.8 Electric - Reliability Risk ($000)

NY Electric	2015	2016	2017	2018	2019
NYSEG Transmission	3,286	9,258	22,784	25,037	32,590
NYSEG Distribution	1,366	8,350	7,725	7,957	8,195
TOTAL NYSEG	**4,653**	**17,608**	**30,509**	**32,993**	**40,786**
RG&E Transmission	36,333	30,279	41,978	56,927	60,005
RG&E Distribution	7,809	3,300	3,384	3,470	3,559
TOTAL RG&E	**44,142**	**33,579**	**45,362**	**60,397**	**63,564**
Total Reliability Risk Electric	**48,795**	**51,187**	**75,871**	**93,391**	**104,349**

Table 5.9 shows the a partial list of projects included in this category.

Table 5.9 Electric – Reliability Risk Projects

NYSEG Project	2015	2016	2017	2018	2019
Watercure Rd. - 2nd 345 kV Transformer	1,500	100	180	1,239	1,253
Oakdale Reconfiguration Project	300	100	100	218	977

RGE Project	2015	2016	2017	2018	2019
Station 49 - Replace 34.5-11.5kV Xfmr - Rochester	1,003	100	2,755	2,000	0
Sectionalize 115kV Circuit 917 (S7 - S418)	1,490	100	1,478	2,755	2,000
Station 168 Service Area Reinforcement	1,061	3,991	4,387	7,813	4,449
Station 262- New 115kV/34.5kV Substation	4,105	100	2,363	2,023	3,500

Other projects in the category include:

Distributed Outage Management and Reporting System: These implementations have been determined to be of critical importance to Operations as it pertains to outage management and reporting. They, along with the Spectrum REPOS system (part of Energy Control Center project) comprise the complete integrated Outage Management system solution providing: regulatory reliability and outage summary reporting; more efficient management of crews assignments through a common user interface; and planned outage scheduling and tracking all of which are vital to our core business operations.

Mobiles: To facilitate major substation rebuilds on the same site. It allows flexibility in construction and will help reduce outages that will be required for substation modifications.

Other Betterments projects: Minor projects in transmission, substation and distribution equipment to maintain system reliability for customers.

Red Circuits/WPC: Projects in distribution circuits with high impact in SAIFI and CAIDI to maintain system reliability for customers.

A detailed list of projects included in Transmission Projects is provided in Attachment 4 and a description of the most significant projects in this category is included in Attachment 2.

5.4 EFFICIENCY

This category is related to Objective 5: Improve effectiveness and efficiency of the network.

It includes the projects and programs to control and monitor the circuits in substations, transformers, and major points of the electric system.

Currently there are many RTUs whose capacity has been exceeded and much of the distribution delivery system does not have RTUs. The majority of the existing RTUs are also difficult to maintain or to obtain spares, as they are obsolete.

Reclosers are to be installed in overhead lines to the improve quality of service and reduce the number and duration of outages. They help to locate faults faster, increase the level of safety and reduce the number of customers out of service for a given distribution line fault.

The communication between substations and the Energy Control Center is presently outdated. In order to support increased automation, the Companies must upgrade the communication utilizing new fiber optic lines, links via microwave, additional channels for digital radio or purchased communication pathways from providers. The specific mode of communication will be based on security of the method and cost of installation.

The Companies propose to invest in this category during 2015 through 2019 as follows:

Table 5.10 Electric – Efficiency ($000)

NY Electric	2015	2016	2017	2018	2019
NYSEG Transmission	-	3,000	7,996	12,029	14,450
NYSEG Distribution	463	2,650	3,080	2,722	5,437
TOTAL NYSEG	**463**	**5,650**	**11,076**	**14,751**	**19,887**
RG&E Transmission	626	1,000	2,000	2,686	3,722
RG&E Distribution	857	2,700	4,981	7,621	4,325
TOTAL RG&E	**1,483**	**3,700**	**6,981**	**10,306**	**8,047**
Total Efficiency Electric	**1,946**	**9,350**	**18,057**	**25,057**	**27,934**

Collectively, the Companies' Automation and Substation Modernization Programs invest in an array of state-of-the art substation and line equipment such as integrated control, metering and system protection devices, circuit breakers, reclosers, sectionalizers and motor-operated switches. The program leverages the advancement of microprocessor-based equipment and communication/protocol technologies such as the IEC 61850 protocol standard, fiber-optic, cellular, licensed and non-licensed radio frequency systems, as well as standard copper line-type communication systems. These communication systems provide for the exchange of data between field/end devices and the front-end EMS/SCADA system located at the respective Company's Energy Control Center and are key to a smart grid system.

The integrated/smart electric system provides the capability to automatically/remotely detect, locate and isolate system faults, which results in an efficient use of labor resources, and ultimately provides customer benefits of reduced outage frequency and duration. Moreover, an integrated and remote controlled distribution system improves system operating flexibility and efficiency such as during peak load periods, during periods of highly intermittent flow from DER, during load curtailment periods and during scheduled and unscheduled maintenance (i.e., remote control of reclosing functionality), as well electric system planning for future betterments.

Table 5.11. Electric – Efficiency, projects and programs

NYSEG Project	2015	2016	2017	2018	2019
Substation Modernization (10% allocated to efficiency)	-	-	1,996	4,529	4,500
NYSEG Automation Program (substations, reclosers, etc)	463	1,500	1,610	1,722	1,837
NYSEG - Communications for Automation Initiatives	-	1,000	1,000	1,000	1,000
NYSEG Telecom - SONET Refresh	-	-	450	-	-
Telecomm Bridges for new KGO BU Site	-	-	20	-	-
NYSEG Telecom - Alarm Monitoring Refresh	-	150	-	-	150
Substation Automation - incremental investment	-	3,000	6,000	7,500	7,500

RGE Project	2015	2016	2017	2018	2019
Substation Modernization (10% allocated to efficiency)	626	-	-	186	172
RGE Substation Automation Program	157	2,000	2,090	2,182	2,275
RGE - Communication for Automation Initiatives	-	500	1,000	1,000	1,000
RGE Pilot Wire Replacement Program	700	200	1,891	4,439	-
Substation Automation - incremental investment	-	1,000	2,000	2,500	2,500

5.5 ASSET CONDITION REPLACEMENT

This category is related to Objectives 4 and 5, replacing equipment based on condition and facilities and improving effectiveness and efficiency of the network. The Companies need to replace equipment that is obsolete either because it is aged or technologically obsolete. Obsolete equipment can cause safety issues, risk environmental incidents, and can lack reliability, and such equipment is difficult and costly to maintain and to obtain spares. The major types of facilities included in this category are: poles, batteries, relays, switches and substation breakers and batteries. This includes the projects and programs done for the following investment reasons:

- Risk of failure and consequence of failure
- Obsolescence, lack of replacement parts
- Cost benefit analysis of continued repair versus replacement
- Substation, gate and regulator station modernization

The Companies propose to invest in projects and programs in this category during 2015 through 2019 as follows:

Table 5.12 Electric – Asset Condition Replacement ($000)

NY Electric	2015	2016	2017	2018	2019
NYSEG Transmission	1,568	14,450	16,154	17,120	17,949
NYSEG Distribution	25,414	25,485	26,360	26,700	27,612
TOTAL NYSEG	**26,982**	**39,935**	**42,515**	**43,820**	**45,561**
RG&E Transmission	6,841	4,684	5,869	9,612	9,739
RG&E Distribution	837	10,333	13,970	14,304	14,736
TOTAL RG&E	**7,678**	**15,017**	**19,839**	**23,916**	**24,475**
Total Asset Condition - Electric	**34,660**	**54,952**	**62,354**	**67,736**	**70,036**

Attachment 6 provides the list of programs included in this category.

The description of the most significant projects programs of this category is provided below:

Station 23 Transformer and 11 kV switchgear - Add 11 kV GIS and two 115/11 kV transformers to Station 23. Add double bus configuration to the 115 kV GIS. Transformer replacements are due to poor health - 1T and 2T are leaking and reaching end of life. Two of the four bus sections of 11 kV are overdutied and need to be upgraded for proper fault current ratings. Bus 3 and 4 are at 96% of rated interrupt capacity.

TDIRP, Transmission, Distribution Infrastructure Replacement Program - Circuit Breaker Replacement Program: A condition assessment performed by Asset Management of circuit breakers found 68 to be in very poor health and 690 to be in poor health at NYSEG, and 99 to be in very poor health and 368 to be in poor health at RG&E. This program addresses these very poor and poor condition circuit breakers. Replacements will eliminate/replace units most at risk of failure and improve reliability of the system.

TDIRP- Battery Replacement Program: This program replaces current lead-acid systems with engineered Ni-Cd. As a critical component of a substation, battery systems that fail to perform or are in poor working condition can hinder operational capability. These systems are nearing their end of life and are being replaced to reduce risk of failure and negative impacts on system operations.

TDIRP- Distribution Pole Replacement Program: The Companies plan to systematically replace poles greater than 75 years old. A condition assessment performed by Asset Management in 2011 found 50,463 poles at NYSEG greater than 70 years old. Pole inspections show rejection rates increasing rapidly at 50-60 years. RG&E has 8,937 poles greater than 70 years old.

Portion of Division Projects: Individual projects that are less than $100,000 and not included in other special programs such as TDIRP are included in this category. Projects are part within any portion of the electric system (i.e distribution, transmission and substations).) Examples of projects are repairs determined from Line Inspections and streetlight repairs.

Substation Modernization Program: Rebuild several Downtown Rochester substations and NYSEG substations to current standards. These substations are old with deteriorating structures. They are difficult to maintain due to lack of available parts, are potentially unsafe for employees and the public. 90% of the costs of this program are included in this category and 10% are included in Efficiency.

The Substation Modernization Program currently includes the modernization of the substations noted in Section 5.4.

Other substations will be evaluated for modernization during the next several years.

5.6 STRATEGIC

This category is related to Objective 5: Improve effectiveness and efficiency of the network

The Companies propose to invest the following amounts in projects and programs in this category during 2015 through 2019 as shown in Table 5.13:

Table 5.13 Electric – Strategic ($000)

NY Electric	2015	2016	2017	2018	2019
NYSEG Distribution	-	6,000	22,399	34,663	35,801
TOTAL NYSEG	**-**	**6,000**	**22,399**	**34,663**	**35,801**
RG&E Distribution	-	-	2,438	8,125	9,532
TOTAL RG&E	**-**	**-**	**2,438**	**8,125**	**9,532**
Total Strategic Electric	**-**	**6,000**	**24,836**	**42,788**	**45,333**

NYSEG and RG&E Smart Grid:

Within the overall considerations associated with supporting the REV efforts in NY, Iberdrola USA Networks has developed a Smart Grid approach for NYSEG and RG&E. The plan considers the potential costs, benefits, and schedules, including full implementation of AMI for the New York electric and gas utilities beginning in 2018. The costs in the plan include the Smart Energy Demonstration project as well as full AMI roll out with a communications infrastructure and systems to support the customer, market and operational benefits envisioned.

5.7 CUSTOMER BENEFITS

The Companies recognize that there are a number of concerns that could result under a single element failure (in transformers or lines), contingency situations (N-1) at peak demand and a much smaller number of failures that could result under normal operating conditions at peak demand, as shown in the next section.

Many of the Appendix L projects included in the last rate plan were designed to address the concerns found in the assessment of the system.

5.7.1 Transmission

Transmission System Planning has developed Five-Year Reliability-Based Transmission and Substation Capital Projects in order to solve the concerns shown in Table 5.14.

This Plan has been developed to address the concerns shown in Table 5.14, but some of them require modifications in the network which require several years to complete. Projects to address these concerns are expected to be executed during the 2015 through 2019 period, but some of the projects will be placed in service after 2019.

Table 5.14 Transmission System Concerns 2015-2019

	# Problems			MW			# Customers		
	NYSEG	RG&E	TOTAL	NYSEG	RG&E	TOTAL	NYSEG	RG&E	TOTAL
N-1 in Line	15	14	29	176.7	242.5	419.2	37,277	51,720	88,997
N-1 in Transformer	16	16	32	724.6	578.1	1,302.7	171,907	124,250	296,157
Voltage quality	28	8	36	430.8	126.3	557.1	126,979	34,912	161,891
Transformer overload	3	4	7	41.1	97.6	138.7	10,546	15,441	25,987
Line Overload	2	2	4	26.7	48.4	75.1	11,734	14,017	25,751
TOTALS	**64**	**44**	**108**	**1,399.9**	**1,092.9**	**2,4292.8**	**358,443**	**240,340**	**598,783**

Please note that one customer could have been counted more than once if the same customer is affected by more than one problem.

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5.7.2 Distribution

Distribution System Planning has developed a Reliability Based Distribution approach to solve the concerns shown in Table 5.15. This table also shows the distribution concerns that will be solved by projects with total investment less than $200,000 that are part of Division Projects.

This Plan has been developed to address the concerns shown in Table 5.15, but some of them require modifications in the network which require several years to complete. The projects to address these concerns are expected to be executed during the 2015 through 2019 period, but some of the projects will be placed in service after 2019.

Table 5.15 Distribution System Concerns 2015-2019

	# Problems			MW			# Customers		
	NYSEG	RG&E	TOTAL	NYSEG	RG&E	TOTAL	NYSEG	RG&E	TOTAL
Transformer overload	3	0	3	18	0	18	6,608	0	6,608
Line overload	9	0	9	25	0	25	8,897	0	8,897
TOTALS	**12**	**0**	**12**	**43**	**0**	**43**	**15,505**	**0**	**15,505**

Please note that one customer could have been counted more than once if the same customer is affected by more than one problem.

[REDACTED – CONTAINS TRADE SECRET INFORMATION]

[REDACTED – CONTAINS TRADE SECRET INFORMATION]

NYSEG and RG&E have numerous substations serving distribution circuits where the failure of a transformer would result in the loss of customers and load. Prior to the projects which solve the concern being placed into service, the Companies address these distribution risks by installing a mobile substation as a temporary replacement until the permanent transformer is repaired or replaced.

5.8 NEW SUBSTATIONS

The new substations that address the transmission and distribution system problems and that will be added during the 2015 through 2019 period in this category are as follows:

NYSEG

Columbia County Transmission (Klinekill/Valkin Substation 115 kV transmission line project), in service 2018, Mechanicville Division: A new 115kV line was proposed to create a connection between an existing National Grid 115kV source and NYSEG's Klinekill substation. However, in the course of the Article VII proceeding for the licensing of the proposed 115kV line, Department of Public Service Staff recommended the construction of a 115/34.5kV substation with two 34.5kV distribution lines as an alternative. This alternative is currently being reviewed and is the subject of Settlement proceedings.

Perry Center Area Substation Project, in service 2015, Hornell Division: Construct a new three-breaker, 34.5 kV switching station and bring in all three sections of the 591 line into the new substation and close the normally open switch #59186 between Stanton Avenue and Perry Center Substations. Construction of this switching station at Perry Center will allow for adequate voltages and thermal conditions to be maintained in the area in the event of an outage of the Federal Street to Perry Center 34.5 kV line.

Tom Miller Road Substation Project, in service 2015, Plattsburgh Division: A new 46/12.5 kV substation with one 12/16/20 MVA transformer and 3 distribution circuit breakers to relieve a substation transformer overload condition.

Luther Forest Substation (Mechanicville System Reinforcement Project), in service 2015, Mechanicville Division: A new 115/34.5 kV Substation with one 34.5 kV, 30/40/50 MVA LTC

transformer and 2 distribution circuits. The objective is to resolve loading issues with the existing Mulberry Substation by transferring load to a new 115-34.5 kV source at Luther Forest.

Waterloo Substation, in service 2017, Geneva Division: On a company owned site south of the existing substation install the 10/12/14 MVA, 34.5/12.5 KV transformer with two distribution circuits as the new Waterloo Substation. Extend the 34.5 KV transmission line from the old substation to the new substation about 1/4 mile to relieve future overload conditions in the area.

RG&E

Rochester Area Reliability Project, in service 2019-2021: Station 255, a new 345kV bulk power system station will be constructed and located approximately 3.8 miles west of the RG&E Station 80. The two NYPA 345kV cross-state transmission lines will be brought into the new station. A new 345kV line will be constructed between the new substation and Station 80. Two 115kV lines will be emanating from the new substation. The first line, which is approximately 10 miles long, will tie into Station 418. The second line which is approximately 14 miles long will tie into the RG&E 115kV system at Station 23.

The RARP was originally designed to provide adequate supply to the RG&E service area during refueling outages of the Ginna Nuclear Plant, which, when needed, are scheduled during light load periods. The project reduces loading values already below LTE rating at station 122 during the temporary outage of Ginna in peak load periods and also provides for future load growth. With the announcement of the proposed retirement of Ginna, new studies showed the need for immediate reinforcement of the transmission system elements at Station 122 to bring loading below Normal ratings, followed by the later completion of the RARP scope of work to address load growth and system resiliency under N-1-1 planning criteria.

Station 262, in service 2016: A new 115/34.5 kV, 57 MVA substation with one transformer with LTC. The new substation and the new 34 kV line to Station 26 will provide necessary relief to existing lines and transformers from thermal stress under contingency conditions in the Rochester Central District.

Ginna Retirement Transmission Alternative Project and Fifth Bay at Station 80, in service 2016: This project consists of consists of two major elements and work at Station 80. First, RG&E will upgrade the Company's facilities at Station 122. The work at Station 122 consists of: replacing three transformers at Station 122 with new transformers rated at 494, 603, and 630 MVA; reconfiguring the 345 kV circuit breaker to a breaker and a half configuration; and replacing the 115 kV open-air breaker configuration with a 115 kV gas-insulated switchgear arranged in a breaker and half configuration. Second, RG&E will uprate five circuits: 34.5 kV Circuit 718; 34.5 kV Circuit 735; 34.5 kV Circuit 770; 34.5 kV Circuit 623; and 11.5 kV Circuit 623. Finally, RG&E will construct a new bay of 345 kV circuit breakers at Station 80 to reconnect transformers #5 and #3.

The upgrades and reconfiguration included in this project are needed to solve the thermal overloads at Station 122 and to ensure that only one bulk transformer can be lost in a single contingency. A GIS breaker and half is needed to replace the existing 115kV park due to a fault over duty failure because of the replacement of the transformers. The new (fifth) 345 kV bay is needed to resolve the stuck breaker at Station 80, which will ensure that only one bulk transformer is lost in a single contingency. Additionally, the upgrade of circuits enables the RG&E network to transfer power from Station 80 to Station 122 and vice versa. This ability allows for the reduction or elimination of thermal overloads under contingency conditions.

6.0 HYDRO GENERATING FACILITIES CAPITAL INVESTMENT PLAN

A summary of the investments that the Companies plan during the period 2015-2019 in its Hydro Generation Facilities is shown in Table 6.2. These projects help the Companies meet several strategic objectives including cost-effectively improving unit efficiencies and reliability, increasing capacity, maintaining the infrastructure, safeguarding employees and the public and addressing hydro/license regulatory mandates and obligations.

Table 6.1 summarizes Generation investment by category:

Table 6.1 Hydro Generation Facility Investments by category ($000)

	2015	2016	2017	2018	2019
NYSEG					
Mandatory	3,159	2,914	3,528	2,156	7,196
Reliability Risk	160	250	600	1,200	1,900
Total	**3,319**	**3,164**	**4,128**	**3,356**	**9,096**

RGE					
Mandatory	2,945	5,228	9,706	2,863	2,470
System Capacity	150	800	1,924	7,633	7,076
Reliability Risk	-	300	100	750	475
Total	**3,095**	**6,328**	**11,730**	**11,246**	**10,021**

NYSEG

High Falls: High Falls is a run-of-river hydro-electric station located on the Saranac River near Plattsburgh, New York. The powerhouse consists of three units with a total rating of 15,000 kW based on historical average annual river flow can produce approximately 86,000 MWh/year of renewable electric energy, a direct benefit to NYSEG customers. Major activities during the forecast period include: Unit 2 and Unit 3 Turbine Generator major rebuilds, Units 1, 2 and 3 draft tube stop logs, Units 1, 2 and 3 generator field breakers, installing fire and life safety betterments, and completion of roadwork to the powerhouse.

Cadyville: Cadyville is a run-of-river hydro-electric station located on the Saranac River near Plattsburgh, New York. The powerhouse consists of three units with a total rating of 5,525 kW, which based on historical average annual river flows can produce approximately 25,000 MWh/year of renewable electric energy, directly benefitting NYSEG customers. Major activities during the

forecast period include: Unit 1 Turbine Generator major rebuild, installing an automatic flood/spill control gate in the dam, installing new plant GIS type switchgear and generator protection, and installing fire and life safety betterments.

Mill C: Mill C is a run-of-river hydro-electric station located on the Saranac River near Plattsburgh, New York. The powerhouse consists of three units with a total rating of 6,050 kW, which based on historical average annual river flows can produce approximately 26,000 MWh/year of renewable electric energy, a direct benefit of NYSEG customers. Major activities during the forecast period include: Restoration of Mill C powerhouse exterior, begin Unit 1 Turbine Generator major rebuild (2018), and installing fire and life safety betterments.

Kents Falls: Kents Falls is a run-of-river hydro-electric station located on the Saranac River near Plattsburgh, New York. The powerhouse consists of three units with a total rating of 13,680 kW based on historical average annual river flow can produce approximately 60,000 MWh/yr of renewable electric energy for the direct benefit of NYSEG customers. Major activities during the forecast period include: water conveyance system betterments to replace aging infrastructure (penstock trifurcation, ring girders, and emergency bypass valve removal), installing a motorized raking system and narrower spaced trash racks (regulatory requirement of the FERC hydro license), begin Unit 1 Turbine Generator major rebuild (2018) and installing fire and life safety betterments.

Rainbow Falls: Rainbow Falls is a run-of-river hydro-electric station located on the Ausable River near Plattsburgh, New York. The powerhouse consists of two units with a total rating of 2,600 kW that can produce approximately 20,000 MWh/year of renewable electric energy for a direct benefit of NYSEG customers based on historical average river flows. Major activities during the forecast period include: Completing the installation of the intake gate gantry system, floodgate upgrades, dam/spillway resurfacing, commissioning of new environmental improvements required of the FERC hydro license (trash racks and trash removal system, and downstream fish bypass), begin penstock replacement (2018), installing fire and life safety betterments, and completing the restoration of the powerhouse that was significantly damaged and taken out of service as a result of the flood caused by the Hurricane Irene event on August 28-29, 2011. The capital investment

required to restore the powerhouse to service is currently estimated at $5.25 million. The Company expects to recover a portion of the cost through an insurance claim.

Mechanicville: Mechanicville is a run-of-river hydro electric station on the Hudson River north of Albany, New York. It consists of two units with a total rating of 18,500 kW which based on an historical average annual river flow can produce approximately 100,000 MWH/year of renewable electric energy directly benefiting NYSEG customers. Major activities during the forecast period include: completing the installation of a standby electric generator for station power during a loss of offsite power (i.e., during major storm events), installing a new floor system in the gallery of the dam, resurfacing the spillway, performing relicensing activities, and installing fire and life safety betterments.

RG&E

Station 2: Station 2 is a run-of-river hydro-electric station located on the Genesee River in Rochester, New York. The powerhouse consists of a single unit with a rating of 8,500 kW which produced on average during the period 1984-2012 approximately 37,100 MWh/year of renewable electric energy which directly benefited RG&E customers. With the recent plant upgrades and based on an historic average water year, the unit is expected to produce approximately 53,500 MWh/year. Major activities during the forecast period include: Completing construction of a new GIS switchgear adjacent to the powerhouse to interconnect the generator output/facilities to the Station 137, replacing intake structures and the penstock, a portion of which is over 100 years old and is nearing end-of-life and installing a new butterfly valve, constructing a small spill gate and SCADA/communications control house adjacent to the Central Avenue Dam, installing a high-efficiency static exciter on Unit 1, and, pending a favorable cost-benefit analysis, restart of work to add a new 6.3 MW generating Unit (No. 2), which includes deepening Brown's Race to provide the required flow to Unit 1 and Unit 2 (race deepening pending construction easement/parcel transfer from the City of Rochester), and installing fire and life safety betterments.

Station 26: Station 26 is a run-of-river hydro-electric station located on the Genesee River in Rochester, New York. The powerhouse consists of a single unit with a rating of 3,000 kW which based on an historical average water year (after the unit major rebuild) can produce approximately 17,500 MWh/year of renewable electric energy for the direct benefit of RG&E customers. Major

activities during the forecast period include: completing the Unit 1 major rebuild (original equipment installed in 1952), new water conveyance system betterments including draft tube stop logs gantry and intake shut off gate mechanism/operator), constructing a new tailrace wall extension, and installing fire and life safety betterments.

Station 5: Station 5 is a run-of-river hydro-electric station located on the Genesee River in Rochester, New York. The powerhouse consists of three units with a rating of approximately 46,000 kW which produced on average during the period 1996-2006 approximately 155,000 MWh/year of renewable electric energy for the direct benefit of RG&E customers. With the recent station upgrades and based on an historic average water year, the plant is expected to produce approximately 219,000 MWh/year. Major activities during the forecast period include: betterments to replace end-of-life infrastructure including spill gate pier and spillway rock stabilizations, crest gate seal replacements, generator control and protection upgrades (inter-related with Station 5 Substation Modernization project), site security enhancements at the powerhouse, civil/structural projects such as rebuilding access roads, surge tank height expansion and concrete betterments, service water improvements at the powerhouse and dam, intake stop log gantry, and installing fire and life safety betterments.

7.0 GAS CAPITAL INVESTMENT PLAN

TABLES

7.0 Gas Capital Investment Plan

This section contains descriptions of the gas projects and programs necessary to accomplish the strategic objectives. The common projects are included in Section 8. The following table summarizes the gas capital investment plan for the Companies:

Table 7.16 Gas Capital Investment Plan by Year ($ Millions)

	2015	2016	2017	2018	2019
NYSEG Gas	46,189	61,649	65,307	85,996	71,160
RGE Gas	30,702	46,274	61,386	58,031	68,703
Total Gas	**76,891**	**107,923**	**126,693**	**144,027**	**139,863**

7.1 MANDATORY COMPLIANCE

This category is related to meeting the gas requirements of new customers or load additions for a specific customers, in accordance with tariff and for projects required by municipalities or other statutory reasons.

The Companies propose to make investments in projects and programs in this category during 2015 through 2019 as follows:

Table 7.2 Gas - Mandatory ($000)

	2015	2016	2017	2018	2019
NYSEG Gas	45,369	53,215	37,558	44,789	41,489
RGE Gas	24,171	38,488	44,728	36,872	37,811
Total Mandatory - Gas	**69,540**	**91,703**	**82,286**	**81,661**	**79,300**

A list of projects and programs included in this category is included in Attachment 7; highlighted projects and programs included in this category are described below:

Gas Meter Program: All new and replacement meters as required due to new services and mandated meter replacement and change out programs.

Gas Regulators Program: All new and replacement regulators as required due to new services and mandated replacement

Leak Prone Main Replacement Program: The replacement of at least 24 miles of prioritized leak prone gas main annually at each company. Beginning in 2017, the Companies plan to increase the level of replacements.

Leak Prone Services Replacement Program: The replacement of at least 2,000 (1,200 at NYSEG and 1,000 at RG&E) prioritized leak prone unprotected steel gas services annually at the Companies.

Minor Distribution Mains: Install gas mains as required due to main condition (immediate safety), conflicts, code violations, and other miscellaneous field conditions discovered as part of normal operations or other construction and inspection activities. This line item also covers work to address safety and code violations discovered during normal operation and maintenance of the gas distribution system.

Distribution Main, Replacements: Replacement of gas mains due to numerous factors including; poor conditions, conflicts with existing or proposed structures, and other miscellaneous field conditions discovered as part of normal operations or other construction and inspection activities.

New Gas Services: Install new gas services to new customers in accordance with tariff and replace gas services in conflict with street reconstruction projects in accordance with terms and conditions to occupy public rights-of-way.

Chemung County Service Replacement: The project replaces 1 and 1-1/4 inch leak prone steel medium pressure gas services. Approximately 1,000 services per year in 2015 and 2016 will be replaced.

MF60 Northwest, Port of Rochester Development, Install New Mains, Rochester: Install 12,000 feet of 8” plastic gas main along Latta Road (Dewey Avenue east to Lake Avenue) and along Lake Avenue (Latta Road to Beach Avenue) to support expected residential and commercial development at the Port of Rochester and surrounding area.

Lansing/Freeville Gas Reinforcement Project: This project installs seven miles of 10 inch diameter, 124 psig distribution gas main along West Dryden Road in Ithaca, NY, a new 60 psig regulator station at the intersection of Warren and West Dryden Roads and rebuild of the Dominion Transmission owned Freeville gate station. The existing system is below 50% of maximum operating pressure on the design day. The system is experiencing growth and lacks sufficient capacity to support significant load growth. The project will improve existing system pressures during the heating season and for the design condition while providing capacity for expected load growth. There are several large private projects developing residential and mixed use properties underway that have requested natural gas service. To serve these loads, this reinforcement of the distribution system is necessary.

Mechanicville Compressed Natural Gas Station: The project will bring new gas supply to the Town of Mechanicville. The existing distribution system has the capacity to service, but the supply pressure from National Grid is insufficient to meet load growth that has occurred and is projected. Additionally, there are upstream capacity limitations for incremental capacity on the supply transmission system from DTI, making compressed natural gas a viable alternative to shaving peak load demand for the Mechanicville distribution area. NYSEG will build, own and operate the CNG station at Central Avenue that will accommodate three trailers.

7.2 SYSTEM CAPACITY

This category is related to Objective 2: Meet the electrical and natural gas needs of our customers.

The Companies propose to make the following System Capacity related capital investments in the natural gas system in this category during 2015 through 2019 as follows:

Table 7.3 Gas – System Capacity ($000)

	2015	2016	2017	2018	2019
NYSEG Gas	-	5,045	10,537	5,531	1,792
RGE Gas	6,310	6,432	6,735	4,465	6,338
Total System Capacity - Gas	**6,310**	**11,477**	**17,272**	**9,996**	**8,130**

Table 7.shows the projects included in this category.

Table 7.4 Gas – System Capacity - Projects ($000)

NYSEG Projects	2015	2016	2017	2018	2019
North Country Gas Franchise Expansion	-	1,375	2,357	-	-
Vienna Rd -Macedon Feeder Main replacement	-	100	5,800	1,200	-
Gas Pipeline Susquehanna River Bore Extension Project	-	1,350	-	-	-
Boswell Hill Bare Steel Main Replacement Project	-	1,400	1,500	1,500	-
Port Dickinson Gas Pipeline Loop Extension	-	-	100	1,541	1,337
Becketts way - Install Gas Mains	-	-	-	250	-
Binghamton 60-PSI System Improvement	-	-	-	600	-
Boiceville System Reinforcement	-	-	350	-	-
Homer System Upgrade	-	820	430	440	455
Total - NYSEG	**-**	**5,045**	**10,537**	**5,531**	**1,792**

RG&E Projects	2015	2016	2017	2018	2019
Northeast 60, Install Gas Mains	-	1,120	3,535	2,585	3,000
MF35 Walworth System Improvements	-	-	950	-	-
MF60 Northwest, Port of Rochester Development	-	725	-	380	628
Whittier Road Improvement- Install Gas Mains	-	-	-	-	210
MF13 Geneseo Improvement, Install Gas Mains	-	-	500	-	-
MF120 Western Monroe, New Regulator Station 500	-	-	500	-	-
Mt Read SF115 psi, Replace Gas Mains, Roch	-	1,250	1,250	-	2,500
MF42 Henrietta: Brighton Henrietta Town Line Rd	-	855	-	1,500	-
Buffalo Rd - Reg Station and Replace Gas Main	415	2,482	-	-	-
New Empire West Gate Station	5,895	-	-	-	-
Total - RG&E	**6,310**	**6,432**	**6,735**	**4,465**	**6,338**

A detailed list of projects included in Distribution Mains – System Capacity is included in Attachment 8; descriptions of the most significant projects in this category are included in Attachment 9. Some of the projects are highlighted below.

Gas Pipeline Susquehanna River Bore Extension Project: The project will install 7,000 feet of new 10 inch 124 psig wrapped steel gas main. The proposed 124 psig pipeline will tie into the existing 8 inch steel 124 psig pipeline located on the south side of the river in the Town of Vestal. This connection will raise the system pressure on the existing pipeline 20 to 25 psig on the design day.

7.3 RELIABILITY RISK

This category is related to Objective 3: Achieve service reliability and quality targets.

The Companies propose to make the following reliability risk related capital investments in the natural gas system in this category during 2015 through 2019 as follows:

Table 7.5 Gas – Reliability Risk ($000)

	2015	2016	2017	2018	2019
NYSEG Gas	320	2,478	12,140	24,906	17,540
RGE Gas	100	500	6,000	12,053	16,800
Total Reliability - Gas	**420**	**2,978**	**18,140**	**36,959**	**34,340**

Table 7.6 shows the projects included in this category.

Table 7.6 Gas – Reliability Risk Projects

NYSEG Projects	2015	2016	2017	2018	2019
Phelps (South) Transmission Replacement	-	500	2,300	5,671	-
DeRuyter Transmission Replacement	-	500	6,000	15,000	13,000
Bradley Street	-	-	-	200	-
Route 23 system reinforcement	-	-	-	-	750
Edgett Street Canal Crossing	-	-	-	-	500
Replace South Union Street Bridge Crossing	-	278	422	-	-
State Rd Tie Medium Pressure Systems	-	-	85	-	-
Middleport to Medina Interconnect	-	-	-	285	290
Transmission Casing Replacement Program, NYSEG	-	1,000	1,000	1,000	1,000
Remotely Operated Valves Program	-	200	500	500	-
Robinson Road Gate Station Rebuild, Lockport	2	-	-	-	-
Gas Regulator Modernization & Automation Program	318	-	1,083	1,500	2,000
Gas SCADA System Replacement	-	-	750	750	-
Total - NYSEG Reliability Risk Gas	**320**	**2,478**	**12,140**	**24,906**	**17,540**

RG&E Projects	2015	2016	2017	2018	2019
CM-1 Transmission Gas Main Replacement Project	-	-	500	5,000	9,000
Gas Regulator Modernization & Automation Program	100	500	1,000	1,000	1,000
Gas SCADA System Replacement	-	-	-	-	1,500
Total -RG&E Reliability Risk Gas	**100**	**500**	**1,500**	**6,000**	**11,500**

Gas Regulator Station Modernization & Automation program: Utilize standardized templates for regulator station design that consider safety, obsolescence, operability, capacity and future growth. This program will increase the reliability of our systems.

Phelps (South) Transmission Replacement: This project will rebuild the Phelps Tap Gate Station and replace 25,000 feet of 10" steel gas main (162 psi) with 12" steel gas main (203 psi). The project will increase reliability and capacity to the Geneva System during peak demand by eliminating the operational need to seasonally open and close the Packwood valve. Add regulation and controls to Millard Tap.

DeRuyter Transmission Replacement Project: This project will replace approximately 28 miles of 8 inch 298 psig MAOP coated steel gas transmission mains with 10 inch mains. These lines were installed in 1953 and lack sufficient capacity to supply the Winey Hill 1st stage regulator station in Oneonta. The increase in capacity will eliminate the need to utilize the compressor located in Norwich.

Transmission Casing Replacement Program: This program replaces five to ten miles of transmission gas main crossings a year over a ten year period. Casing may be shorted to the transmission carrier gas pipe, causing corrosion and potential leaks on the pipelines.

Robinson Road Gate Station: The project includes rebuilding the Robinson Road Gate Station including new regulators and monitors, heaters, odorization and control lines, SCADA, RTU, phone and electric lines, relief valves and buildings. The existing station is one of two primary feeds to the Lockport division. The existing station equipment is outdated and in poor condition and the heater is experiencing increasing maintenance; construction is scheduled 2015.

Further descriptions of the most significant projects in this category are provided in Attachment 9.

7.4 EFFICIENCY

This category is related to Objective 4: Improve effectiveness and efficiency of the network

The Companies propose to make these Efficiency related capital investments in the natural gas systems during 2015 through 2019 as follows:

Table 7.7 Gas- Efficiency ($000)

	2015	2016	2017	2018	2019
NYSEG Gas	-	-	600	600	600
RGE Gas	-	175	-	-	2,000
Total Efficiency - Gas	**-**	**175**	**600**	**600**	**2,600**

Table 7.8 shows the projects included in this category.

Table 7.8 Gas – Efficiency Projects ($000)

NYSEG Project	2015	2016	2017	2018	2019
Gas RTU/Telemetry Upgrade	-	-	600	600	600

RG&E Projects	2015	2016	2017	2018	2019
RG&E Controller Replacement Project	-	175	-	-	-
Outage Management System, RG&E	-	-	-	-	2,000

Remote Operated Valves Program: This program will install remotely operated valves to protect operation of the gas distribution and transmission systems due to external threats and risk (i.e. third party damage, flooding and other natural forces) Remote operation valves will be selectively installed on both transmission and distribution systems to provide quick emergency response for system hardening without the need for dispatch of field personnel.

Gas RTU/Telemetry Upgrade Project: This project will replace regulator station remote terminal unit (RTU) equipment. The existing equipment is obsolete and beyond its service life. Equipment failure would require field personnel to monitor operations of a regulator station until restoration of the RTU. The project will improve pipeline safety, distribution system reliability, monitoring and controlling.

7.5 ASSET CONDITION REPLACEMENT

This category is related to Objective 4 and 5: Optimize obsolete equipment and facilities and Improving the effectiveness and efficiency of the delivery network. The Companies need to replace equipment that is obsolete either because it is aged or it is technologically obsolete. Obsolete equipment can cause safety issues, increases the risk of environmental incidents, and lack of reliability and such equipment is difficult and costly to maintain and to obtain spares.

The Companies propose Asset Condition Replacement investments during 2015 through 2019 as follows:

Table 7.9 Gas – Asset Condition Replacement ($000)

	2015	2016	2017	2018	2019
NYSEG Gas	500	911	2,121	2,332	543
RGE Gas	120	680	2,611	266	622
Total Asset Condition - Gas	**620**	**1,591**	**4,732**	**2,598**	**1,165**

Table 7. shows a portion of the projects and programs included in this category.

Table 7.10 Gas – Asset Condition Replacement - Projects and Programs

NYSEG Projects	2015	2016	2017	2018	2019
North Titus Reg Station and Gas Main Replacement	-	300	-	-	-
Bradley Farms, Rebuild Gas Gate Station	-	100	1,600	1,600	-
Airport Corporate Park South	-	-	-	200	-
Total - NYSEG Asset Condition - Gas	**-**	**400**	**1,600**	**1,800**	**-**

RGE Projects	2015	2016	2017	2018	2019
Thruway Park Drive, Replace Gas Tran Main	-	-	2,000	-	-
Uprate MF30 Henrietta	-	250	-	-	-
MF60 Southwest	-	-	350	-	350
RG&E Controller Replacement Project	-	175	-	-	-
Total - RG&E Asset Condition - Gas	**-**	**425**	**2,350**	**-**	**350**

8.0 COMMON CAPITAL INVESTMENT PLAN

The Company's Common capital investments include fleet, improvements to division and office facilities, security, operational efficiency projects and information technology projects. These expenditures are typically for projects that benefit both electric and gas businesses. At NYSEG, common investments are currently allocated 79.1% to electric and 20.9% to gas, and at RG&E, common investments are currently allocated 65% to electric and 35% to gas. Allocation rates will be reviewed in the Companies' upcoming rate cases and may change starting in 2016.

The Companies propose to make Common Investments during 2015 through 2019 as follows:

Table 8.17 Common Investment ($000)

	2015	2016	2017	2018	2019
Customer Services	50	2,570	200	700	250
Building Projects and Space Management	2,000	2,860	2,150	3,385	5,875
General Services	156	638	641	433	336
Fleet - Transportation Equipment	3,531	5,100	14,100	16,600	18,100
Operations Technologies	3,052	14,079	6,704	6,705	1,507
Information Technology	10,678	9,331	10,601	10,993	10,434
Security	1,634	8,496	17,109	10,191	14,245
Total NYSEG Common	**21,101**	**43,074**	**51,505**	**49,007**	**50,746**
Customer Services	50	730	600	600	640
Building Projects and Space Management	1,905	2,710	2,400	2,830	3,500
General Services	173	1,200	1,786	2,683	1,180
Fleet - Transportation Equipment	4,744	5,197	5,991	6,454	6,808
Operations Technologies	800	1,333	1,435	1,537	439
Information Technology	6,262	5,592	7,041	7,097	6,919
Security	4,925	6,560	5,875	6,050	1,050
Total RGE Common	**18,860**	**23,323**	**25,129**	**27,251**	**20,535**

Table 8.18 shows the summary by investment categories:

Table 8.18 **Common by categories ($000)**

	2015	2016	2017	2018	2019
NYSEG- Mandatory	6,255	16,498	17,418	11,653	14,611
RG&E - Mandatory	5,872	7,404	7,192	8,863	1,875
Total Mandatory	**12,127**	**23,903**	**24,610**	**20,516**	**16,485**
NYSEG - Reliability Risk	319	290	370	615	400
RG&E - Reliability Risk	354	550	350	330	250
Total Reliability Risk	**673**	**840**	**720**	**945**	**650**
NYSEG - Group Initiatives	4,880	882	816	1,982	859
RG&E - Group Initiatives	2,552	261	261	858	243
Total Group Initiatives	**7,433**	**1,143**	**1,077**	**2,840**	**1,102**
NYSEG - Efficiency	1,077	11,520	8,797	7,780	7,494
RG&E - Efficiency	910	3,215	2,538	2,166	3,600
Total Efficiency	**1,987**	**14,735**	**11,335**	**9,946**	**11,093**
NYSEG - Asset Condition	8,570	12,643	22,038	26,716	27,382
RG&E - Asset Condition	9,171	11,237	12,640	13,840	13,936
Total Asset Condition Replacement	**17,741**	**23,880**	**34,678**	**40,556**	**41,318**
NYSEG - Strategic	0	1,241	2,065	260	0
RG&E - Strategic	0	656	2,148	1,194	633
Total Strategic	**0**	**1,896**	**4,213**	**1,455**	**633**
TOTAL - Common	**39,961**	**66,396**	**76,634**	**76,257**	**71,282**

Fleet: Purchases and/or capital leases of new vehicles will move the Companies toward the industry average ages for specific fleet equipment and will replace older and less reliable vehicles. IUSA is transitioning its historical model of 100% vehicle ownership to a hybrid model of ownership (medium and heavy duty units) and leasing (light duty units). Phase 1 of this leasing initiative will begin in four locations (Oneonta, Ithaca, Brewster and Liberty) during 2015 and could continue in subsequent years.

Facilities and General Services: Improvements to division offices, garages, and other facilities owned or leased by the Companies.

Information Technology: address the Corporation's aging technological infrastructure, critical security requirements, global alignment directives, and the need for enhanced workplace tools to improve effectiveness and efficiency of work. Specific projects include:

> Data Center Consolidation: This project will seek to reduce risk and improve efficiency by consolidating multiple physical datacenters, adopting standardization, and enabling new infrastructure to improve Iberdrola USA datacenter technology (servers, storage, networks, etc) and disaster recoverability.
>
> NY SAP CRM: Implement a significant upgrade to the existing customer service and billing system (SAP CCS). The new version - SAP CRM&B – will provide the NY companies with greater ease of use, new functional capabilities and full integration with AMI. Additionally it will extend the life of the system by ensuring vendor support.

Operation Technology: projects to maintain the systems with lifecycle infrastructure replacements, planned system upgrades to support added functionality and remain on supported software platforms for compliance, and accounts for organic growth.

General Equipment: Tools and work equipment that are necessary to support the effective construction and maintenance of the Company's facilities and work processes.

System Security: This program is a collection of one larger and two smaller projects needed to comply with security requirements discussed below. Expenditures for the larger project are anticipated during this time period for hardened security upgrades, lighting and fencing installations at various NYSEG and RG&E facilities, including electric substations and service centers. Video Surveillance upgrades at critical gas and electric substations and overall security system upgrades for hydro generating stations and Company facilities are also planned. These projects will address the recommended security standards set forth under the Homeland Security Act of 2002, NERC CIP regulations and orders by the PSC related to Case 02-M-0953.

The smaller projects address Fire Protection and Access Control. We have identified areas in need of improvement and have taken necessary measures to continue meeting a high standard of security, fire, life safety and regulatory compliance.

9.0 2014 INFORMATION

TABLES

9.1 CAPITAL INVESTMENT – 2014

During 2014 the Companies invested more than $440M in the electric and natural gas delivery systems (including generation and common investments). This represents 103% of the 2014 Plan included in the Five Year Capital Investment Plan dated March 31, 2014.

Table 9.1 below includes 2014 capital investment information by operating company and line of business.

Table 9.1 2014 Capital Investment ($M)

	Actual	2014 Plan	%
NYSEG Electric	$204.2	$191.6	107%
RGE Electric	140.7	148.4	95%
Subtotal NY Electric	**344.9**	**340.0**	**102%**
NYSEG Gas	55.2	49.1	112%
RGE Gas	40.5	39.6	101%
Subtotal NY Gas	**95.7**	**88.8**	**108%**
Total	**$440.6**	**$428.7**	**103%**

9.2 FACILITIES PLACED INTO SERVICE

Table 9.2 shows the facilities related to major projects placed into service in 2014.

Table 9.2 Facilities Placed into Service in 2014

Equipment	Total	Thyristor	12.5kV	15kV	34.5kV	38kV	46kV	115kV	230kV
Breakers	24			2	2		3	17	
Switchgear	3		2		1				
Capacitor Banks	24				69.7MVAR			487MVAR	
Phasor Data Concentrators	7								
Phasor Measurement Units	6								

Line/Cable	Total Miles	34.5kV	46kV	69kV
Transmission Line	14.92	2.5	10.7	1.72
T-Line - ADSS	24.7	24.7		
Distribution Line	1.25	1.25		
Distribution Cable	1.5	1.5		

Transformers	2		345/115kV	420MVA	LTC
	1		115/34.5kV	56MVA	LTC
	2		115kV	230MVA	PST
	1		115/11.5kV	56MVA	LTC
	2		115/14kV	200MVA	LTC
	1		34.5/12kV	22.4MVA	LTC
			34.5/11.5kV	22.4MVA	LTC
	2		46/12.5kV	20MVA	LTC
	1		34.4/4.36kV	11.2MVA	
	12		Total		
Auto Transformers	1		345/115kV	420MVA	LTC
			Total		

Substations	1		46/12.5kV
			34/11kV
	1		Total

Control House Modifications	0
Control Houses	4
Service Building	1

Total cost $131M, over 598MW and over 150,57614 customers affected.

Attachment 1

Detail Project List for 2015 to 2019

NYSEG Electric - Capital Project or Category	Priority Category	2015	2016	2017	2018	2019
SYSTEM PLANING PROJECTS						
Bright Line	Mandatory	376,999	4,000,000	10,000,000	10,000,000	10,000,000
Marcy South Series Capacitance	Mandatory	19,293,993	41,295,007	-	-	-
Auburn Transmission Project (Auburn 345kV Source)	Mandatory	15,795,515	48,867,858	11,181,158	-	-
Columbia County Transmission Project (Klinekill 115kV)	Mandatory	6,146,815	791,606	13,981,728	11,814,001	-
AES Projects	Mandatory	3,261,726	-	-	-	-
Other Transmission Projects		21,540,793	3,728,896	16,379,434	21,323,570	28,965,619
Mandatory- Transmission Projects	Mandatory	15,678,794	396,854	-	-	-
System Capacity - Transmission Projects	System Capacity	3,841,999	423,669	-	-	200,000
Reliability Risk - Transmission Projects	Reliability Risk	1,920,001	2,908,373	16,379,434	21,323,570	28,765,619
Asset Condition - Transmission Projects	Asset Condition Replacement	100,000	-	-	-	-
SYSTEM PLANNING PROJECTS		**66,415,842**	**98,683,367**	**51,542,320**	**43,137,571**	**38,965,619**
CAPITAL PROJECT REQUIRED FOR MGP REMEDIATION						
Transit St Substation MGP Remediation	Mandatory	1,770,000	-	-	-	-
McMaster St. MGP Remediation	Mandatory	170,000	-	-	-	-
Clark Street MGP Remediation - Auburn	Mandatory	600,000	-	-	-	-
MPG REMEDIATION		**2,540,000**	**-**	**-**	**-**	**-**
DISTRIBUTION PLANING PROJECTS						
Mandatory- Distribution Projects	Mandatory	8,767,434	-	-	-	-
System Capacity - Distribution Projects	System Capacity	2,351,331	9,236,554	11,006,578	17,192,478	16,978,838
Reliability Risk-Distribution Projects	Reliability Risk	-	-	-	-	-
Asset Condition - Distribution Projects	Asset Condition Replacement	-	-	-	-	-
DISTRIBUTION PLANNING PROJECTS		**11,118,765**	**9,236,554**	**11,006,578**	**17,192,478**	**16,978,838**
DISTRIBUTION OPERATIONS						
Service Installations						
Industrial/Commercial	Mandatory	1,577,282	1,248,788	1,273,764	1,299,239	1,325,224
Residential	Mandatory	6,253,783	8,000,000	8,240,000	8,487,200	8,741,816
Service Connects	Mandatory	3,867,107	2,787,247	2,842,992	2,899,852	2,957,849
Major Customer projects	Mandatory	-	-	-	-	-
Distribution Equipment						
Meters	Mandatory	2,610,750	2,633,182	2,633,182	2,633,182	2,764,841
General Equipment	Asset Condition Replacement	-	510,000	520,200	530,604	541,216
Distribution Line work						
Transmission Line	Asset Condition Replacement	1,402,000	4,605,300	4,697,406	4,791,354	4,887,181
Distribution Line	Asset Condition Replacement	19,994,563	14,500,000	14,935,000	15,383,050	15,844,542
Distribution Line Inspections	Mandatory	8,127,767	9,241,393	9,651,687	10,584,900	11,450,719
Street Lighting	Mandatory	1,030,000	1,000,000	1,030,000	1,060,900	1,092,727
Storm	Mandatory	2,137,632	1,326,000	1,352,520	1,379,570	1,407,162

NYSEG Electric - Capital Project or Category	Priority Category	2015	2016	2017	2018	2019
Highway Relocation Work						
Relocate Electric Facilities	Mandatory	4,210,719	2,040,000	2,080,800	2,122,416	2,164,864
Major Relocation Projects	Mandatory	-	-	-	-	-
Planned Betterments						
Red Circuits/WPC	Reliability Risk	-	4,000,000	4,120,000	4,243,600	4,370,908
Other betterment projects	Reliability Risk	-	7,000,000	7,210,000	7,426,300	7,649,089
Transmission and Distribution Fault Indicators	Asset Condition Replacement	-	250,000	250,000	250,000	-
Switch Replacement Program	Asset Condition Replacement	-	300,000	300,000	-	-
T&D Reject Pole Replacement	Asset Condition Replacement	-	500,000	515,000	663,502	683,407
DISTRIBUTION OPERATIONS		**51,211,602**	**59,941,910**	**61,652,550**	**63,755,669**	**65,881,544**
SUBSTATIONS						
Distribution substation work	Asset Condition Replacement	5,162,984	1,428,000	1,456,560	1,485,691	1,515,405
Substation Modernization (90%)	Asset Condition Replacement	-	-	221,769	503,179	500,000
Substation Modernization (10%)	Efficiency	-	-	1,995,922	4,528,610	4,500,000
Substation Modernization				2,217,691	5,031,789	5,000,000
Automation						
NYSEG Automation Program	Efficiency	462,997	1,500,000	1,610,000	1,722,200	1,836,644
NYSEG - Communications for Automation Initiatives	Efficiency	-	1,000,000	1,000,000	1,000,000	1,000,000
NYSEG Telecom - SONET Refresh	Efficiency	-	-	450,000	-	-
Telecomm Bridges for new KGO BU Site	Efficiency	-	-	20,000	-	-
NYSEG Telecom - Alarm Monitoring Refresh	Efficiency	-	150,000	-	-	150,000
Mobile Replacement #2 & #4	Reliability Risk	-	2,000,000	2,800,000	-	-
NY SPCC	Mandatory	2,000,000	-	-	-	-
IEC 61850	Mandatory	2,500,000	-	-	-	-

NYSEG Electric - Capital Project or Category	Priority Category	2015	2016	2017	2018	2019
Asset condition programs						
Substation Transformer Transmission Replacement program	Asset Condition Replacement	-	1,000,000	1,000,000	1,000,000	1,000,000
Substation Transformer Distribution Replacement program	Asset Condition Replacement	-	1,000,000	1,000,000	1,000,000	1,000,000
Silicon Carbide Change out Program	Asset Condition Replacement	-	500,000	500,000	250,000	250,000
Substation Insulator Change out Program	Asset Condition Replacement	-		950,000	950,000	950,000
Breakers	Asset Condition Replacement	-	2,666,973	2,717,771	2,784,769	2,868,866
Batteries	Asset Condition Replacement	-	1,166,667	1,190,000	1,213,800	1,238,076
General Equipment	Asset Condition Replacement		153,000	156,060	159,181	162,365
Homer City Capital	Mandatory		500,000	500,000	500,000	500,000
SUBSTATIONS		**10,125,981**	**13,064,640**	**17,568,082**	**17,097,430**	**17,471,356**
OPERATIONS TECHNOLOGIES						
Energy Control Center (Integrated EMS/DMS/OMS Project)	Mandatory	2,864,930	-	-	-	-
ECC System Upgrade	Efficiency	-	-	-	-	4,900,000
Energy Control Center Project in NY, Siemens DMS	Reliability Risk	-	700,000	-	-	-
Lifecycle Replacement - ECC/XECS systems	Asset Condition Replacement	132,000	105,000	105,000	105,000	620,000
Organic Growth ECC/XECS systems	System Capacity	-	138,000	140,000	142,000	144,000
NYSEG Network Monitor, Operation, Security	Reliability Risk	222,500	-	-	-	-
Remote Outage Visualization	Reliability Risk	1,000,000	1,000,000	-	-	-
Spectrum security wrapper	Mandatory	114,600	-	-	-	-
Spectrum based back office solution	Reliability Risk	76,600	-	-	-	-
Distributed outage management and reporting system	Reliability Risk	1,433,856	-	-	-	-
OPERATIONS TECHNOLOGIES		**5,844,486**	**1,943,000**	**245,000**	**247,000**	**5,664,000**
AMI AND SMARTGRID DEMONSTRATION PROJECT						
AMI/Smartgrid Demonstration Project	Strategic	-	6,000,000	5,500,000	3,000,000	1,000,000
AMI/SmartGrid Demonstration Project		**-**	**6,000,000**	**5,500,000**	**3,000,000**	**1,000,000**
HYDRO GENERATION						
Mandatory- Customer requirement	Mandatory	3,159,247	2,914,000	3,528,000	2,156,000	7,196,054
System Capacity	System Capacity	-			-	-
Reliability Risk	Reliability Risk	159,682	250,000	600,000	1,200,000	1,900,000
Asset Condition	Asset Condition Replacement	800	750,000	2,220,000	2,045,000	-
HYDRO GENERATION		**3,319,729**	**3,914,000**	**6,348,000**	**5,401,000**	**9,096,054**
Other						
General Equipment Electric - AM&M	Asset Condition Replacement	190,000	-	-	-	-
Allegro Update - Electric	Mandatory	413,476	-	-	-	-
Other		**603,476**	**-**	**-**	**-**	**-**

NYSEG Electric - Capital Project or Category	Priority Category	2015	2016	2017	2018	2019
ELECTRIC PORTION OF COMMON (71.9%)						
Fleet		2,793,373	4,034,100	11,153,100	13,130,600	14,317,100
Information Technology		8,446,053	7,380,517	8,385,110	8,695,406	8,253,309
Operations Technology - Common portion		2,414,477	11,136,468	5,302,961	5,303,914	1,191,716
Buildings Projects and Space Management		1,582,000	2,262,260	1,700,650	2,677,535	4,647,125
General Services		123,258	504,555	507,151	342,294	265,818
Customer Services		39,550	2,032,870	158,200	553,700	197,750
Security		1,292,538	6,720,477	13,533,086	8,060,700	11,267,523
ELECTRIC PORTION OF COMMON (71.9%)		**16,691,249**	**34,071,247**	**40,740,258**	**38,764,149**	**40,140,341**
Electric		**151,179,881**	**192,783,471**	**153,862,531**	**149,831,148**	**155,057,411**
Total NYSEG Electric		**167,871,131**	**226,854,718**	**194,602,789**	**188,595,297**	**195,197,752**
Incremental Projects						
Automation Projects	Efficiency	-	3,000,000	6,000,000	7,500,000	7,500,000
Asset Condition - Red Health Index	Asset Condition Replacement	-	11,250,000	12,000,000	12,750,000	13,500,000
Smart Grid/AMI (including Smart Meter and Smart Grid Communications)	Strategic	-	-	16,898,750	31,662,500	34,800,836
Total - Incremental		**-**	**14,250,000**	**34,898,750**	**51,912,500**	**55,800,836**
Total NYSEG + Incremental		**167,871,131**	**241,104,718**	**229,501,539**	**240,507,797**	**250,998,588**

RG&E Electric - Capital Project or Category	Priority Category	2015	2016	2017	2018	2019
SYSTEM PLANNING PROJECTS						
Bright Line	Mandatory	2,014,542	5,000,000	10,000,000	10,000,000	10,000,000
RARP	Reliability Risk	18,324,156	19,178,000	28,604,000	40,776,000	48,464,000
Ginna Retirement Transmission Alternative and Fifth Bay - Station 80	Mandatory	20,200,000	110,770,000	18,680,000	-	-
Other Transmission Projects						
Mandatory- Transmission Projects	Mandatory	1,004,800	-	16,000,000	20,000,000	-
System Capacity - Transmission Projects	System Capacity	17,915,399	6,063,565	20,214,378	12,556,258	20,551,610
Reliability Risk-Transmission Projects	Reliability Risk	8,599,213	5,564,061	10,983,346	14,590,259	9,949,181
Asset Condition - Transmission Projects	Asset Condition Replacement	-	-	-	-	-
Efficiency - Transmission Projects	Efficiency	-	-	-	-	-
TRANSMISSION PLANNING PROJECTS		**68,058,110**	**146,575,626**	**104,481,723**	**97,922,517**	**88,964,791**
DISTRIBUTION PLANNING						
System Capacity	System Capacity	4,024,000	7,178,050	9,050,283	5,316,220	8,020,369
DISTRIBUTION PLANNING PROJECTS		**4,024,000**	**7,178,050**	**9,050,283**	**5,316,220**	**8,020,369**
DISTRIBUTION OPERATIONS						
Service Installation						
Industrial/Commercial	Mandatory	1,299,786	2,584,765	2,636,460	2,689,189	2,742,973
Residential	Mandatory	1,949,066	2,783,580	2,839,252	2,896,037	2,953,957
Service Connects	Mandatory	649,280	1,445,492	1,474,402	1,503,890	1,533,968
Distribution Equipment						
Meters	Mandatory	1,289,478	1,206,091	1,206,091	1,206,091	1,266,396
General Equipment	Asset Condition Replacement	-	255,000	260,100	265,302	270,608
Distribution Line work						
Transmission Line	Asset Condition Replacement	450,000	367,200	374,544	382,035	389,676
Distribution Line	Asset Condition Replacement	-	5,000,000	5,150,000	5,304,500	5,463,635
Distribution Line Inspections	Mandatory	-	1,000,000	1,030,000	1,060,900	1,092,727
T&D Switch Replacement Program	Asset Condition Replacement	-	-	318,270	327,818	337,653
Street Lighting	Mandatory	743,000	1,000,000	1,030,000	1,060,900	1,092,727
Storm	Mandatory	519,424	306,000	312,120	318,362	324,730
Highway Relocation Work						
Relocate Electric Facilities	Mandatory	-	352,903	359,961	367,160	374,503
Major Relocation Projects	Mandatory	8,645,229	8,352,059	8,519,100	8,689,482	8,863,272
Planned Betterments						
Red Circuits/WPC	Reliability Risk	-	1,800,000	1,854,000	1,909,620	1,966,909
Other betterment projects	Reliability Risk	15,127,753	3,000,000	3,060,000	3,121,200	3,183,624
T&D Reject Pole Replacement	Asset Condition Replacement	-	605,000	623,150	641,845	661,100
DISTRIBUTION OPERATIONS		**30,673,016**	**30,058,090**	**31,047,450**	**31,744,331**	**32,518,456**

RG&E Electric - Capital Project or Category	Priority Category	2015	2016	2017	2018	2019
SUBSTATIONS						
Distribution substation work	Asset Condition Replacement	-	831,541	848,172	865,135	882,438
Substation Modernization						
Station 5 Modernizatrion		1,250,000	-	-	-	-
Station 38 Total Refurbishment		3,200,000	-	-	-	-
Station 210 Modernization		1,210,157	-	-	-	-
New Projects		600,000	-	-	1,855,672	1,718,978
Total Substation Modernizations		**6,260,157**	**-**	**-**	**1,855,672**	**1,718,978**
Substation Modernization (90%)	Asset Condition Replacement	5,634,141	-	-	1,670,104	1,547,080
Substation Modernization (10%)	Efficiency	626,016	-	-	185,567	171,898
	90%Asset Condition, 10% Efficiency					
Automation Programs						
RGE Automation Program	Efficiency	157,199	2,000,000	2,090,000	2,181,800	2,275,436
RGE - Communication for Automation Initiatives	Efficiency	-	500,000	1,000,000	1,000,000	1,000,000
RGE Pilot Wire Replacement Program	Efficiency	700,000	200,000	1,891,253	4,438,990	-
Mobile Substations #3 & #5	Reliability Risk	800,000	2,900,000	860,234	-	-
Mobile switchgear #4	Reliability Risk	800,000	1,137,000	-	-	-
NY SPCC	Mandatory	2,000,000	-	-	-	-
Asset condition programs						
Substation Transformer Transmission Replacement program	Asset Condition Replacement	-	-	1,000,000	3,000,000	3,000,000
Substation Transformer Distribution Replacement program	Asset Condition Replacement	-	-	3,000,000	3,000,000	3,000,000
Old Insulator Change out Program	Asset Condition Replacement		750,000	750,000	750,000	750,000
Silicon Carbide Change out Program	Asset Condition Replacement	-	150,000	150,000	150,000	150,000
Distribution Fault Indicators	Asset Condition Replacement	-	100,000	100,000	-	-
Padmount Switchgear Replacement	Asset Condition Replacement	-	300,000	300,000	300,000	300,000
Breakers	Asset Condition Replacement	680,000	1,666,820	1,702,219	1,723,453	1,729,341
Batteries	Asset Condition Replacement	680,000	1,000,000	1,020,000	1,040,400	1,061,208
General Equipment	Asset Condition Replacement	80,000	102,000	104,040	106,121	108,243
SUBSTATIONS		**12,157,356**	**11,637,360**	**14,815,918**	**20,411,570**	**15,975,644**

RG&E Electric - Capital Project or Category	Priority Category	2015	2016	2017	2018	2019
OPERATIONS TECHNOLOGIES						
ECC projects						
Distributed Outage Management and Reporting System	Reliability Risk	466,149	-	-	-	-
Network Monitor, Oper, Security, RGE	Mandatory	222,500				
RG&E ECC System Upgrade	Efficiency	-	-	-	-	2,100,000
Lifecycle Replacement - ECC/XECS systems	Asset Condition Replacement	154,000	139,000	139,000	139,000	324,000
Spectrum security wrapper	Mandatory	35,400	-	-	-	-
Spectrum based back office solution	Reliability Risk	24,400	-	-	-	-
Energy Control Center (Integrated EMS/DMS/OMS Project)	Mandatory	970,319	-	-	-	-
OPERATIONS TECHNOLOGIES		**1,872,768**	**139,000**	**139,000**	**139,000**	**2,424,000**
HYDRO GENERATION						
Mandatory	Mandatory	2,945,001	5,228,000	9,706,000	2,863,000	2,470,027
System Capacity	System Capacity	150,000	800,000	1,924,000	7,633,000	7,076,000
Reliability Risk	Reliability Risk		300,000	100,000	750,000	475,000
Asset Condition	Asset Condition Replacement	-	-	1,630,000	535,000	-
HYDRO GENERATION		**3,095,001**	**6,328,000**	**13,360,000**	**11,781,000**	**10,021,027**
Other	Mandatory	**250,760**				
ELECTRIC PORTION OF COMMON (65%)						
Fleet		3,083,627	3,378,050	3,894,150	4,195,000	4,425,200
Information Technology		4,070,345	3,635,125	4,576,816	4,613,314	4,497,333
Operations Technology - Common portion		520,000	866,450	932,750	999,050	285,350
Buildings Projects and Space Management		1,238,433	1,761,500	1,560,000	1,839,500	2,275,000
General Services		112,450	780,000	1,161,000	1,743,696	766,681
Customer Services		32,500	474,500	390,000	390,000	416,000
Security		3,201,463	4,264,134	3,819,065	3,932,500	682,500
ELECTRIC PORTION OF COMMON (65%)		**12,258,819**	**15,159,759**	**16,333,781**	**17,713,060**	**13,348,064**
Electric		120,131,011	201,916,126	172,894,373	167,314,638	157,924,287
Total RG&E Electric		**132,389,830**	**217,075,885**	**189,228,154**	**185,027,698**	**171,272,351**
Incremental Projects						
Automation Projects	Efficiency	-	1,000,000	2,000,000	2,500,000	2,500,000
Asset Condition - Red Health Index	Asset Condition Replacement	-	3,750,000	4,000,000	4,250,000	4,500,000
Smart Meter/Smart Grid communications	Strategic	-	-	-	-	-
Smart Grid/AMI (including Smart Meter and Smart Grid Communications)	Strategic	-	-	2,437,500	8,125,000	9,532,250
Total - Incremental		**-**	**4,750,000**	**8,437,500**	**14,875,000**	**16,532,250**
Total RG&E + Incremental		**132,389,830**	**221,825,885**	**197,665,654**	**199,902,698**	**187,804,601**

NYSEG Gas - Capital Project or Category	Priority Category	2015	2016	2017	2018	2019
TRANSMISSION MAINS						
Phelps (South) Transmission Replacement	Reliability Risk	-	500,000	2,300,000	5,671,000	-
DeRuyter Transmission Replacement	Reliability Risk	-	500,000	6,000,000	15,000,000	13,000,000
TRANSMISSION MAINS		**-**	**1,000,000**	**8,300,000**	**20,671,000**	**13,000,000**
DISTRIBUTION MAINS						
Becketts way - Install Gas Mains	Growth/System Capacity	-	-	-	250,000	-
Airport Corporate Park	Asset Condition Replacement	-	-	-	200,000	-
Bradley Street	Reliability Risk	-	-	-	200,000	-
Binghamton 60-PSI System Improvement	Growth/System Capacity	-	-	-	600,000	-
Route 23 system reinforcement	Reliability Risk	-	-	-	-	750,000
Edgett Street Canal Crossing	Reliability Risk	-	-	-	-	500,000
Boiceville System Reinforcement	Growth/System Capacity	-	-	350,000	-	-
North Titus Regulator Sation and Gas Main Replacement	Asset Condition Replacement	-	300,000		-	-
Homer System Upgrade	Growth/System Capacity	-	820,000	430,000	440,000	455,000
Replace South Union Street Bridge Crossing	Reliability Risk	-	278,000	422,000	-	-
State Rd Tie Medium Pressure Systems	Reliability Risk	-	-	85,000	-	-
Middleport to Medina Interconnect	Reliability Risk	-	-	-	285,000	290,000
Replace Croton River Crossing	Mandatory	230,122		230,000	-	-
North Salem Franchise Expansion	Mandatory	22,600	13,000	24,000	-	-
North Country Franchise Expansion	Growth/System Capacity	-	1,375,000	2,357,000	-	-
Vienna Rd -Macedon Feeder Main replacement, Install Gas Mains	Growth/System Capacity	-	100,000	5,800,000	1,200,000	-
Incremental Customer Growth - Gas Related Projects-NYSEG	Mandatory	28,000	2,000,000	2,000,000	2,000,000	2,000,000
Gas Pipeline Susquehanna River Bore Extension Project Town of Vestal and Village of Johnson City, Binghamton, NY	Growth/System Capacity	-	1,350,000	-	-	-
Boswell Hill Bare Steel Main Replacement Project Town of Union, Binghamton, NY Phases 1, 2, & 3	Growth/System Capacity	-	1,400,000	1,500,000	1,500,000	-
Port Dickinson Gas Pipeline Loop Extension Towns of Port Dickinson and Fenton, Binghamton, NY	Growth/System Capacity	-		100,000	1,540,898	1,337,102
Plattsburgh Gas Franchise Expansion	Mandatory	4,728,735	1,315,000	1,059,000	315,000	-
Lansing / Freeville - Regulator Station - Gas Reinforcement Project (Ithaca/Dryden Gas Distribution)	Mandatory	6,184,624	12,152,000	280,000	-	-
Enhanced First Responders and Fire Training Mobile Facility and Program, NYSEG	Mandatory	-	750,000	-	-	-
DISTRIBUTION MAINS		**11,194,081**	**21,853,000**	**14,637,000**	**8,530,898**	**5,332,102**
PROGRAMS						
Leak Prone Main Replacement Program	Mandatory	11,486,468	12,190,524	13,534,181	14,908,816	15,049,054
Leak Prone Services Replacement Program	Mandatory	6,853,592	5,492,980	6,407,347	7,704,727	9,541,003
Minor Services, Install Gas Service	Mandatory	4,593,563	3,522,450	3,645,647	4,234,305	4,177,603
Minor Distribution Mains, Install Gas Mains	Mandatory	2,536,837	3,052,790	3,116,899	3,182,353	3,249,183
Gas Meters	Mandatory	3,943,400	3,023,565	3,114,272	3,207,700	3,303,931
Gas Regulators	Mandatory	295,500	294,761	309,500	318,785	328,349
Critical Valve Installations, Binghamton	Mandatory	81,360	150,000	153,150	156,366	-
Chemung County Gas Service Replacements	Mandatory	-	5,650,000	-	-	-
Distribution Main Replacement, Replace Gas Mains	Mandatory	651,322	765,750	781,831	798,249	815,012
Transmission Casing Replacement Program, NYSEG	Reliability Risk	-	1,000,000	1,000,000	1,000,000	1,000,000
Remotely Operated Valves Program	Reliability Risk	-	200,000	500,000	500,000	-
PROGRAMS		**30,442,042**	**35,342,820**	**32,562,826**	**36,011,302**	**37,464,134**

NYSEG Gas - Capital Project or Category	Priority Category	2015	2016	2017	2018	2019
HIGWAY RELOCATIONS						
Large Government Jobs (to be identified) - NYSEG	Mandatory	-	2,000,000	2,042,000	2,084,882	2,128,665
Minor Government Jobs, Replace Gas Mains, NYSEG	Mandatory	761,889	842,325	860,014	878,074	896,514
NYS Route 281 - Distribution Piping - (West Rd), Replace Gas Mains, Cortland	Mandatory	1,215,000	-	-	-	-
HIGWAY RELOCATIONS		**1,976,889**	**2,842,325**	**2,902,014**	**2,962,956**	**3,025,179**
GATE STATIONS						
Bradley Farms, Rebuild Gas Gate Station	Asset Condition Replacement	-	100,000	1,600,000	1,600,000	-
Mechanicville Compressed Natural Gas Station and Facilities - Project Management	Mandatory	1,631,600	-	-	3,000,000	-
Robinson Road Gate Station Rebuild, Lockport	Reliability Risk	2,000	-	-	-	-
Gas Regulator Modernization & Automation Program, Replace Regulator Stations, NYSEG	Reliability Risk	318,280	-	1,083,000	1,500,000	2,000,000
GATE STATIONS		**1,951,880**	**100,000**	**2,683,000**	**6,100,000**	**2,000,000**
OPERATIONS TECHNOLOGIES						
Gas SCADA System Replacement	Reliability Risk	-	-	750,000	750,000	-
Gas RTU/Telemetry Upgrade	Efficiency	-	-	600,000	600,000	600,000
Outage Management System, NYSEG	Mandatory	-	-	-	2,000,000	-
OPERATIONS TECHNOLOGIES		**-**	**-**	**1,350,000**	**3,350,000**	**600,000**
Gas Operations						
Asset Condition	Asset Condition Replacement	500,000	510,500	521,221	532,166	543,342
GAS OPERATIONS		**500,000**	**510,500**	**521,221**	**532,166**	**543,342**
OTHER	Mandatory	**124,316**	**-**	**-**	**-**	**-**
SMART GRID/AMI	Strategic	**-**	**-**	**2,351,250**	**7,837,500**	**9,195,164**
GAS PORTION OF COMMON (20.1%)						
Fleet		738,072	1,065,900	2,946,900	3,469,400	3,782,900
Information Technology		2,231,637	1,950,099	2,215,535	2,297,522	2,180,710
Operations Technology - Common portion		637,959	2,942,505	1,401,161	1,401,414	314,878
Buildings Projects and Space Management		418,000	597,740	449,350	707,465	1,227,875
General Services		32,568	133,315	134,001	90,442	70,235
Customer Services		10,450	537,130	41,800	146,300	52,250
Security		341,518	1,775,701	3,575,746	2,129,818	2,977,133
GAS PORTION OF COMMON (20.1%)		**4,410,204**	**9,002,390**	**10,764,493**	**10,242,361**	**10,605,981**
Gas		46,189,208	61,648,645	65,307,311	85,995,822	71,159,921
Total NYSEG Gas		**50,599,412**	**70,651,035**	**76,071,804**	**96,238,182**	**81,765,903**

RG&E- Gas - Capital Project or Category	Priority Category	2015	2016	2017	2018	2019
TRANSMISSION MAINS						
Thruway Park Drive, Replace Gas Transmission Main, Roch	Asset Condition Replacement	-	-	2,000,000	-	-
CM-1 Transmission Gas Main Replacement Project	Reliability Risk	-	-	500,000	5,000,000	9,000,000
Recycled Energy Development (RED) Transmission Gas Main Extension	Mandatory	-	4,500,000	11,200,000	-	-
CM5 - Gas Main Replacement - Humphrey to Ballantyne Rd - Rochester - Project Management	Reliability Risk	-	-	4,000,000	5,553,000	5,000,000
TRANSMISSION MAINS		**-**	**4,500,000**	**17,700,000**	**10,553,000**	**14,000,000**
DISTRIBUTION MAINS						
Inner Loop - Gas Main Project - Distribution Piping	Mandatory	980,000	-	-	-	-
MF60 Southeast	Mandatory	620,000	-	-	-	-
Northeast 60, Install Gas Mains	Growth/System Capacity	-	1,120,000	3,535,000	2,585,000	3,000,000
MF35 Walworth System Improvements	Growth/System Capacity	-		950,000		
MF60 Southwest	Asset Condition Replacement	-	-	350,000	-	350,000
MF60 Northwest, Port of Rochester Development	Growth/System Capacity	-	724,500	-	380,000	627,500
Whittier Road Improvement, Phase 4, Install Gas Mains, Roch	Growth/System Capacity	-	-	-	-	210,000
MF13 Geneseo Improvement, Install Gas Mains, Roch	Growth/System Capacity	-	-	500,000	-	-
Enhanced First Responders and Fire Training Facility and Program, RG&E	Mandatory	-	2,700,000	-	-	-
MF120 Western Monroe, Install New Regulator Station 500	Growth/System Capacity	-	-	500,000	-	-
Uprate MF30 Henrietta	Asset Condition Replacement	-	250,000	-	-	-
Mt Read SF115 psi, Replace Gas Mains, Roch	Growth/System Capacity	-	1,250,000	1,250,000	-	2,500,000
MF42 Henrietta: Brighton Henrietta Town Line Rd Improvement	Growth/System Capacity	-	855,000	-	1,500,000	-
Incremental Customer Growth - Gas Related Projects - RG&E	Mandatory	-	2,500,000	2,552,500	2,500,000	2,500,000
DISTRIBUTION MAINS		**1,600,000**	**9,399,500**	**9,637,500**	**6,965,000**	**9,187,500**
PROGRAMS						
Leak Prone Main Replacement Program	Mandatory	10,842,911	12,496,824	13,872,974	16,446,185	16,618,707
Leak Prone Services Replacement Program	Mandatory	2,174,235	2,261,515	2,688,462	3,051,004	3,477,452
Install New Gas Services, RG&E	Mandatory	3,143,932	3,369,300	3,504,235	3,708,877	3,786,764
Gas Distribution Mains - New Installations - RG&E	Mandatory	2,032,890	1,939,900	1,980,638	2,022,231	2,064,698
Gas Meters	Mandatory	2,944,000	2,290,047	2,358,748	2,429,511	2,502,396
Gas Regulators	Mandatory	178,000	186,200	195,510	205,295	215,555
Gas Distribution Mains - Replacements - RG&E	Mandatory	350,002	301,195	307,520	313,978	320,572
Remotely Operated Valves Program	Reliability Risk	-		500,000	500,000	300,000
PROGRAMS		**21,665,970**	**22,844,981**	**25,408,087**	**28,677,081**	**29,286,144**
HIGWAY RELOCATIONS						
Large Government Jobs (to be identified) - RG&E	Mandatory	-	5,304,500	5,415,895	5,529,628	5,645,750
Minor Government Jobs, Replace Gas Mains	Mandatory	666,878	638,125	651,526	665,208	679,177
HIGWAY RELOCATIONS		**666,878**	**5,942,625**	**6,067,420**	**6,194,836**	**6,324,928**

RG&E- Gas - Capital Project or Category	Priority Category	2015	2016	2017	2018	2019
GATE STATIONS						
Buffalo Road Rebuild Regulator Station and Replace Gas Main - Project Manager	Growth/System Capacity	415,000	2,482,000	-	-	-
Gas Regulator Modernization & Automation Program, Replace Regulator Station - RGE	Reliability Risk	100,000	500,000	1,000,000	1,000,000	1,000,000
RG&E Controller Replacement Project (Bristol RSR), Roch	Efficiency	-	175,000	-	-	-
New Empire West Gate Station - Project Management - Build New Gate Station -	Growth/System Capacity	5,895,435	-	-	-	-
GATE STATIONS		**6,410,435**	**3,157,000**	**1,000,000**	**1,000,000**	**1,000,000**
OPERATIONS TECHNOLOGIES						
Gas SCADA System Replacement	Reliability Risk	-	-	-	-	1,500,000
Outage Management System, RG&E	Efficiency	-	-	-	-	2,000,000
RG&E Controller Replacement Project (Bristol RSR), RochRG&E Controller Replacement Project (Bristol RSR), Roch	Asset Condition Replacement	-	175,000	-	-	-
OPERATIONS TECHNOLOGIES		**-**	**175,000**	**-**	**-**	**3,500,000**
GAS OPERATIONS						
Asset Condition	Asset Condition Replacement	120,000	255,250	260,610	266,083	271,671
GAS OPERATIONS		**120,000**	**255,250**	**260,610**	**266,083**	**271,671**
SMART GRID/AMI	**Strategic**	**-**	**-**	**1,312,500**	**4,375,000**	**5,132,750**
Other	Mandatory	**238,503**	-	-	-	-
GAS PORTION OF COMMON (35%)						
Fleet		1,660,415	1,818,950	2,096,850	2,258,846	2,382,800
Information Technology		2,191,724	1,957,375	2,464,439	2,484,092	2,421,641
Operations Technology - Common portion		280,000	466,550	502,250	537,950	153,650
Buildings Projects and Space Management		666,849	948,500	840,000	990,500	1,225,000
General Services		60,550	420,000	625,154	938,913	412,828
Customer Services		17,500	255,500	210,000	210,000	224,000
Security		1,723,865	2,296,072	2,056,419	2,117,500	367,500
GAS PORTION OF COMMON (35%)		**6,600,902**	**8,162,947**	**8,795,113**	**9,537,802**	**7,187,419**
Gas		30,701,786	46,274,356	61,386,117	58,031,000	68,702,993
Total RG&E Gas		**37,302,688**	**54,437,303**	**70,181,229**	**67,568,802**	**75,890,411**

Attachment 2

Description of the Most Significant Electric Projects

Capital Project Summary

All

Brightline

Project Scope:

Since 2012, Iberdrola USA has conducted a program to ensure compliance to the FERC Brightline Order. This order establishes the BES (Bulk Electric System) as including most facilities 100kV and above. The work associated with this program is being managed according to the IUSA PMO (Project Management Organization) standards. The goal of the program is to ensure compliance by the enforcement date of the Brightline Order, which is July 1, 2016.
The scope for the program was established by a NERC Reliability Standard GAP analysis conducted in 2011. The program includes the following projects:
-CIP Implementation
-Install security systems at five RG&E substations
System Operations
-NYSEG and RG&E Energy Control Centers (ECC's) register as Transmission Operators (TOP's) and build a NERC compliance program
System Protection
-Determine Areas in identified parts of the BES system where protection devices limit facility ratings
Substation Maintenance
-Develop testing plans for BES substation equipment identified in NYSEG's and RG&E's BES substations
System Planning
-Conduct a planning study on NYSEG's and RG&E's BES system to determine where NERC TPL (Transmission Planning) Standards are not met
Facility Ratings
-Deploy a common database to store BES facility ratings information for NYSEG and RG&E

Reasons and Benefits:

(FERC) issued Order 773 on December 20, 2012. Compliance with the new BES Definition is mandatory. Iberdrola USA must comply with over 100 NERC Reliability Standards applicable to the BES by 2016, or else be subject to fines and sanctions up to $1 million per day per violation, depending on severity.

Investment Clasification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment:	$2,090
2015 and Future Investments:	$136,600

NYSEG

Fraser Sub - Add 2nd 345/115 kV Transformer

Project Scope:

Install a second 345/115 kV, 150/200/250/280 MVA, LTC transformer at the Fraser Substation and operate it in parallel with the existing 345/115 kV, 150/200/250/280 MVA LTC transformer.

Reasons and Benefits:

During the 2012 summer and winter periods, an outage of the Fraser 345/115 kV transformer and a 115 kV line results in low voltages in Oneonta. Up to 50 MW and 10,400 customers could be exposed to these potential problems for up to 600 hours based on 2012 loading conditions.

Investment Clasification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$138
2015 and Future Investments:	$30,273

Hilldale 115kV source, transformer bank upgrade and 2nd 12kV distribution circuit.

Project Scope:

Extend a 11 5kV source into the Hilldale Substation and replace the existing transformer with a 115-12.47 kV, 12/16/20 MVA LTC transformer with two 12 kV circuit positions.

Reasons and Benefits:

This project is needed to accommodate new load growth in the area served by the Hilldale Substation.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$17,708

Gardenville, Add 3rd 230/115 kV Transformer

Project Scope:

Install a third 230/115/34.5 kV, 200/250 MVA, LTC transformer with a 34.5 kV, 50 MVA tertirary winding at the Gardenville Substation and operate it in parallel with the two existing 230/115/34.5 kV, 200/250 MVA, LTC transformers.

Reasons and Benefits:

During the 2012 summer period, an outage of one Gardenville 230/115 kV transformer with the other one already out results in low voltages in Lancast. Up to 90 MW and 20,600 customers could be exposed to these potential problems for up to 350 hours based on 2012 loading conditions.

Investment Clasification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$17,429

Watercure Rd. - 2nd 345 kV Transformer

Project Scope:

Install a second 400 MVA 360/240/36.2 kV, LTC trasformer at the Watcure Substation. Install three 345 kV circuit breakers and four 230 kV circuit breakers to connect the new transformer in parallel with the existing bank #1.

Reasons and Benefits:

The project will mitigate the emergency conditions encountered after the failure of bank #1.

Investment Clasification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$5,295
2015 and Future Investments:	$6,158

Oakdale Reconfiguration Project

Project Scope:

Install four new 345 kV breakers at the Oakdale Substation and reconfigure the 345 kV portion of the substation from a ring bus to a breaker and a half. The reconfiguration of the 345 kV element connections will ensure that no two critical elements can be lost.

Reasons and Benefits:

Under current system conditions and load levels, the permanent shutdown or retirement of the entire AES owned Cayuga Generating Plant results in a voltage collapse situation in NYSEG's Binghamton Division. The Oakdale Reconfiguration project is required for a current violation of N-1-1. The NYISO, who is responsible for the studies of the 345 kV bulk power system, identified the violation as part of their Comprehensive Reliability Planning Report. The problem really stems from the AES generation retirements at their Westover plant in Binghamton, Greenidge, and the possible closure at Cayuga.

Investment Clasification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$8,205

Line 526, Rebuild Coddington-South Hill 34.5 kV Line

Project Scope:

Rebuild the existing 4/0 ACSR 6/1 section of the #526 line from Coddington to South Hill (2.59 miles) with 477 MCM or equivalent conductor.

Reasons and Benefits:

During the 2012 summer peak load period, an outage of the Coddington to Ithaca College 34.5 kV line would cause the 4/0 ACSR section of the Coddington to South Hill 34.5 kV line #526 to exceed its summer LTE rating.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$900

Line 879

Project Scope:

Replacing Structure 137 as a result of damage structures from woodpecker holes and addressing a clearance issue as a result of DOT plans to increase the D&H Rail Road 2.5ft higher over interstate 87.

Reasons and Benefits:

Install 3-pole transmission structure and the 2-pole distribution structure using laminated wood poles to prevent further damage from woodpeckers in the area.

Replace Str.137 in-place (3-pole structure)

Split the distribution on a separate 2-pole DE utilizing the 3 dead conductors

Total project cost of $367K covers the rolling road blocks across Interstate 87, 3-pole DE, 2-pole DE installations, labor and related material for the transmission & distribution.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$712

Line 601 Raylinski Tap to Coons Crossing Rebuild

Project Scope:

Raylinski Tap to Coons Crossing Rebuild, 2.7 miles

Reasons and Benefits:

35KV line between Coons Crossing and Raylinski Tap to accommodate load growth and expansion at Luther Forest to strengthen circuit tie between Mulberry & Luther Forest substations.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$1,859
2015 and Future Investments:	$1,630

Line 807, Convert to 115kV Operation, Brewster

Project Scope:

Convert approximately 13 miles of 46 kV to 115 kV. Convert the existing Line 807, 46 kV line from Carmel to Katonah to 115 kV. The new 115 kV line will extend from the Carmel Substation to the Wood Street Substation to the Katonah Substation.

- New 115 kV line breaker location and two new 115 kV breakers will be added at Carmel Substation
- Two new 115 kV line breaker locations and two new 115 kV breakers will be added at Wood Street Substation
- New 115 kV line breaker location and three new 115 kV breakers will be added at Katonah Substation.

Reasons and Benefits:

Increase capacity to meet load growth in the Brewster region to provide adequate voltage levels and thermal conditions.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$9,405
2015 and Future Investments:	$1,924

Stephentown Substation New Transformer

Project Scope:

Install a new 115/34.5 kV, 30/40/56 MVA LTC transformer to operate in parallel with the existing transformer. Work will include all associated equipment required with this transformer addition.

Reasons and Benefits:

Submarginal voltages appear in areas served from the Berlin, Stephentown, West Lebanon, Canaan and Saw+Di Substations upon loss of the Stephentown 115/34.5 kV transformer.

Investment Clasification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$4,518
2015 and Future Investments:	$3,145

New Gardenville 230 kV Substation Install DME

Project Scope:

Install new DME (Disturbance monitoring equipment) at New Gardenville Bulk 230kV Substaiton Currently New Gadenville does not have a DME. This equpiment is needed to be compliant with NPCC and NERC standards Failure to complete this project will place NYSEG out of compliance and subject to sanction and penalties.

Reasons and Benefits:

NYSEG has Digital Fault Recorders and Sequence of events recorders at all of its Bulk Power and larger transmission substations except New Gardenville in Lancaster. DMEs are mandated at all bulk power substations, must be in working order, and must be remotely accessible and time synced. This project is to install a DME which meets all current NPCC and NERC ERO standards. Failure to complete this project will place NYSEG out of compliance.

Investment Clasification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment:	$304
2015 and Future Investments:	$100

Fraser-Gilboa 345kV 35 Line(GF5) Relay & Comm. Replacement

Project Scope:

Replace the existing Fraser 35Line Siemens and obsolete GE relaying and communications equipment with new SEL 421 relaying and RFL 9745 audio tone communications equipment.

Reasons and Benefits:

NPCC Bulk Power System(BPS) Protection guidelines state that primary and secondary relaying and communications equipment shall have two different paths of communication (e.g. carrier, tone, microwave, etc.).

Investment Clasification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$597

Westover Substation New 115kV Transformer and Binghamton Division Capacitors

Project Scope:

•New Westover (Goudey) 115/34.5 kV, 30/40/50 MVA, LTC transformer bank.
•Install 102 MVAR, two-step, switched capacitor bank, at the Westover (Goudey) Substation 115 kV bus.
•Install 12.6 MVAR switched capacitor bank at the Robble Ave Substation 115 kV bus.
•Install 13.2 MVAR switched capacitor bank at the Noyes Island Substation 34.5 kV bus.
•Install 7.2 MVAR switched capacitor bank at the Oakdale Substation 34.5 kV bus.
•Install 2.4 MVAR switched capacitor bank at the Whitney Ave Substation 34.5 kV bus.
•Install 2.4 MVAR switched capacitor bank along the 34.5 kV transmission Line 431 in the vicinity of the Conklin Substation.
•Install 1.2 MVAR switched capacitor bank along the 34.5 kV transmission Line 453 in the vicinity of the Bevier Street Substation.

Reasons and Benefits:

Submarginal voltages appear in the areas served from the Morgan, Langdon, Fuller Hollow, Jones and Conklin Substations and the LTE rating is exceeded at the Westover #7 115/13.8 kV and 34.5/13.8 kV transformers upon the simultaneous loss of the Oakdale transformers.

Investment Clasification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$3,098
2015 and Future Investments:	$13,800

Perry Center Area Install New 34.5kV Substation

Project Scope:

Build a three breaker 34.5 kV switching station and bring in all three sections of the 591 transmission line. Close the normally open 59186 switch.

Reasons and Benefits:

During high load periods, loss of Line 591 in the area results in low voltages and overloads above the STE on the Line 590. This would result in load shedding of 5 MW and the period of exposure in about 262 hours per year. This would affect 1,400 customers.

Investment Clasification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$5,062
2015 and Future Investments:	$4,654

Geneva, Add Switched Capacitor Bank at Five Points Prison Substation

Project Scope:

Install switched capacitor bank(s) with total of 1.2 MVAR at the Five Points Prison Substation.

Reasons and Benefits:

For L/O 34.5kV East Cable - Willard in 2018, sub-marginal voltages appear at the Five Points Prison substation. In 2018, the calculated exposure is 25 hours/yr, affecting 1 customer and 2.3 MW of load.

Investment Clasification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$903

Eelpot New Transformer

Project Scope:

Install a second 115/34.5 kV, 30/40/56 MVA LTC transformer at the Eelpot Road substation. Work will include all associated equipment required with this transformer addition.

Reasons and Benefits:

Eelpot Road Substation serves approximately 22 MW of load to 5,118 customers. During peak load periods loss of the existing 115/34.5 kV transformer at the Eelpot Substation results in overloads above the LTE of the 565 line low voltages in the area. This causes shedding of 12 MW load affecting 3,500 customers.

Investment Clasification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$6,848
2015 and Future Investments:	$8,926

Windham Substation 115 KV Capacitor Bank Addition

Project Scope:

Install a new 115 kV, 6 MVAR switched capacitor bank at the Windham Substation

Reasons and Benefits:

The installation of a 115 kV, 5.4 MVAR switched capacitor bank at Windham Substation will allow for adequate voltages and thermal conditions to be maintained in the area for an outage of the Fraser 345/115 kV transformer.

Investment Clasification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$778
2015 and Future Investments:	$1,524

Meyer Substation New Transformer - 115/34.5kV

Project Scope:

Add a second 115/34.5 kV, 30/40/56 MVA LTC transformer at the Meyer Substation. Work will include all associated equipment required with this transformer addition.

Reasons and Benefits:

Meyer Substation serves approximately 60 MW of load and transmission flow associated with 6,740 customers. During high load periods and with the loss of the 230/115/34.5 kV Meyer Transformer, loss of the existing 115/34.5 kV transformer at Meyer substation results in overloads above the LTE on Line 542 affecting 5 MW of load and 1,200 customers.

Investment Clasification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$3,004
2015 and Future Investments:	$2,598

South Perry New 115kV Transformer

Project Scope:

Add a second 115/34.5 kV, 30/40/56 MVA LTC transformer at the South Perry Substation. Work will include all associated equipment required with this transformer addition.

Reasons and Benefits:

The substation serves approximately 34 MW of load which is 8,144 customers which include Castile. During peak load periods, the existing 115/34.5 kV transformer will overload under normal system conditions or the entire area load will be lost.

Investment Clasification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$4,310
2015 and Future Investments:	$1,795

Willet Substation New Transformer

Project Scope:

Install a new Flat Street 115/34.5 kV, 20/26/33(36.7) MVA, LTC transformer to operate in parallel with existing one.

Reasons and Benefits:

Exposure to submarginal voltages and thermal overload will result from the loss of 115/34.5 kV Greenidge tranformer is 900 hrs/yr, w/ 5524 customers (22.5 MW) dropped. For the loss of 115/34.5 kV Flat Street transfomer, exposure is 25 hrs/yr, w/ 274 customers (4.3 MW) dropped.

Investment Clasification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment:	$3,552
2015 and Future Investments:	$976

Flat Street Substation New Transformer

Project Scope:

Install a new Flat Street 115/34.5 kV, 20/26/33(36.7) MVA, LTC transformer to operate in parallel with existing one.

Reasons and Benefits:

Exposure to submarginal voltages and thermal overload will result from the loss of 115/34.5 kV Greenidge tranformer is 900 hrs/yr, w/ 5524 customers (22.5 MW) dropped. For the loss of 115/34.5 kV Flat Street transfomer, exposure is 25 hrs/yr, w/ 274 customers (4.3 MW) dropped.

Investment Clasification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment:	$5,708
2015 and Future Investments:	$650

Coopers Corners, Add 3rd 345/115 kV Transformer

Project Scope:

This project includes the installation of a third 345/115 kV, LTC transformer rated 120/160/200 MVA at Coopers Corners Substation and appurtenant equipment. The new transformer will be operated in parallel with the two existing 345/115 kV, 200 MVA, LTC transformers.

Reasons and Benefits:

The Coopers Corners Third 345/115kV Transformer Project is required under NPCC/NYSRC Bulk Power System Planning Criteria for N-1-1 contingency. Currently, if one of the existing 345/115 kV transformers at Coopers Corners Substation is out of service for an extended period and the remaining 345/115 kV transformer suffers a forced outage, widespread load shedding would be experienced by the majority of NYSEG's customers in its Liberty Division.

Investment Clasification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$76
2015 and Future Investments:	$22,870

Wood Street - Add 3rd 345/115 kV Transformer

Project Scope:

Install a third 345/115 kV, 150/200/250/280 MVA, LTC transformer at Wood Street Substation and operate it in parallel with the two existing 345/115 kV, 150/200/250/280 MVA LTC transformers.

Reasons and Benefits:

During the 2012 summer period, an outage of one Wood Street 345/115 kV transformer with the other one already out results in low voltage in Brewster. Up to 200 MW and 35,000 customers could be exposed to these potential problems for up to 5,100 hours in 2012.

Investment Clasification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$150
2015 and Future Investments:	$10,926

Mechanicville Reinforcement Project, Construct New Luther Forest Substation

Project Scope:

Construct a new 115-34.5 kV substation with two 34.5 kV distribution circuits and two future 34.5 kV distribution circuit positions.

Reasons and Benefits:

Resolve loading issues with the existing Mulberry Substation by transferring load to a new 115-34. 5 kV source at Luther Forest. Supply future needs of the Luther Forest Technology Campus.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$12,625
2015 and Future Investments:	$960

Holland Transformer Replacement

Project Scope:

Replace substation transformer.

Reasons and Benefits:

Substation transformer loaded to 97.5% of rating based on 2012 loading. Loss of this tranformer would affect 6 MW of load and 3,305 customers.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$7,004

Orchard Park - Add a 2nd Transformer Bank

Project Scope:

Add a second 34.5-4.8x12.5kV, 12/16/20 MVA LTC transformer bank at the Orchard Park Substation.

Reasons and Benefits:

The loading on the existing 7.5 MVA transformer bank at Orchard Park Substation has reached 95% of its PLBN rating during the summer peak of 2011. Loss of this transformer could affect 9 MW of load and 6,301 customers.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$8,678

West Davenport Sub - Replace sub transformer with non-LTC 7.5/10.5MVA unit.

Project Scope:

Replace the existing three 1667 KVA sub transformers with a non-LTC 7.5/10.5MVA transf with dual 4.8/12.5 kV winding. Replace the existing recloser on Circuit 22 with a breaker. Upgrade the existing two 167 KVA regulators on Circuits 12 and 22 with three 250 KVA (3-328A) units.

Reasons and Benefits:

The Circuit 12 has reached its loading limit and is a challenge to maintain the voltage at 4.8 kV. There are already three sets of line voltage regulators in series maintaining the voltage over 8.6 miles of line.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$6,503

Walden 35kV Conversion

Project Scope:

Extend 35kV feeders on Walden 35kV loop to relieve overloaded padmounted step transformers.

Reasons and Benefits:

Two padmounted step transformers have been identified as overloaded on the Walden 35kV loop system. This project proposes to extend the 35kV distribution and relieve the loading on the two padmounted step transformers.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$500

South Perry New 230kV Transformer

Project Scope:

Add a new 230/115 kV LTC transformer at the South Perry Substation. Adding a 230 kV transformer may require the addition of a new 230 kV switchyard.

Reasons and Benefits:

The South Perry and Geneseee Region Station 158 serve approximately 90 MW of load to over 17,000 customers. During highload periods, loss of one or both 115 kV lines that supplies that area will cause the other line to overload beyond its LTE rating.

Investment Clasification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$5,138
2015 and Future Investments:	$4,939

Amenia 2nd Bank & 13.2 KV Conversion - Brewster

Project Scope:

Relocate and install the 46 -13.2 KV 5 MVA LTC unit substation from Kent Substation to Amenia to initiate a voltage conversion of 4.8 KV circuit #153 to 13.2 KV.

Reasons and Benefits:

This will address bank loading concerns on the existing 3-1667 KVA 46-4.8 KV transformers. In service date 4th quarter 2012.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$10,000

Columbia County Transmission Project

Project Scope:

A new 115kV line was proposed to create a connection between an existing National Grid 115kV source and NYSEG's Klinekill substation. However, in the course of the Article VII proceeding for the licensing of the proposed 115kV line, Staff recommended the construction of a 115/34.5kV substation with two 34.5kV distribution lines as an alternative. This alternative is currently being reviewed and is the subject of settlement proceedings.

Reasons and Benefits:

The Columbia County Transmission Project is required under NYSEG's internal planning criteria for N-1 contingency. N-1 loss of the existing 115kV Line 984 from Churchtown to Craryville or loss of the existing 115kV Line 993 from Greenbush to Stephentown results in low voltage issues in the Columbia County area of NYSEG's Mechanicville Division. This project as originally proposed would correct these deficiencies, eliminating the potential for loss of load for the subject contingencies and improving overall system resiliency and restoration times. It would also accommodate increasing demand in the region.

Investment Clasification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$32,734

Auburn Transmission Project

Project Scope:

This project includes the construction a new 115 kV transmission line ("Phase 1") and enhancement of an existing 115kV circuit ("Phase 2"), both running approximately 14.5 miles from National Grid's Elbridge Substation to NYSEG's State Street Substation in Auburn, as well as associated work at both substations. The route of the project follows an approximately 4.2 mile existing NYSEG right-of-way and an approximately 10.3 mile existing National Grid right-of-way. Phase 1 would add a new circuit between the two substations. Phase 2 would increase the capacity of the existing circuit between the two substations comprised of NYSEG's existing 115kV Line 972 and National Grid's existing Line 5. This Phase 2 increase would be accomplished by NYSEG rebuilding its 4.2 mile Line 972 and National Grid busing together its 10.3 mile Line 5 with the conductors presently comprising the same 10.3 section of its Line 15, which is double-circuited with Line 5 for that length. To allow use of Line 15 for this purpose, Phase 2 also includes electrically relocating Line 15 to new conductors that would be installed on the double-circuit structures installed for the 10.3 mile portion of the Phase 1 new line in National Grid's right of way.

Reasons and Benefits:

The Auburn Transmission Project is needed under NERC Bulk Electric System Planning Criteria for N-1 contingency and NYSEG's internal planning criteria to reinforce NYSEG's electric transmission system in its Auburn Division. Currently, NYSEG's ability to ensure reliable service to customers in this division is dependent on both of the generating units at the Cayuga Generating Facility being available to operate. The project will enable NYSEG to maintain adequate system normal and single contingency service throughout the Auburn Division during temporary or extended outages of generating units at the Cayuga Generating Facility.

Investment Clasification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment:	$6,353
2015 and Future Investments:	$75,845

Marcy South Series Capacitance

Project Scope:

This project includes the re-conductoring of a 22 mile section of the NYSEG-owned 345 kV Transmission Line Fraser-Coopers Corner and installation of a 240 MVAr Capacitor Bank in series connection to the Transmission Line Fraser-Coopers Corner at the Fraser substation.

Reasons and Benefits:

Together with the installation by the New York Power Authority ("NYPA") of two additional Capacitor Banks at the Fraser substation, NYSEG's Marcy South Series Compensation ("MSSC") Project will alleviate congestion on the New York State bulk transmission system and provide a partial solution to potential generator retirements, including the retirement of the Indian Point Energy Center ("IPEC"). The Project increases the transfer limit across the Total East and UPNY/SENY interfaces and is one of several projects proposed initially in the Commission's AC Upgrade Proceeding. However, on November 17, 2014 both NYPA and NYSEG withdrew their respective portions of the MSSC Project from any further consideration in the AC Upgrade Proceeding because the Commission previously had determined that the Project is required to meet a reliability need in the event that IPEC is retired and that the MSSC Project is a "no regrets" solution that will benefit energy consumers even in the event that IPEC is not retired.

Investment Clasification:
Mandatory

Planned Capital Investment (000s)

Prior Years Investment:	$2,885
2015 and Future Investments:	$60,589

Java 2nd Transformer and 12kV Conversion

Project Scope:

Add a second substation transformer and two 12 kV distribution circuits. Convert distribution circuits to 12 kV operation.

Reasons and Benefits:

Substation transformer loaded to 100% of rating based on 2012 loading. Loss of this transformer would affect 5 MW of load and 1,665 customers.

Investment Clasification:
System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$10,780

Oakdale Fraser Substation

Project Scope:

Construct a new 345 kV line, 57 miles, from Oakdale Substation to Fraser Substation by converting the existing Oakdale-Kattelville-Jennison 115 kV line to 345 kV operation and extending the line from Jennison on to the Fraser Substation.

Reasons and Benefits:

Project part of a proposal by the NY TRANSCO in the AC Transmission Upgrade proceeding (Case 12-T-0502)

Investment Clasification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$1,602
2015 and Future Investments:	$120

Stillwater Substation- Upgrade Transformer to 14MVA

Project Scope:

Upgrade Stillwater substation with a new 34.5-4.8X12.5 kV, 10/12.5(14) MVA, LTC transformer. Convert approximately two miles of distribution to 12.5 kV from the substation to Colonial Dr.

Reasons and Benefits:

Expand the existing substation to install a new structure to accommodate 34.5 kV motor-operated line load break switches, a 34.5 kV bank breaker, a new 10/12.5(14) MVA, 34.5-4.8x12.5 kV LTC transformer and distribution conversion to 12.5 kV.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$8,563

Davis Road, Replace 115/34.5 kV Transformers #2 & #3 with new LTC's

Project Scope:

Replace the existing 115/34.5 kV, 15/20/25 MVA, non-LTC transformers #2 and #3 at the Davis Road Substation with two new 115/34.5 kV, 20/26/33 MVA, LTC transformers.

Reasons and Benefits:

During the 2012 summer peak period, the loss of Big Tree-Armor 34.5 kV line results in low voltage at Armor and South Park Substations. Up to 31 MW and 13,737 customers could be exposed to these potential problems for up to 325 hours in the 2012 summer.

Investment Clasification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$14,094

West Varysburg 2nd Cicruit (Unload Wales Center)

Project Scope:

Install a second 12.5 KV breaker, voltage regulators and circuit exit at West Varysburg Sub. Convert about 5.3 miles of 4.8 KV Wales Center #326 to 12.5 KV operation.

Reasons and Benefits:

Wales Center 4.8 KV transformer is loaded to 108% of its PLBN rating and National Fuel Gas has requested a new service for 300 KVA of load. To eliminate the overload and provide capacity for NFG about 1050 KVA will be converted to 12.5 KV from W. Vary.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$750

Glenwood - Replace Substation Transformers

Project Scope:

This project consists of the replacement of the two existing 5 MVA 4.8 kV substation transformers with two new 10 MVA transformers that have dual 4.8kV/12.5 kV windings.

Reasons and Benefits:

Upgrading the two 5MVA banks to 10MVA units will relieve the loadings on the transformers and the dual low side windings 4.8KV "delta" and 12.5KV "wye" will allow for a future 12.5kV source that will support the load growth in the area.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$1,000

Dingle Ridge - 2nd Bank and 13.2kV Conversion

Project Scope:

Add a second transformer and 13.2kV conversion at the Dingle Ridge Substation

Reasons and Benefits:

Failure of this transformer will result in the loss of 6MW and service to 783 customers for 10 hours.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$38
2015 and Future Investments:	$6,100

Old Fall substation - Install 2nd LTC Transformer

Project Scope:

Install a second 12/16/20 MVA LTC transformer at the Old Falls Substation. Install three 12.5 kV distribution feeders.

Reasons and Benefits:

The Old Falls Substation transformer tripped in Summer 2011 due to an overload. The summer peak was recorded as high as 24 MVA but the existing substation bank only has a summer PLBN rating of 22 MVA. Loss of this transformer could affect 26 MW of load and 3,600 customers.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$10,280

RG&E

Station 117 - Replace #1 Transformer Bank and convert 3 circuits to 12kV operation.

Project Scope:

Replace transformer bank #1 at Station 117 with a new 34.5-4.16x12.5 kV, 13.4/17.9/22.4 MVA transformer Bank and convert the three existing 4.16 kV distribution circuits to 12.5 kV.

Reasons and Benefits:

The loading on the existing 5.25 MVA transformer banks #1 at Station 117 has reached 92% of its PLBN rating during the summer peak of 2011.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$20,406

Station 218 to Clyde New 34.5kV Transmission Line

Project Scope:

There will be modifications to Circuit 708. Circuit 708 originates from station 199 and serves six substations. In order to split the current load from existing circuit 708, a new 34 kV line, Circuit 804, will be constructed. Circuit 804 will be installed somewhat parallel with 708 to a point near Station 218.
The northern loop of Circuit 708 will be split with half being connected to the new Circuit 804. The other half remains connected to Circuit 708. Circuit 708 will be re-constructed along portions of the route to replace aging infrastructure and improve its line conductor ratings.
This project will require the addition of an outdoor breaker bay and building expansion at Station 199. The work will include, but not limited to the bay and building development, DC Battery System evaluation and design, and SCADA. The existing station has sufficient room to add a second breaker bay.
The existing control building must be increased due to being small and will not have adequate room for the modern control panels, DC system and the telecom system.

Reasons and Benefits:

The existing Station 199 in Clyde to Station 218 line services approximately 25 MW of load which is 9,217 customers. During high load periods, the line goes above its normal rating. This would result in shedding approximately 3MW of load to relive the overload. The period of exposure is approximately 175 hours per year. The criteria used for this project is the system normal criteria for the transmission system that provides when all elements are in-service all elements will be below their normal rating.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$4,365
2015 and Future Investments:	$6,122

Station 23 - New Downtown 115kV Source

Project Scope:

Station 23 will have a new gas-insulated 115kV bus with two new 115/34.5 kV transformers with two 34.5 kV feeds to Station 137. The 115kV line 901 will be upgraded from Station 82 to Station 33 above ground and from Station 33 to Station 23 underground. A phase-shifting transformer will be added on the 920 line at Station 42. The protection on the 901 line will be modified to replace the existing pilot wire relays with dual line current differential relaying over redundant and diverse fiber channels, including corresponding protection changes at the 901 line S82 and S33 remote terminals. Making these changes at Station 23 will resolve the overload issues at Station 137, Station 33 and Station 42.

Reasons and Benefits:

The new 115 kV Source at Station 23 Project is required under RG&E's internal Planning Criteria for N-0 and N-1 contingencies. System issues include System Normal overload of transformers at Station 33 and N-1 contingency overloads to the supply lines at Station 137 and the 115kV supply lines to Station 42. The project will resolve the overload issues and provide a third source to Station 42, which enhances resiliency.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$19,561
2015 and Future Investments:	$91,950

Station 23 - Transformer & 11kV Switchgear

Project Scope:

This project will add an 11 kV GIS and two 115/11 kV transformers to Station 23, as well as add double bus configuration to the 115 kV GIS. Transformers 1T and 2T have corrosion and leak issues and are reaching the end of useful life. Two of the four bus sections of 11kV are overdutied and need to be upgraded for proper fault current ratings. As of today there are 6 overdutied breakers on Bus 1 and 6 on Bus 2 (all approx 125% overdutied). Bus 3 & 4 have all 11kv breakers today at 96% of rated interrupt capacity. Looking toward future planning with all projects included, the breaker duties will continue to increase. Bus 3 and Bus 4 will each have 6 breakers with fault duty equal to 100 - 100.1% of their interrupt capability leaving no interrupt capability room for system changes.

Reasons and Benefits:

Transformer replacements are due to aging infrastructure. 1T and 2T are leaking and reaching the end of their useful lives. Two of the four bus sections of 11 kV are overdutied and need to be upgraded for proper fault current ratings. Bus 3-4 today is at 96% of rated interrupt capacity. This project will insure the reliability of supply from Station 23.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$6,106
2015 and Future Investments:	$4,229

Ginna Retirement Transmission Alternative and Fifth Bay - Station 80

Project Scope:

This project consists of consists of two major elements and work at Station 80. First, RG&E will upgrade the Company's facilities at Station 122. The work at Station 122 consists of: replacing three transformers at Station 122 with new transformers rated at 494, 603, and 630 MVA; reconfiguring the 345 kV circuit breaker to a breaker and a half configuration; and replacing the 115 kV open-air breaker configuration with a 115 kV gas-insulated switchgear arranged in a breaker and half configuration. Second, RG&E will uprate five circuits: 34.5 kV Circuit 718; 34.5 kV Circuit 735; 34.5 kV Circuit 770; 34.5 kV Circuit 623; and 11.5 kV Circuit 623. Finally, RG&E will construct a new bay of 345 kV circuit breakers at Station 80 to reconnect transformers #5 and #3.

Reasons and Benefits:

The upgrades and reconfiguration included in this project are needed to solve the thermal overloads at Station 122 and to ensure that only one bulk transformer can be lost in a single contingency. A GIS breaker and half is needed to replace the existing 115kV park due to a fault over duty failure because of the replacement of the transformers. The new (fifth) 345 kV bay is needed to resolve the stuck breaker at Station 80, which will ensure that only one bulk transformer is lost in a single contingency. Additionally, the upgrade of circuits enables the RG&E network to transfer power from Station 80 to Station 122 and vice versa. This ability allows for the reduction or elimination of thermal overloads under contingency conditions.

Investment Clasification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$149,526

Rochester Area Reliability Project

Project Scope:

As part of the RARP, Station 255, a new 345kV bulk power system station, will be constructed and located approximately 3.8 miles west of the RG&E Station 80. The two NYPA 345kV cross-state transmission lines will be brought into the new station. A new 345kV line will be constructed between the new substation and Station 80. Two 115kV lines will be emanating from the new substation. The first line, which is approximately 10 miles long, will tie into Station 418. The second line, which is approximately 14 miles long, will tie into the RG&E 115kV system at Station 23. An Article VII petition has been filed with the PSC.

Reasons and Benefits:

The RARP was originally designed to provide adequate supply to the RG&E service area during refueling outages of the Ginna Nuclear Plant, which, when needed, are scheduled during light load periods. The project reduces loading values already below LTE rating at station 122 during the temporary outage of Ginna in peak load periods and also provides for future load growth. With the announcement of the proposed retirement of Ginna, new studies showed the need for immediate reinforcement of the transmission system elements at Station 122 to bring loading below Normal ratings, followed by the later completion of the RARP scope of work to address load growth and system resiliency under N-1-1 planning criteria.

Investment Clasification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$45,371
2015 and Future Investments:	$223,126

Station 89, Replace #2 Transformer

Project Scope:

Replace the existing 34/4 kV transformer with a 34/12 kV unit. Convert the two existing 4 kV circuits to 12 kV.

Reasons and Benefits:

The service area of this new 12 kV source can be extended northward where the 12 kV capacity will benefit an adjacent town that is experiencing significant new residential and commercial growth with limited 4 kV supply capacity.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$12,251

Station 46 - Replace #1 and #3 Transformer Banks

Project Scope:

Replace transformer banks #1 and #3 at Station 46 with two new 34.5-4.16x12.5 kV, 13.4/17.9/22.4 MVA transformer banks.

Reasons and Benefits:

The loading on the existing 6.25 MVA transformer banks #1 and #3 at Station 46 has reached 99% and 82%, respectively, of their PLBN rating respectively during the summer peak of 2011.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$4,630

Station 43 - Replace #3 and #4 Transformer Banks.

Project Scope:

Replace transformer banks #3 and #4 at Station 43 with two new 34.5-4.16x12.5 kV, 13.4/17.9/22.4 MVA transformer banks.

Reasons and Benefits:

The loading on the existing 6.25 MVA transformer banks #3 and #4 at Station 43 has reached 113% and 95% of their PLBN rating respectively during the summer peak of 2011.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$7,285

Stations 67 to 418 New 115kV Transmission Line

Project Scope:

New 115kV line from STA 67 to STA 418. At STA 67: Abandon the existing circuit breaker 92602 and add a new line terminal for circuit 926. Add a new circuit breaker 8x6772 to Bus #1 to connect new 115kV Bus #3 for accomodation of the new line positions (L939) and connection points for a mobile sub and future 4T. Also included is installing new protection and control for L939 and Bus #3, upgrading Circuit 910 protection to match new relaying at Station 418, and upgrade control relay for circuit 926. At STA 418: Replace the existing 4 fault duty circuit switchers. Three (3) new CCVT's will be installed on 115kV bus section #2. Slipover CTs will be added to the existing transformers. Also added is a new Control house for all new P&C.

Reasons and Benefits:

Station 418 serves approximately 50MW of load which is approximately 9,800 customers which includes Kodak and Rochester Tech. During high load periods, loss of the 910 line results in low-voltages and overloads above STE on the 917 line. This would result in shedding all 50 MW of load at Station 418. The period of exposure is approximately 300 hours per year.
On February 23, 2011 an outage was experienced on the 917 circuit that cascaded resulting in the loss of 46,000 customers.

A new line between STA 418 and STA 67 will resolve the contingency issue for L910. The criteria being used for this project is the single contingency criteria. The criteria provides for two things; first, that with the loss of any element, the remaining elements stay above the post contingency voltage. Second, that with the loss of any element, the remaining elements stay below their long term contingency rating.

Investment Clasification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$2,319
2015 and Future Investments:	$15,149

Station 192 transformer/facilities upgrade

Project Scope:

Replace the existing 1500 KVA station transformer with new 5/7 MVA transformer and upgrade station equipment to facilitate new installation. Included in the upgraded equipment are:
1) replace existing secondary switch,
2) relocate exsiting regulator and
3) add new regulator to individual station circuits.

Reasons and Benefits:

Existing station transformer is overloaded per the 2012 summer survey. The project will satisfy existing demand requirements.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$4,943

Station 168 Service Area Reinforcement

Project Scope:

Sectionalize National Grid 115 kV trunks #2 and #4 at Station 168 with 115 kV circuit breakers. Install fixed and switched voltage controlled capacitors along 34.5 kV circuits presently served from Station 168.

Reasons and Benefits:

In the event of a contingency under summer peak or winter peak load conditions, the remaining 115/34.5 kV transformer at Station 168 will be loaded above its thermal capacities. Sectionalizing the line and adding the capacitors will improve system reliability.

Investment Clasification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$3,527
2015 and Future Investments:	$25,702

Station 262- New 115kV/34.5kV Substation

Project Scope:

The project includes the following components:
•New 115/34.5 kV, 57 MVA substation, one transformer of 57 MVA in Rochester
•New 1.5-mile, 34.5 kV undeground line from the new substation to Station 26
•New 34.5/11.5 kV, 37 MVA transformer along with the modernization of the switchgear and communication equipment at Station 26

Reasons and Benefits:

Loss of circuit 741 (S33-S26) or loss of 34.5/11.5 kV transformer at Station 26 results in excessive overload of 11.5 kV Circuit 629. Exposure is 175 hours per year, potentially affecting 700 customers and 38 MW of load.

Investment Clasification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$7,650
2015 and Future Investments:	$17,091

Station 95 - Add 2nd 34.5-11.5kV Transformer - Rochester

Project Scope:

Station 95 serves approximately 15MW of load which relates to approximately 2,320 customers, one of which is Kodak. During high load periods, the loss of the existing 34.5kV/11.5kV transformer at Station 95 results in overloading the 11.5kV 676 Line. This would result in a cable failure and low-voltages to the customers supplied from Station 95, including Kodak. The customer load would then have to be transferred to Station 403 to supply the impacted customers. Load would need to be reduced by 3MW.

Reasons and Benefits:

The period of exposure is approximately 850 hour per year. The criterion used to justify this project is the single contingency criteria for the transmission system that provides for loss of any element results in the remaining elements being below their long-term emergency rating.

Investment Clasification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$1,656
2015 and Future Investments:	$2,213

Station 56 Additional 12kV Source

Project Scope:

Station 56 is a 12kV source which supplies approximately 4,500 upscale, mainly residential customers in the Towns of Pittsford and Brighton. Station 53 operates at 4kV supplying 1,400 customers in an adjacent area.
The project is to install a new source for the existing Station 56 12kV yard with installing a new 115-12kV, 12/22 MVA transformer (4T), three 115kV breakers and associated disconnect switches, 115kV bus work, 12kV GIS equipments, 12kV GIS building and new control room in the GIS building. All the site work will be contained within the fenced area of the existing substation 115/12kV yard.

Reasons and Benefits:

This project will improve potential reliability to the entire area while allowing further room growth. The Station 56 transformer is loaded beyond 90% of its 22MVA capability at peak periods, while Station 53 is loaded at peak to its Planned Loading Beyond Nameplate rating. There are insufficient ties to supply either service area in the event of a transformer problem resulting in long outage durations. This project will eliminate Station 53 and increase the capacity at Station 56 to improve potential reliability to the entire area while allowing room for further growth. Through the application of the current Iberdrola substation design standard, the project will upgrade the existing equipment and provide increased operational capability.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$8,793
2015 and Future Investments:	$12,817

Station 49 - Replace 34.5-11.5kV Xfmr - Rochester

Project Scope:

This project will include the replacement of Transformer 3 and 4 (18.75 MVA) with Transformer 5 and 6 (20/26.6/33.3 (37.3) MVA) and the installation of new 11 kV gas insulated switchgear (GIS) to be located in the existing control house. Additional property is being acquired from Bausch & Lomb to accommodate the transformer replacement and oil containment. The two 34.5/11.5kV transformers will be replaced with larger LTC units.

Reasons and Benefits:

Station 49 serves approximately 22MW of load which is 6230 customers which includes Bausch-Lomb and Rochester General Hospital. During high load periods, loss of one of the 34.5kV/11.5kV transformers at Station 49 results in overloading the other 34.5/11.5kV transformer above its Longterm Emergency Rating (LTE) and voltages at sub-marginal levels. This would result in the shedding 2MW of load to relieve the overload on the remaining transformer. The period of exposure is approximately 400 hours per year. The criteria used for this project is the single contingency criteria for the transmission system that provides for loss of any element results in the remaining elements being below their long-term emergency rating.

Investment Clasification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$4,619
2015 and Future Investments:	$5,858

Sectionalize 115kV Circuit 917 (S7 - S418)

Project Scope:

The RG&E owned 115kV circuit number 917 includes 6 tapped substations and over 30,000 customers. The existing #917 line protection is provided by primary and secondary step distance electromechanical relays located at station 418 and microprocessor based relays at station 7.
The purpose of this project is to minimize the impacts of faults on this line by breaking up the line at various locations using breakers and possibly motor-operated switching sectionalizing schemes depending on what can be done at various substations. The solution required to sectionalize the line is to install circuit breakers and switches in each of the 115kV buses at station 69 and 70 and install GIS-type compact switching devices for station 71. It is also required to equip the existing 115kV disconnect switches at station 69, 70, and 113 with motor operating mechanisms as well as supervisory elements for remote control. Protections and controls necessary to isolate each section of the line in the minimum time will also be provided for the project, as well as fiber optic communication.
In 2015, Station 69 above ground construction will be completed as well as completing SPC 3-7 for Station 70 and beginning detailed engineering for Station 71.

Reasons and Benefits:

Sectionalization of the existing line at various locations by use of breakers at Station 71 and motor operated sectionalizing schemes at Stations 69 and 70 will minimize the number of customers affected by a persistent fault. Station 113 is currently used to sectionalize the line. Motor operated switches will be added at this station to ensure reliability. This project also includes the establishment of necessary communication, control and protection. Currently, the circuit is sectionalized in two and a failure will affect half of the customers. Adding sections will allow the automatic isolation of a persistent fault to a smaller section and therefore affect fewer customers.

Investment Clasification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$3,216
2015 and Future Investments:	$7,823

Station 51 transformer/facilities upgrade and secondary source addition

Project Scope:

Replace existing Station 51 transformer with a new 10 MVA 11/4 kV LTC type transformer and upgrade the existing facilities as required. Add a second 10 MVA, LTC type 34.5/4 kV transformer and extend Circuit 773 from a location at or near Station 88.

Reasons and Benefits:

Comply with SAIFI requirement to increase Station 51 capacity and develop a second source contingency. This is a reliability improvement project.

Investment Clasification:

System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$9
2015 and Future Investments:	$9,316

Attachment 3

List of Electric Projects Included in Mandatory

NYSEG	2015	2016	2017	2018	2019
PSC/NERC/FERC	**37,949,658**	**64,226,857**	**46,167,093**	**33,778,472**	**22,857,881**
Bright Line	376,999	4,000,000	10,000,000	10,000,000	10,000,000
Storm	2,137,632	1,326,000	1,352,520	1,379,570	1,407,162
Distribution Line Inspections	8,127,767	9,241,393	9,651,687	10,584,900	11,450,719
New Gardenville 230 kV Substation Install DME	-	-	-	-	-
Auburn Transmission Project (Auburn 345kV Source)	15,795,515	48,867,858	11,181,158	-	-
Columbia County Transmission Project (Klinekill 115kV)	6,146,815	791,606	13,981,728	11,814,001	-
IEC 61850	2,500,000	-	-	-	-
Energy Control Center (Integrated EMS/DMS/OMS Project)	2,864,930	-	-	-	-
Contractual	**7,096,079**	**21,833,993**	**43,875,807**	**2,622,416**	**2,664,864**
Homer City Capital	-	500,000	500,000	500,000	500,000
Relocate Electric Facilities	4,210,719	2,040,000	2,080,800	2,122,416	2,164,864
Marcy South Series Capacitance	2,885,360	19,293,993	41,295,007	-	-
Customer Driven	**18,600,648**	**15,669,217**	**16,019,938**	**16,380,373**	**16,882,457**
AES Projects	3,261,726	-	-	-	-
Industrial/Commercial	1,577,282	1,248,788	1,273,764	1,299,239	1,325,224
Residential	6,253,783	8,000,000	8,240,000	8,487,200	8,741,816
Service Connects	3,867,107	2,787,247	2,842,992	2,899,852	2,957,849
Meters	2,610,750	2,633,182	2,633,182	2,633,182	2,764,841
Street Lighting	1,030,000	1,000,000	1,030,000	1,060,900	1,092,727
Safety and Environmental	**4,540,000**	**-**	**-**	**-**	**-**
NY SPCC	2,000,000	-	-	-	-
Transit St Substation MGP Remediation	1,770,000	-	-	-	-
McMaster St. MGP Remediation	170,000	-	-	-	-
Clark Street MGP Remediation - Auburn	600,000	-	-	-	-

RG&E	2015	2016	2017	2018	2019
PSC/NERC/FERC	**24,559,085**	**117,076,000**	**30,022,120**	**11,379,262**	**11,417,457**
Bright Line	2,014,542	5,000,000	10,000,000	10,000,000	10,000,000
Storm	519,424	306,000	312,120	318,362	324,730
Distribution Line Inspections	-	1,000,000	1,030,000	1,060,900	1,092,727
IEC 61850 Servers	854,800	-	-	-	-
Energy Control Center (Integrated EMS/DMS/OMS Project)	970,319	-	-	-	-
Ginna Retirement Transmission Alternative	20,200,000	110,770,000	18,680,000	-	-
Contractual	**8,445,229**	**8,704,962**	**8,879,061**	**9,056,642**	**9,237,775**
U of R New 115-34kV Substation 251	(200,000)	-	-	-	-
Relocate Electric Facilities	-	352,903	359,961	367,160	374,503
Major Relocation Projects	8,645,229	8,352,059	8,519,100	8,689,482	8,863,272
Customer Driven	**6,450,034**	**9,325,928**	**9,498,325**	**9,674,469**	**9,914,751**
Industrial/Commercial	1,299,786	2,584,765	2,636,460	2,689,189	2,742,973
Residential	1,949,066	2,783,580	2,839,252	2,896,037	2,953,957
Service Connects	649,280	1,445,492	1,474,402	1,503,890	1,533,968
Meters	1,289,478	1,206,091	1,206,091	1,206,091	1,266,396
Street Lighting	743,000	1,000,000	1,030,000	1,060,900	1,092,727
Storm	519,424	306,000	312,120	318,362	324,730
Safety and Environmental	**2,222,500**	**-**	**-**	**-**	**-**
NY SPCC	2,000,000	-	-	-	-
Network Monitor, Oper, Security, RGE	222,500	-	-	-	-

Attachment 4

System Planning Projects

Company	Title	Investment Clasification	2015	2016	2017	2018	2019
NYSEG							
NYSEG	Coddington Add LTC Capability to 115/34.5kV Transformer	Mandatory	100,000	-	-	-	-
NYSEG	Flat Street Substation New Transformer	Mandatory	650,001	-	-	-	-
NYSEG	Willet Substation New Transformer	Mandatory	975,972		-	-	-
NYSEG	Fraser-Gilboa 345kV 35 Line(GF5) Relay & Comm. Replacement	Mandatory	200,000	396,854	-	-	-
NYSEG	New Gardenville 230 kV Substation Install DME	Mandatory	100,000	-	-	-	-
NYSEG Mandatory Projects - System Planning			2,025,972	396,854	-	-	-
NYSEG	Mechanicville Reinforcement Project, Construct New Luther Forest Substation	System Capacity	960,000	-	-	-	-
NYSEG	Line 807, Convert to 115kV Operation, Brewster	System Capacity	1,500,000	423,669	-	-	-
NYSEG	Line 601 Raylinski Tap to Coons Crossing Rebuild	System Capacity	1,629,999				
NYSEG	Line 879	System Capacity	712,000				
NYSEG	Line 526, Rebuild Coddington-South Hill 34.5 kV Line	System Capacity	-			-	200,000
NYSEG - System Capacity Projects- System Planning			4,801,999	423,669	-	-	200,000
NYSEG	Wood Street - Add 3rd 345/115 kV Transformer	Reliability Risk	400,000	100,000	3,165,109	7,260,817	-
NYSEG	Coopers Corners, Add 3rd 345/115 kV Transformer	Reliability Risk	-	-	461,445	2,345,742	7,063,397
NYSEG	South Perry New 115kV Transformer	Reliability Risk	741,480	1,053,892		-	-
NYSEG	Meyer Substation New Transformer - 115/34.5kV	Reliability Risk	800,000	854,481	943,183	-	-
NYSEG	Windham Substation 115 KV Capacitor Bank Addition	Reliability Risk	550,000	100,000	874,244	-	-
NYSEG	Eelpot New Transformer	Reliability Risk	4,376,278	100,000	100,000	4,349,285	-
NYSEG	Fraser Sub - Add 2nd 345/115 kV Transformer	Reliability Risk	200,000	100,000	1,572,074	3,910,887	7,871,504
NYSEG	Perry Center Area Install New 34.5kV Substation	Reliability Risk	2,235,064	100,000	2,318,869	-	-
NYSEG	South Perry New 230kV Transformer	Reliability Risk	-	100,000	4,838,857	-	-
NYSEG	Westover Substation New 115kV Transformer and Binghamton Division Capacitors	Reliability Risk	1,700,000	100,000	470,895	2,000,000	4,528,685
NYSEG	Stephentown Substation New Transformer	Reliability Risk	1,690,000	100,000	1,355,014	-	-
NYSEG	Oakdale Reconfiguration Project	Reliability Risk	300,000	100,000	100,000	218,254	977,272
NYSEG	Watercure Rd. - 2nd 345 kV Transformer	Reliability Risk	1,500,001	100,000	179,744	1,238,585	1,253,048
NYSEG	Gardenville, Add 3rd 230/115 kV Transformer	Reliability Risk	-	-	-	-	660,072
NYSEG	Oakdale Faser Substation	Reliability Risk	120,000	-	-	-	-
NYSEG	Davis Road, Replace 115/34.5 kV Transformers #2 & #3 with new LTC's	Reliability Risk	-	-	-	-	5,508,998
NYSEG	Erie Street, Add 3rd 115/34.5 kV Transformer	Reliability Risk	-	-	-	-	-
NYSEG	Line 810, Rebuild Carmel-Adams Corners 46 kV Line	Reliability Risk	-	-	-	-	-
NYSEG	Mechanicville, Circuit 620 (BRAINARD TAP - WEST LEBANON Sw. Sta.), Install Static and C	Reliability Risk	-	-	-	-	-
NYSEG	Geneva, Add Switched Capacitor Bank at Five Points Prison Substation	Reliability Risk	-	-	-	-	902,643
NYSEG - Reliability Risk Projects - System Planning			14,612,822	2,908,373	16,379,434	21,323,570	28,765,619
NYSEG	Robinson Road 230kV Transformer Replacement Project - Lockport	Asset Condition Replacement	100,000	-	-	-	-
NYSEG - Asset Condition Projects - System Planning			100,000	-	-	-	-

Company	Title	Investment Clasification	2015	2016	2017	2018	2019
RG&E							
RG&E	U of R New 115-34kV Substation 251	Mandatory	(200,000)	-	-	-	-
RG&E	IEC 61850 Servers	Mandatory	854,800	-	-	-	-
RG&E	Station 33 - Spare Transformer	Mandatory	350,000	-	-	-	-
RG&E	Move circuits 904 and 905 from Double Circuit Towers to separate towers	Mandatory	-	-	8,000,000	10,000,000	-
RG&E	Station 70 - Auto sectionalization 115kV Circuit 917	Mandatory	-	-	8,000,000	10,000,000	-
RG&E - Mandatory Projects - System Planning			1,004,800	-	16,000,000	20,000,000	-
RG&E	Station 218 to Clyde New 34.5kV Transmission Line	System Capacity	6,121,671	-	-	-	-
RG&E	Station 23 - New Downtown 115kV Source	System Capacity	9,993,728	5,963,565	17,885,132	12,556,258	20,551,610
RG&E	Station 23 - Transformer & 11kV Switchgear	System Capacity	1,800,000	100,000	2,329,246	-	-
RG&E - System Capacity Projects - System Planning			17,915,399	6,063,565	20,214,378	12,556,258	20,551,610
RG&E	Station 168 Service Area Reinforcement	Reliability Risk	1,061,247	3,991,123	4,387,094	7,812,877	4,449,181
RG&E	Station 262- New 115kV/34.5kV Substation	Reliability Risk	4,105,000	100,000	2,363,252	2,022,763	3,500,000
RG&E	Rochester - Add 35kV Circuit - Offload Circuit 778	Reliability Risk	-	-	-	-	-
RG&E	Station 95 - Add 2nd 34.5-11.5kV Transformer - Rochester	Reliability Risk	940,000	1,272,938	-	-	-
RG&E	Station 49 - Replace 34.5-11.5kV Xfmr - Rochester	Reliability Risk	1,003,250	100,000	2,754,619	2,000,000	-
RG&E	Sectionalize 115kV Circuit 917 (S7 - S418)	Reliability Risk	1,489,716	100,000	1,478,381	2,754,619	2,000,000
RG&E	Stations 67 to 418 New 115kV Transmission Line	Reliability Risk	-	-	-	-	-
RG&E - Reliability Risk Projects - System Planning			**8,599,213**	**5,564,061**	**10,983,346**	**14,590,259**	**9,949,181**

Attachment 5

Distribution Planning Projects

Company	Title	Investment_Classification	2015	2016	2017	2018	2019
NYSEG							
NYSEG	Tom Miller Rd New Substation	Mandatory	1,103,000	-	-	-	-
NYSEG	Harris Lake - Diesel Generator Upgrade	Mandatory	5,934,457	-	-	-	-
NYSEG	Silver Creek Substation New Transformer	Mandatory	1,480,000	-	-	-	-
NYSEG	Keuka Substation - Replace Bank #2 Transformer	Mandatory	249,977	-	-	-	-
NYSEG - Mandatory - Distribution Planning			**8,767,434**	-	-	-	-
NYSEG	Pershing Ave Step Transformer Replacement	System Capacity	-	-	-	-	-
NYSEG	Dingle Ridge - 2nd Bank and 13.2kV Conversion	System Capacity	500,000	1,044,977	4,555,023	-	-
NYSEG	Glenwood - Replace Substation Transformers	System Capacity	450,375	1,000,000	-	-	-
NYSEG	West Varysburg 2nd Cicruit (Unload Wales Center)	System Capacity	-	750,000	-	-	-
NYSEG	Stillwater Substation- Upgrade Transformer to 14MVA	System Capacity	200,000	2,453,666	5,909,819		
NYSEG	Chenango Bridge Substation 743 Regulation	System Capacity	-	250,000	-	-	-
NYSEG	Morningside Heights - Add a 2nd Transformer Bank and 3rd circuit position	System Capacity	500,000	-	-	-	-
NYSEG	Old Fall substation - Install 2nd LTC Transformer	System Capacity	500,000	3,737,911	6,541,736	-	-
NYSEG	Sackett Lake Sub - Replace transformer with 7.5MVA unit and convert distributio	System Capacity	200,000	-	-	-	-
NYSEG	Hilldale 115kV source, transformer bank upgrade and 2nd 12kV distribution circu	System Capacity	-	-	9,272,478	8,435,827	-
NYSEG	Walden 35kV Conversion	System Capacity	-	500,000	-	-	-
NYSEG	West Davenport Sub - Replace sub transformer with non-LTC 7.5/10.5MVA unit.	System Capacity	-	-	-	2,826,892	3,574,913
NYSEG	Orchard Park - Add a 2nd Transformer Bank	System Capacity	-	-	-	4,136,119	4,483,537
NYSEG	Holland Transformer Replacement	System Capacity	-	-	-	115,306	3,359,202
NYSEG	Bulkhead - Replace Transformer Bank#2	System Capacity	-	-	-	-	-
NYSEG	Sloan - Add a 2nd Transformer Bank and 4th circuit position.	System Capacity	-	-	-	-	-
NYSEG	Crafts - Add 2nd Transformer and 4th 13.2kV circuit position	System Capacity	955	-	-	-	
NYSEG	Java 2nd Transformer and 12kV Conversion	System Capacity	-	-	-	489,115	1,048,207
NYSEG - System Capacity - Distribution Planning			2,351,331	9,736,554	26,279,056	16,003,260	12,465,860

RG&E							
RG&E	Station 56 Additional 12kV Source	System Capacity	4,024,000	-	-	-	-
RG&E	Station 192 transformer/facilities upgrade	System Capacity	-	-	2,678,050	2,265,063	-
RG&E	Station 117 - Replace #1 Transformer Bank and convert 3 circuits to 12kV operat	System Capacity	-	-	5,000,000	6,406,476	9,000,000
RG&E	Station 43 - Replace #3 and #4 Transformer Banks.	System Capacity	-	2,500,000	4,785,220	-	-
RG&E	Station 51 transformer/facilities upgrade and secondary source addition	System Capacity	-	4,000,000	4,126,773	1,189,447	-
RG&E	Station 46 - Replace #1 and #3 Transformer Banks	System Capacity	-	-	1,000,000	1,709,241	1,920,369
RG&E	Station 89, Replace #2 Transformer	System Capacity	-	-	-	-	3,792,711
RG&E - System Capacity - Distribution Planning			4,024,000	6,500,000	17,590,043	11,570,227	14,713,080

Attachment 6

List of Electric programs included in Asset Condition Replacement

NYSEG	2015	2016	2017	2018	2019
Distribution Operations General Equipment	-	510,000	520,200	530,604	541,216
Transmission Line	1,402,000	4,605,300	4,697,406	4,791,354	4,887,181
Distribution Line	19,994,563	14,500,000	14,935,000	15,383,050	15,844,542
Transmission and Distribution Fault Indicators	-	250,000	250,000	250,000	-
Switch Replacement Program	-	300,000	300,000	-	-
T&D Reject Pole Replacement	-	500,000	515,000	663,502	683,407
Distribution substation work	5,162,984	1,428,000	1,456,560	1,485,691	1,515,405
Substation Modernization (90%)	-	-	221,769	503,179	500,000
Substation Transformer Transmission Replacement p	-	1,000,000	1,000,000	1,000,000	1,000,000
Substation Transformer Distribution Replacement pr	-	1,000,000	1,000,000	1,000,000	1,000,000
Silicon Carbide Change out Program	-	500,000	500,000	250,000	250,000
Substation Insulator Change out Program	-	-	950,000	950,000	950,000
Breakers	-	2,666,973	2,717,771	2,784,769	2,868,866
Batteries	-	1,166,667	1,190,000	1,213,800	1,238,076
Substations General Equipment	-	153,000	156,060	159,181	162,365
Asset Condition - Red Health Index	-	11,250,000	12,000,000	12,750,000	13,500,000
NYSEG Total	**26,559,547**	**39,829,940**	**42,409,767**	**43,715,130**	**44,941,057**

RG&E	2015	2016	2017	2018	2019
Distribution Operations General Equipment	-	255,000	260,100	265,302	270,608
Transmission Line	450,000	367,200	374,544	382,035	389,676
Distribution Line	-	5,000,000	5,150,000	5,304,500	5,463,635
T&D Switch Replacement Program	-	-	318,270	327,818	337,653
T&D Reject Pole Replacement	-	605,000	623,150	641,845	661,100
Distribution substation work	-	831,541	848,172	865,135	882,438
Substation Modernization (90%)	5,634,141	-	-	1,670,104	1,547,080
Substation Transformer Transmission Replacement p	-	-	1,000,000	3,000,000	3,000,000
Substation Transformer Distribution Replacement pr	-	-	3,000,000	3,000,000	3,000,000
Old Insulator Change out Program		750,000	750,000	750,000	750,000
Silicon Carbide Change out Program	-	150,000	150,000	150,000	150,000
Distribution Fault Indicators	-	100,000	100,000	-	-
Padmount Switchgear Replacement	-	300,000	300,000	300,000	300,000
Breakers	680,000	1,666,820	1,702,219	1,723,453	1,729,341
Batteries	680,000	1,000,000	1,020,000	1,040,400	1,061,208
Substations General Equipment	80,000	102,000	104,040	106,121	108,243
Asset Condition - Red Health Index	-	3,750,000	4,000,000	4,250,000	4,500,000
RG&E Total	**7,524,141**	**14,877,560**	**19,700,495**	**23,776,712**	**24,150,982**

Attachment 7

List of Gas Projects/Programs included in Mandatory

NYSEG	2015	2016	2017	2018	2019
Replace Croton River Crossing	230,122		230,000	-	-
North Salem Franchise Expansion	22,600	13,000	24,000	-	-
Plattsburgh Gas Franchise Expansion	4,728,735	1,315,000	1,059,000	315,000	-
Lansing / Freeville - Regulator Station - Gas Reinforcement Project	6,184,624	12,152,000	280,000	-	-
Enhanced First Responders and Fire Training Mobile Facility and Program,	-	750,000	-	-	-
Leak Prone Main Replacement Program	11,486,468	12,190,524	13,534,181	14,908,816	15,049,054
Leak Prone Services Replacement Program	6,853,592	5,492,980	6,407,347	7,704,727	9,541,003
Minor Services, Install Gas Service	4,593,563	3,522,450	3,645,647	4,234,305	4,177,603
Minor Distribution Mains, Install Gas Mains	2,536,837	3,052,790	3,116,899	3,182,353	3,249,183
Gas Meters	3,943,400	3,023,565	3,114,272	3,207,700	3,303,931
Gas Regulators	295,500	294,761	309,500	318,785	328,349
Critical Valve Installations, Binghamton	81,360	150,000	153,150	156,366	-
Chemung County Gas Service Replacements	-	5,650,000	-	-	-
Distribution Main Replacement, Replace Gas Mains	651,322	765,750	781,831	798,249	815,012
Large Government Jobs (to be identified) - NYSEG	-	2,000,000	2,042,000	2,084,882	2,128,665
Minor Government Jobs, Replace Gas Mains, NYSEG	761,889	842,325	860,014	878,074	896,514
NYS Route 281 - Distribution Piping - (West Rd), Replace Gas Mains, Cortland	1,215,000	-	-	-	-
Mechanicville Compressed Natural Gas Station and Facilities - Project	1,631,600	-	-	3,000,000	-
Outage Management System, NYSEG	-	-	-	2,000,000	-
Total - NYSEG	**45,216,612**	**51,215,145**	**35,557,840**	**42,789,258**	**39,489,313**

RG&E	2015	2016	2017	2018	2019
Recycled Energy Development (RED) Transmission Gas Main Extension	-	4,500,000	11,200,000	-	-
Inner Loop - Gas Main Project - Distribution Piping	980,000	-	-	-	-
MF60 Southeast	620,000	-	-	-	-
Enhanced First Responders and Fire Training Facility and Program, RG&E	-	2,700,000	-	-	-
Incremental Customer Growth - Gas Related Projects - RG&E	-	2,500,000	2,552,500	2,500,000	2,500,000
Leak Prone Main Replacement Program	10,842,911	12,496,824	13,872,974	16,446,185	16,618,707
Leak Prone Services Replacement Program	2,174,235	2,261,515	2,688,462	3,051,004	3,477,452
Install New Gas Services, RG&E	3,143,932	3,369,300	3,504,235	3,708,877	3,786,764
Gas Distribution Mains - New Installations - RG&E	2,032,890	1,939,900	1,980,638	2,022,231	2,064,698
Gas Meters	2,944,000	2,290,047	2,358,748	2,429,511	2,502,396
Gas Regulators	178,000	186,200	195,510	205,295	215,555
Gas Distribution Mains - Replacements - RG&E	350,002	301,195	307,520	313,978	320,572
Large Government Jobs (to be identified) - RG&E	-	5,304,500	5,415,895	5,529,628	5,645,750
Minor Government Jobs, Replace Gas Mains	666,878	638,125	651,526	665,208	679,177
Total - RG&E	**23,932,848**	**38,487,606**	**44,728,007**	**36,871,917**	**37,811,072**

Attachment 8

List of Gas Projects included in Distribution Mains – System Capacity

NYSEG	2015	2016	2017	2018	2019
Becketts way - Install Gas Mains	-	-	-	250,000	-
Binghamton 60-PSI System Improvement	-	-	-	600,000	-
Boiceville System Reinforcement	-	-	350,000	-	-
Homer System Upgrade	-	820,000	430,000	440,000	455,000
North Country Franchise Expansion	-	1,375,000	2,357,000	-	-
Vienna Rd -Macedon Feeder Main replacement, Install Gas Mains	-	100,000	5,800,000	1,200,000	-
Town of Vestal and Village of Johnson City, Binghamton, NY	-	1,350,000	-	-	-
Boswell Hill Bare Steel Main Replacement Project	-	1,400,000	1,500,000	1,500,000	-
Port Dickinson Gas Pipeline Loop Extension	-		100,000	1,540,898	1,337,102
Total - NYSEG	**-**	**5,045,000**	**10,537,000**	**5,530,898**	**1,792,102**

RG&E	2015	2016	2017	2018	2019
Northeast 60, Install Gas Mains	-	1,120,000	3,535,000	2,585,000	3,000,000
MF35 Walworth System Improvements	-	-	950,000		
MF60 Northwest, Port of Rochester Development	-	724,500	-	380,000	627,500
Whittier Road Improvement, Phase 4, Install Gas Mains, Roch	-	-	-	-	210,000
MF13 Geneseo Improvement, Install Gas Mains, Roch	-	-	500,000	-	-
MF120 Western Monroe, Install New Regulator Station 500	-	-	500,000	-	-
Mt Read SF115 psi, Replace Gas Mains, Roch	-	1,250,000	1,250,000	-	2,500,000
MF42 Henrietta: Brighton Henrietta Town Line Rd Improvement	-	855,000	-	1,500,000	-
Buffalo Road Rebuild Regulator Station and Replace Gas Main	415,000	2,482,000	-	-	-
New Empire West Gate Station - Build New Gate Station	5,895,435	-	-	-	-
Total - RG&E	**6,310,435**	**6,431,500**	**6,735,000**	**4,465,000**	**6,337,500**

Attachment 9

Description of the Most Significant Gas Projects

Capital Project Summary

NYSEG

Gas RTU/Telemetry Upgrade

Project Scope:

Currently, NYSEG utilizes the Fisher ROC 300 series Remote Terminal Unit (RTU) at all remote operated regulator stations and terminal pressure monitoring locations. The Fisher ROC allows Gas Control to remotely operate and monitor 256 regulator stations and terminal endpoint pressures throughout the NYSEG franchise

Reasons and Benefits:

The Fisher ROC 300 series is obsolete. This project proposes to replace this equipment with the current Fisher FloBoss FB107 technology. Currently NYSGE utilizes the ROC link for communications with the Fisher ROC 300 series and is compatible with the new FloBoss FB107 technology which will minimize impact to field operations. Installation of the FloBoss FB107 comes with a backplane that allows it to fit exactly where the existing Fisher ROC 300 series is mounted which will minimize installation costs.

Investment Classification:

Efficiency

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$1,800

Airport Corporate Park South, Big Flats-Install Gas Main

Project Scope:

Install approximately 5,700' - 6" PE Medium Pressure Gas Main to serve the new Big Flats Industrial Park.

Reasons and Benefits:

This project will be necessary to provide gas service to the new Big Flats Industrial Park.

Investment Classification:

Asset Condition Replacement

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $200

Remotely Operated Valves Program

Project Scope:

This program installs remotely operated valves to protect system operations.

Reasons and Benefits:

This is a system hardening proposal to install remotely operated valves that will protect system operations in the event of an emergency. The installation of remotely operated valves can increase system safety and reliability.

Investment Classification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $1,200

Port Dickinson Gas Pipeline Loop Extension

Project Scope:

Install 12,000 feet of new 8 inch 124 psig wrapped steel gas main.

Reasons and Benefits:

This proposed 124 psig pipeline will provide a two-way feed to supplement the current supply point at Hinman's Corners Station and provide a loop feed to the 20 psig distribution system in the Town of Chenango and the Village of Chenango. This new pipeline will raise the inlet pressure at Hinman's Corners regulator station approximately 10 psig and raise the low pressure point in the 20 psig system approximately 5 psig on the design day.

Investment Classification:

Growth/System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$2,978

Plattsburgh Gas Franchise Expansion

Project Scope:

Extend mains (66500 feet) and services (460) outside existing franchise limits.

Reasons and Benefits:

Comply with PSC order filed 7/24/2014. Meet customer demand and corporate objectives.

Investment Classification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment:	$614
2015 and Future Investments:	$7,103

Phelps (South) Transmission Replacement

Project Scope:

Rebuild Phelps Tap (South) and replace 25,000 feet of 10" steel gas main (162 psi) with 12" steel gas main (203 psi). Add regulation and controls to Millard Tap.

Reasons and Benefits:

The project will increase reliability and capacity to the Geneva System during peak demand by eliminating the operational practice of seasonally opening/closing the Packwood Valve. The project addresses asset condition by replacing transmission pipe installed in the 1940s. In addition, this improvement increases gas capacity by approximately 680 mcfh or 38% above existing capacity.

Investment Classification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $8,471

NYS Route 28, Replace Gas Mains, Cortland

Project Scope:

Replace 12,800 feet of 6" leak prone steel gas main in conflict with proposed NYSDOT road reconstruction prject with 8" plastic gas main on NYS Route 281 between Luker Rd and Copeland Ave.

Reasons and Benefits:

This project is required by regulation to replace gas mains in conflict with street reconstruction projects in accordance with terms and conditions to occupy public rights-of-way. A portion of the gas mains replaced may also qualify toward the replacement of leak prone mains as required by rate cases.

Investment Classification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $1,215

North Country Gas Franchise Expansion

Project Scope:

Extend mains (66500 feet) and services (460) outside existing franchise limits.

Reasons and Benefits:

Meet customer demand and corporate objectives for gas system growth.

Investment Classification:

Growth/System Capacity

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $3,732

Middleport to Medina Interconnect

Project Scope:

Install 11200 of 6” plastic gas distribution main.

Reasons and Benefits:

Middleport has a single feed for its medium pressure system. This system is experiencing commercial growth and lacks the reliability for this new load.

Investment Classification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $575

Mechanicville Compressed Natural Gas Station and Facilities

Project Scope:

The project includes: site development, odorization, regulation, over pressure protection, SCADA etc. for development of Compressed Natural Gas (CNG). Phase 1 is located at Central Avenue, Phase 2 is for a future location to be determined that can accommodate additional CNG trucks for gas demand load growth beyond what Phase 1 can accommodate (2 CNG trucks).

Reasons and Benefits:

The project is necessary to lift a moratorium that has been on file with the PSC since Fall 2012. The moratorium is that NYSEG can no longer support the addition of new customers or added load from existing customers on this gas distribution system. The project will build, connect and maintain compressed natural gas trailer facilities that will provide peak shaving gas supply. This will allow lifting the moratorium and connection of new customers. The existing gas supply from National Grid is insufficient in pressure and flow to meet load growth. The option to improve National Grid's facilities to support NYSEG's increasing customer demand would be a pipeline improvement project on Grid's facilities that would cost $6M to Grid in capital, $6M to NYSEG. NYSEG has been and continues to be in discussion with PSC staff regarding lifting the moratorium by the heating season 2015-2016. The timing of Phase 2 depends on the realization of future load growth and ability of Phase 1 to meet that demand.

Investment Classification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment:	$217
2015 and Future Investments:	$4,632

Lansing / Freeville Gas Reinforcement Project

Project Scope:

Install 7 miles of 10" 124 psig gas main along West Dryden Road and a new 60 psig regulator station at the intersection of Warren Rd and West Dryden Rd. DTI rebuild of Freeville POD (NYSEG capital cost) and NSYEG facilities including: odorization, 60 psi regulation, overpressure protection for 124 psi and 60 psi, and SCADA.

Reasons and Benefits:

The project is necessary to serve growth in the Dryden and Lansing townships. Without these projects a moratorium for areas of Lansing and Dryden will be necessary due to insufficient existing capacity to support further growth in load demand. There is significant pressure from customers, politicians and the PSC for NYSEG to serve the load growth. NYSEG has responded to the PSC IR's regarding a developer's complaint regarding inability to serve and NYSEG's plans for system improvements. Existing design day pressure is calculated to be 14 psi at the system endpoint, less than 50% of maximum operating pressure of 60 psig. The northern system endpoint has experienced pressures of approximately 24 psi during the winters of 2013-2015. Those winter conditions were warmed than the design day condition. This limits the distribution system ability to serve new load growth.

Investment Classification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment:	$512
2015 and Future Investments:	$18,617

Incremental Customer Growth - Gas Related Projects-NYSEG

Project Scope:

Allocate capital funds for infrastructure related to serving new customers.

Reasons and Benefits:

Meet customer demand and corporate objectives.

Investment Classification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$8,028

Route 23 System Reinforcement

Project Scope:

Install 3200 feet of 6" plastic gas main from Cole Road to Morningside Road along Route 23. Install 3500' of 6" plastic gas main from the 4" plastic 45 psig system on NYS Route 7, directional drill under Susquehanna River, I88 and Delaware & Hudson RR, connecting to an isolation valve on the 4" plastic 60 psig system on County Route 47.

Reasons and Benefits:

Looping on Route 23 will improve terminal pressures in West Davenport and on County Route 47. Connecting to the 45 psig system will provide an emergency feed, and facilitate future upgrade of the 45 psig system to 60 psig, creating a continuous loop around the Oneonta system.

Investment Classification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$750

Gas SCADA System Replacement

Project Scope:

This project replaces hardware, the operating system and software for gas SCADA system.

Reasons and Benefits:

This is a computer system to operate the company's gas transmission and distribution system. Due to technology advancements, changes and use, the systems need to be replaced every seven years. Without replacement the software becomes unsupported by the vendor.

Investment Classification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$1,500

South Union Street Bridge Crossing - Replace Gas Main

Project Scope:

Install 2500 feet of 8" plastic gas ditribution main along West River Rd from South Union St west. Install 750 feet 8" high density plastic gas distribution river crossing.

Reasons and Benefits:

This bridge crossing is in poor condition due to corrosion. NYSEG Gas Field Operations and PSC Safety Staff are aware of and monitoring the condition of this bridge crossing. The benefits of this project to install a new river crossing and main are: the new main will eliminate the deteriorated section of existing 8" steel main attached to the bridge on South Union Street in Olean, NY. The new main will maintain the medium pressure loop feed into Olean for reliability and improved pressure.

Investment Classification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $700

Gas Pipeline Susquehanna River Bore Extension Project

Project Scope:

Install 7000 feet of new 10 inch 124 psig wrapped steel gas main.

Reasons and Benefits:

The proposed 124 psig pipeline will tie into the existing 8 inch steel 124 psig pipeline located on the south side of the river in the Town of Vestal. This connection will raise the system pressure on the existing pipeline 20 to 25 psig on the design day

Investment Classification:

Growth/System Capacity

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $1,350

Edgett Street Canal Crossing, Newark - Install Gas Main

Project Scope:

Install 450 feet of 8" high denstiy plastic pipe by directional drilling under the Erie Canal.

Reasons and Benefits:

The existing system is below 70% of maximum operating pressure on design day. The system, particularly the area north of the canal, is experiencing growth and lacks capacity to support additional load. This project will eliminate an existing exposed overhead 1946 unprotected steel main that crosses the canal on an abandoned railroad bridge.

Investment Classification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $500

DeRuyter Transmission Replacement

Project Scope:

Replace approximately 25 miles of 8" 298 psig coated steel gas transmission gas mains with 10" in 4 phases over 4-5 years.

Reasons and Benefits:

The DeRuyter transmission mains were installed in 1953 and lack sufficient capacity to supply the Winney Hill 1st stage regulator station in Oneonta. The increase in capacity will eliminate the need to utilize the compressor located in Norwich. If the compressor is still run, the replacement increases capacity by approximately 590 mcfh or 38% above existing capacity.

Investment Classification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $34,500

Croton River Crossing-Install Alternative Gas Feed

Project Scope:

Retire 10" steel gas main located on bridge and replace with 525' of 10" steel gas main.

Reasons and Benefits:

Main line feed to Brewster division is located on a county bridge that has been closed and will be replaced when county funds become available. Existing bridge that NYSEG's 10" gas main is located on is being demolished and removed by the County Department of Public Works. Install a new gas main tie on the medium pressure (MP) 20 psig MAOP gas pressure system from the existing main located along Middleport Medina Road.

Investment Classification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $460

Critical Valve Installations, Binghamton

Project Scope:

Install gas valves in the Binghamton distribution system.

Reasons and Benefits:

This project will bring the Binghamton gas distribution system into compliance with O&M section 7.500. Due to past pressure upratings from low to medium pressure in areas previously owned by Columbia Gas these areas have insufficient valves to section off customers for emergency operations per section 7.500.

Investment Classification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $541

Chemung County Gas Service Replacements

Project Scope:

Replace all 1' and 1-1/4" leak prone steel medium pressure gas services in the county, approximately 1,000 services per year.

Reasons and Benefits:

This project improves safety and reliability and meets requirements of an order anticipated from the PSC. Field investigation work is in progress.

Investment Classification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $5,650

Bradley St, Install Gas Mains, Auburn

Project Scope:

Tie-in gas main under Owasco Outlet @ Bradley St.

Reasons and Benefits:

This project will eliminate two (1941 and 1952) overhead steel mains and the supporting steel structure that cross the Owasco Outlet. Phase 1 of this project, completed in 2012, included installing a new 8-inch PE main via directional drilling method. this project will connect the new main to existing mains on both sides of the Owasco Outlet.

Investment Classification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $200

Bradley Farms, Rebuild Gas Gate Station

Project Scope:

This gate station project will replace existing equipment that is in poor asset condition, replace buildings in poor condition, demolish buildings and remove equipment no longer necessary, and correct site conditions including grading.

Reasons and Benefits:

The existing station is in poor asset condition, the buildings are deteroriated, and the station is only single-run. Current design standards for a gate station include dual-run regulators for reliabiity of service.

Investment Classification:

Asset Condition Replacement

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $3,300

Boswell Hill Bare Steel Main Replacement Project

Project Scope:

Install new 10 inch wrapped steel gas main.

Reasons and Benefits:

Existing gas main is unprotected steel and undersized for system capacity. This project will replace sections over a three year period with the tie in and abandonment of the unprotected steel to take place in the third year.

Investment Classification:

Growth/System Capacity

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $4,400

Boiceville System Reinforcement

Project Scope:

Install 7300 feet of 6" plastic main.

Reasons and Benefits:

This reinforcement project may be customer driven and reimbursed in part. It is replacement of steel gas main to increase system capacity to serve load growth due to residential development.

Investment Classification:

Growth/System Capacity

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $350

Binghamton 60-PSI Gas System Improvements

Project Scope:

Install (2) sections of 6”PE main 2330’ and 1250’. Cut loose existing 25Psig MAOP main on Dorman, Wilson Hill and Aitcheson Rds. Upgrade to 60Psig and connect to existing 60Psig on Willis Rd and Airport Rd

Reasons and Benefits:

Creates a loop feed on the one way feed 60Psig system which currently has a 25% drop. The 60Psig system in turn feeds a 15Psig regulator which is at 50% utilization at design loads. Project will enhance system capacity and reliability.

Investment Classification:

Growth/System Capacity

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $600

Beekmantown Gas Franchise Expansion

Project Scope:

Extend mains (41000 feet) and services (358) outside existing franchise limits.

Reasons and Benefits:

Meet customer demand and corporate objectives for gas system growth.

Investment Classification:

Growth/System Capacity

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $3,000

Homer System Upgrade

Project Scope:

Multiple year plan to uprate low pressure to medium pressure.

Reasons and Benefits:

Meet customer demand and corporate objectives for gas system growth.

Investment Classification:

Growth/System Capacity

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $2,145

Vienna Rd -Macedon Feeder Main replacement, Install Gas Mains

Project Scope:

Install approximately 39,500 feet of 10" steel gas main, from Vienna Road Regulator Station to Palmyra City Gate Regulator Station.

Reasons and Benefits:

Existing system is below 50% of maximum operating pressure on design day. The system is experiencing growth and lacks capacity to support additional load. The downstream system, the Macedon 45 psig MAOP system, has been supplemented by an emergency interconnect with RGE since 2008 to maintain system pressures during peak usage periods. This improvement would reinforce the system, improve reliability and would allow serving additional commercial customers.

Investment Classification:

Growth/System Capacity

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $7,100

Leak Prone Services Replacement (NYSEG)

Project Scope:

Replace leak prone gas services as required by various regulations.

Reasons and Benefits:

This work is required by reulgations. It replaces gas services in conflict with street reconstruction projects in accordance with terms and conditions to occupy public rights of way, rate cases, tarrifs and leaks.

Investment Classification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment:

2015 and Future Investments: $47,830

Leak Prone Main Replacement (NYSEG)

Project Scope:

Replace leak prone gas main in accordance with rate case requirements. Includes mains replaced due to condition (DIMP and leaks) and municipal projects. Replacements each year are: 2015-2016 (24 miles), 2017 (28 miles), 2018+ (32-36 miles).

Reasons and Benefits:

This program is required by agreement in rate cases with the PSC. The leak prone main replacement program improves distribution safety and reliability by replacing gas mains in poor asset condition at high risk for failure. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management (DIMP) regulations and leak information. As part of the replacements, low pressure systems are replaced with medium pressure whenever possible. Medium pressure gas mains allow installation of smaller diameter pipe and retirement of some regulator stations. The use of medium pressure results in more cost effective installation, long term maintenance cost reduction, and greater capacity to serve gas demand, than low pressure gas distribution systems. The programmed gas main replacements result in a distribution system that is safer and more reliable.

Investment Classification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment:

2015 and Future Investments: $68,596

Robinson Road Gate Station Rebuild

Project Scope:

This project rebuilds the Robinson Road gate station including new: metering, regulators and monitors, heater, odorization and control lines, SCADA, RTU, phone and electric lines, relief valves and buildings. The project includes payment to Tennessee Gas Pipeline for work on their facilities located at the gate station to serve NYSEG.

Reasons and Benefits:

The existing gate station is in poor asset condition, outdated equipment, cannot supply existing demand with load growth and the existing heater is failing. Without replacement of equipment at this critical gate station, NYSEG's Lockport gas division is at risk of not being able to reliable gas service to the western half of Lockport which includes major industrial and agricultural customers in addition to the residential customers.

Investment Classification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment: $2,903

2015 and Future Investments: $2

Remotely Operated Valves Program

Project Scope:

This program allocates capital funds to install remotely operated valves to protect operation of the gas against flooding on distribution and transmission mains systems due to outside forces (i.e. third party damages, flooding and other natural forces).

Reasons and Benefits:

This is a system hardening proposal to install remotely operated valves that will protect system operations in the event of an emergency. The installation of remotely operated valves can increase system safety and reliability.

Investment Classification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$1,300

Leak Prone Main Replacement (RG&E)

Project Scope:

Replace leak prone gas main in accordance with rate case requirements. Includes mains replaced due to condition (DIMP and leaks) and municipal projects. Replacements each year are: 2015-2016 (24 miles), 2017 (28 miles), 2018+ (32-36 miles).

Reasons and Benefits:

This program is required by agreement in rate cases with the PSC. The leak prone main replacement program improves distribution safety and reliability by replacing gas mains in poor asset condition at high risk for failure. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management (DIMP) regulations and leak information. As part of the replacements, low pressure systems are replaced with medium pressure whenever possible. Medium pressure gas mains allow installation of smaller diameter pipe and retirement of some regulator stations. The use of medium pressure results in more cost effective installation, long term maintenance cost reduction, and greater capacity to serve gas demand, than low pressure gas distribution systems. The programmed gas main replacements result in a distribution system that is safer and more reliable.

Investment Classification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment:

2015 and Future Investments: $80,029

Beckett's Way Gas Installation

Project Scope:

Install 2200 fee fo 6" medium pressure plastic gas main

Reasons and Benefits:

This project will create a loop feed from Beckett's Way north to Cayuga Heights Road. Peak day terminal distribution system pressure will be improved from approximately 12 psig to 18 psig with this project. Creation of the loop is a necessary interim measure to reinforce the Lansing system prior to completing the Lansing/Freeville Gas Reinforcement Project. The loop feed provides additional reliability and improvement in the system pressures in the southern area of Ithaca after completion of the new 124 psig, 10: gas main installed by the Lansing/Freeville Project.

Investment Classification:

Growth/System Capacity

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $250

Enhanced First Responders and Fire Training Facility and Program

Project Scope:

Build a Gas Training Center in Rochester to train employees and municipal agencies.

Reasons and Benefits:

RG&E received a letter from the Public Service Commission dated November 18, 2014, that provided notice of amendment specifying the inadequacies of the revised Iberdrola USA Gas Emergency Plan (GEP), in place for RG&E submitted in accordance with Commission Order 13-G-0484, providing RG&E an opportunity to respond and make the necessary revisions. In addition to addressing the deficiencies noted in the letter, RG&E is proposing to expand the communications with local fire departments to include fire department training associated with gas specific emergency situations. This program will enhance public safety and overall communications within the communities served.

Investment Classification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $2,700

New Empire West Gate Station

Project Scope:

This project builds a new gate station in the Town of Chili off the Empire Pipeline and rebuilds two associated regulator stations.

Reasons and Benefits:

The project is necessary to support on-going load growth in the Rochester area including Recycled Energy Development and Flower City Tissue (coal conversions) and development of the Port of Rochester. The project also improves system operation and safety by enabling a portion of the CM-1 transmission line to operate long term at a reduced pressure (of 120 psig). At this reduced pressure, the CM-1 operates at less than 20% of SMYS. The project is part of a long-term plan to reduce system operating constraints between the gas suppliers, Empire Pipeline and Dominion Transmission Pipeline. Construction is underway with completion anticipated in 2015.

Investment Classification:

Growth/System Capacity

Planned Capital Investment (000s)

Prior Years Investment: $5,726

2015 and Future Investments: $5,895

Gas Regulator Modernization & Automation Program, Replace Regulator

Project Scope:

This program replaces equipment that is obsolete or in poor asset or operating condition. Replacements include: regulators, filters, heaters, odorizers, backup generators, chart recorders, valves, inlet and outlet piping, enclosures, associated fittings, and corrosion protection. The program also includes automation of equipment such as: RTUs, Telog endpoints, and automated regulator operation as appropriate.

Reasons and Benefits:

This modernization and automation program improves system reliability, reduces maintenance costs, reduces potential outages due equipment failures, and improves equipment standardization and safety.

Investment Classification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment:	$4,516
2015 and Future Investments:	$3,600

Buffalo Road Rebuild Regulator Station and Replace Gas Main

Project Scope:

This project rebuilds regulator stations 290 and 343 and modifies stations 291. New SCADA equipment and automation are included. The project also replaces 120 feet of 20-inch wrapped steel gas main installed in 1951 that crosses Buffalo Road, New York State Route 33, near the Barge Canal. Construction begins in 2015.

Reasons and Benefits:

The project is necessary to support on-going load growth in the Rochester area including Recycled Energy Development and Flower City Tissue (coal conversions) and development of the Port of Rochester. This project is part of the overall transmission system and feeder main system improvement projects including the new Empire West Gate Station and CM-1 transmission gas main replacement to increase gas supply capacity to the Rochester system. It also replaces 50 year old regulator station equipment and piping that passes 25% of RG&E's total gas load. The station work is necessary to continue to serve the load growth occurring on RG&E's distribution system.

Investment Classification:

Growth/System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$304
2015 and Future Investments:	$2,897

CM5 - Gas Main Replacement - Humphrey to Ballantyne Rd - Rochester

Project Scope:

This project installs 22800 feet of 24" wrapped steel pipeline parallel to the existing CM-1, 22 ½" pipeline from the new Empire West Gate Station north to Ballantyne Rd. Engineering will begin in 2015 for the Article VII application.

Reasons and Benefits:

The project addresses asset condition by replacing transmission pipe installed in the 1950s that has leak potential as identified by RG&E's Integrity Management Plan. The new pipeline will be designed to operate at less than 20% SMYS. The project is the first part of the long-term plan to increase gas supply to the Rochester area and improve system reliability. Replacing the 22 ½" pipeline with 24" and tie into the new Empire West Gate Station improves system capacity and terminal pressure at the Buffalo Road regulator station 20 percent. The new CM-5 pipeline will be designed and constructed to a MAOP of 330 psig and tie into the existing CM-4 pipeline which also has a MAOP of 300 psig. This improvement to 330 psig will provide for long term growth on the RG&E transmission system.

Investment Classification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $14,553

Recycled Energy Development (RED) Transmission Gas Main Extension

Project Scope:

Recycled Energy Development is a customer driven and reimbursed project to build more than 4 miles of new 12" or 16" transmission main for conversion of coal fired electric generation to natural gas. The pipe size chosen by RED will depend on RED's forecast for customer demand growth within the existing Kodak Park utility service area. The new transmission pipe will be designed for a future maximum allowable operating pressure of 330 psig and run normally at 250 psig. The minimum delivery pressure to RED is 180 psi at the existing Weiland Road meter location. The transmission main will begin at the Buffalo Road Regulator station and extend north along the Erie Canal and Lee Road to Weiland Road in the Town of Greece. The project requires an Article VII permit. Design and Article VII application development are underway for a 2016 construction start.

Reasons and Benefits:

This project provides service to new customer in accordance with tariff, generating gas delivery revenue and meet corporate objectives for gas system growth.

Investment Classification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $15,700

MF60 Northwest , Port of Rochester

Project Scope:

Install 12,000 ft of 8" plastic gas main along Latta Rd (Dewey Ave east to Lake Ave), and along Lake Ave (Latta Rd to Beach Ave) to support expected residential and commercial development at the Port of Rochester area

Reasons and Benefits:

Existing MF14 Greece pressure system cannot support the addition of 120 mcfh estimated total load. MF60 Northwest pressure system can support the additional gas load once planned system reinforcement projects have been completed

Investment Classification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $1,732

MF13 Geneseo Improvement, Install Gas Mains, Roch

Project Scope:

Install 2500' - 4" plastic gas mains on Avon Rd (Cavalry Rd - Country Club Dr), 5560' - 4" plastic gas mains on Country Club Rd (Avon Rd - Lima Rd), and 7600' - 4" plastic gas mains on Lima Rd (Country Club Dr - existing mains just west of Volunteer Rd) to provide a loop feed.

Reasons and Benefits:

This project will create a loop feed to improve gas system pressure that is currently less than 50% of maximum operating pressure on Lima Rd and Avon Rd. The drop in pressure is due to recent residential and commercial development in close proximity to the aforementioned streets.

Investment Classification:

Growth/System Capacity

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $500

Leak Prone Services Replacement (RG&E)

Project Scope:

Replace leak prone gas services as required by various regulations.

Reasons and Benefits:

This work is required by reulgations. It replaces gas services in conflict with street reconstruction projects in accordance with terms and conditions to occupy public rights of way, rate cases, tarrifs and leaks

Investment Classification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment:

2015 and Future Investments: $13,334

Gas SCADA System replacement

Project Scope:

This project replaces hardware, the operating system and software for gas SCADA system.

Reasons and Benefits:

This is a computer system to operate the company's gas transmission and distribution system. Due to technology advancements, changes and use, the systems need to be replaced every seven years. Without replacement the software becomes unsupported by the vendor and the equipment at high risk of failure.

Investment Classification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $1,500

MF42 Henrietta: Thruway Park Drive, Install Gas Mains

Project Scope:

Install 2200 ft of 4" plastic gas mains and replace 2200 feet of 2" plastic and steel gas mains along Thruway Park Dr (Erie Station Road to West Henrietta Road) to support expected commercial development on Thruway Park Drive.

Reasons and Benefits:

The existing MF42 Henrietta pressure system cannot support additional customer load in this immediate area without gas pressure dropping below 50% of maximum operating pressure. Occupancy of existing vacant land parcels is expected within the next several years along Thruway Park Dr. In conjunction with the 8" plastic gas mains installed for MF42 Henrietta Phases 3A and 3B projects along Erie Station Rd, this improvement will increase pressure above 70% MAOP and provide extra capacity in the area to support development on more of the land parcels along Thruway Park Drive. Additional future gas main replacements in this area may be necessary, depending on how much additional load is proposed by the customer for each parcel or building.

Investment Classification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $200

CM-1 Transmission Gas Main Replacement Project

Project Scope:

This project replaces the remaining CM-1 after the CM-5 project is complete. The CM-1 replacement project installs 35000 feet of 24" wrapped steel pipeline from the Caledonia Gate Station north to the new Empire West Gate Station on Ballantyne Road south of Humphrey Road.

Reasons and Benefits:

The project addresses asset condition by replacing transmission pipe installed in the 1950s that has leak potential as identified by RG&E's IMP. The new pipeline will be designed to operate at less than 20% SMYS. The project is part of the long-term plan to maintain gas supply to the Rochester area and improve transmission system reliability. This CM-1 pipeline replacement will also be designed and constructed to a MAOP of 330 psig and tie into the new CM-5 pipeline which will also have a MAOP of 330 psig. This will provide for long term growth on the RG&E transmission system and increase gas supply from the Caledonia Gate Station, Dominion Transmission Company. Reliability will also improve by looping this section of CM-1 with CM-5, CM-4 and CM-2.

Investment Classification:

Reliability Risk

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $1,450

MF60 Southeast: New Michigan Rd and Collett Rd, Install Gas Mains

Project Scope:

This project installs 4800 feet of 4" plastic gas main along New Michigan Road and Canandaigua Farmington Townline Road and installs 3700 feet of 6" plastic gas mains on Collett Rd (NYS Route 332 - Hook Road) in support of recent developments in immediate area.

Reasons and Benefits:

This project is necessary for RG&E to meet tariff obligations to serve new customers due to the extent of active residental development built and currently underway. Additional load from subdivisions underconstruction with more than 480 total lots for Auburn Meadows, as well as other recent residential developments has decreased the gas pressure in Farmington. Gas mains must be increased in size to support these new customers.

Investment Classification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $620

Incremental Customer Growth - Gas Related Projects - RG&E

Project Scope:

This line item is for infrastructure related to serving new, emergent customers.

Reasons and Benefits:

Meet customer demand and corporate objectives.

Investment Classification:

Mandatory

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $10,053

Northeast 60, Install Gas Mains

Project Scope:

Install approximately 15,000 linear feet of 4", 6" and 8" plastic gas main located along various roads throughout the Northeast 60 psig system (Webster/Penfield area).

Reasons and Benefits:

The Project will eliminate multiple dead-end gas mains and create looped piping sections to increase pressure and capacity throughout the system. The existing system is at 50% of maximum operating pressure on design day and serves an area of active growth. The project is part of the long-term plan to increase the Northeast 60 psig pressure system capacity to supply load growth as well as improve system reliability.

Investment Classification:

Growth/System Capacity

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $10,240

MF42 Henrietta: Brighton Henrietta Town Line Rd Improvement, Install G

Project Scope:

Install 6418' of 12" plastic gas main, from existing 12" at Canal View Blvd west to 8" at East Henrietta Rd. Existing 12" gas mains that cross Route I-390 will remain.

Reasons and Benefits:

The existing pressure system is at 50% of maximum operating pressure on design day. The system is experiencing growth and lacks capacity to support additional load. There are known pending multi-purpose (a combination of residential and commercial) development (Winfield Park) that will begin construction within a few years and will draw upon the MF42 psig pressure system. The location of this project is along a congested commercial/industrial corridor with some room for growth.

Investment Classification:

Growth/System Capacity

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $2,355

Mt Read SF115 psi, Replace Gas Mains, Roch

Project Scope:

This project replaces 5000 feet of 1950's vintage 20" steel pipe on Mount Read Boulevard and Driving Park.

Reasons and Benefits:

The Mount Read Blvd corridor in the City of Rochester and town of Greece has experienced a large amount of growth in recent years on the SF115 Mt Read Blvd, MF60 Northwest and MF14 Greece pressure systems. In order to continue support of future developments, this project is necessary to distribute pressure efficiently on the SF115 system, and adequately supply the regulators that feed the MF60 Northwest and MF14 Greece systems.

Investment Classification:

Growth/System Capacity

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $5,000

MF120 Western Monroe, Install New Regulator Station 500

Project Scope:

This project installs a new regulator station, RS 500, at the New Empire Chili Gate Station.

Reasons and Benefits:

This project has been identified as a system improvement plan to support current and expected future growth along the MF120 Western Monroe (MF120WM) system. It improves system pressures at the Buffalo Road Regulator Station and improves system pressures and supply to the MF120WM system. Buffalo Road Station pressures will improve by shifting load to the new RS 500 station in the MF120WM system. In addition, the new station will increase system reliability to the MF120WM system. RGE's largest customer, the University of Rochester (U of R), is served off the MF120WM system. The U of R has experienced significant growth in recent years which is expected to continue in the future. In addition, the additional supply to the MF120WM feeder main system will allow for future expected growth to reach the northern and western areas of Monroe County.

Investment Classification:

Growth/System Capacity

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $500

Uprate MF30 Henrietta

Project Scope:

The project installs 2440 ft of 8" plastic gas main, and uprate and combine the MF30 Henrietta with the MF42 Henrietta system. This will eliminate regulator stations 334 and 364 which are in poor condition.

Reasons and Benefits:

The existing MF42 Henrietta pressure system can only support limited additional customer load. By installing the new gas mains, the system reliability of the 42 psig system is increased, and the performance of regulator station 334 will be improved. Station 334 is currently operating at its maximum capacity.

Investment Classification:

Asset Condition Replacement

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $250

Thruway Park Drive, Replace Gas Transmission Main, Roch

Project Scope:

Thruway Park Drive replaces 400 feet of 20" cased transmission main installed in 1967 under Interstate 90 installed in 1967. The project eliminates a cased crossing in a high consequence area (HCA) that requires 7 year reassessment to meet Federal Integrity Management Plan (IMP) requirement regulations, and incurring future and on-going O&M costs. Replacement of the pipe in 2016 is necessary for compliance with Integrity Management Plan regulations in 2016.

Reasons and Benefits:

The project replaces transmission pipe crossing of I-90 installed in 1967, eliminating cased crossing in high consequence area (HCA) that requires 7 year reassessment.

Investment Classification:

Asset Condition Replacement

Planned Capital Investment (000s)

Prior Years Investment: $0

2015 and Future Investments: $2,000

MF35 Walworth System Improvement, Install Pipe and Regulator Station

Project Scope:

Install 9100 feet of 6" PE along NYS Route 441 in Monroe County and Wayne County, rebuild regulator stations 316, 318, and 335, and remove regulator stations 317 and 344 from service. Existing 35 psig gas mains and 1100 services will be upgraded to 60 psi.

Reasons and Benefits:

This project will increase gas supply, improve reliability, and improve system endpoint pressure due to recent growth in the Gananda residential development and surrounding areas in east Monroe County, and western Wayne County.

Investment Classification:

Growth/System Capacity

Planned Capital Investment (000s)

Prior Years Investment:	$0
2015 and Future Investments:	$950

Capital Investment Plan by Prioritization Category
NYSEG

		2015	2016	2017	2018	2019
Mandatory	Transmission	67,127	95,851	35,663	22,314	10,500
	Distribution	42,442	28,277	29,105	30,467	31,905
	Generation	3,159	2,914	3,528	2,156	7,196
	Common	4,948	13,050	13,778	9,218	11,557
	Total Mandatory - Electric	**117,676**	**140,092**	**82,074**	**64,155**	**61,158**
System Capacity	Transmission	3,842	493	70	71	272
	Distribution	2,351	9,306	11,077	17,263	17,051
	Generation	0	0	0	0	0
	Total System Capacity - Electric	**6,193**	**9,798**	**11,147**	**17,334**	**17,323**
Reliability Risk	Transmission	3,286	9,258	22,784	25,037	32,590
	Distribution	1,366	8,350	7,725	7,957	8,195
	Generation	160	250	600	1,200	1,900
	Common	252	229	293	486	316
	Total Reliability Risk - Electric	**5,065**	**18,088**	**31,402**	**34,680**	**43,002**
Group Initiatives	Common	3,860	697	645	1,568	680
	Total Group Initiative - Electric	**3,860**	**697**	**645**	**1,568**	**680**
Efficiency	Transmission	0	3,000	7,996	12,029	14,450
	Distribution	463	2,650	3,080	2,722	5,437
	Common	852	9,112	6,959	6,154	5,927
	Total Efficiency - Electric	**1,315**	**14,762**	**18,035**	**20,905**	**25,814**
Asset Condition	Transmission	1,568	14,450	16,154	17,120	17,949
	Distribution	25,414	25,485	26,360	26,700	27,612
	Generation	1	750	2,220	2,045	0
	Common	6,779	10,001	17,432	21,132	21,660
	Total Asset Condition - Electric	**33,761**	**50,686**	**62,167**	**66,998**	**67,221**
Strategic	Distribution	0	6,000	22,399	34,663	35,801
	Common	0	981	1,634	206	0
	Total Strategic - Electric	**0**	**6,981**	**24,032**	**34,869**	**35,801**
	TOTAL - Electric	**167,871**	**241,105**	**229,502**	**240,508**	**250,999**

Capital Investment Plan by Prioritization Category
RG&E

		2015	2016	2017	2018	2019
Mandatory	Transmission	26,084	115,770	44,680	30,000	10,000
	Distribution	15,709	19,031	19,407	19,792	20,245
	Generation	2,945	5,228	9,706	2,863	2,470
	Common	3,817	4,813	4,675	5,761	1,218
	Total Mandatory - Electric	**48,556**	**144,842**	**78,468**	**58,416**	**33,934**
System Capacity	Transmission	17,915	6,064	20,214	12,556	20,552
	Distribution	4,024	7,178	9,050	5,316	8,020
	Generation	150	800	1,924	7,633	7,076
	Total System Capacity - Electric	**22,089**	**14,042**	**31,189**	**25,505**	**35,648**
Reliability Risk	Transmission	36,333	30,279	41,978	56,927	60,005
	Distribution	7,809	3,300	3,384	3,470	3,559
	Generation	0	300	100	750	475
	Common	230	358	228	215	163
	Total Reliability Risk - Electric	**44,372**	**34,237**	**45,689**	**61,362**	**64,201**
Group Initiatives	Common	1,659	170	170	558	158
	Total Group Initiative - Electric	**1,659**	**170**	**170**	**558**	**158**
Efficiency	Transmission	626	1,000	2,000	2,686	3,722
	Distribution	857	2,700	4,981	7,621	4,325
	Common	592	2,090	1,650	1,408	2,340
	Total Efficiency - Electric	**2,075**	**5,790**	**8,631**	**11,714**	**10,387**
Asset Condition	Transmission	6,841	4,684	5,869	9,612	9,739
	Distribution	837	10,333	13,970	14,304	14,736
	Generation	0	0	1,630	535	0
	Common	5,961	7,304	8,216	8,996	9,058
	Total Asset Condition - Electric	**13,639**	**22,320**	**29,686**	**33,447**	**33,533**
Strategic	Distribution	0	0	2,438	8,125	9,532
	Common	0	426	1,396	776	411
	Total Strategic - Electric	**0**	**426**	**3,834**	**8,901**	**9,943**
	TOTAL - Electric	**132,390**	**221,826**	**197,666**	**199,903**	**187,805**

RG&E Electric Capital Project or Category	Reference	2015	2016	2017	2018	2019	2020	2021	Total
Station 2 Hydro	Five Year Plan		$ 3,981,000	$ 5,761,000	$ 6,476,000	$ 6,476,000			**$ 22,694,000**
	Forecast	$ 2,074,800	$ 11,277,500	$ 14,804,400	$ 9,084,400	$ -	$ -	$ -	**$ 37,241,100**
RARP	Five Year Plan	$ 18,324,156	$ 19,178,000	$ 28,604,000	$ 40,776,000	$ 48,464,000	$ 49,150,000	$ 25,322,000	**$ 155,346,156**
	Forecast	$ 11,765,000	$ 16,348,000	$ 31,302,000	$ 53,659,000	$ 69,159,000	$ 37,624,000	$ 3,448,000	**$ 182,233,000**
Ginna Retirement Transmission Alternative	Five Year Plan	$ 20,200,000	$ 110,770,000	$ 18,680,000	$ -	$ -	$ -		**$ 149,650,000**
and Fifth Bay - Station 80	Forecast	$ 20,075,296	$ 110,769,694	$ 18,681,830					**$ 149,526,820**
Station 23 - New Downtown 115kV Source	Five Year Plan	$ 9,993,728	$ 5,963,565	$ 17,885,132	$ 12,556,258	$ 20,551,610	$ 25,000,000		**$ 66,950,293**
	Forecast	$ 10,999,748	$ 54,468,361	$ 28,624,217	$ 5,174,228	$ 1,000,000			**$ 100,266,554**
Station 23 - Transformer & 11kV Switchgear	Five Year Plan	$ 1,800,000	$ 100,000	$ 2,329,245					**$ 4,229,245**
	Forecast	$ 2,101,974	$ 3,144,891	$ 2,820,382	$ 447,894				**$ 8,515,141**
Line 917	Five Year Plan	$ 1,489,716	$ 100,000	$ 1,478,381	$ 2,754,619	$ 200,000			**$ 6,022,716**
	Forecast	$ 1,961,954	$ 2,996,388	$ 2,889,561					**$ 7,847,903**

NYSEG Electric Capital Project or Category	Reference	2015	2016	2017	2018	2019	2020	2021	Total
Marcy South Series Capacitance	Five Year Plan	$ 19,293,993	$ 41,295,007						**$ 60,589,000**
	Forecast	$ 2,850,000	$ 24,260,000	$ 33,640,000					**$ 60,750,000**
Auburn Transmission Project	Five Year Plan	$ 15,795,515	$ 48,867,858	$ 11,181,158					**$ 75,844,531**
(Auburn 345kV Source)	Forecast	$ 5,887,479	$ 5,632,398	$ 53,791,451					**$ 65,311,328**
Columbia County Transmission Project	Five Year Plan	$ 6,146,815	$ 791,606	$ 13,981,728	$ 11,814,001				**$ 32,734,150**
(Klinekill 115kV)	Forecast	$ 5,452,808	$ 1,869,642	$ 6,973,198	$ 10,108,240	$ 5,167,919			**$ 29,571,807**
Harris Lake	Five Year Plan	$ 5,934,457							**$ 5,934,457**
	Forecast	$ 5,706,783	$ 12,349						**$ 5,719,132**

Capital Project Summary

Project Title/Program: Auburn Transmission Project

Operating Company: NYSEG

Project Type: Electric

Investment Category: Mandatory

Scope:

This project includes the construction a new 115 kV transmission line ("Phase 1") and enhancement of an existing 115kV circuit ("Phase 2"), both running approximately 14.5 miles from National Grid's Elbridge Substation to NYSEG's State Street Substation in Auburn, as well as associated work at both substations. The route of the project follows an approximately 4.2 mile existing NYSEG right-of-way and an approximately 10.3 mile existing National Grid right-of-way. Phase 1 would add a new circuit between the two substations. Phase 2 would increase the capacity of the existing circuit between the two substations comprised of NYSEG's existing 115kV Line 972 and National Grid's existing Line 5. This Phase 2 increase would be accomplished by NYSEG rebuilding its 4.2 mile Line 972 and National Grid busing together its 10.3 mile Line 5 with the conductors presently comprising the same 10.3 section of its Line 15, which is double-circuited with Line 5 for that length. To allow use of Line 15 for this purpose, Phase 2 also includes electrically relocating Line 15 to new conductors that would be installed on the double-circuit structures installed for the 10.3 mile portion of the Phase 1 new line in National Grid's right of way.

Justifications:

The Auburn Transmission Project is needed under NERC Bulk Electric System Planning Criteria for N-1 contingency and NYSEG's internal planning criteria to reinforce NYSEG's electric transmission system in its Auburn Division. Currently, NYSEG's ability to ensure reliable service to customers in this division is dependent on both of the generating units at the Cayuga Generating Facility being available to operate. The project will enable NYSEG to maintain adequate system normal and single contingency service throughout the Auburn Division during temporary or extended outages of generating units at the Cayuga Generating Facility.

Annual Capital Investment ($000): **Total Project Cost:** $82,198

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$417	$2,020	$3,916	$15,796	$48,868	$11,181	$0	$0	$0

Capital Project Summary

Project Title/Program: Bright Line
Operating Company: NYSEG
Project Type: Electric
Investment Category: Mandatory

Scope:
The USA Federal Energy Regulatory Commission (FERC) issued Order 773 on December 20, 2012 establishing a new "Bright Line" Bulk Electric System (BES) Definition. This new BES Definition obligates Iberdrola USA and all other Transmission Owners in the United States to apply more strict North American Electric Reliability Corporation (NERC) Reliability Standards to their transmission systems at voltages of 100 kV and higher. This project is to meet compliance with transmission system design requirements of the NERC Transmission Planning Standards. The total cost, cash flows and duration of cash flows are preliminary. The project scope continues to be developed and defined.

The costs shown in below are an estimate of the project costs based on conceptual engineering and do not include the entire cost of the project.

Justifications:
FERC issued Order 773 on December 20, 2012. Compliance with the new BES Definition is mandatory. Iberdrola USA must comply with over 100 NERC Reliability Standards applicable to the BES by 2016, or else be subject to fines and sanctions up to $1 million per day per violation, depending on severity.

Annual Capital Investment ($000): **Total Project Cost:** $451,000

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$5	$161	$233	$377	$4,000	$10,000	$10,000	$10,000	$425,223

Capital Project Summary

Project Title/Program: Columbia County Transmission Project

Operating Company: NYSEG

Project Type: Electric

Investment Category: Mandatory

Scope:

A new 115kV line was proposed to create a connection between an existing National Grid 115kV source and NYSEG's Klinekill substation. However, in the course of the Article VII proceeding for the licensing of the proposed 115kV line, Staff recommended the construction of a 115/34.5kV substation with two 34.5kV distribution lines as an alternative. This alternative is currently being reviewed and is the subject of settlement proceedings.

Justifications:

The Columbia County Transmission Project is required under NYSEG's internal planning criteria for N-1 contingency. N-1 loss of the existing 115kV Line 984 from Churchtown to Craryville or loss of the existing 115kV Line 993 from Greenbush to Stephentown results in low voltage issues in the Columbia County area of NYSEG's Mechanicville Division. This project as originally proposed would correct these deficiencies, eliminating the potential for loss of load for the subject contingencies and improving overall system resiliency and restoration times. It would also accommodate increasing demand in the region.

Annual Capital Investment ($000): **Total Project Cost:** $36,665

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$1,091	$1,606	$1,234	$6,147	$792	$13,982	$11,814	$0	$0

Capital Project Summary

Project Title/Program: Coopers Corners, Add 3rd 345/115 kV Transformer

Operating Company: NYSEG

Project Type: Electric

Investment Category: Mandatory

Scope:

This project includes the installation of a third 345/115 kV, LTC transformer rated 120/160/200 MVA at Coopers Corners Substation and appurtenant equipment. The new transformer will be operated in parallel with the two existing 345/115 kV, 200 MVA, LTC transformers.

Justifications:

The Coopers Corners Third 345/115kV Transformer Project is required under NPCC/NYSRC Bulk Power System Planning Criteria for N-1-1 contingency. Currently, if one of the existing 345/115 kV transformers at Coopers Corners Substation is out of service for an extended period and the remaining 345/115 kV transformer suffers a forced outage, widespread load shedding would be experienced by the majority of NYSEG's customers in its Liberty Division.

Annual Capital Investment ($000): **Total Project Cost:** $26,704

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$99	($37)	$13	$0	$0	$461	$2,346	$7,063	$16,758

Capital Project Summary

Project Title/Program: Dingle Ridge - 2nd Bank and 13.2kV Conversion

Operating Company: NYSEG

Project Type: Electric

Investment Category: System Capacity

Scope:

Upgrade the current 5MVA bank to a 2 - 12/16/20 (22.4) MVA. Convert the current 4.8KV circuits to 13.2KV and make provisions for the establishment of four (4) 13.2 kV distribution circuits.

Justifications:

Dingle Ridge Sustation, located in the NYSEG Brewster Division is an existing 46-4.8 kV station with two (2) 4.8 kV distribution circuit feeders. The 46 kV transmission source is tapped using motor operated disconnect switches at the 813 Line between Peach Lake and Putnam Substations. The current 5MVA substation Transformer is loaded to 126% of nameplate rating (2013 Loading) and 128% of nameplate rating (2014 Loading). There are strong ties between the Dingle Ridge substation circuits and Putnam Lake and also with Tilly Foster. Hence a double bank upgrade to from 5MVA to 2-12/16/20 (22.4)MVA should suffice to establish an N-1 redundancy at Dingle Ridge and also to off load the heavily loaded Tilly Foster substation, Putnam Lake and Peach lake. Failure of this transformer will result in the loss of service to 709 customers for 10 hours.

Annual Capital Investment ($000): **Total Project Cost:** $6,138

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$0	$0	$38	$500	$1,045	$4,555	$0	$0	$0

Capital Project Summary

Project Title/Program: Eelpot New Transformer
Operating Company: NYSEG
Project Type: Electric
Investment Category: Mandatory
Scope:
Install a second 115/34.5 kV, 30/40/50/56 MVA, LTC transformer at Eelpot Road Substation and operate it in parallel with the existing 115/34.5 kV, 30/40/50/56 MVA, LTC transformer.

Justifications:
During the 2015 summer peak load period, an outage of the existing Eelpot Road 115/34.5 kV transformer would cause the Meyer to Wayland 34.5 kV line #565 to exceed its summer LTE rating and result in submarginal voltages at Midlesex (0.718), Naples (0.730), Eelpot (0.744), Sprngwtr (0.809), Atlanta (0.753), Wayland (0.817), Atlantic (0.872), and Kanona(0.884). 79MW is the threshold load level at which violations occurs, with approximately 9.1MW at risk for an outage of the Eelpot Road 115/34.5 kV transformer.

Annual Capital Investment ($000): **Total Project Cost:** $14,767

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$1,639	$1,570	$2,633	$4,376	$100	$100	$4,349	$0	$0

Capital Project Summary

Project Title/Program: Energy Control Center (Integrated EMS/SCADA/DMS/OMS Project)

Operating Company: NYSEG

Project Type: Electric

Investment Category: Mandatory

Scope:

This project consists of design and installation of a fully integrated EMS/SCADA/DMS/OMS system that replaces the existing EMS/SCADA systems and current "Smartmap" Outage Management System. All these systems will be combined and integrated into one Energy Control Center system that will be compliant with NERC Critical Infrastructure Protections Standards (CIPS). This project will replace the current system at NYSEG and upgrade the current Siemens system at RG&E to the Siemens Spectrum system.

Justifications:

The Energy Control Center Project will address the following issues and will result in the following benefits:
One integrated control center platform for NYSEG and RG&E
The integration of the EMS/SCADA system with the OMS provides real time transmission, substation, and distribution situational awareness for dispatchers and operators.
New infrastructure that facilitates increased automation on the transmission and distribution system while providing a robust foundation for additional automation of the system.
Better visibility of the growing penetration of distributed generation, requiring better coordination of distribution-transmission to manage distributed generation upstreamvpower flows.
Stronger demand-side participation as electric vehicles potentially gain popularity.
Outage management based on a variety of integrated inputs, including customer calls, SCADA and other devices.
Enterprise Geographic Information System (GIS) Integration.

Annual Capital Investment ($000): **Total Project Cost:** $21,561

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$7,802	$3,634	$7,260	$2,865	$0	$0	$0	$0	$0

Capital Project Summary

Project Title/Program: Energy Smart Community REV Project

Operating Company: NYSEG

Project Type: Electric

Investment Category: Strategic

Scope:

Implementation of a test-bed environment for REV initiatives which will include (1) new processes and tools for integrated distribution system planning, (2) support customer and third-party engagement in market operations, and (3) operate the grid efficiently and reliably. The deployment of certain foundational investments in a concentrated geographic area (Ithaca, NY) will create an attractive test platform.

Justifications:

The benefits under review include operational benefits including reductions in meter reading and off cycle reads, reductions in service orders related to on/off, reduction in technical loss including reduced meter watts loss, improved outage management, efficiencies in billing including reduction in estimated bills, exceptions, summary and specialized billing, reduction in back office costs related to estimated bills, reduction in non-technical losses, improved power quality and voltage management. Customer benefits include support for time differentiated rates, tools and information for customers to help understand and manage their usage, support for settlement on actual customer usage, support for demand response programs, improved reliability, more accurate bills and more timely response to service requests. Other market benefits include data collection and possible information sharing and third party participation in a community based test platform.

Annual Capital Investment ($000): **Total Project Cost:** $15,500

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$0	$0	$0	$0	$6,000	$5,500	$3,000	$1,000	$0

Capital Project Summary

Project Title/Program: Flat Street Substation New Transformer

Operating Company: NYSEG

Project Type: Electric

Investment Category: System Capacity

Scope:

The installation of an additional Flat Street 115/34.5 kV transformer will solve thermal and voltage problems associated with any of two contingencies, i.e., the loss of the Greenidge 115/34.5 kV transformer and the loss of the Flat Street 115/34.5 kV transformer.

Justifications:

Presently, sub-marginal voltages will appear in the areas served from the Pulteny (0.886), Dundee (0.898), Keuka Pk (0.879), Pratsbur (0.900), Willard (0.896), and Ovid (0.897) substations upon loss of the Greenidge 115/34.5 kV Transformer. Under the same contingency condition, the LTE ratings will be exceeded at the Flat Street 115/34.5 kV transformer. 185MW is the threshold load level at which violations occurs, with approximately 10.79MW at risk.

Annual Capital Investment ($000): **Total Project Cost:** $6,358

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$2,721	$1,736	$1,251	$650	$0	$0	$0	$0	$0

Capital Project Summary

Project Title/Program: Fraser Sub - Add 2nd 345/115 kV Transformer

Operating Company: NYSEG

Project Type: Electric

Investment Category: System Capacity

Scope:

Install a second 345/115 kV, 150/200/250/280 MVA, LTC transformer at the Fraser Substation and operate it in parallel with the existing 345/115 kV, 150/200/250/280 MVA LTC transformer.

Justifications:

Oneonta Division is winter peaking and has low bus voltages throughout the northern parts of the Division. Loss of the 345/115kV transformer at Fraser causes low bus voltages throughout the area. The problem appears at a Division load level of 160MW. The exposure is about 3,000 hours for 2015, with approximately 50 MW at risk.

Annual Capital Investment ($000): **Total Project Cost:** $31,111

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$80	$9	$48	$200	$100	$1,572	$3,911	$7,872	$17,318

Capital Project Summary

Project Title/Program: Gardenville, Add 3rd 230/115 kV Transformer

Operating Company: NYSEG

Project Type: Electric

Investment Category: Reliability Risk

Scope:

The project will install a third 230/115 kV transformer at the Gardenville Substation and operate it in parallel with the two existing transformers.

Justifications:

Lancaster Division has low bus voltages along 34.5kV line#525 under system normal. N-1 loss of existing 230/115 kV transformer at Gardenville caused thermal overload at the 2nd Gardenville 230/115 kV. The load threshold of this problem was 468MW in 2008, when the peak load was 570.6MW. The peak for 2015 is expected to be about 543.5MW.

Annual Capital Investment ($000): **Total Project Cost:** $17,429

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$0	$0	$0	$0	$0	$0	$0	$660	$16,769

Capital Project Summary

Project Title/Program: Geneva - Demolish and Construct Transporation and UC&M Garage
Operating Company: NYSEG
Project Type: Common
Investment Category: Asset Condition Replacement
Scope:
Construct a new transportation and UC&M garage on the present Geneva facility site.

Justifications:
The existing UC&M &Transportation facilities are inefficient. Construction of a new stand alone structure will provide swing space for required relocation & renovations to Customer Services.

Annual Capital Investment ($000): **Total Project Cost:** $8,690

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$0	$0	$0	$0	$0	$0	$1,200	$2,800	$4,690

Capital Project Summary

Project Title/Program: Harris Lake - Diesel Generator Upgrade
Operating Company: NYSEG
Project Type: Electric
Investment Category: System Capacity
Scope:
Install a new 2,500 kW diesel generator to supplement the existing 1,750 kW generator and fuel system.

Justifications:
The Harris Lake Diesel Generator Unit is rated for 1,750/2,000 kW, however the peak load as measured at the Raquette Lake metering point has consistently exceeded the rating of the diesel generator in recent years with documented peaks as high as 3,230 kW.

Annual Capital Investment ($000): **Total Project Cost:** $7,708

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$271	$629	$874	$5,934	$0	$0	$0	$0	$0

Capital Project Summary

Project Title/Program: Hilldale 115kV source, transformer bank upgrade and 2nd 12kV distribution circuit.

Operating Company: NYSEG

Project Type: Electric

Investment Category: System Capacity

Scope:

This project proposed to relieve the Hilldale 34.5/12.5KV 10.5MVA (3-2.5/2.8/3.5MVA) substation transformers by adding a second 115/12.5KV 1-12/16/20MVA LTC substation, converting the existing 4.8 kV circuit #225 to 12 kV operation and adding a 2nd 12.5KV feeder. The transformer will be served off the 115KV rather than the 34.5KV transmission system.

Justifications:

During the Summer of 2013, the Hilldale substation transformer was loaded up to 98% (10.3MVA) of it's top nameplate rating. Plans have also been received for a new 100 home underground housing development located at Inner Circle Drive off State Route 52 in the Town of Fallsburg. The substation has also experienced many outages on the 34.5KV subtransmission. Switching the source from the 34.5KV to the 115KV transmission will improve the reliability and allow for future ties (without phasing issues) with the new future 115/12.5KV Old Fall substation. Moving the load from the 3.5KV to the 115KV transmission will also free capacity on the 34.5KV system.

Annual Capital Investment ($000): **Total Project Cost:** $18,708

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$0	$0	$0	$0	$0	$0	$8,192	$2,516	$8,000

Capital Project Summary

Project Title/Program: Java - Add Second Transformer and 12 kV Conversion

Operating Company: NYSEG

Project Type: Electric

Investment Category: System Capacity

Scope:

Replace the existing 34.5-4.8 KV 3-1667 KVA transformer bank with two (2) new 34.5 -12.5KV,10/12.5/14 MVA LTC transformers. Convert both Java distribution feeder circuits 280 and 281 to 12 kV operation.

Justifications:

Java Substation, located in NYSEG Lacaster Division, is a 34.5-4.8 kV substation with two distribution feeder circuits which serves 1,665 customers. The existing 5 MVA bank has reached 101% of is nameplate rating in 2011. Java is bordered to the west by Wales Center and Holland 4.8kV substations, to the north by West Varysburg 12.5kV, and to the south and east by the franchise line with RG&E. Java Circuit #280 has been a major concern since 2008, due to the load expansion of a recreational campground and water park at the tail end of the single-phase 4.8kV, which is bordered by RG&E's service territory to the immediate south and west. Presently, the park and its surrounding customers have experienced low voltage in the summer months between the Fourth of July and Labor Day. Circuit modeling and simulation presently projects sub-marginal voltages (< 114V) on the three-phase trunk lines directly preceding the existing voltage regulators that have been installed on the circuit. Additionally, Java Substation Circuit #281 cannot accomodate any additional line regulation, and any added line capacitance is projected to both create high-voltage scenarios during off-peak load periods.

Annual Capital Investment ($000): **Total Project Cost:** $28,286

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$0	$0	$0	$0	$0	$0	$489	$1,048	$26,749

Capital Project Summary

Project Title/Program: Line 807, Convert to 115kV Operation, Brewster

Operating Company: NYSEG

Project Type: Electric

Investment Category: System Capacity

Scope:

Line 807 was originally built to 115kV standards but has been operated at 46kV. The existing line extends over 13 miles from Carmel Substation to Wood Street Substation to Katonah Substation. Convert these sections of line by adding equipment at the substations and swinging the line terminals from their existing 46kV positions to 115kV positions at the substations. The work includes the following components:

•New 115 kV line breaker location and two new 115 kV breakers will be added at Carmel Substation
•Two new 115 kV line breaker locations and two new 115 kV breakers will be added at Wood Street Substation
•New 115 kV line breaker location and three new 115 kV breakers will be added at Katonah Substation

•New 115 kV line breaker location and two new 115 kV breakers will be added at Carmel Substation
•Two new 115 kV line breaker locations and two new 115 kV breakers will be added at Wood Street Substation
•New 115 kV line breaker location and three new 115 kV breakers will be added at Katonah Substation.

Justifications:

By serving Carmel and Katonah at 115kV sourced from Wood Street, there will be increased capacity to meet load growth in the Brewster region to provide adequate voltage levels and thermal conditions.

Annual Capital Investment ($000): **Total Project Cost:** $7,636

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$1,639	$1,427	$2,646	$1,500	$424	$0	$0	$0	$0

Capital Project Summary

Project Title/Program: Marcy-South Series Compensation

Operating Company: NYSEG

Project Type: Electric

Investment Category: Mandatory

Scope:

This project includes the re-conductoring of a 22 mile section of the NYSEG-owned 345 kV Transmission Line Fraser-Coopers Corner and installation of a 240 MVAr Capacitor Bank in series connection to the Transmission Line Fraser-Coopers Corner at the Fraser substation. Replacement and/or repiar of an overall quanitity of 33 structures of the 345kV FCC-33 line so as to allow the new conductor to be supported.

Justifications:

Together with the installation by the New York Power Authority ("NYPA") of two additional Capacitor Banks at the Fraser substation, NYSEG's Marcy-South Series Compensation ("MSSC") Project will alleviate congestion on the New York State bulk transmission system and provide a partial solution to potential generator retirements, including the retirement of the Indian Point Energy Center ("IPEC"). The Project increases the transfer limit across the Total East and UPNY/SENY interfaces and is one of several projects proposed initially in the Commission's AC Upgrade Proceeding. However, on November 17, 2014 both NYPA and NYSEG withdrew their respective portions of the MSSC Project from any further consideration in the AC Upgrade Proceeding because the Commission previously had determined that the Project is required to meet a reliability need in the event that IPEC is retired and that the MSSC Project is a "no regrets" solution that will benefit energy consumers even in the event that IPEC is not retired.

Annual Capital Investment ($000): **Total Project Cost:** $62,278

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$29	$147	$1,514	$19,294	$41,295	$0	$0	$0	$0

Capital Project Summary

Project Title/Program: Mechanicville Reinforcement Project, Construct New Luther Forest Substation

Operating Company: NYSEG

Project Type: Electric

Investment Category: System Capacity

Scope:

Construct a new 115-34.5 kV substation with two 34.5 kV distribution circuits and two future 34.5 kV distribution circuit positions.

Justifications:

Resolve loading issues with the existing Mulberry Substation by transferring load to a new 115-34. 5 kV source at Luther Forest. Supply future needs of the Luther Forest Technology Campus.

Annual Capital Investment ($000): **Total Project Cost:** $13,585

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$9,335	$2,155	$1,135	$960	$0	$0	$0	$0	$0

Capital Project Summary

Project Title/Program: Oakdale Reconfiguration Project

Operating Company: NYSEG

Project Type: Electric

Investment Category: Reliability Risk

Scope:

The project will convert the existing 345kV ring bus into a breaker-and-a-half configuration and add a third 345/115/34.5kV 400MVA-Class transformer.

Justifications:

Loss of either of the 345/115/34.5kV transformers overloads the remaining transformer beyond its Normal rating. N-1-1 loss of both transformers or a transformer and 345kV line combination results in severe submarginal voltage throughout the Binghamton Division. Reconfiguring the existing 345kV ring bus to a breaker-and-a-half configuration and adding a third transformer resolves the violations associated with the N-1-1 loss of both transformers or one transformer and one 345kV line or two 345kV lines. Further, loss of the 345kV lines from Watercure to Oakdale and from Clarks Corners to Oakdale, along with the existing Oakdale 345kV capacitor bank also results in severe submarginal voltage. The problem appears at a Division load level of 320MW. The exposure for 2015 is approximately 7,070 hours with 420 MW at risk.

Annual Capital Investment ($000): **Total Project Cost:** $8,306

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$0	$0	$0	$300	$100	$100	$218	$977	$6,610

Capital Project Summary

Project Title/Program: Old Fall substation - Install 2nd LTC Transformer

Operating Company: NYSEG

Project Type: Electric

Investment Category: System Capacity

Scope:

Install a second 12/16/20 MVA LTC transformer at the Old Falls Substation. Install three 12.5 kV distribution feeders.

Justifications:

The Old Falls Substation transformer tripped in Summer 2011 due to an overload. The summer peak was recorded as high as 24 MVA but the existing substation bank only has a summer PLBN rating of 22 MVA. Loss of this transformer could affect 26 MW of load and 3,600 customers.

Annual Capital Investment ($000): **Total Project Cost:** $11,053

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$221	$28	$24	$500	$3,738	$6,542	$0	$0	$0

Capital Project Summary

Project Title/Program: Orchard Park - Add a 2nd Transformer Bank

Operating Company: NYSEG

Project Type: Electric

Investment Category: System Capacity

Scope:

Orchard Park - Replace the existing 34.5-4.8 kV, 9.38 MVA transformer bank with two (2) new 34.5-4.8x12.5kV, 12/16/20 MVA LTC Transformer Banks, convert the three existing 4.8 kV distribution feeder circuits 285,286,287 to 12 kV operation and establish a fourth (4th) 12 kV circuit.

Justifications:

Orchard Park Substation, located in the NYSEG Lancaster Division is an existing 34.5-4.8 kV station with (3) 4.8 kV distribution circuit feeders. the 34.5kV transmission source is tapped off the 34.5 kV lines from Big Tree Substation. The loading on the existing 9.38 MVA transformer bank at Orchard Park substation has reached 98% of its nameplate rating during the summer peaks of 2011 and 2012, and 102 % in 2013. The failure of this substation transformer would result in the loss of 9.57 MVA and 2,473 customers for more than 10 hours.

Annual Capital Investment ($000): **Total Project Cost:** $8,678

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$0	$0	$0	$0	$0	$0	$4,136	$4,484	$58

Capital Project Summary

Project Title/Program: Perry Center Area Install New 34.5kV Substation

Operating Company: NYSEG

Project Type: Electric

Investment Category: System Capacity

Scope:

Construct a new 3-breaker, 34.5 kV switching station and bring in all three sections of the 591 line into the new substation and close the normally open switch #59186 between Stanton Avenue and Perry Center Substations.

Justifications:

During the 2015 summer peak load period, an outage of the Federal Street to Perry Center 34.5 kV line #591 would cause the South Perry to Silver Springs 34.5 kV line #590 to exceed its summer LTE rating. Up to 5 MW and 1,400 customers in the area could potentially be at risk for an outage of the Federal Street to Perry Center 34.5 kV line #591.

Annual Capital Investment ($000): **Total Project Cost:** $9,717

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$652	$790	$3,621	$2,235	$100	$2,319	$0	$0	$0

Capital Project Summary

Project Title/Program: Smart Grid/AMI (including Smart Meter and Smart Grid Communications)

Operating Company: NYSEG

Project Type: Electric

Investment Category: Strategic

Scope:

The scope includes a phased deployment of AMI across NYSEG using lessons learned from the NYSEG's Energy Smart Community deployment in the City of Ithaca.

Justifications:

The benefits under review include operational benefits including reductions in meter reading and off cycle reads, reductions in service orders related to on/off, reduction in technical loss including reduced meter watts loss, improved outage management, efficiencies in billing including reduction in estimated bills, exceptions, summary and specialized billing, reduction in back office costs related to estimated bills, reduction in non-technical losses, improved power quality and voltage management. Customer benefits include support for time differentiated rates, tools and information for customers to help understand and manage their usage, support for settlement on actual customer usage, support for demand response programs, improved reliability, more accurate bills and more timely response to service requests.

Note: The Future amounts noted below represent currently planned 2020 spend

Annual Capital Investment ($000): **Total Project Cost:** **TBD**

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$0	$0	$0	$0	$0	$16,899	$31,663	$34,801	$38,764

Capital Project Summary

Project Title/Program: South Perry New 115kV Transformer

Operating Company: NYSEG

Project Type: Electric

Investment Category: System Capacity

Scope:

Install a second 115/34.5 kV, 30/40/50/56 MVA, LTC transformer at South Perry Substation and operate it in parallel with the existing 115/34.5 kV, 30/40/50/56 MVA, LTC transformer at South Perry.

Justifications:

During the 2015 summer peak load period, an outage of the existing 115/34.5 kV, 30/40/50 MVA will cause the entire South Perry area to be out of service. Up to 34 MW of load could potentially be at risk for an outage of the South Perry 115/34.5 kV transformer.

Annual Capital Investment ($000): **Total Project Cost:** $5,797

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$1,074	$1,059	$1,869	$741	$1,054	$0	$0	$0	$0

Capital Project Summary

Project Title/Program: South Perry New 230kV Transformer

Operating Company: NYSEG

Project Type: Electric

Investment Category: System Capacity

Scope:

Install a new 230/115 kV LTC transformer at South Perry Substation and reconductor the 16.7 miles of 4/0 ACSR conductor in the Meyer to South Perry 115 kV line #934 with 477 ACSR or equivalent conductor. It should be noted that the installation of the new South Perry 230/115 kV transformer will cause the Meyer to South Perry 115 line #934 (19.6 miles) to exceed its summer LTE rating for loss of either the Meyer to South Perry 230 kV line #87 or the 230/115 kV transformer at Meyer Substation. Therefore, the 16.7 miles of 4/0 ACSR conductor of the Meyer to South Perry 115 kV line #934 needs to rebuilt with 477 ACSR or equivalent conductor as part of this study alternative.

Justifications:

During the 2015 summer peak load period, loss of either the Meyer to South Perry 115 kV line #934 or the South Perry (RG&E Station 162) to Station 158 to Mortimer 115 kV lines #924/906 that supply the South Perry (NYSEG) and Genesee (RGE) regions will cause the remaining line to exceed its respective summer LTE rating. Up to 10 MW of load in the area could potentially be at risk for loss of either the 115 kV line #934 or the 115 kV line #924/906.

Annual Capital Investment ($000): **Total Project Cost:** $10,077

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$2,293	$1,085	$1,760	$0	$100	$4,839	$0	$0	$0

Capital Project Summary

Project Title/Program: Stephentown Substation New Transformer

Operating Company: NYSEG

Project Type: Electric

Investment Category: System Capacity

Scope:

Add a new Stephentown 115/34.5 kV, 20/26/33 (37) MVA, LTC transformer, to operate in parallel with the existing Stephentown 115/34.5 kV, 20/26/33 (37) MVA, LTC transformer.

Justifications:

During summer 2030 peak load period, sub-marginal voltages will appear in the areas served from the Berlin, Stephentown, West Lebanon, and Canaan substations upon the loss of the existing Stephentown 115/34.5 KV transformer. 190.2MW is the threshold load level at which violations occurs, with approximately 0.3MW at risk upon the loss of the existing Stephentown 115/34.5 KV transformer.

Annual Capital Investment ($000): **Total Project Cost:** $7,663

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$1,591	$1,194	$1,733	$1,690	$100	$1,355	$0	$0	$0

Capital Project Summary

Project Title/Program: Stillwater Substation- Upgrade Transformer to 14MVA

Operating Company: NYSEG

Project Type: Electric

Investment Category: System Capacity

Scope:

Upgrade Stillwater substation with a new 34.5-4.8X12.5 kV, 10/12.5(14) MVA, LTC transformer. Convert approximately two miles of distribution to 12.5 kV from the substation to Colonial Dr.

Justifications:

During the summer of 2013, the Stillwater 2.8mVA substation transformer was loaded to as much as 106%. To relieve the substation load, a small portion of the load had to be transferred to the nearby Flike Rd 605 circuit but the loading on the transformer was still as high as 96%. The high loading has also resulted in soft voltage and conductor loading concerns on the distribution feeder. The voltage concerns were corrected by installing the largest size distribution class line regulators at 219amps but the high line loaded has resulted in the units being loaded to as much as 122%. A voltage conversion to 12.5KV is recommended.

Annual Capital Investment ($000): **Total Project Cost:** $8,693

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$108	$17	$4	$200	$2,454	$3,410	$2,500	$0	$0

Capital Project Summary

Project Title/Program: Tom Miller Rd New Substation

Operating Company: NYSEG

Project Type: Electric

Investment Category: System Capacity

Scope:

Construct a new 46-12.5 kV distribution substation on company owned property along Tom Miller Road with a new 12/16/20 MVA transformer and three distribution circuit breakers to help alleviate overloading conditions at Hammond Lane substation.

Justifications:

To help balance distribution loads across several substations in the area, a new substation along Tom Miller Road is proposed. Hammond Lane is a single bank 46-12.5 kV 12/16/20 MVA station with three distribution feeders. It supplies the commercial area of the City of Plattsburgh. The summer peak load to date was 22,021 KVA or 98% of the banks PLBN rating.

Annual Capital Investment ($000): **Total Project Cost:** $7,251

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$1,000	$817	$4,331	$1,103	$0	$0	$0	$0	$0

Capital Project Summary

Project Title/Program: Transit St Substation MGP Remediation

Operating Company: NYSEG

Project Type: Electric

Investment Category: Mandatory

Scope:
Relocate control house and two 12 kV distribution circuits from the west end of the existing substation to facilitate MGP remediation.

Justifications:
Transit Street Substation MGP Remediation. Remediation of this site is necessary to comply with a mandate from the New York State Department of Environmental Conservation to cleanup former manufactured gas plants and the coal tar on this property.

Annual Capital Investment ($000): **Total Project Cost:** $6,035

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$865	$1,164	$2,237	$1,770	$0	$0	$0	$0	$0

Capital Project Summary

Project Title/Program: Transportation

Operating Company: NYSEG

Project Type: Common

Investment Category: Asset Condition Replacement

Scope:

Replace aged/outdated vehicles needed to maintain ideal average age of Fleet and replace aged/outdated equipment needed to perform fleet maintenance.

Justifications:

Vehicles are a necessary component in supplying Safe and reliable service to our Customers in that they are used by our workforce to access jobsites and perform their duties. Annually, the fleet is reviewed and assets replaced based on their age, mileage and cost to maintain in order to provide safe and reliable transportation in compliance with State and Federal regulations and good business practices.

Annual Capital Investment ($000): **Total Project Cost:** $91,732

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$4,858	$3,715	$6,155	$3,504	$5,000	$14,000	$16,500	$18,000	$20,000

Capital Project Summary

Project Title/Program: Watercure Rd. - 2nd 345 kV Transformer

Operating Company: NYSEG

Project Type: Electric

Investment Category: Reliability Risk

Scope:

Install a second 400 MVA 360/240/36.2 kV, LTC trasformer at the Watercure Substation. Install three 345 kV circuit breakers and four 230 kV circuit breakers to connect the new transformer in parallel with the existing bank #1.

Justifications:

N-1-1 loss of the existing Watercure 345/230kV transformer in combination with other Bulk Power System or Bulk Electric System transmission lines causes widespread submarginal voltages and thermal overloads.

Annual Capital Investment ($000): **Total Project Cost:** $11,360

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$3,893	$456	$852	$1,500	$100	$180	$1,239	$1,253	$1,887

Capital Project Summary

Project Title/Program: West Davenport Sub - Replace sub transformer with non-LTC 7.5/10.5MVA unit.

Operating Company: NYSEG

Project Type: Electric

Investment Category: System Capacity

Scope:

The project proposes to replace the existing 3-1667kVA 46-4.8kV banks at West Davenport substation with a LTC 10MVA unit with dual 4.8 & 12.5KV windings and to convert the two #012 and #022 feeders from 4.8KV to 12.5KV. The existing recloser on circuit 22 will be replaced a breaker.

Justifications:

The Davenport 012 is a long 9 mile radial 4.8kV circuit and has three set of line regulators to support the voltage. The circuit has difficulty supporting additional load and maintaining the voltage at 4.8kV. The project proposed to convert the substation bank and the two circuits (Ckts 012 & 022) from 4.8KV to 12.5KV to support the load growth and voltage in the area.

Annual Capital Investment ($000): **Total Project Cost:** $6,402

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$0	$0	$0	$0	$0	$0	$2,827	$3,575	$0

Capital Project Summary

Project Title/Program: Westover Substation New 115kV Transformer and Binghamton Division Capacitors

Operating Company: NYSEG

Project Type: Electric

Investment Category: Mandatory

Scope:

Add a 30/40/50 MVA LTC transformer at Goudey (Westover). Install the following switched capacitors: 102MVAR on the 115kV bus at Goudey, 12.6MVAR on the 115kV bus at Robble Avenue, 13.2MVAR on the 34.5kV bus at Noyes Island, 7.2MVAR on the 34.5kV bus at Oakdale, 2.4MVAR on the 34.5kV bus at Whitney Avenue, 2.4MVAR on the 34.5kV bus at Conklin, and 1.2MVAR on the 34.5kV bus at Bevier Street.

Justifications:

Binghamton Division has low bus voltage at Afton Substation and the Northside 115/34.5kV #2 transformer is overloaded beyond its Normal rating in Normal conditions. N-1-1 loss of both of the 345/115/34.5kV transformers at Oakdale overloads the two 115/34.5kV transformers at Westover. N-1-1 loss of both transformers results in severe voltage loss throughout the division. This appears at a load level of 370 MW. The exposure is about 265 hours for 2015, with approximately 70 MW at risk.

Annual Capital Investment ($000): **Total Project Cost:** $16,899

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$1,623	$510	$965	$1,700	$100	$471	$2,000	$4,529	$5,000

Capital Project Summary

Project Title/Program: Wood Street - Add 3rd 345/115 kV Transformer
Operating Company: NYSEG
Project Type: Electric
Investment Category: System Capacity
Scope:
Install a third 150/200/250/280 MVA LTC transformer in parallel with the two existing ones.

Justifications:
Brewster Division has low bus voltages along the 805 line under Normal conditions; Dover Plains (0.943), Wassaic (0.939), and Amenia (0.935). N-1-1 loss of both 345/115kV LTC transformers at Wood Street results in voltage collapse throughout the division and overloads the 115kV Fishkill – Sylvan Lake – Pawling lines above their STE ratings. Closing in the Normally Open 69kV tie between Smithfield and Amenia doesn't resolve the problem. The load threshold of this problem was 153 MW in 2012 when the peak load was 371MW; the peak for 2015 is expected to be about 380MW. Approximately 200 MW of load and 35,000 customers are at risk for about 5,100 hours in 2015.

Annual Capital Investment ($000): **Total Project Cost:** $11,076

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$97	$10	$43	$400	$100	$3,165	$7,261	$0	$0

Capital Project Summary

Project Title/Program: Bright Line

Operating Company: RG&E

Project Type: Electric

Investment Category: Mandatory

Scope:

The USA Federal Energy Regulatory Commission (FERC) issued Order 773 on December 20, 2012 establishing a new "Bright Line" Bulk Electric System (BES) Definition. This new BES Definition obligates Iberdrola USA and all other Transmission Owners in the United States to apply more strict North American Electric Reliability Corporation (NERC) Reliability Standards to their transmission systems at voltages of 100 kV and higher. This project is to meet compliance with transmission system design requirements of the NERC Transmission Planning Standards. The total cost, cash flows and duration of cash flows are preliminary. The project scope continues to be developed and defined.

The costs shown in below are an estimate of the project costs based on conceptual engineering and do not include the entire cost of the project.

Justifications:

FERC issued Order 773 on December 20, 2012. Compliance with the new BES Definition is mandatory. Iberdrola USA must comply with over 100 NERC Reliability Standards applicable to the BES by 2016, or else be subject to fines and sanctions up to $1 million per day per violation, depending on severity.

Annual Capital Investment ($000): **Total Project Cost:** $50,000

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$29	$147	$1,403	$2,015	$5,000	$10,000	$10,000	$10,000	$11,407

Capital Project Summary

Project Title/Program: Energy Control Center (Integrated EMS/SCADA/DMS/OMS Project)

Operating Company: RG&E

Project Type: Electric

Investment Category: Mandatory

Scope:

This project consists of design and installation of a fully integrated EMS/SCADA/DMS/OMS system that replaces the existing EMS/SCADA systems and current "Smartmap" Outage Management System. All these systems will be combined and integrated into one Energy Control Center system that will be compliant with NERC Critical Infrastructure Protections Standards (CIPS). This project will replace the current system at NYSEG and upgrade the current Siemens system at RG&E to the Siemens Spectrum system.

Justifications:

The Energy Control Center Project will address the following issues and will result in the following benefits:
One integrated control center platform for NYSEG and RG&E
The integration of the EMS/SCADA system with the OMS provides real time transmission, substation, and distribution situational awareness for dispatchers and operators.
New infrastructure that facilitates increased automation on the transmission and distribution system while providing a robust foundation for additional automation of the system.
Better visibility of the growing penetration of distributed generation, requiring better coordination of distribution-transmission to manage distributed generation upstream power flows.
Stronger demand-side participation as electric vehicles potentially gain popularity.
Outage management based on a variety of integrated inputs, including customer calls, SCADA and other devices.
Enterprise Geographic Information System (GIS) Integration.

Annual Capital Investment ($000): **Total Project Cost:** $10,666

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$5,280	$1,711	$2,704	$970	$0	$0	$0	$0	$0

Capital Project Summary

Project Title/Program: Ginna Retirement Transmission Alternative (GRTA) & New Fifth Row at Station 80

Operating Company: RG&E

Project Type: Electric

Investment Category: Mandatory

Scope:

This project consists of consists of two major elements and work at Station 80. First, RG&E will upgrade the Company's facilities at Station 122. The work at Station 122 consists of: replacing three transformers at Station 122 with new transformers from 200MVA class to 400MVA class; reconfiguring the 345 kV circuit breaker to a breaker and a half configuration; and replacing the 115 kV open-air breaker configuration with a 115 kV gas-insulated switchgear arranged in a breaker and half configuration. Second, RG&E will uprate four circuits: 34.5 kV Circuit 718; 34.5 kV Circuit 735; 34.5 kV Circuit 770; and 11 kV Circuit 623. Finally, RG&E will construct a new bay of 345 kV circuit breakers at Station 80 to reconnect transformers #5 and #3.

Justifications:

The upgrades and reconfiguration included in this project are needed to solve the thermal overloads at Station 122 and to ensure that only one bulk transformer can be lost in a single contingency. A GIS breaker and half is needed to replace the existing 115kV park due to a fault over duty failure because of the replacement of the transformers. The new (fifth) 345 kV bay is needed to resolve the stuck breaker at Station 80, which will ensure that only one bulk transformer is lost in a single contingency. Additionally, the upgrade of circuits enables the RG&E network to transfer power from Station 80 to Station 122 and vice versa. This ability allows for the reduction or elimination of thermal overloads under contingency conditions.

Annual Capital Investment ($000): **Total Project Cost:** $149,927

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$0	$0	$277	$20,200	$110,770	$18,680	$0	$0	$0

Capital Project Summary

Project Title/Program: Mobile Substations #3 & #5

Operating Company: RG&E

Project Type: Electric

Investment Category: Reliability Risk

Scope:

Purchase two new mobile substations to be available for substation proejcts. Mobile substation #3 is rated at 46 MVA at 115kV/34.5kV and 28 MVA at 115kV/13.1-11/5kV. Mobile substation #5 is rated at 37.3MVA at 34.5kV/13.1-11.5kV with 35kV/15kV GIS with three 1200A feeder bays. Both units include high and low side protection, protection and control or are out of phase with the RG&E circuits.

Justifications:

Mobile substations are required in many scenarios to facilitate substation upgrades and improvements. In most cases, lengthy and costly outages are required to perform the upgrades which can be avoided with mobile substations. RG&E's current mobile substation fleet has limited resources to cover the needs of projects on the RG&E electric system.

Annual Capital Investment ($000): **Total Project Cost:** $5,419

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$174	$112	$572	$800	$2,900	$860	$0	$0	$0

Capital Project Summary

Project Title/Program: RGE Pilot Wire Replacement Program

Operating Company: RG&E

Project Type: Electric

Investment Category: Asset Condition Replacement

Scope:

Replace the RG&E obsolete DC pilot wire communications and relay systems with fiber optic communications systems and microprocessor relays.

Justifications:

RG&E's pilot wire system is 60-70 years old and consists of approximately 100 separate pilot wire routes which connect many critical substations. The project is a multi-year plan to replace the obsolete communications and relay facilities.

Annual Capital Investment ($000): **Total Project Cost:** $10,416

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$2,409	$172	$605	$700	$200	$1,891	$4,439	$0	$0

Capital Project Summary

Project Title/Program: Rochester Area Reliability Project (RARP)

Operating Company: RG&E

Project Type: Electric

Investment Category: Reliability Risk

Scope:

As part of the RARP, Station 255, a new 345kV bulk power system station, will be constructed and located approximately 3.8 miles west of the RG&E Station 80. The two NYPA 345kV cross-state transmission lines will be brought into the new station. A new 345kV line will be constructed between the new substation and Station 80. Two 115kV lines will be emanate from the new substation. The first line, which is approximately 10 miles long, will tie into Station 418. The second line, which is approximately 14 miles long, will tie into the RG&E 115kV system at Station 23. An Article VII petition has been filed with the PSC.

Justifications:

The RARP was originally designed to provide adequate supply to the RG&E service area during refueling outages of the Ginna Nuclear Plant, which, when needed, are scheduled during light load periods. The project reduces loading values already below LTE rating at Station 122 during the temporary outage of Ginna in peak load periods and also provides for future load growth. With the announcement of the proposed retirement of Ginna, new studies showed the need for immediate reinforcement of the transmission system elements at Station 122 to bring loading below Normal ratings, followed by the later completion of the RARP scope of work to address load growth and system resiliency under N-1-1 planning criteria.

Annual Capital Investment ($000): **Total Project Cost:** $275,189

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$8,824	$17,018	$19,528	$18,324	$19,178	$28,604	$40,776	$48,464	$74,472

Capital Project Summary

Project Title/Program: Sectionalize 115kV Circuit 917 (Station 7 - Station 418)

Operating Company: RG&E

Project Type: Electric

Investment Category: Reliability Risk

Scope:

The RG&E owned 115kV circuit number 917 includes 6 tapped substations and over 30,000 customers. The existing 917 line protection is provided by primary and secondary step distance electromechanical relays located at Station 418 and microprocessor based relays at Station 7.

The purpose of this project is to minimize the impacts of faults on this line by breaking up the line at various locations using breakers and possibly motor-operated switching sectionalizing schemes depending on what can be done at various substations. The solution required to sectionalize the line is to install circuit breakers and switches in each of the 115kV buses at Station 69 and 70 and install GIS-type compact switching devices for Station 71. It is also required to equip the existing 115kV disconnect switches at Station 69, 70, and 113 with motor operating mechanisms as well as supervisory elements for remote control. Protections and controls necessary to isolate each section of the line in the minimum time will also be provided for the project, as well as fiber optic communication.

In 2015, Station 69 above ground construction will be completed as well as completing SPC 3-7 for Station 70 and beginning detailed engineering for Station 71.

Justifications:

Sectionalization of the existing line at various locations by use of breakers at Station 71 and motor operated sectionalizing schemes at Stations 69 and 70 will minimize the number of customers affected by a persistent fault. Station 113 is currently used to sectionalize the line. Motor operated switches will be added at this station to ensure reliability. This project also includes the establishment of necessary communication, control and protection.

Currently, the circuit is sectionalized in two and a failure will affect half of the customers. Adding sections will allow the automatic isolation of a persistent fault to a smaller section and therefore affect fewer customers.

Annual Capital Investment ($000): **Total Project Cost:** $13,789

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$1,723	$1,554	$2,690	$1,490	$100	$1,478	$2,755	$2,000	$0

Capital Project Summary

Project Title/Program: Smart Grid/AMI (including Smart Meter and Smart Grid Communications)

Operating Company: RG&E

Project Type: Electric

Investment Category: Strategic

Scope:

The scope includes a phased deployment across RG&E using lessons learned from the NYSEG's Energy Smart Community deployment in the City of Ithaca.

Justifications:

The benefits under review include operational benefits including reductions in meter reading and off cycle reads, reductions in service orders related to on/off, reduction in technical loss including reduced meter watts loss, improved outage management, efficiencies in billing including reduction in estimated bills, exceptions, summary and specialized billing, reduction in back office costs related to estimated bills, reduction in non-technical losses, improved power quality and voltage management. Customer benefits include support for time differentiated rates, tools and information for customers to help understand and manage their usage, support for settlement on actual customer usage, support for demand response programs, improved reliability, more accurate bills and more timely response to service requests.

Note: The Future amounts noted below represent currently planned 2020 spend

Annual Capital Investment ($000): **Total Project Cost: TBD**

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$0	$0	$0	$0	$0	$2,438	$8,125	$9,532	$9,818

Capital Project Summary

Project Title/Program: Station 117 - Replace #1 Transformer Bank and convert 3 circuits to 12kV operation.

Operating Company: RG&E

Project Type: Electric

Investment Category: System Capacity

Scope:

Replace Transformer Bank #1 and associated gear with a new 34.5-12.5 kV, 20/26/33 (37.3)MVA Transformer Bank and convert the 3 existing 4.16 kV distribution circuits to 12.5 kV.

Justifications:

The loading on the existing 5.25 MVA transformer bank #1 at Station 117 has reached 103% of its PLBN rating during the summer peak of 2013. The conversion to 12kV will enhance station capacity, and adjacent station 12kV circuit tie over for contingency. The larger transformer will improve system reliability by providing N-1 capacity to the station, and adjacent circuits that currently are without adequate circuit ties during high demand periods.

Annual Capital Investment ($000): **Total Project Cost:** $20,406

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$0	$0	$0	$0	$0	$0	$0	$5,100	$15,306

Capital Project Summary

Project Title/Program: Station 121, Add 2nd 115/34.5kV Transformer

Operating Company: RG&E

Project Type: Electric

Investment Category: Reliability Risk

Scope:

Install a second 115/34.5 kV, 30/40/50/56 MVA, LTC transformer at Station 121 and operate it in parallel with the existing 115/34.5 kV, 30/40/50/56 MVA, LTC transformer.

Justifications:

During the 2015 summer period, loss of the Station 121 115/34.5 kV transformer would result in low voltages in the area and cause the bank #1 at Station 127 to exceed it summer LTE rating. Up to 5 MW and 1200 customers could be at risk for 40 hrs in 2015.

Annual Capital Investment ($000): **Total Project Cost:** $8,388

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$0	$0	$0	$0	$0	$0	$0	$0	$8,388

Capital Project Summary

Project Title/Program: Station 168 Service Area Reinforcement

Operating Company: RG&E

Project Type: Electric

Investment Category: Reliability Risk

Scope:

Sectionalize National Grid 115 kV trunks #2 and #4 at Station 168 with 115 kV circuit breakers. Install fixed and switched voltage controlled capacitors along 34.5 kV circuits presently served from Station 168. Additionally, a 14.6 mile 34.5kV line will be installed.

Justifications:

In the event of a contingency involving the loss of either National Grid Trunk #4 or #7 under summer peak or winter peak load conditions, the remaining 115/34.5 kV Transformer at Station 168 loads above its thermal capacity necessitating the dropping of either portions or all load served by Station 168. For the same contingency, and at lower levels of transformer loading, the three 34.5 kV circuits (#736, #737, #704) served from Station 168 suffer submarginal voltage problems. For a contingency involving the loss of Trunk #4, the calculated exposure to low voltage is 2628 hours/year (30% of the time), calculated exposure to transformer overload above its Normal Rating is 1139 hours/year (13% of the time), calculated exposure to transformer overload above its LTE Rating is 438 hours/year (5% of the time), and calculated exposure to transformer overload above its STE Rating is 175 hours/year (2% of the time). Sectionalization of Trunk #4 will ensure that the 12 kV load at Station 168 is not dropped for a single-element contingency involving loss of either section of Trunk #4. Sectionalization of both Trunks (#2 and #4) will ensure that the 34.5 kV load at Station 168 is always shared by the two 115/34.5 kV Transformers for any single-element contingency involving loss of either section of Trunk #4 or of Trunk #7.

Annual Capital Investment ($000): **Total Project Cost:** $40,314

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$466	$1,309	$90	$1,061	$3,991	$7,240	$7,813	$4,449	$13,895

Capital Project Summary

Project Title/Program: Station 2 - 6.3MW Hydrogeneration Addition

Operating Company: RG&E

Project Type: Generation

Investment Category: Growth/System Capacity

Scope:

Adds 6.3 MW of hydro generation capacity and approximately 26,500 MWh of generation per year. It supports the New York State goal of increasing generation.

Justifications:

This project covers the addition of a new 6.3 MW unit to Station 2 in Rochester, NY. Includes a new powerhouse, upgraded penstock, modifications to the power canal and associated electrical equipment.

Annual Capital Investment ($000): **Total Project Cost:** $13,052

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$0	$0	$0	$0	$0	$100	$6,476	$6,476	$0

Capital Project Summary

Project Title/Program: Station 2 Replace Penstock & Intake

Operating Company: RG&E

Project Type: Generation

Investment Category: Asset Condition Replacement

Scope:

Design, procurement, and installation of a new penstock, trash chute, fish bypass, and siphon.

Justifications:

The existing systems are at end of life and require replacement to prevent potential failures and long term station outages.

Annual Capital Investment ($000): **Total Project Cost:** $9,642

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$0	$0	$0	$0	$3,981	$5,661	$0	$0	$0

Capital Project Summary

Project Title/Program: Station 204, Add 115-35kV MVA LTC Transformer

Operating Company: RG&E

Project Type: Electric

Investment Category: Reliability Risk

Scope:

Add a third 115/34.5kV transformer that is rated for 75MVA with LTC at Station 204.

Justifications:

L/O one of two Station 204 115/34.5kV Xfrs, from L/O feeder lines or Xfr outage, causes the remaining Station 204 115/34.5kV Xfr to be thermally overloaded. The exposure is 30 hrs/yr, affecting 2100 customers and 5 MW of load.

Annual Capital Investment ($000): **Total Project Cost:** $27,956

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$0	$0	$0	$0	$0	$0	$0	$0	$27,956

Capital Project Summary

Project Title/Program: Station 218 to Station 199 (Clyde) New 34.5kV Transmission Line #804

Operating Company: RG&E

Project Type: Electric

Investment Category: System Capacity

Scope:

The project entails adding a 10.8 mile 34.5kV 35MVA line 804 from Clyde Substation to Station 218, and upgrading existing 34.5kV line 708.

Justifications:

A new 34.5 kV line circuit 804 (from the Clyde Station to Station 218) relieves the existing 34.5 kV line circuit 708 (from the Clyde Station to Station 218) of thermal stress through parallel operation. The project allows the existing 34.5 kV line 708 Clyde (Station 199) - Station 218 and the proposed new 34.5 kV line 804 Clyde (Station 199) - Station 218 carry present and future load in the area under normal conditions. The project will also allow the load to be more equally split between circuit #708 and the new circuit #804. Voltage regulators ensure that voltages at all load stations are within allowable limits.

Annual Capital Investment ($000): **Total Project Cost:** $16,970

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$3,054	$2,985	$4,809	$6,122	$0	$0	$0	$0	$0

Capital Project Summary

Project Title/Program: Station 23 - 115 - 11kV Transformers & 11kV Switchgear

Operating Company: RG&E

Project Type: Electric

Investment Category: System Capacity

Scope:

This project will add an 11 kV GIS and two 115/11 kV transformers to Station 23, as well as add a double bus configuration to the 115kV GIS.

Justifications:

Transformer replacements are due to aging infrastructure. 1T and 2T are leaking and reaching the end of their useful lives. Two of the four bus sections of 11 kV are overdutied and need to be upgraded for proper fault current ratings. Bus 3-4 today is at 96% of rated interrupt capacity. Looking toward future planning with all projects included, the breaker duties will continue to increase. Bus 3 and Bus 4 will each have 6 breakers with fault duty equal to 100 100.1% of their interrupt capability leaving no interrupt capability room for system changes. This project will insure the reliability of supply from Station 23.

Annual Capital Investment ($000): **Total Project Cost:** $11,002

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$2,572	$1,908	$2,292	$1,800	$100	$2,329	$0	$0	$0

Capital Project Summary

Project Title/Program: Station 23 - New Downtown 115kV Source

Operating Company: RG&E

Project Type: Electric

Investment Category: System Capacity

Scope:

Station 23 will have a new gas-insulated 115kV bus with two new 115/34.5 kV transformers with two 34.5 kV feeds to Station 137. The 115kV line 901 will be upgraded from Station 82 to Station 33 above ground and from Station 33 to Station 23 underground.

Justifications:

TThe new 115 kV source at Station 23 Project is required under RG&E's Internal Planning Criteria for N-1 contingencies. The Station 23 project eliminates N-1 thermal overloads, including overload on the supply lines to Station 3, overloads of the 115/34.5kV transformers at Station 33, overloads on the 115kV cables that supply Station 42, overloads on 34.5 kV cables in the vicinity of Station 42, and overload on the 115 kV Circuit #901, all under contingency conditions. The new 34.5 kV lines from Station 23 to the 34.5kV bus at Station 137 solve the thermal problems associated with the loss of one of the existing 34.5 kV lines feeding Station 3 and provide a third source to Station 42, which enhances resiliency.

Annual Capital Investment ($000): **Total Project Cost:** $113,219

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$4,815	$7,686	$8,769	$9,994	$5,964	$17,885	$12,556	$20,552	$25,000

Capital Project Summary

Project Title/Program: Station 262- New 115kV/34.5kV Substation

Operating Company: RG&E

Project Type: Electric

Investment Category: Reliability Risk

Scope:

A new 115 kV source station for the Station 26 load provides necessary relief to existing lines and transformers from thermal stress under these contingency conditions. The new 115 kV source will take the form of a new 115/34.5 kV substation, a new 34.5 kV line, and a second 34.5/11.5 kV transformer at Station 26.

Justifications:

Station 26 and Station 6 serve approximately 38MW of load which is approximately 700 customers and the 11.5 kV network load. During high load periods, loss of the 34.5 kV Circuit #741 (Station 101- Station 33) or loss of the 34.5/11.5kV transformer at Station 26 results in thermal overload above the short-term emergency (STE) rating of the 11.5 kV Circuit #629 (Station 6 – Station 23). This results in shedding approximately 8MW of load to relieve the overload. The period of exposure is approximately 175 hours per year.

Annual Capital Investment ($000): **Total Project Cost:** $27,512

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$3,070	$4,378	$2,973	$4,105	$100	$2,363	$2,023	$3,500	$5,000

Capital Project Summary

Project Title/Program: Station 43 - Replace #3 and #4 Transformer Banks.

Operating Company: RG&E

Project Type: Electric

Investment Category: System Capacity

Scope:

Replace transformer banks #3 and #4 at Station 43 with two new 34.5-4.16x12.5 kV, 13.4/17.9/22.4 MVA transformer banks.

Justifications:

The loading on the existing 6.25 MVA transformer banks #3 and #4 at Station 43 has reached 113% and 95% of their PLBN rating respectively during the summer peak of 2011. The transformers are older units, #3T was installed in 1950 and #4T was installed in 1953. The total peak loading at the station is around 14 MVA, attributable to the six circuits, three fed from each transformer. The station serves approximately 6,356 residential and commercial customers. Presently, loss of either transformer places the other in a situation where it is loaded well above its LTE rating, which conflicts with Distribution Planning Criteria.

Annual Capital Investment ($000): **Total Project Cost:** $7,285

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$0	$0	$0	$0	$0	$2,500	$4,785	$0	$0

Capital Project Summary

Project Title/Program: Station 49 - Replace 34.5-11.5kV Transformer - Rochester

Operating Company: RG&E

Project Type: Electric

Investment Category: Reliability Risk

Scope:

This project will include the replacement of Transformer 3 and 4 (18.75 MVA) with Transformer 5 and 6 (20/26.6/33.3 (37.3) MVA) and the installation of new 11 kV gas insulated switchgear (GIS) to be located in the existing control house. Additional property is being acquired from Bausch & Lomb to accommodate the transformer replacement and oil containment. The two 34.5/11.5kV transformers will be replaced with larger LTC units.

Justifications:

Station 49 serves approximately 22MW of load which is 6230 customers which includes Bausch Lomb and Rochester General Hospital. During high load periods, loss of one of the 34.5kV/11.5kV transformers at Station 49 results in overloading the other 34.5/11.5kV transformer above its Longterm Emergency Rating (LTE) and voltages at sub marginal levels. This would result in the shedding 2MW of load to relieve the overload on the remaining transformer. The period of exposure is approximately 400 hours per year. The criteria used for this project is the single contingency criteria for the transmission system that provides for loss of any element results in the remaining elements being below their long term emergency rating.

Annual Capital Investment ($000): **Total Project Cost:** $10,235

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$175	$2,366	$1,836	$1,003	$100	$2,755	$2,000	$0	$0

Capital Project Summary

Project Title/Program: Station 51 transformer/facilities upgrade and secondary source addition

Operating Company: RG&E

Project Type: Electric

Investment Category: System Capacity

Scope:

Replace existing Station 51 transformer with a new 10 MVA 11/4 kV LTC type transformer and upgrade the existing facilities as required. Add a second 10 MVA, LTC type 34.5/4 kV transformer and extend Circuit 773 from a location at or near Station 88.

Justifications:

This project will increase station capacity and develop second source contingency. This is a reliability improvement project. A delay will be negatively impact RG&E SAIFI. The station is located in an isolated area of service. The station provides service to Seabreeze park. If the station transformer were lost the area distribution would not be able to support the load during the summer peak.

Annual Capital Investment ($000): **Total Project Cost:** $9,355

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$30	$9	$0	$0	$4,000	$4,127	$1,189	$0	$0

Capital Project Summary

Project Title/Program: Station 56 Additional 12kV Source

Operating Company: RG&E

Project Type: Electric

Investment Category: System Capacity

Scope:

The project is to install a new source for the existing Station 56 12kV yard with installing a new 115-12kV, 12/22 MVA transformer (4T), three 115kV breakers and associated disconnect switches, 115kV bus work, 12kV GIS equipments, 12kV GIS building and new control room in the GIS building. All the site work will be contained within the fenced area of the existing substation 115/12kV yard.

Justifications:

Station 56 is a 12kV source which supplies approximately 4500 upscale, mainly residential customers in the Towns of Pittsford and Brighton. Station 53 operates at 4kV supplying 1400 customers in an adjacent area. The Station 56 transformer is loaded beyond 90% of its 22MVA capability at peak periods, while Station 53 is loaded at peak to its Planned Loading Beyond Nameplate rating. There are insufficient ties to supply either service area in the event of a transformer problem resulting in long outage durations. This project will eliminate Station 53 and increase the capacity at Station 56 to improve potential reliability to the entire area while allowing room for further growth. Through the application of the current Iberdrola substation design standard, the project will upgrade the existing equipment and provide increased operational capability. Conceptual and detailed engineering has been approved. In ground construction phase 1 has been completed; above ground phase 1 has been completed. The testing and commissioning phase 1 is in progress.

Annual Capital Investment ($000): **Total Project Cost:** $18,582

Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$3,313	$5,480	$5,765	$4,024	$0	$0	$0	$0	$0

Capital Project Summary

Project Title/Program: Stations 67 to 418 New 115kV Transmission Line

Operating Company: RG&E

Project Type: Electric

Investment Category: Reliability Risk

Scope:

New 115kV line from Station 67 to Station 418. At Station 67: Abandon the existing circuit breaker 92602 and add a new line terminal for Circuit 926. Add a new circuit breaker 8x6772 to Bus #1 to connect new 115kV Bus #3 for accomodation of the new line positions (L939) and connection points for a mobile sub and future 4T. Also included is installing new protection and control for L939 and Bus #3, upgrading Circuit 910 protection to match new relaying at Station 418, and upgrade control relay for Circuit 926. At Station 418: Replace the existing 4 fault duty circuit switchers. Three (3) new CCVT's will be installed on 115kV bus section #2. Slipover CTs will be added to the existing transformers. Also added is a new Control house for all new P&C.

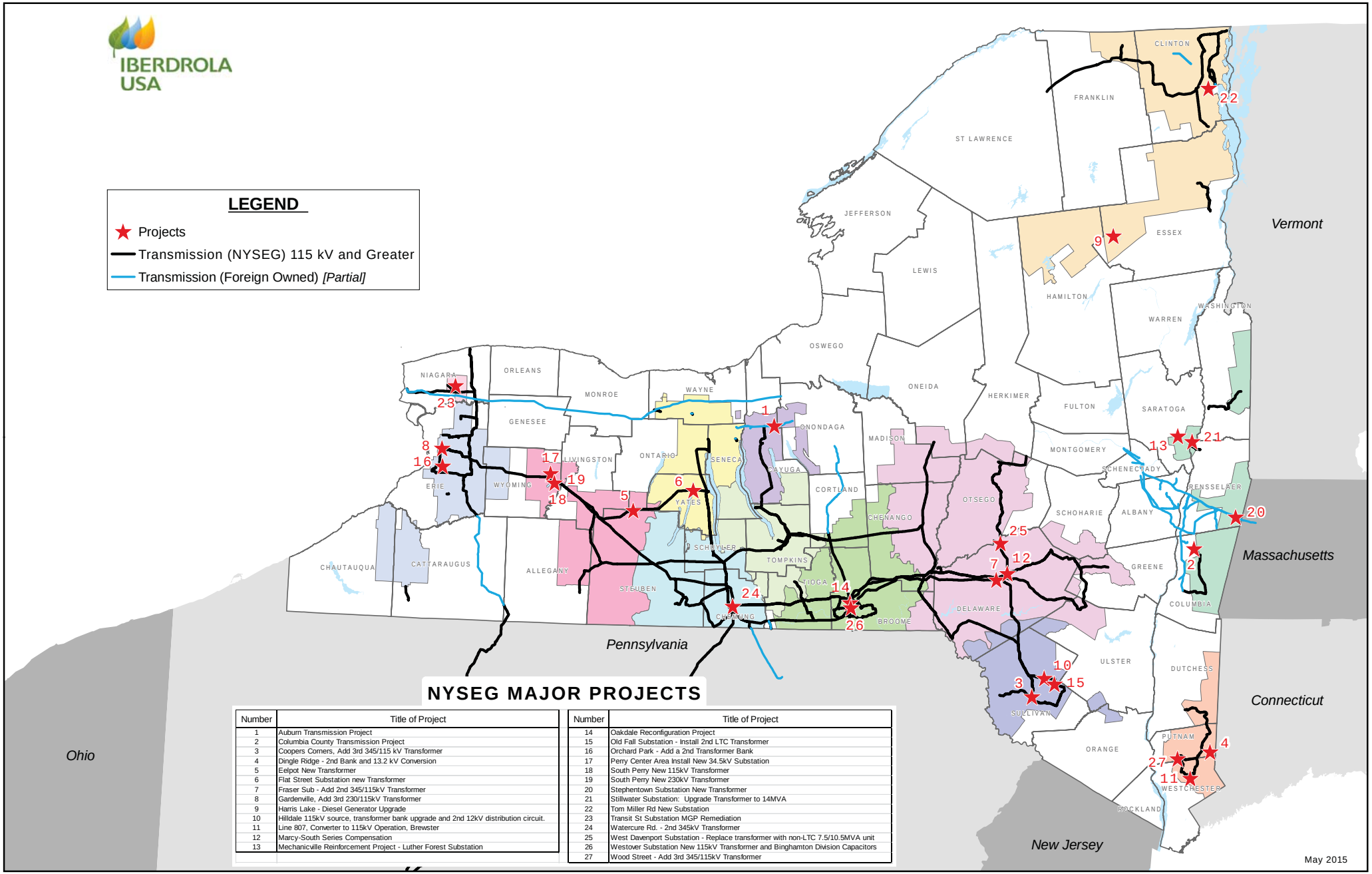
Justifications:

Station 418 serves approximately 50MW of load which is approximately 9,800 customers. During high load periods, loss of the 910 line results in low-voltages and overloads above STE on the 917 line. This would result in shedding all 50 MW of load at Station 418. The period of exposure is approximately 300 hours per year. On February 23, 2011 an outage was experienced on the 917 circuit that cascaded resulting in the loss of 46,000 customers.

A new line between Station 418 and Station 67 will resolve the contingency issue for the 910 line. The criteria being used for this project is the single contingency criteria. The criteria provides for two things; first, that with the loss of any element, the remaining elements stay above the post contingency voltage. Second, that with the loss of any element, the remaining elements stay below their long term contingency rating.

Annual Capital Investment ($000): **Total Project Cost:** $18,246

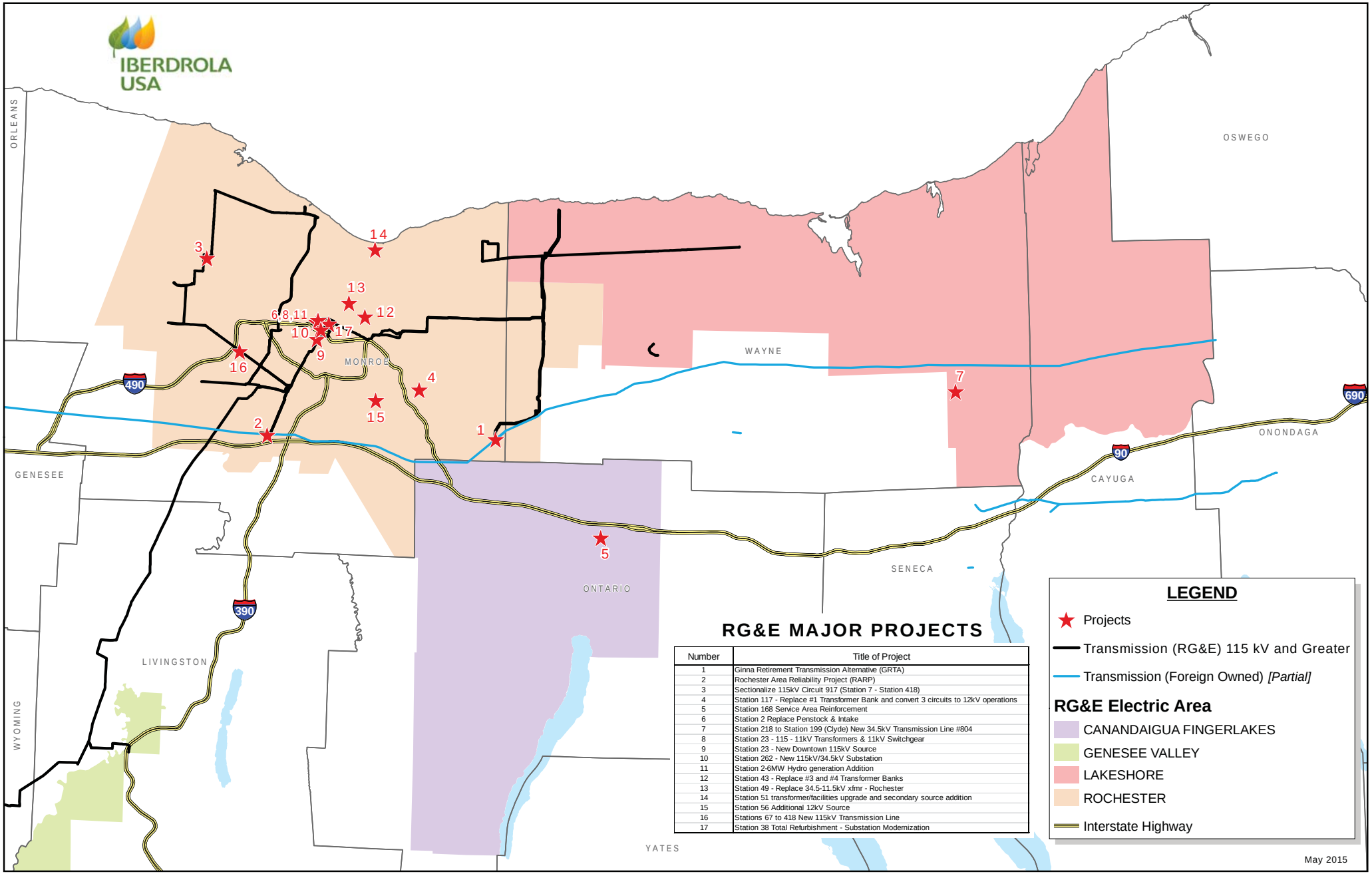
Actual Investment:			Forecasted Investment:					
2012 and Prior	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Future**
$754	$1,552	$791	$0	$0	$5,149	$10,000	$0	$0



NYSEG MAJOR PROJECTS

Number	Title of Project
1	Auburn Transmission Project
2	Columbia County Transmission Project
3	Coopers Corners, Add 3rd 345/115 kV Transformer
4	Dingle Ridge - 2nd Bank and 13.2 kV Conversion
5	Eelpot New Transformer
6	Flat Street Substation new Transformer
7	Fraser Sub - Add 2nd 345/115kV Transformer
8	Gardenville, Add 3rd 230/115kV Transformer
9	Harris Lake - Diesel Generator Upgrade
10	Hilldale 115kV source, transformer bank upgrade and 2nd 12kV distribution circuit.
11	Line 807, Converter to 115kV Operation, Brewster
12	Marcy-South Series Compensation
13	Mechanicville Reinforcement Project - Luther Forest Substation

Number	Title of Project
14	Oakdale Reconfiguration Project
15	Old Fall Substation - Install 2nd LTC Transformer
16	Orchard Park - Add a 2nd Transformer Bank
17	Perry Center Area Install New 34.5kV Substation
18	South Perry New 115kV Transformer
19	South Perry New 230kV Transformer
20	Stephentown Substation New Transformer
21	Stillwater Substation: Upgrade Transformer to 14MVA
22	Tom Miller Rd New Substation
23	Transit St Substation MGP Remediation
24	Watercure Rd. - 2nd 345kV Transformer
25	West Davenport Substation - Replace transformer with non-LTC 7.5/10.5MVA unit
26	Westover Substation New 115kV Transformer and Binghamton Division Capacitors
27	Wood Street - Add 3rd 345/115kV Transformer



RG&E MAJOR PROJECTS

Number	Title of Project
1	Ginna Retirement Transmission Alternative (GRTA)
2	Rochester Area Reliability Project (RARP)
3	Sectionalize 115kV Circuit 917 (Station 7 - Station 418)
4	Station 117 - Replace #1 Transformer Bank and convert 3 circuits to 12kV operations
5	Station 168 Service Area Reinforcement
6	Station 2 Replace Penstock & Intake
7	Station 218 to Station 199 (Clyde) New 34.5kV Transmission Line #804
8	Station 23 - 115 - 11kV Transformers & 11kV Switchgear
9	Station 23 - New Downtown 115kV Source
10	Station 262 - New 115kV/34.5kV Substation
11	Station 2-6MW Hydro generation Addition
12	Station 43 - Replace #3 and #4 Transformer Banks
13	Station 49 - Replace 34.5-11.5kV xfmr - Rochester
14	Station 51 transformer/facilities upgrade and secondary source addition
15	Station 56 Additional 12kV Source
16	Stations 67 to 418 New 115kV Transmission Line
17	Station 38 Total Refurbishment - Substation Modernization

LEGEND

- Projects
- Transmission (RG&E) 115 kV and Greater
- Transmission (Foreign Owned) *[Partial]*

RG&E Electric Area

- CANANDAIGUA FINGERLAKES
- GENESEE VALLEY
- LAKESHORE
- ROCHESTER
- Interstate Highway

May 2015

NYSEG Capital Estimate

Standard Group			Total Estimated Capital Cost
BAL	Resource and Demand Balancing	$	-
CIP	Critical Infrastructure Protection	$	-
COM	Communications	$	-
EOP	Emergency Preparedness and Operations	$	-
FAC	Facilities Design, Connections, and Maintenance	$	-
INT	Interchange Scheduling and Coordination	$	-
IRO	Interconnection Reliability Operations and Coordination	$	-
MOD	Modeling, Data, and Analysis	$	-
NUC	Nuclear	$	-
PER	Personnel Performance, Training, and Qualifications	$	-
PRC	Protection and Control	$	-
TOP	Transmission Operations	$	-
TPL	Transmission Planning	$	460,600,000
VAR	Voltage and Reactive	$	-
Total Capital:		$	460,600,000

RG&E Capital Estimate

Standard Group			Total Estimated Capital Cost
BAL	Resource and Demand Balancing	$	-
CIP	Critical Infrastructure Protection	$	1,500,000
COM	Communications	$	-
EOP	Emergency Preparedness and Operations	$	-
FAC	Facilities Design, Connections, and Maintenance	$	-
INT	Interchange Scheduling and Coordination	$	-
IRO	Interconnection Reliability Operations and Coordination	$	-
MOD	Modeling, Data, and Analysis	$	-
NUC	Nuclear	$	-
PER	Personnel Performance, Training, and Qualifications	$	-
PRC	Protection and Control	$	-
TOP	Transmission Operations	$	-
TPL	Transmission Planning	$	45,300,000
VAR	Voltage and Reactive	$	-
Total Capital:		$	46,800,000

NYSEG and RG&E
Advanced Metering Infrastructure Plan

Overview

The Companies (NYSEG and RG&E) are in the process of preparing a report and analysis of their multi-year proposal for Advanced Metering Infrastructure ("AMI") investment. In this one-year rate filing, the Companies are not proposing any material investment in AMI during the rate year. For any multi-year rate plan consideration, the Companies would anticipate partial AMI deployment beginning in 2017 and continuing for numerous years. The Companies expect their AMI report will be available early third quarter 2015 for Department of Public Service Staff and other parties to consider as part of any multi-year settlement discussion. The considerations being addressed in the Companies' AMI report are described below.

Scope of AMI Report

The Companies AMI report scope includes a deployment strategy that reflects the necessary IT back office systems to support customer benefits realization. The scope assumes an initial meter and network deployment in the city of Ithaca through its Energy Smart Community, and then phased meter deployments at NYSEG and RG&E. The Companies have engaged an outside expert consultant, Black & Veatch, to assist in preparing the AMI report. The AMI report will include cost, benefit and benchmark analysis and will incorporate knowledge gained as a result of the Companies' sister company, Central Maine Power Company, which has fully deployed AMI in its service territory.

Cost Assumptions

AMI project costs will involve five major areas of implementation including: network deployment; information technology ("IT") systems; meter deployment and infrastructure development; project management including process development; and community and customer communications to support the successful deployment of the project.

In its multi-year capital investment plan through 2021, the Companies have reflected approximately $263 million for AMI investment in the electric and gas capital plans. The AMI investments include the following elements:

Network Devices and Deployment:

The proposed network related costs will support a meter-level deployment as well as a wide area network to backhaul the meter information to a central office. The proposed network costs support AMI meter data collection as well as provide a platform to serve future communication requirements such as distribution automation, active network management and voltage

optimization. The cost estimates will assume network coverage with high-bandwidth, low latency to effectively support the deployed meters. The network costs will include network design, staffing resources required for field siting, installation and performance tuning, as well as network devices and related equipment to support the deployment of the network.

IT

IT systems will be necessary to support operational and customer benefits. AMI meters generate significantly more data and functionality than standard electromechanical meters. In order to achieve full benefit from the AMI data, investments in upgrading, integrating or developing new IT systems will be critically important. The AMI platform will also need to support future capabilities and will need to be designed to readily scale.

IT upgrades and/or integration costs for the customer billing, meter asset management, load settlement, gas systems and the outage management systems will be necessary. The development of new systems will include meter data management, AMI head end, and a data warehouse. Because of the volume of data, as well as security requirements, investments in IT infrastructure including storage area networks, routers and firewalls and other security measures will also be required.

The data warehouse infrastructure investments will support the REV-envisioned data transparency for DER integration and market development as well as provide support for continued opportunities to optimize assets and grid operations in a more dynamic future environment.

The IT investments will also include the capability to provide customer information via a web portal that could support usage notification and home/business reports.

IT system costs will be necessary regardless of the meter deployment scale.

Meters and Deployment

AMI meter deployment will be a critical factor in overall costs. Through 2021, it is assumed approximately 195,000 electric and 55,000 gas electric meters would be installed. The costs for the electric meter will assume the essential functionalities for typical AMI meters including remote reconnect/disconnect switch, Home Area Network-enablement, outage and voltage event notification capabilities, remote upgrade capabilities and a minimum of hourly interval information. The deployment costs will include the meter and communication module, meter installation, customer communication and outreach to support deployment as well as the incremental costs to support testing facilities at the meter lab.

Project Management and Customer Outreach:

A Project Management Office ("PMO") will be responsible for the AMI project from initial assessment of detailed cost and implementation planning to full deployment and benefits realization. The PMO will include support for the five identified project areas including an overall project lead as well as a network lead, meter lead, IT lead and customer communications lead. Additionally, the PMO includes a business processes lead to develop project-based and new business processes to deliver benefits as envisioned. The PMO will also include the standard project functions including legal and regulatory support, budget and control, exceptions management, and reporting.

Lastly, the PMO includes the resources required for a robust outreach plan. The plan would include communications and outreach for communities and customers across the service territory. The costs also include support for the development and communication of an opt-out program to be made available to customers. The project costs do not include the ongoing costs to support an opt out program and the Companies will recommend an opt out fee that covers the costs associated with an election to opt out.

AMI Justification

AMI is unique in the sheer number of benefits it provides. It has been proven to improve operational efficiencies, to provide enhanced service to customers as well as provide more tools, products and services, each of which provides customer value. Additionally, markets and market providers are leveraging the AMI data to provide new and innovative products and services. AMI is also a necessary foundational investment that will support various future functionalities necessary to create and operate the Distributed System Platform.

AMI Benefits Under Review

The Companies are currently reviewing the potential AMI benefits. The benefits assessment will include benefits to the Companies' operations, to customers and to the market. The review will include both qualitative and quantitative assessment. The benefits under review include:

Operational Benefits

- Reduction in meter reading and off cycle reads
- Reduction in service orders related to on/off
- Reduction in technical loss including reduced meter watts loss
- Improved outage management

- Efficiencies in billing including reduction in estimated bills, exceptions, summary and specialized billing
- Reduction in back office costs related to estimated bills
- Reduction in non-technical losses Improved baseline and ongoing performance measurement and verification for DER
- Improved power quality and voltage management

Customer Benefits

- Support for time differentiated rates
- Tools and information (web portal and usage alerts) for customers to help understand and manage their usage
- Support for individualized UCAP tags and settlement on actual customer usage
- Support for demand response programs
- Improved reliability
- More accurate bills
- More timely response to service requests

Market Benefits

- Data collection and possible information sharing