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The Narragansett Electric Company  
d/b/a National Grid  
RIPUC Docket No. 4770  
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## Gas Business Enablement



Steering Group  
**Deck 1 – All Attendees Deck**  
January 31, 2018

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## Meeting Objectives & Agenda



**Meeting Objectives**

- Update Steering Group (SG) on Program progress and key activities, including escalated risks
- Review PA1 deployment approach and plan
- Discuss PA1 GBE Change Management and Training plan
- Provide information about "Bring GBE to Life"



Meeting Agenda	Speaker	Duration
Opening Remarks • Meeting Objectives & Agenda • Action Items	•CC •CC	5 min
State of the Program • Program Progress • Escalated Risks • PA Consulting – Value Assurance Update	•KC •CC / KC •AM	30 min
Key Gas Business Enablement (GBE) Delivery Elements Spotlights • Deployment Approach and Plan • Training and Change Mgmt for PA1 • Bring GBE to Life (Feb 6)	•RIF •RIF •RIF	30 min
Meeting Close + Feedback	•CC	5 min
National Grid (NG) Breakout	•CC	20 min

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Action Items nationalgrid | gas business enablement

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**Open  
Action Items**

**No. 2**  
**Integrated US Change Plan**  
Define the approach for developing a US integrated change plan (Dan Davies)  
*Status: In progress, due 1/31/18*

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**State of the Program**

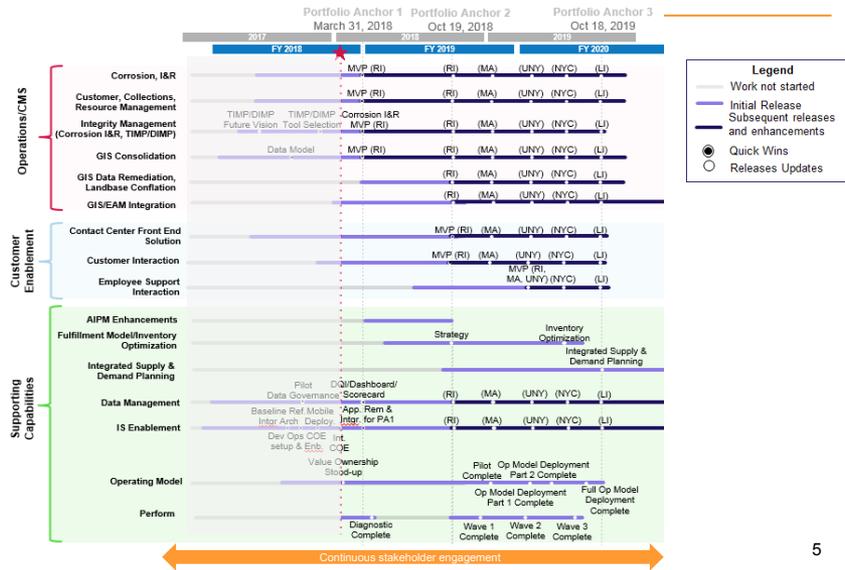
- Program Progress
- Escalated Risks

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## Program Progress

GBE Roadmap: A targeted view through PA3



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## Program Progress

### Overview of Key Activities



#### PA1 Program Highlights

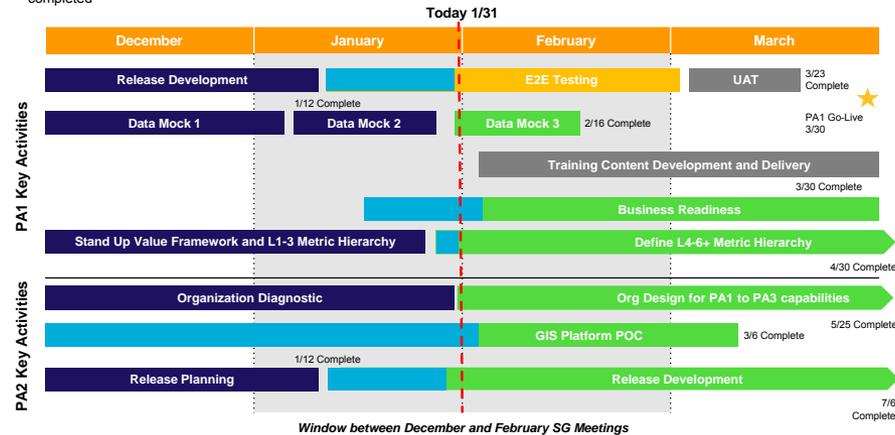
- On track for PA1 go live
- Systems testing started on time
- PA1 Release Development completed

#### PA2 Program Highlights

- PA2 Release Development started on time

#### Legend

- Progress to date
- Not yet started
- Completed Activity
- On track
- Behind but mitigation in place to catch up
- Delayed



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## Program Progress

Other Program Highlights



Business Readiness	Org Design & Value Framework	Program Delivery		
<b>35</b> Number of Go/No Go criteria defined for Business Readiness	<b>8+</b> Meetings scheduled to communicate diagnostic findings	111 of 193 defects resolved to date for PA1	Prepared 5 <i>Journeys</i> and 10+ <i>personas</i> to define vision for client experience	Budget*
<b>9</b> Business Readiness reps from impacted groups mobilized	<b>9</b> Yard visits performed to understand field performance mgmt	Reviewed Solution and Approach with John Pettigrew December 7, 2017	7 Accelerator 2.0 Projects Kicked Off	Resources*
<b>9</b> Business Readiness mtgs scheduled before go-live	<b>429</b> Natgrid employees surveyed to assess Op. Model	150 end users engaged in 16 demos	Detailed deployment and cutover plans drafted for PA1	Commercial*

**Legend**

<span style="background-color: #cccccc; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Not yet started	<span style="background-color: #ffcc00; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Behind but mitigation in place to catch up
<span style="background-color: #000080; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Completed Activity	<span style="background-color: #ff0000; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Delayed
<span style="background-color: #008000; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> On track	

\* Note: Further detail can be found in NG only update.

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Risks & Issues		Steering Group Support Needed	
Risk	Description	Contributing Factors	Mitigation Activities
Unstaffed GBE IS Team leadership role (Vice President)	There is a risk that without a senior IS leader, the GBE Program will experience: <ul style="list-style-type: none"> <li>Diminished access to IS networks and resources (and vice versa) to remove bottlenecks or manage synergies</li> <li>Diminished line-of-sight to major IS programs to identify dependencies and capture synergies</li> <li>Over-utilization of GBE IS Directors</li> </ul>	<ul style="list-style-type: none"> <li>The deployment of new technologies and methodologies by the GBE Program is also changing the way the IS organization supports programs and deployed solutions.</li> <li>The GBE IS Director team has full time and key roles in enabling the Program to move forward in deploying its scope of work</li> </ul>	<ul style="list-style-type: none"> <li>Prem Singh has been hired as IS Business Partner for Network Operations and will prioritize support of GBE <i>Status: In Progress</i></li> <li>Recruiting of a new Vice President has been reinitiated (JG) <i>Status: In progress</i></li> <li>Prem Singh will lead the GBE IS Director team during the recruiting process (PS) <i>Status: Monitoring</i></li> </ul>
Insufficient IS team capacity to support GBE critical path activities	There is a risk that: <ul style="list-style-type: none"> <li>Lack of capacity to develop new/revised architectures, policies and guidelines to deploy new capabilities will delay the implementation of GBE solutions.</li> <li>Overall program timelines will be delayed and costs will increase</li> </ul>	<ul style="list-style-type: none"> <li>GBE is deploying new technologies (e.g. cloud-based solutions, Software-as-a-Service, Infrastructure-as-a-Service, etc.) that require National Grid to develop new and revised architectures, policies and guidelines</li> <li>The Program Agile approach accelerates the deployment of new technologies and solutions compared to traditional program delivery methodologies</li> </ul>	<ul style="list-style-type: none"> <li>Program SI (PWC) has engaged SME's experienced in these new technologies and is working with IS to provide support (JG) <i>Status: In progress</i></li> <li>Conduct joint GBE / IS capability alignment and planning workshop (JG/AS) <i>Status: In progress</i></li> <li>Formalize roles, responsibilities and scope between PwC and IS functions to support capability deployment (JG) <i>Status: DR&amp;S resource embedded and another role posted</i></li> </ul>
Required Salesforce capabilities not delivered in time to meet GBE roadmap	Through detailed design, additional capabilities are being identified that are required in Salesforce that are not currently available. If they are not delivered in time: <ul style="list-style-type: none"> <li>We will need to identify if there is an alternate approach or work around</li> <li>Alter our roadmap to align to capability delivery</li> <li>In the worst case, decide that Salesforce is too immature a product for field service and change the solution</li> </ul>	<ul style="list-style-type: none"> <li>Salesforce's Field Service Lightning is a relatively new product, NG would be the first utility to roll out</li> <li>Through the strategic assessment a number of gaps were identified with the Salesforce platform and the majority of these have been closed in releases since this was shared. NG selected Salesforce for its strategic customer capabilities</li> <li>Getting to the next level of detail of requirements building has potentially identified new capability gaps we need to address with Salesforce and Accenture</li> </ul>	<ul style="list-style-type: none"> <li>Meet with the Field Service Lightning owner at Dreamforce <i>Status: Complete</i></li> <li>Schedule a follow up meeting with Salesforce to walk through the gaps in detail to confirm if gaps and if so when they will be delivered <i>Status: First mtgs complete, to be an ongoing activity</i></li> <li>Schedule an executive meeting with Salesforce and John Gilbert <i>Status: In progress</i></li> <li>Strengthen team engagement with Product Development Team <i>Status: Started</i></li> <li>Tie GBE near term needs with NG long term opportunity <i>Status: Targeting February</i></li> </ul>

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## Risks & Issues Program Watch List



Risk	Description	Mitigation Activities	Status
GBE / CxT Program Schedule Misalignment	There is a risk that the timeline for CxT's development of certain functionality is no longer supportive of GBE development timelines. This could cause GBE to delay deployment of elements of the Customer Enablement solution	<ul style="list-style-type: none"> <li>Perform Impact Assessment study for detailed analysis of options to mitigate this risk, <i>Status: In Progress</i></li> <li>Escalate as appropriate to Steering Group for support in resolving priorities &amp; courses of action, <i>Status: Monitoring</i></li> <li>Maintain current pace of inter-program coordination, <i>Status: Monitoring</i></li> </ul>	In Progress
Agile Adoption	There is a risk that partial or ineffective deployment of our new Agile practices and tools could compromise our ability to deliver our scope of work in a timely manner, impacting our delivery commitments and budgets	<ul style="list-style-type: none"> <li>Stand up an "Agile Adoption Working Group" to support Agile deployment, remove blockers and resolve issues, <i>Status: Complete</i></li> <li>Conduct periodic "retrospectives" to evaluate progress, <i>Status: Complete – incorporated into methodology</i></li> <li>Review staffing model and utilization for agile methodology support, <i>Status: Ongoing</i></li> </ul>	Monitoring
GBE Staffing Model and Resource Availability	There is a risk that the GBE staffing model and timelines may not support the true level of effort to both deliver new functionality/processes and support Program testing and deployment activities and that staffing of key GBE National Grid positions could fall behind plan	<ul style="list-style-type: none"> <li>Proactively engage Program, Workstream and SI Partner leadership in planning and prioritization of requirements, <i>Status: In Progress</i></li> <li>Prioritize recruiting activities, <i>Status: In Progress</i></li> <li>Leverage Agile toolset and processes to monitor capacity / throughput, <i>Status: In progress</i></li> <li>Develop contingency plans for activity support, <i>Status: Incorporating into resource management process</i></li> </ul>	In Progress
PA1 Go-Live Date	NG does not typically "go-live" at FY close, which would impact the planned PA1 go live date of March 31, 2018	<ul style="list-style-type: none"> <li>Proactively engage with NG Finance to review GBE PA1 functionality and deployment plan to develop mitigation strategies for each concern identified <i>Status: In Progress</i></li> </ul>	Open

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PA Consulting has continued its Value Assurance Partner role with this “Value Assurance Review #3” assessment 

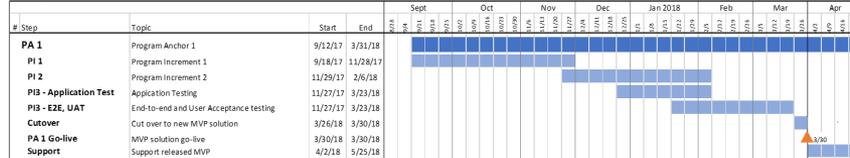
**Value Assurance Mission**

- Provide risk prioritized and focused assurance services across the relevant elements of the portfolio of Gas Business Enablement programs, projects and initiatives, focused on assuring the successful delivery of the program and its anticipated business benefits
- Effectively serve as an “insurance policy” acting as an external set of eyes to observe and monitor program progress, identify potential risk areas, and provide recommendations on issue avoidance and remediation

Value Assurance Timeline



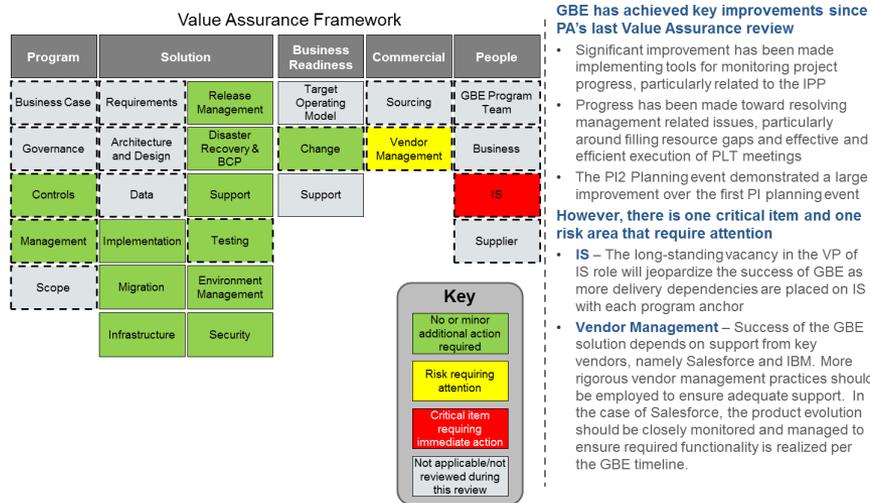
Program Timeline



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GBE is currently on track to achieve its first release at the end of March, however some critical risks are looming over the horizon 



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Recommendation Summary



Area	Issues	Recommendations
People (IS)	<p>IS Leadership: The long-vacant VP of IS role – now compounded with the departure of the US CIO – will jeopardize the success of the GBE program if not addressed promptly. An ongoing absence of IS leadership creates multiple risks:</p> <ul style="list-style-type: none"> <li>IS security direction and decision making</li> <li>Legacy IS integration work and prioritization decisions</li> <li>Internal and external IS support and vendor management</li> <li>IS staffing, load balancing, and IS employee morale</li> </ul>	<p>Build a multi-layered mitigation and contingency plan to address the situation:</p> <ul style="list-style-type: none"> <li>Identify and place interim leaders in the two vacant roles immediately, ideally people who are well respected in the business (already under way); consider relieving interim leaders of all other duties until some stabilization criteria is met</li> <li>Engage in an aggressive campaign to find permanent leaders to fill the roles. While external candidates with the right skills should certainly be considered, internal, well-respected leaders should also be strongly considered, even if they are not career IS people</li> <li>Consider and fully explore other ways to fill some or all of the gaps, such as the use of contracted resources, etc.</li> </ul>
Vendor Management	<ol style="list-style-type: none"> <li>Salesforce: There is growing concern that emerging solution requirements coming out of the development process may be difficult to achieve with the Salesforce solution (either through out-of-the-box capability or future Salesforce product enhancements), and/or may result in solution elements that don't meet functional or usability objectives.</li> <li>IBM / Maximo: SLA terms are not clear and widely understood by the GBE team, and may be insufficient to fully support GBE needs.</li> </ol>	<ol style="list-style-type: none"> <li>Salesforce:                     <ul style="list-style-type: none"> <li>Review and fully understand the emerging solution needs coming out of the development process, determine the criticality of these solution needs, and determine how any critical needs may best be addressed.</li> <li>If the current Salesforce development path leads to significant gaps between functional needs and solution capabilities, develop and critically weigh alternatives. Determine a go / no-go / redirect decision framework such that any deviation decision from the current path is made as early as possible.</li> </ul> </li> <li>IBM / Maximo:                     <ul style="list-style-type: none"> <li>For all major suppliers, GBE should write "guides" that clearly articulate the service levels that GBE is entitled to as a customer. This effort was started for the IBM Maximo contract, and should be picked up again for IBM and other major suppliers.</li> <li>Have Salesforce and IBM/Maximo leadership report out to the Steering Group on a periodic basis (quarterly) to drive accountability</li> </ul> </li> </ol>

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### Next Steps



Conduct "Value Assurance Review #4"

- Timing: ~ Feb 5 – Feb 16
- Focus: Operating Model Design, GIS Status, Release Readiness
- Value Assurance Review #4 will follow our 3-step approach similar to previous reviews



Value Assurance Timeline

# Step	Topic	Start	End	8/18	9/4	9/11	9/18	9/25	10/2	10/9	10/16	10/23	10/30	11/6	11/13	11/20	11/27	12/4	12/11	12/18	12/25	1/1	1/8	1/15	1/22	1/29	2/5	2/12	2/19	2/26	3/5	3/12	3/19	3/26	4/2	4/9	4/16				
1	Program Kickoff	8/28/17	8/28/17																																						
2	GBE Set Up for Success	9/4/17	9/29/17																																						
3	Value Assurance Review #2	10/30/17	11/17/17																																						
3a	Attend P12 Planning	11/27/17	11/28/17																																						
4	Value Assurance Review #3	12/11/17	1/5/18																																						
5	Value Assurance Review #4	2/5/18	2/16/18																																						
6	Project Health Monitoring	8/28/17	3/30/18																																						

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**Key GBE Delivery Elements Spotlights**

- Deployment Approach and Plan
- Change Management and Training for PA1
- Bring GBE to Life

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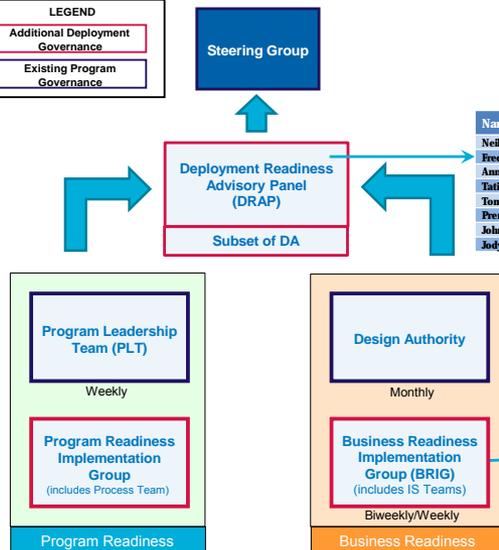
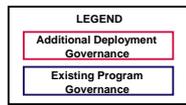
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# PA1 Deployment Governance



Name	Impact	PA1 Impacted Team
Neil Proudman	High	I&R
Fred Amaral	High	CMS Collections & Dispatch
Annette Saxman	High	Corrosion
Tatiana Roc	High	Process – (Aware to Repair)
Tom Amerige	High	Process – (Operate the network)
Premjith Singh	High	IS
John Starvakas	Medium	AM (I&R)
Jody Alison	High	Credit and Collections

Name	Impact	PA1 Impacted Team
John Barrett	High	I&R – (MC Field Ops)
Gary Beameit	High	Collections – (CMS)
Jim Patterson	High	Dispatch (CMS)
Katie Backus	High	Corrosion – (Gas Engineering)
Tatiana Roc	High	Process – (Aware to repair)
Tom Amerige	High	Process – (Operate the network)
IS Representative	High	TBC
Stephen Greco	Medium	I&R – (Asset Management)
Stephen Bill	Low	Compliance (will also rep Gas Work
Tara Kapilla	High	Process – (Customer Excellence)
Jody Alison	High	Credit and Collections

\* Low Impact areas will be involved ad hoc or as the business requires or requests

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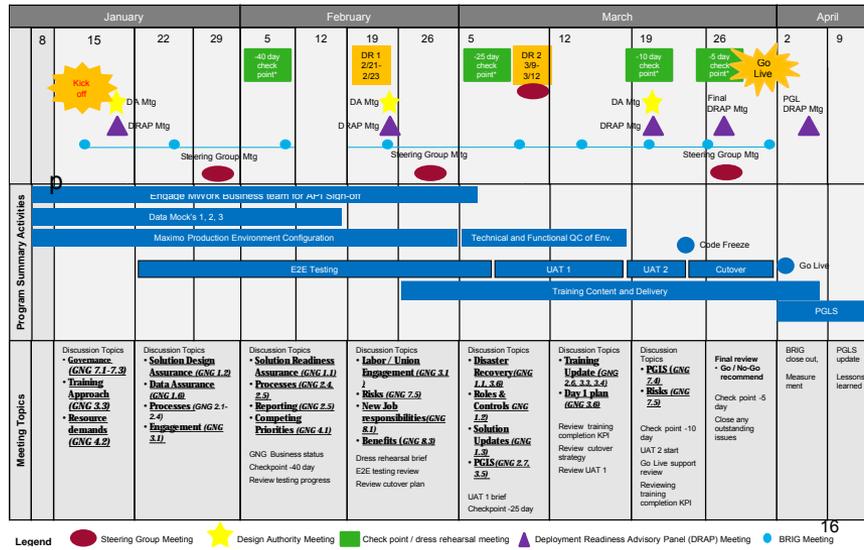
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## Deployment Plan Overview



Legend: ● Steering Group Meeting, ★ Design Authority Meeting, ■ Check point / dress rehearsal meeting, ▲ Deployment Readiness Advisory Panel (DRAP) Meeting, ● BRIG Meeting

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PA1 Change Management Overview		nationalgrid   gas business enablement	
Engagement Channel	What is it:	What's been done to date	Upcoming
<b>GBE on the Road</b>	Engaging visits with impacted end users to share the solution and gather feedback	<ul style="list-style-type: none"> <li>5 Roadshows delivered between Dec &amp; Jan</li> <li>Over 120 impacted employees engaged</li> </ul>	<b>Feb:</b> Next round of roadshows to show progress of GBE and prepare users for training
<b>Personalized Journey Maps</b>	Personalized change journey for each of the highly impacted roles. Allows Managers and Directors to own the change for their groups	<ul style="list-style-type: none"> <li>Defined personalized journeys for 7 highly impacted roles and socialized them with business leaders</li> </ul>	<b>Feb:</b> Continue to share journey maps with impacted groups to drive ownership & adoption
<b>BETL App</b>	Mobile app with on-the-go information about GBE, pre-training, demos and user success stories	<ul style="list-style-type: none"> <li>Launched with Urgency Team in Dec</li> <li>Downloaded over 120 times at Accelerate event on 1/17/18</li> </ul>	<b>Feb:</b> Official launch to the business, specifically including impacted users for pre-training materials
<b>Urgency Team &amp; Volunteer Network</b>	A diverse cross-section of the business who can build energy and alignment with users.	<ul style="list-style-type: none"> <li>Launched the Urgency Team, defined charters for sub-teams, and started regular cadence of activities &amp; coordination calls. Signed up almost 100 people in Volunteer Network, and starting to identify volunteer opportunities.</li> </ul>	<b>Feb:</b> Continue to sign up volunteers, identify and publish volunteer opportunities, and create more excitement with local events across jurisdictions.
<b>Results Accelerator</b>	Driving short term wins - team creates and reaches a "seemingly impossible yet achievable" goal; Building new capability in the business	<ul style="list-style-type: none"> <li>7 RA opportunities identified, RA's Launched 1/23/18</li> </ul>	Update on progress 2/27/18; Results shared at Leadership meeting, April 3, 2018

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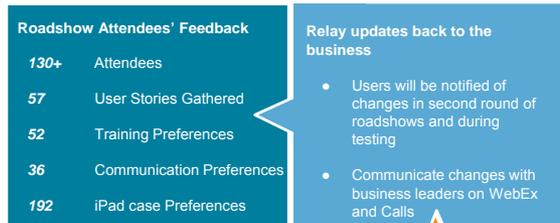
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## Road Show Updates



### Completed

- **Dec 11-15**
  - I&R – Allen Ave,
  - CMS – Melrose,
  - Corrosion – Norwood,
  - I&R – Cumberland
- **Jan**
  - Dispatch – Northborough



### Scheduled

- **Feb** - RI 2<sup>nd</sup> round of Roadshows (focused on readiness for Go Live eg processes, terminology, expectation setting etc)
  - **April** – MA
  - **May** - UNY, DNY
  - **July / Aug** - 2<sup>nd</sup> round of Roadshows
- In addition;
- **May / June** - Large Showcases (Syracuse, Melville, Waltham, Albany)



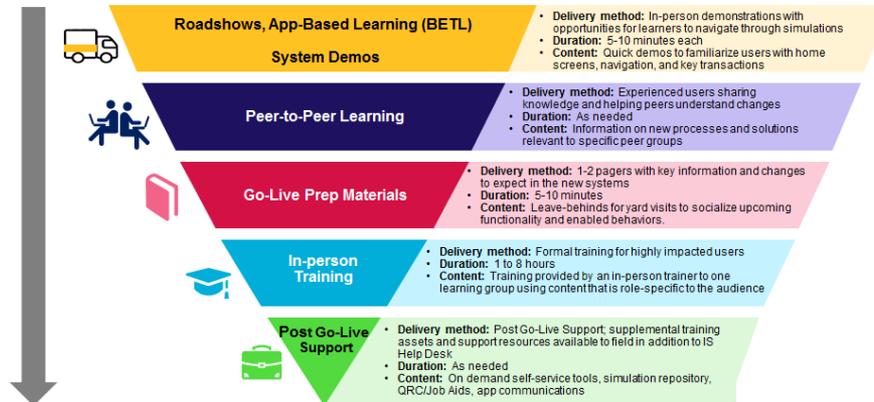
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## PA1 Training Overview



Using a blended learning approach, we will build users capabilities over the course of the PA to ensure they are gradually brought along to the new ways of working and not overwhelmed leading up to go-live



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## PA1 Training Logistics



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## Bring GBE to Life (Feb 6th)

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### Meeting Objectives

- Create a sense of GBE progress
- Continue to build confidence in the work
- Educate on the agile approach
- Appreciate the agile approach and new ways of working

Time	Topic	Presenter
7:30am-8:00am	Arrivals/Breakfast	
8:00am-8:15am	Welcome & Roadmap Review	Dean Seavers & John Bruckner
8:15am-9:15am	Introduction to Agile	Ray Hearrell
9:15am-10:30am	PI Planning Immersion Experience	Chris Connolly, KC Healy & Reihaneh Irani-Famili
10:30am-11:15am	World Café Debrief	David Carder
11:15am-11:45am	Impact on the Business: Live Demo	Chris Connolly & Andy Schoener
11:45am-12:00pm	Business Ownership - Video	Reihaneh Irani-Famili
12:00pm-12:15pm	Summary and Closing	Chris Connolly
12:15pm-1:30pm	Lunch Break	



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Speaker: JJ



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**Appendix**

- Appendix A - Action Log
- Appendix B - Risk Log
- Appendix C - SG Spotlight Backlog
- Appendix D - GBE Roadmap
- Appendix E - Deployment Lessons Learned
- Appendix F - Deployment Governance Roles
- Appendix G – PA1 GNG Business Readiness Criteria Summary

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## Appendix A - Action Log



#	Action	Owner(s)	Assigned	Due	Comment	Status
1	Provide Dan Davies with an overview of how GBE Capabilities align with NG Process Model	Chris Connolly	October 23, 2017	December 2017	Chris and Dan Davies discussed on Tuesday, November 14.	Closed
2	Define the approach for developing a US integrated change to identify and manage cross program dependencies. Plan will be presented to US Executive Team	Dan Davies	October 23, 2017	January 2018	Change planning framework developed and socialized with Dean, Peggy, JP and Andrew Bonfield. Remaining activity includes assigning an owner that will work with the US business to execute and populate the integrated change plan.	Open

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Appendix B - Risk Log		nationalgrid   gas business enablement			
#	Risk	Description	Mitigation Activities	Owner	Status
1	Unstaffed GBE IS Team leadership role (VP)	<p>There is a risk that without a senior IS leader, the GBE Program will experience:</p> <ul style="list-style-type: none"> <li>Diminished access to IS networks and resources (and vice versa) to remove bottlenecks or manage synergies</li> <li>Diminished line-of-sight to major IS programs to identify dependencies and capture synergies</li> <li>Over-utilization of GBE IS Directors</li> </ul>	<ul style="list-style-type: none"> <li>Andy Schoener is standing in as the lead on top of his architecture role with CM supporting virtually <i>Status: Monitoring</i></li> <li>Recruiting of a new Vice President is in the interviewing stage (AB) <i>Status: In progress</i></li> <li>Monitoring Director utilization (KCH) <i>Status: Monitoring</i></li> </ul>	Anuraag Bhargava	<p>Escalated: October 23, 2017</p> <p>Updates provided: November 28, 2017, December 19, 2017, January 31, 2018</p>
2	Insufficient IS team capacity to support GBE critical path activities	<p>There is a risk that:</p> <ul style="list-style-type: none"> <li>Lack of capacity to develop new/revised architectures, policies and guidelines to deploy new capabilities will delay the implementation of GBE solutions.</li> <li>Overall program timelines will be delayed and costs will increase</li> </ul>	<ul style="list-style-type: none"> <li>Program SI (PWC) has engaged SME's experienced in these new technologies and is working with IS to provide support (AB) <i>Status: In progress</i></li> <li>Formalize roles, responsibilities and scope between PwC and IS functions to ensure capabilities are able to deployed at the pace GBE requires (AB) <i>Status: DR&amp;S resource embedded and another role posted, Jan planning exercise in progress</i></li> </ul>	Anuraag Bhargava	<p>Escalated: October 23, 2017</p> <p>Updates provided: November 28, 2017, December 19, 2017, January 31, 2018</p>
3	Insufficient Finance support of the GBE Program	<p>There is a risk that:</p> <ul style="list-style-type: none"> <li>Delays in definition of a Program accounting structure greatly increase manual support efforts and capex/opex reporting inaccuracies (internal and external)</li> <li>Delays in the development of program level "tools" raise the level of manual effort and potential for error in managing Program financials</li> </ul>	<ul style="list-style-type: none"> <li>Full time Finance Director hired and started 11/13 (DC) <i>Status: Complete</i></li> <li>Program accounting set-up is in progress and the team aims to complete in January(DC) <i>Status: Complete</i></li> </ul>	Dave Campbell	<p>Escalated: October 23, 2017</p> <p>Updates provided: November 28, 2017, December 19, 2017</p>

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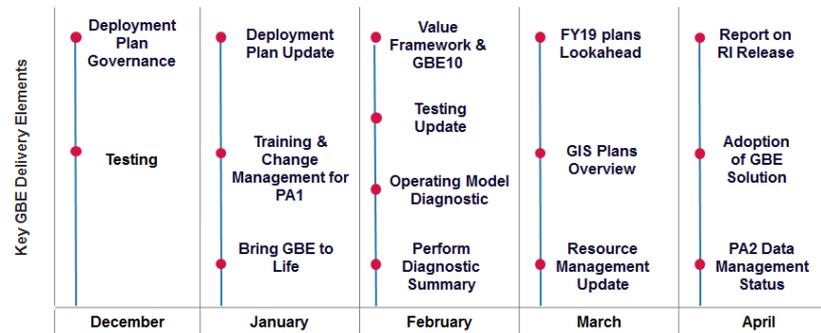
### Appendix B - Risk Log (continued)



#	Risk	Description	Mitigation Activities	Owner	Status
4	Required Salesforce capabilities not delivered in time to meet GBE roadmap	Through detailed design, additional capabilities are being identified that are required in Salesforce that are not currently available. If they are not delivered in time: <ul style="list-style-type: none"> <li>We will need to identify if there is an alternate approach or work around</li> <li>Alter our roadmap to align to capability delivery</li> <li>In the worst case, decide that Salesforce is too immature a product for field service and change the solution</li> </ul>	<ul style="list-style-type: none"> <li>Meet with the Field Service Lightning owner at Dreamforce <i>Status: Complete</i></li> <li>Schedule a follow up meeting with Salesforce to walk through the gaps in detail to confirm if gaps and if so when they will be delivered <i>Status: In progress</i></li> <li>Schedule an executive meeting with Salesforce and Anuraag Bhargava <i>Status: In progress</i></li> <li>Tie requirements into commercial discussions with next contract <i>Status: Targeting February</i></li> </ul>	Chris Connolly	Escalated: November 28, 2017  Update provided: December 19, 2017 January 31, 2018

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## Appendix C - SG Proposed Spotlight Backlog

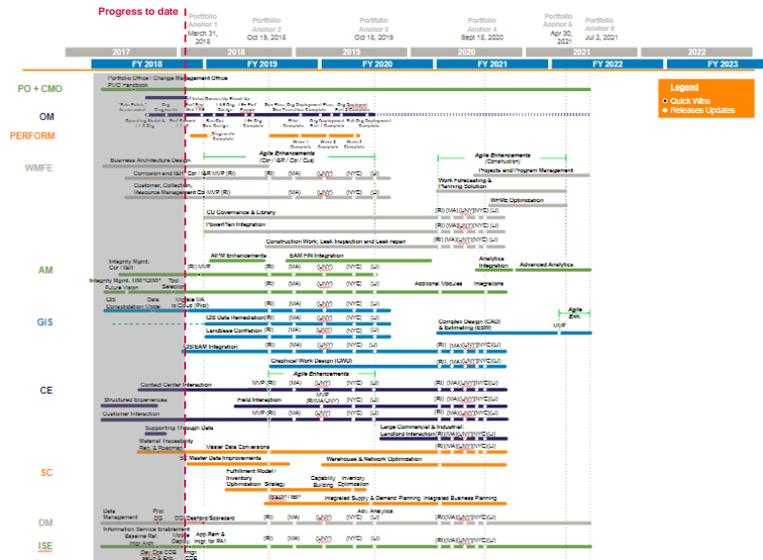


**Note:** Proposed topics are subject to change based on the needs of the GBE Program and input from the Steering Group.

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# Appendix D - GBE Roadmap



28

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## Appendix E - Deployment Lessons Learned



*Our teams plan to leverage key lessons learned from previous large IT enabled business transformation projects at National Grid, which will be incorporated into our success criteria for overall readiness.*



### EHRI Production

Detailed activity descriptions, as well as timely and accurate communications deployed through alternative channels are critical to ensuring stakeholders are engaged throughout the process.



### USFP BI Release 2 & 3

A detailed cutover staffing plan with the ability to support a 24/7 schedule (with critical load periods) reduces resource strain and allows for better planning and support.

A further refined RACI will provide clarity around governance and approvals - ensuring accountability and responsibility are clearly understood.

A more detailed cutover plan and checklist is needed to accurately reflect readiness

Better control of the stage gate process along with a strong mitigation process for stage gate findings is critical.

A robust organizational chart is needed to help identify key decision makers and ensure timely decisions.

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## Appendix F: Deployment Governance Roles



Governance Group	Responsibilities	Inputs	Outputs
Steering Group	<ul style="list-style-type: none"> <li>Consults with Advisory Panel and then makes final Go No Go decision</li> <li>Engages with Program and Business Leadership to understand readiness leading up to Go No Go decision</li> </ul>	<ul style="list-style-type: none"> <li>Advisory Panel Recommendation</li> </ul>	<ul style="list-style-type: none"> <li>Go No Go Decision</li> </ul>
Deployment Readiness Advisory Panel	<ul style="list-style-type: none"> <li>Comprised of a subset of the DA, whose business area is highly impacted by the PA</li> <li>Provide Go No Go recommendation to Steering Group</li> <li>Engages with Program and Business periodically to understand readiness ahead of giving Go No Go recommendation</li> </ul>	<ul style="list-style-type: none"> <li>BRIG Status Reports</li> <li>Design Authority Feedback</li> <li>Program Readiness Assessments</li> </ul>	<ul style="list-style-type: none"> <li>Go No Go Recommendation</li> </ul>
Design Authority	<ul style="list-style-type: none"> <li>Provide direction to the BRIG, including feedback on deployment approach and support on escalated issues</li> <li>Detailed management of Business Readiness deferred to BRIG</li> </ul>	<ul style="list-style-type: none"> <li>Proposed readiness criteria and status</li> </ul>	<ul style="list-style-type: none"> <li>Oversight</li> <li>Assurance</li> </ul>
Portfolio Leadership Team	<ul style="list-style-type: none"> <li>Provide direction to the program, including feedback on deployment approach and support on escalated issues</li> </ul>	<ul style="list-style-type: none"> <li>Deployment plan</li> <li>Readiness criteria and status</li> </ul>	<ul style="list-style-type: none"> <li>Oversight</li> <li>Assurance</li> </ul>
Business Readiness Implementation Group	<ul style="list-style-type: none"> <li>Coordinate and manages business readiness activities against an agreed Go No Go Criteria</li> <li>Objective to actively progress "readiness"</li> <li>Represented by DA members or delegated authority as deemed appropriate</li> </ul>	<ul style="list-style-type: none"> <li>Business feedback against Go No Go criteria</li> <li>Program updates and direction setting</li> </ul>	<ul style="list-style-type: none"> <li>Go No Go Status by high/medium impacted teams</li> </ul>

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## Appendix G: PA1 GNG Business Readiness Criteria Summary

Criteria	Statement of business readiness:
Solution Ready (inc Functionality, Data & Controls)	• The solution is deemed fit for purpose and deemed ready to be received by the business
Business Processes & Procedures Ready	• New processes to enable GBE are clearly defined and implemented where required & impacts on existing processes including Reporting are understood
People are Ready	• All key stakeholders engaged and users have clarity on GBE solutions and their responsibilities
Operational Readiness	• All Operational Implications have been considered and suitable to receive new solutions
Unions / Third Parties Ready	• Labor Relations and any Impacted Third Parties fully engaged & implications managed
Site Readiness	• Physical sites are updated and ready for Day 1
Governance Ready	• Governance arrangements in place and fully understood ensuring a 'Business Led' decision
Operational Model & Benefits Realization	• Organizational architecture supports the role/responsibility requirements of the release. Confidence in the Business's ability to realize expected benefits. Governance has been adjusted to support new decision making expectations after the Go Live

This is the intended Business Readiness Criteria that will be ratified with the business leads as part of our kick-off discussion this week

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The Narragansett Electric Company  
d/b/a National Grid  
RIPUC Docket No. 4770  
Attachment DIV 7-49-122  
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Boston Gas Company and Colonial Gas Company  
each d/b/a National Grid  
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## Gas Business Enablement



Steering Group  
**Deck 2 – National Grid ONLY**  
January 31, 2017

Bring  
Energy  
to Life

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## NG Only Agenda

<u>Topic</u>	<u>Time</u>	<u>Presenter</u>
Budget Highlights – January Forecast	5 min	CC
Vendor Collaboration Scores	5 min	CC
Change Requests	5 min	CC
Meeting Feedback & Close	5 min	CC

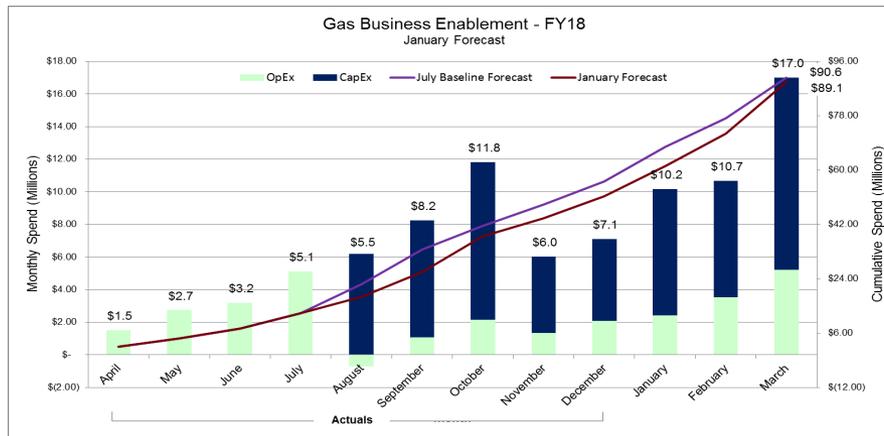
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### FY18 Budget & Forecast – OpEx/CapEx



	FY18		
	Budget	*Jan. Forecast	Variance
OpEx	\$ 30.2	\$ 29.6	\$ 0.6
CapEx	\$ 54.3	\$ 59.5	\$ (5.2)
<b>Total</b>	<b>\$ 84.5</b>	<b>\$ 89.1</b>	<b>\$ (4.6)</b>

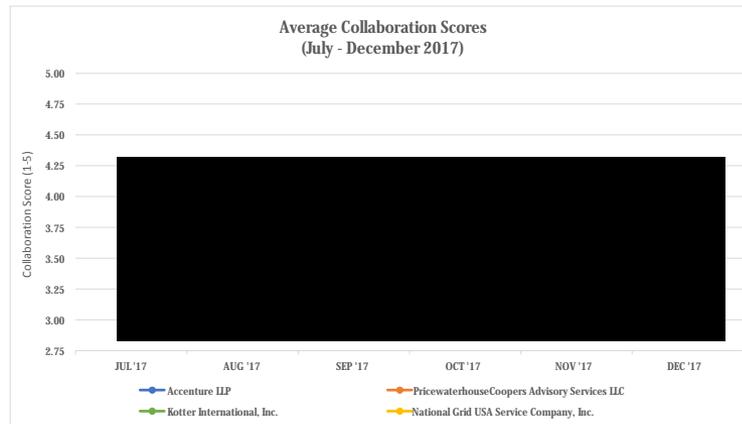
- FY18 Controllable OpEx Budget: \$27.8M
- January Controllable OpEx Forecast: \$27.4M

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## Value Framework – Collaboration Scores

¾ FY18 – Monthly Average

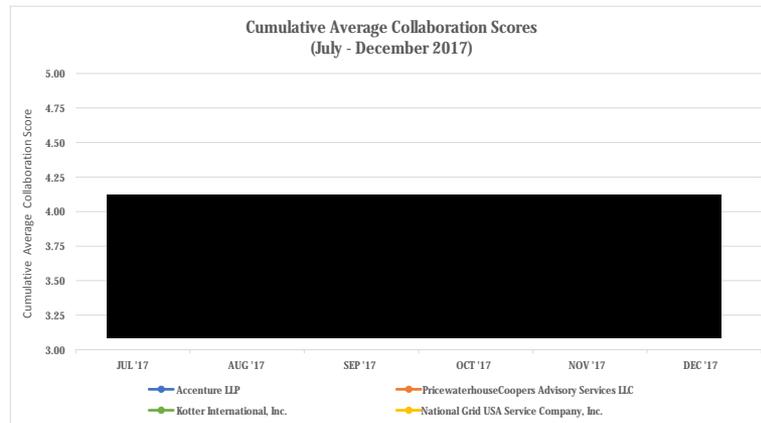


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## Value Framework – Collaboration Scores

¾ FY18 – Average across all periods to date



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### Change Control Requests

Change ID	Vendor	Workstreams Impacted	Date Submitted	Requested By	Short Description of Change	Impact Type (Anchor, Milestone, Budget, Schedule, Scope)	Budget Impact (USD)	External Programs Impacted	Change Recommendation	Contractual Artefacts Impacted	EIF Date of Change	Status
GRE.AC.N.CO-001	Accenture LLP	WM-SDM	8/31/17	Houchins, Cass	Administrative change – correct milestone dates to align more closely with GBE schedule. No change to scope / budget/ staffing	Milestone only	None	None	Approved	SOW, Module Plan	Immediately	Approved & Closed
GRE.AC.N.CO-002	Accenture LLP	Customer Engagement	10/13/17	Connolly, Christopher (NG)	Address schedule alignment between GBE and CXT	TBD	TBD	TBD	Hold pending analysis of strategic options	TBD	TBD	On-hold, pending further analysis

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d/b/a National Grid  
RIPUC Docket No. 4770  
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## Gas Business Enablement



Steering Group  
**Deck 1 – All Attendees Deck**  
February 27, 2018

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## Meeting Objectives & Agenda



### Meeting Objectives

- Understand Salesforce roadmap alignment plan
- Approve PA1 Go-Live date adjustment
- Update Steering Group (SG) on Program progress and key activities, including escalated risks
- Provide information about IS Dependencies
- Review operating model diagnostic and results



Meeting Agenda	Speaker	Duration
National Grid (NG) Breakout	•JJ	30 min
SalesForce.com Partner Intro and GBE / SalesForce.Com Roadmap Alignment	• GH / JS	25 min
Program Progress <ul style="list-style-type: none"> <li>• Program Update and Escalated Risks</li> <li>• PA1 Go Live Date Decision</li> <li>• Go No Go Decision Timeline</li> </ul>	<ul style="list-style-type: none"> <li>• JJ / KCH</li> <li>• KCH</li> <li>• RIF</li> </ul>	5 min 5 min 5 min
Key Gas Business Enablement (GBE) Delivery Elements Spotlights <ul style="list-style-type: none"> <li>• Managing IS Dependencies</li> <li>• Operating Model Diagnostic Summary</li> </ul>	<ul style="list-style-type: none"> <li>•PS</li> <li>•RIF</li> </ul>	5 min 10 min
Meeting Close + Feedback	•JJ	5 min

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## National Grid GBE and Salesforce Roadmap Alignment



### Goals

- Level Setting
- Understand Salesforce engagement cadence
- Review gaps and understand action plan
- Next Steps

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## National Grid GBE and Salesforce Roadmap Alignment

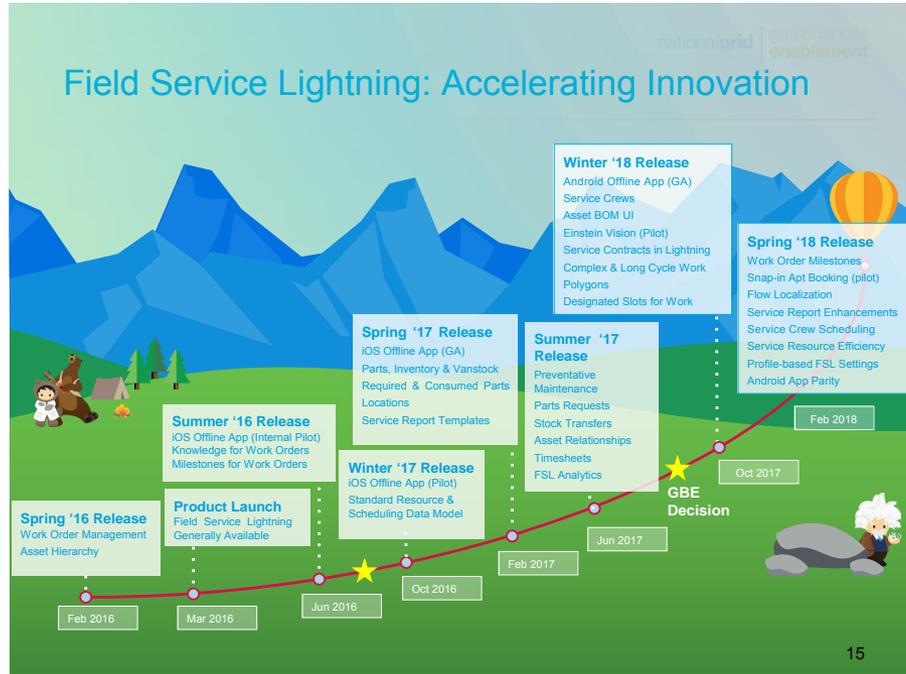


### Why Did We Choose Salesforce?

- A few key outcomes of the Gas Business Enablement program:
  - Customer Interactions enabled by a seamless end to end processes
  - Fields Workers enabled by mobile solutions connecting them with work, asset and customer information
  - Integrated Work and Asset Management processes and technologies
  - Better work and asset planning
- Salesforce enables these outcomes by providing:
  - A single seamless platform enabling Customer Interaction, Customer Relationship Management, Work Scheduling, Resource Management and Field Mobility
  - A 360 degree view of the Customer
  - Rapid Business Solutions and Architecture by providing ongoing innovation, 3 releases per year
  - Advanced and scalable Software as a Service (SaaS) Platform

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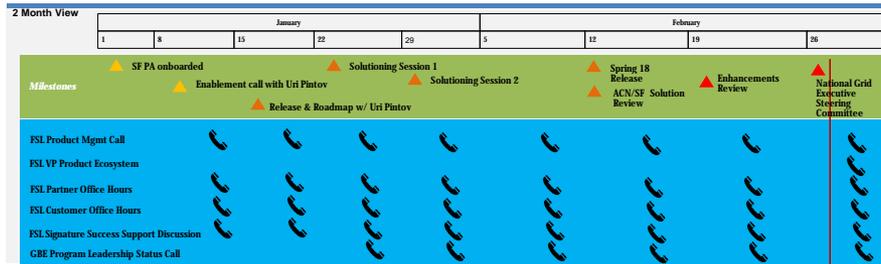


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## National Grid GBE and Salesforce Roadmap Alignment



### Salesforce Engagement



**Current & Upcoming Milestones & Activities**

- Ride Along with Salesforce Team - Salesforce team to participate in ride along with National Grid field technicians
- Salesforce Attendance @ Executive Steering Committee, 27-Feb - John Durocher (EVP, Customer Success) Karen Mehal (VP, Field Service Lightning) will be attending the National Grid Executive Steering committee

**Engagement Cadence**

- Weekly product management call 1:1, Wednesdays
- Weekly VP Product Ecosystem Call
- Weekly FSL partner office hours, Tuesdays
- Weekly Customer Office Hours, Thursdays
- FSL Signature Support Discussion, every other Friday
- Constant interaction via Quip document

**Completed Milestones**

- Solutioning Session 2, 1/29/18
- Quarterly Call with Uri Pintov, 1/26/18
- Solutioning Session 1, 1/23/18
- FSL Scheduling Enablement Call with Uri Pintov, 1/11/18
- Onboarded Salesforce Program Architect to Accenture team, 1/2/18

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## National Grid GBE and Salesforce Roadmap Alignment



### Gaps Update

Short Description	Category	GBE Need	MVP	PA1 Mar-18	PA2 Oct-18	PA3 Oct-19	PA4 ~Apr-20	RAG
Offline validation rules in VisualFlow	Critical	Mar '18	Yes			WIN-19		Yellow
Context relevent actions	Critical	Mar '18	Yes		SU-18			Green
Predefined fields in FSL mobile	Critical	Mar '18	Yes			2019		Green
Offline status transition enforcement	Critical	Mar '18	Yes			2019		Green
Capacity reservation in scheduling	Critical	Oct '18	No*			SP-19		Red
Technician Emergency Work	Critical	Oct '18	Yes		SU-18	WIN-19		Green
Data capture (Forms)	Critical	Oct '18	Yes					Yellow
Service Appt. field customization in the mobile UI	High	Mar '18	Yes			SP-19		Green
FLS in Dispatch Console	High	Mar '18	Yes	SP-18				Green
Criteria based sharing on Service Appt.	High	Mar '18	Yes					Green
Launch a URL from a quick action	High	Mar '18	Yes		SU-18			Green

\* MVP proof of concept is underway and is expected within the next week. The initial technical proof of concept proved viability of the approach.  
SU = Summer Release ; SP = Spring Release ; WIN = Winter Release

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## National Grid GBE and Salesforce Roadmap Alignment



### Gaps Update

Short Description	Category	GBE Need	MVP	PA1 Mar-18	PA2 Oct-18	PA3 .....	PA4 .....	RAG
Crew scheduling	High	Oct '18	Yes		SP-18			Green
Crew shuffling UI	High	Oct '18	Yes					Yellow
Crew map icon	High	Oct '18	Yes					Green
Dispatcher Emergency Work	High	Oct '18	Yes					Green
Customize dispatch console list views	High	TBD	Yes		SU-18			Green
Dispatch console list view column character limit	High	TBD	Yes		SU-18			Green
Mobile validation rule rendering	High	TBD	Yes	SP-18				Yellow
Dymanic dispatch console map attributes	High	TBD	TBD					Green
Commit a quick action without acknowledgement	High	TBD	Yes			2019		Green

- Satisfied there is a solution in place for the short or long term. MVP with enablers leading to aspirational. Built and or being further enabled or delivered by SF.
- Solution in place to support the MVP however in need of technical enablers and or features to further enable capability (EG flexibility in the mobile platform, better validation rule capability)
- Does not support MVP currently.

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## National Grid GBE and Salesforce Roadmap Alignment



- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li><input type="checkbox"/> Capacity Reservation in Scheduling           <ul style="list-style-type: none"> <li>- Workshop Design Session (1/29)               <ul style="list-style-type: none"> <li>- Grid, ACN, Salesforce</li> </ul> </li> <li>- Technical Prototype Build (2/20)               <ul style="list-style-type: none"> <li>- ACN builds working prototype based on Workshop Design session</li> <li>- Technical Validation</li> </ul> </li> <li>- FSL PM Team Prototype Readback</li> <li>- ACN UI Build &amp; Grid Functional Approval</li> <li>- FSL PM Team Research &amp; Requirements Gathers for Capacity Reservation               <ul style="list-style-type: none"> <li>- Grid/ACN Feedback</li> </ul> </li> <li>- FSL PM Team Product Feature Design               <ul style="list-style-type: none"> <li>- Grid/ACN Feedback</li> </ul> </li> <li>- Custom/Configured Capacity Reservation Solution Transition to FSL Product Feature               <ul style="list-style-type: none"> <li>- Sandbox Testing Pre-release</li> <li>- Production Release</li> </ul> </li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> Offline Validation Rules in VisualFlow</li> <li><input type="checkbox"/> Data Capture (Forms)</li> <li><input type="checkbox"/> Crew Shuffling UI</li> <li><input type="checkbox"/> Mobile Validation Rule Rendering</li> <br/> <li><input type="checkbox"/> These features/technical enhancements are all on the FSL Roadmap / Backlog</li> <br/> <li><input type="checkbox"/> Advanced Roadmap Alignment Sessions           <ul style="list-style-type: none"> <li>- FSL PM Team &amp; ACN/Grid go through each of these features on the roadmap with product technical plan &amp; capability to ensure meets Grid business requirement</li> <li>- Timeline alignment. Some of the features will be multi-release enabled. FSL PM Team will work with Grid/ACN to give clear visibility into each release</li> </ul> </li> </ul> |
|--|--|

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## National Grid GBE and Salesforce Roadmap Alignment



### Next Steps

- Deep dive on PA4 capabilities to confirm no further known gaps over next month
- Quarterly Steering Group checkpoints to monitor progress
- Long term sustainment - Center of Excellence
- Participation in Customer Advisory Board

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**State of the Program**

- *Action Items*
- Program Progress
- Escalated Risks
- PA1 Go Live Date

11

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Action Items						nationalgrid   gas business enablement
#	Action	Owner	Assigned	Due	Comment	Status
3	Set up deep dive to discuss integration and maintenance of data between legacy and new solutions	CC	1/29/18	TBD	A follow up meeting with Dan Davies needs to be scheduled	Open
4	Conduct March SG meeting in RI	KCH	1/29/18	Mar	<ul style="list-style-type: none"> <li>Discuss at Feb SG meeting</li> <li>Propose SG join UAT at 404 Wyman OA 3/22</li> </ul>	In Progress
5	Provide survey results to DD and RT	RIF	1/29/18	Feb	Completed by RIF	Complete
6	Provide a deep dive on resource mgt (including risks) to Steering Group	KCH	1/29/18	Feb	Included in NG Only Deck	In Progress
7	Provide more detail on SG escalated risks	KCH	1/29/18	Feb	New format presented in Feb SG	In Progress
8	GBE to make recommendation to SG on go live date for PA1	KCH	1/29/18	Feb	Recommendation to be discussed in Feb SG meeting	In Progress
9	Reach out to Tech. Accounting regarding capitalization of SaaS licenses	KCH	1/29/18	Feb	Confirmed with Tech Accounting that SaaS capitalization conditions do not currently apply to GBE	Complete
10	SF Management Plan – share with SG including timeline, Key Decision Points	CC	1/29/18	Feb	Salesforce deep dive in Feb SG and Salesforce Product Executive in attendance	In Progress
11	Follow-up with J. Bruckner question about Electric GIS upgrade/replacement	CC	1/29/18	Feb	Electric not currently pursuing GIS replacement, have made linkage between GBE and Electric	Complete
12	Follow up on legacy interfaces and how they are to be delivered, Risk/mitigations	PS	1/29/18	Feb	Review in Feb SG meeting	In Progress

REDACTED



**State of the Program**

- Action Items
- *Program Progress*
- Escalated Risks
- PA1 Go Live Date

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## Program Progress

### Overview of Key Activities



#### PA1 Program Highlights

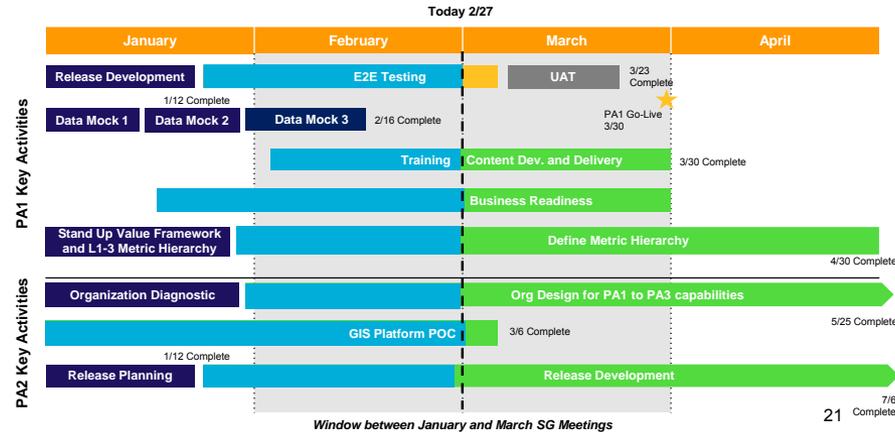
- On track for PA1 go live
- E2E Testing Completed On Time
- Data Mocks Completed successfully

#### PA2 Program Highlights

- PA2 Release Development on track

#### Legend

- Progress to date
- Not yet started
- Completed Activity
- On track
- Behind but mitigation in place to catch up
- Delayed



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## Program Progress

Other Program Highlights



Business Readiness		Org Design & Value Framework	Program Delivery	
24 of 35 Business Readiness Criteria discussed with BRIG	GBE On the road series starts Feb 27th	1 Workshop done to refine process metrics	19 open critical and high defects, but we have plan for resolution on each (as of 2/21)	Budget*
11 Business Readiness reps including 2 new members (Process Owners)	Urgency Team will meet in person March 7 <sup>th</sup> for the 2 <sup>nd</sup> time	2 Workshops planned to refine jurisdictional metrics	Launch of 'Bring GBE to Life' App to Gas Business	Resources*
4 of 9 Business Readiness mtgs conducted with BRIG members	Engaged users in E2E testing to get early user familiarity	485 Performance metrics reviewed	Dress Rehearsal 1 On Track to be completed on time	Commercial*

**Legend**

Not yet started	Behind but mitigation in place to catch up
Completed Activity	Delayed
On track	

\* Note: Further detail can be found in NG only update.

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## Risks & Issues for Steering Group Support nationalgrid | gas business enablement

(See Appendix B for further detail and mitigation plans)

Risk	Description	Likelihood / Impact	Owner	Target Resolution Date / Status
Unstaffed GBE IS Team leadership role (Vice President)	There is a risk that without a senior IS leader the GBE Program will experience diminishing access to IS networks, resources and lose its line of sight to major IS programs with dependencies on GBE.	Impact: High Likelihood: Medium	John Gilbert	<ul style="list-style-type: none"> <li>03/30/18</li> <li>Mitigations in progress</li> <li>On track</li> </ul>
Insufficient IS team capacity to support GBE critical path activities	There is a risk that lack of capacity to develop new/ revised architectures, policies and guidelines to deploy new capabilities will delay the implementation of GBE solutions, overall program timelines will be delayed and costs will increase.	Impact: High Likelihood: High	Prem Singh	<ul style="list-style-type: none"> <li>10/31/18</li> <li>Mitigations in progress</li> <li>On track</li> </ul>
Required Salesforce capabilities not delivered in time to meet GBE roadmap	Through detailed design, additional capabilities are being identified that are required in Salesforce that are not currently available. If they are not delivered in time, there is a risk that: <ul style="list-style-type: none"> <li>Our deployed solution may lack promised functionality or require work arounds and other compromises</li> <li>The program roadmap / integrated plan may need to be altered to align to the availability of Salesforce capabilities</li> <li>It could be determined that Salesforce is too immature a product for field service and an alternate solution is required (worst case scenario)</li> </ul>	Impact: High Likelihood: Medium	Chris Connolly	<ul style="list-style-type: none"> <li>For PA2/3 2/21/18</li> <li>Mitigations in progress</li> <li>On track</li> </ul>
<b>NEW</b> Cross Program Integration (Formerly "GBE / CxT Program Schedule Misalignment")	National Grid has active or is planning / considering a number of major programs with overlapping schedules and/or scope. These programs include GBE, CXT, CIS and others. Even if interdependencies can be managed, demand on IS capabilities, infrastructure and resources (Business & IS) must be balanced. There is a risk that ineffective integration and dependency management could: <ul style="list-style-type: none"> <li>Misalign Strategic roadmaps impacting corporate goals.</li> <li>Create bottle-necks, inefficiencies and write-offs.</li> <li>Cause sub-optimal deployment of new functionality</li> <li>Disrupt Business and IS operations</li> </ul>	Impact: High Likelihood: High	Johnny Johnston John Gilbert	<ul style="list-style-type: none"> <li>6/30/18</li> <li>Mitigation planning started</li> <li>TBD</li> </ul>

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## Risks & Issues

### Program Watch List



Risk	Description	Mitigation Activities	Status
Agile Adoption	There is a risk that partial or ineffective deployment of our new Agile practices and tools could compromise our ability to deliver our scope of work in a timely manner, impacting our delivery commitments and budgets	<ul style="list-style-type: none"> <li>Stand up an "Agile Adoption Working Group" to support Agile deployment, remove blockers and resolve issues, <i>Status: Complete</i></li> <li>Conduct periodic "retrospectives" to evaluate progress, <i>Status: Complete – incorporated into methodology</i></li> <li>Review staffing model and utilization for agile methodology support, <i>Status: Ongoing</i></li> </ul>	Monitoring
GBE Staffing Model and Resource Availability	There is a risk that the GBE staffing model and timelines may not support the true level of effort to both deliver new functionality/processes and support Program testing and deployment activities and that staffing of key GBE National Grid positions could fall behind plan	<ul style="list-style-type: none"> <li>Proactively engage Program, Workstream and SI Partner leadership in planning and prioritization of requirements, <i>Status: In Progress</i></li> <li>Prioritize recruiting activities, <i>Status: In Progress</i></li> <li>Leverage Agile toolset and processes to monitor capacity / throughput, <i>Status: In progress</i></li> <li>Develop contingency plans for activity support, <i>Status: Incorporating into resource management process</i></li> </ul>	In Progress
PA1 Go-Live Date	NG does not typically "go-live" at FY close, which would impact the planned PA1 go live date of March 31, 2018	<ul style="list-style-type: none"> <li>Proactively engage with NG Finance to review GBE PA1 functionality and deployment plan to develop mitigation strategies for each concern identified <i>Status: Complete</i></li> </ul>	Recommendation complete, awaiting SG Approval

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**State of the Program**

- Action Items
- Program Progress
- Escalated Risks
- PA1 Go Live Date

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## PA1 Go Live Date Analysis

### Issue:

- The original planned deployment date closely overlapped with the FY18 Year End Close and other end of year activities, creating a potential for control and compliance issues

### Evaluation Approach:

- An evaluation model was developed that considered cost, benefit, delivery risk, business risk, controls and compliance, and strategic alignment to evaluate a potential change to go-live dates
- Input was collected from Program, Business and Function SME's
- Three date options were evaluated including: March 31 (Base case), April 1<sup>st</sup>, and April 7<sup>th</sup>

### Recommendation:

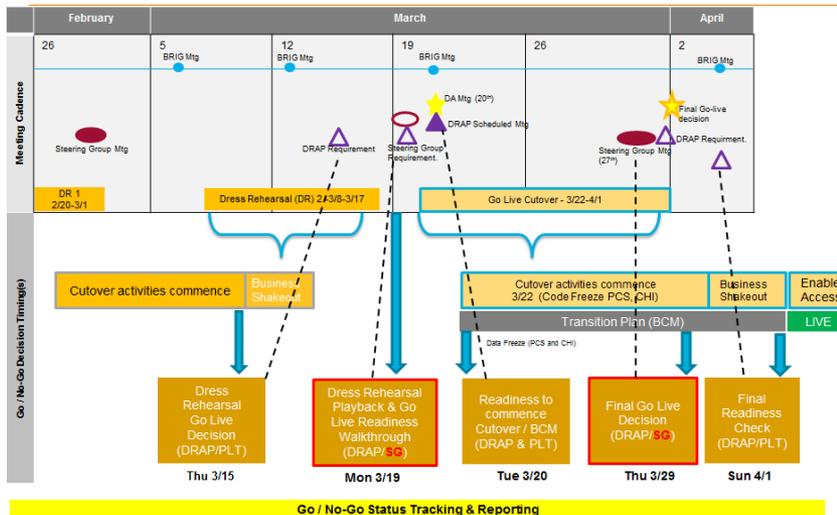
- GBE PLT recommends an April 7<sup>th</sup> go-live
- GBE is developing mitigation plans for the following risks associated with this change:
  - Commercial risk – third party milestones are tied to the go-live date
  - PI Planning – currently scheduled for the week of April 16<sup>th</sup>. If go-live is moved to April 7<sup>th</sup> resource contention between PI Planning and PGLS must be managed
  - Switch to PA2 – risk that resources involved in PA1 who are supposed to switch to PA2 could struggle to switch focus back and forth

*See Appendix C for Analysis detail*

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PA1 Go Live Go / No Go Decision Timeline 



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## IS Dependency Background



- GBE Steering group has requested the GBE PLT Team to present the impacts of Integration between GBE and Legacy systems.
- ISLT quickly embedded a SWOT integration Team to assess impacts and provide recommendation:
  - **GBE Business Partner / RM** Surajit Roy-Chowdhury
  - **Global Architecture** Svetlana Lyba
  - **Program Delivery / Build** Riziel Cruz-Bower
  - **Service Delivery / Run** Shibu George

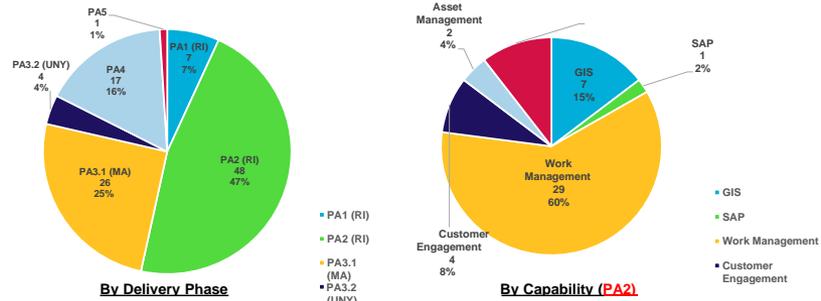
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# IS Dependency Status



## Overall Status

- The Integration Team is in the process of determining scope of required integration work
- High-level scope is being prioritized by PA's / Capabilities for prioritization of work as shown below.



- Note:**
- This includes all interfaces and does not differentiate between delivery groups
  - Analysis underway to segment work by delivery group

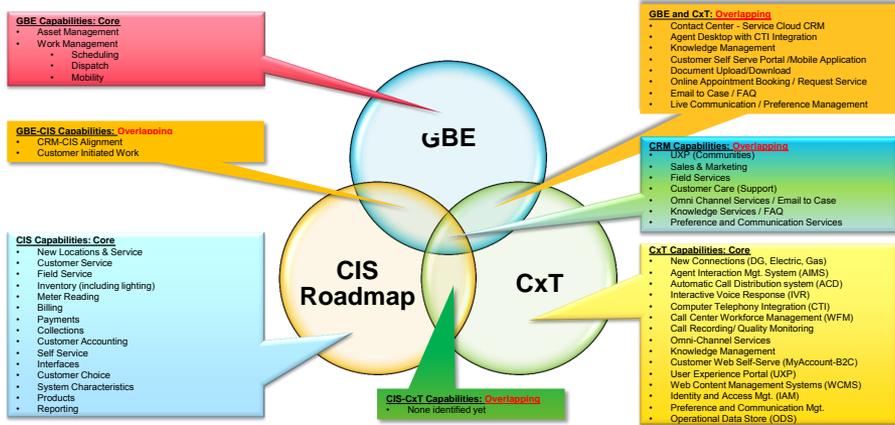
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# IS Dependency Status

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## Program Dependencies – Draft(tbc).



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## IS Dependency Next Steps

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- Complete analysis and provide recommendation of all Program dependencies to provide a Strategic roadmap of initiatives.
- Provide recommendations on integration deliverables by PA for GBE.
- Estimate resources, costs, and timelines for PA2 release.
- Present partial sanction IRS paper at the USSC for GBE.

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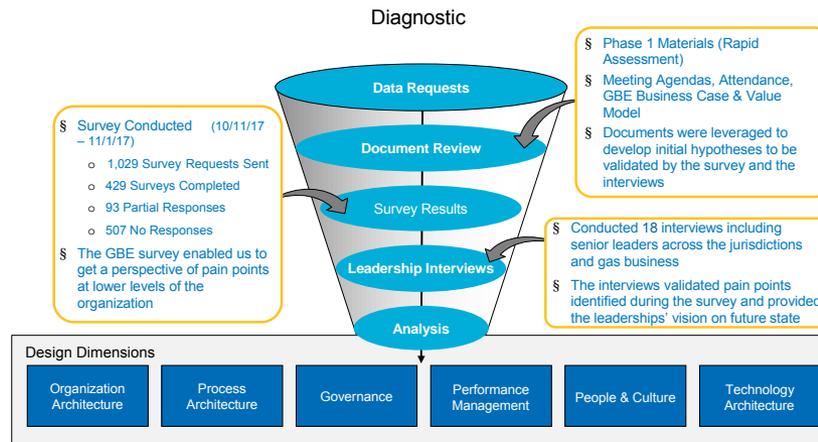
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## Operating Model Diagnostic

Multiple data sources and analysis were triangulated to validate findings for each of the six operating model dimensions



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## Operating Model Diagnostic



The following hypotheses guided the development of the analysis, allowing the prioritization of key test areas within each operating model dimension

### Operating Model Dimensions

- Organization Architecture
- Process Architecture
- Governance
- Performance Management
- People & Culture
- Technology Architecture

### Hypothesis Test Areas

Overlapping Responsibilities	Role Clarity / Job "Purity"	Spans of Control	Resource / Effort Imbalances
Process Breakdowns	Conflicts with Strategic Direction	Inefficient Handoffs	Misalignment with Value Metrics
Inconsistent / Unclear Escalation	Fragmented Accountability	Unclear Decision Rights	Inefficient Meetings
Broken Feedback Mechanisms	Conflicting Metrics	Lack of Visibility	Abundance of Metrics
Inadequate Training	Aging Workforce Impacts <sup>1</sup>	Culture Misalignment	Onboarding Gaps

Any Pain Points Identified will be Passed to Appropriate Solution Teams

### Opportunities Identified During Targeted Diagnostic

● Limited Opportunity  
 ● Some Opportunity  
 ● Significant Opportunity

<sup>1</sup>) Staff understand who to reach out to for information, informal knowledge transfer network is robust

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## Operating Model Diagnostic

The Diagnostic results will feed into the design of the future state organization and the work of the other solution teams by identifying key focus areas in six design dimensions



Design Dimensions	Key Questions	Findings
<b>Organizational Architecture</b> 	§ Can we reduce overlap in the organization? § Is there clarity around roles and responsibilities? § Are spans and layers optimal?	<ul style="list-style-type: none"> <li>Clarify roles and responsibilities to address inefficient handoffs, increase accountability and effective collaboration, align priorities, and minimize duplicative effort</li> <li>Rationalize staffing levels post design to efficiently redeploy resources to high work volume areas</li> <li>Clarify decision making, prioritize key meetings and eliminate or restructure meetings that are not currently adding value to increase productive time</li> <li>Create a holistic performance management model to standardize and rationalize KPIs, including a metric hierarchy to provide visibility up and down the organization</li> </ul>
<b>Process Architecture</b> 	§ Are processes cohesive and well defined? § Are cross-group interactions efficient and timely?	
<b>Governance</b> 	§ Is governance effective? § Are the right people participating?	
<b>Performance Management</b> 	§ Are metrics standardized and aligned with incentives? § Are there processes in place to track and measure KPIs?	
<b>People &amp; Culture</b> 	§ Do teams have the skills needed to perform their jobs?	
<b>Technology Architecture</b> 	§ Are technology requirement currently addressed by the GBE effort?	

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**Appendix**

- Appendix A - Action Log
- Appendix B - Risk and Risk Log
- Appendix C - PA1 Go Live Analysis
- Appendix D - Deployment Governance Roles
- Appendix E - PA1 GNG Business Readiness Criteria Summary

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### Appendix A - Action Log



#	Action	Owner(s)	Assigned	Due	Comment	Status
1	Provide Dan Davies with an overview of how GBE Capabilities align with NG Process Model	Chris Connolly	October 23, 2017	December 2017	Chris and Dan Davies discussed on Tuesday, November 14.	Closed
2	Define the approach for developing a US integrated change to identify and manage cross program dependencies. Plan will be presented to US Executive Team	Dan Davies	October 23, 2017	January 2018	Change planning framework developed and socialized with Dean, Peggy, JP and Andrew Bonfield. Remaining activity includes assigning an owner that will work with the US business to execute and populate the integrated change plan.	Closed

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## Appendix B - Risks & Issues

### Steering Group Support Needed



Risk ID(s)	Risk Description	Target Resolution Date		
Unstaffed GBE IS Team leadership role (Vice President)	<p>There is a risk that without a senior IS leader, the GBE Program will experience:</p> <ul style="list-style-type: none"> <li>• Diminished access to IS networks and resources (and vice versa) to remove bottlenecks or manage synergies</li> <li>• Diminished line-of-sight to major IS programs to identify dependencies and capture synergies</li> <li>• Challenged ability to balance tactical / near term with strategic / long term priorities</li> </ul>	03/30		
Impact Rating	Potential Impact			
Medium	<ul style="list-style-type: none"> <li>• Misalignments in priorities and schedules between GBE and Contemporary IS causing delays to GBE and/or disruption to legacy platform projects and support</li> <li>• Increased costs to GBE and/or contemporary IS</li> </ul>			
Likelihood Rating	Mitigation Plan			
Medium	Action		Resp	Target Date / Status
	Re-prioritize IS Business Partner for Operations, Engineering & Network (Prem Singh) time to focus on GBE support.		JG	Complete
	Restart recruiting process to hire a new VP to be assigned full time to GBE		JG	Active (7 interviews completed, 2 promising candidates have been selected for 2nd round to be concluded by 2nd Mar)
	Prem Singh will lead the GBE IS Director teams in an interim basis during the recruiting process		PS	Active

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## Appendix B - Risks & Issues

### Steering Group Support Needed



Risk ID(s)	Risk Description	Target Resolution Date																		
Insufficient IS team capacity to support GBE critical path activities	<p>There is a risk that:</p> <ul style="list-style-type: none"> <li>Lack of capacity to develop new/updated architectures, policies and guidelines to deploy new capabilities will delay the implementation of GBE solutions.</li> <li>Overall program timelines will be delayed and costs will increase</li> </ul>	10/31/18																		
Impact Rating	Potential Impact																			
High	<ul style="list-style-type: none"> <li>GBE deployment of new technologies (e.g. cloud-based solutions, Software-as-a-Service, Infrastructure-as-a-Service, etc.) could be negatively impacted in terms of cost if the program is required to retain third party services to close gaps in assumed Contemporary IS capabilities</li> <li>GBE could experience delays in deployments and/or hand over of solution support from Program resources to Contemporary IS infrastructure and operations. This would impact overall program costs and delay benefit capture</li> <li>Regulatory confidence in National Grid ability to deliver technology driven projects would be eroded</li> </ul>																			
Likelihood Rating	Mitigation Plan																			
	<table border="1"> <thead> <tr> <th>Action</th> <th>Resp</th> <th>Target Date / Status</th> </tr> </thead> <tbody> <tr> <td>Selectively leverage PWC SME's to provide short term support for PA1 to close immediate skill gaps to keep program on track.</td> <td>PS</td> <td>Plan in Progress</td> </tr> <tr> <td>Embed selected IS managers/SME's (full and/or part time) into the GBE program to support integration and alignment</td> <td>PS</td> <td>Complete</td> </tr> <tr> <td>Schedule and conduct GBE / IS informational workshops for information sharing and expectation setting for PA2 .</td> <td>PS</td> <td>Active (02/05-03/30)</td> </tr> <tr> <td>Schedule and conduct GBE / IS Deep Dive workshop to align plans and schedules for PA2.</td> <td>PS</td> <td>Active (02/05-03/30)</td> </tr> <tr> <td>Schedule and conduct GBE / IS operating model workshop to define near term(PA1) and long term (PA2 and beyond) support models (RTB) and capability requirements.</td> <td>PS</td> <td>PA1 Active(02/05-03/30) PA2 Started(02/19-08/31)</td> </tr> </tbody> </table>	Action	Resp	Target Date / Status	Selectively leverage PWC SME's to provide short term support for PA1 to close immediate skill gaps to keep program on track.	PS	Plan in Progress	Embed selected IS managers/SME's (full and/or part time) into the GBE program to support integration and alignment	PS	Complete	Schedule and conduct GBE / IS informational workshops for information sharing and expectation setting for PA2 .	PS	Active (02/05-03/30)	Schedule and conduct GBE / IS Deep Dive workshop to align plans and schedules for PA2.	PS	Active (02/05-03/30)	Schedule and conduct GBE / IS operating model workshop to define near term(PA1) and long term (PA2 and beyond) support models (RTB) and capability requirements.	PS	PA1 Active(02/05-03/30) PA2 Started(02/19-08/31)	
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## Appendix B - Risks & Issues

### Steering Group Support Needed



Risk ID(s)	Risk Description	Target Resolution Date	
Required Salesforce capabilities not delivered in time to meet GBE roadmap	<p>Through detailed design, additional capabilities are being identified that are required in Salesforce that are not currently available. If they are not delivered in time, there is a risk that:</p> <ul style="list-style-type: none"> <li>Our deployed solution may lack promised functionality or require work arounds and other compromises</li> <li>The program roadmap / integrated plan may need to be altered to align to the availability of Salesforce capabilities</li> <li>It could be determined that Salesforce is too immature a product for field service and an alternate solution is required (worst case scenario)</li> </ul>	<p>For PA2/3 2/21; Iterating weekly per engagement schedule</p> <p>For PA4 Mar / Apr '18; initial architecting discussion then iterating weekly per engagement schedule</p>	
Impact Rating	Potential Impact		
High	<ul style="list-style-type: none"> <li>Increased Program costs due to delays in program timelines, additional development/testing/deployment costs for work arounds – both to deploy and then to replace, or replace SF with an alternative solution</li> <li>Delayed benefit capture</li> <li>Eroded confidence – regulator and business</li> </ul>		
Likelihood Rating	Mitigation Plan		
Medium	Action	Resp	Target Date / Status
	Integrated GBE Roadmap and Salesforce Product Roadmap alignment through GBE and SF FSL Product Management engagement monthly and weekly per plan	GBE, SF	Started, ongoing
	Senior Executive (SE) alignment on a frequent bases between National Grid and Salesforce. The SE engagement plan must be defined and started.	GBE, SF	March 2, 2018
	Accelerate the progressive elaboration of capability needs for the subsequent release specifically focused on Construction 2020	GBE, Accn	March – April 2018

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## Appendix B - Risks & Issues

### Steering Group Support Needed



Risk ID(s)	Risk Description	Target Resolution Date															
Cross Program Integration (Formerly "GBE / CxT Program Schedule Misalignment")	National Grid has active or is planning / considering a number of major programs with overlapping schedules and/or scope. These programs include GBE, CXT, CIS and others. Even if interdependencies can be managed, demand on IS capabilities, infrastructure and resources (Business & IS) must be balanced. There is a risk that ineffective integration and dependency management could: <ul style="list-style-type: none"> <li>• Misaligned Strategic roadmaps impacting corporate goals.</li> <li>• Create bottle-necks, inefficiencies and write-offs</li> <li>• Cause sub-optimal deployment of new functionality</li> <li>• Disrupt Business and IS operations</li> </ul>	June 2018															
Impact Rating	Potential Impact																
High	<ul style="list-style-type: none"> <li>• Increased program and operations costs due to inefficient use of resources, deployment of regret work and increased reliance on 3<sup>rd</sup> party resources</li> <li>• Increased program delivery risk due to unanticipated schedule delays, bottle necks or degraded management and execution capabilities</li> <li>• Delayed benefit realization due to suboptimal or delayed deployments</li> <li>• Eroded Stakeholder confidence – external and internal – due to the failure of high profile programs. Including disallowance of regulatory and legal obligations.</li> </ul>																
Likelihood Rating	Mitigation Plan																
High	<table border="1"> <thead> <tr> <th>Action</th> <th>Resp</th> <th>Target Date / Status</th> </tr> </thead> <tbody> <tr> <td>Complete near and long term GBE – CXT – CIS(removed IS since its just an enabler) dependency analysis to address immediate integration needs</td> <td>TBD</td> <td>3/30 (TBC)</td> </tr> <tr> <td>Identify stakeholders / "product managers" for active, planned and potential major initiatives</td> <td>TBD</td> <td>4/27 (TBC)</td> </tr> <tr> <td>Convene planning summit to identify opportunities and risks, identify integration points and dependencies and create an action plan</td> <td>TBD</td> <td>05/31 (TBC)</td> </tr> <tr> <td>Deploy action plan to address long term integration needs</td> <td>TBD</td> <td>06/29 (TBC)</td> </tr> </tbody> </table>	Action	Resp	Target Date / Status	Complete near and long term GBE – CXT – CIS(removed IS since its just an enabler) dependency analysis to address immediate integration needs	TBD	3/30 (TBC)	Identify stakeholders / "product managers" for active, planned and potential major initiatives	TBD	4/27 (TBC)	Convene planning summit to identify opportunities and risks, identify integration points and dependencies and create an action plan	TBD	05/31 (TBC)	Deploy action plan to address long term integration needs	TBD	06/29 (TBC)	
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Deploy action plan to address long term integration needs	TBD	06/29 (TBC)															

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**Appendix C – PA1 Go Live Date Analysis** nationalgrid | gas business enablement  
Factors and weighting

Factor	Sub-factor	Description	Weighting
Cost / Benefit	Program Costs	Impact of change on program costs including fees, resource hours, licenses etc	15%
	Business Costs	Impact of change on cost to business to run BCP's, overtime hours etc	
	Benefit delivery	Impact on benefits case – timing, amount, type, etc	
Delivery Risk	Schedule disruption	Impact of change on overall program plan (downstream impact on subsequent activities and milestones)	15%
	Resource disruption	Impact on program resources – availability, contentions etc	
	Capacity disruption	Impact on program capacity	
Business Risk	Disruption to Operations	Impact on business operations, length of BCP and recovery etc	25%
	Staffing and Manning	Impact on schedules, labor agreements etc	
	Safety, Health, Environment	Impact on ability to operate safety	
Control and Compliance	Controls	Impact on ability to operate key business and functional controls	30%
	Compliance	Impact on ability to comply with regulatory and statutory requirements (e.g. SARBOX)	
Strategic Alignment	External Stakeholders	Impact on the Program's overall ability to support National Grid's strategic vision	15%
	Regulatory commitments	Impact on any commitments made to Regulators and other external agencies	

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**Appendix C – PA1 Go Live Date Analysis** nationalgrid | gas business enablement  
Definitions

Definitions				
Rating	Cost	Risk	Compliance	Alignment
	No impact	No Risk	No compliance or control issues	No impact
	Minimal impact <2%	Some disruption but mitigatable with existing resources and no long term impacts	Some potential impacts that may require monitoring	Minor impacts requiring follow up communication
	Moderate impact <5%	Moderate disruption requiring mitigation. Multiple teams or organizations impacted	Potential impacts that require additional temporary controls and/or checks	Formal communications and follow-ups are required
	Major impact <10%	Major disruption requiring significant mitigation. Cross organizational impacts	Major impacts requiring additional controls and leadership reviews	Major changes requiring leadership intervention to avoid reputational damage
	Significant impact, available contingency exceeded	Significant risk, high likelihood and impact. Requires SG escalation	Significant risk of negative impact on/to controls. Requires SG escalation	Significant change to external commitments/messaging

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Appendix C – PA1 Go Live Date Analysis 

Factor	Sub-factor	3/31	Note	4/1	Note	4/7	Note
Cost / Benefit	Program Costs						Potential Commercial impact
	Business Costs						
	Benefit delivery						
Delivery Risk	Schedule disruption						PA2 risk
	Resource disruption				Easter holiday: resource constraint		PI Planning w/o 4/16/18
	Capacity disruption						PA2 risk
Business Risk	Disruption to Operations						
	Staffing and Manning				Easter holiday: resource constraint		
	Safety, Health, Environment						
Control and Compliance	Controls		Concurrent with close		Concurrent with close		Follows related close activities
	Compliance		SARBOX audit		Concurrent with audit		Concurrent with audit
Strategic Alignment	External Stakeholders						
	Regulatory commitments						

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Appendix C – PA1 Go Live Date Analysis 

Factor	Sub-factor	31-Mar	1-Apr	7-Apr	Weight	31-Mar	1-Apr	7-Apr
Cost / Benefit	Program Costs	4	4	4	15%	0.6	0.6	0.6
	Business Costs	4	4	4	15%	0.6	0.6	0.6
	Benefit delivery	4	4	4	15%	0.6	0.6	0.6
Delivery Risk	Schedule disruption	4	4	4	15%	0.6	0.6	0.6
	Resource disruption	4	2	4	15%	0.6	0.3	0.6
	Capacity disruption	4	4	3	15%	0.6	0.6	0.45
Business Risk	Disruption to Operations	4	4	3	25%	1	1	0.75
	Staffing and Manning	4	2	4	25%	1	0.5	1
	Safety, Health, Environment	4	4	4	25%	1	1	1
Control and Compliance	Controls	0	1	2	30%	0	0.3	0.6
	Compliance	0	1	2	30%	0	0.3	0.6
Strategic Alignment	External Stakeholders	4	3	3	15%	0.6	0.45	0.45
	Regulatory commitments	4	3	3	15%	0.6	0.45	0.45
					Total	7.8	7.3	8.3

REDACTED

## Appendix D - Deployment Governance Roles

Governance Group	Responsibilities	Inputs	Outputs
Steering Group	<ul style="list-style-type: none"> <li>Consults with Advisory Panel and then makes final Go No Go decision</li> <li>Engages with Program and Business Leadership to understand readiness leading up to Go No Go decision</li> </ul>	<ul style="list-style-type: none"> <li>Advisory Panel Recommendation</li> </ul>	<ul style="list-style-type: none"> <li>Go No Go Decision</li> </ul>
Deployment Readiness Advisory Panel	<ul style="list-style-type: none"> <li>Comprised of a subset of the DA, whose business area is highly impacted by the PA</li> <li>Provide Go No Go recommendation to Steering Group</li> <li>Engages with Program and Business periodically to understand readiness ahead of giving Go No Go recommendation</li> </ul>	<ul style="list-style-type: none"> <li>BRIG Status Reports</li> <li>Design Authority Feedback</li> <li>Program Readiness Assessments</li> </ul>	<ul style="list-style-type: none"> <li>Go No Go Recommendation</li> </ul>
Design Authority	<ul style="list-style-type: none"> <li>Provide direction to the BRIG, including feedback on deployment approach and support on escalated issues</li> <li>Detailed management of Business Readiness deferred to BRIG</li> </ul>	<ul style="list-style-type: none"> <li>Proposed readiness criteria and status</li> </ul>	<ul style="list-style-type: none"> <li>Oversight</li> <li>Assurance</li> </ul>
Portfolio Leadership Team	<ul style="list-style-type: none"> <li>Provide direction to the program, including feedback on deployment approach and support on escalated issues</li> </ul>	<ul style="list-style-type: none"> <li>Deployment plan</li> <li>Readiness criteria and status</li> </ul>	<ul style="list-style-type: none"> <li>Oversight</li> <li>Assurance</li> </ul>
Business Readiness Implementation Group	<ul style="list-style-type: none"> <li>Coordinate and manages business readiness activities against an agreed Go No Go Criteria</li> <li>Objective to actively progress 'readiness'</li> <li>Represented by DA members or delegated authority as deemed appropriate</li> </ul>	<ul style="list-style-type: none"> <li>Business feedback against Go No Go criteria</li> <li>Program updates and direction setting</li> </ul>	<ul style="list-style-type: none"> <li>Go No Go Status by high/medium impacted teams</li> </ul>

REDACTED

## Appendix E - PA1 GNG Business Readiness Criteria Summary

Criteria	Statement of business readiness:
Solution Ready (inc Functionality, Data & Controls)	• The solution is deemed fit for purpose and deemed ready to be received by the business
Business Processes & Procedures Ready	• New processes to enable GBE are clearly defined and implemented where required & impacts on existing processes including Reporting are understood
People are Ready	• All key stakeholders engaged and users have clarity on GBE solutions and their responsibilities
Operational Readiness	• All Operational Implications have been considered and suitable to receive new solutions
Unions / Third Parties Ready	• Labor Relations and any Impacted Third Parties fully engaged & implications managed
Site Readiness	• Physical sites are updated and ready for Day 1
Governance Ready	• Governance arrangements in place and fully understood ensuring a 'Business Led' decision
Operational Model & Benefits Realization	• Organizational architecture supports the role/responsibility requirements of the release. Confidence in the Business's ability to realize expected benefits. Governance has been adjusted to support new decision making expectations after the Go Live

This is the intended Business Readiness Criteria that will be ratified with the business leads as part of our kick-off discussion this week

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Strictly Confidential – National Grid employees only



## Gas Business Enablement



Steering Group – National Grid Only Addendum  
February 27, 2018

Bring  
Energy  
to Life

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## Meeting Objectives & Agenda – NG Only



### Meeting Objectives

- Decision: Add Program Anchor to roadmap
- Decision: Value Framework adjustment
- Decision: Esri Change Request
- Confirm hiring pause adjustments
- Provide updates on budget, resourcing and collaboration scoring



Meeting Agenda	Speaker	Duration
Meeting Open	• JJ	5 min
Program Update • Budget • Vendor Collaboration Scores • Resourcing / Confirm Hiring Pause Adjustments	• JJ	5 min
Decisions • Designate new Program Anchor ("4") • Approve Value Framework Baseline Adjustment	• JJ • RIF	5 min 5 min
Esri Change Request	• CC / CF / TK	10 min
Move to Full Steering Group Agenda		2

REDACTED



### State of the Program

<p><b>Finances</b></p>  <p>On Track to come in under budget on Opex (\$28.3M forecast vs \$30.2M budget)</p> <p>Totex due to come in within 2% of budget</p>	<p><b>Hiring Pause</b></p>  <ul style="list-style-type: none"> <li>¼ FY19 hiring plan - 82 resources</li> <li>¼ Focus on next 3 months – 60 resources</li> <li>¼ Delayed resources we believe we can push out without adverse impact – 7 resources</li> <li>¼ <b>Requesting permission to push forwards hiring 53 resources</b></li> </ul>	<p><b>Collaboration Scores</b></p>  <p>In Q2 all vendors scored [redacted] (ie demonstrating the collaboration principles)*</p> <p>Accenture: [redacted] PWC: [redacted] Kotter: [redacted] National Grid: [redacted]</p>
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Summary in Appendix A

Summary in Appendix B

Summary in Appendix c

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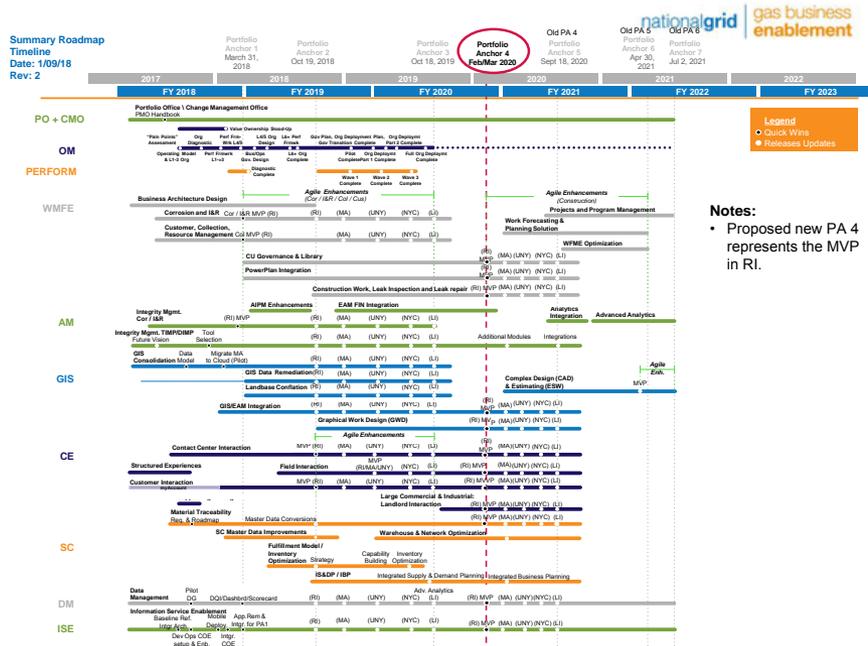


## Designating a new Program Anchor for Construction MVP

<p><b>Context</b></p> <ul style="list-style-type: none"> <li>PA2 and PA3 “bookend” an MVP in RI and subsequent roll outs to other jurisdictions</li> <li>The same approach was intended for the construction work, but the roadmap only reflects a PA at the end of the subsequent jurisdictional roll outs</li> <li>Program Anchors provide strategic control points for Program planning, and SI commercial commitments</li> </ul> <p><b>Actions Taken</b></p> <ul style="list-style-type: none"> <li>BPR and PO teams met to review current roadmap and evaluate the need for a Program Anchor for the MVP in RI for Construction</li> </ul>	<p><b>Options Considered:</b></p> <ul style="list-style-type: none"> <li>No change</li> <li>Add new release</li> <li><b>Identify current release as new PA</b></li> </ul> <p><b>Recommendation:</b></p> <ul style="list-style-type: none"> <li>Designate the current planned release to deliver MVP in RI and identify it as PA4</li> <li>Rename following PA’s accordingly</li> </ul> <p><b>Justification:</b></p> <ul style="list-style-type: none"> <li>Align with strategy of delivering MVP in RI and then enhancing</li> <li>Consistent communication about MVP and enhancements</li> <li>Enhance commercial controls</li> </ul>
<p><b>Next Steps</b></p> <ul style="list-style-type: none"> <li>Align Roadmap and Integrated Program Plan</li> <li>Identify any impacts to scope, business and function operations</li> <li>Confirm any commercial implications</li> <li>Initiate change request documentation</li> </ul>	

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## The GBE KPIs are operational metrics to track value realization for GBE

### GBE KPIs

**Purpose: Measure success of the GBE Program**

- ¾ Based on specific benefit categories laid out in the business case presented to regulators
- ¾ GBE KPI's are used to align incentives for our partners

Work Management	1. Average Unproductive Time / Day
	2. Average # of Completed Jobs per Worker / Day
Engineering & Back Office	3. Average # of WOs Processed per Back-office FTE
Customer	4. Total Call Volume
	5. Customer Effort (Field) rating
Asset & Inventory Management	6. # of Construction Projects Delayed due to Supply Chain
	7. Inventory Turnover
Gas Safety & Compliance	8. Total Compliance Penalties and Violations
Employee Safety	9. Safety Composite (OSHA)
Employee Engagement	10. Employee Engagement Score

- ¾ GBE KPI baselines were established in FY17
- ¾ During FY18 we have been tracking performance of GBE KPI's
- ¾ Today we are requesting Steering Group approval of the updated baseline and related targets for GBE KPI's

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Review of the GBE KPIs’ original baseline during 2018 suggested the need for change in some of the baselines

KPI	Old Baseline	Methodology of Old Baseline	New Baseline	Methodology of Revised Baseline	Q2 2018 Actuals	Q3 2018 Actuals
<b>2c. Avg. feet of Main Replaced per Worker per Day – M&amp;C</b>	12.27	Avg. of FY16 & FY17 actuals & FY18 Planned (3-years) assuming average productivity. Uses Avg. Productive Hours per year to calculate weighted avg.	15.14	Avg. of FY16 & FY17 actuals & FY18 Planned (3-years) assuming National Grid standard weighting for productivity. Uses Miles Completed per year to calculate weighted avg.	15.01	15.12
<b>3. Avg. No. of Work Orders Processed Per BO FTE / Year</b>	722	April 2016 to May 2017 Casbuilt reports ( <i>Excluding: Narragansett and NIMo</i> )- *Uses 14 months of data instead of 12 months.	656	Avg. of Q3 FY17 to Q2 FY18 (October 2016 – September 2017); includes all data.	656	654
<b>4. Total Call Volume / Year</b>	3.75M	Move Calls- Avg. of 2013-2016 months Non Move Calls-FY17 *Data was unavailable for the KEDNY move calls – assumed 892K calls. No actuals available as of June 2017.	3.27M	12-Months - Total Number of Calls from Q3 2017 to Q2 2018 (i.e. 1-Year Total: October 2016 - September 2017). Actuals.	3.27M	3.23M

All numbers reflect 1-year average at quarter end and are represented for Financial Years (FY)

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The recommended baselines will be used to establish targets and track performance in FY19 for NG as well as our partners

KPI	Baseline	Basis of Baseline	Q2 Actuals	Q3 Actuals
1. Avg Unproductive Time per Day (min/day)	200	FY17 (1-Year)	184	179
2a. Avg Number of Completed Jobs per Worker per Day – CMS	3.9	Avg. of FY15 & FY16 planned & collections jobs	4.3	4.2
2b. Avg Number of Service Jobs Completed per Worker per Day– M&C <sup>1</sup>	0.35	Avg. of FY16 & FY17 actuals & FY18 Planned	0.34	0.35
2c. Avg feet of Main Replaced per Worker per Day – M&C <sup>1</sup>	15.14 (formerly 12.27)	Avg. of FY16 & FY17 actuals & FY18 Planned	15.01	15.12
3. Avg. No. of Work Orders Processed Per BO FTE / Year	656 (formerly 722)	Total 12 month results (Q3 FY17 to Q2 FY18)	656	654
4. Total Call Volume / Year	3.27M (formerly 3.75M)	Total 12 month results (Q3 FY17 to Q2 FY18)	3.27M	3.23M
5. Customer Experience (% Field Rating ≥8)	65.6%	Avg. of all quarters from FY16 & FY17 ratings	66.2%	65.4%
6. No. of Construction Projects Delayed due to Supply Chain / Year	68	FY16	Data not available	Data not available
7. Avg. Stockouts / Month	198	12-Month Trailing Avg. at Qtr End- Q2 FY17 to Q3 FY18	194	209
8. Total Compliance Penalties / Year2	\$24.65M	3 year average (2013-2015)	Data not available	Data not available

All numbers reflect 1-year average at quarter end and are represented for Financial Years (FY)

Avg. Productivity, used to calculate M&C Avg. No. of Service Jobs and Avg. Feet of Main Replaced, remains constant and assumes NY Avg. Productivity is similar to MA. Construction Projects Delayed and Total Compliance Penalties are available after FY End.  
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## ESRI Executive Summary

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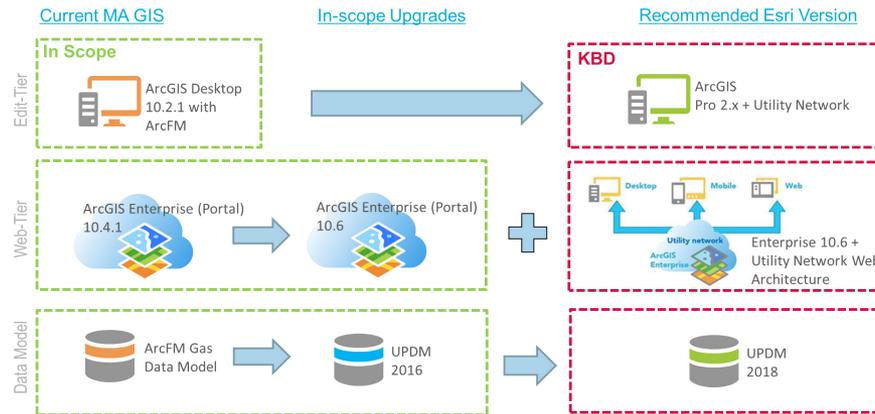
- The current GIS Module Scope of Work is to consolidate onto Esri's ArcGIS Desktop 10.2.1 with ArcFM (current system in MA)
- Esri just released ArcGIS Pro 2.1 that includes version 1.0 of the Utility Network Management Extension/UPDM 2018 (this is their new infrastructure that ERSI will support for next 10-15 years, the platform we are on officially goes out of support in 2021 ie during GBE implementation but could be extended)
- There is an opportunity for National Grid to move to this new platform now, however to avoid impacting the roadmap this decision needs to be made before the end of February
- There is an incremental cost of \$1.3M to predominantly cover the unanticipated conversion & enhancement of the MA GIS data [vs ~\$10M if done later, so reducing long term cost impact to customers]
- There are risks with moving onto a new platform [note the Pro platform has been out since 2015, it is the utility model that is new], however the recommendation, assurances and resources commitments National Grid has received from ESRI and PWC largely mitigate these risks
- ***After significant due diligence the GBE Project Team are recommending that the Steering Group approve moving to the newest version of Esri technology as part of the GBE GIS Consolidation effort***

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### Key Business Decision on ESRI Software



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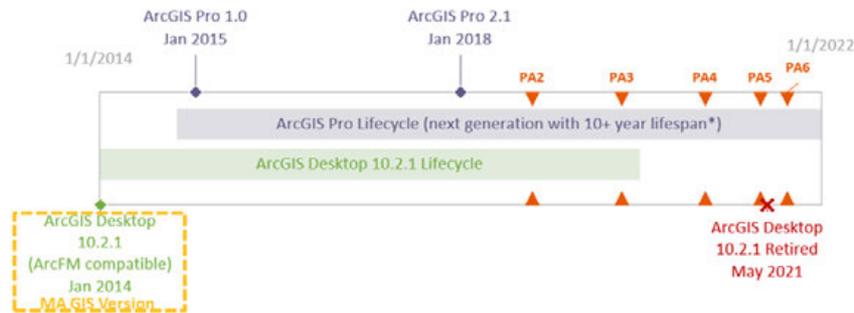
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## Key ESRI Product Dates

- Current technology foundation built before internet was adopted in business settings
- All investments outside of bug fixes will be made in the ArcGIS Pro 2.x platform
- ArcGIS Desktop 10.2.1 with ArcFM won't be supported after May 2021



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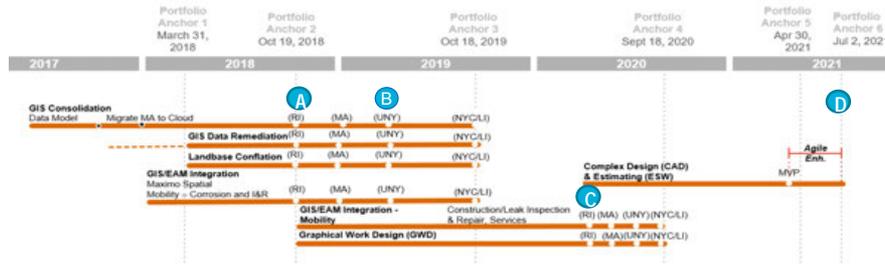
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## When should National Grid Upgrade to ArcGIS Pro and the Utility Network

### Four (4) Options:

- A. **Upgrade Now:** Deploy ArcGIS Pro 2.1 and Utility Network Management Extension 1.0 for PA2
- B. **Upgrade after RI/MA deployment:** deploy ArcFM in RI/MA and then upgrade to ArcGIS Pro at UNY rollout – additional rework required
- C. **Upgrade after GIS Consolidation is Done:** Deploy ArcGIS Desktop 10.2.1 at PA2 and then upgrade to ArcGIS Pro 2.x at the same time as the GWD initiative (PA4)
- D. **Upgrade after GBE Program:** Deploy ArcGIS Desktop 10.2.1 at PA2 and upgrade to ArcGIS Pro 2.x post-GBE GIS Consolidation



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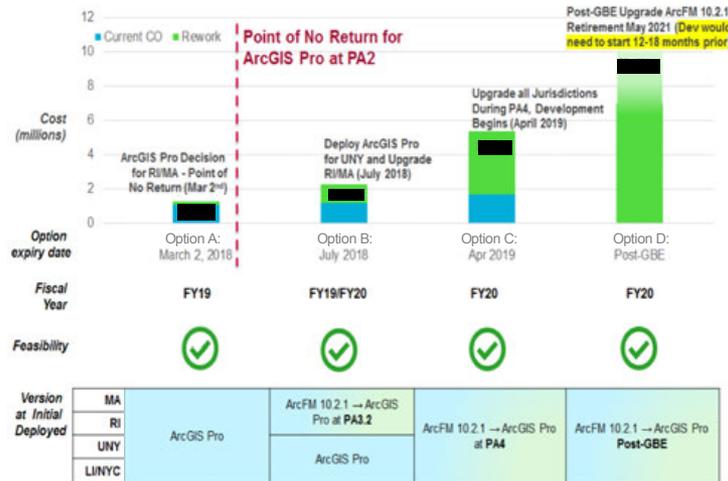
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## Change Dates and Cost Impact

- \$1M investment today avoids ~\$10M+ cost over the next 5 years



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## Program Benefits and Risks

### Benefits:

- Implement Esri's next generation software that will last 10-20 years
- Increased system performance due to web-based architecture
- Cross platform solution providing similar functionality across desktop and web today, followed by mobile
- An advanced network model for GIS that allows better real world representation of what's on the ground
- Reduce total cost of upgrade by embedding upgrade into GBE program.
  - While there will be an incremental cost the to program, the future upgrade costs will be avoided
- Avoid rework associated with GIS integrations to Maximo, FSL/Lemur, and Integrity Management Solution

### Risk and Mitigation:

- Implementation risk associated with new technology
  - Engaged Esri on project and received commitment to support National Grid if issues with Product arise
  - Prioritize complex user stories early in the release development schedule
- Minor functionality gaps at initial release, resulting in development of interim solutions
  - Change order includes develop for interim solution for lack of dimensioning and line split capabilities – we have received roadmap commitments from ERSI on the redeployment of these capabilities
  - Leverage CMO to manage expectations with end-users

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## Recommendation Considerations

Considerations	Option A ArcGIS Pro at PA2	Options B/C/D ArcFM 10.2.1 at PA2 and upgrade later
Solution	<ul style="list-style-type: none"> <li>Implement Esri's next generation software that has a 10+ year lifecycle (+)</li> <li>Benefits from new technology available FY19 (+)</li> <li>More web editing now and in the future (+)</li> <li>Improved performance (+)</li> <li>Minor functionality gaps at initial release, resulting in development of interim solutions (-)</li> <li>Risk associated with new technology (-)</li> </ul>	<ul style="list-style-type: none"> <li>Deployment of software that is in maintenance mode and not being enhanced (-)</li> <li>Continue with existing performance limitations and versioning model (-)</li> <li>Harder to migrate lightweight editing workflows to the web (-)</li> <li>Unable to support Linear Referencing for transmission without 3<sup>rd</sup> party software and heavy customization (-)</li> </ul>
Integrations	<ul style="list-style-type: none"> <li>Integrations to Maximo, FSL/Lemur, and IM Solution built on UPDM 2018 and would <i>not</i> require future rework (+)</li> </ul>	<ul style="list-style-type: none"> <li>Integrations with Maximo, FSL/Lemur, and IM would need to be updated as part of the future upgrade project (-)</li> </ul>
Change Management	<ul style="list-style-type: none"> <li>One-time change management and training activity (+)</li> <li>End-users are getting a better product and user experience (+)</li> </ul>	<ul style="list-style-type: none"> <li>Multiple changes and training activities within a 2-5 year period (-)</li> </ul>
Budget	<ul style="list-style-type: none"> <li>Lowest total cost option over a 5 year period(+)</li> </ul>	<ul style="list-style-type: none"> <li>5x-10x+ incremental cost to National Grid over a 5 year period (-)</li> </ul>

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## ESRI Software Recommendations

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**Recommendation:** *Option A – Implement ArcGIS Pro 2.1 and Utility Network Management Extension as part of Consolidation project*

**Capture the timing opportunity:**

- Deliver on GBE Promise to operate with agility to better serve customers, employees, and regulators by leveraging new opportunities in the platform over the coming years
- Lowest cost option that will exist on a 5-10 year time horizon
- NG and Consulting Partner teams (Business, ISE, BPR, Change Mgmt) are in place with the expertise, capacity and momentum to execute a significant tech deployment

**Change Once and Deploy Next-Gen version of Esri:**

- Reduces amount and frequency of change by implementing a foundational Esri platform that will support the business for 10-20 years
- Mitigate risk of substantial integration changes to other business capabilities (WM, AM-IM, etc) later

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## Next Step if KBD is Approved

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- Work with Portfolio Office to approve Change Order
- Redirect GIS development teams to ArcGIS Pro and UPDM 2018 development
- Work with ISE Team to make changes required in the Azure Cloud environments
- Work with CMO to develop strategy to communicate decision to key stakeholders
- Work with Esri to finalize an engagement model and expectations

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## Appendix

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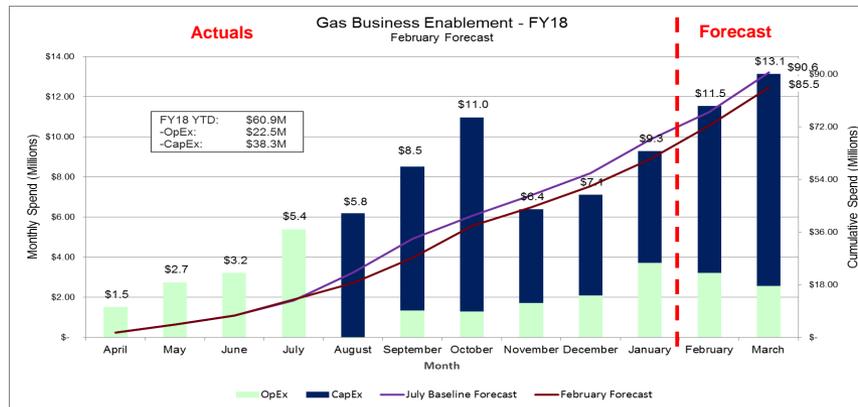
- ¾ Appendix A: FY18 Forecast
- ¾ Appendix B: Hiring Pause and Resource Deep Dive
- ¾ Appendix C: Collaboration

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### Appendix A: FY18 Forecast – OpEx/CapEx



	Budget	Jan. Forecast	Feb. Forecast	Variance
OpEx	\$ 30.2	\$ 29.9	\$ 28.3	\$ 1.6
CapEx	\$ 54.3	\$ 59.5	\$ 57.2	\$ 2.2
<b>Total</b>	<b>\$ 84.5</b>	<b>\$ 89.4</b>	<b>\$ 85.5</b>	<b>\$ 3.9</b>

**\$1.6 Favorable February OpEx Variance to January Forecast:**

- 3<sup>rd</sup> Party Debt Financing: \$1.0M
- Release of Contingency Post Time Reporting True-up: \$0.6M

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## Appendix B: Hiring Pause - 90 Day Hiring Plan Detail

Role	Module	Band	Priority Level	Target Start Date	Tower Lead Comments
Change Management Lead - AM/Data	CMO	D	1	02/01/18	This can wait
Regulatory Manager	PO	D	1	02/01/18	CRITICAL
Program Manager / Agile Coach	PO	D	1	03/01/18	CRITICAL
Sr Finance Analyst 2 (Business Case) (Willard)	PO	D	1	03/01/18	CRITICAL
Business Engagement Lead	CMO	D	1	03/01/18	This can wait
Change Management Lead - SDM/CE	CMO	D	1	03/01/18	This can wait
Product Owner - CE	CE	E	1	03/01/18	CRITICAL
CL&D Support (enduring roles)	CLD	E	1	03/01/18	CRITICAL
Maximo Developer (Support Org.)	WM(M)	D	1	03/01/18	CRITICAL
Salesforce Dev. (Support Org.)	WM-SDM (ACN)	D	1	03/01/18	CRITICAL
Change Associate Analyst - AM / Data	CMO	F	2	03/01/18	CRITICAL
Change Associate Analyst - SDM/CE	CMO	F	2	03/01/18	CRITICAL
Change Analyst - GS / Data	CMO	E	2	03/01/18	CRITICAL
CMO Change Analyst	CMO	E	2	03/01/18	CRITICAL
Change Specialist - Associate Analyst	CMO	F	2	03/01/18	CRITICAL
Delivery Lead - Financial Controls	PO	P	1	04/01/18	CRITICAL
Change Associate Analyst - WM	CMO	F	1	04/01/18	This can wait
Data Management Specialist	DM	E	1	04/01/18	CRITICAL
Data Management Specialist	DM	E	1	04/01/18	CRITICAL
Lead Data Analyst	DM	D	1	04/01/18	CRITICAL
Change Leadership & development Lead	CLD	D	1	04/01/18	CRITICAL
Product Owner - AIPM	AM	D	1	04/01/18	CRITICAL
Analyst	AM	E	1	04/01/18	CRITICAL
Sr. Commercial Contracts Manager	PO	D	1	04/01/18	CRITICAL
NG Agile Coach	PO	D	1	04/01/18	CRITICAL
WM Analyst	WM(M)	E	1	04/01/18	CRITICAL
Salesforce Analyst (Support Org.)	WM-SDM (ACN)	E	1	04/01/18	CRITICAL
Solution Architect	ISE	D	2	04/01/18	CRITICAL
PM NFRs	ISE	D	2	04/01/18	CRITICAL
CMO Comms / Engagement Support	CMO	E	2	04/01/18	CRITICAL
Change Analyst - Customer	CMO	E	2	04/01/18	CRITICAL
SME WM 2 - Analyst	WM-SDM (ACN)	E	2	04/01/18	CRITICAL
Change Associate Analyst - WM	CMO	F	2	04/01/18	CRITICAL
Principal Change Management Lead	CMO	D	2	04/01/18	CRITICAL
NG   Business/Functional   Sr./ Test Lead	CE	F	2	04/01/18	CRITICAL

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## Appendix B: Hiring Pause 90 Day Hiring Plan Detail (cont)



Data Management Analyst / Specialist	DM	E	2	05/01/18	Start date moved to May 1st
NG   Business/Functional   Scrum Master	SE	D	2	04/01/18	CRITICAL
NG   Business/Functional   Scrum Master	SE	D	2	04/01/18	CRITICAL
Product Lead (SME)	SE	E	2	04/01/18	CRITICAL
Product Analyst / Configurator - Salesforce	CE	E	2	04/01/18	CRITICAL
Advanced Analytics Architect - WM (Maximo)	SE	D	2	04/01/18	CRITICAL
Sr. Program Manager - Ops. Model	OM	E	2	04/01/18	CRITICAL
Maximo Analyst (Support Org.)	WM(M)	E	2	04/01/18	CRITICAL
Salesforce Release Manager (Support Org.)	WM-SDM (ACN)	D	2	04/01/18	CRITICAL
Salesforce Test Lead (Support Org.)	WM-SDM (ACN)	D	2	04/01/18	CRITICAL
Mulesoft Analyst	CE	F	2	04/01/18	CRITICAL
NG   Business/Functional   Sr./ UX / UI Designer	SE	D	3	04/01/18	CRITICAL
Seasonal Intern - ISE	SE	F	3	04/01/18	CRITICAL
Data Scientist	DM	F	3	09/01/18	Start date moved to September 1st
Azure Services Manager	SE	D	1	04/15/18	CRITICAL
Test Automation Manager	SE	D	2	04/15/18	CRITICAL
Test Automation Engineer	SE	F	2	04/15/18	CRITICAL
Instructional Designer	SE	E	3	04/15/18	CRITICAL
Maximo Analyst (Support Org.)	WM(M)	E	1	05/01/18	CRITICAL
Analyst	PO	E	2	05/01/18	This can wait
Salesforce Analyst (Support Org.)	WM-SDM (ACN)	E	2	05/01/18	CRITICAL
Data Management Specialist	DM	E	3	09/01/18	Start date moved to September 1st
Summer Intern - DM	DM	F	3	05/01/18	CRITICAL
Summer Intern - DM	DM	F	3	05/01/18	CRITICAL
Summer Intern - DM	DM	F	3	05/01/18	CRITICAL

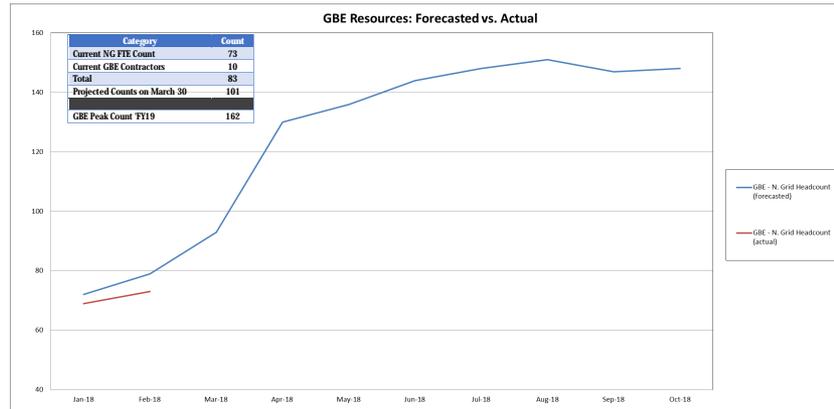
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### Appendix B: GBE Resources: Baseline Plan-Forecasted vs. Actual



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## Appendix B: GBE Resources: Detailed Hiring Status

Chris C. - Week of February 19																		
Priority Level	Movements from Prior Week			Risk Status					Hiring Process									
	Total Roles	Movement	No Movement	Dehyed	Late	At Risk	On Track	Hired	Pre-Recruitment Calendar / Heat Map Schedule	In Development	Bidding	Posted	Resume Review	Interviewing	Offer Pending	Blocked	Delayed	Onboard
1	10	2	8	0	4	0	5	1	3	0	0	1	2	3	0	0	0	1
2	6	1	5	0	1	0	5	0	4	1	0	0	0	1	0	0	0	0
3	8	1	7	2	4	0	1	1	1	3	0	0	0	1	0	0	2	1
<b>Total</b>	<b>24</b>	<b>4</b>	<b>20</b>	<b>2</b>	<b>9</b>	<b>0</b>	<b>11</b>	<b>2</b>	<b>8</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>

Robbuck - Week of February 19																		
Priority Level	Movements from Prior Week			Risk Status					Hiring Process									
	Total Roles	Movement	No Movement	Dehyed	Late	At Risk	On Track	Hired	Pre-Recruitment Calendar / Heat Map Schedule	In Development	Bidding	Posted	Resume Review	Interviewing	Offer Pending	Blocked	Delayed	Onboard
1	8	0	8	0	5	0	2	1	0	0	1	0	2	3	0	1	0	1
2	13	0	13	0	7	0	5	1	0	1	0	1	5	0	4	0	0	1
3	1	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>22</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>8</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>2</b>

Andy S. - Week of February 19																		
Priority Level	Movements from Prior Week			Risk Status					Hiring Process									
	Total Roles	Movement	No Movement	Dehyed	Late	At Risk	On Track	Hired	Pre-Recruitment Calendar / Heat Map Schedule	In Development	Bidding	Posted	Resume Review	Interviewing	Offer Pending	Blocked	Delayed	Onboard
1	7	1	6	0	4	0	2	1	0	1	0	4	0	1	0	0	0	1
2	17	3	14	1	12	0	4	0	0	8	2	1	0	1	4	0	1	0
3	5	0	5	0	3	0	2	0	1	3	0	1	0	0	0	0	0	0
<b>Total</b>	<b>29</b>	<b>4</b>	<b>25</b>	<b>1</b>	<b>19</b>	<b>0</b>	<b>8</b>	<b>1</b>	<b>2</b>	<b>12</b>	<b>2</b>	<b>6</b>	<b>0</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>1</b>

KC Hoyle - Week of February 19																		
Priority Level	Movements from Prior Week			Risk Status					Hiring Process									
	Total Roles	Movement	No Movement	Dehyed	Late	At Risk	On Track	Hired	Pre-Recruitment Calendar / Heat Map Schedule	In Development	Bidding	Posted	Resume Review	Interviewing	Offer Pending	Blocked	Delayed	Onboard
1	7	2	4	1	4	0	2	0	0	1	1	1	1	0	0	0	0	1
2	2	0	2	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0
3	1	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>10</b>	<b>2</b>	<b>7</b>	<b>1</b>	<b>5</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>

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## Appendix B: GBE Resources: Detailed Hiring Status (cont.)

Chick C - Week of February 19 Detailed Changes																		
Priority Level	Movements from Prior Week			Risk Status				Hiring Process										
	Total Roles	Movement	No Movement	Delayed	Late	At Risk	On Track	Hired	Pre-Recruitment Calendar / Heat Map Schedule	In Development	Handing	Posted	Resume Review	Interviewing	Offer Pending	Blocked	Delayed	Outward
1	10	1	-1	0	3	-1	-3	1	0	0	0	0	0	1	-1	0	0	1
2	6	1	-1	0	0	0	0	0	0	0	0	0	1	-1	0	0	0	0
3	8	1	-1	0	4	0	-4	0	0	-1	0	0	0	1	0	0	0	0
<b>Total</b>	<b>24</b>	<b>3</b>	<b>-3</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>-7</b>	<b>1</b>	<b>0</b>	<b>-1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>

Ezomah - Week of February 19 Detailed Changes																		
Priority Level	Movements from Prior Week			Risk Status				Hiring Process										
	Total Roles	Movement	No Movement	Delayed	Late	At Risk	On Track	Hired	Pre-Recruitment Calendar / Heat Map Schedule	In Development	Handing	Posted	Resume Review	Interviewing	Offer Pending	Blocked	Delayed	Outward
1	6	-1	0	0	1	-1	-1	0	0	0	0	0	0	0	0	0	0	0
2	11	-1	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0
3	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	-1	0	0
<b>Total</b>	<b>18</b>	<b>-2</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>-2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-1</b>	<b>0</b>	<b>0</b>

Andy S - Week of February 19 Detailed Changes																		
Priority Level	Movements from Prior Week			Risk Status				Hiring Process										
	Total Roles	Movement	No Movement	Delayed	Late	At Risk	On Track	Hired	Pre-Recruitment Calendar / Heat Map Schedule	In Development	Handing	Posted	Resume Review	Interviewing	Offer Pending	Blocked	Delayed	Outward
1	7	0	0	0	1	-1	-1	0	0	0	0	0	-1	1	0	0	0	0
2	11	-1	1	0	2	0	-2	0	0	-1	0	-2	0	-2	1	0	0	0
3	5	0	0	0	1	0	-1	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>23</b>	<b>-1</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>-4</b>	<b>0</b>	<b>0</b>	<b>-1</b>	<b>0</b>	<b>-2</b>	<b>0</b>	<b>-1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>

KC Heath - Week of February 19 Detailed Changes																		
Priority Level	Movements from Prior Week			Risk Status				Hiring Process										
	Total Roles	Movement	No Movement	Delayed	Late	At Risk	On Track	Hired	Pre-Recruitment Calendar / Heat Map Schedule	In Development	Handing	Posted	Resume Review	Interviewing	Offer Pending	Blocked	Delayed	Outward
1	7	-2	2	0	1	-1	-2	0	0	0	-1	1	0	0	0	0	0	0
2	2	0	0	0	1	0	-1	0	0	0	0	0	0	0	0	0	0	0
3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>10</b>	<b>-2</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>-3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

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## Appendix C: Collaboration Principles

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- ¾ Do the Right Thing
- ¾ Find a Better Way
- ¾ Communication, Participation & Transparency
- ¾ One Team, Focused on Successful Delivery
- ¾ Professional Respect & Confidentiality
- ¾ “Fix first, discuss later”

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## Appendix C: Collaboration Scoring

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### ¾ Scoring scale of 1 to 5

- 1 = failure to demonstrate Collaboration Principles on multiple occasions. Changes required to support successful program delivery.
- 2 = failure to demonstrate the Collaboration Principles on a few occasions. An appropriate intervention is recommended to avoid matters deteriorating further.
- 3 = consistently demonstrating the Collaboration Principles
- 4 = consistently demonstrating the Collaboration Principles and instances of individual resources exceeding expectations
- 5 = consistently demonstrating the Collaboration Principles and fully engaged and aligned in helping deliver a successful outcome for National Grid

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### Appendix C: Collaboration Scores – Q1 and Q2

§ Jul-Sep 2017 Summary (Q1 GBE)		Average Score		
Consulting Partner	Jul-17	Aug-17	Sep-17	Q1 GBE
Accenture LLP	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
PricewaterhouseCoopers Advisory Services LLC		[REDACTED]	[REDACTED]	[REDACTED]
Kotter International, Inc.		[REDACTED]	[REDACTED]	[REDACTED]
National Grid USA Service Company, Inc.		[REDACTED]	[REDACTED]	[REDACTED]

Oct-Dec 2017 Summary (Q2 GBE)		Average Score		
Consulting Partner	Oct-17	Nov-17	Dec-17	Q2 GBE
Accenture LLP	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
PricewaterhouseCoopers Advisory Services LLC	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Kotter International, Inc.	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
National Grid USA Service Company, Inc.	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

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## Gas Business Enablement



Steering Group  
**Deck 1 – All Attendees Deck**  
March 27, 2018

REDACTED

## Meeting Objectives & Agenda



### Meeting Objectives

- Prepare for PA1 Go/No Go
- Provide overview of progress toward PA2
- Discuss escalated risks and issues
- Review Op Model Diagnostic



Meeting Agenda	Speaker	Duration
National Grid (NG) Breakout	•JJ	15 min
State of the Program <ul style="list-style-type: none"> <li>• PA1 Readiness</li> <li>• Program Update and Escalated Risks</li> </ul>	•RIF/ KC •KC / JJ / PS	20 min 20 min
Key Gas Business Enablement (GBE) Delivery Elements Spotlights <ul style="list-style-type: none"> <li>• IS Dependencies</li> <li>• Salesforce Collaboration Update</li> <li>• Operating Model Diagnostic</li> </ul>	•PS •CH / CC •RIF	10 min 10 min 10 min
Meeting Close + Feedback	•JJ	5 min

REDACTED



**State of the Program**

- Action Items
- PA1 Readiness
- Program Progress
- Escalated Risks

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3

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Action Items						 
#	Action	Owner	Assigned	Due	Comment	Status
3	Set up deep dive to discuss integration and maintenance of data between legacy and new solutions	CC	1/29/18	TBD	Deep dive preparation started. Confirming details on direction with DD	In progress
4	Conduct March SG meeting in RI	KCH	1/29/18	Mar	<ul style="list-style-type: none"> <li>Discuss at Feb SG meeting</li> <li>Invite SG to join UAT at 404 Wyman 3/22</li> </ul>	Complete
6	Provide a deep dive on resource mgt (including risks) to Steering Group	KCH	1/29/18	Feb	Included in NG Only Deck	Complete Feb
7	Provide more detail on SG escalated risks	KCH	1/29/18	Feb	New format presented in Feb SG	Complete Feb
8	GBE to make recommendation to SG on go live date for PA1	KCH	1/29/18	Feb	Recommendation to be discussed in Feb SG meeting	Complete Feb
10	SF Management Plan – share with SG including timeline, Key Decision Points	CC	1/29/18	Feb	Salesforce deep dive in Feb SG and Salesforce Product Executive in attendance	Complete Feb
12	Follow up on legacy interfaces and how they are to be delivered, Risk/ mitigations	PS	1/29/18	Feb	Reschedule from Feb to Mar (time constraint)	In Progress
13	Provide SG with plan to repatriate GBE NG team members to business	KCH	2/27/18	Aug		Open

REDACTED



**State of the Program**

- Action Items
- PA1 Readiness
- Program Progress
- Escalated Risks

5

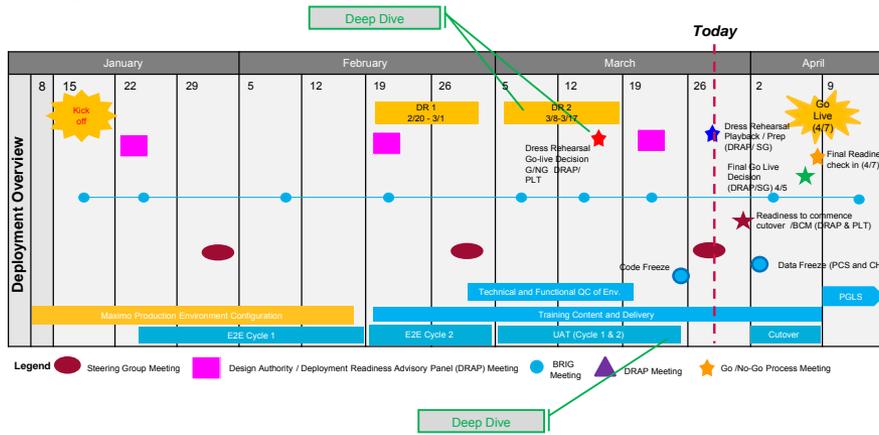
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### The Program and Business Stakeholders are deep into cutover preparations

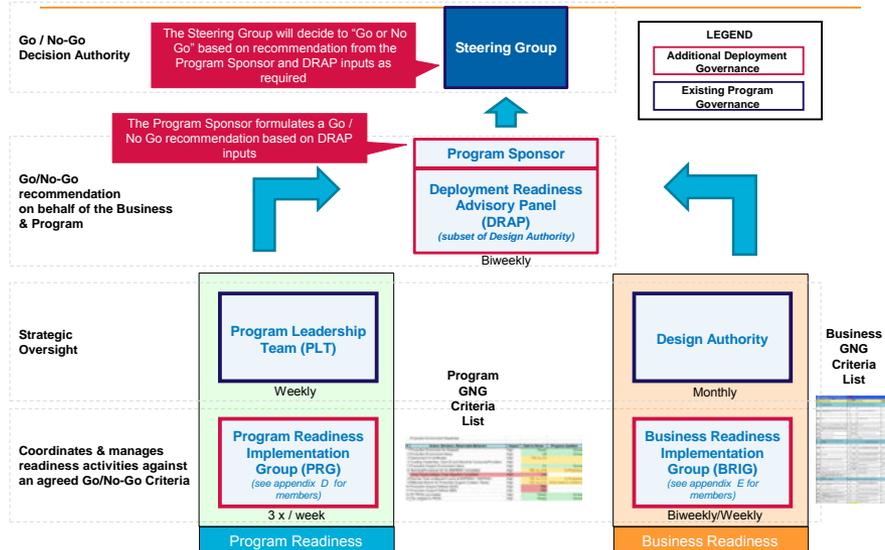


While there a number of watch areas and some activities remaining to be completed, we are tracking to a "Go" decision



REDACTED

In addition to preparing the solution and business, we have been practicing the Go / No Go decision process



REDACTED

The DRAP dress rehearsal adhered to the actual decision process as closely as practical



**Objectives:**

- To be comfortable on the process to be followed (allow for refinement)
- To be able to make a mock decision on Go/No-Go
- Be clear on the critical actions, caveats (if any) in support of that decision, as the key focus areas moving forward



**Input**

1. 'Program' Readiness Status
2. 'Business' Readiness Status *(presented by each business area)*



**Assessment**

- Discussion by exception
- Materiality of outstanding items
- Draw out key risks / benefits to position
- Recommendation / status discussions



**Output**

1. Simulate the April 5<sup>th</sup> final Go/No-Go meeting
2. Make decision with agreed caveats, actions as appropriate

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### The DRAP followed 5 Parameters / Guidelines for a “mock” Go / No-Go Recommendation



#### 1. OUTCOMES

- Go
- No Go
- Go with Caveat

#### 2. QUORUM

- Representative or casting vote from each operational business areas impacted
- Representative or casting vote from overarching support functions; Finance, IS, Process, Compliance
- Representative or casting vote from the GBE Program sponsor or delegated authority

#### 3. DECISION

- It's not as at today
- Its based on your confidence in what your know, in being ready for Go Live. Do you believe we should proceed as planned

#### 4. COLLATERAL *The basis for your vote will be;*

- Your starting position from feedback from your BRIG, PRIG members
- Increased understanding of the wider position
- A reflective assessment of the above

#### 5. RESPONSIBILITY = *When exercising your vote remember,*

- With great power comes great responsibility
- A no decision is a positive decision – To protect from the ramifications of deploying when not ready
- A go decision is a also positive decision, but for the reasons above can equally be a negative one

9

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DRAP members expressed some concerns as of 3/15 but were confident they would be addressed in a timely manner 

Overall status	Amber					
	I&R		Collections & Dispatch		Gas Engineering	
Criteria	MC Fid Ops	Asset Mgmt	Billing	Collections	Dispatch	Corrosion
Solution Ready	●	●	●	●	●	●
Business Processes & Procedures Ready	●	●	●	●	●	●
People Are Ready	●	●	●	●	●	●
Operational Readiness	●	●	●	●	●	●
Unions/Third Parties Ready	●	●	●	●	●	●
Site Readiness	●	●	●	●	●	●
Governance Ready	●	●	●	●	●	●

Compliance	In process actions: Reviewing Gas methods, continuing to evaluate impacts of new processes on organizations
IS	Open action: Review PGLS support processes, submit requests to IS Change Board (for cutover weekend)
Process	All process areas: Complete testing, complete L4 process documentation
Finance	Criteria to be defined



- Red: Insufficient control to predict on schedule completion
- Amber: In control but incomplete or lagging scheduled completion
- Green: In control and on track for scheduled completion

**Highlights**

- Solution status is driven largely by currently open solution defects. For example, Billing and Collection is unable to verify accurate posting to financial systems. Other business areas have similar concerns
- The Process and People Ready areas reflect the need for further process documentation, feedback on training effectiveness and further detail and clarifications on Post Go Live Support
- Each area continues to express overall confidence in the information and level of detail available, however there were a number of areas where completion of checklist verifications has not been possible, therefore a conservative approach to status assessment was taken

REDACTED

DRAP members voted to continue Program preparations and defect resolution activities...



...however had this been the actual "go-live" vote, some members would have voted "no go"

		March 15 Status	March 30 Status	April 2 Status	April 4 Status	April 5 Status
Quorum	Area	Vote	Vote	Vote	Vote	Vote
Neil Proudman	I&R (M&C Field Ops )	Go (with caveats)				
John Stravakas	I&R (Asset mgt)	Go (with caveats)				
Annette Saxman	Corrosion	Go (with caveats)				
Fred Amaral	Collections & Dispatch	Go (with caveats)				
Jody Allison	Billing & Collections	Go (with caveats)				
Prem Singh	IS	Go (with caveats)				
Tom B, Tom A, Tara	Process	Go (with caveats)				
Dan McNamara	Compliance	Go (with caveats)				
J. Johnston	GBE Program	Go (with caveats)				

REDACTED

The Program readiness for Go Live is “Amber”...



...with high confidence that all remaining activities and issues will be completed or satisfactorily mitigated prior to the April 5 Go / No Go decision

	RAG Status	Comments
BRD		<b>Amber Due to:</b> <ul style="list-style-type: none"> <li>Monitoring potential impacts on Training material from defect resolution</li> <li>Finalizing resourcing schedule for PGLS</li> <li>Finalizing exit criteria for PGLS</li> <li>Deployment of site level equipment in progress</li> </ul>
BPR		<b>Amber due to:</b> <ul style="list-style-type: none"> <li>Resolution of 4 remaining critical and high priority defects in progress</li> <li>Final code fixes in progress</li> <li>Approval of process documentation in progress</li> </ul>
ISE		<b>Amber due to:</b> <ul style="list-style-type: none"> <li>“Off Hours” Support Playbook under development</li> <li>Security logging to defect anomalous activities being developed</li> <li>Technical documentation to support PGLS and steady state being finalized and validated with team</li> </ul>
PO		<b>Amber due to:</b> <ul style="list-style-type: none"> <li>PGLS KPI's and transition to steady state details being finalized and validated with team</li> <li>Dress Rehearsal 2.5 to be conducted Mar 26-28</li> <li>Final cutover and contingency plans need to be reviewed and approved (post DR 2.5)</li> </ul>

Legend



**Blue:** The Criteria (and all sub-criteria) have been agreed to (signed off) by the Business, ready for go-live.



**Yellow:** In control but lagging behind or moderate risk identified



**Green:** In control and on track for scheduled completion



**Red:** Insufficient control to predict on schedule completion

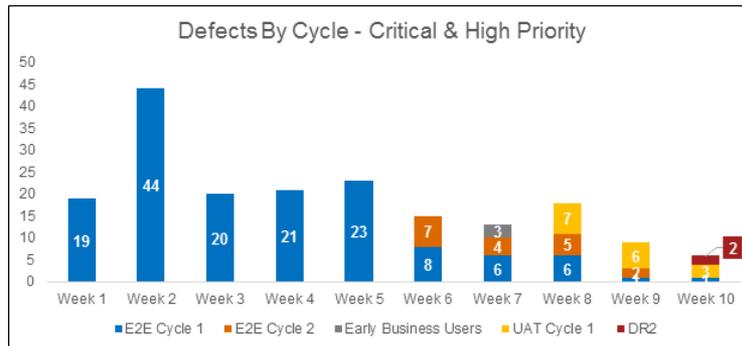
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The solution has been extensively tested and we are making good progress in resolving defects 

Testing Summary



**Defect Summary:** 188 critical and high priority defects were uncovered over several different testing phases. The team continues to resolve the remaining open defects.

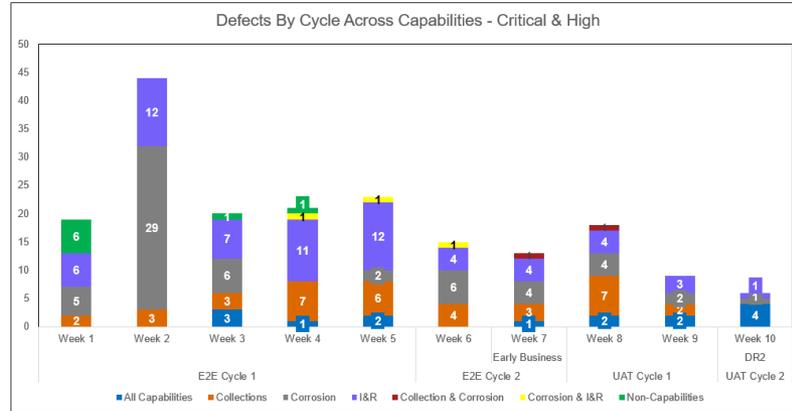


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Defect Summary by Capability



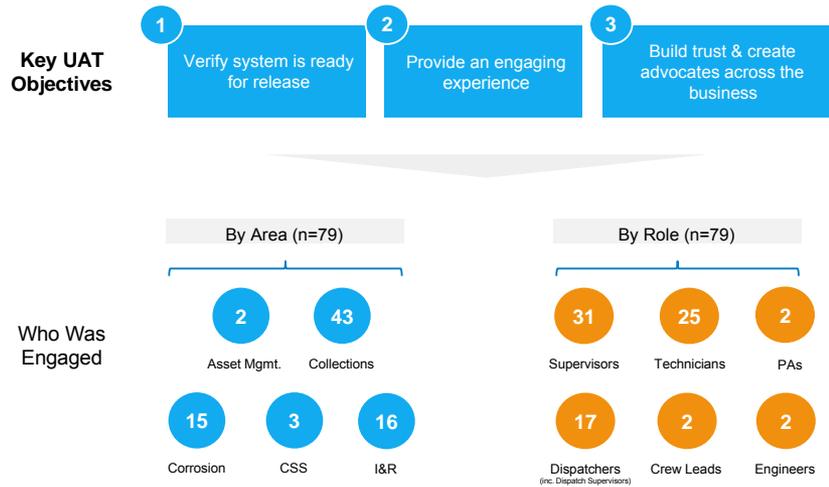
The remaining open defects impact a mix of Corrosion, I&R, and Collections capabilities



REDACTED



### Overview of User Acceptance Testing



Source: UAT Participant Checklist

REDACTED



## What we heard – some of the ‘greats’



### 1. Support and Engagement From the Business



- This was good to have business people [here].
- This [testing] was a good hands on training. We like learning by doing.
- PO's visits and discussion were quite helpful. Nice to have someone from the our function explain how things work.



### 3. Strong Solution



- Software is incredible. ...it does way more than what we need but that's what we want. There is so much more than our current database.
- I like the iPad because it's so simple.
- I love that its cloud based. 5 years from now you won't be able to imagine how you ever worked without this program.



### 2. It's a Needed Change



- "We need this change; everyone is ready"
- "Paperless for everyone is great"
- "I'm optimistic and looking forward to GBE."
- "I don't know how we can work without this."



### 4. UAT Format and Style



*"The testing process worked well and I would not change anything. I'm usually a stickler for keeping things lively so people don't get bored but this event was well paced and kept my attention throughout. I wouldn't change a thing."*

REDACTED



## What we heard – some of the ‘not so good’



### 1. We're nervous about another big change

*Testers are generally optimistic, however there is acknowledgement that there will be a steep learning curve and resistance among some detractors of the new system*



### 2. Navigation is the hardest part

- It's difficult to see where everything is; too many steps and too much swiping
- The page / data entry sequence needs to be ordered to match our paper process
- Once submitted we can't go back to make changes



### 3. Display the Relevant Data

- e.g. "Use Regulator Station / # of Station / ID and address including city." – I&R
- Need to be able to enter more comments from the field

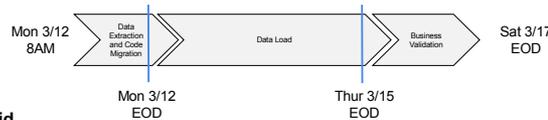


### 4. Use Terminology That I Use

*"The child level doesn't provide sufficient detail for us to use the tasks essentially making this useless. Better to not roll it out until that is changed along with the Parent / Child nomenclature."*

REDACTED

### We have completed two dress rehearsals of our cutover plan



#### What We Did

- Rehearsed cutover activities including environment configuration, data extraction and data load, code migration, and validation of data and functional capabilities
- Rehearsed and refined processes for managing cutover

#### Dress Rehearsal Outcomes

##### 1<sup>st</sup> Dress Rehearsal:

- Two technical issues at the end of the dress rehearsal related to Maximo configuration prevented a successful end-to-end connection

##### 2<sup>nd</sup> Dress Rehearsal:

- All scheduled activities were completed
- New defects were identified, including defects that were caused by mistakes made during the cutover process
- False identification of defects slowed the process for identifying and addressing the real defects

#### Lessons Learned

- Strengthen controls and quality checks
- More clear expectations and accountability
- More practice and support for business validation

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Based on the results of dress rehearsal 2  
a third dress rehearsal has been added to the plan



**Program Readiness Group Analysis and Next Steps**

- To mitigate risks to a successful cutover, the Program Readiness Group (PRG) determined that an additional dress rehearsal should be considered
- After consideration of various options, the PRG developed and endorsed the concept of a focused “mini” DR to practice specific activities
- The GBE PLT approved the recommendation and directed preparations begin

**Partial Dress Rehearsal (“DR 2.5”)**

- Will span 3 days: Monday 3/26 – Wed 3/28
- Will rehearse integrations, Salesforce configuration and data load, and business validation
- Will implement the DR2 lessons learned and practice cutover management process refinements

<b>Mon</b> 3/26 SF Data GBE Int.	<b>Tues</b> 3/27 Business Val ESB Cutover	<b>Wed</b> 3/28 End-to-End Validation
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Data loads have been successfully tested multiple times



DM team performed multiple loads of PA1 migration data sets

- Three MOCK loads completed between 11/17 and 2/18
  - Scope included all 26 Data Specifications
  - 19 Distinct Data Objects across Maximo and Salesforce
- Loads performed to support E2E testing and UAT
- Loads performed to support Dress Rehearsal 1 & 2
- All Objects loaded with greater than 95% success rate

Objects in Scope PA1
Asset Templates
Assets
AssetSpec Values
ClassSpec Definition
Crafts
Job Plans
Location
LocationSpec Values
Master PMs
Meter Definition
Meter Readings
Person
PM
Service Address
SF Operating Hours
SF Resources
SF Skills
SF Users
User

*Highlight! In our work to develop the Corrosion solution, GBE identified 20K+ data conflicts which resulted in approx. 60K+ updates in PCS (pipeline compliance system). Since December, there has been approx. 160 hours of cleanup by the Corrosion Team to enhance/correct the data.*

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Training activities are on track nationalgrid | gas business enablement

Overall Training Status					
					50%
GBE Training Effectiveness Dashboard					
Course	Number of Learners	Training Attendance Rate	Average number of times taking assessment	Pass Rate	Average assessment score
I&R Field Supervisor (John Barrett)	9				
I&R Field Ops (John Barrett)	22				
Collections (Gary Bennett)	53	91%	1	100%	91%
Dispatch (Jim Patterson)	36	100%	1	100%	94%
Corrosion Supervisor (Katie Backus)	13				
Corrosion Technician (Katie Backus)	9				
I&R Asset Management ( Steve Greco)	6				
<b>Total/Average</b>	<b>148</b>	<b>95%</b>	<b>1</b>	<b>100%</b>	<b>93%</b>

Training Stats as of 3/23/18

- Five training courses completed: Collections (3) and Dispatch (2)
- Attendance rate is currently at 95%
- Average assessment score is 93% and on average learners are passing assessment on first attempt. (see appendix F for detail)

REDACTED



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## Program Progress

### Overview of Key Activities



#### PA1 Program Highlights

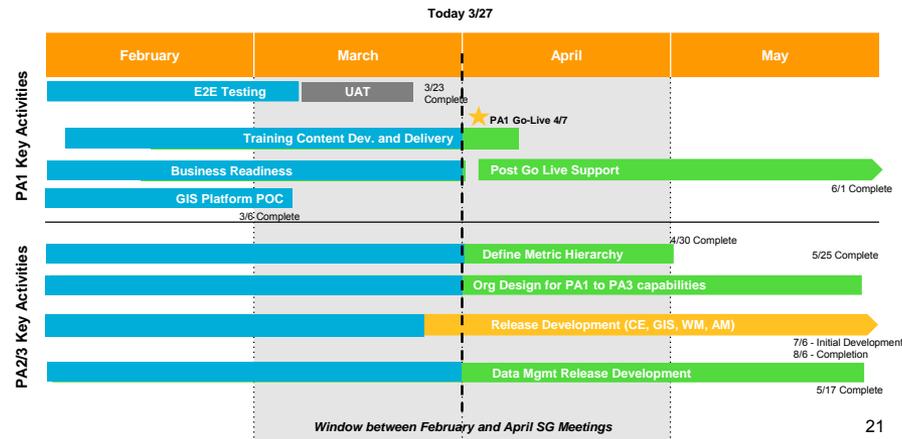
- On track for PA1 go live
- UAT In Progress

#### PA2 Program Highlights

- PA2 Release Development is behind plan and teams are identifying plans to catch up

#### Legend

- Progress to date
- Not yet started
- Completed Activity
- On track
- Behind but mitigation in place to catch up
- Delayed



REDACTED

## Program Progress

Other Program Highlights



Business Readiness		Org Design & Value Framework	Program Delivery	
35 of 35 Business Readiness Criteria discussed with BRIG	GBE Living Room kicking off in April followed by GBE On the road series starting in May	2 Workshops done to define metric hierarchy	2 open critical and high defects; all with resolutions identified or work arounds (as of 3/23)	Budget*
12 Business Readiness reps including 1 new member	Results Accelerator Readout - April 3	Interviews with 15 people performed to obtain input for metric hierarchy	Launch of 'Bring GBE to Life' App to Gas Business (2765 downloads and counting)	Resources*
8 of 10 Business Readiness mtgs conducted with BRIG members	~70 business users across all jurisdictions for UAT	1 Workshop pending to validate metric hierarchy with stakeholders	Dress Rehearsal 1 and 2 Finished and additional rehearsal in progress	Commercial*

**Legend**

Not yet started	Behind but mitigation in place to catch up
Completed Activity	Delayed
On track	

\* Note: Further detail can be found in NG only update.

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Risks & Issues		nationalgrid   gas business enablement		
Steering Group Support Needed				
Risk	Description	Likelihood and Impact	Owner	Target Resolution Date / Status
Unstaffed GBE IS Team leadership role (Vice President)	There is a risk that without a senior IS leader, the GBE Program will experience diminishing access to IS networks and resources and line of sight to major IS programs with dependencies.	<b>Impact: High</b> <b>Likelihood: Low</b>	John Gilbert	<ul style="list-style-type: none"> <li>03/30/18</li> <li>Mitigations in progress</li> <li>VP level interim resource starts 3/27</li> <li>Off track, New target 06/30/18</li> </ul>
Insufficient IS team capacity to support GBE critical path activities	The level of effort and complexity of the GBE interfaces to legacy systems is still not fully understood. The required skills and resource capacity may be insufficient to develop new/revised interfaces, architectures, policies and guidelines. This could delay the implementation of GBE solutions, overall program timelines will be delayed and costs will increase.	<b>Impact: High</b> <b>Likelihood: High</b>	Prem Singh	<ul style="list-style-type: none"> <li>PA2 Interfaces: 04/31/18</li> <li>Mitigations in progress</li> <li>Additional EA start 4/9</li> <li>Off track</li> </ul>
Required Salesforce capabilities not delivered in time to meet GBE roadmap	Through detailed design, additional capabilities are being identified that are required in Salesforce that are not currently available. If they are not delivered in time, there is a risk that: <ul style="list-style-type: none"> <li>Our deployed solution may lack promised functionality or require work arounds and other compromises</li> <li>The program roadmap / integrated plan may need to be altered to align to the availability of Salesforce capabilities</li> <li>It could be determined that Salesforce is too immature a product for field service and an alternate solution is required (worst case scenario)</li> </ul>	<b>Impact: High</b> <b>Likelihood: Medium</b>	Chris Connolly	<ul style="list-style-type: none"> <li>For PA2/3 2/21/18</li> <li>Mitigations in progress</li> <li>On track</li> </ul>
Cross Program Integration (Formerly "GBE / CxT Program Schedule Misalignment")	National Grid has active or is planning / considering a number of major programs with overlapping schedules and/or scope. These programs include GBE, CXT, CIS and others. Even if interdependencies can be managed, demand on IS capabilities, infrastructure and resources (Business & IS) must be balanced. There is a risk that ineffective integration and dependency management could: <ul style="list-style-type: none"> <li>Misalign Strategic roadmaps impacting corporate goals.</li> <li>Create bottle-necks, inefficiencies and write-offs.</li> <li>Cause sub-optimal deployment of new functionality</li> <li>Disrupt Business and IS operations</li> </ul>	<b>Impact: High</b> <b>Likelihood: High</b>	Chris Connolly	<ul style="list-style-type: none"> <li>6/30/18</li> <li>Mitigation in progress</li> <li>On track</li> </ul>

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## Risks & Issues

### Program Watch List



Risk	Description	Mitigation Activities	Status
Agile Adoption	There is a risk that partial or ineffective deployment of our new Agile practices and tools could compromise our ability to deliver our scope of work in a timely manner, impacting our delivery commitments and budgets	<ul style="list-style-type: none"> <li>Stand up an "Agile Adoption Working Group" to support Agile deployment, remove blockers and resolve issues, <i>Status: Complete</i></li> <li>Conduct periodic "retrospectives" to evaluate progress, <i>Status: Complete – incorporated into methodology</i></li> <li>Review staffing model and utilization for agile methodology support, <i>Status: Ongoing</i></li> </ul>	Monitoring
GBE Staffing Model and Resource Availability	There is a risk that the GBE staffing model and timelines may not support the true level of effort to both deliver new functionality/processes and support Program testing and deployment activities and that staffing of key GBE National Grid positions could fall behind plan	<ul style="list-style-type: none"> <li>Proactively engage Program, Workstream and SI Partner leadership in planning and prioritization of requirements, <i>Status: In Progress</i></li> <li>Prioritize recruiting activities, <i>Status: In Progress</i></li> <li>Leverage Agile toolset and processes to monitor capacity / throughput, <i>Status: In progress</i></li> <li>Develop contingency plans for activity support, <i>Status: Incorporating into resource management process</i></li> </ul>	In Progress
PA1 Go-Live Date	NG does not typically "go-live" at FY close, which would impact the planned PA1 go live date of March 31, 2018	<ul style="list-style-type: none"> <li>Proactively engage with NG Finance to review GBE PA1 functionality and deployment plan to develop mitigation strategies for each concern identified <i>Status: Complete</i></li> <li>Program Go-Live date replanning complete – new date set for 7 April 18 <i>Status: Complete</i></li> </ul>	Complete

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**Key GBE Delivery Elements Spotlights**

- IS Dependencies
- Salesforce Collaboration Update
- Operating Model Diagnostic

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## IS Dependency Background



- GBE Steering group has requested the GBE PLT Team to present the impacts of Integration between GBE and Legacy systems.
- ISLT quickly embedded a SWOT integration Team to assess impacts and provide recommendation:
  - **GBE Business Partner / RM** Surajit Roy-Chowdhury
  - **Global Architecture** Svetlana Lyba
  - **Program Delivery / Build** Riziel Cruz-Bower
  - **Service Delivery / Run** Shibu George

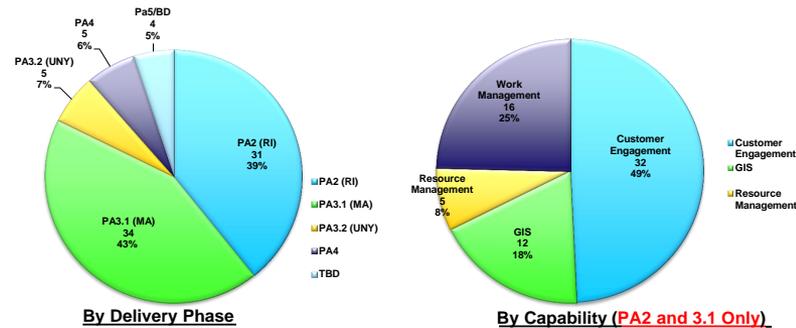
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## IS Dependency Status



### Overall Status

- The Integration Team is in the process of determining scope of required integration work
- High-level scope is being prioritized by PA's / Capabilities for prioritization of work as shown below.



**Note:**

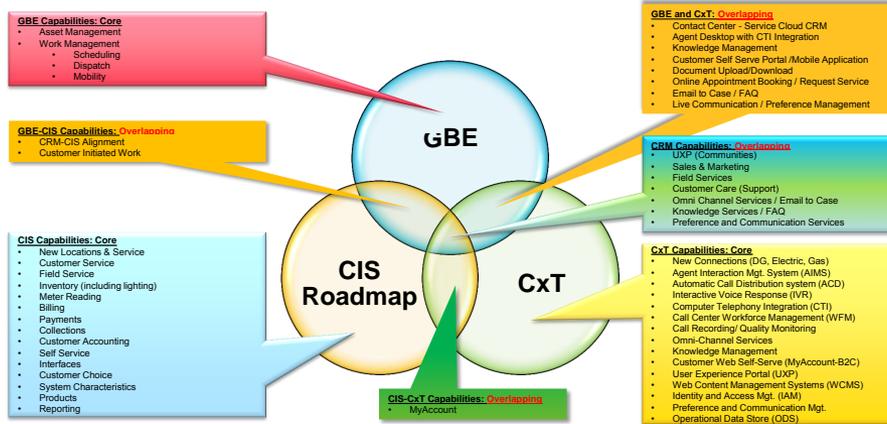
- This includes all interfaces and does not differentiate between delivery groups
- Analysis underway to segment work by delivery group

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# IS Dependency Status



## Program Dependencies – Draft(tbc).



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## IS Dependency Next Steps

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- Complete analysis and provide recommendation of all Program dependencies(GBE-CxT-CIS) to provide a Strategic alignment of various initiatives.
- Provide recommendations on integration deliverables by PA for GBE.
- Estimate resources, costs, and timelines for PA2 & PA3.1 release.

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**Key GBE Delivery Elements Spotlights**

- IS Dependencies
- Salesforce Collaboration Update
- Operating Model Diagnostic

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## National Grid GBE and Salesforce Roadmap Alignment



- Capacity Reservation in Scheduling
- ü Workshop Design Session (1/29)
  - Grid, ACN, Salesforce
- ü Technical Prototype Build (2/20)
  - ACN builds working prototype based on Workshop Design session
  - Technical Validation
- ü ACN UI Build & Grid Functional Approval (3/2)
- ü FSL PM Team Prototype Read back (3/7)
- § FSL PM Team Research & Requirements Gathers for Capacity Reservation
  - § Grid/ACN Input
- § FSL PM Team Product Feature Design
  - § Grid/ACN Feedback scheduling Week of April 9
  - § 4 weeks ahead of schedule
- § Capacity Reservation Product Feature Pilot
- § Custom/Configured Capacity Reservation Solution Transition to FSL Product Feature
  - § Sandbox Testing Pre-release
  - § Production Release

- Construction Capability Collaboration PA4/5
- § Accenture framing the Construction requirements leveraging Accenture SMA's through March with National Grid
- § Collaboration with Salesforce expected to start in full at the end of March spanning through the first weeks of April
- § ACN, FSL PM Team and NG iterate on capability requirements to ensure mutual understanding
- § National Grid, Salesforce and Accenture complete requirements playback through April
- § FSL PM Team collaborate with NG and ACN in order to align the feature delivery on the Roadmap

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**Key GBE Delivery Elements Spotlights**

- IS Dependencies
- Salesforce Collaboration Update
- Operating Model Diagnostic

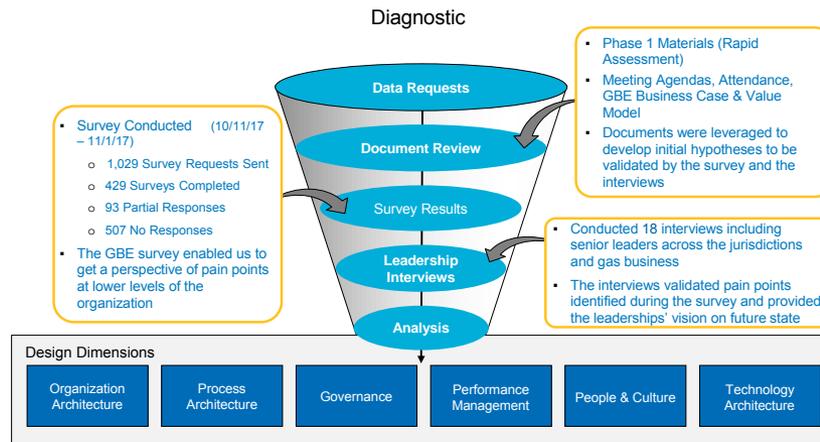
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## Operating Model Diagnostic

Multiple data sources and analysis were triangulated to validate findings for each of the six operating model dimensions



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## Operating Model Diagnostic



The following hypotheses guided the development of the analysis, allowing the prioritization of key test areas within each operating model dimension

### Operating Model Dimensions

- Organization Architecture
- Process Architecture
- Governance
- Performance Management
- People & Culture
- Technology Architecture

### Hypothesis Test Areas

Overlapping Responsibilities	Role Clarity / Job "Purity"	Spans of Control	Resource / Effort Imbalances
Process Breakdowns	Conflicts with Strategic Direction	Inefficient Handoffs	Misalignment with Value Metrics
Inconsistent / Unclear Escalation	Fragmented Accountability	Unclear Decision Rights	Inefficient Meetings
Broken Feedback Mechanisms	Conflicting Metrics	Lack of Visibility	Abundance of Metrics
Inadequate Training	Aging Workforce Impacts <sup>1</sup>	Culture Misalignment	Onboarding Gaps

Any Pain Points Identified will be Passed to Appropriate Solution Teams

### Opportunities Identified During Targeted Diagnostic

● Limited Opportunity  
● Some Opportunity  
● Significant Opportunity

<sup>1</sup>) Staff understand who to reach out to for information, informal knowledge transfer network is robust

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## Operating Model Diagnostic

The Diagnostic results will feed into the design of the future state organization and the work of the other solution teams by identifying key focus areas in six design dimensions



Design Dimensions	Key Questions	Findings
<b>Organizational Architecture</b> 	<ul style="list-style-type: none"> <li>Can we reduce overlap in the organization?</li> <li>Is there clarity around roles and responsibilities?</li> <li>Are spans and layers optimal?</li> </ul>	<ul style="list-style-type: none"> <li>Clarify roles and responsibilities to address inefficient handoffs, increase accountability and effective collaboration, align priorities, and minimize duplicative effort</li> <li>Rationalize staffing levels post design to efficiently redeploy resources to high work volume areas</li> <li>Clarify decision making, prioritize key meetings and eliminate or restructure meetings that are not currently adding value to increase productive time</li> <li>Create a holistic performance management model to standardize and rationalize KPIs, including a metric hierarchy to provide visibility up and down the organization</li> </ul>
<b>Process Architecture</b> 	<ul style="list-style-type: none"> <li>Are processes cohesive and well defined?</li> <li>Are cross-group interactions efficient and timely?</li> </ul>	
<b>Governance</b> 	<ul style="list-style-type: none"> <li>Is governance effective?</li> <li>Are the right people participating?</li> </ul>	
<b>Performance Management</b> 	<ul style="list-style-type: none"> <li>Are metrics standardized and aligned with incentives?</li> <li>Are there processes in place to track and measure KPIs?</li> </ul>	
<b>People &amp; Culture</b> 	<ul style="list-style-type: none"> <li>Do teams have the skills needed to perform their jobs?</li> </ul>	
<b>Technology Architecture</b> 	<ul style="list-style-type: none"> <li>Are technology requirement currently addressed by the GBE effort?</li> </ul>	

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**Appendix**

- Appendix A - Action Log
- Appendix B - Risk and Risk Log
- Appendix C - Deployment Governance Roles
- Appendix D – Program Readiness Group
- Appendix E – DRAP Members

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## Appendix A - Action Log



#	Action	Owner(s)	Assigned	Due	Comment	Status
1	Provide Dan Davies with an overview of how GBE Capabilities align with NG Process Model	Chris Connolly	October 23, 2017	December 2017	Chris and Dan Davies discussed on Tuesday, November 14.	Closed
2	Define the approach for developing a US integrated change to identify and manage cross program dependencies. Plan will be presented to US Executive Team	Dan Davies	October 23, 2017	January 2018	Change planning framework developed and socialized with Dean, Peggy, JP and Andrew Bonfield. Remaining activity includes assigning an owner that will work with the US business to execute and populate the integrated change plan.	Closed

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## Appendix B - Risks & Issues

### Steering Group Support Needed



Risk ID(s)	Risk Description	Target Resolution Date	
Unstaffed GBE IS Team leadership role (Vice President)	<p>There is a risk that without a senior IS leader, the GBE Program will experience:</p> <ul style="list-style-type: none"> <li>Diminished access to IS networks and resources (and vice versa) to remove bottlenecks or manage synergies</li> <li>Diminished line-of-sight to major IS programs to identify dependencies and capture synergies</li> <li>Challenged ability to balance tactical / near term with strategic / long term priorities</li> </ul>	06/30/18	
Impact Rating	Potential Impact		
Medium	<ul style="list-style-type: none"> <li>Misalignments in priorities and schedules between GBE and Contemporary IS causing delays to GBE and/or disruption to legacy platform projects and support</li> <li>Increased costs to GBE and/or contemporary IS</li> </ul>		
Likelihood Rating	Mitigation Plan		
Low	Action	Resp	Target Date / Status
	Re-prioritize IS Business Partner for Operations, Engineering & Network (Prem Singh) time to focus on GBE support.	JG	Complete
	Restart recruiting process to hire a new VP to be assigned full time to GBE Changed out head hunter Eghon Zehnder	JG	Active, new head hunter being briefed targeting end of June
	Kate Parsons (VP-Level Consultant) to provide interim support to GBE Program	JG	Starting 3/27
	Prem Singh will lead the GBE IS Director teams in an interim basis during the recruiting process	PS	Active

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## Appendix B - Risks & Issues

### Steering Group Support Needed



Risk ID(s)	Risk Description	Target Resolution Date																		
Insufficient IS team capacity to support GBE critical path activities	<p>There is a risk that:</p> <ul style="list-style-type: none"> <li>That without a clear understanding of the level of effort and complexity of GBE to legacy system interfaces, the required skills and resource capacity may be insufficient to develop new/revised interfaces, architectures, policies and guidelines</li> <li>Overall program timelines could be delayed and costs will increase</li> </ul>	04/30/18 (for PA2)																		
Impact Rating	Potential Impact																			
High	<ul style="list-style-type: none"> <li>GBE deployment of new technologies (e.g. cloud-based solutions, Software-as-a-Service, Infrastructure-as-a-Service, etc.) could be negatively impacted in terms of cost if the program is required to retain third party services to close gaps in assumed Contemporary IS capabilities</li> <li>GBE could experience delays in deployments and/or hand over of solution support from Program resources to Contemporary IS infrastructure and operations. This would impact overall program costs and delay benefit capture</li> <li>Regulatory confidence in National Grid ability to deliver technology driven projects would be eroded</li> </ul>																			
Likelihood Rating	Mitigation Plan																			
Medium	<table border="1"> <thead> <tr> <th>Action</th> <th>Resp</th> <th>Target Date / Status</th> </tr> </thead> <tbody> <tr> <td>Selectively leverage PWC SME's to provide short term support for PA1 to close immediate skill gaps to keep program on track.</td> <td>PS</td> <td>Plan in Progress</td> </tr> <tr> <td>Embed selected IS managers/SME's (full and/or part time) into the GBE program to support integration and alignment</td> <td>PS</td> <td>Complete</td> </tr> <tr> <td>Schedule and conduct GBE / IS informational workshops for information sharing and expectation setting for PA2 .</td> <td>PS</td> <td>Active (02/05-03/30)</td> </tr> <tr> <td>Schedule and conduct GBE / IS Deep Dive workshop to align plans and schedules for PA2.</td> <td>PS</td> <td>Active (02/05-03/30)</td> </tr> <tr> <td>Schedule and conduct GBE / IS operating model workshop to define near term(PA1) and long term (PA2 and beyond) support models (RTB) and capability requirements.</td> <td>PS</td> <td>PA1 Active(02/05-03/30) PA2 Started(02/19-08/31)</td> </tr> </tbody> </table>	Action	Resp	Target Date / Status	Selectively leverage PWC SME's to provide short term support for PA1 to close immediate skill gaps to keep program on track.	PS	Plan in Progress	Embed selected IS managers/SME's (full and/or part time) into the GBE program to support integration and alignment	PS	Complete	Schedule and conduct GBE / IS informational workshops for information sharing and expectation setting for PA2 .	PS	Active (02/05-03/30)	Schedule and conduct GBE / IS Deep Dive workshop to align plans and schedules for PA2.	PS	Active (02/05-03/30)	Schedule and conduct GBE / IS operating model workshop to define near term(PA1) and long term (PA2 and beyond) support models (RTB) and capability requirements.	PS	PA1 Active(02/05-03/30) PA2 Started(02/19-08/31)	
	Action	Resp	Target Date / Status																	
	Selectively leverage PWC SME's to provide short term support for PA1 to close immediate skill gaps to keep program on track.	PS	Plan in Progress																	
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## Appendix B - Risks & Issues

Steering Group Support Needed



Risk ID(s)	Risk Description	Target Resolution Date	
Required Salesforce capabilities not delivered in time to meet GBE roadmap	Through detailed design, additional capabilities are being identified that are required in Salesforce that are not currently available. If they are not delivered in time, there is a risk that: <ul style="list-style-type: none"> <li>Our deployed solution may lack promised functionality or require work arounds and other compromises</li> <li>The program roadmap / integrated plan may need to be altered to align to the availability of Salesforce capabilities</li> <li>It could be determined that Salesforce is too immature a product for field service and an alternate solution is required (worst case scenario)</li> </ul>	For PA2/3 2/21; iterating weekly per engagement schedule	For PA4 Mar / Apr '18; initial architecting discussion then iterating weekly per engagement schedule
Impact Rating	Potential Impact		
High	<ul style="list-style-type: none"> <li>Increased Program costs due to delays in program timelines, additional development/testing/deployment costs for work arounds – both to deploy and then to replace, or replace SF with an alternative solution</li> <li>Delayed benefit capture</li> <li>Eroded confidence – regulator and business</li> </ul>		
Likelihood Rating	Mitigation Plan		
Medium	Action	Resp	Target Date / Status
	Integrated GBE Roadmap and Salesforce Product Roadmap alignment through GBE and SF FSL Product Management engagement monthly and weekly per plan	GBE, SF	Started, ongoing
	Senior Executive (SE) alignment on a frequent bases between National Grid and Salesforce. The SE engagement plan must be defined and started.	GBE, SF	Complete
	Accelerate the progressive elaboration of capability needs for the subsequent release specifically focused on Construction 2020	GBE, Accn	March – April 2018

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## Appendix B - Risks & Issues

Steering Group Support Needed



Risk ID(s)	Risk Description	Target Resolution Date															
Cross Program Integration (Formerly "GBE / CXT Program Schedule Misalignment")	National Grid has active or is planning / considering a number of major programs with overlapping schedules and/or scope. These programs include GBE, CXT, CIS and others. Even if interdependencies can be managed, demand on IS capabilities, resources and infrastructure must be balanced. There is a risk that ineffective integration and dependency management could: <ul style="list-style-type: none"> <li>• Create bottle-necks and inefficiencies</li> <li>• Cause sub-optimal deployment of new functionality</li> <li>• Disrupt Business and IS operations</li> </ul>	June 2018															
Impact Rating	Potential Impact																
High	<ul style="list-style-type: none"> <li>• Increased program and operations costs due to inefficient use of resources, deployment of regret work and increased reliance on 3<sup>rd</sup> party resources</li> <li>• Increased program delivery risk due to unanticipated schedule delays, bottle necks or degraded management and execution capabilities</li> <li>• Delayed benefit realization due to suboptimal or delayed deployments</li> <li>• Eroded Stakeholder confidence – external and internal – due to the failure of high profile programs</li> </ul>																
Likelihood Rating	Mitigation Plan																
High	<table border="1"> <thead> <tr> <th>Action</th> <th>Resp</th> <th>Target Date / Status</th> </tr> </thead> <tbody> <tr> <td>Complete near and long term GBE – IS – CXT dependency analysis to address immediate integration needs</td> <td>TBD</td> <td>3/30</td> </tr> <tr> <td>Identify stakeholders / "product managers" for active, planned and potential major initiatives</td> <td>TBD</td> <td>4/27 (TBC)</td> </tr> <tr> <td>Convene planning summit to identify opportunities and risks, identify integration points and dependencies and create an action plan</td> <td>TBD</td> <td>5/31 (TBC)</td> </tr> <tr> <td>Deploy action plan to address long term integration needs</td> <td>TBD</td> <td>6/29 (TBC)</td> </tr> </tbody> </table>	Action	Resp	Target Date / Status	Complete near and long term GBE – IS – CXT dependency analysis to address immediate integration needs	TBD	3/30	Identify stakeholders / "product managers" for active, planned and potential major initiatives	TBD	4/27 (TBC)	Convene planning summit to identify opportunities and risks, identify integration points and dependencies and create an action plan	TBD	5/31 (TBC)	Deploy action plan to address long term integration needs	TBD	6/29 (TBC)	
	Action	Resp	Target Date / Status														
	Complete near and long term GBE – IS – CXT dependency analysis to address immediate integration needs	TBD	3/30														
	Identify stakeholders / "product managers" for active, planned and potential major initiatives	TBD	4/27 (TBC)														
Convene planning summit to identify opportunities and risks, identify integration points and dependencies and create an action plan	TBD	5/31 (TBC)															
Deploy action plan to address long term integration needs	TBD	6/29 (TBC)															

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### Appendix C - Deployment Governance Roles

Governance Group	Responsibilities	Inputs	Outputs
Steering Group	<ul style="list-style-type: none"> <li>Consults with Advisory Panel and then makes final Go No Go decision</li> <li>Engages with Program and Business Leadership to understand readiness leading up to Go No Go decision</li> </ul>	<ul style="list-style-type: none"> <li>Advisory Panel Recommendation</li> </ul>	<ul style="list-style-type: none"> <li>Go No Go Decision</li> </ul>
Deployment Readiness Advisory Panel	<ul style="list-style-type: none"> <li>Comprised of a subset of the DA, whose business area is highly impacted by the PA</li> <li>Provide Go No Go recommendation to Steering Group</li> <li>Engages with Program and Business periodically to understand readiness ahead of giving Go No Go recommendation</li> </ul>	<ul style="list-style-type: none"> <li>BRIG Status Reports</li> <li>Design Authority Feedback</li> <li>Program Readiness Assessments</li> </ul>	<ul style="list-style-type: none"> <li>Go No Go Recommendation</li> </ul>
Design Authority	<ul style="list-style-type: none"> <li>Provide direction to the BRIG, including feedback on deployment approach and support on escalated issues</li> <li>Detailed management of Business Readiness deferred to BRIG</li> </ul>	<ul style="list-style-type: none"> <li>Proposed readiness criteria and status</li> </ul>	<ul style="list-style-type: none"> <li>Oversight</li> <li>Assurance</li> </ul>
Portfolio Leadership Team	<ul style="list-style-type: none"> <li>Provide direction to the program, including feedback on deployment approach and support on escalated issues</li> </ul>	<ul style="list-style-type: none"> <li>Deployment plan</li> <li>Readiness criteria and status</li> </ul>	<ul style="list-style-type: none"> <li>Oversight</li> <li>Assurance</li> </ul>
Business Readiness Implementation Group	<ul style="list-style-type: none"> <li>Coordinate and manages business readiness activities against an agreed Go No Go Criteria</li> <li>Objective to actively progress "readiness"</li> <li>Represented by DA members or delegated authority as deemed appropriate</li> </ul>	<ul style="list-style-type: none"> <li>Business feedback against Go No Go criteria</li> <li>Program updates and direction setting</li> </ul>	<ul style="list-style-type: none"> <li>Go No Go Status by high/medium impacted teams</li> </ul>

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Appendix D

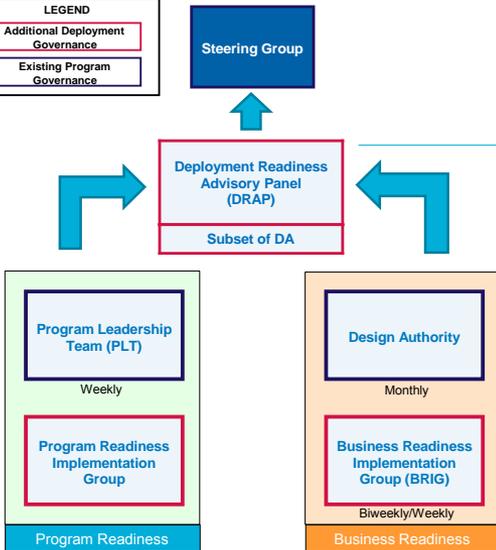
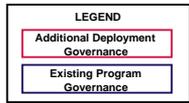


Program Readiness Group

Members	Purpose / Activities
<p><b>Primary Members</b></p> <ol style="list-style-type: none"> <li>1 KC Healy, Chair</li> <li>2 Schuyler Dutton / Matt Cardamone / Peter Maathey, Portfolio Office</li> <li>3 Diego Negro / Branden Elkins / Danielle Morressey / Mark Scaporoti, WM – Max.</li> <li>4 Sonika Singal / Eric Sebastian, WM - Salesforce</li> <li>5 Ken Campbell / Nick Raad, Data Management</li> <li>6 Ashwin Raman, Cutover Lead</li> <li>7 Brian Urbanovich / Eric Austin, Testing</li> <li>8 Mani Lakshminarayanan, Integrations</li> <li>9 Stephen Boyd, Deployment Advisor</li> <li>10 Steven Porter, Deployment Advisor</li> <li>11 Russell Gibbons / Mel Smith, Business Readiness</li> <li>12 Haley McCraven, Deployment Support</li> <li>13 Karthik Vinayakamurthy, Mobility</li> <li>14 Matt Hawley, Risk &amp; Controls</li> <li>15 Sathish Mallegowda, IS - Legacy Systems</li> <li>16 Pankaj Goyal, CSS Lead</li> <li>17 Ron Krantz, ISE</li> </ol> <p><b>Optional Members</b></p> <ol style="list-style-type: none"> <li>1 Todd Knapp</li> <li>2 Cass Houchins</li> <li>3 Chris Connolly</li> <li>4 Reihaneh.Irani-Famili</li> <li>5 Karen Brennan-Holton</li> <li>6 Andy Schoener</li> <li>7 Ralph Roam</li> <li>8 Munawar Lakdawala</li> </ol>	<p><b>Purpose / Activities</b></p> <ul style="list-style-type: none"> <li>• Confirm readiness criteria</li> <li>• Align on status of detailed criteria</li> <li>• Align on recommended status of summary criteria</li> <li>• Discuss and agree on mitigation actions for criteria with yellow or red status</li> </ul> <p><b>Schedule</b></p> <ul style="list-style-type: none"> <li>• PRIG - Monday (3/19) – 1 hour</li> <li>• PRIG - Wednesday (3/21) – 30 minutes</li> <li>• PRIG - Friday (3/23) – 30 minutes</li> <li>• PRIG - Monday (3/26) – 1 hour</li> <li>• PRIG - Tuesday (3/27) – Dress Rehearsal Playback (PLT/SG)</li> <li>• PRIG - Wednesday (3/28) – 1 hour</li> <li>• <b>PRIG - Thursday (3/29) – 1 hour – Go-Live Recommendation</b></li> <li>• <b>Friday (3/30) – 1 hour – PLT Go-Live Recommendation</b></li> <li>• <b>Monday (4/2) – DRAP Begin Cutover Recommendation</b></li> <li>• <b>Wednesday (4/5) – SG Final Go-Live Decision</b></li> </ul>

REDACTED

Appendix E  
 PA1 Deployment Governance



DRAP Member	Impact	PA1 Impacted Team(s)
Neil Proudman	High	ISR (SR Field Ops)
Fred Amaral	High	CMS Collections & Dispatch
Annette Saeman	High	Corrosion
Tom Bennett	High	Process (Public Safety Gas)
Tara Kapila	High	Process (Establish & Pay for Service)
Tom Amerige	High	Process (Operate the Network)
Premjith Singh	High	IS
John Stavrakas	Low	AM (ISR)
Jody Allison	Low	Credit & Collections
Dan McNamara	Low	Compliance

- DRAP Member Impact
- Neil Proudman High
- Fred Amaral High
- Annette Saeman High
- Tom Bennett High
- Tara Kapila High
- Tom Amerige High
- Premjith Singh High
- John Stavrakas Low
- Jody Allison Low
- Dan McNamara Low

BRIG Member	Impact	PA1 Impacted Team
John Barrett	High	ISR (SR Field Ops)
Gary Bennett	High	Collections (CMS)
Jim Patterson	High	Dispatch (CMS)
Katie Backus	High	Corrosion (Gas Engineering)
Polina Adelson	High	Process (Public Safety Gas)
Margaret Gordon	High	Process (Establish & Pay for Service)
Tom Amerige	High	Process (Operate the Network)
Surjit RoyChowdhury	High	IS (Plan)
Rizel Cruz-bower	High	IS (Build)
Shibu George	High	IS (Deliver)
Stephen Greco	Medium	AM (ISR)
Stephen Bell	Low*	Compliance (also represents Gas Works Methods)

- BRIG Member Impact
- John Barrett High
- Gary Bennett High
- Jim Patterson High
- Katie Backus High
- Polina Adelson High
- Margaret Gordon High
- Tom Amerige High
- Surjit RoyChowdhury High
- Rizel Cruz-bower High
- Shibu George High
- Stephen Greco Medium
- Stephen Bell Low\*

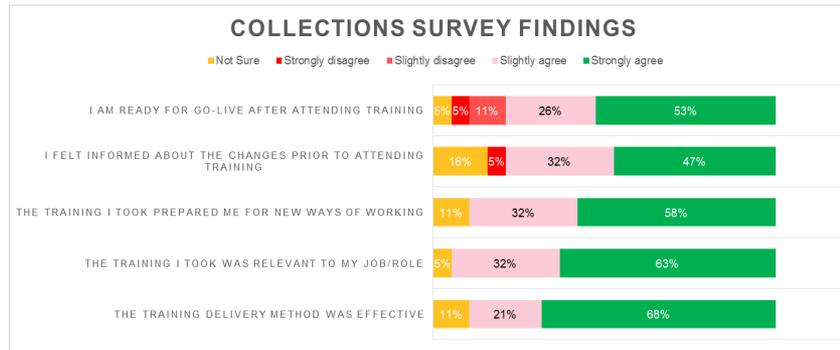
\* Low Impact areas will be involved ad hoc or as the business requires or requests 47

REDACTED

Appendix F



Collections

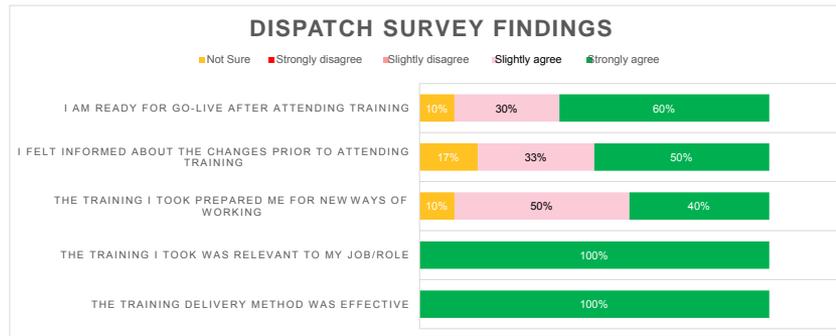


Total number of responses as of 3/21/18: 19

REDACTED



## Dispatch



Total number of responses as of 3/22/18: 8

REDACTED

The Narragansett Electric Company  
d/b/a National Grid  
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Boston Gas Company and Colonial Gas Company  
each d/b/a National Grid  
D.P.U. 17-170  
Attachment AG 24-3-3 - Redacted  
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REDACTED



REDACTED

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## Gas Business Enablement



Steering Group – National Grid Only Addendum  
Tuesday, March 27, 2018

Boston Gas Company and Colonial Gas Company  
each d/b/a National Grid  
D.P.U. 17-170  
Attachment AG 24-3-3 - Redacted  
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### NG Only Agenda

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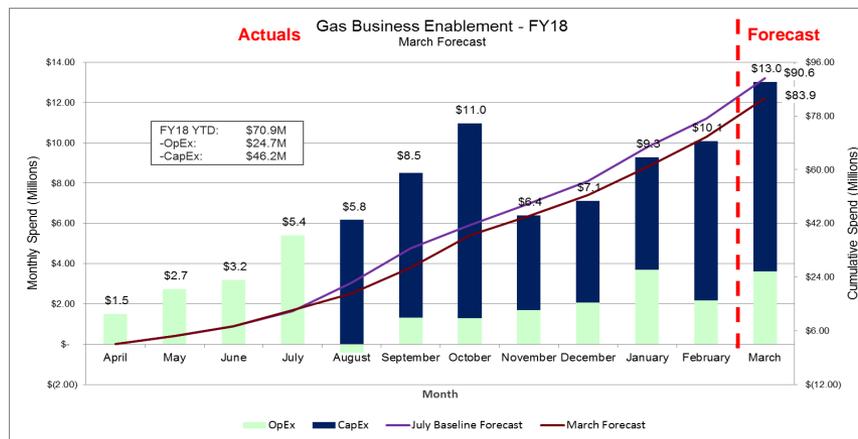
<u>Topic</u>	<u>Time</u>	<u>Presenter</u>
Overall update on program	15 min	Johnny
Verbal regulatory update		
Budget		
Resources		
Collaboration Scores		

REDACTED

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FY18 Forecast – OpEx/CapEx



	Budget	Feb. Forecast	Mar. Forecast	Variance
OpEx	\$ 30.2	\$ 28.3	\$ 28.3	\$ (0.0)
CapEx	\$ 54.3	\$ 57.2	\$ 55.6	\$ 1.6
<b>Total</b>	<b>\$ 84.5</b>	<b>\$ 85.5</b>	<b>\$ 83.9</b>	<b>\$ 1.6</b>

\$1.6M Variance to Prior Forecast:

- Legacy Interface: \$0.9M
- Software: \$0.7M

REDACTED

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## GBE Hiring Summary

---

- ¾ Overall, program resources are at amber but good progress has been made
- ¾ Planned to get to 84 FTEs by end of FY18, there are currently 85 FTEs on the program
- ¾ Through to end of May we have 53 roles we need to hire:
  - 17 hired
  - 2 offers pending
  - 25 roles in interview process
  - 8 posted
  - 1 to be banded
- ¾ Continue to review progress on a weekly basis

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Attachment AG 24-3-3 - Redacted  
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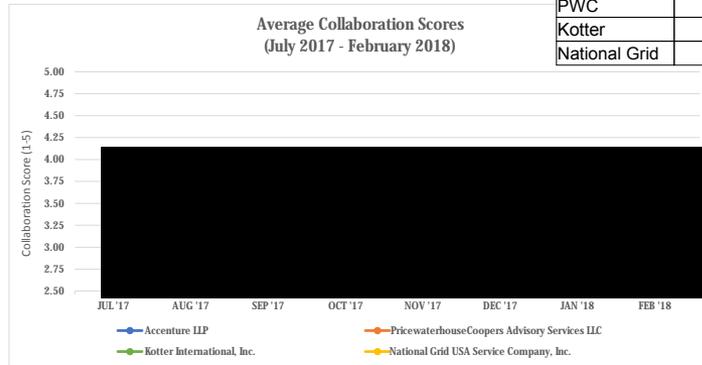
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### GBE Collaboration Scores

#### ¾ Average Collaboration Scores – FY18

Partner	Feb-18
Accenture	REDACTED
PWC	REDACTED
Kotter	REDACTED
National Grid	REDACTED



REDACTED

The Narragansett Electric Company  
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Boston Gas Company and Colonial Gas Company  
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Information Request AG-15-11  
February 23, 2018  
H.O. Pieper  
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Information Request AG-15-11

Request:

Referring to Exhibit NG-MLR-1, page 30, please provide the name and curriculum vitae of the Senior Vice President that will be leading the GBE Program.

Response:

Anthony H. (Johnny) Johnston is the Senior Vice President of Gas Business Enablement. His curriculum vitae is included as Attachment AG 15-11-1

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each d/b/a National Grid  
D.P.U. 17-170  
Attachment AG-15-11-1  
Page 1 of 3

NATIONAL GRID • 404 WYMAN • WALTHAM • MA • 02451 • USA  
PHONE: +1 929 324 4856 • E-MAIL: [JOHNNY.JOHNSTON@NATIONALGRID.COM](mailto:JOHNNY.JOHNSTON@NATIONALGRID.COM)

JOHNNY (ANTHONY) JOHNSTON  
MENG. CENG. MBA. MIET. MCMI. APMP

#### EDUCATION

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- Cranfield School of Management, UK – **Masters in Business Administration (MBA)**
- Keble College, Oxford University, UK - **Masters in Engineering Science 2:1 (MEng)**

#### EMPLOYMENT EXPERIENCE

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National Grid (NG) one of the world's largest investor owned utilities with more than 20 million customers and 26,000 employees across the US and UK:

**Senior Vice President, Gas Business Enablement** – National Grid US, Waltham, MA 2016 -

**Business Transformation:** accountable for standardizing processes, re-platforming technology and optimizing the operating model to drive a step change in gas safety and compliance performance, operational effectiveness, and customer satisfaction

**Vice President of Customer Meter Services** – National Grid US, Brooklyn, NY 2014 - 2016

**Leading large cross jurisdiction field team:** officer position accountable for an opex budget of \$180m and combined gas and electric team of 2,500 people at 63 locations across 16 unions in NY, MA and RI. Accountable for providing frontline field service; gas leak response, gas and electric meter work including complex commercial fitting work, meter reading, collections and dispatch

**Implementing an operational excellence program:** developing and implementing a strategic plan resulting in an 80% reduction in lost time injuries, a 25% reduction in road traffic collision, a significant reduction in compliance findings, and managing an increase in workloads of 11.2% over 2 years

**Executive Advisor to Global CEO** – National Grid Corporate Centre, London, UK 2012 - 2014

**Chief of Staff role:** maximizing effectiveness of the CEO, Steve Holliday, and his Executive Committee by coordinating meeting content and group performance reporting, and developing briefings and speeches

**Talent & Skills leadership:** managing multi-business skills and careers initiatives including developing a framework for businesses to give careers advice in schools and an exhibition on engineering careers for the Science Museum

**Head of Customer Operations** – National Grid Gas (NGG), Hinckley, UK 2010 - 2012

**Leading large multi function team:** distribution executive position accountable for an opex budget of £30m and team of 1,150 people; that deliver the UK Gas Emergency Service, resource management and dispatch of 2,500 field force, and various back office support processes

**Implementing a process aligned operating model:** leading my team to work collaboratively in a matrix aligned organization for the first time. Successfully piloting performance excellence prior to a company wide roll out of this new way of working to empower employees and drive performance

**Delivery of a significant transformation:** lead a significant cultural change and capability build program, including a major SAP implementation, site closure and 25% reduction in roles. Through this period employee engagement increased 8% to 80%; 17% above the average

**Network Design Manager** – National Grid Gas (NGG), Hinckley, UK 2010

**Developing annual network reinforcement program:** manage a team of 50 engineers with an Opex budget of £4m and Capex budget of £10m

**Accountable for gas distribution network models and network analysis capability:** ensuring network capacity to meet forecast demands, support operational decisions and annual replacement investment program of around £400m pa

**Reset strategic direction:** Restarted the London Strategy Project that resulted in Ofgem allowing an additional £100m investment through to 2021. Restructured the team to align capabilities, reduce headcount and build towards a design center of excellence

**Head of Sustainable Gas Group-** Warwick, UK 2009- 2010

**Developing National Grid's strategic position on renewable gas:** lead a small global team to work with multiple internal and external stakeholders to develop National Grid's global strategic position on renewable gas in both the UK and US including publishing a white paper on its potential

**Developed the UK's first pilot plant for renewable gas injection:** in partnership with United Utilities; secured government funding, and the first gas quality approval from the safety regulator for this new technology. Developed for the government a renewable gas injection guide for the industry.

**Project Manager – Blue-NG (BNG) -** National Grid Gas (NGG), Warwick, UK 2007 – 2009

**Managed relationship and Implemented commercial arrangements:** developed and negotiated commercial and contractual arrangements for a third party to build and run turbo expanders to generate electricity on NG gas pressure reduction sites.

**Senior Project Analyst -** National Grid US, Salt Lake City, US 2005 - 2006

- **Developed business case** for development of a \$4bn new build project and opened new office.
- **Advised Senior US Officials** including: US State Governors' energy advisors and State Regulators

**Team Leader -** GridAmerica (1<sup>st</sup> US independent transmission company), Cleveland, US 2003 - 2005

- **IT Manager:** lead a four person IT team to successfully close GA's IT systems, managed the US\$1.7m IT budget (20% of the company budget) and delivered over 20% cost savings
- **Pioneered Power System Economic Modelling in the US:** Led a 30 strong cross functional team to deliver the first reports on transmission operation economics in the US, identifying customer savings of over US\$300m from congestion
- **Project Managed** GridAmerica's entry into the Midwest energy market, delivered system and process changes, and trained over 100 staff

**Graduate, Sponsored Student and Year In Industry -** National Grid, UK 1997-2003

#### AWARDS RECEIVED

---

- 2007 Winner HHL Business Challenge, Germany
- 2006 European Winner of AT Kearney Global Prize – Team Leader
- 2005 National Grid's Emergent Leaders Program
- 2004 National Grid's Graduate of the Year

#### PROFESSIONAL QUALIFICATIONS

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- 2007 APMP – Association of Project Managers (AMP)
- 2006 Chartered Engineer – the Institute of Engineering and Technology (IET)
- 2006 Member Chartered Management Institute (MCMI)
- 2002 Member of the IET (MIET)

#### INTERESTS AND ACTIVITIES

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- **Sports:** Professional ski instructor, amateur sailor and learning to curl

The Narragansett Electric Company  
d/b/a National Grid  
RIPUC Docket No. 4770  
Attachment DIV 7-49-124  
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Boston Gas Company and Colonial Gas Company  
each d/b/a National Grid  
D.P.U. 17-170  
Attachment AG-15-11-1  
Page 3 of 3

- **Charity:** Board member of HeartShare Human Services of New York, ran the New York & London Marathons for charity raising over \$20k, volunteer ski instructor with Special Olympics GB, and completed charity expeditions to India, Thailand and Uganda
- **Travelling:** Had the privilege of travelling to all corners of the world and visiting over 50 different countries

Boston Gas Company and Colonial Gas Company  
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D.P.U. 17-170  
Information Request AG-15-12  
February 26, 2018  
H.O. Pieper  
Page 1 of 1

Information Request AG-15-12

Request:

Please provide all materials supplied to National Grid PLC's board of directors regarding the GBE Program.

Response:

No materials regarding the Gas Business Enablement Program have been provided to the National Grid PLC Board of Directors. As a US program, the Gas Business Enablement Program is sanctioned by the US Senior Executive Sanctioning Committee ("SESC"), which comprises all senior US executives. Annual review and sanctioning is required by that committee.

Additionally, the Gas Business Enablement Program is governed by a Steering Committee, which comprises senior officers and other functional representatives from throughout the US business. That Steering Committee is chaired by Dean Seavers, US President of National Grid USA. Mr. Seavers also serves as an Executive Director on the National Grid PLC Board of Directors.

Boston Gas Company and Colonial Gas Company  
each d/b/a National Grid  
D.P.U. 17-170  
Information Request AG-19-2  
March 7, 2018  
H.O. Pieper  
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Information Request AG-19-2

Request:

Referring to Exhibit NG-GBE-1, page 43, please provide supporting calculations for the contingency of \$61 million on line 17.

Response:

The \$61 million contingency referred to in Exhibit NG-GBE-1, page 3 was developed during the strategic assessment phase of the program by Accenture, the experienced consulting partner supporting the work. Based on their experience with clients on programs of similar sizes and complexities they recommended using 20 percent of anticipated consulting spend on the program as an appropriate contingency number for the program as a whole. This resulted in the \$61 million contingency for the FY18-FY23 Gas Business Enablement total projected spend of \$458 million. This is equivalent to 13.32 percent of the total spend.

Boston Gas Company and Colonial Gas Company  
each d/b/a National Grid  
D.P.U. 17-170  
Information Request AG-19-3  
March 12, 2018  
H.O. Pieper  
Page 1 of 2

Information Request AG-19-3

Request:

Referring to Exhibit NG-GBE-1, page 46, line 14 – page 47, line 4, please provide an example of how the Company will account for the GBE rent expense recovered in rates and the actual GBE costs.

Response:

With respect to the 5-year amortization of projected costs, please see Exhibit NG-DSD-1, Page 82, lines 10-19 for a detailed description of the Company's proposal.

With respect to the computation of actual costs, the capital and operations and maintenance expenditures incurred for Gas Business Enablement will be charged against unique work streams within the NGUSA Service Company. Please see Attachment DPU-NG-1-10-1, page 1 of 6, for a list of the work streams and allocators.

Gas Business Enablement costs will be allocated to the operating affiliates sharing in the use of the system using three allocators developed consistent with the guidelines set forth in the Service Company Cost Allocation Manual. The majority of the program will be allocated based on allocator C210, which allocates to All US Gas Distribution Companies based on the number of customers. Only gas companies will benefit from these work streams.

The Scheduling, Dispatch, and Mobility, and Customer Engagement work streams will be allocated based on allocator C175, which allocates to All US Electric and Gas Distribution Companies based on the number of customers. Both gas and electric distribution companies will benefit from these work streams.

The PowerPlan Enhancement work stream will be allocated based on allocator G012, which allocates to All Companies based on a three-point allocator for Net Plant, Net Margin, and Net Operations & Maintenance Expense. This is consistent with previous PowerPlan projects.

With respect to the reconciliation of actual costs to amounts collected through base rates, the Company would quantify the allocated share of actual costs charged to Boston Gas and Colonial Gas and reconcile that amount to the "proxy" 5-year amortization included in the Company's revenue requirement in this case. Exhibit NG-GBE-1, Page 46, Line 2 through Page 47, Line 1 describes how the Company would propose to reconcile the GBE rent expense recovered in rates to the actual GBE costs.

Prepared by or under the supervision of: Anthony H. Johnston and Reihaneh Irani-Famili

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As discussed therein, the Company is proposing to defer the actual costs on the Company's books as the costs are incurred and then to reconcile the actual amounts incurred to the amounts collected through the base-rate amortization. Any under or over-collection could be amortized into base rates in the next base-rate proceeding. At that time, the Company will present verification of the total costs that were incurred by the Service Company and support for the allocation of costs to the Company.

The reconciliation could also occur through an annual rate adjustment made in the Local Distribution Adjustment Charge, depending on the timing and magnitude of the reconciliation, and the Department's preference.

Boston Gas Company and Colonial Gas Company  
each d/b/a National Grid  
D.P.U. 17-170  
Information Request AG-19-9  
March 12, 2018  
H.O. Pieper  
Page 1 of 2

Information Request AG-19-9

Request:

Referring to the response to DPU-NG 1-6, Attachment pages 2 and 3, please explain how the GBE is economically justified for Boston Gas and Colonial Gas, given the GBE costs relative to the GBE benefits.

Response:

The main impetus for the GBE program is to replace a large number of fully depreciated, aging and obsolete systems that are creating increased operational risk for gas operations and customer service. Replacing these assets is critical to enable the safe and reliable delivery of service to customers. National Grid has no choice but to replace these systems – the only question is how the replacement should best be accomplished. GBE program costs were developed based on the work and effort that was required to deliver each of the initiatives within the program.

Due to the depth and breadth of coverage of the systems that must be replaced, the GBE program has been designed as a holistic transformation across National Grid's US gas business to deliver a broad range of benefits beyond pure technical replacement. This is appropriate because system changes are not undertaken lightly or frequently on this scale. As a result, there is a unique opportunity to make a step change in the level of functionality available from the new systems. Thus, the program is justified on the basis of a combination of the need for asset replacement and risk reduction, along with the range of anticipated benefits including financial benefits from the broader transformation. These types of drivers are not susceptible to economic justification on a Net Present Value (NPV) basis, either at the Operating Company or Enterprise level.

The Company's response to Information Request DPU-NG 1-6 identified the anticipated financial benefits that are expected to be delivered for Boston Gas and Colonial Gas. The other two main categories of less tangible benefits anticipated are gas safety & compliance benefits and customer benefits.

Gas safety & compliance benefits will arise in relation to the development of asset management and work management systems that will facilitate better decision making and prioritization for investments and resource allocation. The modern systems will also make it easier for field employees to access safety critical information including relevant work procedures and maps.

Prepared by or under the supervision of: Anthony H. Johnston and Reihaneh Irani-Famili

Boston Gas Company and Colonial Gas Company  
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Information Request AG-19-9  
March 12, 2018  
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Customer benefits will include the call center having greater visibility of work in the field to address customer concerns, providing customers with digital channels to book and amend appointments and greater visibility of the work that National Grid is completing for them, giving customers more choice and saving them time.

Boston Gas Company and Colonial Gas Company  
each d/b/a National Grid  
D.P.U. 17-170  
Information Request AG-26-5  
April 3, 2018  
H.O. Pieper  
Page 1 of 1

Information Request AG-26-5

Request:

Please refer to Attachment AG-21-15-1, p. 16 of 51. Please advise whether the \$458 million investment number includes or excludes the \$185 million in “Enhanced Capabilities” investments listed next to Option 4.

Response:

The \$185 million in “Enhanced Capabilities” investments is included in the total investment of \$458 million for Option 4.

Boston Gas Company and Colonial Gas Company  
each d/b/a National Grid  
D.P.U. 17-170  
Information Request AG-26-6  
April 5, 2018  
H.O. Pieper  
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Information Request AG-26-6

Request:

Please advise (and, if applicable, identify) whether any part of the GBE program will benefit National Grid’s electric affiliates. If yes, please provide a breakdown of costs that will be charged to each electric affiliate and any associated projected benefits.

Response:

The majority of the GBE Program will be allocated among National Grid’s gas distribution operating companies, with the exception of two workstreams: (i) Scheduling, Dispatch, and Mobility and (ii) Customer Engagement. These two workstreams will provide benefits to the electric distribution companies and therefore the costs associated with them will be shared with National Grid’s electric distribution affiliates.

Electric customer service work, as well as Customer Call Center capabilities for electric customers, is included within the scope of the GBE Program and so electric customers will see benefits as the GBE solution is deployed. Please refer to the list of benefits below and the description of those benefits supporting both gas and electric customers. Additionally, a breakdown of the costs charged to each electric and gas affiliate for these two workstreams is provided in Attachment AG 26-6-1.

<b>Initiative Description</b>	<b>Benefit Description</b>	<b>Detail</b>
Customer Interaction	Reduce Move Call Volume through Self-Service	Reduction in external handled move calls through introducing the ability to self-schedule appointments on customer portal.
Customer Interaction	Reduce Non-Move Call Volume through Self-Service	Reduction in internally handled calls through introducing the ability to self-schedule appointments and check for status updates on customer portal.
Work Management & Field Enablement	CMS Collections Jobs - Reduction in Mileage	Reduction in miles driven associated with travel time reduction.
Work Management & Field Enablement	CMS Collections Jobs - Reduction in Travel Time	Reduction in travel time via better scheduling, bundling of work, and optimized routing.
Work Management & Field Enablement	CMS Planned Jobs - Reduction in Mileage	Reduction in miles driven associated with travel time reduction.

Prepared by or under the supervision of: Anthony H. Johnston and Reihaneh Irani-Famili

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Work Management & Field Enablement	CMS Planned Jobs - Reduction in Travel Time	Reduction in travel time via better scheduling, bundling of work, and optimized routing.
Work Management & Field Enablement	CMS Planned Jobs - Reduction in unable to complete jobs (UTCs)	Reduction in UTCs due to proactive appointment confirmations and preferred channels.
Work Management & Field Enablement	Reduction in Field Tech Communications	Reduction in the communications from the technician to the customer through automation (e.g., auto call ahead, text, etc.).
Work Management & Field Enablement	Reduction in Meter Verification Jobs	Reduction in meter verification jobs via capturing meter information in the field via pictures attached to the service order and available to call center reps.

Prepared by or under the supervision of: Anthony H. Johnston and Reihaneh Irani-Famili

The Narragansett Electric Company  
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RIPUC Docket No. 4770  
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<b>FY18-23 Operating Maintenance &amp; Capital</b>			
<b>C-175 Allocator- All Retail</b> (used to allocate Service Company charges based on the number of customers for each company)	<b>C175 Alloc.</b>	<b>Customer Experience</b>	<b>Supply, Dispatch and Mobility</b>
Niagara Mohawk Power Corp.- Electric Distr.	23.3%	\$6,776,858	\$6,286,888
Niagara Mohawk Power Corp. - Gas	8.7%	\$2,523,856	\$2,341,380
KeySpan Energy Delivery New York	17.8%	\$5,190,352	\$4,815,086
KeySpan Energy Delivery Long Island	8.3%	\$2,401,593	\$2,227,956
Massachusetts Electric Company	18.4%	\$5,359,191	\$4,971,718
Nantucket Electric Company	0.2%	\$55,309	\$51,311
Boston Gas Company	9.8%	\$2,852,801	\$2,646,542
Colonial Gas Company	2.9%	\$832,552	\$772,358
Narragansett Electric Company	6.9%	\$2,020,249	\$1,874,184
Narragansett Gas Company	3.8%	<u>\$1,097,455</u>	<u>\$1,018,109</u>
		<b><u>\$29,110,216</u></b>	<b><u>\$27,005,532</u></b>

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each d/b/a National Grid  
D.P.U. 17-170  
Information Request AG-26-7  
April 12, 2018  
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Page 1 of 1

Information Request AG-26-7

Request:

Please refer to Attachment AG-21-15-1, p. 23 of 51. Provide a list of each penalty assessed to National Grid's gas affiliates over the past four years. For each penalty listed, identify the gas affiliate, the amount for each penalty, and provide a description of why the penalty was assessed.

Response:

Please refer to the Attachment AG 26-7-1.

The Narragansett Electric Company  
d/b/a National Grid  
RIPUC Docket No. 4770  
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each d/b/a National Grid  
D.P.U. 17-170  
Attachment AG 26-7-1  
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Massachusetts Penalties					
NOPV	Date of NOPV	Operating Company	Civil Penalty Assessed	Description	Date of Incident
14-PL-01	04/24/14	Boston Gas	\$ 30,000	Alleged leaking coupling from WEECO job	11/29/12
14-PL-02	04/30/14	Boston Gas	\$ 30,000	Alleged improper installation of new gas service	01/15/14
14-PL-04	03/15/14	Boston Gas	\$ 50,000	Main connection with ignition.	08/14/13
15-PL-01	06/08/15	Boston Gas	\$ 50,000	Alleged failed visual inspection of butt fusions	09/30/13
15-PL-02	06/08/15	Boston Gas	\$ 50,000	Alleged failure to follow welding procedures	08/08/14
15-PL-03	06/08/15	Boston Gas	\$ 150,000	Alleged to follow procedures resulting in over-pressurization of service line during air test	Various
15-PL-04	07/23/15	Colonial Gas	\$ 1,250,000	Alleged MAOP, Corrosion, Leak Surveillance,	Various
16-PL-03	06/16/16	Boston Gas	\$ 50,000	Alleged failure to follow meter protection procedure	04/14/15
16-PL-04	08/31/16	Boston Gas	\$ 45,000	Alleged failed visual inspection	06/26/15
16-WPA-01	03/22/16	Both	\$ 475,000	Alleged failure to complete mandated program work	03/22/16
17-PL-01	01/05/17	Boston Gas	\$55,000.00	Alleged failure to follow leak investigation procedure	09/09/14
17-PL-02	03/28/17	Boston Gas	\$55,000.00	Alleged failure of failed visual inspection	05/02/16
17-PL-03	04/18/17	Both	\$65,000.00	Alleged failure to follow the program	02/01/16
17-PL-04	05/04/17	Boston Gas	\$40,000.00	Alleged failure to follow backfill (pipe protection) procedure	03/23/16
17-PL-05	09/09/17	Boston Gas	\$35,000.00	Alleged expired OQ	11/02/15

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Rhode Island Penalties			
Year	NOPV	Penalty Amount	Description
2014	14-1	\$ 4,000	Two (2) Unabandoned gas risers
2014	14-2	\$ 20,000	Butt Fusions Burrillville.
2014	14-3	\$ 51,000	Failure to Leak Survey / Five year abandonment.
2015	15-1	\$ 201,000	tapping incident
2015	15-2	\$ 6,000	Five year Abandonment policy was not followed.
2015	15-3	\$ 10,000	Failure to Abandon service.
2015	15-4	\$ 2,500	Security guards,
2016	16-1	\$ 14,000	Corrosion
2016	16-2	\$ 201,000	unsecured wheel valve
2016	16-3	\$ 13,500	Control Room
2016	16-4	\$ 5,000	Fire Extinguisher inspection
2016	16-5	\$ 12,096	Damage Prevention
2016	16-6	\$ 7,000	DIMP Informal hearing Pending RIDPUC response
2016	16-7	\$ 5,000	Broken Valve at Woonsocket Regulator Station
2017	17-1	\$ 15,000	Corrosion
2017	17-2	\$ 5,000	Corrosion Cathodic protection Control Lines at 9 Regulator Stations
2017	17-3	\$ 3,000	Exposed pipe
2017	17-4	\$ 101,000	Manchester Gate Station
2017	17-5	\$ 160,000	Cumberland LNG
2017	17-6	\$ 10,000	Water St & Baker St, Warren
2017	17-7	\$ 3,000	O&M/EFV/Customer Notification Letter

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NMPC Penalties			
Year	Description	Total Occurrences	Capped Net Occurrences Penalty
2014	16 NYCRR 255.17-Preservation of records	32	
2014	16 NYCRR 255.465 (a,e)-External corrosion control: monitoring	29	
2014	16 NYCRR 255.603-General provisions	57	
2014	16 NYCRR 255.605-Essentials of operating and maintenance plan	1	
2014	16 NYCRR 255.619-Maximum allowable operating pressure: steel or plastic pipelines	1	
2014	16 NYCRR 255.723-Distribution systems: leakage surveys and procedures	1	
2014	16 NYCRR 255.726-Inactive service lines	51	
2014	16 NYCRR 255.727-Abandonment or inactivation of facilities	1	
2014	16 NYCRR 255.739 (a,b)-Pressure-limiting and -regulating stations: inspection and testing	1	
2014	16 NYCRR 255.741-Pressure-limiting and -regulating stations: telemetering or recording gauges	3	
2014	16 NYCRR 255.744-Service regulators and vents: inspection	53	
2014	16 NYCRR 255.748-Valve maintenance: service line valves	37	
2014	16 NYCRR 255.756-Replacement of exposed or undermined cast iron piping	1	
2014	16 NYCRR 255.757-Replacement of cast iron mains paralleling excavations	2	
2014	16 NYCRR 255.805-Leaks: general	1	
2014	16 NYCRR 255.807 (a-c)-Leaks: records	2	
2014	16 NYCRR 255.807 (d)-Leaks: records	1	
2014	16 NYCRR 255.809-Leaks: instrument sensitivity verification	22	
2014	16 NYCRR 255.811 (b-e)-Leaks: type classification	1	
2014	16 NYCRR 255.813 (b-d)-Leaks: type A classification	8	
2014	16 NYCRR 255.815-Leaks: type classification	6	
2014	16 NYCRR 255.819 (a)-Leaks: follow-up inspection	2	
2014	16 NYCRR 255.825-Logging and analysis of gas emergency reports	11	
2014	16 NYCRR 261.53-HEFPA liaison	139	
2014	16 NYCRR 261.57-Warning tag: Class A condition	17	
2014	16 NYCRR 261.59-Warning tag: Class B condition	4	
2014	16 NYCRR 261.63-Warning tag: action and follow-up	59	
	<b>Grand Total</b>	<b>543</b>	<b>\$ 9,000,000</b>
2015	16 NYCRR 255.17-Preservation of records	1	

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2015	16 NYCRR 255.327-Cover	1	
2015	16 NYCRR 255.475-Internal corrosion control: General	82	
2015	16 NYCRR 255.507-Test requirements for pipelines to operate at less than 125 psig (862 kPa)	1	
2015	16 NYCRR 255.603-General provisions	71	
2015	16 NYCRR 255.723-Distribution systems: leakage surveys and procedures	6	
2015	16 NYCRR 255.739 (c-f)-Pressure-limiting and -regulating stations: inspection and testing	4	
2015	16 NYCRR 255.744-Service regulators and vents: inspection	191	
2015	16 NYCRR 255.748-Valve maintenance: service line valves	96	
2015	16 NYCRR 255.757-Replacement of cast iron mains paralleling excavations	1	
2015	16 NYCRR 255.801-Reports of accidents	2	
2015	16 NYCRR 255.807 (d)-Leaks: records	1	
2015	16 NYCRR 255.809-Leaks: instrument sensitivity verification	5	
2015	16 NYCRR 255.811 (b-e)-Leaks: type classification	1	
2015	16 NYCRR 255.813 (b-d)-Leaks: type A classification	8	
2015	16 NYCRR 255.815-Leaks: type classification	7	
2015	16 NYCRR 255.817-Leaks: type classification	1	
2015	16 NYCRR 255.819 (a)-Leaks: follow-up inspection	4	
2015	16 NYCRR 261.57-Warning tag: Class A condition	3	
2015	16 NYCRR 261.63-Warning tag: action and follow-up	45	
	<b>Grand Total</b>	<b>531</b>	<b>\$ 9,000,000</b>
2016	16 NYCRR 255.17-Preservation of records	6	
2016	16 NYCRR 255.303-Compliance with construction standards	2	
2016	16 NYCRR 255.355-Customer meters and regulators: protection from damage	12	
2016	16 NYCRR 255.459-External corrosion control: examination of buried pipeline when exposed	13	
2016	16 NYCRR 255.465 (a,e)-External corrosion control: monitoring	14	
2016	16 NYCRR 255.481-Atmospheric corrosion control: monitoring	3	
2016	16 NYCRR 255.603-General provisions	46	
2016	16 NYCRR 255.604-Operator qualification	16	
2016	16 NYCRR 255.627-Tapping pipelines under pressure	1	
2016	16 NYCRR 255.721-Distribution systems: patrolling	2	
2016	16 NYCRR 255.723-Distribution systems: leakage surveys and procedures	1	
2016	16 NYCRR 255.726-Inactive service lines	124	
2016	16 NYCRR 255.748-Valve maintenance: service line valves	36	

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2016	16 NYCRR 255.756-Replacement of exposed or undermined cast iron piping	2	
2016	16 NYCRR 255.811 (b-e)-Leaks: type classification	1	
2016	16 NYCRR 255.813 (b-d)-Leaks: type A classification	2	
2016	16 NYCRR 255.815-Leaks: type classification	2	
2016	16 NYCRR 255.819 (a)-Leaks: follow-up inspection	4	
2016	16 NYCRR 255.825-Logging and analysis of gas emergency reports	22	
2016	16 NYCRR 261.53-HEPPA liaison	39	
2016	16 NYCRR 261.57-Warning tag: Class A condition	13	
2016	16 NYCRR 261.59-Warning tag: Class B condition	3	
2016	16 NYCRR 261.63-Warning tag: action and follow-up	4	
2016	16 NYCRR 261.65-Warning tag records	4	
	<b>Grand Total</b>	<b>372</b>	<b>\$ 9,000,000</b>
2017	16 NYCRR 255.517-Records	1	
2017	16 NYCRR 255.603(d)-General Provisions	40	
2017	16 NYCRR 255.727-Abandonment or inactivation of facilities	67	
2017	16 NYCRR 255.739 (c-f)-Pressure-limiting and -regulating stations: inspection and testing	1	
2017	16 NYCRR 255.744-Service regulators and vents: inspection	13	
2017	16 NYCRR 255.745-Valve maintenance: transmission lines	1	
2017	16 NYCRR 255.748-Valve maintenance: service line valves	2	
2017	16 NYCRR 255.813 (b-d)-Leaks: type A classification	1	
2017	16 NYCRR 255.815-Leaks: type classification	6	
2017	16 NYCRR 255.817-Leaks: type classification	1	
2017	16 NYCRR 255.819 (a)-Leaks: follow-up inspection	1	
2017	16 NYCRR 261.57-Warning tag: Class A condition	1	
2017	16 NYCRR 261.59-Warning tag: Class B condition	1	
2017	16 NYCRR 261.63-Warning tag: action and follow-up	8	
	<b>Grand Total</b>	<b>144</b>	<b>\$ 2,590,000</b>

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KEDNY Penalties			
Year	Description	Total Occurrences	Capped Net Occurrences Penalty
2014	16 NYCRR 255.455 (a-c,f)-External corrosion control: buried or submerged pipelines installed after July ,	11	
2014	16 NYCRR 255.465 (a,e)-External corrosion control: monitoring	1	
2014	16 NYCRR 255.483-Remedial measures: general	11	
2014	16 NYCRR 255.603(d)-General Provisions	29	
2014	16 NYCRR 255.706-Transmission lines: leakage surveys	5	
2014	16 NYCRR 255.723-Distribution systems: leakage surveys and procedures	23	
2014	16 NYCRR 255.741-Pressure-limiting and -regulating stations: telemetering or recording gauges	26	
2014	16 NYCRR 255.744-Service regulators and vents: inspection	2	
2014	16 NYCRR 255.748-Valve maintenance: service line valves	2	
2014	16 NYCRR 255.805-Leaks: general	3	
2014	16 NYCRR 255.807 (d)-Leaks: records	1	
2014	16 NYCRR 255.809-Leaks: instrument sensitivity verification	1	
2014	16 NYCRR 255.811 (b-e)-Leaks: type classification	1	
2014	16 NYCRR 255.817-Leaks: type classification	11	
2014	16 NYCRR 255.819 (a)-Leaks: follow-up inspection	1	
	<b>Grand Total</b>	<b>128</b>	<b>\$ 8,120,000</b>
2015	16 NYCRR 255.465 (a,e)-External corrosion control: monitoring	9	
2015	16 NYCRR 255.483-Remedial measures: general	3	
2015	16 NYCRR 255.491-Corrosion control records	84	
2015	16 NYCRR 255.603(d)-General Provisions	9	
2015	16 NYCRR 255.604-Operator qualification	1	
2015	16 NYCRR 255.706-Transmission lines: leakage surveys	1	
2015	16 NYCRR 255.723-Distribution systems: leakage surveys and procedures	2	
2015	16 NYCRR 255.726-Inactive service lines	8	
2015	16 NYCRR 255.739 (c-f)-Pressure-limiting and -regulating stations: inspection and testing	2	
2015	16 NYCRR 255.757-Replacement of cast iron mains paralleling excavations	5	
2015	16 NYCRR 255.815-Leaks: type classification	1	
2015	16 NYCRR 255.819 (a)-Leaks: follow-up inspection	2	
2015	16 NYCRR 255.819 (b-d)-Leaks: follow-up inspection	1	

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2015	16 NYCRR 261.53-HEPPA liaison	1	
2015	16 NYCRR 261.57-Warning tag: Class A condition	2	
	<b>Grand Total</b>	<b>131</b>	<b>\$ 6,260,000</b>
2016	16 NYCRR 255.17-Preservation of records	1	
2016	16 NYCRR 255.285 (a,b,d)-Plastic pipe: qualifying persons to make joints	2	
2016	16 NYCRR 255.319-Installation of pipe in a ditch	1	
2016	16 NYCRR 255.325-Underground clearance	6	
2016	16 NYCRR 255.327-Cover	3	
2016	16 NYCRR 255.3-Definitions	1	
2016	16 NYCRR 255.465 (a,e)-External corrosion control: monitoring	10	
2016	16 NYCRR 255.483-Remedial measures: general	2	
2016	16 NYCRR 255.491-Corrosion control records	86	
2016	16 NYCRR 255.603-General provisions	23	
2016	16 NYCRR 255.604-Operator qualification	23	
2016	16 NYCRR 255.706-Transmission lines: leakage surveys	1	
2016	16 NYCRR 255.726-Inactive service lines	10	
2016	16 NYCRR 255.744-Service regulators and vents: inspection	1	
2016	16 NYCRR 255.757-Replacement of cast iron mains paralleling excavations	5	
2016	16 NYCRR 255.815-Leaks: type classification	1	
2016	16 NYCRR 255.817-Leaks: type classification	1	
2016	16 NYCRR 255.819 (a)-Leaks: follow-up inspection	1	
2016	16 NYCRR 255.819 (b-d)-Leaks: follow-up inspection	1	
2016	16 NYCRR 255.821-Leaks: non reportable reading	9	
2016	16 NYCRR 261.53-HEPPA liaison	1	
2016	16 NYCRR 261.57-Warning tag: Class A condition	2	
	<b>Grand Total</b>	<b>191</b>	<b>\$ 9,440,000</b>
2017	16 NYCRR 255.285 (a,b,d)-Plastic pipe: qualifying persons to make joints	2	
2017	16 NYCRR 255.327-Cover	1	
2017	16 NYCRR 255.3-Definitions	1	
2017	16 NYCRR 255.481-Atmospheric corrosion control: monitoring	38	
2017	16 NYCRR 255.483-Remedial measures: general	3	
2017	16 NYCRR 255.511-Test requirements for service lines	5	
2017	16 NYCRR 255.603(d)-General Provisions	12	

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2017	16 NYCRR 255.603-General provisions	3	
2017	16 NYCRR 255.604-Operator qualification	23	
2017	16 NYCRR 255.727-Abandonment or inactivation of facilities	67	
2017	16 NYCRR 255.745-Valve maintenance: transmission lines	1	
2017	16 NYCRR 255.748-Valve maintenance: service line valves	3	
2017	16 NYCRR 255.757-Replacement of cast iron mains paralleling excavations	13	
2017	16 NYCRR 261.57-Warning tag: Class A condition	1	
2017	16 NYCRR 261.63-Warning tag: action and follow-up	1	
2017	16 NYCRR 262-Drug And Alcohol Testing	2	
		<b>176</b>	<b>\$ 4,568,833</b>

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KEDLI Penalties		
Year	Description	Capped Net Occurrences Penalty*
2014	16 NYCRR 255.325-Underground clearance	2
2014	16 NYCRR 255.327-Cover	2
2014	16 NYCRR 255.355-Customer meters and regulators: protection from damage	30
2014	16 NYCRR 255.379-New service lines not in use	13
2014	16 NYCRR 255.467-External corrosion control: electrical isolation	5
2014	16 NYCRR 255.481-Atmospheric corrosion control: monitoring	856
2014	16 NYCRR 255.491-Corrosion control records	383
2014	16 NYCRR 255.603-General provisions	30
2014	16 NYCRR 255.739 (a,b)-Pressure-limiting and -regulating stations: inspection and testing	1
2014	16 NYCRR 255.744-Service regulators and vents: inspection	21
2014	16 NYCRR 255.745-Valve maintenance: transmission lines	1
2014	16 NYCRR 255.748-Valve maintenance: service line valves	2
2014	16 NYCRR 255.805-Leaks: general	1
2014	16 NYCRR 255.807 (d)-Leaks: records	4
2014	16 NYCRR 255.809-Leaks: instrument sensitivity verification	24
2014	16 NYCRR 255.811 (b-e)-Leaks: type classification	2
2014	16 NYCRR 255.813 (b-d)-Leaks: type A classification	1
2014	16 NYCRR 255.815-Leaks: type classification	2
2014	16 NYCRR 255.819 (a)-Leaks: follow-up inspection	3
2014	16 NYCRR 261.51-Warning tag procedures	2
2014	16 NYCRR 261.53-HEFPA liaison	13
2014	16 NYCRR 261.55-Warning tag inspection	2
2014	16 NYCRR 261.63-Warning tag: action and follow-up	2
	<b>Grand Total</b>	<b>1402</b> \$ -
2015	16 NYCRR 255.197-Control of the pressure of gas delivered from high pressure distribution systems	1
2015	16 NYCRR 255.483-Remedial measures: general	1
2015	16 NYCRR 255.603-General provisions	14
2015	16 NYCRR 255.744-Service regulators and vents: inspection	40
2015	16 NYCRR 255.807 (d)-Leaks: records	1

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2015	16 NYCRR 255.809-Leaks: instrument sensitivity verification	2	
2015	16 NYCRR 255.811 (b-e)-Leaks: type classification	2	
2015	16 NYCRR 255.817-Leaks: type classification	1	
2015	16 NYCRR 255.819 (a)-Leaks: follow-up inspection	12	
2015	16 NYCRR 261.57-Warning tag: Class A condition	1	
	<b>Grand Total</b>	<b>75</b>	<b>\$ -</b>
2016	16 NYCRR 255.197-Control of the pressure of gas delivered from high pressure distribution systems	1	
2016	16 NYCRR 255.3-Definitions	1	
2016	16 NYCRR 255.483-Remedial measures: general	46	
2016	16 NYCRR 255.603-General provisions	14	
2016	16 NYCRR 255.604-Operator qualification	23	
2016	16 NYCRR 255.811 (b-e)-Leaks: type classification	1	
2016	16 NYCRR 255.819 (a)-Leaks: follow-up inspection	4	
2016	16 NYCRR 261.57-Warning tag: Class A condition	1	
	<b>Grand Total</b>	<b>91</b>	<b>\$ -</b>
2017	16 NYCRR 255.3-Definitions	1	
2017	16 NYCRR 255.483-Remedial measures: general	26	
2017	16 NYCRR 255.511-Test requirements for service lines	1	
2017	16 NYCRR 255.603(d)-General Provisions	4	
2017	16 NYCRR 255.603-General provisions	1	
2017	16 NYCRR 255.604-Operator qualification	23	
2017	16 NYCRR 255.727-Abandonment or inactivation of facilities	17	
2017	16 NYCRR 255.815-Leaks: type classification	1	
	<b>Grand Total</b>	<b>74</b>	<b>\$ -</b>

\*No penalty fine structure in place for KEDLI prior to 2018

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Request:

Please refer to Attachment AG-15-9-1, p. 13 of 84. Please provide an update to the US Systems Routemap shown on this page. Include in your answer an updated timeline reflecting implementation dates for each individual project/function, as well as any applicable dates for the retirement (or planned retirement) of each particular project or function. Please also include a description of the current use for each project/function and whether the project/function will be impacted by the GBE program.

Response:

The US Systems Routemap and strategy was developed after National Grid's acquisition of the Rhode Island operations of New England Gas Company and the KeySpan companies. The purpose of the US Systems Routemap was to rationalize and consolidate applications in order to mitigate risk to the overall US operation, while building value and enhanced functionality through targeted investments over a long-range strategic timeframe. The US Systems Routemap identified the need to deliver back office, customer, front office, mobile and dispatch capabilities to the National Grid businesses. The US Foundation Program ("USFP") was identified as a critical enabler of this strategy.

The US Systems Routemap identified four major areas where investment was required over time:

- US Back Office systems
- Customer System Consolidation
- Gas Front Office
- Electric Front Office

**US Back Office Systems**

The primary objective of the Phase 1-US Foundation Project was to consolidate, onto a single SAP platform, the back-office functionality was being delivered in the US by the Oracle and PeopleSoft Enterprise Resource Planning Suites. The Oracle and PeopleSoft Enterprise Resource Planning Suites delivered critical Finance, Human Resources and Supply Chain back office functionality for the US business. US back office processes, including financial, regulatory reporting, hire-to-retain, and purchase-to-pay are dependent upon these core systems, as are all work and asset management processes that are linked to the back office via other systems.

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Following the KeySpan acquisition, investments in the Oracle and PeopleSoft Enterprise Resource Planning infrastructure were put on hold pending decisions on the strategy and timing of the consolidation of those systems and the underlying Finance, Supply Chain and Human Resources processes. As a result, the US business had been challenged in supporting multiple complex business processes that span multiple and complex technology platforms. The existing US back office systems required replacement or major upgrades because those systems had exceeded or were nearing the end of their supportable life spans.

The US Foundations (back office) project was completed in November 2012 and stabilized in September 2014. As a result, the legacy PeopleSoft and Oracle Enterprise Resource Planning were decommissioned.

The GBE Program, currently under development, will have no impact on US back office systems.

#### **Customer System Consolidation**

One of the key priorities within the customer system consolidation work stream was the migration of Rhode Island customers from the Advantage Billing System to the Customer Service System (“CSS”) in order to deliver much needed customer reporting and analytical abilities that were not available in the Advantage Billing system. The Advantage Customer Billing system conversion to CSS in Rhode Island was successfully implemented in January 2012 and the Advantage Billing system was decommissioned. After the successful completion of the Advantage Customer Billing system migration to CSS, the next customer system consolidation project undertaken was the migration of KeySpan Energy Delivery Long Island (“KEDLI”) Gas customers from Customer Accounting System (“CAS”) to CSS. The CAS Customer Billing conversion to CSS went live in December 2013 and the CAS customer billing system was decommissioned at that time.

The GBE Program, currently under development, will have no impact on Customer System Consolidation.

#### **Gas Front Office (Gas Business Enablement)**

The US Gas Business is facing significant challenges. These include improving gas safety performance, continuing to successfully deliver the growing capital program, meeting the demand for customer connections, supporting evolving customer and regulatory expectations, and running the business more effectively. These challenges are amplified by the complexity created by disparate legacy processes and systems

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currently in use across the business. This is particularly acute with regards to information systems, most of which are nearing end of life, and are beginning to create unacceptable risks to core operations and future growth.

To address these issues, and to create an enduring gas front office capability, the Gas Business Enablement Program was launched in July 2017.

The proposed solution is focused on standardizing and simplifying operational processes into new Asset Management, Work Management, and Mobility systems (the core backbone). Enhanced capabilities focused on the customer experience, asset and work management, and data supplement the core backbone.

#### **Electric Front Office**

The US Routemap contemplated Asset and Work Management system migration to a strategic SAP platform. However, the Electric Front Office work was not contemplated to begin until after the Gas Front office improvements had been delivered. Targeted investments such as the Geographical Information System (“GIS”) consolidation are being made to maintain the existing Electric Front office systems in order to remain stable until such time as the Gas Front Office is mobilized in the future.

GBE will have some impact on the Electric Front Office. First, the GBE systems and processes were designed, to the extent possible, to allow the electric business to utilize similar processes when the Electric Front Office project moves forward. Second, there are certain functions that are common to both gas and electric that are being implemented in GBE and that will benefit both businesses. Please see the response to Information Request AG 26-6 for more detail on the benefits of GBE to the electric business.

National Grid continues to execute on its US Routemap and Strategy with the mobilization of the GBE program. The process of identifying and prioritizing IS investments is renewed annually as the IS function identifies investments that will be required over the next three years. IS Business Relationship Managers work closely with functional leadership and the jurisdictional presidents on an ongoing basis to determine the information technology needs of the business and the cost and timing for the required investments. The investments are then prioritized against overall expenditure targets. Project development follows a sanctioning process for all US IS investments.

Prepared by or under the supervision of: Anthony H. Johnston and Reihaneh Irani-Famili

Boston Gas Company and Colonial Gas Company  
each d/b/a National Grid  
D.P.U. 17-170  
Information Request AG-26-9  
April 12, 2018  
H.O. Pieper  
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Information Request AG-26-9

Request:

Please refer to Attachment AG-21-15-1, p. 30 of 51, specifically the footnote at the bottom: “NOTE: Labor cost is inclusive of the cost internal National Grid labor and external consulting/system integrator labor needed to deliver the program; an exercise is ongoing to determine how much of the internal National Grid labor has been included in the rate base and how much is incremental.” Please provide all documents concerning the exercise described in the footnote, including, but not limited to, any documents evidencing or constituting analysis of how much of the internal National Grid labor has been included in rate base and how much is incremental, and any documents reflecting the results of such analysis.

Response:

The footnote in Attachment AG-21-15-1, Page 30 of 51 references incremental internal National Grid labor. Gas Business Enablement (“GBE”) operating expense includes internal labor and benefits costs. The GBE project team includes 42 National Grid internal resources who were employed as of December 31, 2016 (i.e., the end of the test year). Because those 42 employees would be included in the test-year ending employee complement used to calculate rate year labor and benefits costs in this case, the Company reduced its share of total GBE operating expense by the amount of labor and benefits costs associated with those 42 employees. Therefore, the amount of total GBE operating expense upon which the Company’s rate year request was calculated reflects a level of internal labor and benefits costs incremental to the amount of rate year labor and benefit costs requested elsewhere in this docket.

Attachment AG-26-9-1, Page 1 shows the calculation of total “base-line” GBE internal labor and benefits by fiscal year, as well as the allocation of these costs to Boston Gas and Colonial Gas Companies at 19.02 percent and 5.58 percent, respectively. Base-line labor and benefits were based on the annualized salaries of the 42 employees noted above, assumed labor benefits overhead rates, and assumed percentages of time charged to capital work versus non-capital work. The number of employees was based on the GBE Roadmap, which the Company provided in its November 15, 2017 initial filing with the pre-filed direct testimony of the GBE Panel as Exhibit NG-GBE-5. Further information on the allocation percentages was provided in the Company’s response to Information Request DPU-NG-1-10.

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The Narragansett Electric Company  
d/b/a National Grid  
RIPUC Docket No. 4770  
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Boston Gas Company  
and Colonial Gas Company  
each d/b/a National Grid  
D.P.U. 17-170  
Attachment AG-26-9-1  
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Gas Business Enablement Labor

1 **Summary: Labor Costs, FY18-FY23 (Base Labor and Burden Only, No Employee Expenses)**

	(a)	(b)	(c)	(d)	(e)	(f)	(g)
<b>Labor Type:</b>	<b>FY2018</b>	<b>FY2019</b>	<b>FY2020</b>	<b>FY2021</b>	<b>FY2022</b>	<b>FY2023</b>	<b>Sum of 10 yr FY Total</b>
4 O&M	\$ (6,623)	\$ (14,228)	\$ (12,633)	\$ (10,324)	\$ (4,947)	\$ (372)	\$ (49,127)
5 CAPEX	\$ (4,918)	\$ (10,856)	\$ (9,264)	\$ (8,014)	\$ (2,070)	\$ (61)	\$ (35,183)
6 <b>Total:</b>	<b>\$ (11,541)</b>	<b>\$ (25,084)</b>	<b>\$ (21,898)</b>	<b>\$ (18,338)</b>	<b>\$ (7,017)</b>	<b>\$ (433)</b>	<b>\$ (84,310)</b>

<b>Labor Type:</b>	<b>FY2018</b>	<b>FY2019</b>	<b>FY2020</b>	<b>FY2021</b>	<b>FY2022</b>	<b>FY2023</b>
9 O&M	57%	57%	58%	56%	71%	86%
10 CAPEX	43%	43%	42%	44%	29%	14%
11 <b>Total:</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

15 <b>NG Labor Category</b>	Daily Rates	Annual Rate					
		FY18	FY19	FY20	FY21	FY22	FY23
16 Executive	\$ 1,430	\$ 343,200	350,064	357,065	364,207		
17 Business - Non Executive	\$ 908	\$ 217,800	222,156	226,599	231,131		
18 IS - Non Executive	\$ 880	\$ 211,200	215,424	219,732	224,127		

20 # of Work Days per Year 240  
21 Assumes a 2% annual rate increase.

24 <b>Grid Heads as of 12/31/16</b>		Total \$					
		FY18	FY19	FY20	FY21	FY22	FY23
25 Executive	19	\$ 6,520,800	\$ 6,651,216	\$ 6,784,240	\$ 6,919,925		
26 Business - Non Executive	22	\$ 4,791,600	\$ 4,887,432	\$ 4,985,181	\$ 5,084,884		
27 IS - Non Executive	1	\$ 211,200	\$ 215,424	\$ 219,732	\$ 224,127		
28 <b>Total</b>	<b>42</b>	<b>\$ 11,523,600</b>	<b>11,754,072</b>	<b>11,989,153</b>	<b>12,228,937</b>		

30 <b>NG Labor Opex \$</b>		<b>\$ 6,613,271</b>	<b>\$ 6,667,233</b>	<b>\$ 6,916,851</b>	<b>\$ 6,884,730</b>	<b>\$ 4,946,794</b>	<b>\$ 371,524</b>
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34 <b>Company Description</b>	% of Retail Customers						
		FY18	FY19	FY20	FY21	FY22	FY23
35 Niagara Mohawk Power Corp. - Gas	16.89%						
36 KeySpan Energy Delivery New York	34.87%						
37 KeySpan Energy Delivery Long Island	16.27%						
38 Boston Gas Company	19.02%	1,257,844	1,268,108	1,315,585	1,309,476	940,880	70,664
39 Colonial Gas Company	5.58%	369,021	372,032	385,960	384,168	276,031	20,731
40 Narragansett Gas Company	7.37%						

Boston Gas Company and Colonial Gas Company  
each d/b/a National Grid  
D.P.U. 17-170  
Information Request DPU-NG-22-1  
April 5, 2018  
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Information Request DPU-NG-22-1

Request:

Refer to the Companies' response to information request DPU-NG 12-1. Please confirm that the expenses listed in the table are actual expenses and not estimated expenses.

Response:

O&M expenses reflected in the response to Information Request DPU-NG 12-1 show costs recorded to the Company's financials for three different periods of time, CY2016, FY2017, and FY2018 through February 2018. At any given point in time, the Company's actuals represent a combination of actual expenses and accruals. Accruals represent timing differences when goods and services are delivered and have not yet been invoiced prior to a particular financial closing date. The intent of the accruals is to ensure that costs are booked in the appropriate accounting period. Accruals are replaced by actual invoices once received by the Company and are ultimately resolved at the time of project closure.

Boston Gas Company and Colonial Gas Company  
each d/b/a National Grid  
D.P.U. 17-170  
Information Request DPU-NG-22-2  
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Information Request DPU-NG-22-2

Request:

Refer to the Companies' response to information request DPU-NG 12-2 & Att. and Massachusetts Electric Company/Nantucket Electric Company, D.P.U. 15-155, Exh. NG-RRP-4, at 3-6. Please provide complete and detailed documentation supporting all capital additions that National Grid Service Company has completed and placed into service in a format similar to D.P.U. 15-155, Exh. NG-RRP-4, at 3-6, in Microsoft Excel format with all links and formulae intact.

Response:

As described in the Company's response to Information Request DPU 12-2, the only Gas Business Enablement-related capital addition that is completed and placed into service is the PowerPlan Enhancement Workstream, which was implemented on August 27, 2017. Please refer to the "IS FY18 PP (1)" tab of Attachment DPU-NG-1-12-1 for documentation supporting this workstream in a format similar to D.P.U. 15-115, Exh. NG-RRP-4, at 3-6.

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each d/b/a National Grid  
D.P.U. 17-170  
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Information Request DPU-NG-22-3

Request:

Refer to the Companies' response to information request DPU-NG 12-2, Att. at 1. Please provide complete and detailed documentation, including a project authorization, variance analysis, and closing report, for the PowerPlan Enhancement project.

Response:

The PowerPlan Enhancement project was included as part of the overall Gas Business Enablement ("GBE") Program. Therefore, there is no separate project authorization for the PowerPlan Enhancement project. Rather, the funding for that project was authorized as part of the FY18 GBE sanctioning process. Please see Attachment AG 24-2-2 for the FY18 GBE Sanction Paper.

Since the PowerPlan Enhancement project was included in the overall GBE Program, a separate variance analysis was not completed for this project. At the end of the GBE Program, a variance analysis and closing report will be completed for the overall program, and not the individual implementations within it. Updates on overall spending and variances are provided to the GBE Steering Group and the US Senior Executive Sanctioning Committee on a regular basis.

Boston Gas Company and Colonial Gas Company  
each d/b/a National Grid  
D.P.U. 17-170  
Information Request DPU-NG-22-4  
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Information Request DPU-NG-22-4

Request:

Refer to the Companies' response to information request AG 19-3, at 2. Please provide further detail on the Companies' proposal to calculate the Gas Business Enablement Program ("GBE Program") reconciliation through an annual rate adjustment made in the Local Distribution Adjustment Charge.

Response:

The total estimated costs for the Gas Business Enablement ("GBE") program attributable to Boston Gas and Colonial Gas are \$31.6 million in one-time, direct operating expense and \$95.3 million in Service Company capital costs allocated to Boston Gas and Colonial Gas as annual rent expense. This represents an estimated total cost of \$127.1 million for Boston Gas and Colonial Gas.

The Company's proposal is to include an amount for annual rent expense in base distribution rates in this proceeding, as a "proxy" or recognition of the costs that will be incurred annually after distribution rates are set. The proxy is designed to recover *only a portion* of the costs expected to be incurred in relation to the elements of the GBE Program placed into service during the period FY 2018 through FY 2023 (i.e., April 2017 through March 2023), along with a proportionate share of total one-time O&M expenses associated with the GBE Program. Under the Company's proposal, recovery through base distribution rates would be deferred on the Company's general ledger and reconciled with actual costs over time as the O&M costs are incurred and investments are recorded as in-service and charged to the Company. The difference would be recovered on an amortized basis through base distribution rates determined at the next rate-case interval.

Specifically, the Company proposes to include \$9.4 million for Boston Gas and \$2.7 million for Colonial Gas, or a total of \$12.1 million annually through base distribution rates. Assuming a five-year interval between the effective date of new base distribution rates in this case and new base distribution rates in a subsequent rate case, recovery would be approximately \$60.5 million, as compared to the total estimated cost of \$127.1 million, representing a difference of approximately \$66.6 million to be recovered on a going-forward basis. This amount would be subject to review, verification, and amortization in base distribution rates at the next rate-case interval under the Company's proposal.

In the response to Information Request AG 19-3, the Company referenced the fact that, if the Department preferred, the difference between the amount recovered through base distribution rates determined in this proceeding and the actual costs incurred over the next five years

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Boston Gas Company and Colonial Gas Company  
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could be recovered through the Local Distribution Adjustment Clause (“LDAC”) rather than amortization included as a component of base distribution rates in the Company’s next rate case. The benefit of recovery of the difference through the LDAC is that it could provide more flexibility with regard to the timing of when recovery or crediting of the difference defined above is completed. Because the precise timing of future rate cases is not currently known, LDAC recovery would allow the Department to investigate GBE Program costs sooner than when that review would occur in the next rate case, and ultimately determine more appropriate timing of when the Company would recover or credit the difference in GBE Program recovery and costs after the reconciliation period has ended without waiting for the next rate case proceeding.

The Company’s full expectation is that, at the time of the next rate case, the GBE Program will be actively in service in its entirety. In these circumstances, a representative test-year level of expense will be known and can be included in base distribution rates. In addition, any variance between recovery and actual costs leading up to that date could be addressed through a positive or negative (credit) amortization in base distribution rates (under the Company’s proposal).

However, it is possible that the timing of GBE project implementation is faster or slower than planned or that the timing of the next rate case proceeding is sooner or later than five years, or a combination of both circumstances could occur. As a result, a situation could arise where the difference between base distribution rate recovery and costs is relatively small, or the normal annual expense remains unknown, for example. In these circumstances, the Department has the flexibility to balance costs and recovery through base distribution rates, or, in the alternative, through the LDAC.

The purpose of the Company’s proposal is to structure a portion of cost recovery to occur on a parallel timeline with project implementation. This proposal makes sense because: (1) the total project cost is substantial for Boston Gas and Colonial Gas; (2) it is not possible to set a representative amount of annual expense in base distribution rates in this case because actual costs incurred in each of the next few years is not ascertainable until the work is performed (and will not be incurred on an even basis as implementation occurs); and (3) if recovery in this case is denied, the timing for the next rate case would have to be greatly accelerated so that the Company has the chance to recover these costs. Addressing any potential over or under-recovery through the LDAC would give the Department flexibility to address the differences in the pace of base distribution rate recovery and actual costs incurred that are intended to be recovered through base distribution rates during the period between rate cases if the Department preferred to have more control over the timing of the reconciliation process.

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Boston Gas Company and Colonial Gas Company  
each d/b/a National Grid  
D.P.U. 17-170  
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Information Request DPU-NG-22-5

Request:

Refer to the Companies' response to information request AG 19-8. Please:

- (a) define "several years;"
- (b) describe the risks and factors affecting information systems obsolescence; and
- (c) discuss whether the GBE Program's information systems will be outdated by the time employees are "in a position to utilize the functionality to [the new system's] optimum capabilities."

Response:

- (a) The statement "several years" from Information Request AG 19-8 refers to the period of time following full implementation of the system that will be required by employees to learn to work with the new system and to utilize its capabilities to the fullest extent possible. It is not possible to precisely define "several years" because the actual period of time will be dependent upon factors such as the complexity of the process being used, the experience and skill level of the personnel in the department(s) using the process, and the level of automation introduced into the specific process by GBE. However, as part of the development of the business case, it has been anticipated that the full benefits will be delivered by FY24, which anticipated a 'lag' in full-benefits delivery of approximately two years following implementation. This assessment was based on the experience and the advice of the Company's Strategic Assessment partner. As referenced above, depending on the exact conditions post-implementation it is possible that these benefits could be delivered sooner or later.
- (b) Since gas operations currently utilizes several different combinations of systems, many of which are obsolete, to perform equivalent functions, the routing of data and the use of business processes can take several different paths through the systems, based on where the work is taking place and the type of work involved. This means that the gas operations work force must navigate a complex web of several combinations of legacy systems, depending on the task at hand, creating opportunities for user error, data error, and process compliance variances. Additionally, the obsolescence of systems within the portfolio creates an elevated cyber security risk because systems are not receiving upgrades that include patches to security

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vulnerabilities. Lastly, using obsolete systems creates frustration for employees, and can damage focus on the work at hand.

No. The GBE Program's information systems will remain current since the GBE Program is leveraging Software as a Service ("SaaS") for the core capabilities of Asset management, Work Management, and Customer Engagement. The commercial arrangements with the SaaS providers are such that upgrades to the SaaS platform are not optional, which forces the Company to stay current with the underlying SaaS platform. In fact, the GBE Program has already experienced and managed one such mandatory upgrade to the Salesforce platform. In other words, where upgrades were once optional and required special action by the Company, upgrades under the SaaS model are routine and part of enduring run the business processes and costs.

Boston Gas Company and Colonial Gas Company  
each d/b/a National Grid  
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Information Request DPU-NG-22-7

Request:

Refer the Companies' responses to information requests AG 21-13, Att. 1 (Confidential), DPU-NG 1-14, Att. 1 (Confidential); and DPU-NG 1-12, Att. 2 (Confidential). Please explain the similarities and differences between the Companies' responses to these three information requests.

Response:

The response to Information Request AG 21-13, Att. 1 reflects total GBE estimated expenses from FY2017- FY 2023 for total, capital, and O&M.

The response to Information Request DPU-NG 1-14, Att. 1 reflects GBE estimated O&M expenses only for FY2018-FY2023. It contains the same information as Information Request AG 21-13, Att. 1 with the exception of FY2017, which is \$20,142,307.

The response to Information Request DPU-NG 1-12, Att. 2 reflects GBE estimated capital for FY2018-FY2023 and equals the estimated capital shown in Information Request AG 21-13, Att. 1. There were no capital costs in FY2017.

Boston Gas Company and Colonial Gas Company  
each d/b/a National Grid  
D.P.U. 17-170  
Information Request DPU-NG-12-1  
March 20, 2018  
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Information Request DPU-NG-12-1

Request:

Refer to the prefiled testimony of the Gas Business Enablement (“GBE”) Panel, NG-GBE-1, at 8, cost projections table. Please update the table with actual data for fiscal years 2016, 2017, and year-to-date 2018. In addition, include a separate row for calendar year 2016 that includes actual data. Finally, provide an update to this response when total actual fiscal year 2018 expenses are known.

Response:

Please refer to the below table for the Gas Business Enablement CY16, FY17, and FY18 actuals. GBE expenditures began in FY17. FY18 Revenue Requirements for Capital Costs reflect a total for the fiscal year. FY18 O&M reflects actuals through February 2018.

<b>Fiscal Period</b>	<b>Revenue Requirments for Capital Costs</b>	<b>O&amp;M</b>	<b>Estimated Total Annual Expense Charged to the Company</b>
<b>CY2016</b>		1,474,235	1,474,235
<b>FY2017</b>		3,052,861	3,052,861
<b>FY2018</b>	11,722	3,980,612	3,992,334

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Boston Gas Company and Colonial Gas Company  
each d/b/a National Grid  
D.P.U. 17-170  
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March 20, 2018  
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Information Request DPU-NG-12-2

Request:

Refer to the prefiled testimony of the Gas Business Enablement Panel, NG-GBE-1, at 8, cost projections table. Please provide complete and detailed documentation supporting all capital additions that National Grid Service Company has completed and placed into service, and all operating and maintenance (“O&M”) expenses related to GBE Program costs and billed to the Companies. In the response, include all project documentation and a summary of GBE Program costs in a format similar to Exhibit NG-RRP-4 in Massachusetts Electric Company/Nantucket Electric Company, D.P.U. 15-155 in Microsoft Excel format with all links and formulae intact. Provide monthly updates to this response. Additionally, ensure that fiscal year totals in this response are cross referenced to the updated table as provided in response to information request DPU-NG 12-1, above.

Response:

Please refer to Attachment DPU-NG 12-2-1, which reflects Gas Business Enablement program costs in a format similar to NG-RRP-4 in Massachusetts Electric Company/Nantucket Electric Company, D.P.U. 15-155 for the PowerPlan Enhancement Workstream, which was implemented on August 27, 2017. The Total Rent Charged to the Company reflects what will be charged in FY18 to Boston Gas and Colonial Gas.

Please refer to the response to DPU-NG 12-1 for the FY18 O&M charged to Boston Gas and Colonial Gas through February 2018.

**Boston Gas Company  
Colonial Gas Company**

Project	Description	Total Investment	In Service Date	Total Rent Charged to Company
PowerPlan Enhancement	PowerPlan Enhancement - This initial Gas Business Enablement implementation will establish a new integration design and data flow between the SAP system as it relates to integration with third party Work Management and Asset Accounting systems (STORMS and Maximo, and PowerPlan). The updated architecture will enhance the current design and, simplify and enable the subsequent Gas Business Enablement implementations.	\$1,406,662	8/27/2017	\$11,722

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each d/b/a National Grid  
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Information Request DPU-NG-12-6

Request:

Refer to the Companies' responses to information requests DPU-NG 1-14 and DPU-NG 1-15. Please explain how the Companies' accounting policies determined what costs should be treated as capital costs and what costs should be treated as operating costs. Provide complete and detailed documentation of the accounting policies used to determine this distinction of cost classification.

Response:

Capital and operating and maintenance expenditure treatment is determined by the Company's accounting policy, which was developed in accordance with US GAAP ASC 350.

The following guidelines are used when determining capitalization:

**Work Order Capitalization**

All capital work orders are predicated on the installation, construction, replacement, or removal of a unit of property. If the answer to either of the questions below is "Yes," the work performed or item purchased should generally be classified as a capital asset:

- 1) Does the work performed or item purchased result in property, plant, or equipment that will provide a benefit to the company beyond one year?
- 2) Does the work performed extend the life, enhance the reliability, increase the capacity or output, or lower the associated operating costs of the existing asset?

**Factors in Determining Treatment of Project Costs**

The following factors also affect the decision whether or not to capitalize project costs:

- Type of work performed
- Construction (addition/replacement) of an existing asset (capital)
- Retirement/removal of an asset (capital)
- Repair/maintenance of an asset (expense)
- Unit of property (retirement unit upon which capitalization decisions are predicated)
- Jurisdiction/rate case (unit of property catalogs can vary based on past rate proceedings within each utility's jurisdiction)

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Boston Gas Company and Colonial Gas Company  
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- Dollar (cost) threshold

Attachment DPU-NG-12-6-1, the Work Order Life Cycle Playbook, provides additional detail on the Work Order Life Cycle used at National Grid.