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RIPUC Docket No. 4770
Attachment DIV 7-49-120
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Boston Gas Company and Colonial Gas Company
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D.P.U. 17-170
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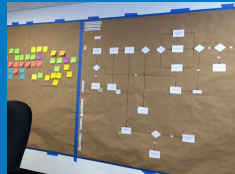
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Gas Business Enablement

Steering Group Pack



Johnny Johnston & Ross Turrini

March 10, 2016 @ 7:30am – William Jessop Suite, Bristol Doyle Hotel

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Ambitions for meeting

To manage our time, this pack will includes information on the scope, approach, progress, risks/issues as a pre-read. I don't intend to walk through the pack line by line, rather focus on the following points of discussion:

- $\frac{3}{4}$ Agree the proposed governance structure (slide 13)
- $\frac{3}{4}$ Confirm SG alignment on ambition & scope (slides 4-5)
- $\frac{3}{4}$ Confirm SG alignment on the proposed approach, principles & timings (slides 6-12)
- $\frac{3}{4}$ Answer any questions the steering committee may have and identify any areas for future focus

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Context: Legacy challenges and a rapidly changing external environment leave the US Gas Business in an unsustainable position of carrying an elevating risk profile while being poorly positioned to access future growth opportunities

Key Business Drivers/Challenges

Legacy Issues:

- Legacy company practices & processes never fully integrated & standardized
- Aged, duplicative & failing systems
- Data, Asset Record & Mapping Issues
- Aging & generally frustrated workforce
- Historic non-compliances
- Culture of 'making do' instead of excellence

Rapidly Changing External Environment:

- Gas Safety never had higher profile
- Significant increase in regulatory focus (audits & fines)
- New legislation expected to material increase obligations & workload on NG
- Digital revolution is dramatically changing how customers want to do business with us

Significant NG Growth Opportunities:

- Biggest growth in NG portfolio Significant organic growth from connecting new customers (low gas prices) & replacing leak prone pipe (\$12.8Bn over 10 years)

Resulting Implications for the US Gas Business

Risk – of operational delivery from systems failures, fines from compliances findings (\$26.7M in fines received or in negotiation over last 2 years), safety failures due to issues with maps/records/systems

Historic Compliance issues – disjointed systems make it difficult to keep up with & demonstrate compliance with current obligations resulting in fines & adverse reputational impact

Future Compliance – our legacy systems hamper our ability to make timely changes to keep up with rule changes, frustrating regulators and putting the company at risk of further fines

Operational Performance – focus on in year performance has deterred from strategic improvements, resulting in a misalignment between regulatory funding and operational costs

Accessing future growth at risk – resource limitations and challenges with working with current systems limit ability to deliver growth opportunities. Reputation from compliance findings puts future growth at risk.

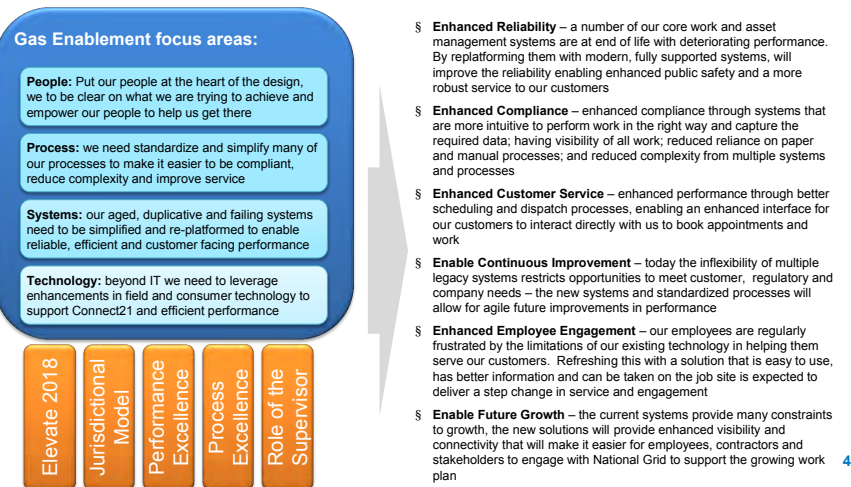
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Ambition: Gas Enablement aims to secure the future of the US Gas Business by enhancing how our employees serve our customers today and by creating the platform for tomorrow's growth

Gas Enablement will deliver changes across people, process, systems and technology but will look to build on and link in with existing National Grid initiatives. Benefits of successful delivery should be measurable across a wide range of key measures:



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Scope: This continues to evolve through discussions but needs to be locked down as a Phase 1 deliverable of the project as there is a significant risk of scope creep, and escalating costs beyond plan

In Scope

- ¾ Compliance - short term 'get well' plan as well as longer term initiatives to sustain desired performance
- ¾ Core US Gas Business M2C, Maintain & Deliver processes (including emergency response and electric short cycle work (CMS)) – need to standardize and simplify
- ¾ 61 Core work management, asset management & GIS systems (incl. Mwork, MDSI, iScheduler, Storms, Maximo, LMS, ESRI, Smallworld – see Slide 17) – need to standardize an consolidate
- ¾ Design the 'To Be' US Gas Delivery Op Model focusing on RACI decision rights and accountability. To including embedding strategic resourcing and training impact
- ¾ Adv. Field technology strategy for demonstration & implementation

Not in Scope:

- ¾ The UK business
- ¾ Electric Operations Initially (albeit principles and technical solution should be appropriate to be extended at a later date)
- ¾ Transgas/Generation
- ¾ Legacy customer systems (CSS/CRIS)
- ¾ SAP Backoffice (NOTE below likely need to reposition Powerplan)
- ¾ Control systems (SCADA)

Assumed Prerequisites:

- ¾ Realignment of Powerplan
- ¾ Consolidation of GIS systems

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Approach: The project has been broken into 4 distinct work-streams which when combined will address the current business issues and deliver the anticipated outcomes of the Gas Enablement project

	Compliance: <ul style="list-style-type: none"> A risk based approach to addressing legacy issues A targeted approach that improves the business' compliance performance today Making the strategic investments to be well positioned to be compliant going forwards 	Process/ Systems: <ul style="list-style-type: none"> Simplify and standardize business processes Replace aged, failing & duplicative work systems that put over 5,000 people to work to complete ~10M jobs a year and deliver > \$1.3bn capital investment Focus on data and usability to drive value 	Business Design & Readiness : <ul style="list-style-type: none"> Align operating model/RACI to optimize value from new solution Embed strategic resource planning Transform the hiring and training processes to support the increased volume and changing employee demographics Strategically increase resourcing to reduce unsustainable practices and create capacity to access growth 	Advanced Ops: <ul style="list-style-type: none"> Invest in demonstration and operationalization of field technology to: <ul style="list-style-type: none"> Extend the life of large cast iron pipe Improve operational efficiency (keyhole) Improve safety
Risk	✓	✓		
Historic Compliance issues	✓	✓		
Future Compliance	✓	✓		
Operational Performance		✓	✓	✓
Accessing future growth at risk	✓	✓	✓	✓

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Draft Principles: These core principles have been proposed to help guide the project in its designs and decision making as the project progresses to keep the focus and deliver the required outcomes

Simplicity– overtime as our business has evolved from legacy companies and as we have built work around on top of work around it has become more and more complex, but at its heart a utility is simple. Everyone will win if we focus on stripping away layers of complexity

Consistency– because we currently do the same thing differently across our organization this drives complexity, makes change difficult, makes it expensive to train, and introduces significant waste and inefficiency that is holding the business back

Visibility– data visibility across our processes is key to making it easy for our customer to business with us, for our employees to serve our customers, our supervisors to manage performance and for us to secure appropriate rate case recovery

Usability – this is about putting our employees and our customers at the heart of the solution, making things easy to use and intuitive

Agility – the fast changes in the external environment mean that our requirements of tomorrow will be different to the requirements of today so we want to build a more continuous improvement and agile way of thinking into our organization and systems through Gas Business Enablement

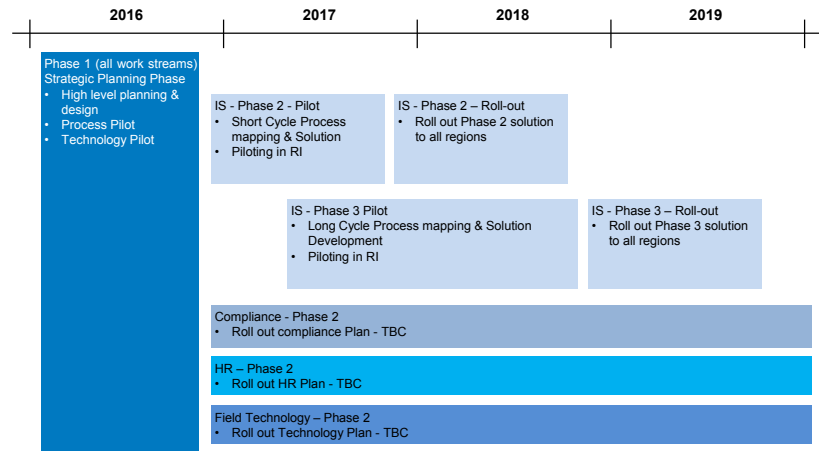
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Implementation: Expected to be a 3-5 year implementation plan, broken into phases to simplify delivery and manage risk. Phase 1 is the Strategic Planning Phase including completing the process and technology pilots. Phases 2 & 3 will be broken into sub-phases through the Phase 1 design

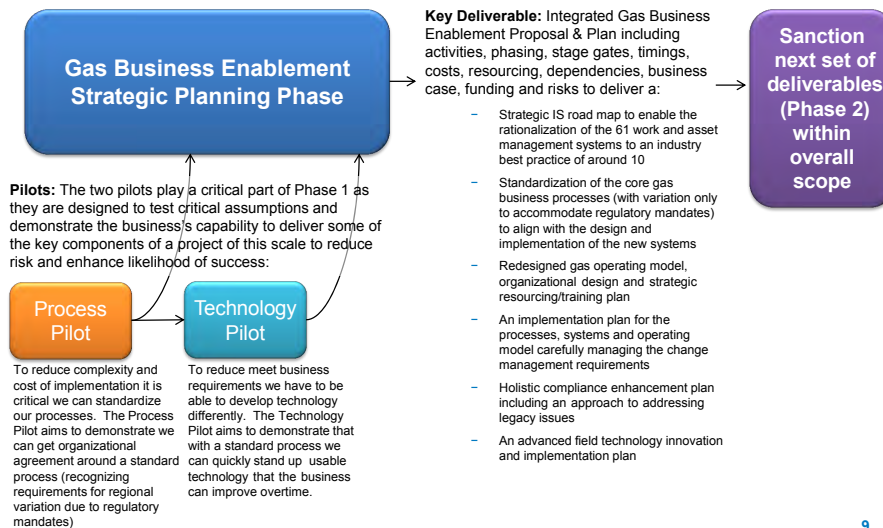


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Phase 1 Approach and key deliverables: Phase 1 is the Strategic Planning Phase that is informed by two critical pilots; process standardization and agile technology deployment



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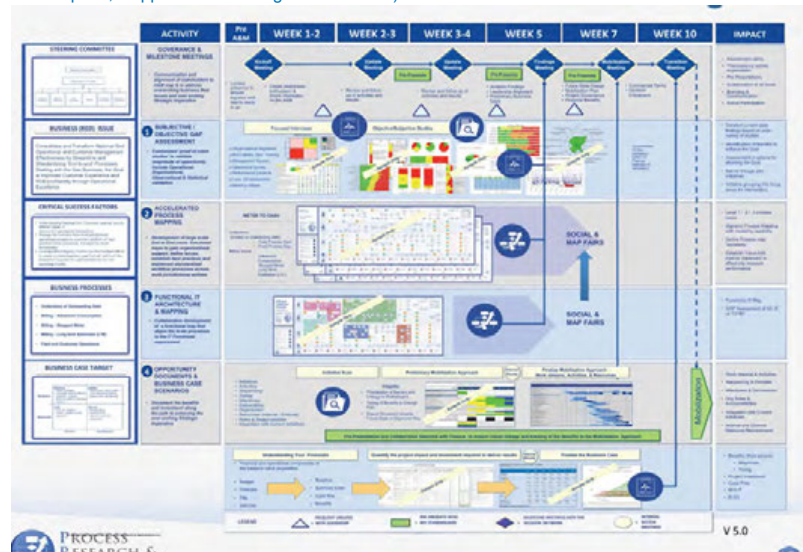
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Process Pilot: PRO (Process, Research & Optimization) selected to deliver 10 week process standardization pilot. 4 Meter to Cash processes chosen for the pilot (collections, advanced consumption, stopped meter & long term estimate). Pilot started on Feb 29.



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Summary draft plan for Phase 1

Gas Enablement Summary Project Plan		Date of last update: 2/3/16										
Enablement Project Plan		Key: On Track Completed Less than 2 weeks behind More than 2 weeks behind										
		Jun 15	Feb 16	Mar 16	Apr 16	May 16	Jun 16	Jul 16	Aug 16	Sep 16	Oct 16	Nov 16
Governance	PLC Update on Funding (Confirm Dates)											
People	Build Core Team											
Pilot	RFP for process support											
	Initial process Standardization											
	Develop Technology Pilot approach											
	Technology Pilot Development											
	Pilot Test period in field											
Process/System Solution	Get core team in place											
	Agree key principles											
	Develop procurement materials											
	Announce Process											
	Complete procurement process											
	Complete Requirements, High level design & Implementation Plan											
Compliance	Get core team in place											
	Select and Appoint 3rd party auditor											
	Complete 3rd party gap assessment											
	Receive interim report with required actions											
	Develop action plan, costs and recovery options											
Advanced Technology	Get core team in place											
	Do initial market intelligence sweep & develop strategy											
	Agree priorities and develop plan for implementation											
HR	Get core team in place											
	Complete strategic resource planning round 1											
	Build resourcing strategy and action plan											
	Secure support for reviewing operating model											
	Complete operating model review to optimize delivery											
	Get recommendation approved and develop implementation plan											
Regulatory Strategy	Develop regulatory strategy											
	Start regulatory engagement											
Business Cases	Develop business case											
Exec approval for funding and progress	Pull together analysis & requirements											
	First Draft of paper											
	Feedback from stakeholders including regulatory											
	Second Draft of paper											
	Sign off from Steering Group											
	Take paper to the US Exec/Group Exec/Board as required											

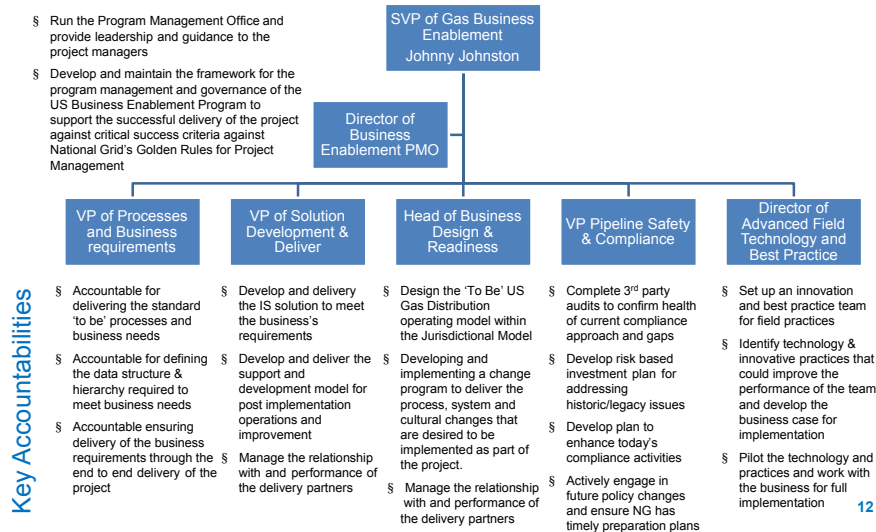
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Leadership Structure and Accountabilities: It should be noted that although these are the key roles to kick off the project, as the project develops the roles and structure will need to evolve to support delivery



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FOR APPROVAL: Business Enablement Governance Structure

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QPR – John Pettigrew, Andrew Bonfield

- Purpose:
- Assurance
- Update PLC Exec on progress
- Note: Not for escalation of project issues

Independent Project Assurance – reporting into Steering Group (could be internal/external)

- Purpose:
- Give independent feedback on project progress, management of risk and escalation of issues

Steering Group – Dean Seavers, John Bruckner, Rich Adduci, Peggy Smyth, Roger Young, Vivienne Bracken, Lorraine Lynch

- Purpose:
- Provide Strategic Direction
- Ultimate 'D' on escalated project issues
- Hold project team to account for delivery of solution, and business case (costs & benefits)

Design Authority – Ross Turrini, Bob De Marinis, Neil Proudman, Cedric Williams, Sue Mais, Doneen Hobbs, Sue Fleck, Tom Bennett, John Stavrakas, Chris Murphy, Pam Viapiano, Keith Hutchinson, Amy Slitt

- Purpose:
- Provide business leadership & strategic input to project team
- Provide businesses input into project team recommendations
- Accountable for approving & delivering business benefits
- Accountable for providing business support & leadership to ensure project success

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Appendix

- $\frac{3}{4}$ Last Cadence Exec Summary
- $\frac{3}{4}$ Funding Summary for Phase 1
- $\frac{3}{4}$ IS Applications for rationalization

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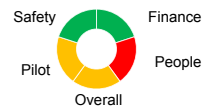
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Business Enablement Executive Summary

Johnny Johnston

Project Summary Status



Progress in the period

UK Best Practice Sharing

- Met with 16 people involved in GDFO from business, project and IS teams – see Appendix for summary of themes

People

- Appointed: Christine Yordt - Finance Lead, Phil Di Giglio – Pilot PM
- CMS interviews completed 2/19/16
- Key roles posted internally & externally

Pilot to standardize a process

- Completed competitive process and selected PRO (Process, Research & Optimization) to pilot process to standardize to a single NG 'to-be' business process
- Pilot steering group: JJ, Sue Mais, Doneen Hobbs & Chris Murphy
- Plan to kick off 10 week piece of work in first week of March

Governance

- Steering Group and Business Design Authority identified

Distributech

- Had sessions with key potential software vendors and delivery partners to better understand options in the marketplace

Risks

Risk	Actions
Missing expectations on progress due to slow start	<ul style="list-style-type: none"> Interviews to release JJ from CMS completed on 2/19/16 – announcement due shortly Roles posted and progress being made on finding best candidates for roles As team appointed, plan and budget will be firmed up and shared with Steering Group, Cadence & QPR to manage expectations Coordination of resource requirements for Pilot workshops with Business Leads
Unsuccessful delivery due to scope creep and overlap with other initiatives	<ul style="list-style-type: none"> Building scope around business case – will use Steering Group to baseline scope and any changes going forwards Reporting spending to plan (i.e. budget) monthly Coordinating with Growth Playbook initiatives to avoid duplication or gaps with other activities
Risk to delivery due to business/IS capacity limitations	<ul style="list-style-type: none"> Will track progress and escalate specific areas of risk/ concern to Steering Group and through cadence

Focus for Next Period

Pilot

- Kick – off process work, develop technology approach
- Pilot business case methodology
- Identify SME's and schedule process workshops. Develop/Socialize business FTE resource requirements with impacted teams

People

- Start interviews for key roles

Strategy

- Develop options for steering group on best way to approach design and measure value

Governance

- Get Steering Group and Business Design Authority initiated with charters
- JJ attending PLC 'Project Sponsor' training

Best Practice

- from others

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Summary of Scope for Phase 1

Area	Ask	Outputs
Central Team	\$2M	<ul style="list-style-type: none"> Establish a PMO – governance & reporting established – including Golden Rules Refine the Case for Change Develop the Prioritized & Phased Plan Define the Ask & Benefits Case Develop the regulatory cost recovery strategy including for KEDNY/KEDLI rate cases
Compliance Plan	\$1.5M	<ul style="list-style-type: none"> 3rd party independent compliance assessment Risk based compliance plan to address historic issues, current performance and strategic investments for future performance
Compliance Immediate Actions	\$5.5M	<ul style="list-style-type: none"> Public Awareness enhancements including Damage Prevention Web Portal 10 Compliance Analysts + 2 QA/QC Analysts Plastic Joining Compliance monitoring post East Harlem Service Line Definition preparation Tactical IS solutions
IS Plan	\$6M	<ul style="list-style-type: none"> Project principles & scope approved Target Data Architecture model developed (including ownership) Approach to process governance established with tool to support Detailed plan to map processes Target technology architecture approach confirmed Benchmarking with other utilities and other leading companies completed Key applications & devices selected Procurement strategy developed
IS Pilot	\$6M	<ul style="list-style-type: none"> First process (Collections) fully mapped Significant progress made on the build of a single process pilot
HR Plan	\$0.85M	<ul style="list-style-type: none"> Strategy and implementation plan including embedding strategic resource planning, transforming hiring & training processes
HR Immediate Actions	\$0.65M	<ul style="list-style-type: none"> Refreshed strategic resourcing planning model 3 FTEs on-boarded to support future hiring requirements
Advanced Ops Plan	\$0.35M	<ul style="list-style-type: none"> Strategy and implementation plan including investment recommendation, deployment plan and regulatory recovery strategy
Advanced Ops Immediate Actions	\$0.3M	<ul style="list-style-type: none"> 3 supervisors embedded in NY & MA operations to deploy CISBOT & advanced lining techniques in the field
Risk Margin	\$2.3M	@ 10%
Total	\$25.5M	16

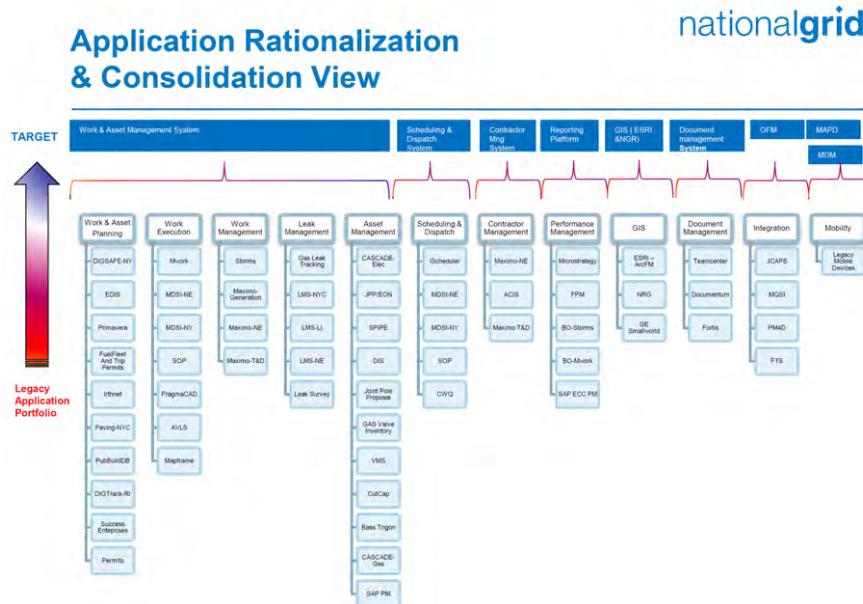
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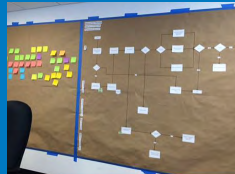
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Gas Business Enablement

Steering Group Pack



Johnny Johnston

May 5, 2016 @ 1400 GMT, Dean's Board Room – W3.003

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Agenda

<u>Topic</u>	<u>Time</u>	<u>Presenter</u>
Opening Remarks / Meeting Objectives	1400-1405	JJ
Action Item Follow Up	1405-1410	JJ
Program Scope Review	1410-1430	JJ
Procurement Strategy	1430-1450	JJ
Program Update	1450-1455	JJ
Meeting Close & Feedback	1455-1500	JJ

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Meeting Objectives

1. Gain Steering Group endorsement of Program scope
2. Gain Steering Group approval of the proposed Program procurement strategy
3. Provide an update on Program start up activities

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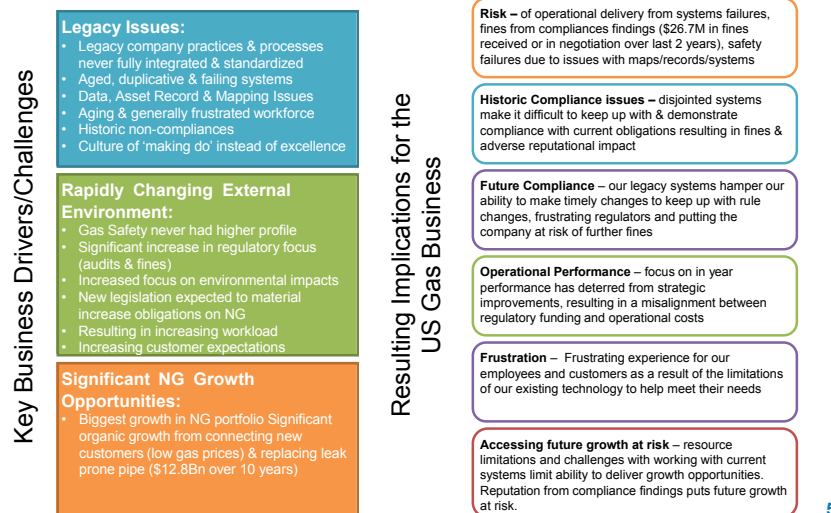
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Action Item Follow Up

	Action	Owner	Assigned	Due	Comment	Complete?
1	Ensure that Enablement is added to the QPR agenda	PS	10 Mar 16	1 Apr 16		Yes
2	To provide visibility of the expect impact of Gas Business enablement on the ability to run the business due to a potential talent drain.	JJ	10 Mar 16	1 May16	Defer to completion of vendor bid analysis	Projected Aug 16
3	To identify the appropriate approach to ensure that the SG has visibility to the level of customization being undertaken by the project.	JJ	10 Mar 16	1 Oct16	Pending	
4	To share the rate case strategy and ensure that any appropriate costs are included in the MA Gas rate case.	JJ	10 Mar 16	1 Jul 16	Pending	

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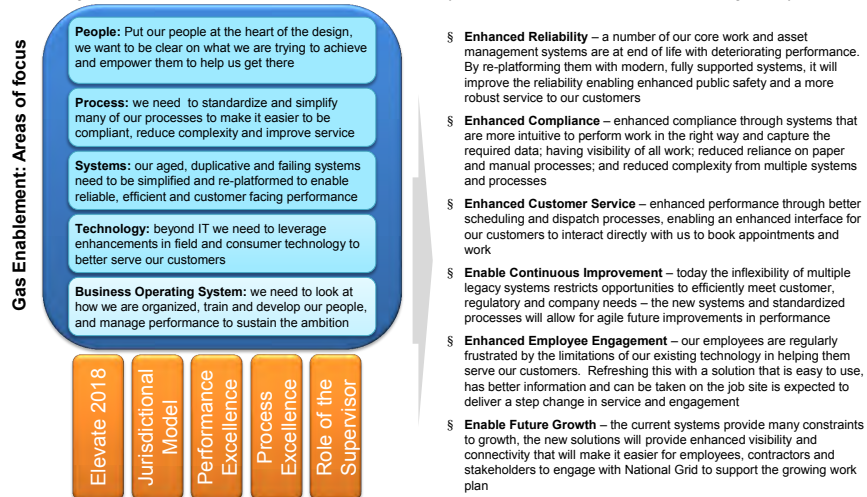


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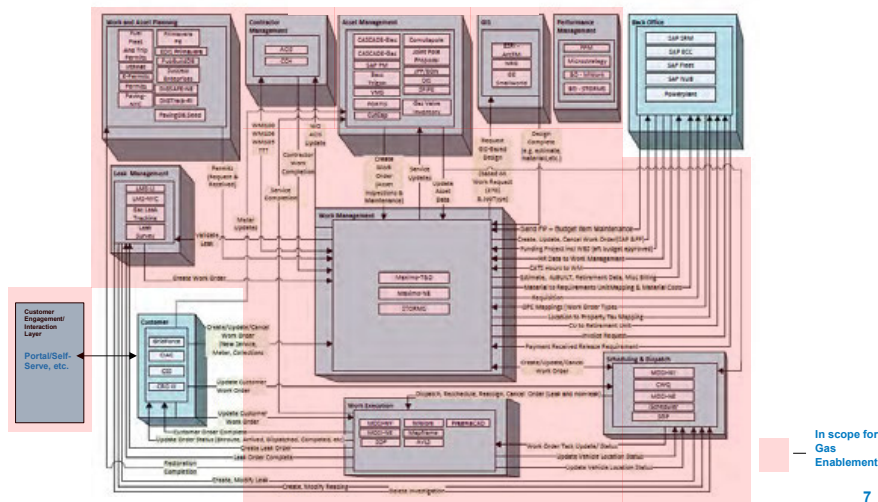
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Technology: The Program will drive simplification and modernization of the application architecture supporting the US Gas Business



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Principles: These core principles have been proposed to help guide the project in its designs and decision making as the project progresses to keep the focus and deliver the required outcomes

Simplicity– over time as our business has evolved from legacy companies and as we have built work around on top of work around it has become more and more complex, but at its heart a utility is simple. Everyone will win if we focus on stripping away layers of complexity

Consistency– Because we currently do the same thing differently across our organization this drives complexity, makes change difficult, makes it expensive to train, and introduces significant waste and inefficiency that is holding the business back

Usability – this is about putting our employees and our customers at the heart of the solution, making things easy to use, intuitive and reliable which will help us to get the data right, be compliant and provide a better customer experience

Visibility– of our data across our processes is key to making it easy for our customer to do business with us, for our employees to serve our customers, our supervisors to manage performance and for us to secure appropriate rate case recovery

Agility – the fast changes in the external environment mean that our requirements of tomorrow will be different to the requirements of today so we want to build a more continuous improvement and agile way of thinking into our organization and systems through Gas Enablement

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Scope Summary: This scope hypothesis supports early planning and commercial activities - it will be “locked down” as a key design phase Program deliverable

In Scope

- ¾ Compliance - short term 'get well' plan as well as longer term initiatives to sustain desired performance
- ¾ Core US Gas Business M2C, Maintain & Deliver processes (including emergency response and electric short cycle work (CMS)) – need to standardize and simplify
- ¾ 61 Core work management, asset management & GIS systems (incl. Mwork, MDSI, iScheduler, Storms, Maximo, LMS, ESRI, Smallworld – see Slide 17) – need to standardize and consolidate
- ¾ Integration with the Customer systems to enable appointment booking, call center visibility and customer engagement services
- ¾ Design the 'To Be' US Gas Delivery Op Model focusing on RACI decision rights and accountability. To including embedding strategic resourcing and training impact
- ¾ Adv. Field technology strategy for demonstration & implementation of technology to enhance field delivery

Not in Scope:

- ¾ The UK business
- ¾ Electric Operations Initially (albeit principles and technical solution should be appropriate to be extended at a later date)
- ¾ Transgas/Generation
- ¾ Legacy customer systems (CSS/CRIS)
- ¾ SAP Backoffice (NOTE below likely need to reposition Powerplan)
- ¾ Control systems (SCADA)

Assumed Prerequisites:

- ¾ Realignment of Powerplan
- ¾ Consolidation of GIS systems

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Definition and execution of a procurement strategy is a Program critical path activity

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Program Leadership and Procurement worked collaboratively to define and evaluate options for procurement of consulting services

1. Review Program goals, objectives and desired end state - **complete**
2. Review Program scope - **complete**
3. Define planning assumptions and success factors - **complete**
4. Form and analyze sourcing options and identify recommended option - **complete**
5. Develop draft RFPs - **complete**
6. Define procurement timelines - **complete**
7. Perform QA and legal / regulatory reviews - **in progress**
8. Obtain Steering Group approval - **pending**
9. Execute strategy - **pending**

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Planning assumptions and success criteria include

Planning Assumptions for Strategic Assessment (Design) Phase

- § Avoid a "Big Bang" approach – a phased approach based on process, technology and organization is STRONGLY preferred
- § Standardize on a single NG way of working recognizing there may be some limited variations around a single process to meet jurisdictional regulatory requirements
- § Minimize customization -use core software functionality to the greatest degree practical
- § Build in flexibility
 - § Use a BPM & SAAS architecture to speed up time to deliver and enable future improvements – if practical
 - § Use standard APIs wherever possible to enable sharing of data and 'plug and play' of applications
- § Based on the above, again if practical, looking to implement a MVP (Minimum Viable Product) approach with agile development to improve the initial solution

Success Criteria for Strategic Assessment (Design) Phase

- § Business buy-in and commitment to process – solution – methodology & approach – business case (& changes required to deliver it)
- § Multiple delivery phases with defined roadmap to reduce risk to delivery
- § Gas Enablement and CET programs are aligned
- § Clear visibility of critical path dependencies to ensure successful delivery
- § Costing's that can actually be delivered (allow for rate case and delivery strategy)
- § Delivers key principles – simplicity, consistency, visibility, usability & agility
- § Delivers defined business case including expected benefits – enhanced reliability, compliance, customer service & employee engagement; and enables continuous improvement & growth
- § NG and Partner relationships are clear and supported
- § Solution and business case that National Grid will approve for the next phase and regulators will fund as a prudent investment

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¾ Traditional Project Approach:



¾ Challenges with traditional approach:

- ¾ Designer often win implementation – are you getting the best deal, are they incentivized to build complexity into the design as they will get rewarded in the build?
- ¾ Design often lends itself to large scale implementations (big bang approaches)
- ¾ Once you select the designer you are often getting their traditional way of doing these projects – may have less flexibility than you think
- ¾ Very few implementers are strong in all areas
- ¾ Assuming the traditional approach as our baseline, we challenged ourselves to identify better value, more innovative options for National Grid

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Six options and the baseline were considered

	Option	Pro	Con	Comment
1	Begin with an RFI Phase <i>Follow with RFP's</i>	Results in more informed RFPs	Time Consuming	Bridge Energy work lessens the need
2	Planning Phase "Competitive Dialog" <i>Engage multiple partners in planning</i>	Opportunity for less cost and risk to NG	Challenging to execute	Very theoretical, complex, untried
3	Multiple Design Phase Work Packs <i>Best partner for each pack</i>	Easy to design	Hard to integrate	Likely to add cost and complexity
4	Independent Designer and Integrator <i>Designer may not implement</i>	Best design for NG	But may not be easily implementable	Missed incentive opportunities
5	Independent Design Assurance <i>Independent design review</i>	Early focus on "Fit – For – Purpose"	Requires careful relationship mgt	An expert 3 rd party will be needed
6	Independent Business Integrator and Designer <i>3rd Party adviser engaged with designer</i>	Could provide NG with more management capability	Complex relationships and blurred accountabilities	Interesting but likely more complex and risky
0	Baseline – Traditional <i>Design, Implement</i>	Proven, relatively easy to manage	"Are we getting the best?"	May not support GE program breadth of scope and ambitions

A more detailed description and analysis can be found in the appendix

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Based on our analysis, a blended option is recommended: Option 5 and Traditional

- ¾ As much as we want this project to be different, having explored a few different models the 'traditional' approach is a good baseline and quality of implementation appears to be the key driver of value.
- ¾ You want the designer to be a potential implementer – solution has to be credible and deployable. Therefore as part of the assessment we want to be sure they could also deliver, however it is important that there are no assurances of delivery as that would create the perverse incentive of 'designing in' cost
- ¾ Procuring 3rd party support to perform the Design Assurance role will be value adding. NG can retain the option to "invite" the Assurance Partner to continue into the implementation phase or even to compete for implementation work.
- ¾ Adding stage-gate/feedback loops through the RFP will give NG the opportunity to learn from the different suppliers and provide feedback into the solutions they are developing – enabling an enhanced solution and avoiding suppliers going off track
- ¾ We need to be super clear on the outputs we are looking for, not the process to deliver them (we want to encourage supplier innovation)
- ¾ Design is a relatively low cost activity compared to delivery. While it is difficult to incentivize we should explore opportunities for appropriate long term risk/reward sharing incentives we could place on successful delivery of the design phase outputs

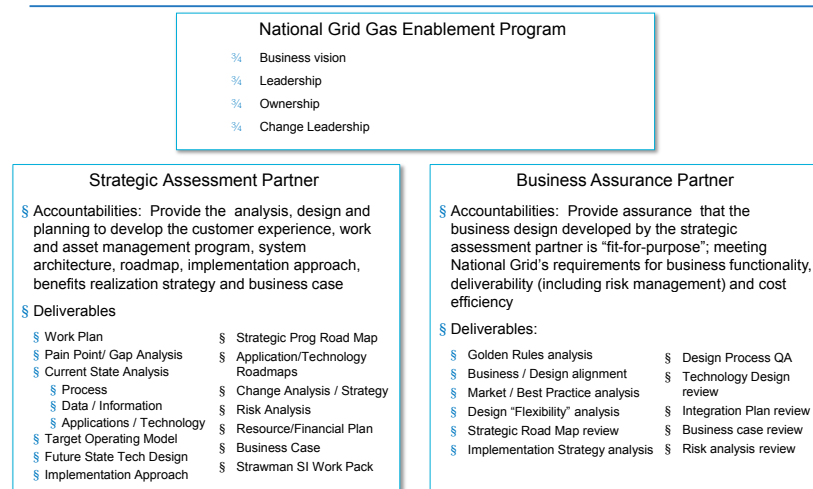
Recommended Strategy

- Ø Two phase approach
 - High level design
 - Implementation
- Ø High level design will
 - Set scope
 - Establish business and technical design
 - Provide a multi-year road map
 - Inform our implementation strategy
 - Create the business case
- Ø Issue two RFPs now
 - Strategic Assessment (Design) partner
 - Business Assurance partner
- Ø Begin defining criteria for implementation partner selection

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The recommended procurement strategy will support a collaborative relationship between National Grid and its key service partners



Anticipated Responders include: Accenture, Bridge Energy Solutions, CapGemini, IBM, KPMG, PA Consulting, PWC & Vesta Partners

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The design phase procurement timeline is necessarily aggressive

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Activity	Date	Implications
Notification of Request for Proposal Issuance with Two-way Non-Disclosure Agreements	05/02/16	% Timing for Executive Sanctioning will likely be driven out to 1Q CY2017
Notification of Request for Proposal Issuance with Two-way Non-Disclosure Agreements Signed	05/02/16	% National Grid stakeholders will need to perform their roles promptly
Vendor Non-Disclosure Agreements Issued	05/08/16	% Q&A responses
Vendor Participation Calls	05/09/16	% Meeting participation
Deadline for Respondent Questions	05/18/16	% Vendor meetings
Vendor Meetings	05/23-24/16	% Internal reviews
Response to Vendor Questions	05/26/16	% Negotiations
Standstill Agreement for questions/deliverables	05/18/16	% Others as required
End bid/Vendor proposals	05/23-24/16	% Proposals reviews
Review of vendor questions and	05/26/16	% Procurement process administration
Submission deadline for approach, deliverables and proposals	06/10/16	% We must be ready to make a decision
Review of selected vendors	06/03/16	% Early identification and clarification of RAPID roles
Proposal presentations/Orals	06/16-17/16	% Plan to execute our commercial activities quickly
Review sessions with selected vendors	06/24/16	% We must also be prepared to extend the timeline if needed to set ourselves up for long term success
Proposal presentations/Orals	06/29-30/16	
Review sessions with selected vendors	07/05-15/16	
Proposal Submission Deadline	07/16/16	
Negotiations	07/23-30/16	
Contract Award	08/01/16	
Targeted Project Start	08/01/16	
Negotiations	07/05-15/16	
Contract award	07/18/16	
Targeted Project Start	08/01/16	

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The Gas Enablement Program requests from the Steering Group:

- § Your endorsement of the current proposed scope (subject to refinement during the Design Phase)
- § Your approval of the proposed procurement strategy

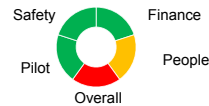
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Program Update

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5e Gas Business Enablement Executive Summary

Project Summary Status – May 16



Progress in the period

People

- ¾ Appointed KC Healy – PMO lead, Chris Connolly – Business/Process Lead, Dan McNamara – Compliance Lead & Dennis Ruppert for the Advanced Technology Role
- ¾ Interviews on-going for the Business Change Lead

Pilot to standardize a process

- ¾ 4 'To Be' standardized & simplified Pilot Process developed – average of 56% reduction in process steps identified (Workshops included 47 + attendees representing multiple operations and jurisdictions).
- ¾ 71 performance improvement opportunities identified

Strategy

- ¾ Procurement strategy developed for Strategic Assessment and High Level design phase. Combination of rigorous procurement approach, timeline for staffing and working around 12003 contract end will push project timeline out and need the program to be re-baselined – thus RED overall

Best Practice Visits

- ¾ Completed visits to One Gas, OK; Atmox, TX; and DTE, MI

Risks

Risk	Actions
Missing expectations on progress due to slow start	<ul style="list-style-type: none"> • JJ released from CMS role • Key project roles close to being finalized including the PMO • Will re-baseline the plan with and reset delivery expectations
Unsuccessful delivery due to scope creep and overlap with other initiatives	<ul style="list-style-type: none"> • Building scope around business case – will use Steering Group to baseline scope and any changes going forwards • Reporting spending to plan (i.e., budget) monthly • Coordinating with Growth Playbook initiatives to avoid duplication or gaps with other activities
Risk to delivery due to business/IS capacity limitations	<ul style="list-style-type: none"> • Will track progress and escalate specific areas of risk/ concern to Steering Group and through cadence
Impact on schedule of industrial action	<ul style="list-style-type: none"> • Working closely with the labor relations team to understand timings and risk • Will look to mitigate as much as possible, however if employees are locked out there will likely be a delay to the project as management focus is elsewhere

Focus for Next Period

Pilot

- ¾ Close down the process phase
- ¾ Start engaging partners for technology pilot & demonstration as part of Phase 2

People

- ¾ Continue search for business change role
- ¾ Will look to start building out the organization

Strategy

- ¾ Plan to release Strategic Assessment and Design Assurance RFPs on May 9, start August 1
- ¾ Develop & agree RFP assessment and selection criteria

Governance

- ¾ Re-baseline plan with the team now in place

Additional detail can be found in the appendix 18

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Meeting close

¾ AOB

¾ New Action Item Summary

¾ Leadership Pulse Check and Closing Remarks

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Appendices



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Options Considered

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Procurement Options Considered to address concerns

Procurement Variations considered	Anticipated Benefits	Potential Downsides	Comments
1. Add an RFI phase – before RFP	<ul style="list-style-type: none"> Allow vendors to show their hands on their ideas and preferred approach's to help NG solidify their request before going to RFP 	<ul style="list-style-type: none"> Adds time to the process Vendors likely to give generic answers 	Through the Bridge Energy work, NG has a pretty strong view of what it is looking for. By structuring the Design RFP with 2 phases we should be able to get the majority of the value you would get from an RFI phase without needed to do a separate one
2. Use a 'competitive dialogue' approach to the planning phase where you have a much more collaborative multi phase approach – this would allow NG to get input from multiple vendors and shape solution to get best bits from each partner	<ul style="list-style-type: none"> Theoretically would mean potential partners would do more of the initial design work at risk (less cost to NG) Theoretically would allow for collaboration between partners and suppliers to get an enhanced solution that NG has been involved in co-developing with the suppliers 	<ul style="list-style-type: none"> Risk key suppliers would not want to engage in a long and costly process without certainty of remuneration Would be a complex process that NG has not run before and so implementation risk is high 	Theoretically attractive but in reality will be a challenge to pull off. Can adapt the standard RFP approach to allow for some of the benefits to be manifested
3. Break Design into Multiple Work Packages	<ul style="list-style-type: none"> This would allow for individual elements to be simpler, more focused and more targeted 	<ul style="list-style-type: none"> Would need to phase to try and allow packages to appropriately integrate – this would significantly extend the time Likely to add complexity through the integration and any benefits of focus and simplification likely to be lost 	Likely to add complexity, costs and time. We may want to break delivery up in to a number of phases but having an integrated design approach will be critical to getting a coherent solution that will help deliver the business case
4. Prevent Designer from being Implementer	<ul style="list-style-type: none"> Force an independent design to help get to the 'right answer' rather than the answer that will generate the most revenue through implementation 	<ul style="list-style-type: none"> Cost of design is much lower than cost of implementation so might prevent key partners for bidding for design If you are designing something you know you don't have to implement then less incentive to make sure that it is deliverable 	The alignment of having to deliver something you have to design seems a more important incentive as although there is a risk of over paying you should receive a design that is implementable with a credible cost and delivery schedule
5. Design Assurance Role	<ul style="list-style-type: none"> This would allow an independent view of the design, does it meet the requirements, is it the simplest solution or has it been over complicated. Is the proposed solution, costs and timeline credible. 	<ul style="list-style-type: none"> It will increase the cost of the design Depending on the partners involved there is the potential for the designer to not want to engage with the assurance partner – we will need to make this relationship clear from the start 	As NG does not have the internal capability to complete nor assure this work it will be critical to engage an independent 3 rd party to be actively involved through the design to assure the quality of the product we will be receiving
6. Add a 'Business Integrator' role – this would be a trusted partner providing 'deep' assurance and guidance through the process	<ul style="list-style-type: none"> Potentially adds to NGs capability to effectively manage the process Would provide more advice and guidance than just a pure assurance role 	<ul style="list-style-type: none"> Complexity in the relationships Risk of blurred accountabilities Risk/Remuneration incentives likely to be misaligned with the BI 	Whilst an interesting model, this is likely to add more complexity and risk than value

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Privileged and confidential draft



Appendix: Assessment against Critical Success Factors

Area	Full Project	Phase 1 (Strategic Assessment)	Basis/Comment
Active Sponsorship	Too early		Johnny Johnston – completed sponsorship training and taken offline to sponsor program
Scope Management	Too early		Scope of strategic assessment defined in the RFPs
Clear Success Criteria	Too early		Success criteria for Strategic Assessment Phase (phase 1) defined
Rigorous Stage gating	Too early		Stage gating clearly defined through RFP process and RFP requested Phase 1 plan with stage gates
Business change/readiness	Too early		There is limited business change required for Phase 1. There is strong business demand for this piece of work. Resources for Phase 1 will be defined during the RFP phase to confirm business can support
Good Governance Controls/Planning	Too early		Program Management Office formed, Steering Group formed & governance signed off
Partner Management	Too early		Set out clear expectations and roles for partners and NG within the RFPs for Phase 1
High Performance Team	Too early		Team just being formed, strong individuals, work to now align as a team behind a common goal

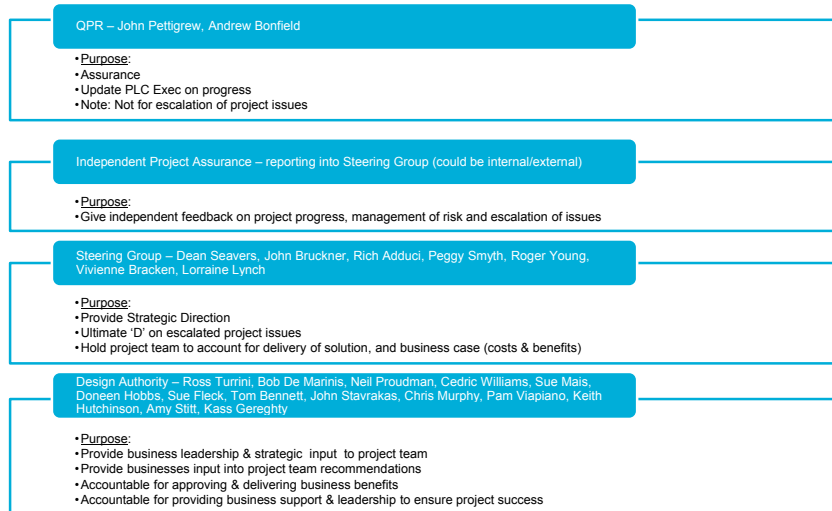
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Business Enablement Governance Structure



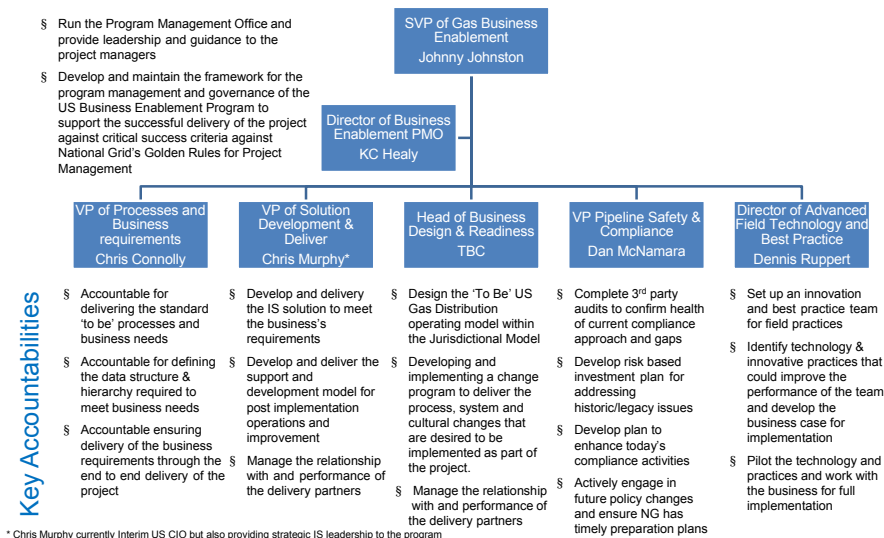
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Leadership Structure and Accountabilities: It should be noted that although these are the key roles to kick off the project, as the project develops the roles and structure will need to evolve to support delivery



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Project Plan Summary

Gas Enablement Summary Project Plan		Date of last update: 4/28/16										
Enablement Project Plan		Key: On Track Completed less than 2 weeks behind More than 2 weeks behind										
		Jan 16	Feb 16	Mar 16	Apr 16	May 16	Jun 16	Jul 16	Aug 16	Sep 16	Oct 16	Nov 16
Governance	PLC Update on Funding (Confirm Dates)											
People	Build Core Team											
Pilot	RFP for process support											
	Initial process Standardization											
	Develop Technology Pilot approach											
	Technology Pilot development											
	Pilot Test period in field											
Process/System Solution	Get core team in place											
	Agree key principles											
	Develop procurement materials											
	Announce Process											
	Complete procurement process											
	Complete Requirements, High level design & Implementation Plan											
Compliance	Get core team in place											
	Select and Appoint 3rd party auditor											
	Complete 3rd party gap assessment											
	Receive interim report with required actions											
	Develop action plan, costs and recovery options											
Advanced Technology	Get core team in place											
	Do initial market intelligence sweep & develop strategy											
	Agree priorities and develop plan for implementation											
HR	Get core team in place											
	Complete strategic resource planning round 1											
	Build resourcing strategy and action plan											
	Secure support for reviewing operating model											
	Complete operating model review to optimize delivery											
	Get recommendations approved and develop implementation plan											
Regulatory Strategy	Develop regulatory strategy											
	Start regulatory engagement											
Business Cases	Develop business case											
Exec approval for funding and progress	Full together analysis & requirements											
	First Draft of paper											
	Feedback from stakeholders including regulatory											
	Second Draft of paper											
	Sign off from Steering Group											
	Take paper to the US Exec/Group Exec/Board as required											

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Summary of Scope for Phase 1

Area	Ask	Outputs
Central Team	\$2M	<ul style="list-style-type: none"> Establish a PMO – governance & reporting established – including Golden Rules Refine the Case for Change Develop the Prioritized & Phased Plan Define the Ask & Benefits Case Develop the regulatory cost recovery strategy including for KEDNY/KEDLI rate cases
Compliance Plan	\$1.5M	<ul style="list-style-type: none"> 3rd party independent compliance assessment Risk based compliance plan to address historic issues, current performance and strategic investments for future performance
Compliance Immediate Actions	\$5.5M	<ul style="list-style-type: none"> Public Awareness enhancements including Damage Prevention Web Portal 10 Compliance Analysts + 2 QA/QC Analysts Plastic Joining Compliance monitoring post East Harlem Service Line Definition preparation Tactical IS solutions
IS Plan	\$6M	<ul style="list-style-type: none"> Project principles & scope approved Target Data Architecture model developed (including ownership) Approach to process governance established with tool to support Detailed plan to map processes Target technology architecture approach confirmed Benchmarking with other utilities and other leading companies completed Key applications & devices selected Procurement strategy developed
IS Pilot	\$6M	<ul style="list-style-type: none"> First process (Collections) fully mapped Significant progress made on the build of a single process pilot
HR Plan	\$0.85M	<ul style="list-style-type: none"> Strategy and implementation plan including embedding strategic resource planning, transforming hiring & training processes
HR Immediate Actions	\$0.65M	<ul style="list-style-type: none"> Refreshed strategic resourcing planning model 3 FTEs on-boarded to support future hiring requirements
Advanced Ops Plan	\$0.35M	<ul style="list-style-type: none"> Strategy and implementation plan including investment recommendation, deployment plan and regulatory recovery strategy
Advanced Ops Immediate Actions	\$0.3M	<ul style="list-style-type: none"> 3 supervisors embedded in NY & MA operations to deploy CISBOT & advanced lining techniques in the field
Risk Margin	\$2.3M	@ 10%
Total	\$25.5M	

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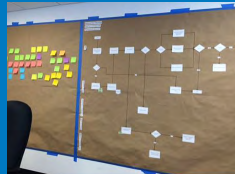
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Gas Business Enablement

Steering Group Pack



Johnny Johnston

24 June 2016 @ 1300 GMT, Board Room – W3.802

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Agenda

<u>Topic</u>	<u>Time</u>	<u>Presenter</u>
Opening Remarks / Meeting Objectives	1300-1305	JJ
Action Item Follow Up	1305-1310	KC
Phase One Procurement Update	1310-1330	JJ
Pilot Update	1330-1340	JJ
Program Update	1340-1355	KC
Meeting Close & Feedback	1355-1400	JJ

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Meeting Objectives

1. Update on procurement process and seek delegation of authority from the Steering Group to the Gas Enablement Leadership team to make Phase 1 contract awards
2. Provide an update on Program Phase Zero and Phase 1 preparations

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Action Item Follow Up

	Action	Owner	Assigned	Due	Comment	Complete?
2	To provide visibility of the expect impact of Gas Business enablement on the ability to run the business due to a potential talent drain.	JJ	10 Mar 16	1 May16	Defer to completion of vendor bid analysis	Projected Aug 16
3	To identify the appropriate approach to ensure that the SG has visibility to the level of customization being undertaken by the project.	JJ	10 Mar 16	1 Oct16	Pending	
4	To share the rate case strategy and ensure that any appropriate costs are included in the MA Gas rate case.	JJ	10 Mar 16	1 Jul 16	Pending	
5	Advise SG on "Asset Accounting" solution options impacting the Program	JJ	5 May 16	Nov 16	Pending	
6	Review GBE Scope with Finance Remediation	KCH	5 May 16	June 16	To be reviewed at 6/17 Fin LT Meeting (update: postponed for agenda change)	To be rescheduled
7	Add controls development to design phase success criteria	KCH	5 May 16	June 16	Complete and reviewed with LT on 6/14	Complete
8	Update the SG on proposal detail, procurement process status and selection criteria	JJ	5 May 16	June 16	Updated provided in this SG pack	Complete

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Execution of the Gas Enablement Phase 1 procurement strategy is well underway

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In our 5 May 2015 Steering Group meeting, the following strategy was reviewed and approved:

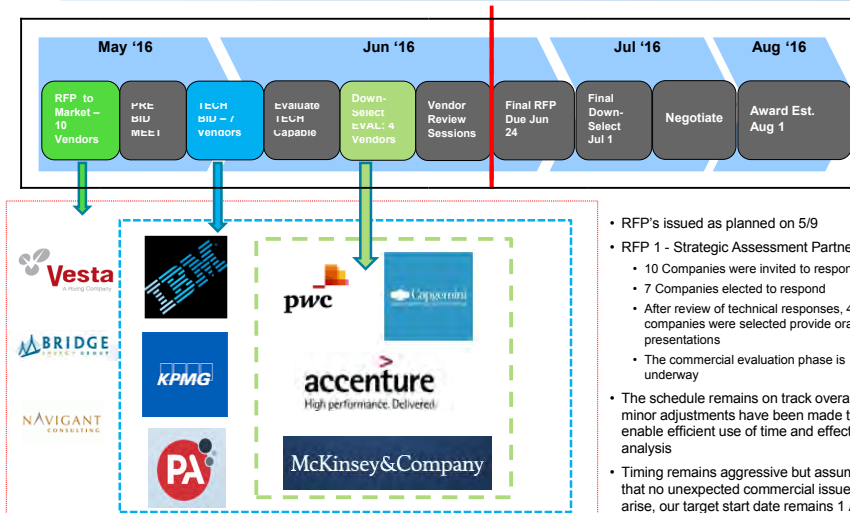
- § Adopt a two phase Program approach
 - § Phase 1: High level design
 - § Phase 2: Implement the high level design
- § Establish the following objectives for the Phase 1 high level design:
 - § Confirm / set GE Program scope
 - § Establish the business and technical design
 - § Provide a multi-year road map
 - § Determine our implementation strategy
 - § Create the business case
- § Issue two RFPs now to support Phase 1
 - § RFP 1: Strategic Assessment (Design) partner: Develop the high level design, road map and business case
 - § RFP 2: Business Assurance partner: Assure the design is fit-for-National Grid-purpose and the road map is "implementable"
- § Begin defining criteria for implementation partner selection

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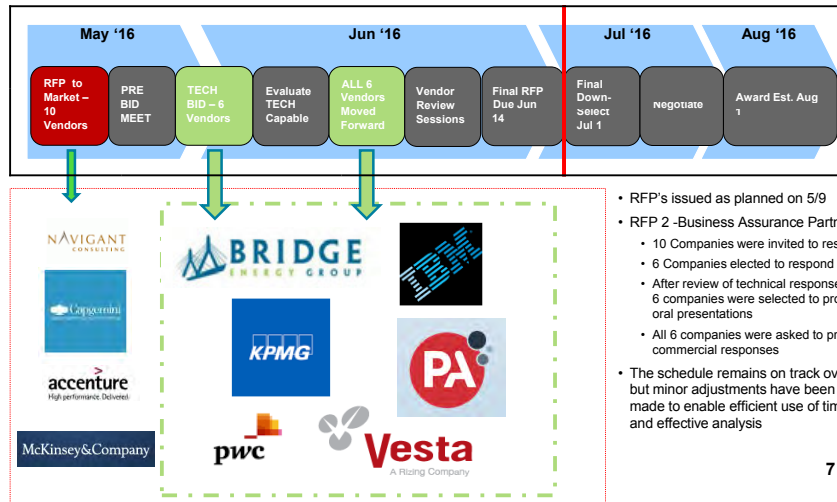
RFP1 Strategic Assessment partner selection process status:
Four viable Strategic Assessment partners are emerging



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RFP2 Business Assurance partner process status: To maintain our partnering options no “down select” was performed



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Although we are only mid-way through the process, some early observations are becoming apparent

- ¾ Based on responses thus far, a consensus is building for a 21-28 week high level design phase, (with several outliers)
- ¾ Receiving a focused technical response early in the process has allowed the team to clearly assess the technical capabilities of the suppliers independently of commercial constraints
- ¾ Engagement with vendors continues to be positive with good dialogue to ensure scope alignment and clear expectations for RFP 1 and RFP 2. The oral presentations following the technical submissions have been very helpful and have insured our vendors are not off track in any assumptions
- ¾ Areas to carefully probe in the next round of oral presentations include:
 - ¾ Scope alignment - Process mapping efforts ("As Is" and "To Be")
 - ¾ Approach and resource needs from the business
 - ¾ Expectations for deliverables and timing of those deliverables (i.e. Business Case)
 - ¾ Alignment between Strategic Assessment Partner, Business Assurance Partner & National Grid
- ¾ Business VP participation in vendor proposal reviews and oral presentations improved both engagement and the quality of the discussions themselves
- ¾ Collaboration between the vendors will be critical to success, to validate abilities of the final vendors, a "collaboration session" will be undertaken prior to contract award(s)
- ¾ Our vendors bring different cultures and approaches to the table, it will be important to "pair" them carefully for the best value to National Grid

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To obtain greatest value for National Grid, it will be important to choose complementary partners

Front running Strategic Assessment partners:

(in no particular order)



- Most experience with similar projects in US utilities
- Tools to help make quick progress
- Could be involved start to finish (continuity)
- Could be too 'cookie cutter' - will need managing
- Missed the mark in the RFP process so far

McKinsey&Company



- #1 Energy consulting firm with strongest thought leadership
- Partnership with Vesta provides deeper Asset Management experience and knowledge of NG
- Least delivery experience – risk of 'theoretically' great solution



- Good balance of delivery experience and thought leadership
- Strong team and consistently performed strongest through the process so far
- 'Comfortable' partner that may not push NG hard enough
- Need to sort any potential audit independence challenges (discussions with UK underway)

Most likely Assurance Partner fits:



- § As well as assuring the design we would be looking for an assurance partner that would help validate that the proposed roadmap solution meets the breadth of National Grid's requirements
- § A more niche consultancy may add more value here



- § As well as assuring the design we would be looking for an assurance partner that would help validate the deliverability of the proposed roadmap
- § A partner with strong delivery experience will have value here



- § As well as assuring the design we would be looking for an assurance partner that would help validate the proposed roadmap solution meets the breadth of National Grid's requirements
- § A niche consultancy that can "challenge" may add more value here

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Final selection will be performed by the below team based on the following criteria:

Criteria	Section Weight	Overall Weight
Technical		
Contractual Fit	10%	55%
Approach and Methodology	30%	
Engagement Plan	10%	
Project Methodology	15%	
Project Governance	10%	
Skills and Experience	15%	
Change Management	10%	
Quality/Adherence and Partnership	25%	25%
Commercial		
Price	20%	20%

Evaluation Team Members:

- Johnny Johnston
- Chris Connolly
- Chris Murphy
- Sean Mongan
- KC Healy
- Nicola Rigby

Advisory Team:

- Sue Mais
- Steve Samways
- John Stavrakas
- Cedric Williams
- Neil Proudman
- Sue Fleck
- Tim Graham
- Kass Geraghty
- Jody Alison

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The Gas Enablement Program requests of the Steering Group:

- § Your advise, suggestions and guidance
- § Your approval to delegate authority to Johnny Johnston, Chris Murphy, Chris Connolly, Sean Mongan & KC Healy working with Nicola White in procurement to make contract awards for RFPs 1 & 2, subject to the previously agreed strategy and in line with the presented selection criteria

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The process standardization pilot is entering phase 2: technology demonstration

Phase 1 – Process Standardization - Complete

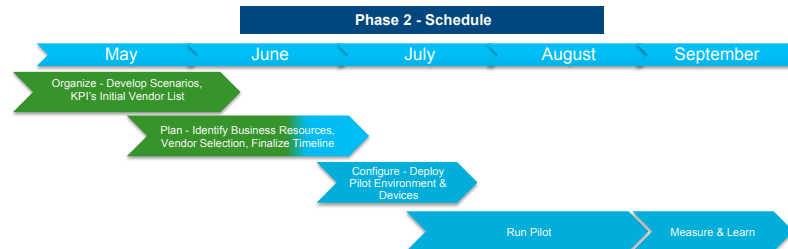
- ¾ 4 "Meter to Cash" processes standardized
 - ¾ Collections
 - ¾ Stopped Meter
 - ¾ Long Term Estimates
 - ¾ Advanced Consumption

¾ Process Sponsors and Leads Identified

Gas Enablement M2C Process Leads and Exec Sponsor		
Process	Steering Group Executive Sponsor	Process Lead
Collections	Doneen Hobbs	Dave Hillery
LTE	Tim Graham	Chris Gibb
Stopped Meters	Doneen Hobbs	Pam Ingersoll
Advanced Consumption	Sue Mais	Arlene Gans

Phase 2 – Technology Demonstration - Goals

- ¾ Demonstrate 2 newly developed "Standard" Processes (Collections & Stopped Meter) may be implemented rapidly using Agile methods
- ¾ Sustain engagement with business community into GE phase I
- ¾ Expose the workforce to modern field force capabilities
- ¾ Trial highly engaged deployment practices
- ¾ Confirm guiding principles utilized during process standardization (i.e. Workflow Logic, Geo based Field Order Routing, Optimization of Field Order Selection...)
- ¾ Transfer learnings to larger Gas Business Enablement strategic assessment effort



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Agenda

<u>Topic</u>	<u>Time</u>	<u>Presenter</u>
Opening Remarks / Meeting Objectives	1300-1305	JJ
Action Item Follow Up	1305-1310	JJ
Phase One Procurement Update	1310-1330	JJ
Pilot Update	1330-1340	JJ
Program Update	1340-1355	KC
Meeting Close & Feedback	1355-1400	JJ

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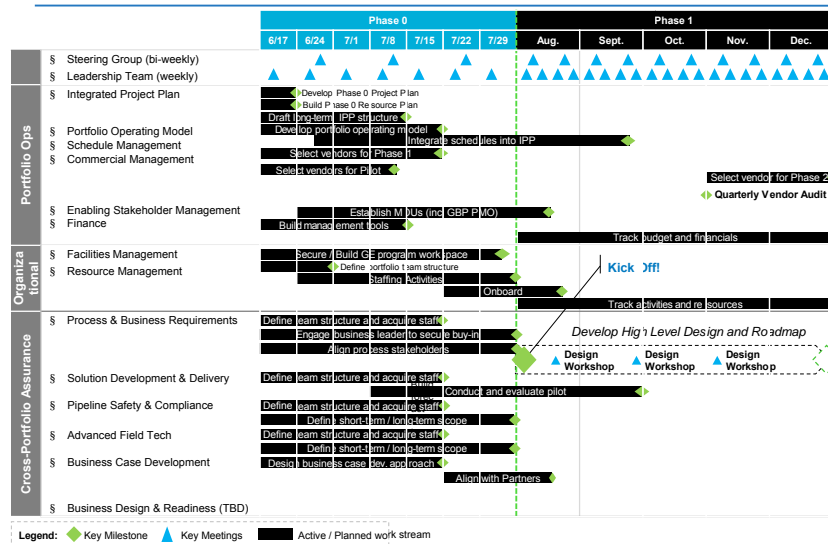
A long term Program site has been selected and preparations are beginning

- ¾ The program will be sited at 58 2nd Avenue in Waltham
- ¾ This site is currently under lease until 2022 and is “fit-for-purpose,” offering appropriate flexibility, access and quality of life at a manageable cost
- ¾ Target occupation date is 1 August, however timeline challenges exist
- ¾ Contingency approaches are being developed for connectivity, build out and finishing of space
- ¾ The Program is currently based in Res Woods, 2nd Floor East

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The first draft of the integrated program plan (IPP)
has been completed and continues to be refined

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Program activity is ramping up significantly however recruiting remains a major focus area

Scope Status And Impacts					Schedule	
1. Scope Status: Unchanged from 5 May 16 SG endorsement 2. Scope Change Requests: None pending / planned 3. Next Scope "Infection Point": Program charter review with Phase 1 consulting partners (Mid July – Mid Aug) 4. Delivery Approach changes: Evaluating Agile Technology Pilot however no impact to Program timelines, scope or budget is anticipated 5. Major Schedule / Deliverable Changes: None planned / anticipated					1. Key milestones: a) RFP 1 / 2 Vendor final down selects: 1 July b) Contract awards complete: 1 Aug c) Phase kick-off: 1st Week Aug d) Phase 1 completion: End Dec 16 (aspiration) 2. Activities completed a) Process Pilot successfully completed in May b) First wave of process and PM team recruiting initiated c) RFP 1 / 2 Technical proposal review and down selects completed Jun 17 3. Upcoming activities: a) Complete technical pilot planning and chartering b) Continue Phase 1 preparations (staffing, PM model etc)	
Resources					Risk	
Category	Budget	Actual	Forecast	Trend	Risk	Actions
Total \$25.5M	\$ 81M	\$ 22M	\$25.5M		Missing expectations on progress due to slow start	<ul style="list-style-type: none"> Key LT members completing legacy commitments Remaining LT member being on-boarded Detailed plan and staffing model being developed concurrently with Partner proposals
the approach and schedule proposed by our Strategic Assessment Partner					Unsuccessful delivery due to scope creep and overlap with other initiatives	<ul style="list-style-type: none"> Building scope around business case – will use Steering Group to baseline scope and any changes going forwards Reporting spending to plan (i.e., budget) monthly Coordinating with Growth Playbook initiatives to avoid duplication or gaps with other activities
Phase 0-14	10	3	1		Risk to delivery due to business/IS capacity limitations	<ul style="list-style-type: none"> Will track progress and escalate specific areas of risk/concern to Steering Group and through cadence Proactively engaging with Business and Function stakeholders to identify support requirements and potential staffing constraints Developing integration model to identify IS dependencies and constraints
					Impact on schedule of industrial action	<ul style="list-style-type: none"> Working closely with the labor relations team to understand timings and risk Will look to mitigate as much as possible, however if employees are locked out there will likely be a delay to the project as management focus is elsewhere

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Meeting close

¾ AOB

¾ New Action Item Summary

¾ Leadership Pulse Check and Closing Remarks

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Appendices



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Planning assumptions and success criteria include

Planning Assumptions for Strategic Assessment (Design) Phase

- § Avoid a "Big Bang" approach – a phased approach based on process, technology and organization is STRONGLY preferred
- § Standardize on a single NG way of working recognizing there may be some limited variations around a single process to meet jurisdictional regulatory requirements
- § Minimize customization -use core software functionality to the greatest degree practical
- § Build in flexibility
 - § Use appropriate architectures to speed up time to deliver and enable future improvements – if practical
 - § Use standard APIs wherever possible to enable sharing of data and 'plug and play' of applications
- § Based on the above, again if practical, looking to implement a MVP (Minimum Viable Product) approach with agile development to improve the initial solution

Success Criteria for Strategic Assessment (Design) Phase

- § Business buy-in and commitment to process – solution – methodology & approach – business case (& changes required to deliver it)
- § Multiple delivery phases with defined roadmap to reduce risk to delivery
- § Gas Enablement and Customer Experience programs are aligned
- § Clear visibility of critical path dependencies to ensure successful delivery
- § Costing's that can actually be delivered (allow for rate case and delivery strategy)
- § Delivers key principles – simplicity, consistency, visibility, usability & agility
- § Business and other controls are developed concurrently with the process design
- § Delivers defined business case including expected benefits – enhanced reliability, compliance, customer service & employee engagement; and enables continuous improvement & growth
- § NG and Partner relationships are clear and supported
- § Solution and business case that National Grid will approve for the next phase and regulators will fund as a prudent investment **20**

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Definition and execution of a procurement strategy is a Program critical path activity

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Program Leadership and Procurement worked collaboratively to define and evaluate options for procurement of consulting services

1. Review Program goals, objectives and desired end state - **complete**
2. Review Program scope - **complete**
3. Define planning assumptions and success factors - **complete**
4. Form and analyze sourcing options and identify recommended option - **complete**
5. Develop draft RFPs - **complete**
6. Define procurement timelines - **complete**
7. Perform QA and legal / regulatory reviews - **complete**
8. Obtain Steering Group approval - **complete**
9. Execute strategy - **In progress**

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Summary of Scope for Phase 1

Area	Ask	Outputs
Central Team	\$2M	<ul style="list-style-type: none"> Establish a PMO – governance & reporting established – including Golden Rules Refine the Case for Change Develop the Prioritized & Phased Plan Define the Ask & Benefits Case Develop the regulatory cost recovery strategy including for KEDNY/KEDLI rate cases
Compliance Plan	\$1.5M	<ul style="list-style-type: none"> 3rd party independent compliance assessment Risk based compliance plan to address historic issues, current performance and strategic investments for future performance
Compliance Immediate Actions	\$5.5M	<ul style="list-style-type: none"> Public Awareness enhancements including Damage Prevention Web Portal 10 Compliance Analysts + 2 QA/QC Analysts Plastic Joining Compliance monitoring post East Harlem Service Line Definition preparation Tactical IS solutions
IS Plan	\$6M	<ul style="list-style-type: none"> Project principles & scope approved Target Data Architecture model developed (including ownership) Approach to process governance established with tool to support Detailed plan to map processes Target technology architecture approach confirmed Benchmarking with other utilities and other leading companies completed Key applications & devices selected Procurement strategy developed
IS Pilot	\$6M	<ul style="list-style-type: none"> First process (Collections) fully mapped Significant progress made on the build of a single process pilot
HR Plan	\$0.85M	<ul style="list-style-type: none"> Strategy and implementation plan including embedding strategic resource planning, transforming hiring & training processes
HR Immediate Actions	\$0.65M	<ul style="list-style-type: none"> Refreshed strategic resourcing planning model 3 FTEs on-boarded to support future hiring requirements
Advanced Ops Plan	\$0.35M	<ul style="list-style-type: none"> Strategy and implementation plan including investment recommendation, deployment plan and regulatory recovery strategy
Advanced Ops Immediate Actions	\$0.3M	<ul style="list-style-type: none"> 3 supervisors embedded in NY & MA operations to deploy CISBOT & advanced lining techniques in the field
Risk Margin	\$2.3M	@ 10%
Total	\$25.5M	

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Scope Summary: This scope hypothesis supports early planning and commercial activities - it will be “locked down” as a key design phase Program deliverable

In Scope

- ¾ Compliance - short term 'get well' plan as well as longer term initiatives to sustain desired performance
- ¾ Core US Gas Business M2C, Maintain & Deliver processes (including emergency response and electric short cycle work (CMS)) – need to standardize and simplify
- ¾ 61 Core work management, asset management & GIS systems (incl. Mwork, MDSI, iScheduler, Storms, Maximo, LMS, ESRI, Smallworld – see Slide 17) – need to standardize and consolidate
- ¾ Integration with the Customer systems to enable appointment booking, call center visibility and customer engagement services
- ¾ Design the 'To Be' US Gas Delivery Op Model focusing on RACI decision rights and accountability. To including embedding strategic resourcing and training impact
- ¾ Adv. Field technology strategy for demonstration & implementation of technology to enhance field delivery

Not in Scope:

- ¾ The UK business
- ¾ Electric Operations Initially (albeit principles and technical solution should be appropriate to be extended at a later date)
- ¾ Transgas/Generation
- ¾ Legacy customer systems (CSS/CRIS)
- ¾ SAP Backoffice (except for necessary technical and process integrations)
- ¾ Control systems (SCADA)

Assumed Prerequisites:

- ¾ Alignment with Powerplan
- ¾ Consolidation of GIS systems

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Principles: These core principles have been proposed to help guide the project in its designs and decision making as the project progresses to keep the focus and deliver the required outcomes

Simplicity— over time as our business has evolved from legacy companies and as we have built work around on top of work around it has become more and more complex, but at its heart a utility is simple. Everyone will win if we focus on stripping away layers of complexity

Consistency— Because we currently do the same thing differently across our organization this drives complexity, makes change difficult, makes it expensive to train, and introduces significant waste and inefficiency that is holding the business back

Usability — this is about putting our employees and our customers at the heart of the solution, making things easy to use, intuitive and reliable which will help us to get the data right, be compliant and provide a better customer experience

Visibility— of our data across our processes is key to making it easy for our customer to do business with us, for our employees to serve our customers, our supervisors to manage performance and for us to secure appropriate rate case recovery

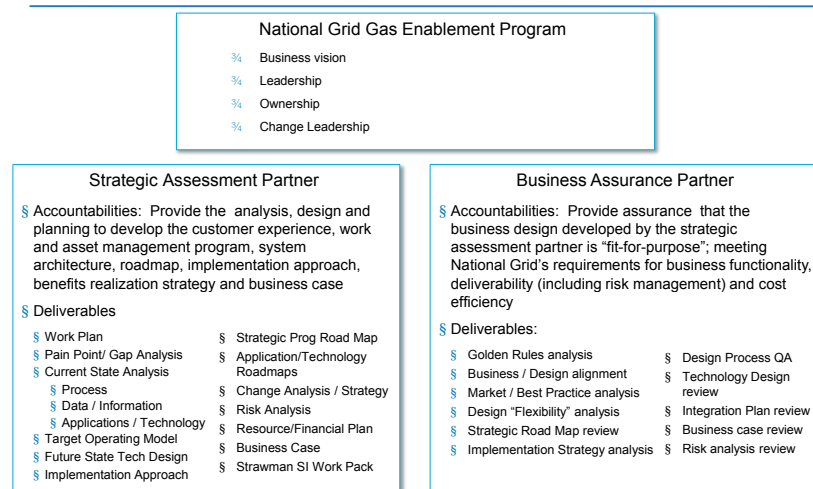
Agility — the fast changes in the external environment mean that our requirements of tomorrow will be different to the requirements of today so we want to build a more continuous improvement and agile way of thinking into our organization and systems through Gas Enablement

“Common Sense”

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The recommended procurement strategy will support a collaborative relationship between National Grid and its key service partners



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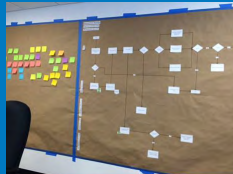
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Gas Business Enablement

Steering Group Pack



Johnny Johnston

1 August 2016 @ 1300 GMT, W3.003

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Agenda

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The logo for National Grid, featuring the word "national" in a light blue sans-serif font and "grid" in a darker blue sans-serif font.

Meeting Objectives

1. Obtain Steering Group endorsement of the Program plan, budget and resource model base-line
2. Review the plan for Phase 1 executive engagement and sanctioning
3. Provide an update on Phase 1 commercial activities and introduce consulting partners

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Action Item Follow Up

	Action	Owner	Assigned	Due	Comment	Complete?
2	To provide visibility of the expected impact of Gas Business enablement on the ability to run the business due to a potential talent drain.	JJ	10 Mar 16	1 May 16	Phase 1 key roles have been filled with Business Leadership engagement and support. Subsequent staffing requirements will be reviewed regularly with the Design Authority Gas business impact to date: 1 VP, 4 Directors, 3 Managers	Aug 16
3	To identify the appropriate approach to ensure that the SG has visibility to the level of customization being undertaken by the project.	JJ	10 Mar 16	1 Oct 16	Pending	
4	To share the rate case strategy and ensure that any appropriate costs are included in the MA Gas rate case.	JJ	10 Mar 16	1 Jul 16	Action Plan: 1) Engaging with NY team to align NY compliance fines to Gas Enablement spend 2) Coordinating with MA to include GE costs in the MA Gas case 3) Will work with Finance to deploy effective tools and processes to capture and report rate case data 4) Insure regulatory strategy is included as part of the business case	Aug 16
5	Advise SG on Powerplan solution options impacting the Program	JJ	5 May 16	Nov 16	Rescheduled for Nov Update	
6	Review GBE Scope with Finance Remediation	KH	5 May 16	June 16	Rescheduled by Fin – working with BQ for new date	
9	Align CWIP and GE programs and incorporate into GE program risk matrix as appropriate	KC	24 June 16	Aug 16	Coordinating with CWIP team to set up initial coord meeting	Proj Aug 16
10	Invite Internal Assurance to participate in vendor oral presentations and proposal review	KC	24 June 16	July 16	Complete – Input received	Yes

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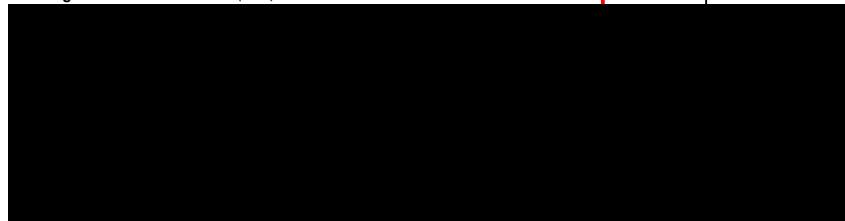
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Execution of the Gas Enablement Phase 1 procurement strategy is complete

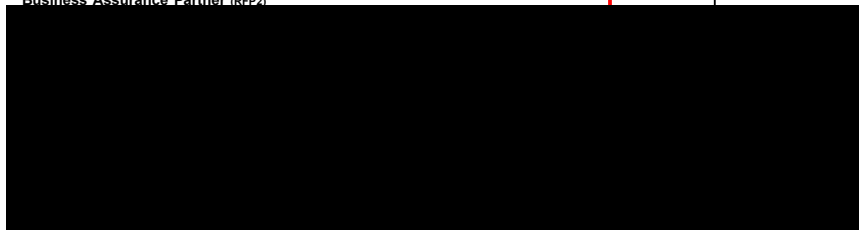
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Subsequent to our 24 June 2016 Steering Group, final vendor down-select has been completed, agreements in principle have been reached and contracts are being finalized

Strategic Assessment Partner (RFP1)



Business Assurance Partner (RFP2)



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Following multiple technical and commercial evaluations,
Accenture was selected as the Strategic Assessment partner

Criteria	Section Weight	Overall Weight
[Redacted]		

Overall Bid Rank	
Bidder Name	[Redacted]
[Redacted]	

[Redacted]

Lead Engagement Partner:
Sandra Jones
Mobile: 1-703-582-6274
Email: sandra.ljones@accenture.com

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Following selection of Accenture as our Strategic Assessment partner, PWC was identified as our best value Assurance partner

Criteria	Section Weight	Overall Weight	Overall Bid Rank
			Bidder Name

Lead Engagement Partner:
Christopher C Fynn
Mobile: 1-646-284-6562
Email: christopher.c.fynn@pwc.com

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We are currently on-boarding our partners and completing mobilization activities

- ¾ Finalizing terms and conditions
- ¾ Initiating on-boarding procedures
- ¾ Joint National Grid / Accenture / PWC relationship alignment and planning meeting planned for 27 July 16 in 2nd Ave
- ¾ Defining performance score cards
- ¾ Current state documentation collection is underway
- ¾ Kick-off meeting being planned for 1 or 2 August

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The Steering Group will have ongoing engagement with our partners

- § Steering Group meeting attendance: Both lead engagement partners will attend on a regular “as needed” basis
- § The Business Assurance lead engagement partner will provide a monthly assessment of program performance to the Steering Group
- § Ad hoc engagement per your request

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The technology pilots are progressing at a pace:

- § We planned the pilots to build learning and demonstrate value in key areas that we believe will differentiators in the success of gas enablement
- § Following successfully completing the process standardization pilot we are taking two of the standardized processes into an agile technology pilot (collections & stopped meter)
- § Agile development is fast with field pilotable solution due in less than 8 weeks:



LI Field Collections Pilot



- § We are also progressing a Stopped Meter back office pilot with Oracle, but need to realign solution so moving to August.
- § We had planned a pilot in RI with IBM but have had to stop based on solution proposed. We are exploring extending the LI pilot to RI with Salesforce to show how we explore expanding one solution to multiple jurisdictions



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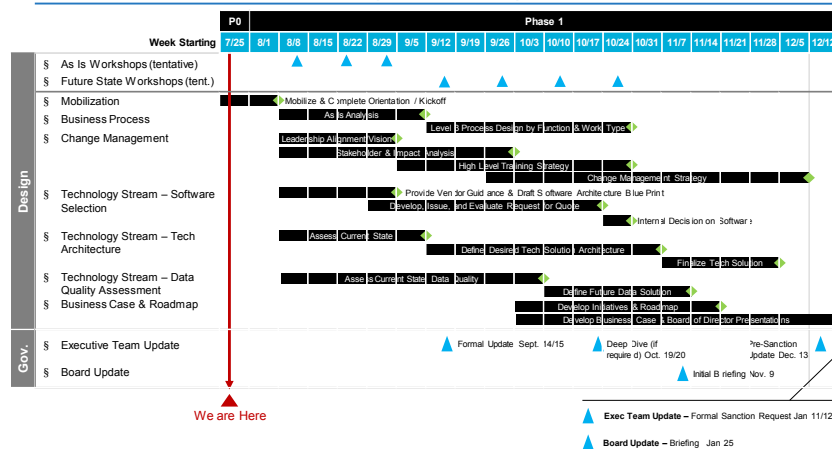


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High level design and governance activities have been incorporated into the Integrated Program Plan



A full plan for all work streams can be found in the appendix

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The Program has the National Grid resources it needs to effectively begin Phase 1

Of the 31 FTE required to support Phase 1, we currently have 14 vacancies (excluding GDP analysts) however none of these vacancies will impede the ability to commence work on 1 August

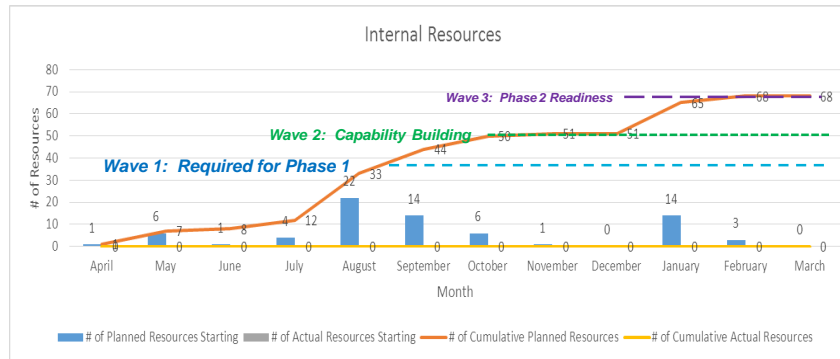
Program Sponsor – Johnny Johnston						
Team	Portfolio and Program Management	Process and Business Requirements	Solution Design and Delivery	Business Design and Readiness	Pipeline Safety and Compliance	Advanced Field Technology
Lead	KC Healy	Chris Connolly	Chris Murphy	Reihaneh Irani-Famili	Dan McNamara	Dennis Ruppert
Phase 1 Wave 1*	Fin Mgr: T Andrews Program Coord: G Prescott - K McAuliffe PM Specialist: Open Resrcr Analyst: Open Analyst (GDP): TBC	Process Leads: • Capabilities: D Morrissey • Customer: M Piccarello • Asset Mgt: P DiGiglio • Work Mgt: M Scapparotti • Data: TBC Delivery Lead • Process Gov: Open • Fin Controls: Open Analyst (GDP): TBC	Program Directors • Ron Krantz • Rory Abbazio Pilot Prod Owner: • P DiGiglio Pilot Business SME: 3 each, TBC Solution Architect: TBC Analyst: Open Analyst (GDP): TBC	Program Director: • E Poyant HR Business Partner: • JWynn DeRamos Analyst (GDP): TBC	Project Manager: Open Analyst (GDP): TBC	Project Mgr 1: Open Project Mgr 2: Open Project Mgr 3: Open Analyst (GDP): TBC

Staffing the remaining open positions in a timely manner will support completion of post August activities

- The Program staffing will be performed in three “waves”
 - Wave 1 (April – August): Staff required to support delivery of Phase 1 scope
 - Wave 2 (Sep – Nov): Staff identified to develop depth of capability, support Phase 2 ramp up and serve in key leadership and SME roles during Phase 2
 - Wave 3 (Dec – Mar 17): Staff required to support execution of April 2017 Phase 2 programs and projects
- Waves will be “activated” based on leadership evaluation of criteria TBD

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The Program sanction will support activation of all three staffing waves



Staffing Process Highlights:

- While the program sanction will support activation of all three waves, evaluation of all staffing requirements will be ongoing
- The decision to activate Waves 2 and 3 will be based on criteria including
 - Timing, scope and likelihood of the Phase 2 sanction and kick-off
 - Early indications from the developing road map and business case
 - Value and quality

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A budget has been prepared that supports **nationalgrid**
our scope and timeline while remaining within the
sanctioned \$25.5M for Phase 1

Expense Type	Leadership	Phase 1 Assessment	Pilot	Safety and Compliance	Advanced Field Technology	Total	Key Assumptions
Labor	\$2.6M	\$5.3M	\$0.55M	\$4.1M	\$0.95M	\$13.5M	<ul style="list-style-type: none"> Includes Burden Total including Wave 1, 2, 3
Wave 1	\$2.3M	\$2.2M	\$0.44M	\$0.55	\$0.95	\$6.44M	
Wave 2, 3	\$0.3M	\$3.1M	\$0.11M	\$3.5M		\$7.02M	
Expenses	\$0.26M	\$0.53M	\$0.05M	\$0.4M	\$0.1M	\$1.4M	<ul style="list-style-type: none"> Assumes Expenses are 10% of Labor
Non Labor	\$0.46M	\$0.05M	\$0.01M	\$0.04	\$0.01M	\$0.57M	<ul style="list-style-type: none"> Facilities, equipment etc. IS Infrastructure, telecom, etc.
Consulting	\$0.3M	\$4.1M	\$0.25M	\$1.5M		\$6.2M	<ul style="list-style-type: none"> Strategic Assessment/Assurance 3rd Party Compliance / Actions
Contingency	\$3.8M					\$3.8M	
Total	\$7.5M	\$10.0M	\$0.86M	\$6.1M	\$1.1M	\$25.45M	

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The Gas Enablement Program requests of the Steering Group:

§ Your endorsement of the Program plan, resource model and budget

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Gas Enablement Program Status

Scope Status And Impacts	Schedule																																						
<div>1. Scope Status: Unchanged from 5 May 16 SG endorsement</div> <div>2. Scope Change Requests: None pending / planned</div> <div>3. Next Scope "Inflection Point": Program charter review with Phase 1 consulting partners (July 27 – Aug 5)</div> <div>4. Delivery Approach changes: Evaluating Agile Technology Pilot however no impact to Program timelines, scope or budget is anticipated</div> <div>5. Major Schedule / Deliverable Changes: None planned / anticipated</div> <div>6. Customization KPI (TBD)</div>	<div>1. Key Upcoming Milestones:</div> <div>a) Phase 1 mobilization meeting: 27 July</div> <div>b) Phase 1 Kick Off: 1 or 2 August</div> <div>c) Initiate Current State Assessments 8 Aug</div> <div>d) Phase 1 completion: End Dec 16</div> <div>2. Activities completed</div> <div>a) Technology pilot demonstration kick-offs complete</div> <div>b) RFP 1 / 2 consulting contracts awarded</div> <div>c) Key Phase 1 resources identified</div> <div>d) Plan, staffing model and budget prepared for "baseline"</div> <div>3. Upcoming activities:</div> <div>a) Continue onboarding NG and Consulting team members</div> <div>b) Continue Phase 1 preparations (discovery, planning, etc.)</div>																																						
Resources	Risk																																						
<table><tr><th>Category</th><th>Budget</th><th>Budget</th><th>Actual to</th><th></th><th></th></tr><tr><th></th><th>Allocated</th><th>Spent</th><th>Baseline</th><th></th><th></th></tr><tr><td>Total</td><td>\$25.45M</td><td>\$3.2M</td><td>\$0.28M</td><td>\$25.45M</td><td></td></tr></table> <div>Major and diverse technological capabilities</div> <table><tr><th>Staffing Plan</th><th>Actual</th><th>In-progress</th><th>Open</th><th>Trend</th><th></th></tr><tr><td>Under Construction – Pending SVP and SG Review</td><td></td><td></td><td></td><td></td><td> </td></tr></table>	Category	Budget	Budget	Actual to				Allocated	Spent	Baseline			Total	\$25.45M	\$3.2M	\$0.28M	\$25.45M		Staffing Plan	Actual	In-progress	Open	Trend		Under Construction – Pending SVP and SG Review						<div>Note: A formal risk review will be performed during the mobilization phase</div> <table><tr><th>Risk</th><th>Actions</th></tr><tr><td>Missing expectations on progress due to slow start</td><td><ul style="list-style-type: none">Key LT members completing legacy commitmentsRemaining LT member being on-boardedDetailed plan and staffing model being developed concurrently with Partner proposals</td></tr><tr><td>Unsuccessful delivery due to scope creep and overlap with other initiatives</td><td><ul style="list-style-type: none">Building scope around business case – will use Steering Group to baseline scope and any changes going forwardsReporting spending to plan (i.e., budget) monthlyCoordinating with Growth Playbook initiatives to avoid duplication or gaps with other activities</td></tr><tr><td>Risk to delivery due to business/IS capacity limitations</td><td><ul style="list-style-type: none">Will track progress and escalate specific areas of risk/concern to Steering Group and through cadenceProactively engaging with Business and Function stakeholders to identify support requirements and potential staffing constraintsDeveloping integration model to identify IS dependencies and constraints</td></tr></table>	Risk	Actions	Missing expectations on progress due to slow start	<ul style="list-style-type: none">Key LT members completing legacy commitmentsRemaining LT member being on-boardedDetailed plan and staffing model being developed concurrently with Partner proposals	Unsuccessful delivery due to scope creep and overlap with other initiatives	<ul style="list-style-type: none">Building scope around business case – will use Steering Group to baseline scope and any changes going forwardsReporting spending to plan (i.e., budget) monthlyCoordinating with Growth Playbook initiatives to avoid duplication or gaps with other activities	Risk to delivery due to business/IS capacity limitations	<ul style="list-style-type: none">Will track progress and escalate specific areas of risk/concern to Steering Group and through cadenceProactively engaging with Business and Function stakeholders to identify support requirements and potential staffing constraintsDeveloping integration model to identify IS dependencies and constraints
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Meeting close

¾ AOB

¾ New Action Item Summary

¾ Leadership Pulse Check and Closing Remarks

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Phase 1 Partner Introductions

- § Accenture: Sandra Jones – Lead Engagement Partner
- § PWC: Chris Fynn – Lead Engagement Partner

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Appendices



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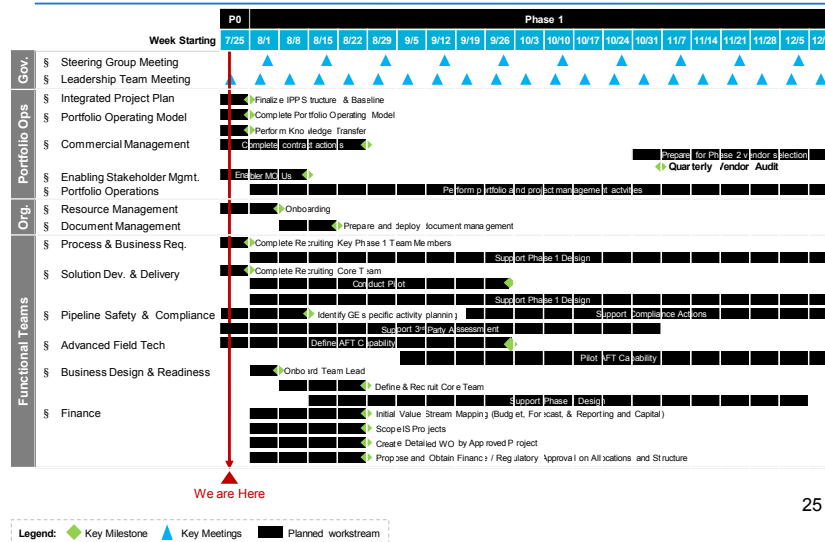


Steering Group Action Item List (complete)

Action	Owner	Assigned	Due	Comment	Complete?
1. Ensure that Enablement is added to the GPR agenda	PS	10 Mar 16	1 Apr 16		Yes
2. To provide visibility of the expected impact of Gas Business enablement on the ability to run the business due to a potential talent drain.	JJ	10 Mar 16	1 May 16	Phase 1 key roles have been filled with Business Leadership engagement and support. Subsequent staffing requirements will be reviewed regularly with the Design Authority	Aug 16
3. To identify the appropriate approach to ensure that the SG has visibility to the level of customization being undertaken by the project.	JJ	10 Mar 16	1 Oct 16	Pending	
4. To share the rate case strategy and ensure that any appropriate costs are included in the MA Gas rate case.	JJ	10 Mar 16	1 Jul 16	Action Plan: 1) Engaging with NY rate case team 2) Coordinating with MA to include GE costs in the MA Gas case 3) WIP work with Finance to deploy effective tools and processes to capture and report rate case data 4) Ensure GE business case is rate case enabling.	Aug 16
5. Advise SG on Powerplan solution options impacting the Program	JJ	3 May 16	Nov 16	Rescheduled for Nov Update	
6. Review CBE Scope with Finance	KH	3 May 16	June 16	Rescheduled by RIA - working with BQ for new date	
7. Add controls development to design phase success criteria	KH	3 May 16	June 16		Yes
8. Update the SG on proposal detail and procurement process status and selection criteria	JJ	3 May 16	June 16		Yes
9. Align CWPV and GE programs and incorporate into GE program risk matrix as appropriate	KC	24 June 16	Aug 16	Coordinating with CWPV team to set up initial coord meeting	Proj Aug 16
10. Invite Internal Assurance to participate in vendor oral presentations and proposal review	KC	24 June 16	July 16	Complete - input received	Yes

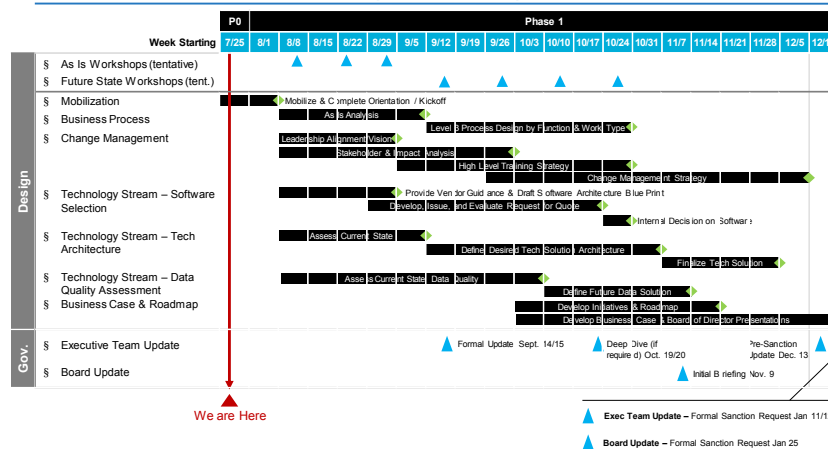
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An Integrated program has been developed and subject to final detailed planning with our partners can be base-lined



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High level design and governance activities have been incorporated into the Integrated Program Plan



A full plan for all work streams can be found in the appendix

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The Gas Enablement pilot has successfully entered Phase 2 – Technology Demonstration

Phase 1 – Process Standardization - Complete

- 3/4 4 "Meter to Cash" processes standardized
 - 3/4 Collections
 - 3/4 Stopped Meter
 - 3/4 Long Term Estimates
 - 3/4 Advanced Consumption
- 3/4 Process Sponsors and Leads Identified

Gas Enablement M2C Process Leads and Exec Sponsor		
Process	Steering Group Executive Sponsor	Process Lead
Collections	Doneen Hobbs	Dave Hillery
LTE	Tim Graham	Chris Glibo
Stopped Meters	Doneen Hobbs	Pam Ingersoll
Advanced Consumption	Sue Mais	Arlene Gans

Phase 2 – Technology Demonstration - Goals

- 3/4 Demonstrate 2 newly developed "Standard" Processes (Collections & Stopped Meter) using Agile methods
- 3/4 Sustain engagement with business community into GE phase I
- 3/4 Expose the workforce to modern field force capabilities
- 3/4 Trial highly engaged deployment practices
- 3/4 Confirm guiding principles utilized during process standardization (i.e. Workflow Logic, Geo based Field Order Routing, Optimization of Field Order Selection...)
- 3/4 Transfer learnings to larger Gas Business Enablement strategic assessment effort

Collections Pilots

- 3/4 Long Island Pilot (Partner Vendor Salesforce)
 - 3/4 Engagement with Bargaining Leaders Completed
 - 3/4 Data Gathering and Agile development process underway
 - 3/4 On track for demo to business early August
- 3/4 Rhode Island Pilot
 - 3/4 Program / Vendor meeting resulted in removing IBM from Pilot process as intended platform was not aligned with agile development process and live field use
 - 3/4 Potential for deploying LI Pilot System in RI to demonstrate ability to deploy "standard" process across multiple jurisdictions (conference room pilot with RI data)

Stopped Meter Pilot

- 3/4 Syracuse Pilot (Partner Vendor Oracle)
 - 3/4 Initial meeting findings discovered some mis-alignment between proposed solution, and pilot goals and objectives
 - 3/4 Revised method and potential data requirements currently in development.
 - 3/4 Technical requirements & product fit being reviewed with business

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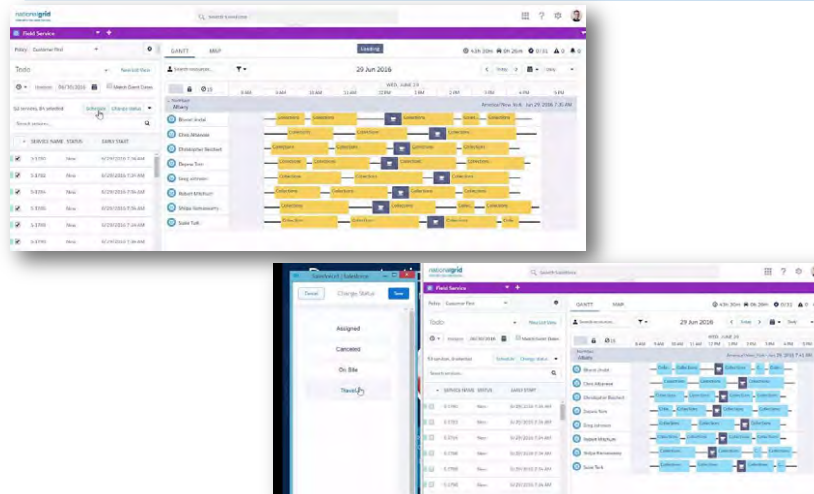
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Screen shots of our collections pilot
in the Salesforce.com application

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Sandy Jones, Accenture Strategic Assessment, Engagement Partner

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Sandy Jones is the North America Digital Field Worker Lead and a Managing Director for Accenture. In this leadership role Sandy is responsible for Accenture's projects in work/asset management, scheduling and mobility. Sandy has 25 years of experience working with gas transmission and distribution organizations and specializes in large scale program change with process re-engineering. Sandy led Accenture's Midstream Pipeline Market from 2013-2015 and is published in the Pipeline & Gas Journal. Sandy received her M.B.A. in Business Strategy and Organizational Behavior from Rennselaer Polytechnic Institute and her B.S. in Industrial Distribution from Clarkson University.

Selected Relevant Experience

- 34 Large Gas Pipeline and Gas Distribution Company—4 Year Transformation Program
 - 34 Developed operating model design and corresponding organization structural design.
 - 34 Generated business case with detailed cost estimates and benefits for a multi-faceted program of over 20 initiatives delivered within approved budget
 - 34 Delivered key organizational changes across 2800 employees.
 - 34 Deployed Maximo, Copperleaf, GIS Consolidation on ESRI and PragmaCad Scheduling and Mobile.
- 34 Mid-sized Gas and Electric Utility—6 Year Program Leadership for:
 - 34 Development of a service-oriented architecture and deployed governance model.
 - 34 Deployment of a new Network Operations Center fitted with tools and dashboards integrated with Systems Operations Center.
 - 34 Asset Management and Operations operating model design and organization restructuring including process ownership and improvement function.
 - 34 Procurement category analysis to identify tangible operational savings.
 - 34 Capital Projects management analysis and roadmap development.
 - 34 Customer service system replacement (SAP CR&B) with integration to Meter Data Management, etc.
- 34 Large Southeast Gas and Electric Utility—Operations Transformation Multi-Year Program
 - 34 Business case development and detailed estimate of end to end Operations Technology program
 - 34 Managed business process standardization and alignment through change management
 - 34 Deployed Maximo for work management, asset management, and supply chain for gas and electric organizations
 - 34 Operational performance management process and tool deployment.
 - 34 Business case development with detailed cost estimates and benefits identification.
- 34 North America Pipelines Market Lead—2 Year Leadership for:
 - 34 Managed diverse portfolio of clients from the energy and utilities sector that span upstream, midstream and downstream sectors.
 - 34 Assisted trade organizations with thought leadership development on intelligent pipeline management and asset data roadmap strategies.

Chris Fynn, PWC Business Assurance Engagement Partner

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Office Location:
New York, NY
Phone:
(646) 471-1266
Email:
christopher.c.fynn
@pwc.com

Background

Chris has 30 years of experience implementing value-driven programs in T&D (electric & gas), power generation, and nuclear, including multiple Maximo and SAP-enabled projects. He focuses on driving targeted outcomes from strategic asset management programs and is partner sponsor of PwC's *leap for Utilities*, our leading practice process/content repository. He has spent the majority of his career focused on EAM/ERP, implementing leading practices and processes enabled by technology.

Certifications/professional designations

- BSc/BEng in Engineering, Manufacturing and Management, University of Manchester
- Graduate Diploma in Project Management, University of South Africa

Executed projects of similar size and scope

- Led a number of successful utility transformational EAM/ERP programs.
- Leads PwC's EAM practice, providing direct leadership and quality oversight of design, development, and execution of strategic asset management improvement programs based on developing leading core capabilities in asset operations management enabled by technology (asset management, work management, optimized work execution, performance management and supporting functions).
- Engagement partner for EAM programs at Laclede Gas, PG&E Gas operations, South Jersey Gas, Spectra Energy - Union Gas.

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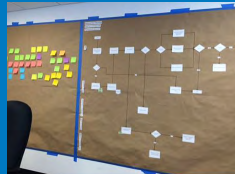
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Gas Business Enablement

Steering Group Pack



Johnny Johnston

23 August 2016 @ 0900 EST, Res Woods W3-003

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Agenda

<u>Topic</u>	<u>Time</u>	<u>Presenter</u>
Opening Remarks / Meeting Objectives	0900-0905	JJ
Action Item Follow Up	0905-0910	KC
Program Update – The First Three Weeks	0910-0935	JJ
<ul style="list-style-type: none">• Kick Off• Workshops• Leadership Alignment Activities• Design Authority• Pilot		
Program Status	0935-0940	KC
Program Staffing Plan Update	0940-0950	KC / JJ
Business Assurance Partner Update	0950-0955	CF
Meeting Close & Feedback	0955-1000	JJ

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Meeting Objectives

1. Provide an update on the first three weeks of High Level Design activities

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Action Item Follow Up

	Action	Owner	Assigned	Due	Comment	Complete?
3	To identify the appropriate approach to ensure that the SG has visibility to the level of customization being undertaken by the project.	JJ	10 Mar 16	1 Oct16	Pending	
5	Advise SG on Powerplan solution options impacting the Program	JJ	5 May 16	Nov 16	Rescheduled for Nov Update	
6	Review GBE Scope with Finance Remediation	KH	5 May 16	June 16	Rescheduled by Fin – working with RQ for new date	
9	Align CWIP and GE programs and incorporate into GE program risk matrix as appropriate	KC	24 June 16	Aug 16	Meeting scheduled for 22 August	Proj Aug 16
11	Provide a follow-up on staffing progress and plans	JJ	1 Aug 16	23 Aug 16	In progress	Proj Aug 16

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Agenda

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Program Update – The First Three Weeks <ul style="list-style-type: none">• Kick Off• Workshops• Leadership Alignment Activities• Design Authority• Pilot	0910-0935	JJ
Program Status	0935-0940	KC
Program Staffing Plan Update	0940-0950	KC / JJ
Business Assurance Partner Update	0950-0955	CF
Meeting Close & Feedback	0955-1000	JJ

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High Level Design is underway and on-track



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Internal Kickoff – August 10, 2016

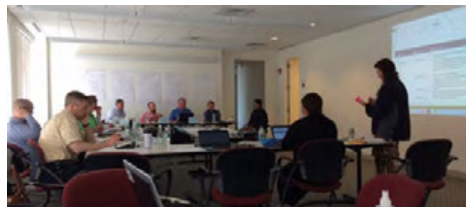


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As-Is work shops are well underway

- ¾ Conducted two parallel streams of workshops through the first two weeks focused in Work & Contractor Management and Asset Management.
- ¾ Both embedded with Customer Experience lens.
- ¾ 15 workshops completed
- ¾ Significant stakeholder engagement across all jurisdictions
 - ¾ CMS, Maintenance, Construction & Shared Services, Call Center, Resource Planning, Process Excellence, Dispatch, Payroll, Accounts Payable, Meter Shop, Regulatory, Compliance, & Others
- ¾ 112 SME's participated
- ¾ 297 pain points identified



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Workshop Images



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nationalgrid Current state assessments of our technology and data landscape have also started

- ¾ Current State Information Management, Data, Application and Technology Architecture – On Track
 - ¾ Current State Technology Workshops kicked off to develop application and technical architecture “As Is”
 - ¾ Artifacts being assembled
 - ¾ Cyber Security workshop completed
 - ¾ Planning proactive steps to design middleware/integration layer in order to accelerate pivot into delivery and implementation
- ¾ Early Guidance on Software Vendors
 - ¾ Initial planning and approach defined
- ¾ Inflight Initiative Identification
 - ¾ Work Session with IS Operations Portfolio completed; further sessions planned with remaining portfolios.

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Leadership alignment & stakeholder engagement activity planning has begun

North Star – band B gas leadership September 7

¾ Objectives:

- ¾ Align on the key opportunities
- ¾ Drafting vision and ambition for the gas business in their own language
- ¾ Commit to lead the change

¾ Approach:

- ¾ One day offsite session
- ¾ Facilitated by Kotter International
- ¾ Focused on engaging the leaders

Accelerate – band B&C gas leadership October 12 & 13

¾ Objective:

- ¾ Understanding the vision and ambition for the gas business
- ¾ Drafting the how to achieve results
- ¾ Creating a near-term action plan

¾ Approach:

- ¾ Two day offsite session – Oct 12/13
- ¾ Facilitated by Kotter and designed as a continuum of North Star session
- ¾ Focused on engaging leaders in creating tangible action plans

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The Program Design Authority has been launched

3/4 Terms of Reference

- 3/4 Inform – Ensure business leaders are informed on progress and any key issues
- 3/4 Decide – Make critical decisions on behalf of business to help shape design and business case
- 3/4 Endorse – High Level Design, Road Map & Business Case
- 3/4 Own – Defined business benefits and delivery of them
- 3/4 Manage – Any escalated issues

3/4 Key Stakeholders

Ross Turrini	John Stavrakas	Anuraag Bhargava	John Spink
Johnny Johnston	Tom Bennett	Amy Stitt	Dan Murray
Neil Proudman	Sue Fleck	Sue Mais	Bill Hilbrunner
Bob DeMarinis	Cedric Williams	Doneen Hobbs	Keith Hutchison
Tim Graham	Sean Mongan	Jody Allison	John Gavin
Fred Amaral	Core team		Extended Team

3/4 Meeting Cadence

- 3/4 Monthly In-Person Meeting at Program Office (2 hrs)
- 3/4 Weekly Phone Conference Briefing (30 min)

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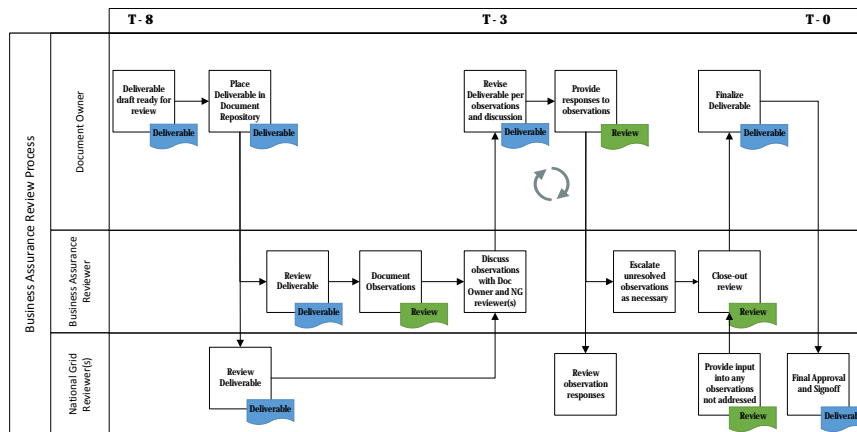
Our Strategic Assessment activities are defined by 20 major deliverables



#	Deliverable	NG Approver (s)	BA	#	Deliverable	NG Approver(s)	BA
1	Detailed Strategic Assessment Project Work Plan	KC Healy		11	Change Impact Analysis	Reihaneh Irani-Famili	
2	Current State Business "Pain Point/Gap" Inventory and Opportunity Analysis	Chris Connolly Chris Murphy		12	Application and technology roadmap including enabling capabilities	Chris Connolly Chris Murphy	
3	Current State structured and unstructured data analysis	Chris Murphy		13	Change Management Strategy	Reihaneh Irani-Famili	
4	Current State Information Management, Application and Technology Architecture	Chris Murphy		14	Risk Inventory Analysis	KC Healy	
5	High-level Business Requirements	Chris Connolly		15	Implementation/deployment approach with recommended phasing	Chris Connolly Chris Murphy Reihaneh Irani-Famili KC Healy	
6	Target Operating Model (High Level Future State Business Process Definition)	Chris Connolly Chris Murphy Reihaneh Irani-Famili Johnny Johnston		16	Prioritized Roadmap of Programs, Projects/Work Packages to Achieve the Required Outcomes	Chris Connolly Chris Murphy Reihaneh Irani-Famili KC Healy	
7	Key Business and Technical Decisions Inventory—Pros and Cons Analysis and Decisions	Chris Connolly Chris Murphy Reihaneh Irani-Famili		17	Resource Plan	Chris Connolly Chris Murphy Reihaneh Irani-Famili KC Healy	
8	Future-state information, application, and integration architecture	Chris Murphy		18	Detailed Financial Breakdown for Delivery of each of the Roadmap Phases	Johnny Johnston	
9	Processes and Key Use Cases for Connected and Disconnected Mobility	Chris Connolly Chris Murphy		19	Executive Board Paper	Johnny Johnston	
10	Software Solution Selection	Chris Murphy		20	SI Work Package (scope, approach, deliverables)	KC Healy	

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Each Deliverable will undergo a rigorous review by our
Business Assurance Partner









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Our Business Assurance partner will provide detailed assessment of each Deliverable

**High Level Design
Business Case**

Impact Category	Overall Assessment	Key Observations
Simplicity		<ul style="list-style-type: none"> <bullets of key observations> <bullets of key observations>
Consistency		<ul style="list-style-type: none"> <bullets of key observations> <bullets of key observations>
Usability		<ul style="list-style-type: none"> <bullets of key observations> <bullets of key observations>
Visibility		<ul style="list-style-type: none"> <bullets of key observations> <bullets of key observations>
Agility		<ul style="list-style-type: none"> <bullets of key observations> <bullets of key observations>
Other		<ul style="list-style-type: none"> <bullets of key observations> <bullets of key observations>

**Initiative
Roadmap**

Impact Category	Overall Assessment	Key Observations
Key Outcomes		<ul style="list-style-type: none"> <bullets of key observations> <bullets of key observations>
Achievable		<ul style="list-style-type: none"> <bullets of key observations> <bullets of key observations>
Speed to Value		<ul style="list-style-type: none"> <bullets of key observations> <bullets of key observations>
Other		<ul style="list-style-type: none"> <bullets of key observations> <bullets of key observations>

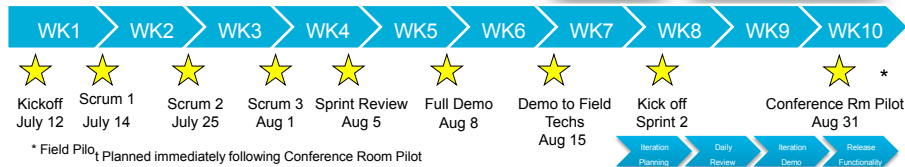
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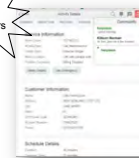
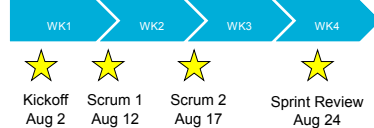
The Technology Pilot continues to make good progress

We have successfully taken the standardized processes into an agile technology pilot for collections and stopped meter, with Salesforce and Oracle respectively

Collections: The Field Techs, Dispatchers and Supervisors were able to get hands on with newly developed software from Salesforce and hardware (an iPad)



Stopped Meter: Development for sprint 1 has been performed for the mobile field tool and is undergoing stakeholder review



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Examples of Business Value that have been identified during the LI Pilot so far...

Before and After		Business Value
20 cases assigned per collector for a total of 60 collections cases a day	→	Average of 30 cases assigned per collector for a total of 120 collections cases day
880 to 040 to field takes 2+ hours	→	880 to 040 to field takes less than an hour
Manually assign collections agents	→	Agents assigned to collections cases automatically based off pre-determined business logic
Route not optimized by street level	→	Route optimized with geographical clustering and routing
Difficulty in changing pre-existing schedules	→	Dispatcher has drag and drop control over in stride changes - field is notified real-time
Manual intervention for scheduling and absences	→	Automatically schedule and accounts for absences / meetings
Call or text for notifications	→	Real-time notifications (internal) in SF1 through Chatter
Only ability to fill out pre-configured fields	→	Ability to capture unstructured data
		<p>Optimizations</p> <ul style="list-style-type: none"> Perform more collections cases with system optimizations <ul style="list-style-type: none"> Secure more money Stop the bleeding Cut down on overhead costs (gas; wear and tear on vehicles) <p>Transparency</p> <ul style="list-style-type: none"> Thorough understanding field collector actions Effective, real-time communication that is logged <p>Automation</p> <ul style="list-style-type: none"> Let the system automate the manual work to free up users to do higher value tasks Perform ad-hoc changes to field techs schedules with minimal effort Capture all data on a mobile device (decrease data errors) <p>Data-Driven Decisions</p> <ul style="list-style-type: none"> Let the business based algorithms help depict high-value work (i.e. mostly likely to perform a function onsite) Capture more data easily (i.e. meter pictures) <p>Voice of the Customer: hear the discontent from users and make system changes in weeks not months</p>

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Agenda

<u>Topic</u>	<u>Time</u>	<u>Presenter</u>
Opening Remarks / Meeting Objectives	0900-0905	JJ
Action Item Follow Up	0905-0910	KC
Program Update – The First Three Weeks	0910-0935	JJ
<ul style="list-style-type: none"> • Kick Off • Workshops • Leadership Alignment Activities • Design Authority • Pilot 		
Program Status	0935-0940	KC
Program Staffing Plan Update	0940-0950	KC / JJ
Business Assurance Partner Update	0950-0955	CF
Meeting Close & Feedback	0955-1000	JJ

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Gas Enablement Program Status

Scope Status And Impacts	Schedule																								
<div>1. Scope Status: Unchanged from 5 May 16 SG endorsement</div> <div>2. Scope Change Requests: None pending / planned</div> <div>3. Next Scope "Inflection Point": As-Is analysis is enabling scope refinement</div> <div>4. Delivery Approach changes: Evaluating Agile Technology Pilot however no impact to Program timelines, scope or budget is anticipated</div> <div>5. Major Schedule / Deliverable Changes: None planned / anticipated</div> <div>6. Customization KPI (TBD)</div>	<div>1. Key Upcoming Milestones and Deliverables:<div><div>a) Initiate Change Impact Assessment (8/22)</div><div>a) Initiate Data Analysis (8/22)</div><div>c) Initiate Software Selection process (8/22)</div><div>d) Review Current State Architecture draft (8/22)</div><div>e) Continue As – Is work</div></div></div> <div>2. Activities completed<div><div>a) As-Is, Current State assessments kicked off on 8 Aug</div><div>b) Program Internal Kick-Off complete</div></div></div> <div>3. Upcoming activities:<div><div>a) Review "Plan" Deliverable assessment by PWC</div><div>b) Continue Hub and other PM process deployments</div></div></div> <div>4. There are no schedule slippages</div>																								
Resources	Risk																								
<table><tr><th>Staffing</th><th>Plan</th><th>Actual</th><th>In-progress</th><th>Open</th><th>Trend</th></tr><tr><td>Total</td><td>31</td><td>19</td><td>12</td><td></td><td><div><div></div><div></div><div></div></div></td></tr></table> <table><tr><th>Finance / Budget Activity</th><th>Status</th><th>Trend</th></tr><tr><td>Program Budget Submitted</td><td><div></div></td><td><div></div></td></tr><tr><td>Forecasted spend (against targets)</td><td><div></div></td><td><div></div></td></tr><tr><td>h. Financial Reporting</td><td><div></div></td><td><div></div></td></tr></table>	Staffing	Plan	Actual	In-progress	Open	Trend	Total	31	19	12		<div><div></div><div></div><div></div></div>	Finance / Budget Activity	Status	Trend	Program Budget Submitted	<div></div>	<div></div>	Forecasted spend (against targets)	<div></div>	<div></div>	h. Financial Reporting	<div></div>	<div></div>	<div>1. Planning is underway to conduct a formal risk workshop</div> <div>2. A risk register has been started and will become a component of the Program Hub meetings</div> <div>3. Engagement with the National Grid Risk Management Team has been initiated</div> <div>4. The current draft risk register can be found in the appendix</div> <div>5. There are no known imminent risks that could impact the program</div>
Staffing	Plan	Actual	In-progress	Open	Trend																				
Total	31	19	12		<div><div></div><div></div><div></div></div>																				
Finance / Budget Activity	Status	Trend																							
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Forecasted spend (against targets)	<div></div>	<div></div>																							
h. Financial Reporting	<div></div>	<div></div>																							
<div>1) Capitalization and work order structure is being defined to facilitate accurate and sustainable cost capture and reporting</div> <div>2) Recruiting activity is accelerating</div> <div>3) 3 GDP interviews will begin week 8/22</div>																									

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Our staffing model continues to evolve based on refinement of work approaches and plans

- Based on our early planning, on Aug 1 the Program identified 14 key open roles in Wave 1 (out of 31)
- Subsequently, our plan has been adjusted to reflect a better understanding of priorities, work approaches and timing. 12 Key Wave 1 roles have been identified and are in progress

Staffing Plan as of 1 Aug			Staffing Plan as of 23 Aug		
Position	Target Date	Status	Position	Required By	Status
Process Lead: Data	Sep 12	Offer letter	Filled	8/29	Accepted, inbound
Delivery Lead Fin Controls	Aug 1	Open	Active	9/30	Posn being defined with HR / FI
Delivery Lead Process Controls	Aug 1	Open	Move to Wave 3	1/1	Leverage PEX this Phase
Pilot Business SME's (3ea)	Aug 1	Open	Eliminated	NA	Removed from Plan
Solution Architect	Aug 1	Offer	Active	9/15	Declined, Re-interviewing
Data Architect	Sep 1	Open	Active	9/15	Interviewing
PSC Project Manager	Aug 1	Open	Active	Oct 1	Position being defined with HR
AFT Project Manager (3 ea)	Aug 1	Open	Active	Oct, Nov, Dec	Position being defined with HR
Portfolio Mgt Specialist	Aug 1	Open	Active	Oct 1	Banding complete
Resource Analyst	Aug 1	Open	Move to Wave 2	Nov 1	Position being defined with HR
Func Lead - Asset Management			Active, Wave 2 to 1	9/15	Interviewing
Func Lead - Workforce Mgt			Active, Wave 2 to 1	9/15	Interviewing
Funct Lead - Customer Exp			Active, Wave 2 to 1	9/15	Interviewing
Communications Manager			Active, Wave 2 to 1	10/1	Interviewing
Total Key Positions to be filled for Wave 1	14		12		

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Strategic Assessment Review - PwC

³/₄ To be provided during the meeting

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Meeting close

- ¾ AOB
- ¾ New Action Item Summary
- ¾ Leadership Pulse Check and Closing Remarks

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Appendices



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Sandy Jones, Accenture Strategic Assessment, Engagement Partner

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Sandy Jones is the North America Digital Field Worker Lead and a Managing Director for Accenture. In this leadership role Sandy is responsible for Accenture's projects in work/asset management, scheduling and mobility. Sandy has 25 years of experience working with gas transmission and distribution organizations and specializes in large scale program change with process re-engineering. Sandy led Accenture's Midstream Pipeline Market from 2013-2015 and is published in the Pipeline & Gas Journal. Sandy received her M.B.A. in Business Strategy and Organizational Behavior from Rennselaer Polytechnic Institute and her B.S. in Industrial Distribution from Clarkson University.

Selected Relevant Experience

- 34 Large Gas Pipeline and Gas Distribution Company—4 Year Transformation Program
 - 34 Developed operating model design and corresponding organization structural design.
 - 34 Generated business case with detailed cost estimates and benefits for a multi-faceted program of over 20 initiatives delivered within approved budget
 - 34 Delivered key organizational changes across 2800 employees.
 - 34 Deployed Maximo, Copperleaf, GIS Consolidation on ESRI and PragmaCad Scheduling and Mobile.
- 34 Mid-sized Gas and Electric Utility—6 Year Program Leadership for:
 - 34 Development of a service-oriented architecture and deployed governance model.
 - 34 Deployment of a new Network Operations Center fitted with tools and dashboards integrated with Systems Operations Center.
 - 34 Asset Management and Operations operating model design and organization restructuring including process ownership and improvement function.
 - 34 Procurement category analysis to identify tangible operational savings.
 - 34 Capital Projects management analysis and roadmap development.
 - 34 Customer service system replacement (SAP CR&B) with integration to Meter Data Management, etc.
- 34 Large Southeast Gas and Electric Utility—Operations Transformation Multi-Year Program
 - 34 Business case development and detailed estimate of end to end Operations Technology program
 - 34 Managed business process standardization and alignment through change management
 - 34 Deployed Maximo for work management, asset management, and supply chain for gas and electric organizations
 - 34 Operational performance management process and tool deployment.
 - 34 Business case development with detailed cost estimates and benefits identification.
- 34 North America Pipelines Market Lead—2 Year Leadership for:
 - 34 Managed diverse portfolio of clients from the energy and utilities sector that span upstream, midstream and downstream sectors.
 - 34 Assisted trade organizations with thought leadership development on intelligent pipeline management and asset data roadmap strategies.

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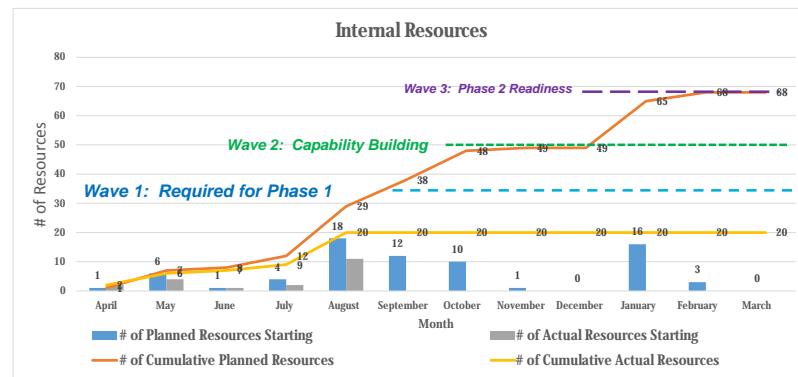
Steering Group Action Item List (complete)

	Action	Owner	Assigned	Due	Comment	Complete?
1	Ensure that Enablement is added to the QPR agenda	PS	10 Mar 16	1 Apr 16		Yes
2	To provide visibility of the expect impact of Gas Business enablement on the ability to run the business due to a potential talent drain.	JJ	10 Mar 16	1 May 16	Phase 1 key roles have been filled with Business Leadership engagement and support. Subsequent staffing requirements will be reviewed regularly with the Design Authority	Aug 16
3	To identify the appropriate approach to ensure that the SG has visibility to the level of customization being undertaken by the project.	JJ	10 Mar 16	1 Oct 16	Pending	
4	To share the rate case strategy and ensure that any appropriate costs are included in the MA Gas rate case.	JJ	10 Mar 16	1 Jul 16	Action Plan: 1) Engaging with NY rate case team 2) Coordinating with MA to include GE costs in the MA Gas case 3) Will work with Finance to deploy effective tools and processes to capture and report rate case data 4) Insure GE business case is rate case enabling	Aug 16
5	Advise SG on Powerplan solution options impacting the Program	JJ	5 May 16	Nov 16	Rescheduled for Nov Update	Y
6	Review GBE Scope with Finance Remediation	KH	5 May 16	June 16	Rescheduled by Fin – working with RQ for new date	
7	Add controls development to design phase success criteria	KH	5 May 16	June 16		Yes
8	Update the SG on proposal detail and procurement process status and selection criteria	JJ	5 May 16	June 16		Yes
9	Align CWIP and GE programs and incorporate into GE program risk matrix as appropriate	KC	24 June 16	Aug 16	Meeting scheduled for 22 August	Proj Aug 16
10	Invite Internal Assurance to participate in vendor oral presentations and proposal review	KC	24 June 16	July 16	Complete – Input received	Yes
11	Provide a follow-up on staffing progress and plans	JJ	1 Aug 16	23 Aug 16	In progress	

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The Program sanction will support activation of all three staffing waves



Staffing Process Highlights:

- While the program sanction will support activation of all three waves, evaluation of all staffing requirements will be ongoing
- The decision to activate Waves 2 and 3 will be based on criteria including
 - Timing, scope and likelihood of the Phase 2 sanction and kick-off
 - Early indications from the developing road map and business case
 - Value and quality

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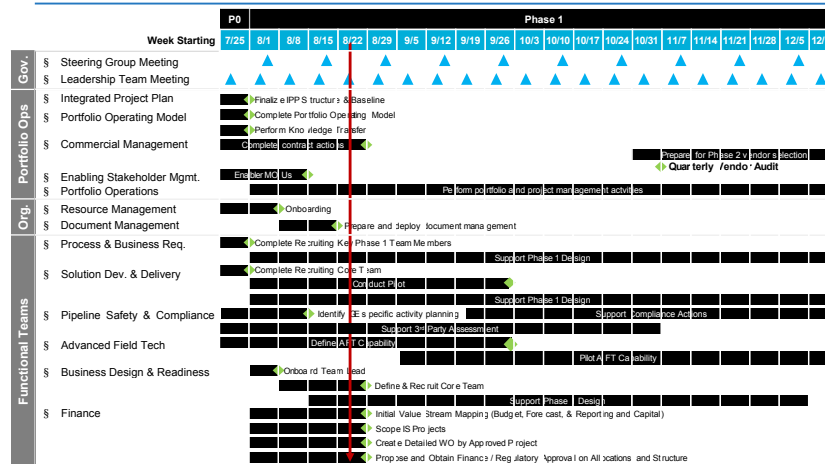


Draft Program Risk Register (under development)

Risk	Actions
Missing expectations on progress due to slow start	<ul style="list-style-type: none"> • Key LT members completing legacy commitments • Remaining LT member being on-boarded • Detailed plan and staffing model being developed concurrently with Partner proposals
Unsuccessful delivery due to scope creep and overlap with other initiatives	<ul style="list-style-type: none"> • Building scope around business case – will use Steering Group to baseline scope and any changes going forwards • Reporting spending to plan (i.e., budget) monthly • Coordinating with Growth Playbook initiatives to avoid duplication or gaps with other activities
Risk to delivery due to business/IS capacity limitations	<ul style="list-style-type: none"> • Will track progress and escalate specific areas of risk/concern to Steering Group and through cadence • Proactively engaging with Business and Function stakeholders to identify support requirements and potential staffing constraints • Developing integration model to identify IS dependencies and constraints
Delays in labor union engagement could impact workshop participation	<ul style="list-style-type: none"> • Develop engagement plan • Aggressive follow-through on engagement activities • Identify SME alternates
Lack of formal data quality analysis could impact design activities	<ul style="list-style-type: none"> • Early engagement with National Grid SME's and Points of Contact to identify potential issues • Identify potential workarounds and incorporate into the work plan prior to task initiation
Short term, required compliance mitigation activities could negatively impact the deployment of long term plans	<ul style="list-style-type: none"> • Complete 3rd Party Compliance Assessment • Develop comprehensive action plan to address findings • Identify and prioritize urgent actions and evaluate any negative impacts to the long term activities (regret costs, program expenses etc) • Develop detailed mitigation plans

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An Integrated program has been developed and subject to final detailed planning with our partners can be base-lined



We are Here

Legend: ◆ Key Milestone ▲ Key Meetings ■ Planned workstream

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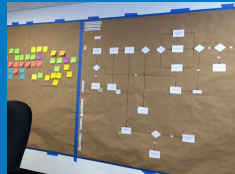
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Gas Business Enablement

Steering Group Pack



Johnny Johnston

29 September 2016 @ 0900 EST, Res Woods W3-003

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Meeting Objectives

1. Obtain Steering Group endorsement of Design Authority decisions on Gas Business strategic capability targets, opportunities and priorities
2. Provide an overview of key High Level Design activities to date

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Action Item Follow Up

	Action	Owner	Assigned	Due	Comment	Complete?
3	To identify the appropriate approach to ensure that the SG has visibility to the level of customization being undertaken by the project.	JJ	10 Mar 16	1 Oct16	Pending	
5	Advise SG on Powerplan solution options impacting the Program	JJ	5 May 16	Nov 16	Rescheduled for Nov Update	
6	Review GBE Scope with Finance Remediation	KH	5 May 16	June 16	Update to Finance Leadership Team 9/14	Complete
9	Align CWIP and GE programs and incorporate into GE program risk matrix as appropriate	KC	24 June 16	Aug 16	Pending completion of CWIP Analysis	
11	Provide a follow-up on staffing progress and plans	JJ	1 Aug 16	23 Aug 16	Completed in 23 Aug SG Update	Complete

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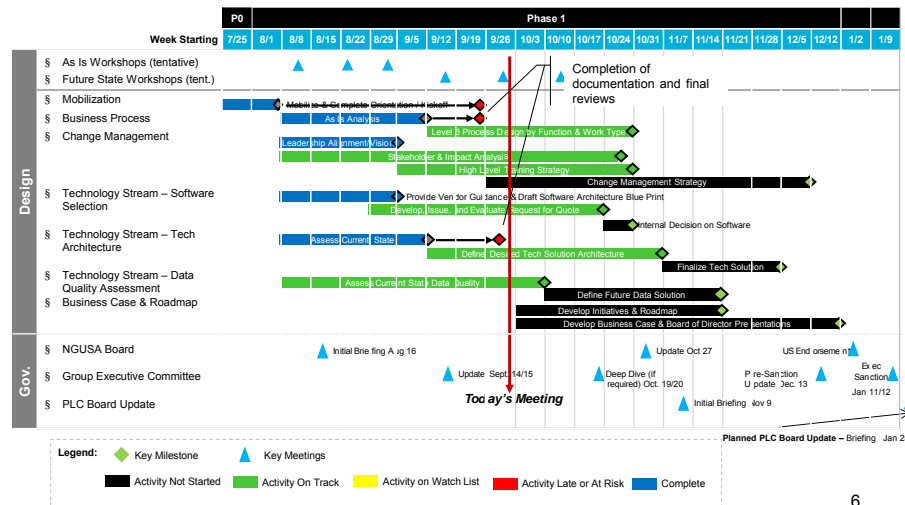


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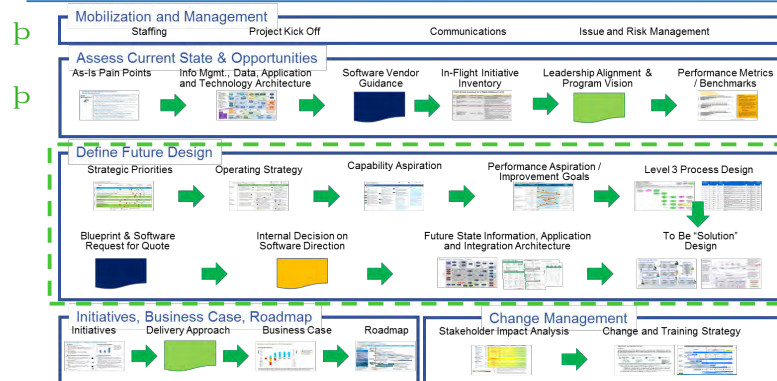
Overall, key Program activities remain on track however finalization of some deliverables is late. This is a focus area



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The Program is moving from current state assessment to future state design



- § Prepare for and Hold Future State “To Be” Design Workshops
- § Integrate Input of Executive Visioning / North Star Activities
- § Define Desired Technology Solution Architecture

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“As Is” Workshops have been completed

The current state assessment was a four week study engaging the business with core process teams consisting of National Grid and Accenture. The team was divided into two work streams with Customer and Data embedded within those groups:

- ¾ Work & Contractor Management
- ¾ Asset Management

Common themes emerged from the sessions collected from the pain points. The findings shape our opportunities and future state aspirations

Workshop success factors	Outcomes
Level of Engagement	<ul style="list-style-type: none"> High level of engagement and positive feedback received by core teams and GE leadership through 17 workshops
Organizational Outreach	<ul style="list-style-type: none"> Conducted workshops in each operating company with 32 organizations participating
Relevant data collection	<ul style="list-style-type: none"> 426 pain points collected (initially and refined) categorized by Data, Reporting & Metrics, Regulatory, Role Based, Process, System, and Customer Experience
Holistic view of current state	<ul style="list-style-type: none"> Process nuances by operating company and type of work defined distinctly along with associated systems and roles performing specific process steps

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Current state findings in work management and customer experience

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Common Themes		High Level Pain Points	Future State Aspirations
1	Visibility of Work & Resources	<ul style="list-style-type: none"> Work initiated in multiple systems Not all work is added to a system; manual work arounds are common Work and resource statuses are not visible to relevant stakeholders 	Increased automation between systems
2	Integration between Systems	<ul style="list-style-type: none"> Integrations between the customer, work management and dispatch tools are minimal Inconsistent processes and workaround tools (Excel, MS Access databases) used to manage work as it flows through the systems 	Single source of truth for relevant data
3	Data Accuracy	<ul style="list-style-type: none"> Heavy use of paper contributes to inaccuracy of data Data managed in multiple systems without definitive system of record 	Increase in regulatory compliance
4	Agility	<ul style="list-style-type: none"> Existing technology does not provide the flexibility to adapt to changing regulatory requirements and customer demands Relevant information not readily available to execute tasks 	Standardized and consistent processes
5	Roles & KPIs	<ul style="list-style-type: none"> Workaround processes create excessive administrative responsibilities for Field Supervisors Inconsistent metrics & KPIs hinder organizational best practice 	Consistent and reliable performance measures
6	Customer Visibility & Communication	<ul style="list-style-type: none"> Departments have minimal visibility into field activities or work status Limited self-service tools are available to customers; no confirmation or validation of work status or completion Customer communications are typically fragmented or non-existent for certain work types 	Increased first touch resolution
7	Customer Expectations	<ul style="list-style-type: none"> Inflexible appointment options do not meet the customer demand Inability to provide the customer with specific and accurate timeframes for long cycle work 	Improved long & short term forecasts/plan and relevant activities
			Increased supervisor time in the field
			Improved customer satisfaction

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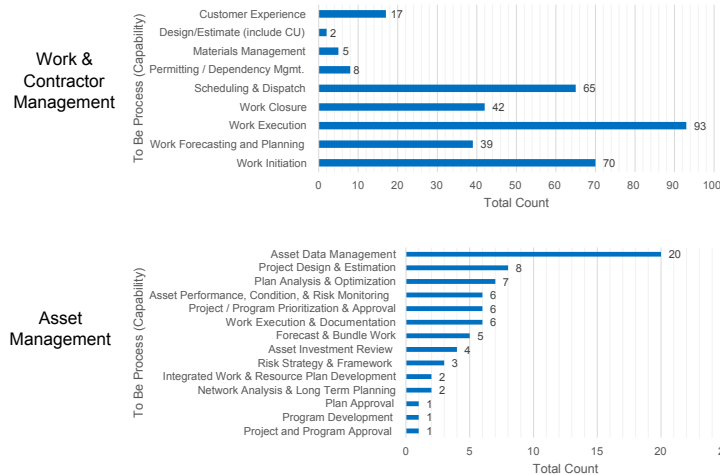
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Current state findings in asset management

Common Themes		High Level Pain Points	Future State Aspirations
1	Design and Construction Execution Inconsistencies	<ul style="list-style-type: none"> Roles responsible for Design through the Construction process varies significantly across jurisdictions Variation of Work Package expectations and common understanding of Standard Design and Complex Design across and within jurisdictions 	<p>Opportunity to conduct asset risk consistently for all asset classes, across asset classes, and across jurisdictions.</p> <p>Opportunity to improve the sanctioning process. This includes multiple grades of design/estimate and a distinction between project/program approval and plan approval as well as building a multi-year pipeline of work.</p>
2	Data Quality Impacts Asset Decision Making	<ul style="list-style-type: none"> Asset Data Quality is a common concern and foundational for asset decision making Duplicate data entry in the field (4 different systems for a service install) 	<p>Opportunity to have a more complete (e.g., service lines, conflation resolved) network connectivity model in the GIS and a single GIS across jurisdictions.</p>
3	Asset Risk Prioritization Process	<ul style="list-style-type: none"> A more holistic view across the network and among asset classes is needed for enhanced decision making Lack of a consistent asset register (EAM, GIS, etc.) 	<p>Opportunity to streamline the design, estimate, and as-built process from a role, process, and technology perspective to drive consistency.</p>
4	Mapping System Challenges	<ul style="list-style-type: none"> Mapping system constraints lead to inaccurate models and design errors resulting in changes during construction 	<p>Opportunity to have a more consistent and dynamic asset data capture process not only from a work completion standpoint but also evolving PHMSA requirements.</p>
5	Design/Estimating Accuracy and Sanctioning Efficiency	<ul style="list-style-type: none"> Estimating, budgeting, and sanctioning timelines are crunched Inaccuracy of estimates leads to budgeting challenges 	
6	Resource Constraints Impact Asset Planning	<ul style="list-style-type: none"> Asset Managers are forced to revise their plans due to resource constraints 	

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These pain points have been mapped to capabilities to support effective “To Be” process design



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We have begun the Software Selection Process to inform the business case

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- P Early guidance and analysis on software vendors complete
- P Request for Information/Request for Quotation (RFI/RFQ) Issued 9/20 for “Exploration and Assessment”
- ¾ Responses due 10/7
- ¾ Planning for a quick transition to RFP to minimize downtime post-sanction

Vendors	Enterprise Asset Management	Resource Mgmt	Mobility
SAP	ü		ü
IBM	ü		ü
CGI	ü		
ABB	ü	ü	ü
ClickSoftware		ü	ü
Salesforce		ü	ü
Oracle		ü	ü

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Our Opportunity (Draft)



We are proud of what we do.

However, we are all frustrated - and the way we work doesn't meet our customers' and regulators' expectations, putting our future growth at risk.

It's our time to fix it/make a change - through employee-driven solutions to deliver industry-leading performance.

We are committed to invest in our business to unlock our passion and potential to build trust among ourselves, and with our customers, communities and regulators.

Our Service Territory offers the greatest opportunity for growth. We have talented people. Working together we will fix today and enable tomorrow.

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Objectives

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1) ***Approach to Strategic Priorities and Operating Strategy***

2) ***Strategic Priorities***

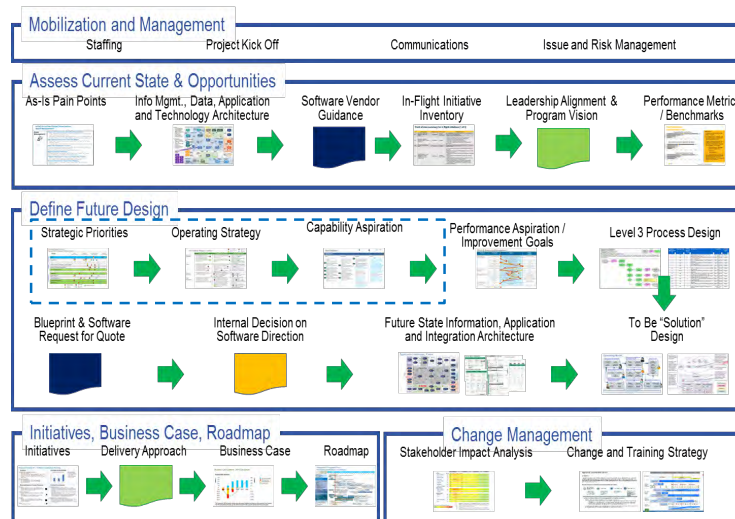
- ¾ Discussion about and endorsement of where the Gas Business should focus over the next 5 years

3) ***Operating Strategy***

- ¾ Discuss about and endorsement of operating model approach

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Approach of the GBE Program nationalgrid

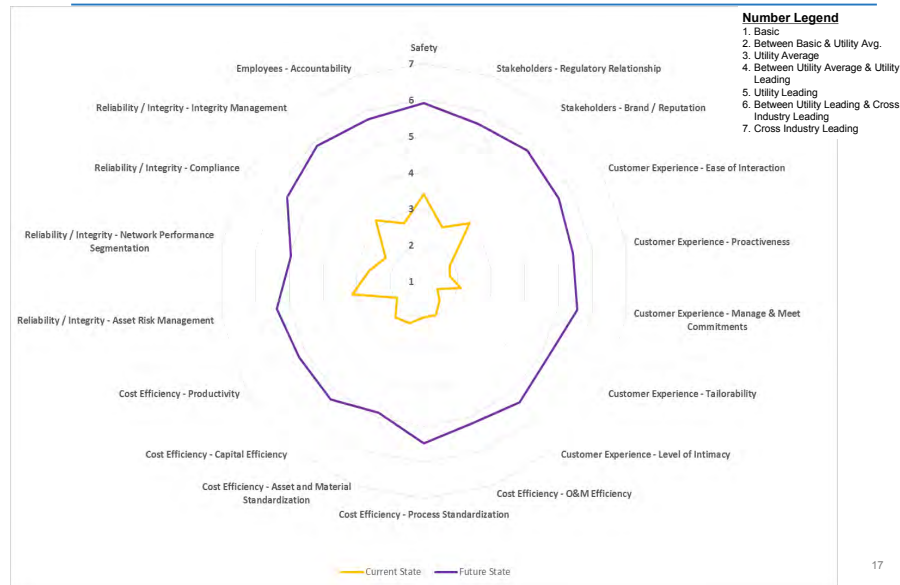


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Survey Results: All Responses

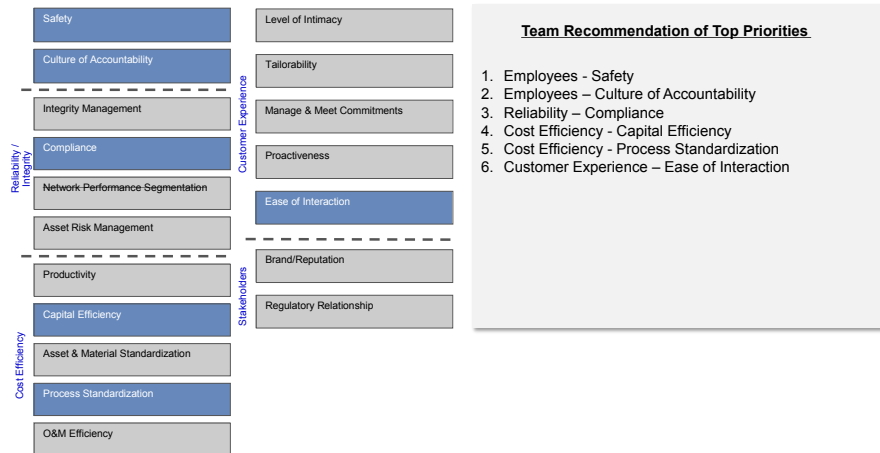
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Gas Business Strategic Priorities: Recommended Strategic Priorities

nationalgrid



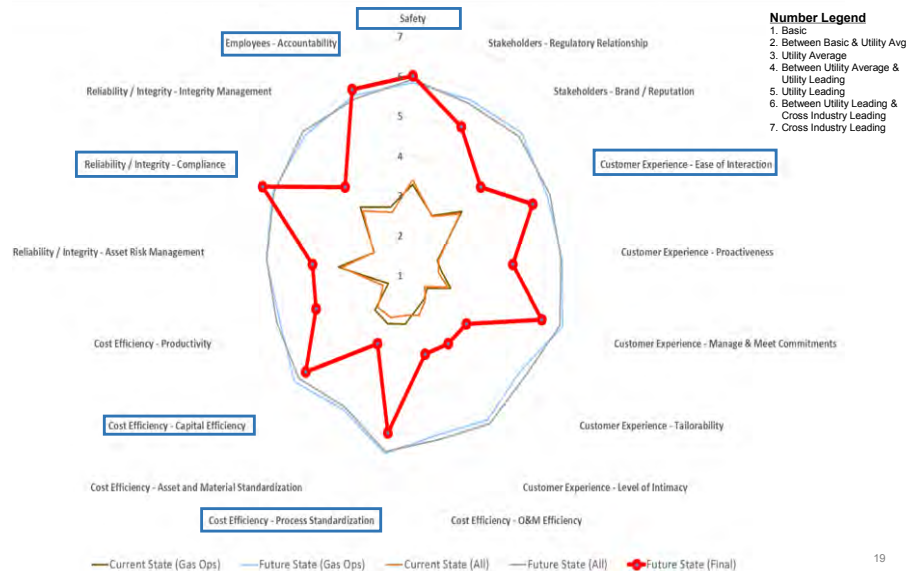
■ Recommendation_g

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Gas Business 3 to 5 year Ambition

Comparison current state assessment to aspiration of the gas business

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Operating Strategy nationalgrid

Operating Model Dimensions and Operating Strategy

*An **operating model** articulates where and how core work gets done across an organization
An **operating strategy** involves making decisions with regard to the operating model to optimize the
deployment of resources to deliver an organization's strategic objectives and achieve its goals.*

Six Dimensions of an Operating Model

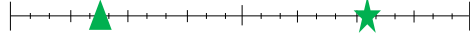
- ¼ **Organization Architecture:** How the capabilities are grouped and the people organized to deliver the company's objectives and goals
- ¼ **People & Culture:** The skills and experience, roles and job positions, desired behaviors, and mindset required to develop, cultivate, and retain talent.
- ¼ **Process Architecture:** The detailed processes for all core activities including responsible roles, key interactions, coordination points, and handoffs.
- ¼ **Technology, Information, and Data:** The overall technology blueprint and information and data architectures and how the technology enables the model.
- ¼ **Performance Framework:** How performance will be measured including line of sight to strategic objectives, scorecards, metrics and targets, and mechanism to build performance metrics and targets into the people performance management system.
- ¼ **Governance:** The overall governance structure, key governance bodies and membership, and decisions rights.

Operating Strategy Decisions

- ¼ Critical decisions required to define elements of an operating model.
- ¼ Decisions on optimization and deployment of resources ensuring effectiveness of the organization to deliver on its strategic priorities.
- ¼ **Focus for Today:**
 - ¼ **Centralization** - How should the organization be organized? How centralized? à **Organization Architecture**
 - ¼ **Standardization** - How standardized should the organization be? à **Process Architecture**

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Standardization Category: People & Culture, **nationalgrid**
Process Architecture, Technology, Performance Framework

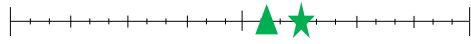
Topic	Spectrum
<p>In general, how standardized is the current business / operations and what level of standardization should it be in the future?</p> <p><i>Key Questions / Considerations</i></p> <ul style="list-style-type: none"> • How similar or dissimilar are the geographies / jurisdictions? • Will one approach work for all geographies / jurisdictions? • Are there regulatory elements that may prevent standardization? 	<p>Locally / Geographically Tailored</p> <p>Standardized, "One National Grid Way"</p>  <p>Flexibility to apply what is needed, when, and where.</p> <p>Unified, standardized execution.</p> <p>Current State Differences in processes, technology, data / information, organization / role, and metrics / KPIs exist across jurisdictions and in some cases within jurisdictions despite prior efforts to standardize.</p> <p>Future State Desire to get to one system with flexibility to meet jurisdictional regulatory requirements and recognize regional and geographic differences (e.g., upstate vs. downstate NY).</p>

▲ Current State ★ Future State

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Centralization Category: *Organization Architecture* nationalgrid

Topic	Spectrum
<p>In general, how centralized are capabilities today and how centralized should they be in the future?</p> <p><i>Key Questions / Considerations</i></p> <ul style="list-style-type: none"> • Will the current level of centralization support strategic objectives and goals? • Would further centralization and dedicated Centers of Excellence better support strategic objectives and goals? • Is local accountability and presence important or critical to achieving strategic objectives and goals? 	<div style="text-align: center;"> <p>Decentralized, Local Model Centralized Model</p>  </div> <p style="text-align: center;">Local accountability, responsive to customers, workers, and the community. Centralized capabilities and accountability.</p> <p>Current State Pre-established conceptual model of key functions (e.g. scheduling, design) are already centralized.</p> <p>Future State Favor a tendency toward centralized standards and process with flexibility for local execution; keep centralized functions that exist, build for future with more centralized functions as appropriate / when makes sense / value; regional presence important in jurisdictional model for customer engagement and local knowledge.</p>

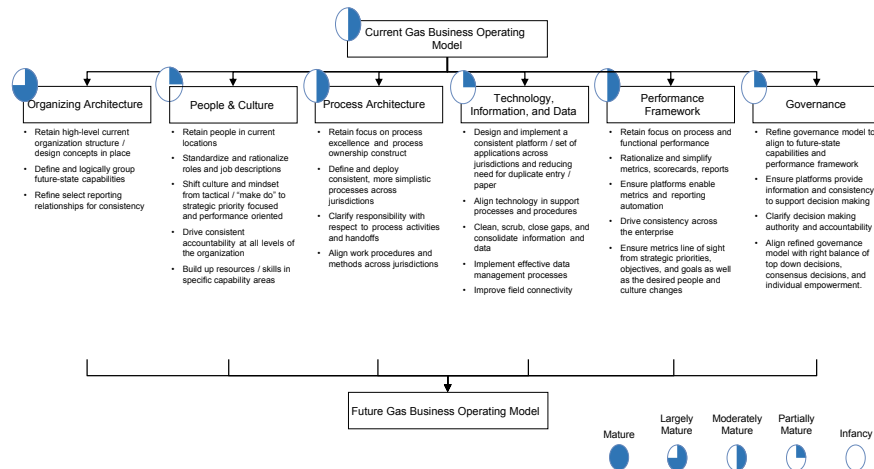
 Current State
  Future State

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Operating Strategy: Current Perspective on Maturity of Current Operating Model

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An evaluation of the current Gas Business operating model using the key takeaways from the GBE Leadership working session shows progress toward industry leading characteristics reflected by maturity across a few key dimensions (e.g., organizing architecture, process architecture, and performance framework) but also shows significant room to improve across the remaining key dimensions (e.g., people & culture, technology, and governance).



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Agenda

<u>Topic</u>	<u>Time</u>	<u>Presenter</u>
Opening Remarks / Meeting Objectives	0900-0905	JJ
Action Item Follow Up	0905-0910	KC
Current State Assessment – Highlights	0910-0915	JJ
“Strategic Decisions”	0915-0940	JJ
Pilot Program Wrap-Up	0940-0945	JJ
Program Status	0945-0950	KC
Business Assurance Partner Update	0950-0955	CF
Meeting Close & Feedback	0955-1000	JJ

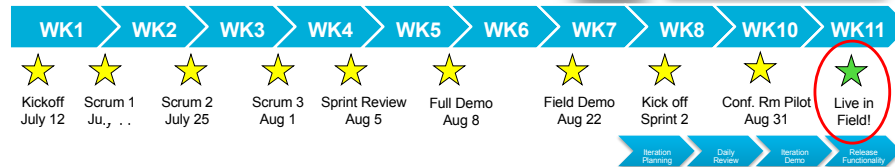
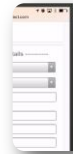
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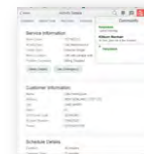
The Technology Pilots are driving toward completion

We have successfully completed the agile technology pilot for LI; The Stopped Meter pilot in upstate NY continues on track

Collections: The Field Techs, Dispatchers and Supervisors we're able to use the newly developed solution in the field for live work.



Stopped Meter: Development for sprint 1 has been performed for the mobile field tool and is undergoing stakeholder review



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Gas Enablement Program Status

Scope Status And Impacts							Schedule Highlights																																																																	
<div>1) Scope Status: Unchanged from 5 May 16 SG endorsement</div> <div>2) Scope Change Requests: Compliance – Field Training, RFP active, evaluating impacts to plan and budget</div> <div>3) Next Scope "Inflection Point": 3rd Party Compliance Assessment / Gas Enablement Alignment Meeting 9/29</div> <div>4) Delivery Approach changes: Evaluating Agile Technology Pilot however no impact to Program timelines, scope or budget is anticipated</div> <div>5) Major Schedule / Deliverable Changes: Continuing to refine Pipeline Safety and Compliance and Advanced Field Technology to define key milestones and deliverables</div> <div>6) Customization KPI (TBD)</div>							<div>1) Key Milestones and Deliverables:</div> <div>1) Initiated To Be Workshops - 9/20</div> <div>2) Initiated Future State Technology Analysis - 9/13</div> <div>3) Software Selection in "RFQ" Phase – TBC 10/21</div> <div>4) Compliance Integration begins 9/29 – 11/30</div> <div>2) Activities completed</div> <div>1) As Is Workshops, and Current State Architecture Analysis</div> <div>2) North Star Leadership Engagement</div> <div>3) Upcoming activities:</div> <div>1) 3rd Party Compliance Analysis / GE Prog Alignment – 9/29</div> <div>2) Prepare for Gas Business Accelerate Event -10/12-13</div> <div>4) Schedule status: Work progress, but final documentation of "As Is" deliverables lags</div>																																																																	
Resources							Risk																																																																	
<table><tr><th>Staffing</th><th>Plan</th><th>Actual</th><th>In-progress</th><th>Open</th><th colspan="2">Trend</th></tr><tr><td>Total</td><td>31</td><td>20</td><td>11</td><td></td><td colspan="2"><div><div></div><div></div><div></div></div></td></tr><tr><td colspan="5">Finance / Budget Activity</td><td>Status</td><td>Trend</td></tr><tr><td colspan="5">Program Budget Submitted</td><td><div><div></div><div></div><div></div></div></td><td><div><div></div><div></div><div></div></div></td></tr><tr><td colspan="5">Forecasted spend (against targets)</td><td><div><div></div><div></div><div></div></div></td><td><div><div></div><div></div><div></div></div></td></tr><tr><td colspan="5">Financial Reporting</td><td><div><div></div><div></div><div></div></div></td><td><div><div></div><div></div><div></div></div></td></tr></table>							Staffing	Plan	Actual	In-progress	Open	Trend		Total	31	20	11		<div><div></div><div></div><div></div></div>		Finance / Budget Activity					Status	Trend	Program Budget Submitted					<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	Forecasted spend (against targets)					<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	Financial Reporting					<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<table><tr><th colspan="4">Top Three Risks</th></tr><tr><th>Risk</th><th>Prob</th><th>Impact</th><th>Mitigation Status</th></tr><tr><td>Missing Expectations on progress due to slow start or late Phase 1 Completion</td><td>Med</td><td>Very High</td><td>Mitigated - Monitoring</td></tr><tr><td>Risk to Delivery Due to IS and Business capacity limitations</td><td>High</td><td>High</td><td>Mitigated - Monitoring</td></tr><tr><td>Gaps in data and/or our understanding of quality and availability</td><td>High</td><td>High</td><td>Mitigation plan under development</td></tr></table>				Top Three Risks				Risk	Prob	Impact	Mitigation Status	Missing Expectations on progress due to slow start or late Phase 1 Completion	Med	Very High	Mitigated - Monitoring	Risk to Delivery Due to IS and Business capacity limitations	High	High	Mitigated - Monitoring	Gaps in data and/or our understanding of quality and availability	High	High	Mitigation plan under development
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<div>1) People: 11 Offers made for early / mid Oct starts</div> <div>2) Evaluating and preparing for Wave 2/3 requirements (up to an additional 36)</div> <div>3) August financial reporting – identified significant positive variance to plan – 7 FTEs charging old acctg, Invoice timing</div> <div>4) Aligning Business / Program compliance budgets</div>							<div>1) First formal Program First formal Program risk workshop conducted on 9/12, follow-ups being planned</div> <div>2) Linkage of Program and Enterprise risk management processes to take place in mid Oct (date tbd)</div>																																																																	

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Strategic Assessment Review - PwC

¾ Deliverables reviewed

¾ Current State Business "Pain Point / Gap" Inventory and Opportunity analysis
Addresses the various elements of a customer experience, work and asset management system
(i.e. people, structure, process, applications/technology, data, reporting/metrics and culture)

¾ Deliverable review process - adjusted to give PwC
a proactive preview – and reduce rework

Intensity of deliverable
production and review is due to
pick up strongly

Observations	Recommendations
Initial To-Be Modeling workshops performed at too high a level – this would miss key benefits to be derived from this strategic assessment	<ol style="list-style-type: none"> 1) To-Be Modeling must be at Level 3 detail (Processes and process steps) 2) Opportunities, pain points and applications should be linked to process steps; use swim lanes or link steps to roles 3) Start with a leading practice baseline - workshop leads should add value in discussing opportunities and leading practices – create the to-be vision
Opportunity analysis missed on Deliverable 2 (above)	<ol style="list-style-type: none"> 1) Review the pain point list and link to opportunities 2) Develop list of opportunities to be addressed in To-Be design for each business capability (e.g. leading practices; gaps; new technology; relevant strategic priorities)
Prior key observation	
Ensure Assessment approach and plan includes clear linkage to business strategies and outcomes	<p>Include project activities to develop tactics/levers that will enable strategies and link these to required business capabilities – ensure program is truly outcome-driven</p> <p>Remedial action to date – strategic priorities have been developed (first tier of levers)</p>

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Meeting close

- ¾ AOB
- ¾ New Action Item Summary
- ¾ Leadership Pulse Check and Closing Remarks

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Appendices

Action Item Log
Risk Register
Program Schedule
LI Collections Pilot Overview

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Steering Group Action Item List (complete)

	Action	Owner	Assigned	Due	Comment	Complete?
1	Ensure that Enablement is added to the QPR agenda	PS	10 Mar 16	1 Apr 16		Yes
2	To provide visibility of the expect impact of Gas Business enablement on the ability to run the business due to a potential talent drain.	JJ	10 Mar 16	1 May 16	Phase 1 key roles have been filled with Business Leadership engagement and support. Subsequent staffing requirements will be reviewed regularly with the Design Authority	Aug 16
3	To identify the appropriate approach to ensure that the SG has visibility to the level of customization being undertaken by the project.	JJ	10 Mar 16	1 Oct 16	Pending	
4	To share the rate case strategy and ensure that any appropriate costs are included in the MA Gas rate case.	JJ	10 Mar 16	1 Jul 16	Action Plan: 1) Engaging with NY rate case team 2) Coordinating with MA to include GE costs in the MA Gas case 3) Will work with Finance to deploy effective tools and processes to capture and report rate case data 4) Insure GE business case is rate case enabling	Aug 16
5	Advise SG on Powerplan solution options impacting the Program	JJ	5 May 16	Nov 16	Rescheduled for Nov Update	
6	Review GBE Scope with Finance Remediation	KH	5 May 16	June 16	Rescheduled by Fin – working with RQ for new date	9/14
7	Add controls development to design phase success criteria	KH	5 May 16	June 16		Yes
8	Update the SG on proposal detail and procurement process status and selection criteria	JJ	5 May 16	June 16		Yes
9	Align CWIP and GE programs and incorporate into GE program risk matrix as appropriate	KC	24 June 16	Aug 16	Pending completion of CWIP Analysis	Proj Aug 16
10	Invite Internal Assurance to participate in vendor oral presentations and proposal review	KC	24 June 16	July 16	Complete – Input received	Yes
11	Provide a follow-up on staffing progress and plans	JJ	1 Aug 16	23 Aug 16	Complete	8/23

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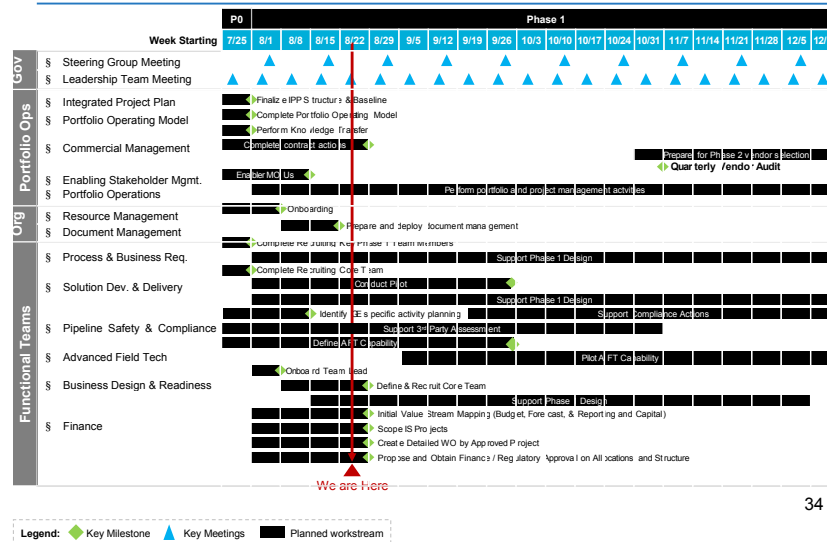
Program Risk Register – 9/23

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Raised by	Date Raised	Probability	Impact	Description & Potential Impact Gaps in our understanding of current state data quality and completeness, as well as our reliance on anecdotal evidence could have negative impacts on our roadmap and business case. - Bad assumptions, unanticipated risks etc.	Planned Action to Prevent Under development	Owner	Due Date	Status	Date Closed/Canceled/Deferred	Notes/Update	Phase Identified	Impact	Category	Impacted Item
Connolly, Christopher	09/12/2016	High	High	The program is dependent on multiple services and SMEs, primarily for the Functional Business Support design and SME availability could impact timelines	Mitigation - proactive planning and coordination, proactive engagement, IS integration model	Connolly, Christopher	09/12/2016	In Progress		9/13 - assigned to Nick Reed to identify a cross team working group and mitigation plan. 9/22 - scheduled for review in 9/28 PLT	Phase 1	High	Program	High Level Design
Johnston, Johnny	03/01/2016	High	High	The design and data to one software solution for each software category. If this is not possible, it will raise the level of complexity of our future state design and increase costs and lengthen timelines in both Phase 1 and Phase 2	Under development	Johnston, Johnny	12/22/2016	Solution Proposed		Mitigation - proactive planning and coordination, proactive engagement, IS integration model	Phase 1	High	Delivery	High Level Design
Houchins, Geraldine	09/12/2016	Medium	High	If we don't complete our staffing process by our target date we will mean that we have insufficient resources to effectively plan and deliver Phase 2 projects. This could result in delays, increased costs	Under development	Murphy, Chris-UST	09/28/2016	In Progress		9/13 CH and CH to further define the risk and propose a mitigation plan. 9/22 Scheduled for PLT review 9/28	Phase 1	High	Program	High Level Design
Healy II, Kenneth	09/26/2016	Medium	High	A disproportionate emphasis on short compliance fixes could consume the time, resources and expertise required to search and sustain longer term fixes		Dallanios, J'Wynn	10/1/2016	In Progress			Phase 1	High	Staffing	PM
McNamara, Daniel F.	08/01/2016	Medium	High	Does the program have the sufficient team depth to overcome the effects of unplanned departures	Complete 3rd Party Assessment, develop integrated plan to deliver recommendations, perform trade off analysis (short vs long term) develop detailed plans for Business and GE Compliance activities	McNamara, Daniel F.	12/22/2016	Solution Proposed		Complete 3rd Party Assessment, develop integrated plan to deliver recommendations, perform trade off analysis (short vs long term) develop detailed plans for Business and GE Compliance activities	Phase 1	High	Delivery	Compliance
Connolly, Christopher	09/12/2016	Medium	Low	Not accounting for the impacts/integration points/risks/complexity between GE and other programs could cause scope overlaps and/or conflicts. This could result in increased costs or delays in schedules	Under development	Dallanios, J'Wynn	09/21/2016	In Progress		9/13 JD to further define the risk and coordinate development of a mitigation plan. 9/22 - scheduled for review in 9/28 PLT	Phase 1	Low	Program	High Level Design
Boyd, Stephan	09/12/2016	Medium	Medium	potentially a risk around enablement keeping joined up with other initiatives - eg. Super Service Enablement and strategic workforce planning	Under development	Murphy, Chris-UST	09/28/2016	In Progress		9/13 - Assigned to Chris M to further define the risk and to develop a mitigation plan. 9/22 KCH - scheduled for review in 9/28 PLT	Phase 1	Medium	Program	High Level Design
Johnston, Johnny	09/21/2016	Medium	Medium	Failure to engage represented employees in the as is/ to be design process could mean that critical information, observations and expert inputs are missing from the high level design process	Develop engagement plan, aggressive follow-through, identify SME alternatives	Dallanios, J'Wynn	10/1/2016	In Progress		This risk might possibly overlap with another risk, J'Wynn will this is a risk I will bring up in my 10/1 meeting as the HRBP's are very close to various initiatives within their design areas and there will be a good starting point	Phase 1	Medium	Workforce Planning	High Level Design
Johnston, Johnny	03/01/2016	Medium	Medium	Delays in starting the program in a timely manner will impact long term timelines. Failure to complete Phase 1 deliverables in a timely manner could delay the seconding process and further delay kick off of deployment work	See Program Plan Implement stage gating and daily PM processes, implement Governance	Connolly, Christopher	10/21/2016	Solution Proposed		Develop engagement plan, aggressive follow-through, identify SME alternatives	Phase 1	Medium	Quality	High Level Design
Johnston, Johnny	03/01/2016	Medium	Very High	Unplanned/unapproved changes to scope can drive program costs, impact timely delivery or compromise the quality of program outcomes		Johnston, Johnny	12/22/2016	Solution Proposed		See Program Plan, Implement stage gating and daily PM processes, implement Governance	Phase 1	Very High	Delivery	High Level Design
Johnston, Johnny	03/01/2016	Medium	Very High		- Mitigation: Build scope around business case, manage changes against baseline, report spending, coordinate the CPP initiatives	Johnston, Johnny	12/22/2016	Solution Proposed		- Mitigation: Build scope around business case, manage changes against baseline, report spending, coordinate the CPP initiatives	Phase 1	Very High	Delivery	High Level Design

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An Integrated program has been developed and subject to final detailed planning with our partners can be base-lined




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Agile Field Pilot: What we did...

Summary of Deliverables	Overview
<p>End-to-end collections process built in Salesforce Field Service Console and Salesforce 1 mobile application over three, <u>two week</u> Agile sprints:</p> 	<p>Pilot Development Duration:</p> <ul style="list-style-type: none">¾ 198 development hours¾ 84 project manager hours <p>Resources:</p> <ul style="list-style-type: none">¾ 3 Developers¾ 1 Scrum Master¾ 1 Project Manager¾ 1 Product Owner (Paula)¾ 4 Testers (Collections)¾ 1 Subject Matter Expert (Phil) <p>Requirements</p> <ul style="list-style-type: none">¾ Completed: 123¾ Backlog: 14
<p>Specifics</p> <ul style="list-style-type: none">¾ Integration of CSS meter data with Salesforce platform¾ Configured a dispatcher console¾ Built and enhanced a custom National Grid mobile application¾ Built multiple dashboards and reports¾ Deployed iPad/iPhone devices	

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Agile Field Pilot: How it went...

- ¾ "I love it" – Field Tech
- ¾ "We really like being involved, we feel like we are being heard" – Field Tech
- ¾ "Impressive" – Field Tech
- ¾ "I love how you can see what they are doing in the field real-time" – Dispatchers
- ¾ "The voice to text is absolutely amazing – please give us this iPad!" – Field Tech
- ¾ "It's so much more intuitive compared to MDSI – glad to see we are finally being innovative" - Field Tech



Day 1 (Existing Solution)		Day 2 (New Solution)		
Jobs Assigned	73	Assigned Jobs	109	↑
Completed*	61	Completed*	58	↑
Travel Time	15 minutes	Travel Time	6 minutes	↓
Job Duration	9 minutes	Job Duration	8 minutes	↓

*Time Cutoff: 330pm

*Time Cutoff: 100pm



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Retrospective Deep Dive Feedback

Positive Feedback	Improvement Feedback
Agile Process: <ul style="list-style-type: none"> ¾ Feedback is taken into consideration (field, dispatch) and implemented swiftly Hardware: <ul style="list-style-type: none"> ¾ Mobility – ability to take the iPad/iPhone platform out of the truck ¾ Ability to take pictures – document findings and picture of meter ¾ Ability to perform voice to text (for field notes) ¾ Connectivity – better connectivity with iPad vs. the Toughbook Software Application Platform: <ul style="list-style-type: none"> ¾ Mobile app is easy to use and intuitive ¾ Aid with route optimization ¾ Incentive dashboard ¾ Ability to see work performance real-time ¾ Voice turn notifications ¾ Free form fields for notes that are not limited 	Agile Process: <ul style="list-style-type: none"> ¾ Want to be involved even more moving forward, would prefer daily Scrums as compared to weekly ¾ Involve Field Techs and Dispatchers even earlier Hardware: <ul style="list-style-type: none"> ¾ Need mobile printing abilities – currently takes 5 minutes or more to write door tag ¾ Need mobile credit card reader – takes too long to take a credit card ¾ Real-time traffic information and street level optimization will further efficiencies Software Application Platform: <ul style="list-style-type: none"> ¾ Need to work on routing abilities w/ more business logic – jobs too far apart ¾ Apartments should be targeted first (even if they are not prioritized)

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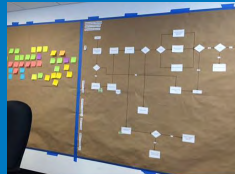
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Gas Business Enablement

Steering Group Pack



Johnny Johnston

24 October 2016 @ 0900 EST, Res Woods E1-938 Latimer

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Agenda

<u>Topic</u>	<u>Time</u>	<u>Presenter</u>
Opening Remarks / Meeting Objectives	0900 - 0905	JJ
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Meeting Objectives

1. Provide an overview of the business case development process to obtain Steering Group feedback, input and endorsement
2. Review software solution activities supporting business case and initiative planning to obtain Steering Group insight and perspective
3. Review As / Is and Future State Design highlights

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Action Item Follow Up

	Action	Owner	Assigned	Due	Comment	Complete?
3	To identify the appropriate approach to ensure that the SG has visibility to the level of customization being undertaken by the project.	JJ	10 Mar 16	1 Oct16	Phase 1: <ul style="list-style-type: none"> Formalize the design principle to minimize, customizations Provide a view of where customizations might be required in Phase 2 based on what we know. Phase 2: <ul style="list-style-type: none"> All customizations will be approved by Chris Murphy and Johnny Johnston and formally reported to the Steering Group. 	Pending
5	Advise SG on Powerplan solution options impacting the Program	JJ	5 May 16	Nov 16	GE, in partnership with Finance, to sponsor study to identify plan, timings and costs to re-architect the integration of SAP / PowerPlan / Front Office	Pending
9	Align CWIP and GE programs and incorporate into GE program risk matrix as appropriate	KC	24 June 16	Aug 16	Dan Glenning / KC coordinating workshop for late Oct , early Nov to discuss lessons learned	Pending

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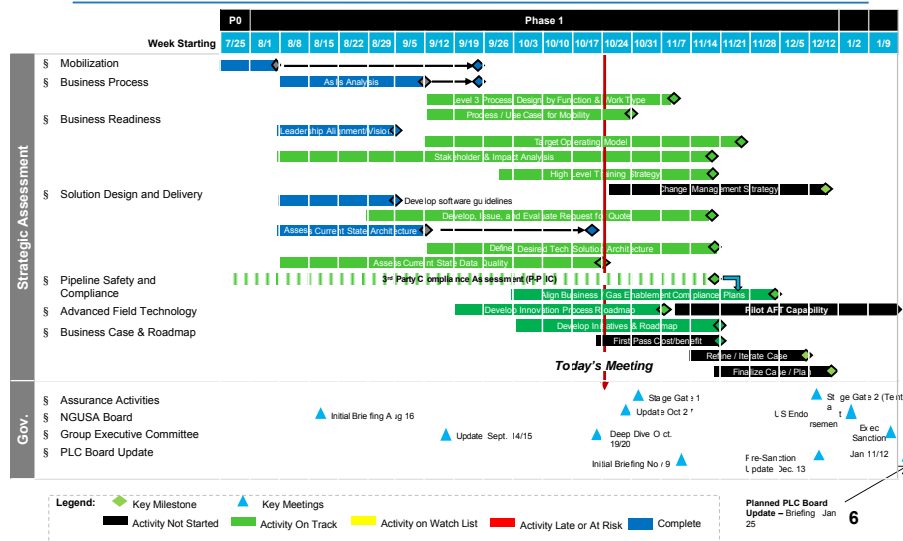


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Program Plan – As Is / To Be activities are completing while business case preparation ramps up as planned



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Business Process Design: “To Be” Design Workshops

The future state design workshops will be completed in the next week. The workshops will be completed over a seven week period with business SME's engaging with core process teams consisting of National Grid and Accenture.

- ¾ Work & Contractor Management
- ¾ Customer Experience
- ¾ Asset Management
- ¾ Data Management

Workshop Success Factors		Outcomes		Workshop Schedule							
				Week	Day	Location	Monday	Tuesday	Wednesday	Thursday	Friday
Level of Engagement		<ul style="list-style-type: none">High level of engagement with approx. 200 management employees attending 14 workshops.Survey results point to high confidence numbers from participants averaging greater than 80% agreement on all questions.		8	MTW	Waltham, MA	Prep & Document	Work Initiation	Planning / Measurement Input	Prep & Document	
				9	MTW	Waltham, MA	Prep & Document	Asset Strat. Align / Asset Needs Ident.	Asset Planning Input	Prep & Document	
				9	MTW	Waltham, MA	Prep & Document	Design/Strategy (Include CA)	Technical Objectives	Prep & Document	
				9	MTW	Waltham, MA	Prep & Document	Design/Strategy (Include CA)	Asset Portfolio & Risk Mgmt.	Prep & Document	
				10	MTW	Waltham, MA	Prep & Document		Schedule & Document	Prep & Document	
Organizational Outreach		<ul style="list-style-type: none">Workshops conducted in New York and New England with 27 organizations participating.Represented employee workshops scheduled for Oct 25th, 27th and Nov 2nd.		10	MTW	Waltham, MA	Prep & Document	Plan (Asset/Portfolio/CA)	Asset Information Management / CA Mgmt.	Prep & Document	
				11	MTW	Waltham, MA	Prep & Document	Work Order / Ticketing / Financial Accounting	Prep & Document	Prep & Document	
				11	MTW	Waltham, MA	Prep & Document	Customer Experience	End to End 1	End to End 2	Deliverable
				12	MTW	Waltham, MA	Prep & Document	Data Management	Prep & Document	Prep & Document	
				13	MTW	Waltham, MA	Deliverable Prep	Discussion NY Represented Org.	Prep & Document	New England Represented Org.	Deliverable
Relevant Data Collection		<ul style="list-style-type: none">Over 500 requirements collected150 key business decisions raisedThe team is refining and categorizing information for review and approval by the Leadership Team.		14	MTW	Waltham, MA	Deliverable Prep	Deliverable Prep	Deliverable Prep	Deliverable	
				15	MTW	Waltham, MA	Deliverable Prep	Deliverable Prep	Deliverable Prep	Deliverable Prep	Deliverable

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From Here to There

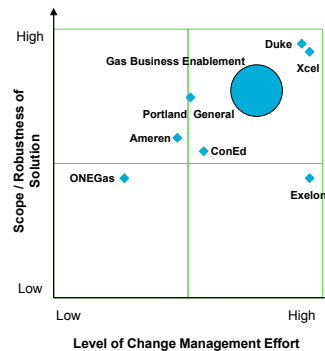
	Today		Tomorrow
Customer	<ul style="list-style-type: none"> • High % of Commitments Not Met • Limited Channels / Self-Service Tools • Inflexible Appointment Options • Minimal Visibility to Work Status • Fragmented Customer Communications 	➡	<ul style="list-style-type: none"> • 95+% of all Commitments Met • Full Suite of Self-Service Tools Available • Channels Meet Customer Needs (e.g., Apps) • After Work and Weekend Appointment Options • Full Visibility to Work Status • Consistent Customer Communications
People	<ul style="list-style-type: none"> • Culture of "Make Do" • Typical Performance Measurement • Roles that Overlap and Drive Duplicative Responsibilities 	➡	<ul style="list-style-type: none"> • Culture of Accountability • Performance Tied to Outcomes • Rationalized Roles and Responsibilities for Specialization
Process & Data	<ul style="list-style-type: none"> • Process Ownership • Inconsistency of Processes • Policies and Methods Not Followed • Conflicting Sources of Data • Information Locked in Expert Minds 	➡	<ul style="list-style-type: none"> • Process AND Data Ownership • Optimized and Standardized Processes • Exception Management Driving Adherence • Single Source of the Truth • Information Available to All at Point of Need
Technology	<ul style="list-style-type: none"> • Manual, Paper-Based Data Collection • Solutions Disconnected • Long Lead Times to Enhance Capabilities • Antiquated Delivery Methods 	➡	<ul style="list-style-type: none"> • Automated and On-line Data Capture • Fully Integrated Solution Architecture • Swifter, More Efficient Enhancement Engines • World Class Delivery Methods and Capabilities

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Peer Utility Programs

§ Solution Scope & Robustness vs. Level of Change Effort



Key Points

- Duke and Xcel had the broadest program in terms of solution scope and robustness and spent heavily on change management effort to ensure adoption and sustainment
- Although Exelon had a much more narrow program solution scope and robustness, it also spent heavily on change management to ensure adoption and sustainment
- Duke, Xcel, and Exelon did the basics including training, and communication but also included change enablement to build the capability to drive the change, organization design and transition, and a significant effort with respect to building performance management
- ONE Gas and Ameren did more of the basics with respect to change management – training, communications, etc.
- Portland General had a broad program but spent modestly on change management
- ConEd had an average program in terms of solution scope and spent slightly more than the Ameren and Portland General on change management

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Business Engagement

North Star - Boston

Leading to the big opportunity

Accelerate - Albany

10

Commitment cards

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The Big Opportunity

We are proud of what we do.

However, we are all frustrated – and the way we work doesn't meet our employees', customers' and regulators' expectations, putting our future growth at risk.

It's our time to fix it and make changes – through employee-driven solutions to deliver industry-leading performance.

We are committed to invest in our business to unlock our passion and potential to build trust among ourselves, and with our customers, communities and regulators.

Our Service Territory offers the greatest opportunity for growth. We have talented people who have permission to act. Working together we will fix today and enable tomorrow.



Result Accelerators

1. Improve Onboarding
2. Field Device Replacement and Repair
3. Reduce Mapping Cycle Time
4. Use of Handheld Device for Mapping or Procedures

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Solution Design and Delivery:

Current state analysis highlight observations and activity

- ¾ The U.S. Gas Enablement program will replace at least ~84% (99 of 117¹) of the application and technology footprint for U.S. Gas Operations.
- ¾ A Significant amount of the application portfolio and data sources ~59% (69 of 117) applications are currently unsupported (e.g. by IS or a supplier etc...)
- ¾ Investments will have to be made in terms of enabling capabilities that will: industrialize/scale agile delivery; provide effective monitoring of extended eco-system (Cloud Solutions); secure mobile devices; standardize the integration and security architecture for external SaaS based solutions.
- ¾ Advanced analytics capabilities and architecture may be leveraged by Gas Enablement and complemented by Big Data solutions, however several step-wise improvements in Enterprise Information Management will be necessary to mitigate development and operations risks due to existing data quality.
- ¾ Future State Info/App/Integration Architecture underway
- ¾ Software Solution RFI responses received and being analyzed
 - ¾ Balance between traditional and innovation under evaluation

1-Application Count for U.S. Gas Operations is 158: including 15 modules of SAP and 26 Applications that are out of scope, 99 Applications have dispositions as "replace", 14 Applications as Integrations, 4 are unknown and need a final disposition. 158-15-26=117.

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With the completion of the Stopped Meter Pilot in Upstate NY,
our technology pilot has come to a successful conclusion

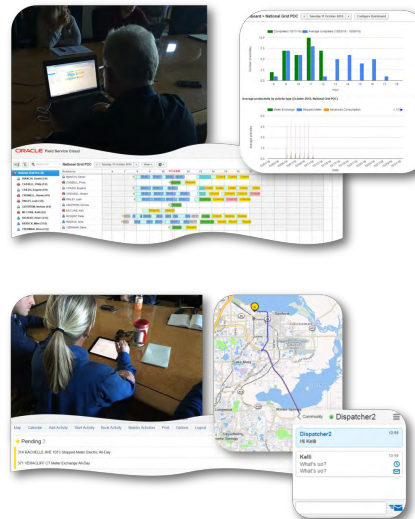
Overview

¾ Process

- ¾ 2 Agile Development Sprints
- ¾ 2 In-Depth Workshops
- ¾ 1 Sprint Review
- ¾ 1 Conference Room Pilot

¾ Results:

- ¾ New standard process demonstrated using modern software and hardware
- ¾ Field techs loved the iPad device and ability to txt and take pictures but want mobile printing capability
- ¾ Participants like the application platform and some of its built in communication capability between field and dispatcher
- ¾ High praise for the Agile process due to the immediacy of feedback and correction but it was acknowledged that it is a big commitment



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Assessed nine software categories for solutioning

	Enterprise Asset Management (EAM)	Consolidate all asset data and track construction, maintenance and inspection work on the network.
	Resource Management	Ensure optimal utilization of resources by forecasting, planning, scheduling, dispatching and monitoring field work.
	Mobility	Provide field workers a platform to receive, document and close the work assigned to them.
	Geospatial Information System (GIS)	Document the location of all assets and leaks on the network.
	Graphic Work Design	Electronically design new and modified segments of the network for future construction activities.
	Asset Investment Planning (AIP)	Ensure the right investments are made on the right assets to effectively reduce risk.
	Integrity Management	Accurately identify and evaluate asset and operational risks to mitigate them.
	Analytics	Leverage asset, work and customer data to improve all aspects of the business.
	Customer Experience	Provide a service to customer that facilitate their interactions with the utility.
	Customer Telephony	Use telephony to improve communication channels between the customer and the utility.

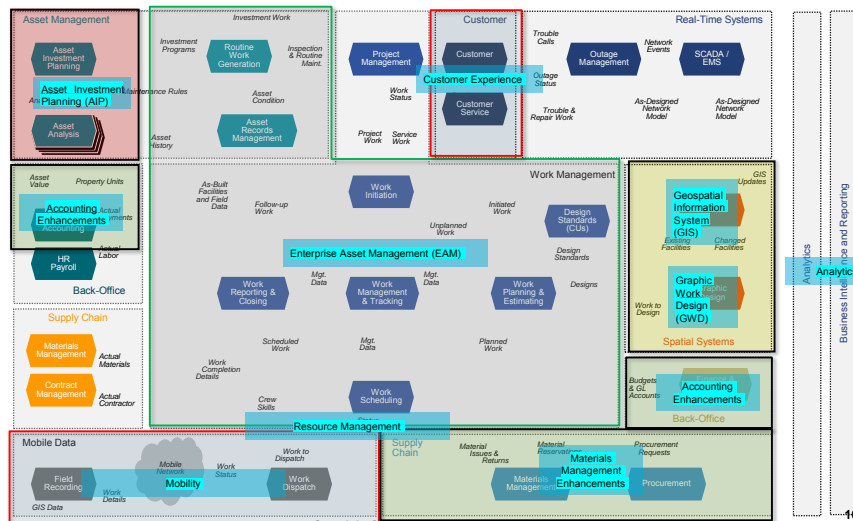
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Currently parallel investments

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Logical Architecture – Key Solutions Focus



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Blend of Traditional and Innovation Options Under Review

- ¾ Traditional solutions implemented by many utilities exist for all categories
- ¾ We are actively evaluating options for the inclusion of emerging players that offer significant upside potential
- ¾ An example is Salesforce's Field Service Lightning Platform which could offer benefit in Resource Management, Mobility and Customer Experience especially for short-cycle (customer-related) work types

	Enterprise Asset Management (EAM)	Consolidate all asset data and track construction, maintenance and inspection work on the network.
	Resource Management	Ensure optimal utilization of resources by forecasting, planning, scheduling, dispatching & monitoring field work
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Currently parallel investments

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Cost Estimating

- ¾ Costs will be estimated for all Gas Enablement initiatives

- ¾ Initiatives will be estimated using Accenture's Development Methods estimators which cover people (e.g., change management), process, and technology and result in a standard resource plan on which labor costs will be calculated

- ¾ Key Estimating Inputs
 - Investment Costs
 - Labor Cost (internal, external)
 - Software License Cost
 - Hardware Cost
 - Legacy Remediation Cost
 - Ongoing Support Costs
 - Labor Cost (internal, external)
 - Software License Maintenance Cost

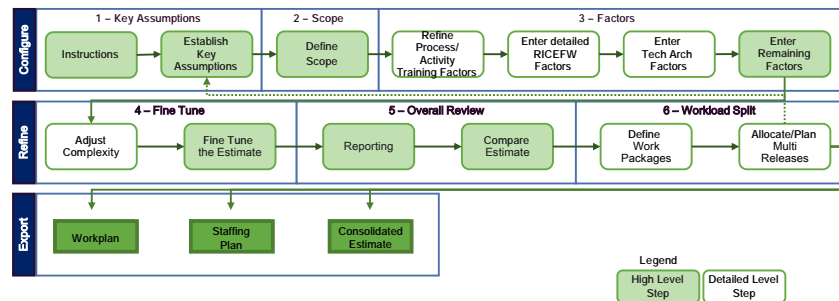
- ¾ Software and hardware estimates will use vendor quoted prices where possible

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Accenture Estimating Model Approach



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Benefit Estimating / Identification

¾ Benefits will be estimated / identified for all Gas Enablement initiatives

¾ 4 types of benefits will be identified

- Type 1: Tangible; direct linkage to costs removed from the business or \$ taken out of budgets; examples include eliminating work activities through automation, reduction in material costs through improved contract purchasing power
- Type 2: Tangible / aspirational; benefits are driven by KPIs vs. \$ taken out of budgets; once KPI targets are achieved, decisions to take \$ out of budgets might be made; examples include cost avoidance such as avoided hiring, avoidance of fines, and productivity improvements
- Type 3: Intangible; non-financial benefits that are measured directly by KPIs; examples include customer satisfaction, asset risk reduction, and safety
- Type 4: Intangible; non-financial benefits that either can't be measured by KPIs or are measured indirectly; examples include culture changes, and goodwill

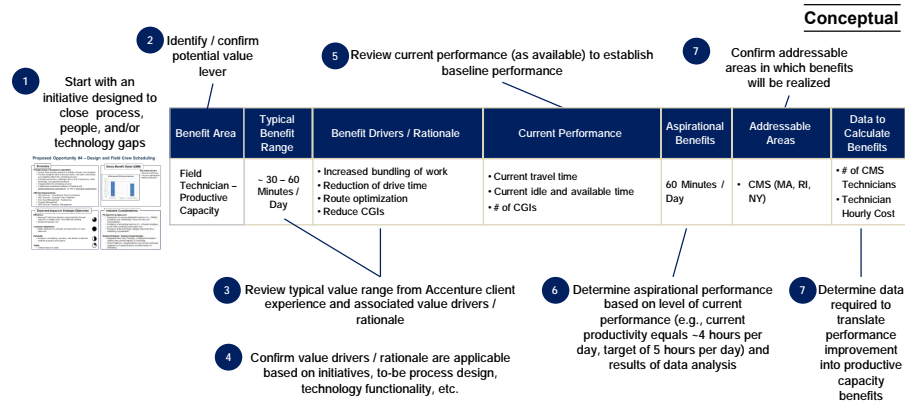
¾ Type 1 and Type 2 benefits will be estimated using Accenture benchmarks and previous client experience with similar initiatives as well as analysis of National Grid's current performance against the possible future state

¾ All benefits will be based on implementing requirements identified as part of the to-be workshops

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Aspirational Benefit Estimating Approach – Type 2 Benefits



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Cost & Performance Benchmarks

Example Benefit Areas (non-exhaustive) ¹

Example Benefit Area	Example Benefit Range	Benefit Drivers	
Field Productivity / Utilization	~10% to 67%	Reduce Drive Time	<ul style="list-style-type: none"> Reduce drive time due to optimized routing to jobs Reduce drive time due to optimized bundling of work
		Reduce Non-Productive Time	<ul style="list-style-type: none"> Reduce trips to "barn" to obtain information / additional work orders through use of electronic work packages Increase field crew / technician utilization through improved, more accurate scheduling – bundling, matching of skills to jobs, etc.
		Reduce Work Time	<ul style="list-style-type: none"> Reduce time spent searching for procedures, work methods, maps, etc. through use of electronic work packages Reduce time spent completing time cards through use of electronic time cards pre-populated based on daily schedule Reduce time spent initiating work orders through the use of pre-populated electronic forms and drop-down menus
		Reduce Truck Rolls	<ul style="list-style-type: none"> Reduce no parts on board, site not ready, and equipment not on site through improved prerequisite fulfillment
Field / Back Office Support Productivity / Utilization	~25% to 45%	Reduce / Eliminate Field Support Activities	<ul style="list-style-type: none"> Automated time card processing / manual intervention for exceptions only Eliminate time spent initiating paper work orders
Fleet Optimization	~15% to 30%	Reduce Fuel Consumption	<ul style="list-style-type: none"> Reduce fuel consumption through optimized routing to jobs Reduce fuel consumption due to false starts through improved prerequisite fulfillment
Damage Prevention	Varies	Reduce Locate Damages	<ul style="list-style-type: none"> Reduce # of damages as a result of locate errors through improved processes / better training
		Reduce Record Error Damages	<ul style="list-style-type: none"> Reduce # of damages as a result of record errors through improved data accuracy
Fine Avoidance	Varies	Reduce Commitments not met Fines	<ul style="list-style-type: none"> Increase the # of commitments met through improved scheduling, optimized routing to jobs, optimized bundling of work, and improved prerequisite fulfillment

¹ Actual benefits will depend on baseline performance, type of work, degree of change from current state to future state solution, etc.

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Our strategic priority setting activities will shape the business case options to be evaluated

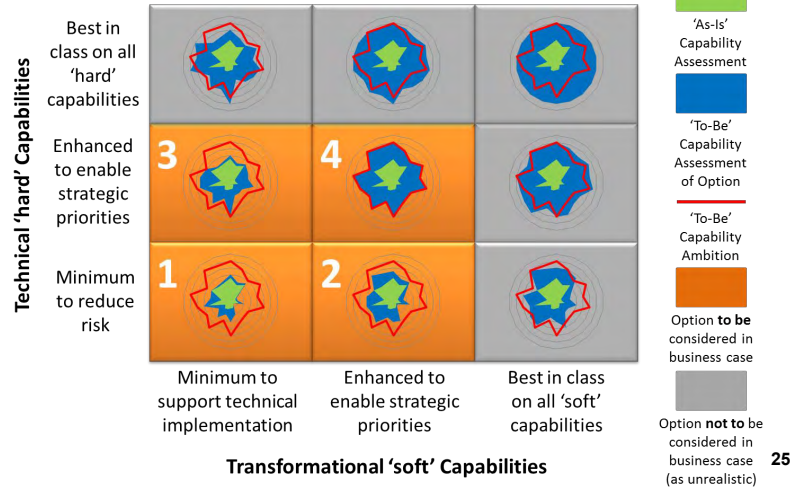
Gas Business Enablement Ambition vs Current State Analysis



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While many options are possible, there are four which are most feasible in our environment

Proposed sanctioning options for Gas Business Enablement



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Gas Enablement Program Status

Scope Status And Impacts	Schedule Highlights																																																								
<div>1) Scope Status: Three potential scope changes are being evaluated:<div>1) Compliance – Field Training</div><div>2) Solution Design – Powerplan Architecture</div><div>3) Solution Design – Proactive Interface Build-out</div></div> <div>2) Approves changes since last update:<div>1) Augmented Business Readiness support</div></div> <div>3) Next Scope "Inflection Point": Completion of 3rd Party Compliance analysis 11/18</div> <div>4) Delivery Approach: Scheduling Agile methodology "deep dive" to support pending road map development activities</div> <div>5) Customization KPI (TBD)</div>	<div>1) Key Milestones and Deliverables:<div>1) 4 of 20 Deliverables are complete - per plan</div><div>2) To Be Workshops to complete – 10/28 and 11/10</div><div>3) Current State Architecture Analysis completed - 10/19</div><div>4) New: GE Pipeline Compliance Strategy – 12/2</div></div> <div>2) Activities completed<div>1) Compliance Integration Work shop #2 – 10/19</div><div>2) Albany "Accelerate" Event – 10/13-14</div></div> <div>3) Upcoming activities:<div>1) Stage Gate 1 Go / No Go Decision – 11/1</div><div>2) Prepare first pass Business Case – 11/18</div></div> <div>4) Schedule status: Tracking to plan after approved revisions. Detailed critical path planning complete for next phase</div>																																																								
Resources	Risk																																																								
<table><tr><th>Staffing</th><th>Plan</th><th>Actual</th><th>In-progress</th><th>Open</th><th>Trend</th></tr><tr><td>Wave 1</td><td>39</td><td>31</td><td>8</td><td></td><td><div><div></div><div></div><div></div></div></td></tr><tr><td colspan="4">Finance / Budget Activity</td><td>Status</td><td>Trend</td></tr><tr><td colspan="4">Program Budget Submitted</td><td><div><div></div></div></td><td><div><div></div></div></td></tr><tr><td colspan="4">Forecasted spend (against targets)</td><td><div><div></div></div></td><td><div><div></div><div>Note 5</div></div></td></tr><tr><td colspan="4">Financial Reporting</td><td><div><div></div></div></td><td><div><div></div></div></td></tr></table> <div>1) Sufficient resources are onboard to successfully complete Ph1 however 5 role vacancies are will impact Phase 2 prep if they remain open for an extended period. Recruiting is active</div> <div>2) Wave 2 roles are being evaluated and prepared</div> <div>3) Budget variances remain favorable however refinement of Business vs Program compliance costs is still underway</div>	Staffing	Plan	Actual	In-progress	Open	Trend	Wave 1	39	31	8		<div><div></div><div></div><div></div></div>	Finance / Budget Activity				Status	Trend	Program Budget Submitted				<div><div></div></div>	<div><div></div></div>	Forecasted spend (against targets)				<div><div></div></div>	<div><div></div><div>Note 5</div></div>	Financial Reporting				<div><div></div></div>	<div><div></div></div>	<table><tr><th colspan="4">Top Three Risks</th></tr><tr><th>Risk</th><th>Prob</th><th>Impact</th><th>Mitigation Status</th></tr><tr><td>Gaps in data and/or our understanding of quality and availability could impact planning and delivery</td><td>High</td><td>Very High</td><td>Mitigation Plan Review 10/26</td></tr><tr><td>The current PowerPlan solution architecture will not support transformed Gas Business platform & process</td><td>High</td><td>Very High</td><td>Detailed planning activity being prepared to inform GE plans and business case</td></tr><tr><td>Incomplete cross US enterprise integration could degrade roadmap viability</td><td>Med</td><td>High</td><td>Integration activity meetings being expanded</td></tr></table> <div>1) Internal Assurance "Pulse Check" conducted 10/18 – follow up planned week 10/24</div>	Top Three Risks				Risk	Prob	Impact	Mitigation Status	Gaps in data and/or our understanding of quality and availability could impact planning and delivery	High	Very High	Mitigation Plan Review 10/26	The current PowerPlan solution architecture will not support transformed Gas Business platform & process	High	Very High	Detailed planning activity being prepared to inform GE plans and business case	Incomplete cross US enterprise integration could degrade roadmap viability	Med	High	Integration activity meetings being expanded
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Strategic Assessment Review - PwC

¾ Deliverables reviewed

- ¾ Current State Information Management, Application and Technology Architecture
- ¾ Current State structured and unstructured data analysis

To date we have reviewed 4 out of 20 deliverables;

Observations	Recommendations
1. Key design deliverables are delayed and bunching up – creating challenges on reviewer bandwidth and limited opportunity for remediation based on business assurance feedback"	Address significant bandwidth or matters arising from deliverable review as required
2. Much of the key project decision making is condensing into last 4-6 weeks of project which will impact quality and ability to iterate based on stakeholder feedback	Focus most attention on highest priority/impact items
3. Fluidity on technology decisions will impact estimation precision in areas such as integration requirements and Total Cost of Ownership (open decisions include core EAM, customer work management and scheduling / dispatch, mobile platform / application, capital projects and portfolio management)	Develop estimates for SAP and non-SAP (Maximo) core EAM applications; make valid assumptions on "seam" for SCM; create a thorough list of interfaces
4. Need to blend proven approaches and technology applications with innovation	Utilize a blend of conventional and agile methodology – there are only so many new things that can be accommodated in developing a plan with a high confidence level
5. More thorough data analysis is required given the size and importance of data remediation effort (primarily assets, GIS, customer records, material masters etc.)	Consider focused project to develop data management estimate. Data is one of the main opportunities and risks for this program and the business.

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Meeting close

- ¾ AOB
- ¾ New Action Item Summary
- ¾ Leadership Pulse Check and Closing Remarks

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Steering Group Action Item List (complete)

	Action	Owner	Assigned	Due	Comment	Complete?
1	Ensure that Enablement is added to the QPR agenda	PS	10 Mar 16	1 Apr 16		Yes
2	To provide visibility of the expect impact of Gas Business enablement on the ability to run the business due to a potential talent drain.	JJ	10 Mar 16	1 May 16	Phase 1 key roles have been filled with Business Leadership engagement and support. Subsequent staffing requirements will be reviewed regularly with the Design Authority	Aug 16 Yes
3	To identify the appropriate approach to ensure that the SG has visibility to the level of customization being undertaken by the project.	JJ	10 Mar 16	1 Oct 16	Phase 1: • Formalize the design principle to minimize, customizations • Provide a view of where customizations might be required in Phase 2 based on what we know. Phase 2: • All customizations will be approved by Chris Murphy and Johnny Johnston and formally reported to the Steering Group.	Pending
4	To share the rate case strategy and ensure that any appropriate costs are included in the MA Gas rate case.	JJ	10 Mar 16	1 Jul 16	Action Plan: 1) Engaging with NY rate case team 2) Coordinating with MA to include GE costs in the MA Gas case 3) Will work with Finance to deploy effective tools and processes to capture and report rate case data 4) Insure GE business case is rate case enabling	Aug 16
5	Advise SG on Powerplan solution options impacting the Program	JJ	5 May 16	Nov 16	GE, in partnership with Finance, to sponsor study to identify plan, timings and costs to re-architect the integration of SAP / PowerPlan / Front Office	pending
6	Review GBE Scope with Finance Remediation	KH	5 May 16	June 16	Rescheduled by Fin – working with RQ for new date	9/14

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Action Items - continued

	Action	Owner	Assigned	Due	Comment	Complete?
7	Add controls development to design phase success criteria	KH	5 May 16	June 16		Yes
8	Update the SG on proposal detail and procurement process status and selection criteria	JJ	5 May 16	June 16		Yes
9	Align CWIP and GE programs and incorporate into GE program risk matrix as appropriate	KC	24 June 16	Aug 16	Pending completion of CWIP Analysis	Proj Aug 16
10	Invite Internal Assurance to participate in vendor oral presentations and proposal review	KC	24 June 16	July 16	Complete – Input received	Yes
11	Provide a follow-up on staffing progress and plans	JJ	1 Aug 16	23 Aug 16	Complete	8/23

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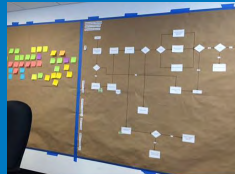
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Gas Business Enablement

Steering Group Pack



Johnny Johnston

2 Dec 2016 @ 1200 EST, Res Woods – E3.903 Curie Conference Room

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Agenda

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Executive Approval and Sanctioning Process	15 min	JJ
Meeting Close & Feedback	5 min (14:00)	JJ

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Meeting Objectives

1. Gain Steering Group input and guidance as to how we should consider our approach to preparing the final business case and road map for sanctioning
2. Gain Steering Group approval of our approach to software procurement
3. Gain Steering Group approval of our recommendations for re-architecture of the Front Office – Powerplan – SAP interface

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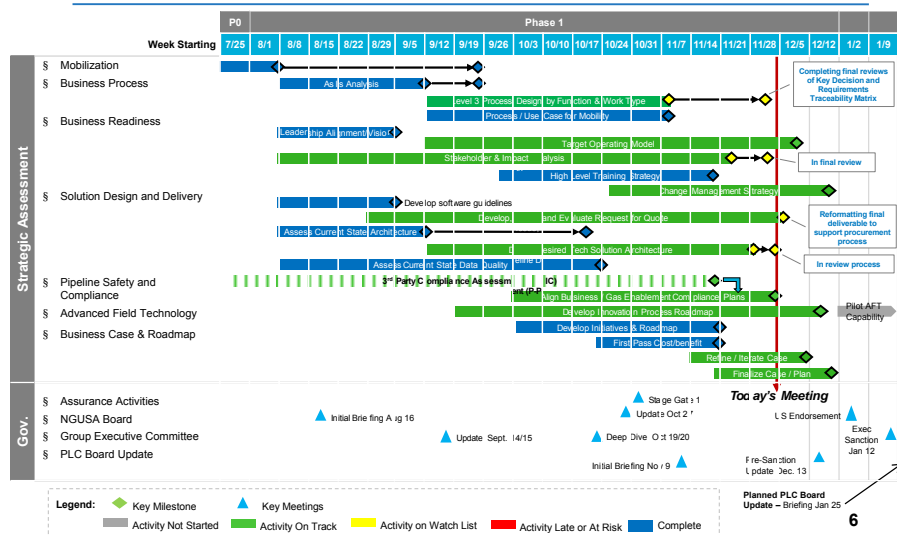
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Action Item Follow Up

	Action	Owner	Assigned	Due	Comment	Complete?
9	Align CWIP and GE programs and incorporate into GE program risk matrix as appropriate	KC	24 June 16	Aug 16	<ul style="list-style-type: none">Gas Enablement will participate in Nov 30 / Dec 1 Work Order Remediation WorkshopsLessons Learned Discussion scheduled for 12/1	Pending

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We are tracking to on-time completion, however some deliverable reviews are closing more slowly than planned



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Meeting Close & Feedback	5 min (14:00)	JJ

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Gas Enablement Program Status

Scope Status And Impacts				Schedule Highlights																																															
<div>1) Scope Status: Multiple potential scope changes are being evaluated:<div>1) Solution Design – Proactive Interface Build-out</div><div>2) Phase 2 “Accelerators” - Various</div></div> <div>2) Approved changes since last update:<div>1) Compliance – Field Training</div><div>2) Solution Design – Powerplan Architecture</div><div>3) Supply Chain Integration</div></div> <div>3) Next Scope “Inflection Point”: Phase 2 Mobilization “Accelerator” analysis W/B 12/5</div> <div>4) Delivery Approach: Being addressed as part of Road Map and Business Case preparation</div> <div>5) Customization KPI: To be developed in Phase 2 Mobilization</div>				<div>1) Key Milestones and Deliverables: <div>1) 5 of 22 Deliverables are complete, 6 are in the review/ approval process with 11 in the build phase. Projected completion – 12/16 per plan</div><div>2) GE Pipeline Compliance Strategy – 12/2</div><div>3) Road Map / Business Case refinement underway</div></div> <div>2) Activities completed <div>1) Stage Gate 1 Go / No Go Decision: “Go” on 11/1</div><div>2) First Pass Roadmap / Business case walk through 11/21</div></div> <div>3) Upcoming activities: Prepare Board and Sanction Papers, Prepare work packets for Phase 2 System Integrator(s)</div> <div>4) Overall Schedule Status: Tracking to revised plan however some Deliverables are lagging in completion of final reviews</div>																																															
Resources				Risk																																															
<table><tr><th colspan="3">Staffing Plan Actual In-progress Trend</th><th></th></tr><tr><td>Wave 1/23 31</td><td>32</td><td>31</td><td><div></div></td></tr></table> <div>ough March</div> <table><tr><th>requirements thr</th><th></th><th></th><th></th></tr><tr><td>Enterprise / Enterprise / Enterprise / Enterprise</td><td><div></div></td><td><div></div></td><td><div></div></td></tr><tr><td>Enterprise / Enterprise / Enterprise / Enterprise</td><td><div></div></td><td><div></div></td><td><div></div></td></tr><tr><td>Enterprise / Enterprise / Enterprise / Enterprise</td><td><div></div></td><td><div></div></td><td><div></div></td></tr></table> <div>s actively rking with</div> <div>forecast</div>				Staffing Plan Actual In-progress Trend				Wave 1/23 31	32	31	<div></div>	requirements thr				Enterprise / Enterprise / Enterprise / Enterprise	<div></div>	<div></div>	<div></div>	Enterprise / Enterprise / Enterprise / Enterprise	<div></div>	<div></div>	<div></div>	Enterprise / Enterprise / Enterprise / Enterprise	<div></div>	<div></div>	<div></div>	<table><tr><th colspan="4">Top Three Risks</th></tr><tr><th>Risk</th><th>Prob</th><th>Impact</th><th>Mitigation Status</th></tr><tr><td>Gaps in data and/or our understanding of quality and availability could impact planning and delivery</td><td>High</td><td>very High</td><td>Data exploration, profiling, and modeling under way to ensure availability and quality</td></tr><tr><td>The current PowerPlan solution architecture will not support transformed Gas Business platform & process</td><td>High</td><td>very High</td><td>This risk has been mitigated</td></tr><tr><td>Incomplete cross US enterprise integration could degrade roadmap viability</td><td>Med</td><td>High</td><td>Integration activity meetings being expanded</td></tr></table> <div>1) Planning Enterprise / Program risk process coordination activities to begin in January</div>				Top Three Risks				Risk	Prob	Impact	Mitigation Status	Gaps in data and/or our understanding of quality and availability could impact planning and delivery	High	very High	Data exploration, profiling, and modeling under way to ensure availability and quality	The current PowerPlan solution architecture will not support transformed Gas Business platform & process	High	very High	This risk has been mitigated	Incomplete cross US enterprise integration could degrade roadmap viability	Med	High	Integration activity meetings being expanded
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Key Observations

- 3/4 Deliverables reviewed
 - 3/4 High Level Business Requirements
 - 3/4 Key Business and Technical Decisions Inventory
 - 3/4 Processes and Key Use Cases for Connected and Disconnected Mobility
 - 3/4 Future-state information, application, and integration architecture (draft)
 - 3/4 Change Impact Analysis
 - 3/4 Application and technology roadmap including enabling capabilities (draft)

Observations	Recommendations
Detailed Observations on Design and Roadmap on following slides	

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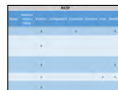
Design

Key Findings

Through the BA reviews, gaps in the quality and completeness of the Design deliverables were identified and not fully addressed:

The **Pain Point and Opportunity Analysis** did not:

1. Bridge the gap from current to desired state
2. Identify industry best practices and tools
3. Cross reference pain points to provide a pivot to the future state



The **High Level Business Requirements** had extensive gaps including:

1. An incomplete inventory missing many important capabilities to support various work types
2. Missing industry best practice requirements
3. The majority of RICEFW categorizations were incorrectly assigned, which will impact cost calculation

The **Level 3 Business Process Flows** have gaps including:

1. No clear inventory or decomposition of level 1, level 2 and level 3 flows
2. No variations illustrated across different work types
3. No link between process steps and related business requirements that support them
4. No swim lanes / roles or visual representation of system interaction
5. Asset Management capabilities do not have detail flows
6. Capital Projects and Portfolio Management capabilities and process flows are not defined



The **Key Business Decision Inventory** has gaps including:

1. Several KBDs require more supporting documentation than is available in the inventory itself
2. Several KBDs were identified where it appeared that further analysis (is) required before determining the approach/consensus
3. Over 20 additional KBDs identified for addition

Implications

The outstanding gaps and shortcomings identified in the design deliverables **do not** prevent development of the roadmap and business case (apart from fuzziness on initiative scope)

The main impact will be on National Grid's ability to issue clearly defined RFP's for software selection and system integration services – a solid set of future state design specifications are required for precise scoping

Recommended Actions

Use Q1 2017 to perform a more detailed and thorough development of Level 3 process flows and develop appropriate linkages to requirements and pain points – **focusing on Core Scope first**

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Roadmap

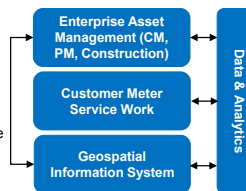
Key Findings

While not fully completed, the initial draft Roadmap has been reviewed and the following conclusions have been drawn to date:

1. The roadmap is comprehensive and provides a large number of initiatives and activities to perform over a four year period.
2. An excess of work and scope is included in the first 3-4 years of the program. This distracts from the main priority of **implementing core scope across the jurisdictions (3+5 model)**. Loses focus on driving the value from getting the core capabilities "right" – and then adding more advanced capabilities from there.
3. Cost/effort estimate of Years 1-4 is bloated by high ratio of non-core scope
4. No clear linkage from the design elements into the roadmap i.e. mapping of capability/process inventory to initiatives. Unable to see which pain points/opportunities, requirements, and processes are enabled within each initiative on the roadmap.
5. The focus should be on foundational GBE scope to enable enterprise end-to-end work and asset management process through a highly integrated architecture (move the business onto a modern, integrated platform).



GBE Foundational/Core Scope



Implications

Creating a roadmap that is overly complex with too many moving parts will be difficult to manage and add risk.

Additionally, as this is a major program, it will be important that the focus of the organization is not pulled into too many directions during the early part of the program.

Recommended Actions

Use the remaining time in Q4 2016 to develop a robust plan to implement the core scope across all jurisdictions in ~3 years.

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Gas Business Enablement

Business Case and Roadmap Development

November 2016

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The US Gas Business is facing a number of challenges today

We hold an unsustainable level of operational risk

- **Duplicate** and aging systems (117 applications vs ~20);
- 59% of our systems are **unsupported** by vendors
- Average **age** of system is 14 years (vs 5 ~ 7 industry norm)
- Underinvestment in infrastructure resulting in reduced **reliability** and increased **operational risk**

We need a step change in operational performance

- Operational performance and **compliance issues**
- Rising customer **expectations**
- Lack of **capacity** to respond to growth
- Diffuse **accountability** for operating performance
- Sustained under achievement of **ROE** (avg of 8.5% vs 9.7% allowed over last 3 years)

Our market framework is changing dramatically

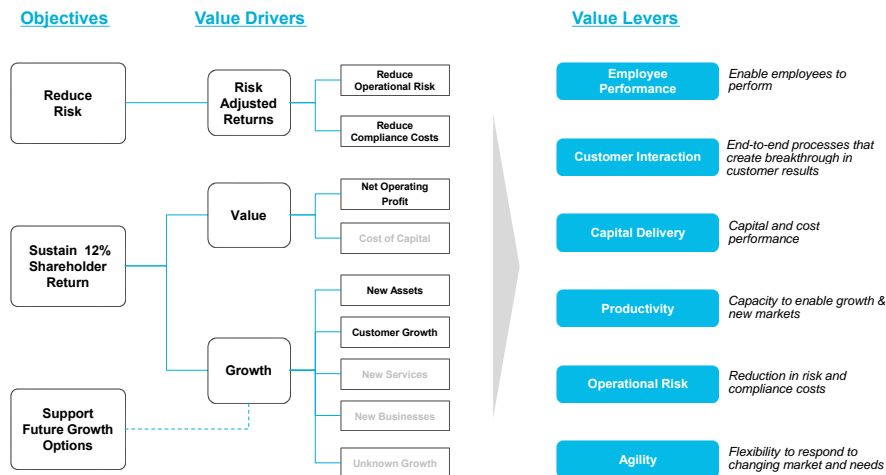
- Rising regulatory **requirements** (e.g., API 1173)
- Changing public **sentiment** on gas (e.g., environmental)
- Competition and **opportunities** from alternative energy sources
- Transformative impact of **digital** on energy system

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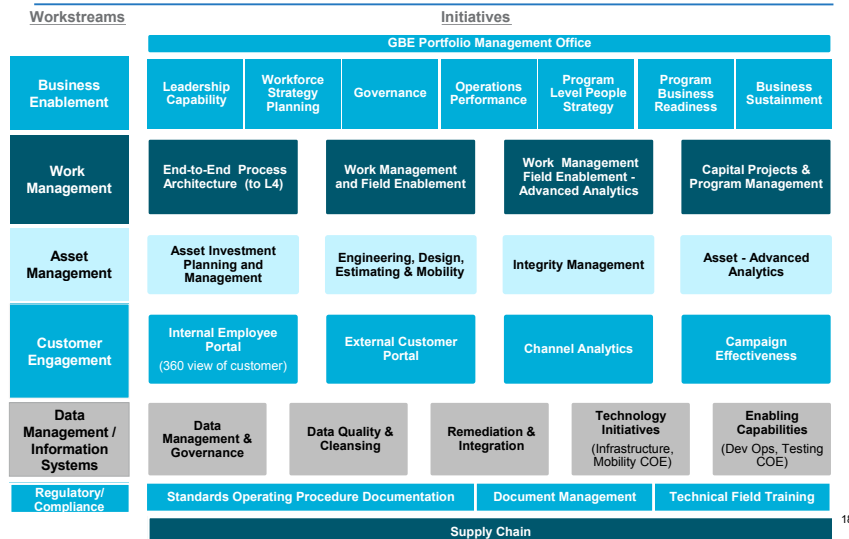
There are three primary objectives for the program



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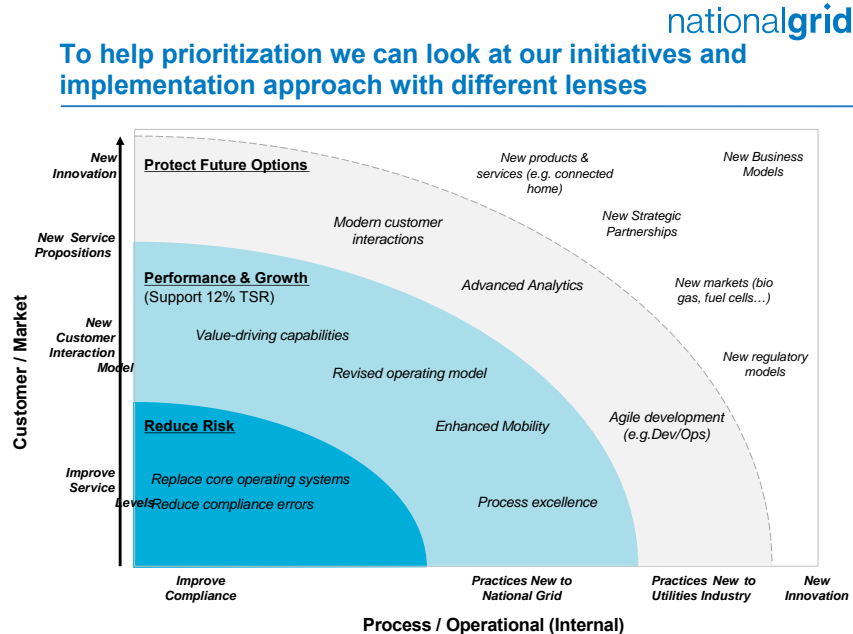
In the strategic assessment phase, we developed the following initiatives to meet these objectives



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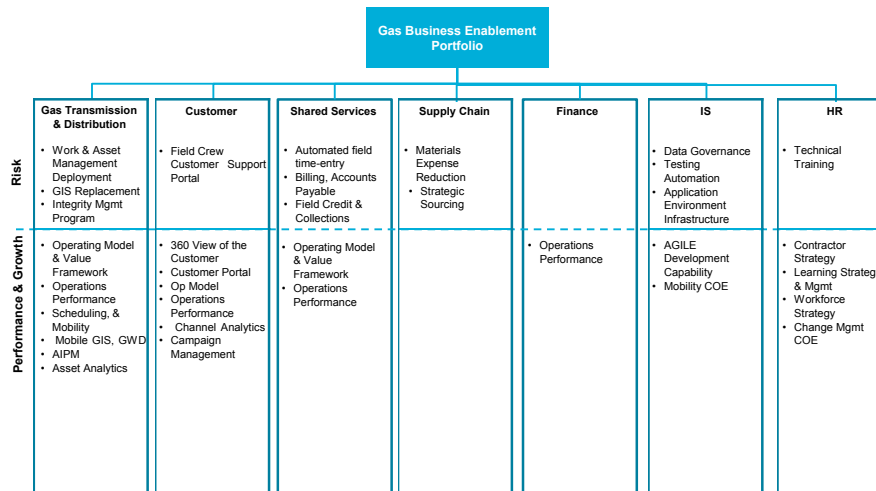
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The initiatives span across a broad range of functions in the organization

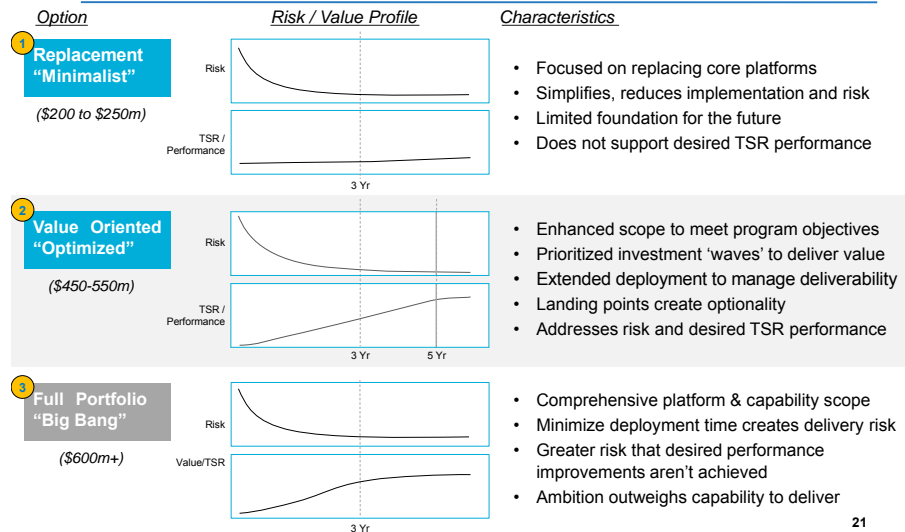


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We assessed 3 different approaches to selection, prioritization and implementation of initiatives



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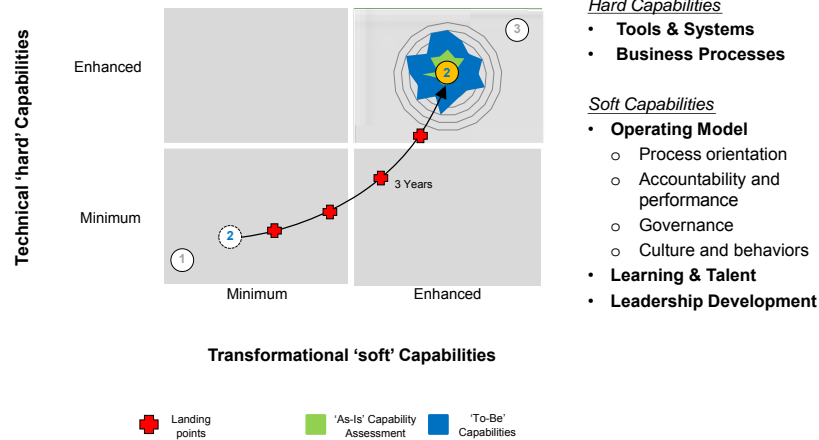
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The value-oriented approach is recommended as it provides the greatest balance between value, delivery risk & optionality

Value-Oriented Option

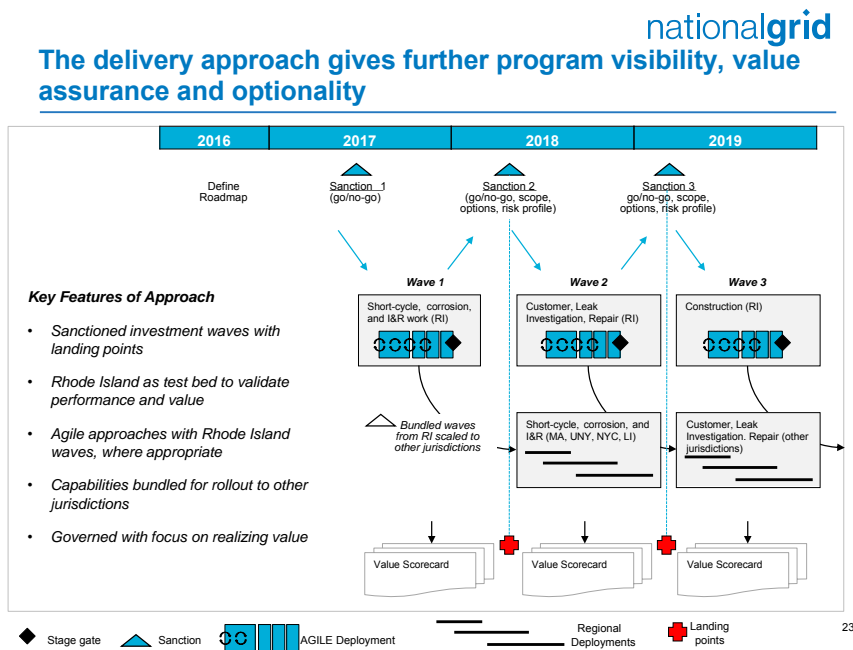


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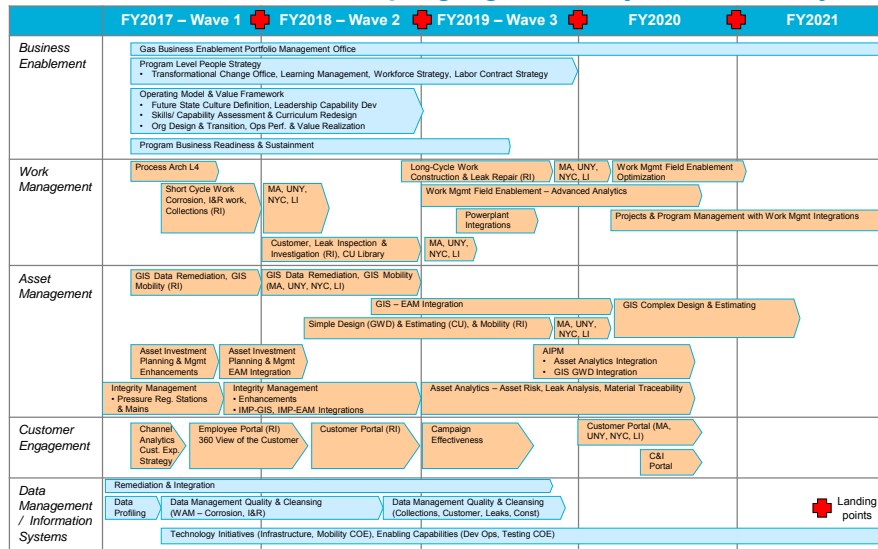


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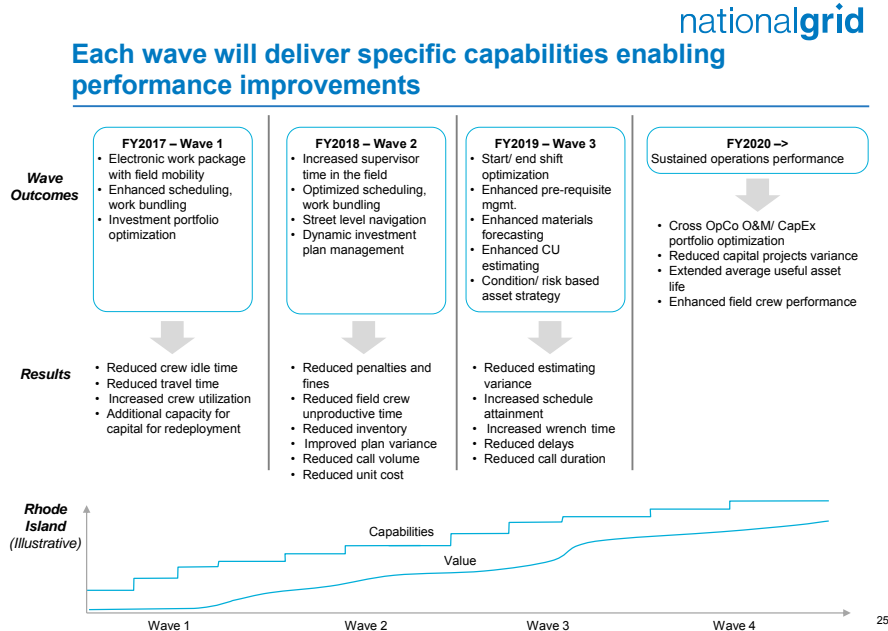
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An initial view of the roadmap highlights the key waves over 5 years



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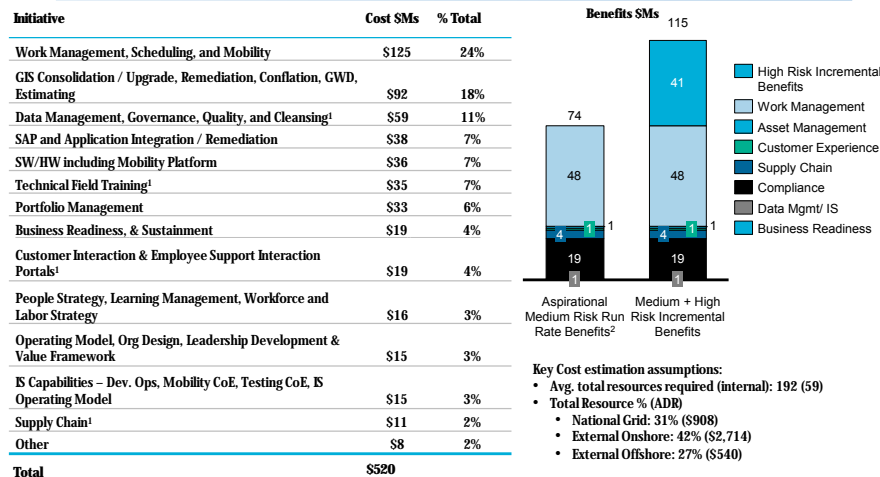
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Working draft breakdown of the initial estimate of \$520m costs and the associated aspirational benefits



²Typically not included as part of the transformation business case

²Base Run Rate includes benefits related to field worker/clerk/engineer productivity, decreased call center volume, avoided damage claims, reduced compliance fines, and supply chain benefits (excluding one-time benefits)

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Questions for Discussion & Guidance

1. Is the value-oriented approach the appropriate deployment strategy?
2. Are there any items in the cost breakdown that should not be part of GBE?
3. Are there any obvious missing areas on the benefits that should be considered?
4. What would prevent you from recommending this program for sanctioning?

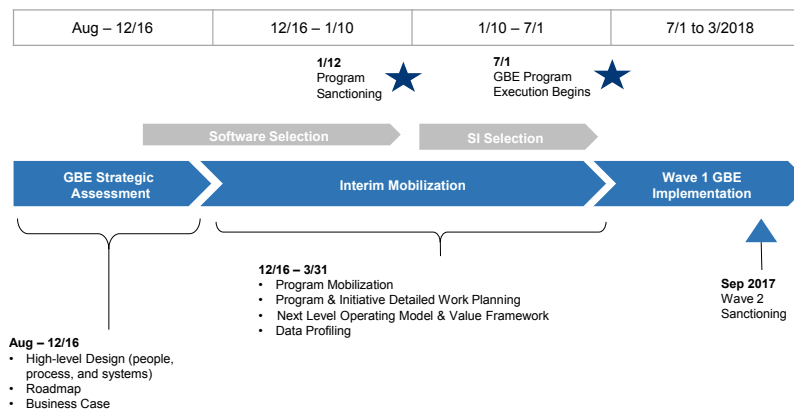
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If sanctioned in January, the program would commence in July 2017

Timeline and Key Milestones & Deliverables



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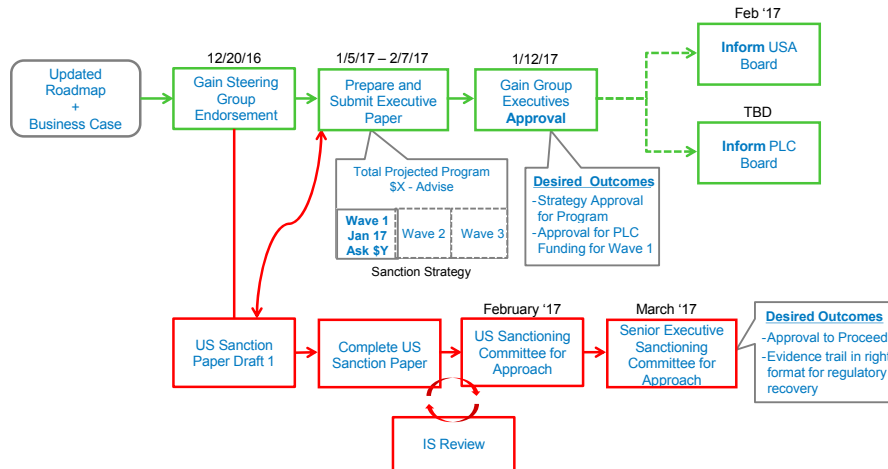
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Proposed Sanctioning Approach



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Steering Group Action Item List (complete)

	Action	Owner	Assigned	Due	Comment	Complete?
1	Ensure that Enablement is added to the QPR agenda	PS	10 Mar 16	1 Apr 16		Yes
2	To provide visibility of the expect impact of Gas Business enablement on the ability to run the business due to a potential talent drain.	JJ	10 Mar 16	1 May 16	Phase 1 key roles have been filled with Business Leadership engagement and support. Subsequent staffing requirements will be reviewed regularly with the Design Authority	Aug 16
3	To identify the appropriate approach to ensure that the SG has visibility to the level of customization being undertaken by the project.	JJ	10 Mar 16	1 Oct 16	Phase 1: <ul style="list-style-type: none">Formalize the design principle to minimize, customizationsProvide a view of where customizations might be required in Phase 2 based on what we know. Phase 2: <ul style="list-style-type: none">All customizations will be approved by Chris Murphy and Johnny Johnston and formally reported to the Steering Group.	Oct 24
4	To share the rate case strategy and ensure that any appropriate costs are included in the MA Gas rate case.	JJ	10 Mar 16	1 Jul 16	Action Plan: <ol style="list-style-type: none">Engaging with NY rate case teamCoordinating with MA to include GE costs in the MA Gas caseWill work with Finance to deploy effective tools and processes to capture and report rate case dataInsure GE business case is rate case enabling	Aug 16

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Action Items - continued

	Action	Owner	Assigned	Due	Comment	Complete?
5	Advise SG on Powerplan solution options impacting the Program	JJ	5 May 16	Nov 16	GE, in partnership with Finance, to sponsor study to identify plan, timings and costs to re-architect the integration of SAP / PowerPlan / Front Office	Oct 24
6	Review GBE Scope with Finance Remediation	KH	5 May 16	June 16	Rescheduled by Fin – working with RQ for new date	Sept 14
7	Add controls development to design phase success criteria	KH	5 May 16	June 16		Yes
8	Update the SG on proposal detail and procurement process status and selection criteria	JJ	5 May 16	June 16		Yes
9	Align CWIP and GE programs and incorporate into GE program risk matrix as appropriate	KC	24 June 16	Aug 16	Pending completion of CWIP Analysis	Aug 16
10	Invite Internal Assurance to participate in vendor oral presentations and proposal review	KC	24 June 16	July 16	Complete – Input received	Yes
11	Provide a follow-up on staffing progress and plans	JJ	1 Aug 16	23 Aug 16	Complete	Aug 23

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Risk Registry (complete)

ID	Risk	Description & Potential Impact	Probability	Impact	Impacted Item	Category	Assigned to	Status	Next Update	Mitigation Date
4	P1 Single solutions to each software category may not be possible	The desired end state is one software solution for each software category. If this is not possible, it will raise the level of complexity of our future state design and increase costs and lengthen timelines in both Phase 1 and Phase 2	M	H	HLD	Program	Houchins, Granville	Monitoring	11/18/16	11/18/16
5	P2 Failure to account for significant ongoing external initiatives	Not accounting for the impacts/integration points/scope overlaps between GE and other programs could create scope overlaps and/or conflicts. This could result in increased costs or delays in schedules	M	H	HLD	Program	Watkins, Wayne S.	Monitoring	12/22/16	
6	Data Quality Data Analysis	Gaps in our understanding of current state data quality and completeness, as well as over-reliance on anecdotal evidence could have negative impacts on our roadmap and business case. - Bad assumptions, unanticipated risks etc	H	H	HLD	Program	Raad, Nicolas	Solution Proposed	12/2/16	12/2/16
7	Program staffing resiliency	Does the program have the sufficient team depth to overcome the effects of unplanned departures	M	M	HLD	Program	DeRamos, JWynn	Monitoring	12/22/16	
14	Failure to meet our staffing targets will impact our ability to initiate Phase 2 in a timely manner	If we don't complete our staffing process by our target date will mean that we have insufficient resources to effectively plan and charter Phase 2 projects. This could result in delays, increased costs.	M	H	PM	Staffing	DeRamos, JWynn	Monitoring	12/22/16	

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Risk Registry (continued)

ID	Risk	Description & Potential Impact	Probability	Impact	Impacted Item	Category	Assigned to	Status	Next Update	Mitigation Date
15	Mis-alignment / lack of integration and coordination between programs	Potentially a risk around enablement keeping joined up with other initiatives - eg Supervisor Enablement and strategic workforce planning	M	M	HLD	Workforce Planning	Irani-Famili, Reihaneh; DeRamos, JWynn	Monitoring	12/22/16	
16	Missing Expectations on progress due to SL start or late Phase 1 Completion	Delays in starting the program in a timely manner will impact long term timelines. Failure to complete Phase 1 deliverables in a timely manner could delay the sanctioning process and further delay kick off of deployment work.	M	VH	HLD	Delivery	Healy III, Kenneth	Solution Proposed	12/22/16	
17	Unsuccessful delivery due to scope creep	Unplanned/unapproved changes to scope can drive program costs, impact timely delivery or compromise the quality of program outcomes	M	VH	HLD	Delivery	Healy III, Kenneth	Solution Proposed	12/22/16	
18	Risk to Delivery Due to IS and Business capacity limitations	The program is dependent on multiple services and SMEs provided by the Functions, Business. Support delays and SME unavailability could impact timelines	H	H	HLD	Delivery	Connolly, Christopher; Murphy, Chris-US II; Irani-Famili, Reihaneh; Healy III, Kenneth	Solution Proposed	12/22/16	
19	Delays in Labor Union Engagement Could Impact workshop participation	Failure to engage represented employees in the as is to be design process could mean that critical information, observations and expert inputs are missing from the HLD process	M	M	HLD	Quality	Connolly, Christopher	Closed	10/21/16	

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Risk Registry (continued)

ID	Risk	Description & Potential Impact	Probability	Impact	Impacted Item	Category	Assigned to	Status	Next Update	Mitigation Date
20	Short term required compliance mitigation activities could negatively impact long term deployment activities	A disproportionate emphasis on short compliance fixes could consume the time, resources and expertise required to launch and sustain longer term fixes	M	H	Comp.	Delivery	McNamara, Daniel F.	Closed	12/22/16	10/20/16
21	Impact Analysis Deliverable Timeline	Impact Analysis milestone date misalignment may impact the downstream delivery of other CM deliverables.	L	L	BDR	BR/CM	Poyant, Ellen L.	Closed	10/3/16	10/7/16
22	Unplanned outages during implementation	Implementation and subsequent RTB (Run the Business) activities for U.S. Gas Enablement core platforms and products will be impacted by unplanned outages . Program Increments, or releases may be delayed due to resource availability or lack of testing.	H	M	SDD	Schedule	Krantz, Ronald D.	In Progress	2/1/17	
23	Powerplan Disintegration	Implementation Roadmap and removing Powerplan integration from work order creation and work execution processes may impact business/implementation roadmap and cost of program.	H	H	SDD	Budget and Schedule Risk	Geer, William J.	Monitoring	12/22/16	
24	Inappropriate use of Agile Delivery Methods	Applying Agile delivery methods against current application platforms and reporting & analytics environments may be inappropriate. Causing project delays.	H	M	SDD	Scope	Krantz, Ronald D.	In Progress	12/22/16	

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Risk Registry (continued)

ID	Risk	Description & Potential Impact	Probability	Impact	Impacted Item	Category	Assigned to	Status	Next Update	Mitigation Date
25	Constrained Benefits by lack of SCM Implementation	ERP Supply Chain and Materials Management capabilities are not fully deployed. Assumed benefits may be at risk of being attainable.	M	H	PM	Benefits	Connolly, Christopher; Healy III, Kenneth	In Progress	12/2/16	
27	Network Bandwidth	Pain point indicated that wifi availability was not present in barns. Mobile/Disconnected mobility may require increased network bandwidth.	M	M	SDD	IS Solution Architecture	Krantz, Ronald	Solution Proposed	12/22/16	5/1/17
28	ECM and HPUM remaining capabilities not mapped	The remaining capabilities (back office, customer, etc) that are not mapped between NG Enterprise Capability Model and the Accenture Utility Model need to be mapped to ensure process/capability connectivity and in support of future impact analysis.	M	L	HLD	Enterprise Business Architecture/ Solution	Lyba, Svetlana	Solution Proposed	1/12/17	3/31/17
29	Data Accessibility	Data is often not accessible, and when it is the spreadsheets are often too large to work with. Data summary documents provided by data managers are often more useful than the data itself.	H	H	PM	Program	Del Santo, Edward	New	11/30/16	
30	Auto dialing or texting wrong customer number	There is a TPCA compliance change that puts us at risk when we auto dial or text customers and their phone number is not correct. Need data cleaned and controlled to ensure we are not being fined.	H	M	Comp.	Quality	Raad, Nick; Plocarreto, Megan	New	5/1/2017	

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Risk Registry (continued)

ID	Risk	Description & Potential Impact	Probability	Impact	Impacted Item	Category	Assigned to	Status	Next Update	Mitigation Date
31	Benefits Identification	Benefits may not be as high / significant for a program / organization of this size and with respect to the starting point (e.g., 4th quartile in O&M/customer, Capital Unit Cost)	H	VH		PM	Del Santo, Edward; Connolly, Christopher	New	12/2/2016	
32	Benefits Buy In	Gas business leadership may not buy into take ownership of identified benefits	H	VH		Delivery	Del Santo, Edward; Jones, Sandra; Johnston, Johnny	New	12/16/2016	

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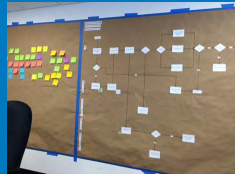
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Gas Business Enablement

Steering Group Pack



Johnny Johnston

20 December 2016, @ 1330 EST, Conf Room E1-995 (Joule) Res Woods

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Agenda

<u>Topic</u>	<u>Time</u>	<u>Presenter</u>
Opening Remarks	10 min	JJ
Meeting Objectives		
Action Item Follow Up		
Recommended Roadmap and Business Plan	75 min	JJ
<ul style="list-style-type: none"> • PwC Opinion • Field Training Assessment • Roadmap and Business Case • Decision 		
Program Next Steps (NG Only)	30 min	JJ / KH
<ul style="list-style-type: none"> • Current Position • Business Assurance Partner Feedback • Mobilization Activities and Recommended Accelerator and Enablement Projects • Decision/Approval 		
Meeting Close & Feedback	5 min	JJ

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Meeting Objectives

1. Seek approval to proceed to Group Executive Committee to sanction Year 1 of implementation having:
 1. Shared recommended roadmap, costs and benefits
 2. Confirmed scope to be included
 3. Confirmed sanctioning approach
2. Seek approval for interim activities for Q4 for FY17

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Action Item Follow Up

	Action	Owner	Assigned	Due	Comment	Complete?
9	Align CWIP and GE programs and incorporate into GE program risk matrix as appropriate	KC	24 June 16	Aug 16	<ul style="list-style-type: none">Gas Enablement will participate in Nov 30 / Dec 1 Work Order Remediation WorkshopsLessons Learned Discussion scheduled for 12/1	Completed
12	Provide a summary of actions taken / planned to address Business Assurance Partner observations	JJ	2 Dec	20 Dec	<ul style="list-style-type: none">Plan to be reviewed during 12/20 Steering Group meeting	Pending

For complete list see Appendix A

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Agenda

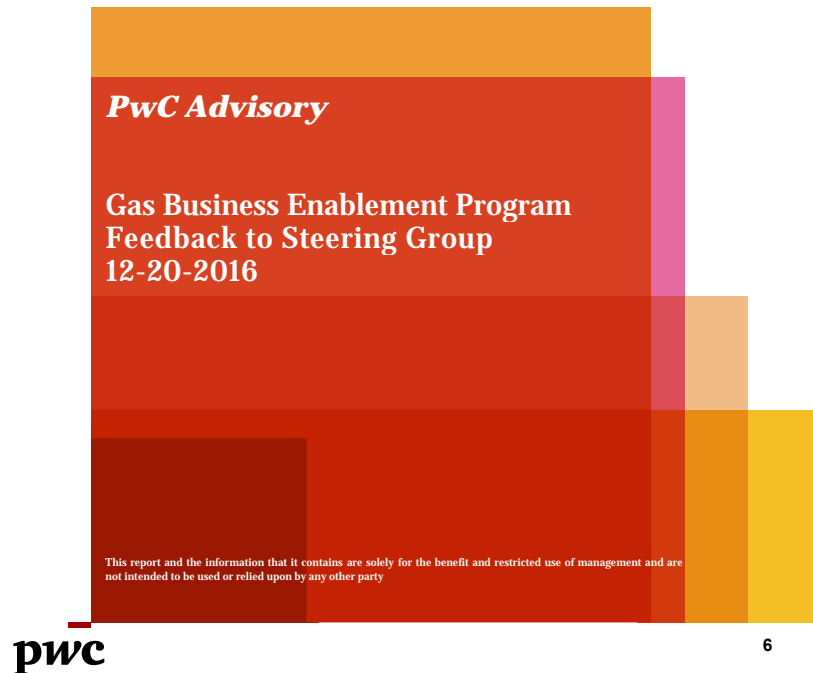
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Meeting Close & Feedback	5 min	JJ

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Gas Business Enablement – Program Context

GBE is structured as a transformational program



It is designed to strengthen core business capabilities to drive your target outcomes



This requires addressing gaps and opportunities beyond process standardization and technology replacement - these include data, structure, people strategy, analytics, culture - and new technologies



Building leading capabilities in work and asset management and customer engagement is an effort-intensive journey and requires significant investment



You are seeking to make substantial changes in a large business - that cannot be accomplished without commensurate effort (there is no quick fix)

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Program Scope

The current set of program initiatives includes:

Core functional scope - the basic set of WAMS and CE capabilities required by the business - moving the business to a new set of integrated modern applications and end-to-end processes

Additional proven functional capabilities which are becoming industry standards

Program Management

Change Management- Business Readiness

Data Management-Remediation

Management Capabilities

Technology Capabilities

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Program effort-cost estimate perspective



The effort estimate is significant - commensurate with achieving substantial business change



It is now structured and segmented to give visibility of the cost of the core scope and other scope components



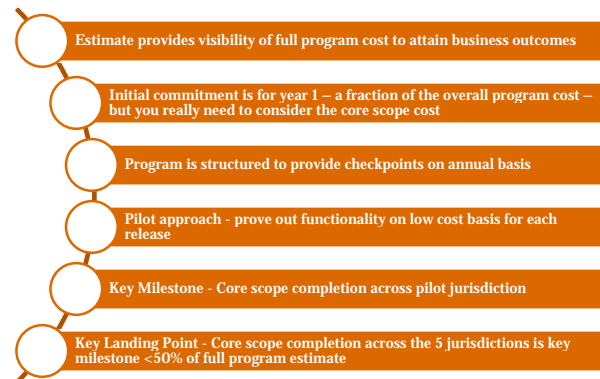
The current program scope can be delivered within this estimate



There are several scope items which require deeper analysis – primarily data and GIS

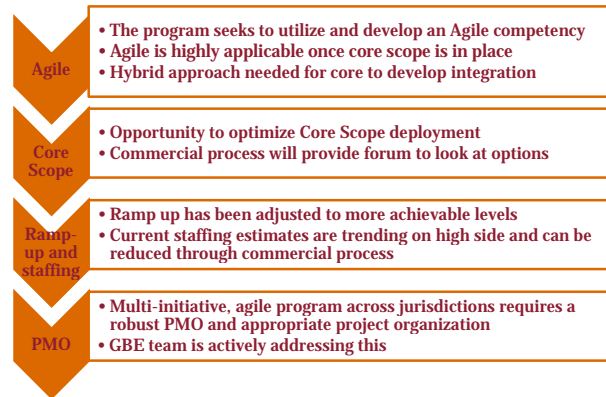
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Program risk control – level of spend



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Deployment Approach



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Strategic Assessment Deliverables Status

¾ Deliverables reviewed

¾ Software Solution Selection

¾ Roadmap (In progress)

¾ 8 Deliverables outstanding to be completed by the Strategic Assessment Consultant and reviewed by the Business Assurance team:

- | | |
|--|-------------------------------|
| 1. Business Case | 5. Target Operating Model |
| 2. Implementation/deployment approach with recommended phasing | 6. Change Management Strategy |
| 3. Resource Plan | 7. Executive Board Paper |
| 4. Risk Inventory Analysis | 8. SI Work Package |

Summary Observation

While the above deliverables have been used to inform the business case, PwC has not had the opportunity to dive into the details of RICEFW Estimates, and Cost and Resourcing Details (in addition to the 8 deliverables outstanding) used to develop the final roadmap, and business case.

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A study of Gas technical training has been completed

Challenges	
Increased regulatory focus on training vs. qualification	Increase in regulatory scrutiny and fines
Changing workforce demographics: knowledge drain	Hiring to backfill exiting workforce and support infrastructure replacement with 500 new hires
Significant infrastructure investment (\$1.6B)	Support transformation from Gas Enablement

- ¾ Corporate Audit Report No. 1994 found that National Grid's technical training is not prepared to meet current or future business needs
 - ¾ 5 P2 findings and 1 P3 finding
- ¾ P-PIC compliance assessment also identified deficiencies with technical training
- ¾ HR/L&D and Gas business partnered with Mosaic to conduct training analysis
 - ¾ Mosaic is a national training and workforce consulting firm that focuses solely on the utility and oil & gas industries
- ¾ Findings validated/extended audit, and developed roadmap to help ensure workforce is ready to address challenges noted above
- ¾ Proposed 3 year cost is \$25M

13

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Training study findings and recommendations

Key Findings

- ¾ Ineffective implementation of 70/20/10 training model (OJT, coaching/mentoring, and classroom training) leading to unmeasured and inconsistent training results with materials that are not up to industry standards
- ¾ Workforce trained to the task (OQ) and not the job, driving "check the box" behaviors that may jeopardize safety, efficiency, and compliance
- ¾ Ineffective governance process for defining training priorities leading to training that is not aligned to business objectives

Key Recommendations

Mosaic Pillar and Recommendation		Mosaic Pillar and Recommendation	
Employee Competence	Train to job/role vs. task	Instructor Excellence	Define and build program Measure performance Create feedback loop
Content and Tools	Rebuild and support 70/20/10	Facilities and Props	Further analysis required
Governance	Design and implement new model/process	Codes and Standards	Ensure alignment with L+D
Technology	Better use existing technology Add content development and management software		14

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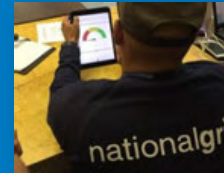
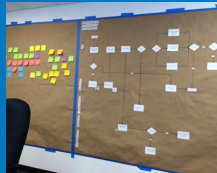
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Gas Business Enablement

A holistic business transformation to fix today and enable tomorrow



December 2016

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The US Gas Business is facing a number of challenges today

We hold an unsustainable level of operational risk

- **Duplicate** and aging systems 117 applications vs ~20;
- 59% of our systems are **unsupported** by vendors
- Average **age** of system is 14 years vs 5 ~ 7 industry norm
- 69% of systems are at end of life, rising to 90% within 2 years, resulting in reduced **reliability** and increased **operational risk**

We need a step change in operational performance

- Operational performance and **compliance issues**
- Rising customer **expectations**
- Lack of **capacity** to respond to growth
- Diffuse **accountability** for operating performance
- Sustained under achievement of **ROE** avg of 8.5% vs 9.7% allowed over last 3 years

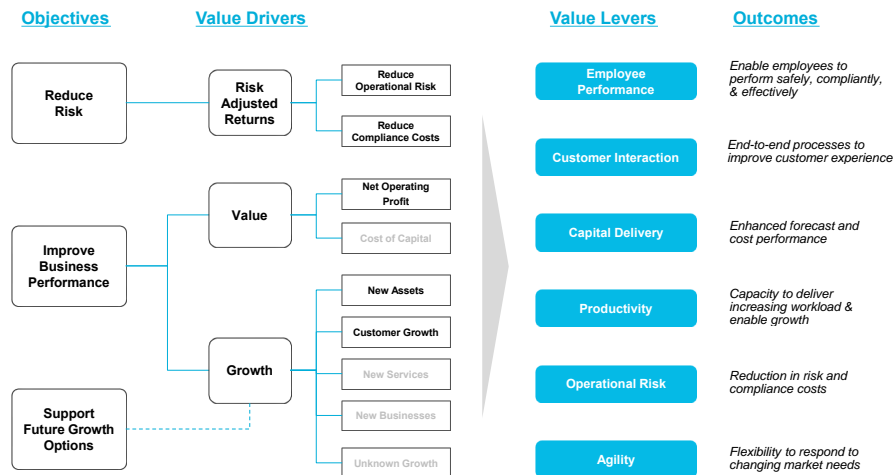
Our market framework is changing dramatically

- Rising regulatory **requirements** e.g. API 1173
- Changing public **sentiment** on gas e.g. environmental
- Competition and **opportunities** from alternative energy sources
- Transformative impact of **digital** on energy system

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**The program is design to deliver three primary objectives
which address the US gas business challenges**



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In the strategic assessment phase, we developed the following initiatives to meet these objectives

Workstreams		Initiatives					
GBE Portfolio Office							
Business Enablement	▶	Program Level People Strategy	Operating Model & Value Framework	Program Business Readiness & Sustainment	Leadership Capability		
Work Management	▶	Process Architecture	Work Management and Field Enablement	Work Management Analytics	Projects & Program Management		
Asset Management	▶	Engineering, Design, Estimating & Mobility	Asset Investment Planning and Management	Integrity Management	Asset - Advanced Analytics		
Regulatory/ Compliance	▶	Standards Operating Procedure Documentation	Document Management	Technical Training			
Customer Engagement	▶	Customer Interaction	Customer Employee Journey	CRM / Contact Center	Channel Analytics		
Data Management	▶	Data Management	Data Quality & Cleansing	Remediation & Integration			
Supply Chain	▶	SC Process Architecture	Integrated Supply & Demand Planning	Capability Building	SC Master Data Improvements	Inventory Optimization	Warehouse & Network Optimization
Information Systems Enabling							

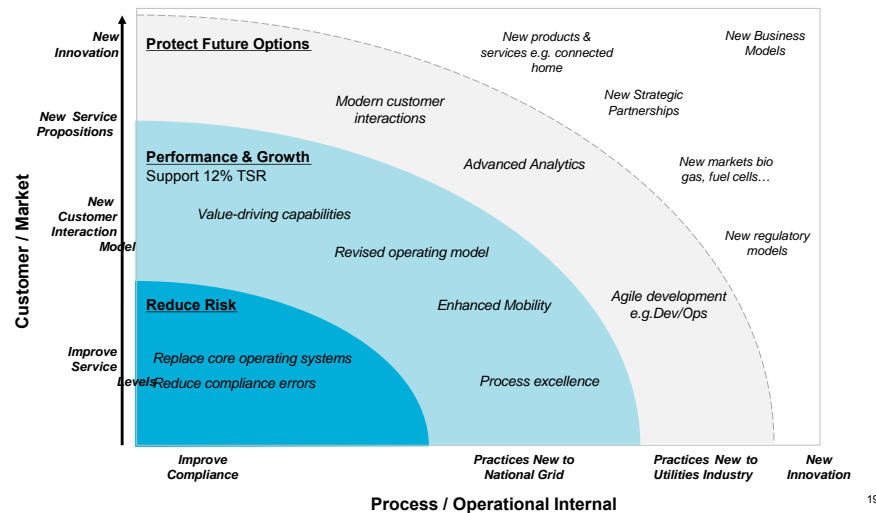
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To help prioritize we looked at our initiatives and implementation approach with different lenses



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The recommended program is a value-oriented approach that optimizes scope, value and risk

Option

Characteristics

1

Backbone only

- Minimum implementation required to mitigate key risks
- Focused on replacing core work and asset platforms over 3 years
- Simplifies, reduces implementation and risk
- Limited foundation for the future

**Risk Focused
Alternative**

2

Value Oriented

- Enhanced scope to meet program objectives
- Prioritized investment 'waves' over 5 years to deliver value
- Initial focus on risk reduction over first 3 years
- Annual decisions points to create optionality
- Addresses risk and desired business performance

**Recommended
Option**

3

"Big Bang"
Approach

- Comprehensive platform & capability scope in 3 years
- Minimized deployment time creates delivery risk
- Greater risk that desired performance improvements aren't achieved
- Ambition outweighs capability to deliver

No further consideration was given to this option

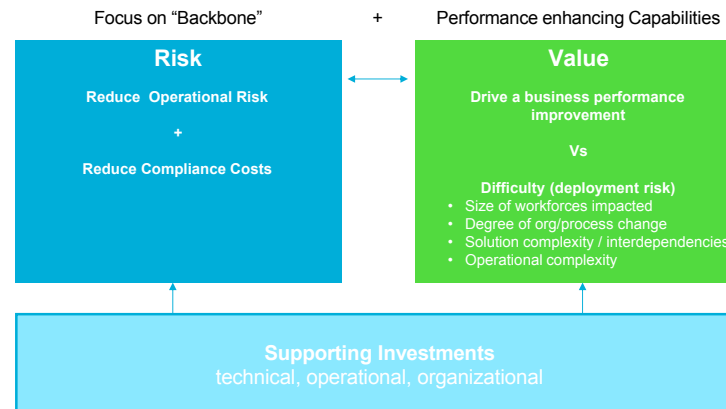
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For the Value Orientated approach (Option 2) there are three main categories of spend within the program

Prioritization Framework

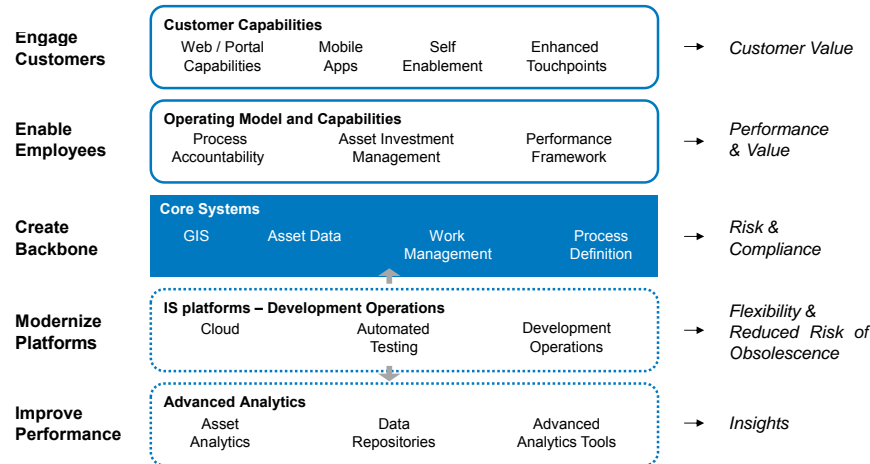


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nationalgrid Creating a solid backbone is core to delivering incremental value to the business going forwards

Conceptual Approach



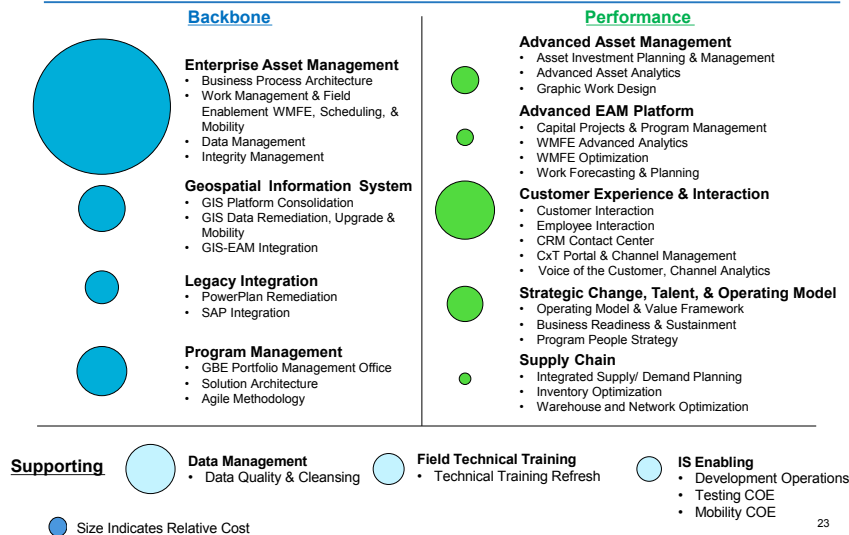
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The recommended scope includes the required 'backbone' investment supplemented by prioritized value-adding capabilities

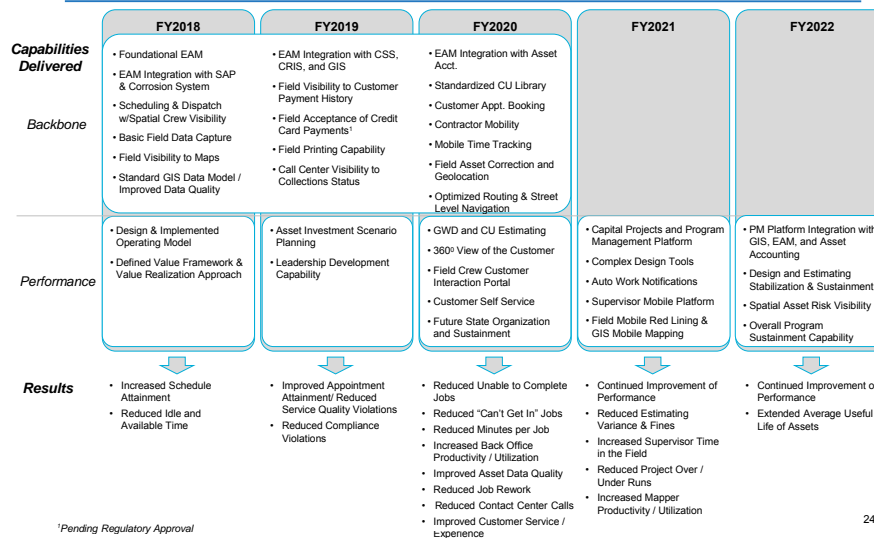


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The deployment of capabilities drives performance and value

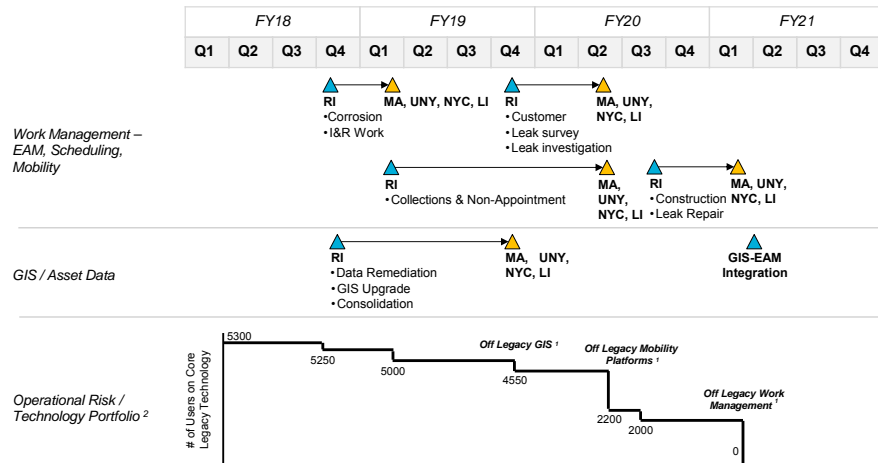


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The roadmap is designed to reduce risk over the first three years of the program as employees move off legacy platforms



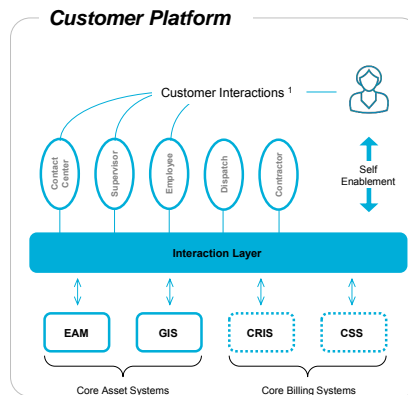
¹ Electric Business will remain on current shared legacy GIS and Work Management technology.
² Legacy backbone applications estimated to go from 42 out of 117 total applications currently to 6 out of 22 post implementation.

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A significant differentiator for this program is the customer interaction layer that sits on top of our core systems



Note 1: Roughly 35% of customer call interactions relate to work that GBE will improve. Source: Call center data Jan 2016-Aug 2016

Our Ambition

- Provide customers with enhanced digital (online and mobile) capabilities, providing more **transparency** and **control** at key touchpoints, e.g.
 - Starting / stopping service
 - Making appointments
 - Providing information
- Giving employees (call center, field) visibility to better serve our customer
- Develop a flexible platform to better meet future customer, regulatory & business needs

Our Opportunity

- Deliver step change in customer performance
- Support customer growth
- Enable future service offerings

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We plan to deliver a step change in customer experience...



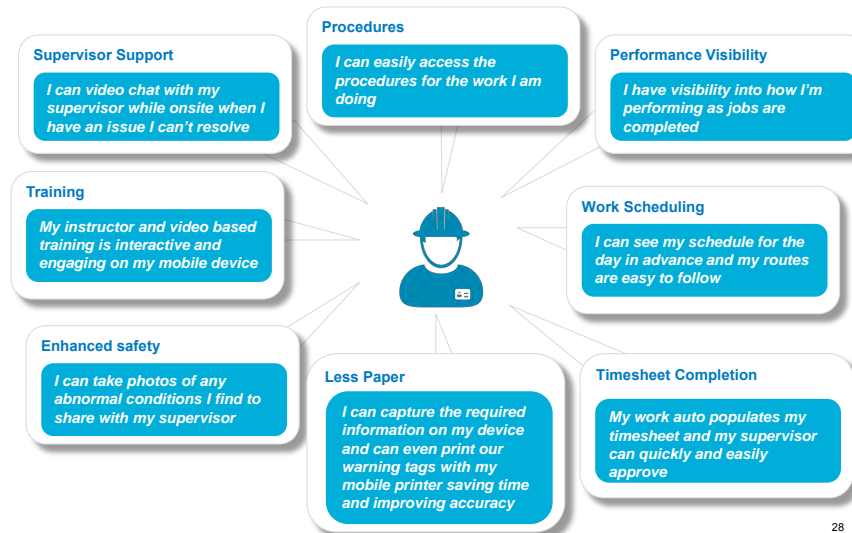
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... and enable our employees to perform



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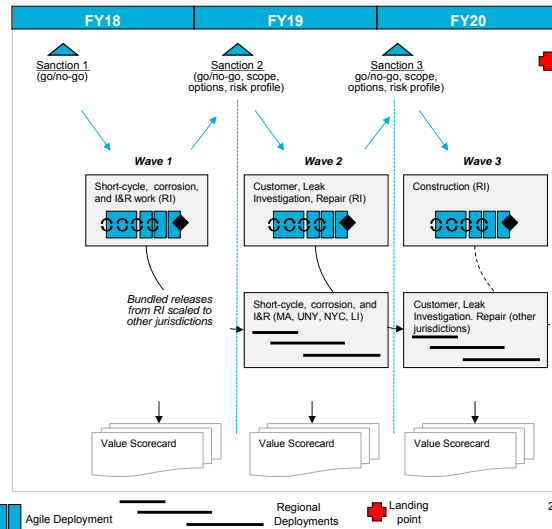
The delivery approach gives further program visibility, value assurance and optionality

Governance

- Sanction waves with scope decisions gives optionality
- Stage gates to manage deployment risk to jurisdictions
- Governed with focus on realizing value

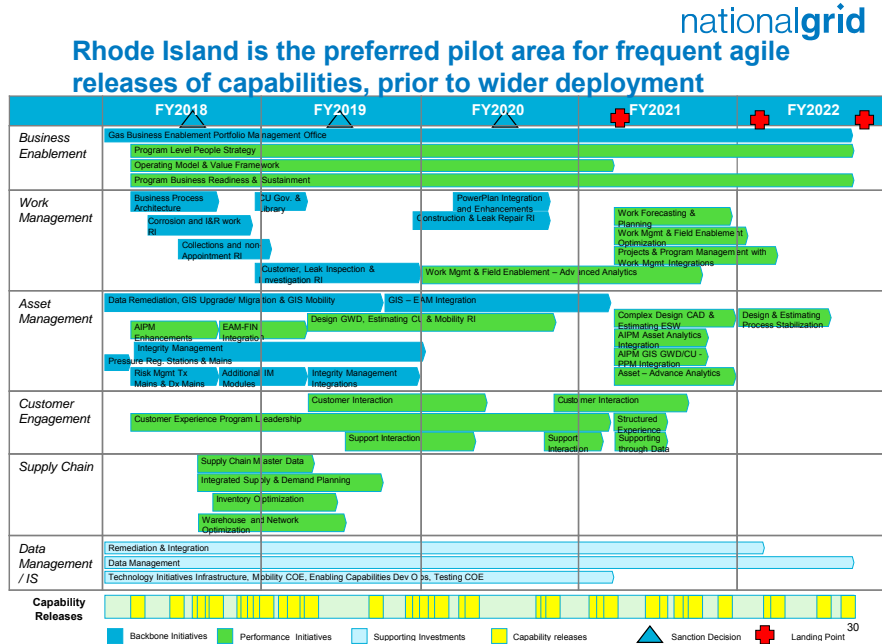
Release Approach

- Rhode Island as test bed to validate performance and value
- Agile deployment approaches in Rhode Island waves to deliver 'Minimal Viable Product' then enhance based on value once working
- Capabilities bundled for scale rollout to other jurisdictions
- Performance framework defines measurable results of releases and waves



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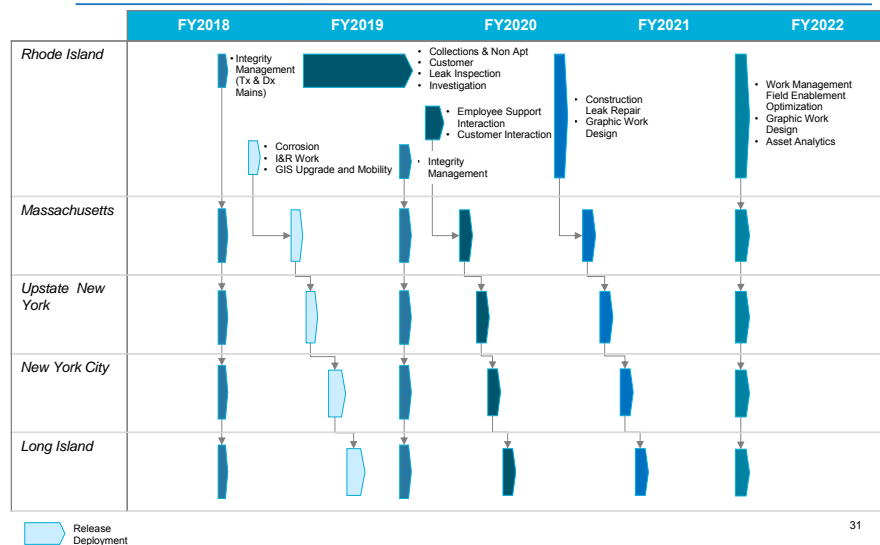


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Capabilities are then bundled into larger releases for jurisdictional deployment



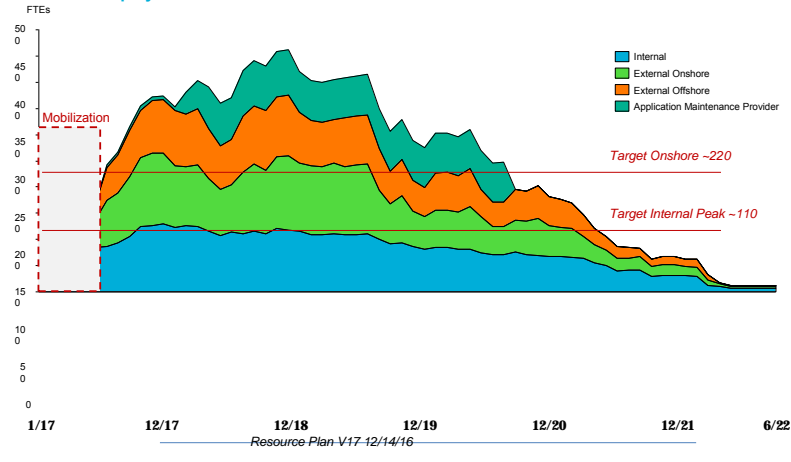
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A mixture of internal & external (incl offshore) resources have been identified to successfully deliver the roadmap

Resource Map by Month¹



¹Source: GBE Master

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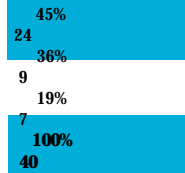
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% of Total
Target on
9/2017

Current
on
12/2016

32

Business
50
IS
40
PM
20
Total
110



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**\$134M of the \$466M total is being requested for the first year
of the Program**

Initiatives	Cost \$Ms ^{1, 2}	% Total
Core EAM Platform	\$126	27%
GIS	\$43	9%
Legacy Integration	\$27	6%
Program Management	\$43	9%
Backbone Subtotal	\$239	51%
Advanced EAM Platform	\$15	3%
Advanced Asset Management	\$25	5%
Customer Experience & Interactions	\$55	12%
Strategic Change, Talent, & Operating Model	\$33	7%
Supply Chain	\$11	2%
Performance Subtotal	\$139	30%
Field Technical Training	\$26	6%
Data Management	\$41	9%
IS Enabling	\$21	5%
Supporting Investments Subtotal	\$88	19%
Total w/Out Contingency	\$466M	
Contingency³	\$19M	
Total w/Contingency	\$485M	

¹ Costs include expenses (17% external, onshore labor cost; 10% internal labor costs); cost includes HW/SW)

² Average Daily Rates: NG - \$845; External - \$1,001 (External Onshore - \$1,711; External Offshore - \$326)

³ Contingency (20%; applied to labor cost only) calculated on the second FY of the program which carries the highest cost profile of all fiscal years 33
— reduced from a traditional program contingency of \$63M due to proposed annual sanctioning approach

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The main benefits are reduced risk and increased safety and compliance however there are a number of other benefits

¾ The primary driver and benefit from Gas Business Enablement is **reduced operational risk** from aged system failure and **enhanced pipeline safety and compliance** from replacing aged and duplicative systems with modern platforms giving a single view of assets and work and having been aligned in design to API 1173 (process safety) control standards

Additional Benefits areas include:

- ¾ **Efficiencies:** \$33M¹ in annual benefits have been identified. Giving a 5 year 'payback' for the performance initiatives
- ¾ **Customer Experience:** Drive better appointment booking and attainment, enhanced call center visibility and enhanced digital experience
- ¾ **Employee Experience:** Driven by modern tools and platform that make it easier to do the job right and easily record the right information
- ¾ **Regulatory Reporting:** Having our assets and work in an enterprise system will significantly simplify our ability to report to our regulators

¹ See Appendix for a breakdown of the efficiency benefits

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Regulatory Approach

Being developed

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We will drive the program to achieve these critical success factors

Success Factors	Description
Leadership Commitment	Substantial involvement of leadership and line managers and strong accountability and commitment to program goals
Coordination & integration	Clear integration with other initiatives in progress that impact the gas business such as shaping our future, customer experience transformation, process improvement initiatives, and operating model changes
Technology Integration	Clear alignment of process designs with IS roadmap and strong collaboration on technology decisions and design / build activities
Value Delivery	Rigorous cascade of value drivers and specific performance goals with clear management of accountabilities to deliver results
Customer Value	Strong focus on understanding customer expectations and improving performance on dimensions that customers value
Organizational Momentum	Focused, energized project teams to drive pace and build excitement and enthusiasm for change over time
Stakeholder Management	Engagement of key external stakeholders as part of a carefully managed relationship migration strategy e.g., customers, regulators, political, union leadership
Transition / Operational Complexity	Identification and mitigation of potential transition risks that could impact day-to-day operations

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We will actively monitor and mitigate major program risks

Risk	Definition	Mitigations
Business disruption	The program causes performance of the business to be reduced because of disruptions to operations	<ul style="list-style-type: none"> § Disciplined release planning anticipates complications § Change Office reinforces disciplined go/no-go stage gate governance and change planning
Market context	Capabilities delivered lose relevance because of dramatic changes in market and or regulatory environment	<ul style="list-style-type: none"> § Waves revisits context of each investment cycle § Agile approaches improve relevance of solution approach
Change in strategic priorities	Business priorities change over time and reduce priority for further program investments	<ul style="list-style-type: none"> § Strong alignment with current strategic priorities § Sanction schedule provides for regular investments § Input from US leadership and Group Executive
Sustainment of performance and value	Program fails to realize sustainable improvement in the performance of the business	<ul style="list-style-type: none"> § Value framework identifies specific performance parameters for every initiative § Operating Model strengthens accountability framework for the business
Capacity for change	Organizational inertia and culture prevents program from achieving required pace of change	<ul style="list-style-type: none"> § Change office and ongoing organizational health metrics to diagnose organizational state § GBE manages change portfolio for gas business
Scope creep	Scope and cost of program increases because of failure to stay focused on objectives	<ul style="list-style-type: none"> § Value framework helps manage scope/value tradeoffs § Agile approaches help identify most relevant solutions § Sanctioning waves allow total costs to be controlled
Data quality	Cost and complexity of data conversion and cleansing is much greater than anticipated	<ul style="list-style-type: none"> § Data discovery allows bottom up profiling of data and data quality
Resources / Capabilities	Business is unable to provide adequate resources and delivery capabilities to successfully manage the program	<ul style="list-style-type: none"> § Resource plan has manageable ramp up § Robust commercial process to find partners with desired capability at a competitive price

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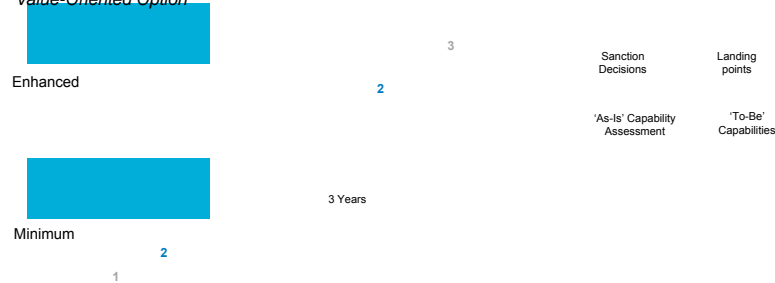
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The value oriented option costs an incremental \$18M in Year 1 that insures optionality for the full program

Value-Oriented Option



Transformational 'soft' Capabilities			\$18M difference between backbone & value orientated approach in 1 st year
	Total Spend	Year 1 Sp	
1 Backbone	\$285M	\$116M	
2 Value Oriented	\$466M	\$134M	
3 "Big Bang" Approach	\$650+M	Not considered	

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The Gas Business Enablement Steering Group are asked to:

- Confirm the Performance Initiatives and Supporting Investments are appropriate for the scope of the program
- Endorse the recommended Value Driven (Option 2) roadmap and business case. Noting the 5 year \$466M investment, \$134M year 1 spend, \$19M rolling contingency and associated benefits.
- Recommend submitting the program to the National Grid Group Executive for sanctioning in January 2017. Requesting that the Committee:
 - support the proposed roadmap and sanctioning approach
 - approve \$134 investment for FY 18 (+\$18M contingency)
 - endorse the GBE Steering Group to oversee the program implementation
- Continue to provide Steering Group oversight and direction through the mobilization and implementation phases of the Program

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Appendix: Initiative Cost Detail

Initiative	Total Cost	% of Total
Backbone	(\$238,656)	51%
Performance	(\$138,601)	30%
Advanced Asset Management	(\$25,437)	5%
AIPM	(\$7,200)	2%
Asset - Advanced Analytics	(\$3,898)	1%
Engineering, Design, Estimating & Mobility	(\$14,339)	3%
Advanced EAM Platform	(\$15,114)	3%
Projects & Program Management	(\$4,756)	1%
Work Management & Field Enablement	(\$10,358)	2%
Customer Experience & Interactions	(\$54,526)	12%
Customer Experience Program Leadership	(\$2,823)	1%
Customer Interaction	(\$21,525)	5%
Structured Experiences	(\$1,387)	0%
Support Interaction	(\$28,674)	6%
Supporting through Data	(\$117)	0%
Strategic Change, Talent, & Operating Model	(\$32,595)	7%
Operating Model & Value Framework	(\$10,178)	2%
Program Business Readiness & Sustainment	(\$7,226)	2%
Program Level People Strategy	(\$15,191)	3%
Supply Chain	(\$10,929)	2%
Supporting Investments	(\$88,257)	19%
Data Management	(\$41,212)	9%
Field Technical Training	(\$26,000)	6%
IS Enabling	(\$21,043)	5%
Enabling Capabilities	(\$17,237)	4%
Technology Initiatives	(\$3,808)	1%
Grand Total	(\$465,514)	100%

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Appendix: Cost by Year by Cost Category

Cost Category ¹	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	Total
Software O&M	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hardware O&M	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Contractor O&M	\$0	(\$4,758)	(\$3,367)	\$0	\$0	\$0	(\$8,125)
External O&M	(\$26,628)	(\$30,008)	(\$18,340)	(\$13,450)	(\$4,654)	(\$350)	(\$93,430)
Internal O&M	(\$15,253)	(\$16,379)	(\$13,503)	(\$10,688)	(\$5,355)	(\$406)	(\$61,583)
Contingency O&M	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Expenses O&M	(\$3,957)	(\$4,404)	(\$2,738)	(\$1,967)	(\$677)	(\$57)	(\$13,799)
Total O&M Costs	(\$45,838)	(\$55,548)	(\$37,948)	(\$26,105)	(\$10,685)	(\$813)	(\$176,937)
Software	(\$30,263)	(\$7,158)	(\$50)	(\$4,050)	(\$50)	\$0	(\$41,571)
Hardware	(\$531)	(\$5,024)	(\$3,390)	\$0	\$0	\$0	(\$8,945)
Contractor CapEx	(\$16,700)	(\$33,140)	(\$18,768)	(\$2,167)	\$0	\$0	(\$70,775)
External CapEx	(\$29,492)	(\$38,135)	(\$30,897)	(\$17,223)	(\$4,161)	(\$189)	(\$120,098)
Internal CapEx	(\$7,458)	(\$9,295)	(\$7,889)	(\$5,174)	(\$936)	(\$15)	(\$30,768)
Contingency CapEx	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Expenses CapEx	(\$3,930)	(\$5,128)	(\$4,325)	(\$2,403)	(\$604)	(\$30)	(\$16,420)
Total CapEx Costs	(\$88,374)	(\$97,881)	(\$65,320)	(\$31,017)	(\$5,752)	(\$234)	(\$288,577)
Total Costs	(\$134,212)	(\$153,429)	(\$103,268)	(\$57,122)	(\$16,437)	(\$1,047)	(\$465,514)
						Contingency	\$18,763
						Total Costs	\$484,287

¹ Costs include expenses 17% external, onshore labor cost; 10% internal labor costs
² Contingency (20%; applied to labor cost only) calculated on the second FY of the program

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Appendix: OpCo Cost by Year

Operating Company	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	Total
Brooklyn Union Gas KEDNY	\$ 40,398	\$ 46,182	\$ 31,084	\$ 17,194	\$ 4,948	\$ 315	\$ 140,120
Keyspan Gas East KEDLI	\$ 28,923	\$ 33,064	\$ 22,254	\$ 12,310	\$ 3,342	\$ 226	\$ 100,318
NiagraMohawk Gas	\$ 16,696	\$ 19,087	\$ 12,846	\$ 7,106	\$ 2,045	\$ 130	\$ 57,910
Boston Gas	\$ 31,258	\$ 35,734	\$ 24,051	\$ 13,304	\$ 3,828	\$ 244	\$ 108,418
Colonial Gas	\$ 6,992	\$ 7,994	\$ 5,380	\$ 2,976	\$ 856	\$ 55	\$ 24,253
Narragansett Gas	\$ 9,945	\$ 11,369	\$ 7,652	\$ 4,233	\$ 1,218	\$ 78	\$ 34,495
Total Costs	\$ 134,212	\$ 153,429	\$ 103,268	\$ 57,122	\$ 16,437	\$ 1,047	\$ 465,514

Costs include expenses 17% external, onshore labor cost; 10% internal labor costs; cost includes HW/SW; Contingency excluded

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Appendix: Annual Aspirational Benefits

Area	Aspirational Annual Benefit	Benefit Drivers
Work Management & Field Enablement	\$16M	Increased Field Productivity / Utilization through: § Better scheduling & work bundling § Optimized routing and street level navigation § Automated dispatch § Digital field data / information capture (e.g., photos, time sheets) § Mobile red-lines and field asset updates Increased Back Office Productivity / Utilization through: § Field automation (e.g., time sheets, asset information capture) § Back office automation (e.g., auto matching of invoices to work orders)
Asset Management & Engineering	\$4M	Increased Engineering Productivity / Utilization through: § Segmentation of non-Engineering work to other resources (e.g., project management) § Improved integration of tools § Standardized CU's and design templates Increased Mapping Productivity / Utilization through: § Mobile red-lines and field asset updates Other § Avoidance of penalties through improved estimating accuracy (NY Only)
Customer Experience	\$3M	Increased Contact Center Productivity / Utilization through: § Reduction in calls due to self-service options and more accurate / timely information Other § Avoidance of service quality penalties through better meeting customer commitments and improving customer satisfaction scores through a better customer experience
Compliance	\$9M	Other § Avoidance of compliance / gas safety penalties
Other	\$1M	Increased Analyst Productivity / Utilization through: § Reduction in the amount of time spent extracting and scrubbing data
Total	\$33M	

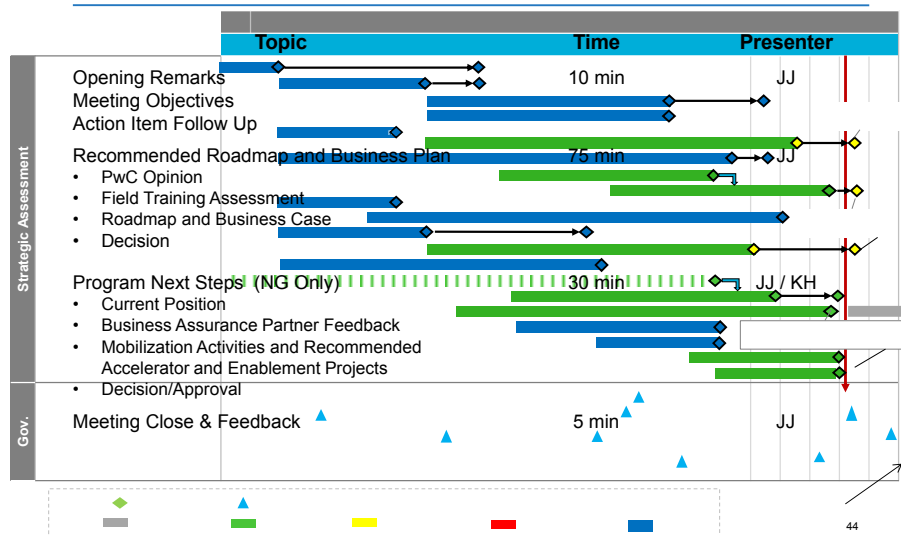
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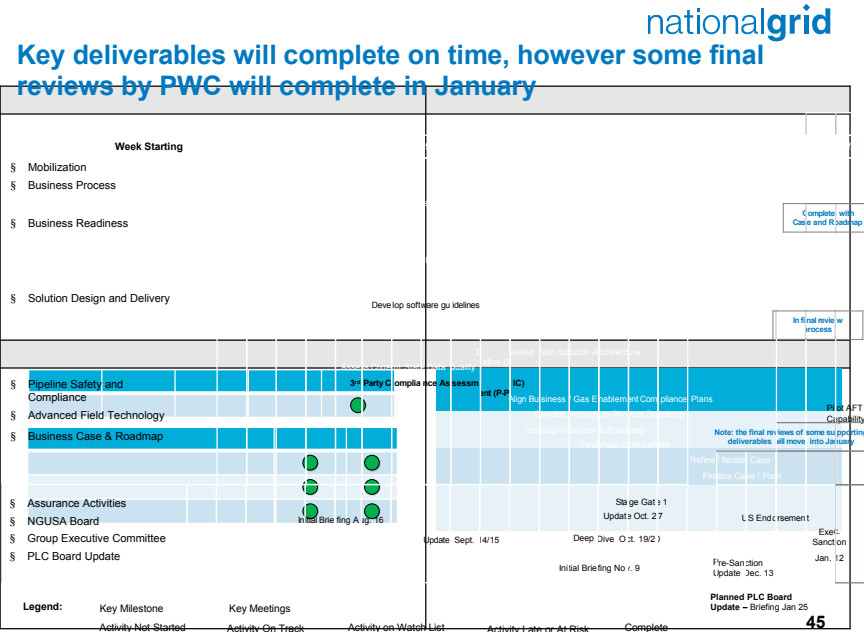
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Agenda



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Gas Enablement Program Status

Scope Status And Impacts				Schedule Highlights			
1) Scope Status: Multiple potential scope changes are being evaluated: 1) Phase 2 "Accelerators" - Various 2) Approved changes since last update: 1) Software procurement support 2) PowerPlan Architecture – Design and Deploy phase 3) Next Scope "Inflection Point": Phase 2 Mobilization "Accelerator" – 12/20 4) Delivery Approach: Being addressed as part of Road Map and Business Case preparation 5) Customization KPI: To be developed in Phase 2 Mobilization				1) Key Milestones and Deliverables: 1) 13 of 22 Deliverables are complete, 9 remaining deliverables are in the build phase to complete 12/20. Draft and final reviews are underway but likely to extend to January. 2) Activities completed 1) Design Authority review of roadmap and business case 3) Upcoming activities: 1) Complete preparation of Executive Committee and Sanction Papers 2) Complete Phase 2 mobilization planning 4) Overall Schedule Status: Tracking to revised plan however some Deliverables are lagging in completion of final reviews			
Resources				Risk			
Wave 1/2/3	71	40	23*	Data Management	High	Very High	Mitigation plan in place (See Accelerators)
Program Budget Submitted				Power Plan solution architecture	High	Very High	Mitigation plan in place
Forecasted spend (against targets)				Incomplete cross US enterprise integration could degrade roadmap viability	Med	High	Mitigation plan in place
Financial Reporting				1) Will initialize collaboration between Enterprise and Program risk management in January 2) Program risk review for mobilization and Phase 2 planned for January 16 3) Risks identified Business Case Risk Inventory Analysis to be incorporated into Program risk register upon			
1) In-Progress – includes all positions now open with the Process team. (There are 15 openings) 2) In-progress numbers include 3 accepted offers with start dates in January 3) Forecast Spend – currently trending to come in at or slightly below budget 4) Financial Reporting – producing monthly reporting on actual, budget, and forecast							

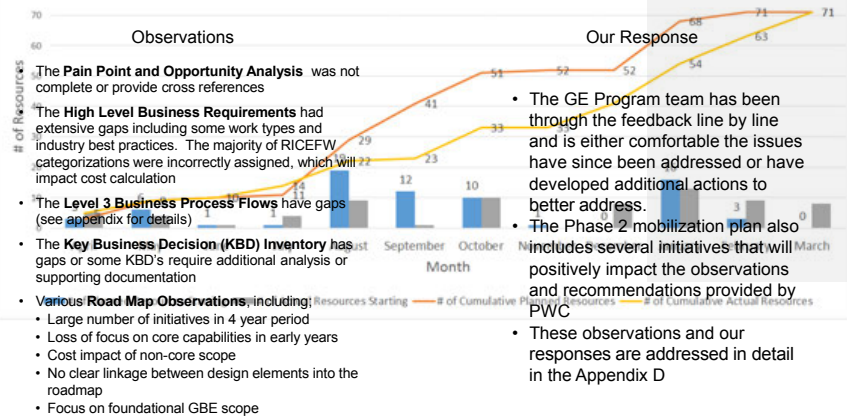
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At the Dec 2 Steering Group meeting PWC provided significant feedback on the Phase 1 work packages

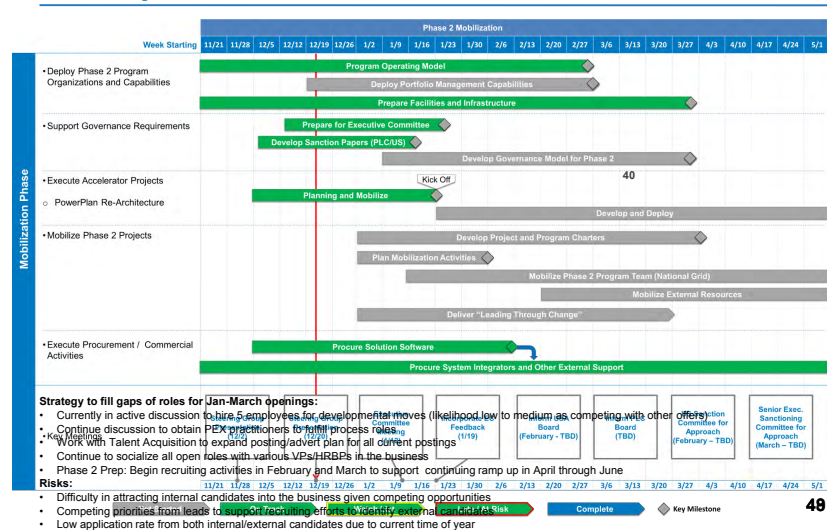
Their overall conclusion was: "The outstanding gaps and shortcomings identified in the design deliverables do not prevent development of the roadmap and business case".



For further details see Appendix C and D

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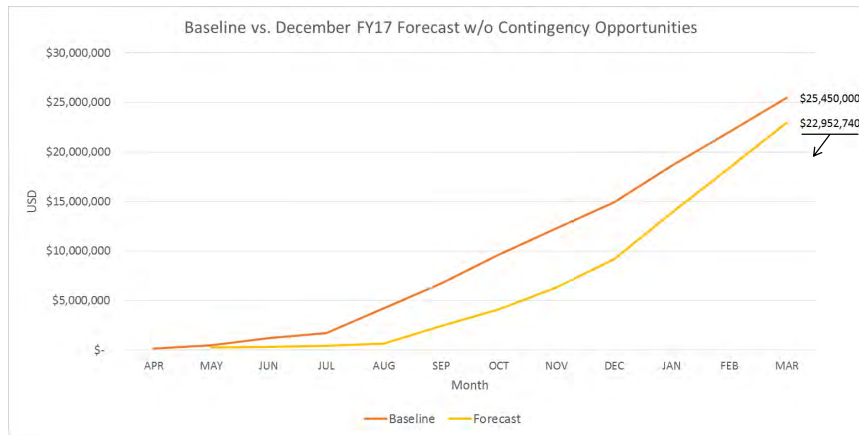
The Program is already preparing for Phase 2, with recruiting underway



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During the next quarter, the Program will begin a broad range of Phase 2 mobilization activities

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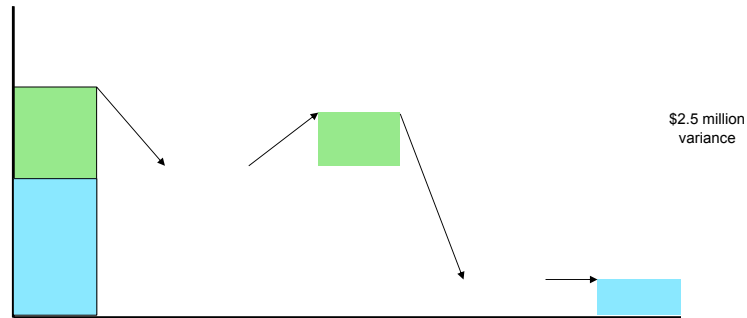


For details on activities see Appendix D

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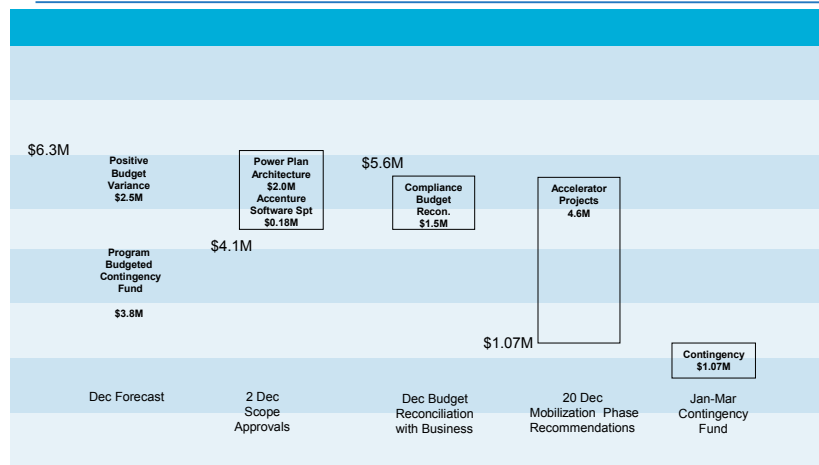
Based on current plans and actuals to date, we are tracking to a positive variance of \$2.5M, plus a \$3.8M contingency



- § Baseline & December 16 Forecast includes \$3.8 Contingency and \$5m in planned Compliance spend.
- § December 16 Forecast is \$2.5m favorable to Baseline which is primarily the result of a slower than planned ramp up of the National Team
- § December 16 Forecast excludes Accelerator opportunities.

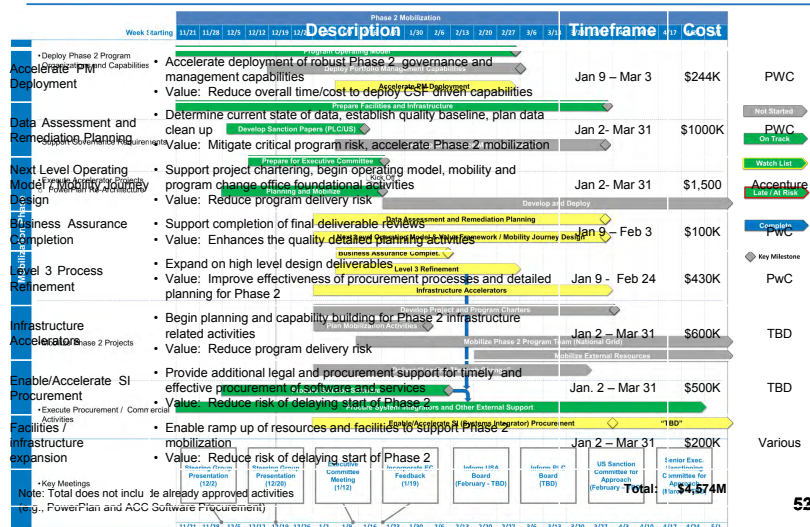
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**This strong budget position provides opportunities to mitigate
Business and Phase 2 mobilization risks**



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These “accelerator” projects will prepare us for Phase 2 ramp up and address Assurance Partner feedback...



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... and can be supported without risk within the Program
Phase 2 mobilization plan (FY17 4Q)

For details on activities see Appendix E

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May we have your

- ¾ Endorsement of the recommended mobilization plan
- ¾ Approval of the release of contingency funds to support Mobilization Phase accelerator projects

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Meeting close

¾ AOB

¾ New Action Item Summary

Leadership Pulse Check and Closing Remarks

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Appendix - A



Steering Group Action Item List (complete)

	Action	Owner	Assigned	Due	Comment	Complete?
1	Ensure that Enablement is added to the QPR agenda	PS	10 Mar 16	1 Apr 16		Yes
2	To provide visibility of the expect impact of Gas Business enablement on the ability to run the business due to a potential talent drain.	JJ	10 Mar 16	1 May 16	Phase 1 key roles have been filled with Business Leadership engagement and support. Subsequent staffing requirements will be reviewed regularly with the Design Authority	Aug 16
3	To identify the appropriate approach to ensure that the SG has visibility to the level of customization being undertaken by the project.	JJ	10 Mar 16	1 Oct 16	Phase 1: • Formalize the design principle to minimize, customizations • Provide a view of where customizations might be required in Phase 2 based on what we know. Phase 2: • All customizations will be approved by Chris Murphy and Johnny Johnston and formally reported to the Steering Group.	Oct 24
4	To share the rate case strategy and ensure that any appropriate costs are included in the MA Gas rate case.	JJ	10 Mar 16	1 Jul 16	Action Plan: 1) Engaging with NY rate case team 2) Coordinating with MA to include GE costs in the MA Gas case 3) Will work with Finance to deploy effective tools and processes to capture and report rate case data 4) Insure GE business case is rate case enabling	Aug 16

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Action Items - continued

	Action	Owner	Assigned	Due	Comment	Complete?
5	Advise SG on PowerPlan solution options impacting the Program	JJ	5 May 16	Nov 16	GE, in partnership with Finance, to sponsor study to identify plan, timings and costs to re-architect the integration of SAP / PowerPlan / Front Office	Oct 24
6	Review GBE Scope with Finance Remediation	KH	5 May 16	June 16	Rescheduled by Fin – working with RQ for new date	Sept 14
7	Add controls development to design phase success criteria	KH	5 May 16	June 16		Yes
8	Update the SG on proposal detail and procurement process status and selection criteria	JJ	5 May 16	June 16		Yes
9	Align CWIP and GE programs and incorporate into GE program risk matrix as appropriate	KC	24 June 16	Aug 16	Pending completion of CWIP Analysis	Aug 16
10	Invite Internal Assurance to participate in vendor oral presentations and proposal review	KC	24 June 16	July 16	Complete – Input received	Yes
11	Provide a follow-up on staffing progress and plans	JJ	1 Aug 16	23 Aug 16	Complete	Aug 23
12	Provide a summary of actions taken / planned to address Business Assurance Partner observations	JJ	2 Dec	20 Dec	Plan to be reviewed during 12/20 Steering Group meeting	Pending

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Appendix - B

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Key Observations

¾ Deliverables reviewed

- ¾ High Level Business Requirements
- ¾ Key Business and Technical Decisions Inventory
- ¾ Processes and Key Use Cases for Connected and Disconnected Mobility
- ¾ Future-state information, application, and integration architecture (draft)
- ¾ Change Impact Analysis
- ¾ Application and technology roadmap including enabling capabilities (draft)

Detailed Observations on Design and Roadmap on following slides

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Design

Key Findings

Through the BA reviews, gaps in the quality and completeness of the Design deliverables were identified and not fully addressed:

The **Pain Point and Opportunity Analysis** did not:

1. Bridge the gap from current to desired state
2. Identify industry best practices and tools
3. Cross reference pain points to provide a pivot to the future state

The **High Level Business Requirements** had extensive gaps including:

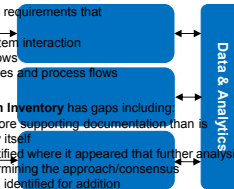
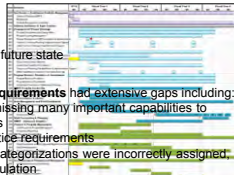
1. An incomplete inventory missing many important capabilities to support various work types
2. Missing industry best practice requirements
3. The majority of RICEFW categorizations were incorrectly assigned, which will impact cost calculation

The **Level 3 Business Process Flows** have gaps including:

1. No clear inventory or decomposition of level 1, level 2 and level 3 flows
2. No variations illustrated across different work types
3. No link between process steps and related business requirements that support them
4. No swim lanes / roles or visual representation of system interaction
5. Asset Management capabilities do not have detail flows
6. Capital Projects and Portfolio Management capabilities and process flows are not defined

The **Key Business Decision Inventory** has gaps including:

1. Several KBDs require more supporting documentation than is available in the inventory itself
2. Several KBDs were identified where it appeared that further analysis (is) required before determining the approach/consensus
3. Over 20 additional KBDs identified for addition



Implications

The outstanding gaps and shortcomings identified in the design deliverables **do not** prevent development of the roadmap and business case (apart from fuzziness on initiative scope)

The main impact will be on National Grid's ability to issue clearly defined RFP's for software selection and system integration services – a solid set of future state design specifications are required for precise scoping

Recommended Actions

Use Q1 2017 to perform a more detailed and thorough development of Level 3 process flows and develop appropriate linkages to requirements and pain points – **focusing on Core Scope first**

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Roadmap

Key Findings	Implications
While not fully completed , the initial draft Roadmap has been reviewed and the following conclusions have been drawn to date:	
1. The roadmap is comprehensive and provides a large number of initiatives and activities to perform over a four year period.	Creating a roadmap that is overly complex with too many moving parts will be difficult to manage and add risk.
2. An excess of work and scope is included in the first 3-4 years of the program. This distracts from the main priority of implementing core scope across the jurisdictions (3+5 model) . Loses focus on driving the value from getting the core capabilities "right" – and then adding more advanced capabilities from there.	Additionally, as this is a major program, it will be important that the focus of the organization is not pulled into too many directions during the early part of the program.
3. Cost/effort estimate of Years 1-4 is bloated by high ratio of non-core scope	
4. No clear linkage from the design elements into the roadmap i.e. mapping of capability/process inventory to initiatives. Unable to see which pain points/opportunities, requirements, and processes are enabled within each initiative on the roadmap.	
5. The focus should be on foundational GBE scope to enable enterprise end-to-end work and asset management process through a highly integrated architecture (move the business onto a modern, integrated platform).	
<div>GBE Foundational/Core Scope</div> <div>Enterprise Asset Management (CM, PM, Construction)</div> <div>Customer Meter Service Work</div> <div>Geospatial Information System</div>	
	<div>Recommended Actions</div> <div>Use the remaining time in Q4 2016 to develop a robust plan to implement the core scope across all jurisdictions in ~3 years.</div>
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Appendix - C



National Grid response to PwC feedback

PWC Feedback	NG Response
<p>The Pain Point and Opportunity Analysis did not:</p> <ol style="list-style-type: none"> 1. Bridge the gap from current to desired state 2. Identify industry best practices and tools 3. Cross reference pain points to provide a pivot to the future state 	<ol style="list-style-type: none"> 1. NG worked with Accenture to ensure Pain Points link to Themes/Opportunity Areas which link to Requirements which link to Initiatives which link to Resource Plans which link to Costs. Requirements link directly to Benefits. However working with PWC, NG believe there is further value here and have identified an interim workpack item to address. NG Business Team is currently validating the traceability from pain points to requirements 2. We have completed a number of best practice visits as well as receiving input from Accenture & PWC. We are comfortable we have received good industry insight. We will continue to complete best practice visits to continue to learn from others. 3. See point 1
<p>The High Level Business Requirements had extensive gaps including:</p> <ol style="list-style-type: none"> 1. An incomplete inventory missing many important capabilities to support various work types 2. Missing industry best practice requirements 3. The majority of RICEFW categorizations were incorrectly assigned, which will impact cost calculation 	<ol style="list-style-type: none"> 1. Using PWC feedback, additional requirements were added by Accenture. Many of the 'missing requirements' were standard requirements not differentiating requirements that would drive scope or cost into the program. PWC have provided the additional level of detail as part of their support for the program. 2. NG comfortable that with additional support from PWC we now have captured the requirements needed to inform the initiatives that support the business case. 3. RAWICE is the inventory Accenture uses for Maximo and RICEFW is used for SAP – following the initial PWC observations, the RICEFW objects were corrected and these have been reviewed by internal solution architects and signed off

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National Grid response to PwC feedback

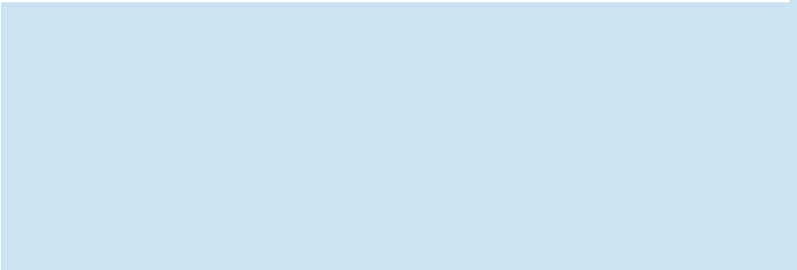
PWC Feedback	NG Response
<p>The Level 3 Business Process Flows have gaps including:</p> <ol style="list-style-type: none"> 1. No clear inventory or decomposition of level 1, level 2 and level 3 flows 2. No variations illustrated across different work types 3. No link between process steps and related business requirements that support them 4. No swim lanes / roles or visual representation of system interaction 5. Asset Management capabilities do not have detail flows 6. Capital Projects and Portfolio Management capabilities and process flows are not defined 	<ol style="list-style-type: none"> 1. PwC follows a different methodology for Strategic Assessments which is not aligned with Accenture's approach. <ul style="list-style-type: none"> • Accenture's High Performance Utility Model for gas distribution provides the full hierarchy of Level 1 – 5 processes and was the basis for the engagement work effort. 2. We developed fully integrated L3 process flows with distinct differences by work type for a number of priority work types as incremental work agreed with Accenture 3. Requirements are linked to the Processes through Capabilities in the Requirements Tracking Matrix. 4. In the Accenture process, the processes have swim lanes that will need to be added during Level 4 Process Architecture to reflect operating model design. 5. PwC may not have seen, but Asset Management process flows were provided and approved by National Grid leadership. 6. In the Accenture approach, process flows and detailed analysis of Capital Projects including a stage gate process that is traditionally a detailed design deliverable. <p>NG believes that additional L3 process detail will help with better defining Phase 2 work packages. An accelerator project has been proposed for the Phase 2 mobilization phase</p>

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National Grid response to PwC feedback

<p>The Key Business Decision Inventory has gaps including:</p> <ol style="list-style-type: none">1. Several KBDs require more supporting documentation than is available in the inventory itself2. Several KBDs were identified where it appeared that further analysis (is) required before determining the approach/consensus3. Over 20 additional KBDs identified for addition	<ul style="list-style-type: none">• Accenture provided our KBD inventory of 35 key business decisions with initial recommendations. For this effort we documented and vetted over 180 KBD's which refined the list to 116. Of those, 30 were presented to the Design Authority and the balance were deemed too detailed and deferred to the next phase for consideration at the project team level.
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National Grid response to PwC feedback

PWC Feedback	NG Response
1. The roadmap is comprehensive and provides a large number of initiatives and activities to perform over a four year period.	1. Agreed
2. An excess of work and scope is included in the first 3-4 years of the program. This distracts from the main priority of implementing core scope across the jurisdictions (3+5 model). Loses focus on driving the value from getting the core capabilities "right" – and then adding more advanced capabilities from there.	2. We have focused on a value focused roadmap that has a mix of core and value adding initiatives to drive a business transformation (with a strong initial focus on risk) rather than a pure technology replacement program – we believe this is the right balance.
3. Cost/effort estimate of Years 1-4 is bloated by high ratio of non-core scope	3. We have reviewed the scope and costs with Accenture and PWC and significantly reduced costs since this observation and believe these are appropriate estimates for this point in the program lifecycle.
4. No clear linkage from the design elements into the roadmap i.e. mapping of capability/process inventory to initiatives. Unable to see which pain points/opportunities, requirements, and processes are enabled within each initiative on the roadmap.	4. See Page 1 this has been addressed
5. The focus should be on foundational GBE scope to enable enterprise end-to-end work and asset management process through a highly integrated architecture (move the business onto a modern, integrated platform).	5. Agreed – see steering group deck

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Appendix - D



Risk Registry (complete)

ID	Risk	Description & Potential Impact	Probability	Impact	Impacted Item	Category	Assigned to	Status	Next Update	Mitigation Date
4	P1 Single solutions to each software category may not be possible	The desired end state is one software solution for each software category. If this is not possible, it will raise the level of complexity of our future state design and increase costs and lengthen timelines in both Phase 1 and Phase 2	M	H	HLD	Program	Houchins, Granville	Monitoring	11/18/16	11/18/16
5	P2 Failure to account for significant ongoing external initiatives	Not accounting for the impacts/integration points/scope overlaps between GE and other programs could create scope overlaps and/or conflicts. This could result in increased costs or delays in schedules	M	H	HLD	Program	Watkins, Wayne S.	Monitoring	12/22/16	
6	Data Quality Data Analysis	Gaps in our understanding of current state data quality and completeness, as well as over-reliance on anecdotal evidence could have negative impacts on our roadmap and business case. - Bad assumptions, unanticipated risks etc	H	H	HLD	Program	Raad, Nicolas	Solution Proposed	12/2/16	12/2/16
7	Program staffing resiliency	Does the program have the sufficient team depth to overcome the effects of unplanned departures	M	M	HLD	Program	DeRamos, JWynn	Monitoring	12/22/16	
14	Failure to meet our staffing targets will impact our ability to initiate Phase 2 in a timely manner	If we don't complete our staffing process by our target date will mean that we have insufficient resources to effectively plan and charter Phase 2 projects. This could result in delays, increased costs.	M	H	PM	Staffing	DeRamos, JWynn	Monitoring	12/22/16	

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Risk Registry (continued)

ID	Risk	Description & Potential Impact	Probability	Impact	Impacted Item	Category	Assigned to	Status	Next Update	Mitigation Date
15	Mis-alignment / lack of integration and coordination between programs	Potentially a risk around enablement keeping joined up with other initiatives - eg Supervisor Enablement and strategic workforce planning	M	M	HLD	Workforce Planning	Irani-Famili, Reihaneh; DeRamos, JWynn	Monitoring	12/22/16	
16	Missing Expectations on progress due to SL start or late Phase 1 Completion	Delays in starting the program in a timely manner will impact long term timelines. Failure to complete Phase 1 deliverables in a timely manner could delay the sanctioning process and further delay kick off of deployment work.	M	VH	HLD	Delivery	Healy III, Kenneth	Solution Proposed	12/22/16	
17	Unsuccessful delivery due to scope creep	Unplanned/unapproved changes to scope can drive program costs, impact timely delivery or compromise the quality of program outcomes	M	VH	HLD	Delivery	Healy III, Kenneth	Solution Proposed	12/22/16	
18	Risk to Delivery Due to IS and Business capacity limitations	The program is dependent on multiple services and SMEs provided by the Functions, Business. Support delays and SME unavailability could impact timelines	H	H	HLD	Delivery	Connolly, Christopher; Murphy, Chris-US IT; Irani-Famili, Reihaneh; Healy III, Kenneth	Solution Proposed	12/22/16	
19	Delays in Labor Union Engagement Could Impact workshop participation	Failure to engage represented employees in the as is to be design process could mean that critical information, observations and expert inputs are missing from the HLD process	M	M	HLD	Quality	Connolly, Christopher	Closed	10/21/16	

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Risk Registry (continued)

ID	Risk	Description & Potential Impact	Probability	Impact	Impacted Item	Category	Assigned to	Status	Next Update	Mitigation Date
20	Short term required compliance mitigation activities could negatively impact long term deployment activities	A disproportionate emphasis on short compliance fixes could consume the time, resources and expertise required to launch and sustain longer term fixes	M	H	Comp.	Delivery	McNamara, Daniel F.	Closed	12/22/16	10/20/16
21	Impact Analysis Deliverable Timeline	Impact Analysis milestone date misalignment may impact the downstream delivery of other CM deliverables.	L	L	BDR	BR/CM	Poyant, Ellen L.	Closed	10/3/16	10/7/16
22	Unplanned outages during implementation	Implementation and subsequent RTB (Run the Business) activities for U.S. Gas Enablement core platforms and products will be impacted by unplanned outages . Program Increments, or releases may be delayed due to resource availability or lack of testing.	H	M	SDD	Schedule	Krantz, Ronald D.	In Progress	2/1/17	
23	Powerplan Disintegration	Implementation Roadmap and removing Powerplan integration from work order creation and work execution processes may impact business/implementation roadmap and cost of program.	H	H	SDD	Budget and Schedule Risk	Geer, William J.	Monitoring	12/22/16	
24	Inappropriate use of Agile Delivery Methods	Applying Agile delivery methods against current application platforms and reporting & analytics environments may be inappropriate. Causing project delays.	H	M	SDD	Scope	Krantz, Ronald D.	In Progress	12/22/16	

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Risk Registry (continued)

ID	Risk	Description & Potential Impact	Probability	Impact	Impacted Item	Category	Assigned to	Status	Next Update	Mitigation Date
25	Constrained Benefits by lack of SCM Implementation	ERP Supply Chain and Materials Management capabilities are not fully deployed. Assumed benefits may be at risk of being attainable.	M	H	PM	Benefits	Connolly, Christopher; Healy III, Kenneth	In Progress	12/2/16	
27	Network Bandwidth	Pain point indicated that wifi availability was not present in barns. Mobile/Disconnected mobility may require increased network bandwidth.	M	M	SDD	IS Solution Architecture	Krantz, Ronald	Solution Proposed	12/22/16	5/1/17
28	ECM and HPUM remaining capabilities not mapped	The remaining capabilities (back office, customer, etc) that are not mapped between NG Enterprise Capability Model and the Accenture Utility Model need to be mapped to ensure process/capability connectivity and in support of future impact analysis.	M	L	HLD	Enterprise Business Architecture/ Solution	Lyba, Svetlana	Solution Proposed	1/12/17	3/31/17
29	Data Accessibility	Data is often not accessible, and when it is the spreadsheets are often too large to work with. Data summary documents provided by data managers are often more useful than the data itself.	H	H	PM	Program	Del Santo, Edward	New	11/30/16	
30	Auto dialing or texting wrong customer number	There is a TPCA compliance change that puts us at risk when we auto dial or text customers and their phone number is not correct. Need data cleansed and controlled to ensure we are not being fined.	H	M	Comp.	Quality	Raad, Nick; Piccarreto, Megan	New	5/1/2017	

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Risk Registry (continued)

ID	Risk	Description & Potential Impact	Probability	Impact	Impacted Item	Category	Assigned to	Status	Next Update	Mitigation Date
31	Benefits Identification	Benefits may not be as high / significant for a program / organization of this size and with respect to the starting point (e.g., 4th quartile in O&M/customer, Capital Unit Cost)	H	VH		PM	Del Santo, Edward; Connolly, Christopher	New	12/2/2016	
32	Benefits Buy In	Gas business leadership may not buy into take ownership of identified benefits	H	VH		Delivery	Del Santo, Edward; Jones, Sandra; Johnston, Johnny	New	12/16/2016	
33	Risk of insufficient alignment between GBE and SOF	Risk that Supply Chain and overall GBE teams are not fully aligned with Shaping Our Future teams. There may be potential scope overlap/gap, critical dependencies, or even valuable inputs between GBE and SOF.	M	H	PM	SCM	Lynch, Joel	New	1/31/2017	
34	Customer Lens Impact during design and roll out	What mitigation/controls can we put in place to ensure that the customer focus is included in anything involving customer facing	M	M	BDR	Customer	Piccarreto, Megan; Connolly, Christopher	New	1/31/2017	
35	Support organizations (Call Center, AMO, Collections) will be required to use CIS and CRM	Full information is not being converted/visible into CRM for undetermined amount of time. This means the support groups will have to use 2 systems to get additional information/take action any time the field is involved. (ex. Make an appointment)	H	M	BDR	Customer	Piccarreto, Megan; Connolly, Christopher	New	1/31/2017	