NPA Framework

January 15, 2025

NPA Identification Process

Project Identification

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Initial Viability Testing

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System Feasibility Review

↓

Electric System Review

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Benefit Cost Analysis

↓

Project Authorization

↓

Project Prioritization

↓

Project Execution
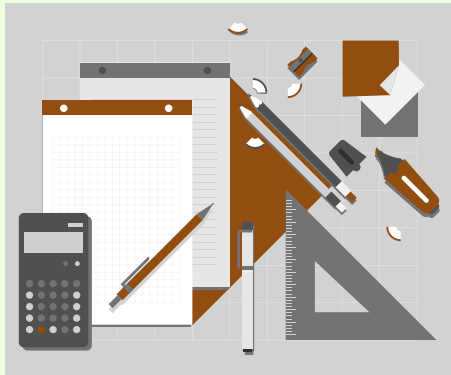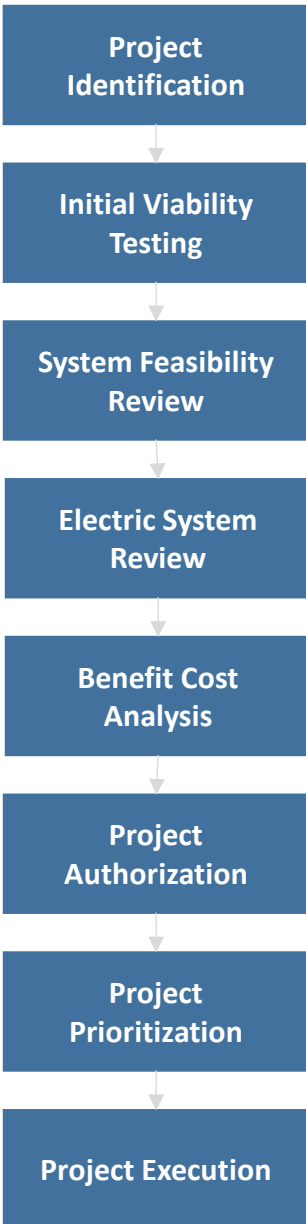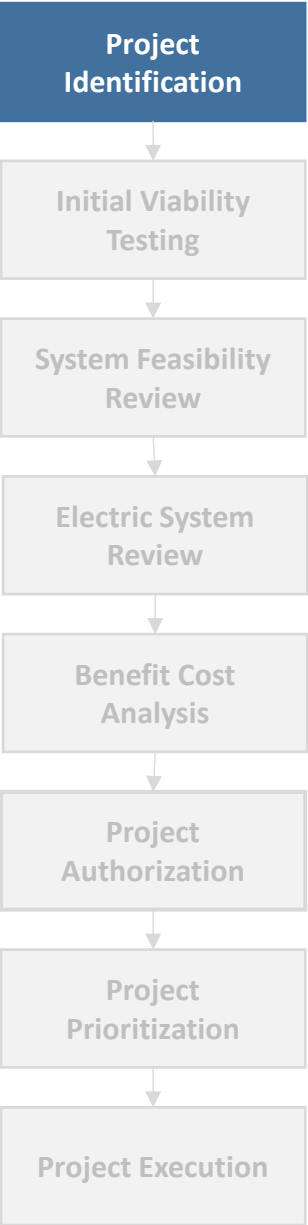
- Defines the Step-by-Step process which the Companies will use to identify likely NPA Candidates

- Each step in the NPA Identification Process is accompanied with requirements the Companies must fulfill when reviewing their projects

- Ensures optimal use of resources by avoiding time and resource expenditures for projects that are not high likelihood candidates

Project Identification (1/4)

Project Identification

Initial Viability Testing

System Feasibility Review

Electric System Review

Benefit Cost Analysis

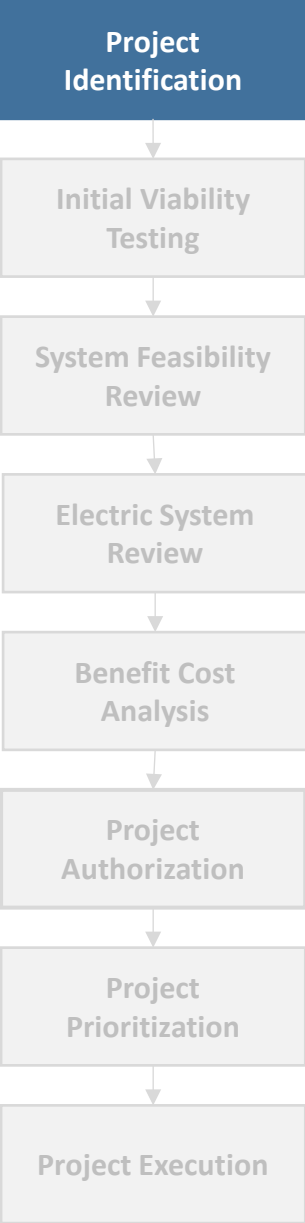Project Authorization

Project Prioritization

Project Execution

The Companies shall initiate the NPA Identification Process as defined in this NPA Framework for all projects identified as requiring such review.

- Understanding which capital investments by the LDCs are suitable for NPA review and which are not is an essential first step in ensuring an efficient NPA Process.

- Not all program types are conducive to an NPA review.

Reference: Table 1a) Types of Capital Projects

Program	High Level Descriptions (may vary by LDC)	Part of NPA review
GSEP	Replacement of leak-prone infrastructure	Yes
Reliability - Capacity	Projects to increase the capacity of the system such as system reinforcements, new gate stations and new regulator stations	Yes
Reliability - Replacement	Replacement projects such as Low-Pressure Conversion and Flood Hardening Projects, MAOP Compliance	Yes
Gate Stations & Regulator Stations	Replacement of equipment in poor condition to improve system reliability	Yes
LNG/LPGA	Provide critical gas supply that supports the system	Yes
Resiliency	Projects that increase the overall ability of the natural gas system's ability to withstand and recover from significant disruptions such as natural disasters and extreme weather events	Yes
New Customer Request	New Customer services and main extensions	Yes
DOT/Municipal Relocations	Address gas main conflicts related to the state DOT or Municipal reconstruction	Yes
Master Meter Compliance	Replacement of customer owned piping beyond the meter set to bring it up to compliance	Yes
Emergent	Unplanned work that addresses immediate safety concerns	No
Other Reliability	Projects that support the gas system (Stub Cut-offs, Corrosion Control, Tools and Equipment, etc.)	No
Metering	Work on Residential and C&I meters (i.e., meter exchanges), improvements to complex meter installations	No
Facilities	Work to facilities such as fencing, building maintenance, painting, security.	No
Information Technology	Investments in IT equipment and systems such as those used for pressure regulation, gas dispatch, customer billing cybersecurity, etc.	No

Project Identification

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Project Execution

The Companies shall initiate the NPA Identification Process as defined in this NPA Framework for all projects identified as requiring such review.

- Understanding which capital investments by the LDCs are suitable for NPA review and which are not is an essential first step in ensuring an efficient NPA Process.

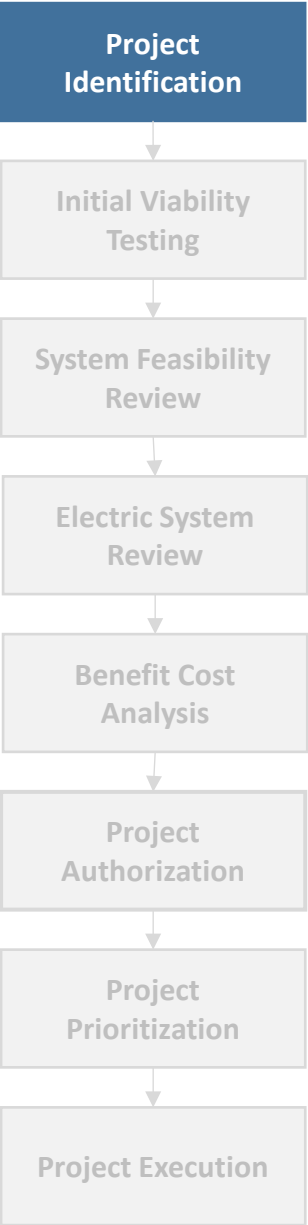- Not all program types are conducive to an NPA review.

Reference: Table 1b) Excluded Programs

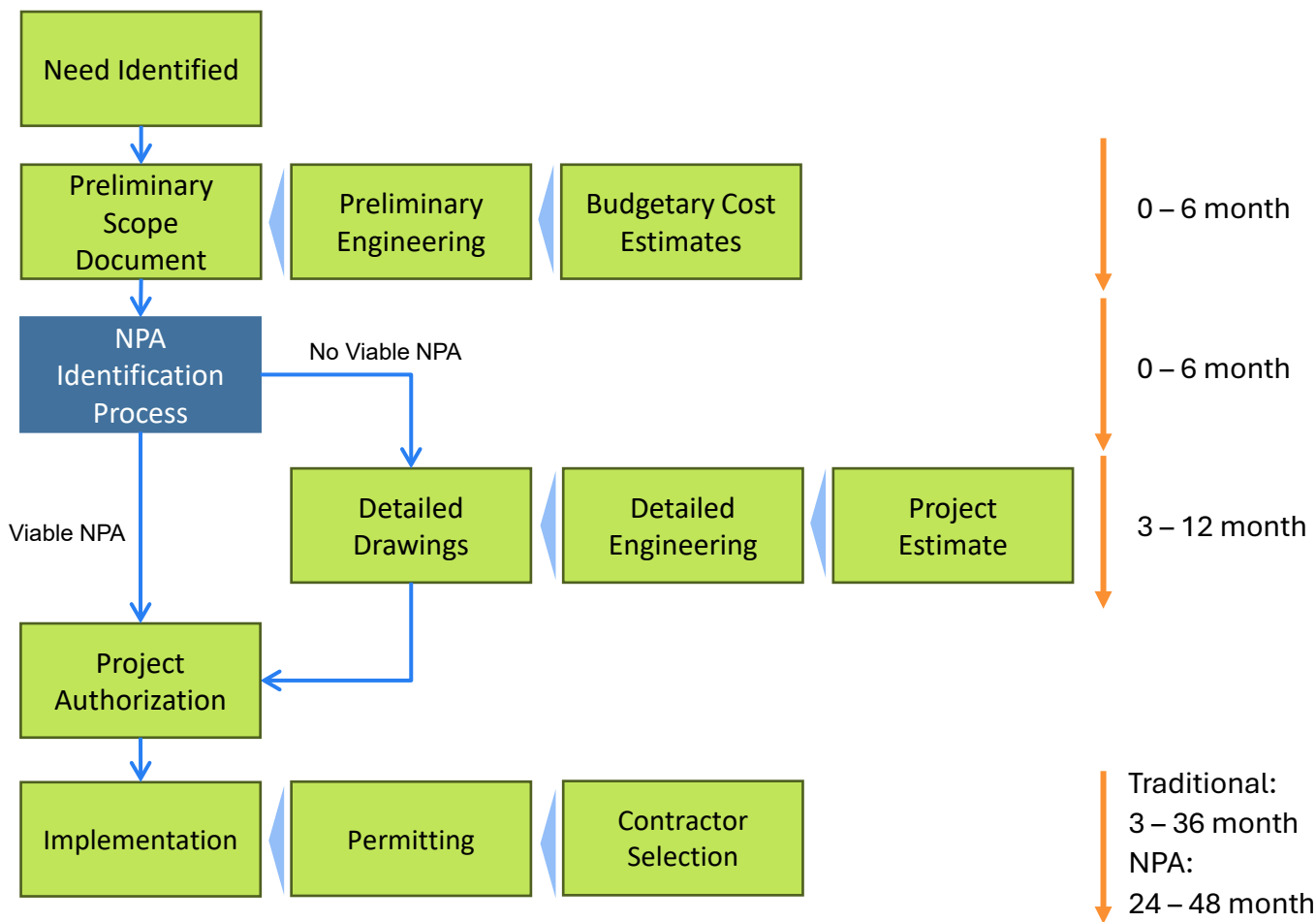| Program	Reason for Exclusion	Part of NPA review
Emergent	Immediate action is required to maintain safe operation of the system. These projects require immediate action to maintain the safety and reliability of the gas system and therefore do not afford the time to conduct the NPA Identification Process.	No
Other Reliability	The work that is classified under this program may vary by company. In general, this is a bucket of work that does not fit into traditional programs but still maintains safety and reliability of the gas system. Projects like stub cut offs (which shorten stubs in the street) or corrosion control (which repairs and enhances the systems protecting steel pipelines) are vital to the system safety and not possible to replace with an NPA.	No
Metering	Metering involves meter purchases and replacements on the gas system for both residential and C&I customers. Most of the work in this program is to comply with statutory obligations to replace gas meters every 7 years. This program is not suitable for NPA review as the work is required compliance, date driven by individual location, identified at a program level rather than at a project level and is low cost compared to other programs.	No
Facilities	The work to repair aging facilities, enhance security and general maintenance of facilities (such as painting or roof repairs) is minor work that is not directly related to pipeline infrastructure and is not suitable for NPA review.	No
Information Technology	This work involves software purchases, updates, work on telemetry and helps the overall safety and functionality of the system. This program is used to make purchases and upgrades that keep the system operating, allowing the Company identify issues and maintain a reliability service.	No

Total project volume in excluded programs represents a very small percentage of work and dollars (varying by LDC and year) of the annual capital plan

Project Identification

Initial Viability Testing

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Project Authorization

Project Prioritization

Project Execution

The Companies shall initiate the NPA Identification Process as defined in this NPA Framework for all projects identified as requiring such review.

- Long-term plans are a long-range outlook on system needs.

- Individual projects are developed in consideration with site-specific and system-specific conditions to advance the long-term plans.

- Long-term and individual projects are assessed at regular intervals.

  - Typically, yearly during capital budget development.

- Where possible, each LDC shall incorporate consideration of NPAs and NPA assessments into its long-term system planning and goal development.

Need Identified

Preliminary Scope Document ← Preliminary Engineering ← Budgetary Cost Estimates

NPA Identification Process

No Viable NPA

Viable NPA

Detailed Drawings ← Detailed Engineering ← Project Estimate

Project Authorization

Implementation ← Permitting ← Contractor Selection

0 – 6 month

0 – 6 month

3 – 12 month

Traditional: 3 – 36 month
NPA: 24 – 48 month

Timelines highly dependent on project type and size and experience with the NPA Process

Project Identification

Initial Viability Testing

System Feasibility Review

Electric System Review

Benefit Cost Analysis

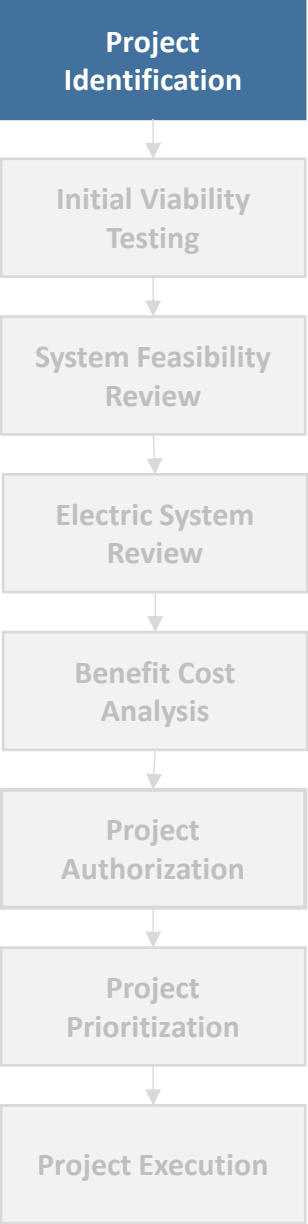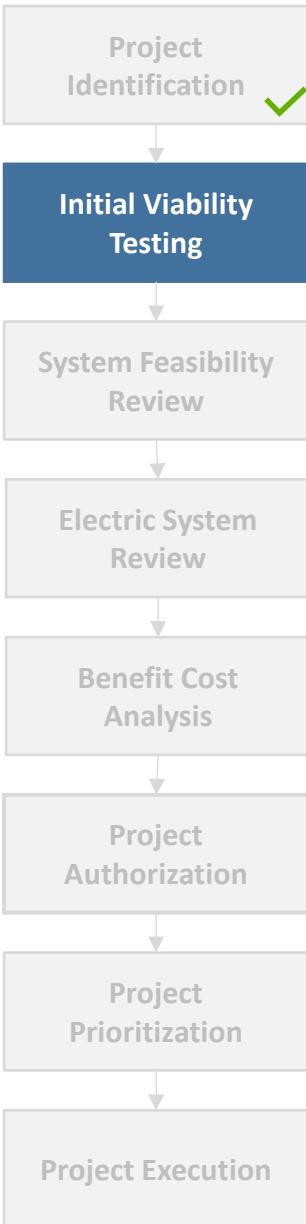Project Authorization

Project Prioritization

Project Execution

The Companies shall initiate the NPA Identification Process as defined in this NPA Framework for all projects identified as requiring such review.

The Companies shall review viable NPA candidates with the following NPA technologies and solutions, or combination of solutions, as defined in Table 2 and provide results of said evaluation.

- The NPA Identification Process will consider a wide array of NPA technologies and solutions, depending on the program type.
- The LDCs will review the viable NPA candidates with the following technologies and measures:
  - **Electrification such as Air Source or Ground Source Heating Pump**
  - **Thermal Network Systems**
  - **Energy Efficiency & Demand Response**
  - **Behavior Change and Market Transformation**
  - **Supply Side Solutions**
- The Companies will also evaluate any combination of technologies listed
- Technologies and solutions will be updated with the Framework as they evolve

Reference: Table 2) NPA Technologies and Solutions

Program	Electrification	Thermal Network Systems	Energy Efficiency & Demand Response	Behavior Change and Market Transformation	Supply Side Solution	Asset Rehabilitation	Traditional Gas System Investment
GSEP	✓	✓	NA	NA	NA	✓	✓
Reliability - Capacity	✓	✓	✓	✓	✓	✓	✓
Reliability - Replacement	✓	✓	NA	NA	NA	✓	✓
Gate & Regulator Stations	✓	✓	✓	✓	✓	✓	✓
LNG/LPGA	✓	✓	✓	✓	✓	✓	✓
Resiliency	✓	✓	NA	NA	NA	NA	✓
New Customer Request	✓	✓	NA	NA	NA	NA	✓
DOT/Municipal Relocations	✓	✓	NA	NA	NA	NA	✓
Master Meter Compliance	✓	✓	NA	NA	NA	NA	✓

Initial Viability Testing (1/2)

Project Identification ✓

Initial Viability Testing

System Feasibility Review

Electric System Review

Benefit Cost Analysis

Project Authorization

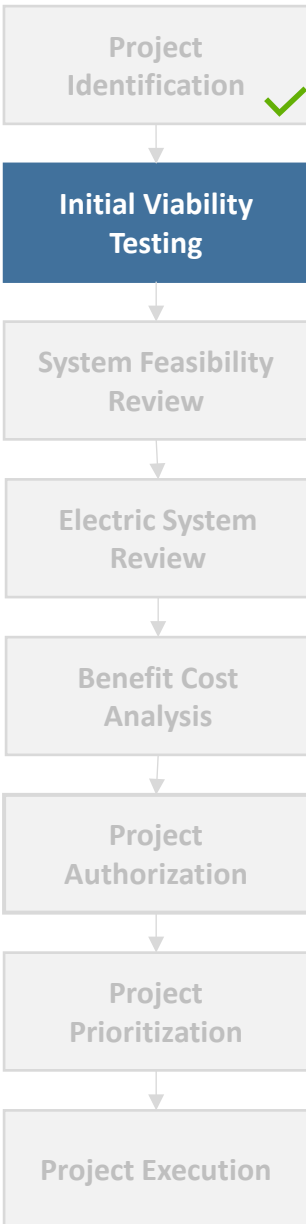Project Prioritization

Project Execution

All projects within the applicable programs will be run through an initial viability test to evaluate if projects are viable NPAs candidates.

- The LDCs shall proactively identify and evaluate projects to increase the likelihood of identifying viable NPAs.

- Testing is based on a variety of factors, including:
  - The safety and reliability concerns tied to the project
  - Timing of project need
  - Customer composition
  - Total project cost relative to customers impacted

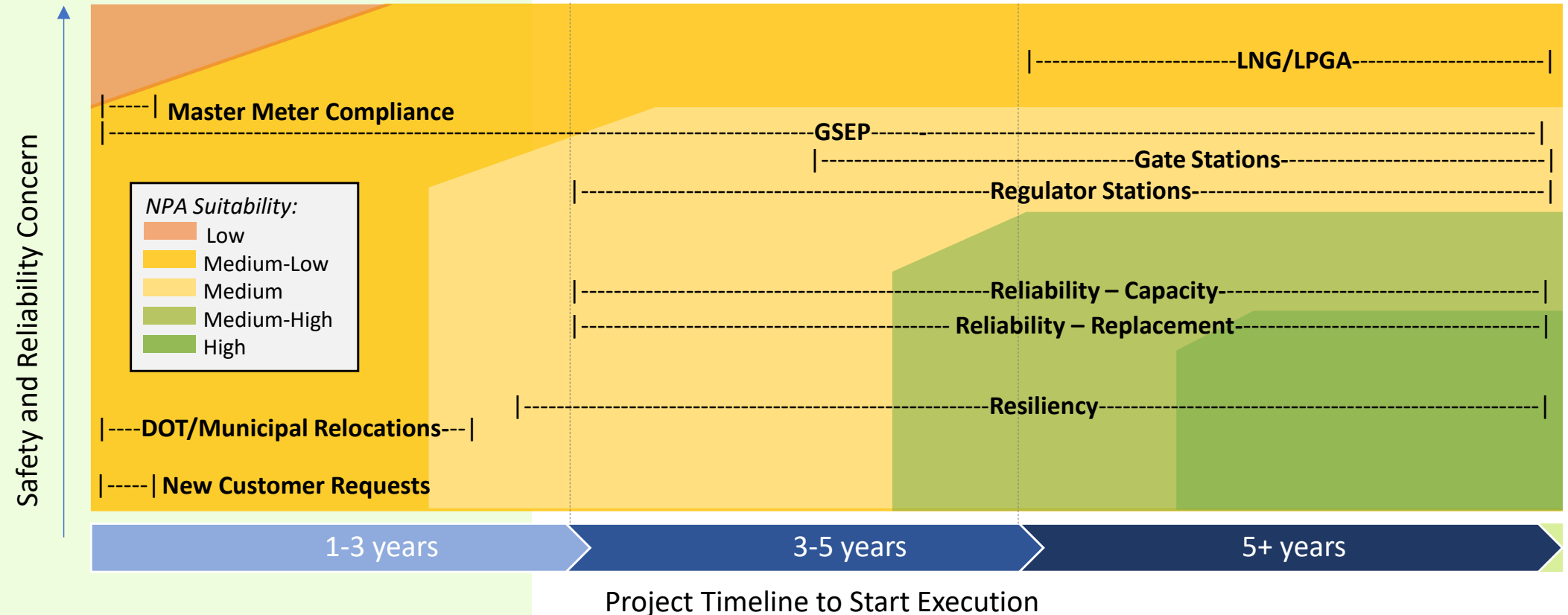- Each LDC will propose certain thresholds to assist in identifying appropriate candidates with a high likelihood of success and ensure those are prioritized.

- The LDCs will provide their Initial Viability Testing Criteria as they evolve based on experiences gained as part of cost recovery filings to provide the Department with an avenue to continuously evaluate the Companies' Initial Viability Testing Criteria.

Initial Viewability Testing (2/2)

Project Identification ✓

Initial Viability Testing

System Feasibility Review

Electric System Review

Benefit Cost Analysis

Project Authorization

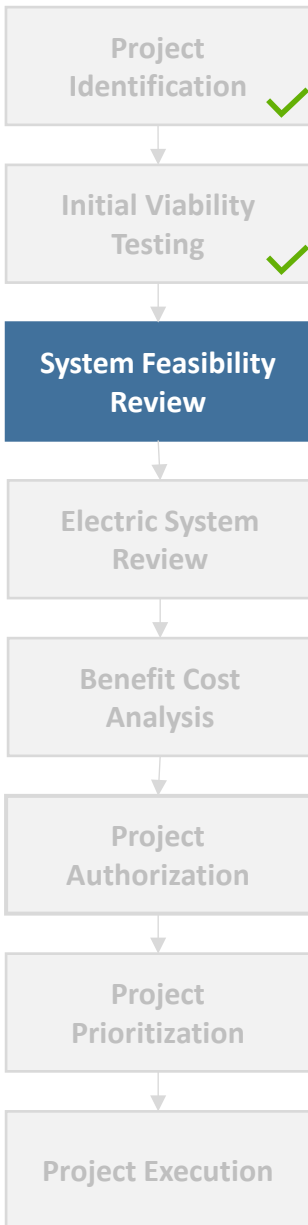Project Prioritization

Project Execution

All projects within the applicable programs will be run through an initial viability test to evaluate if projects are viable NPAs candidates.

- Certain programs (and projects within programs) will show a higher success rate for NPA development than others.

- The NPA Opportunity Matrix suggests how each program fits within the NPA Suitability Score specifically to impacts of timing and safety and reliability concerns.

Safety and Reliability Concern

|------------------------LNG/LPGA------------------------|

|----| **Master Meter Compliance**

|------------------------------GSEP------------------------------|

|------------------**Gate Stations**------------------|

|------------------**Regulator Stations**------------------|

NPA Suitability:
- Low
- Medium-Low
- Medium
- Medium-High
- High

|------------------**Reliability – Capacity**------------------|

|------------------**Reliability – Replacement**------------------|

|------------------**Resiliency**------------------|

|----**DOT/Municipal Relocations**---|

|----| **New Customer Requests**

1-3 years → 3-5 years → 5+ years

Project Timeline to Start Execution

System Feasibility Review

Project Identification ✓

Initial Viability Testing ✓

System Feasibility Review

Electric System Review

Benefit Cost Analysis

Project Authorization

Project Prioritization
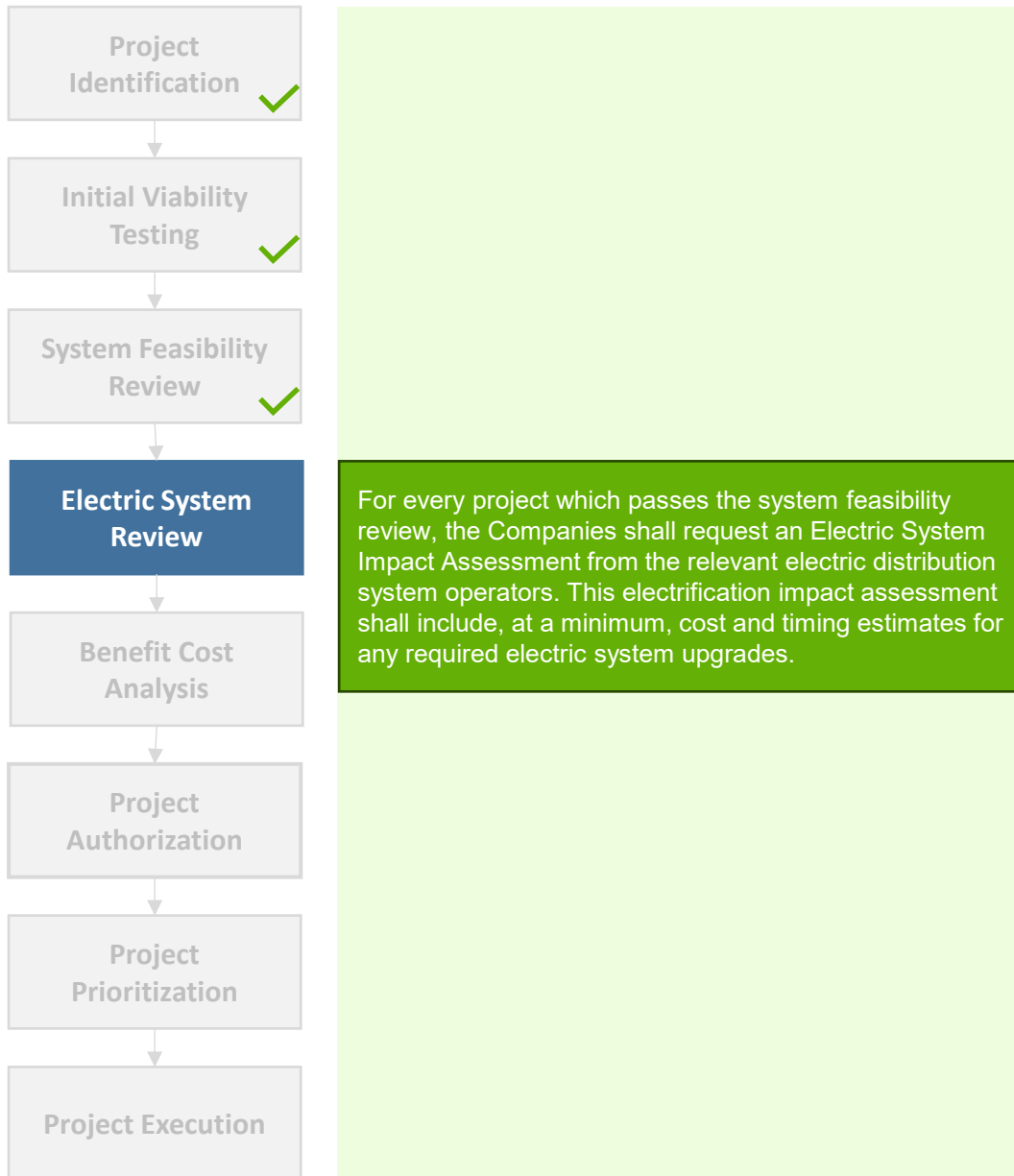
Project Execution

Gas System Integrity Review

For all projects which pass the Initial Viability Testing, the Companies shall produce a System Integrity Review. LDCs may also conduct a Customer Viability review following the Gas System Integrity review to gauge the likelihood that customers would be willing and able to electrify.

For all projects which pass the Gas System Integrity Review, the Companies shall work with the corresponding electric distribution system operators to attain a Step Zero Electric System Review.

Step Zero Electric System Review

- The objective of this review is to determine if the gas system can function safely without the investment the NPA is looking to displace.

- This review may include an analysis using a hydraulic model to simulate system flow on the highest demand days and show the impact that decommissioning or not replacing a segment will have on the overall system. This step may include a re-scoping of the project area.

- This review is to determine if the electric system can safely and reliably serve the additional load, and the level of investment needed (Step Zero Review).

- These Step Zero Reviews are developed by the electric distribution system operators and will provide the LDC with information on required system investments and timelines to completion of said investments.
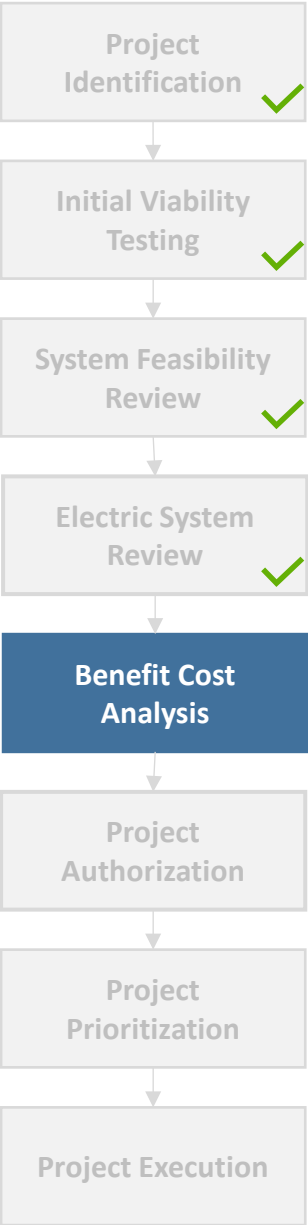
Electric System Review

Project Identification ✓

Initial Viability Testing ✓

System Feasibility Review ✓

Electric System Review

Benefit Cost Analysis

Project Authorization

Project Prioritization

Project Execution

For every project which passes the system feasibility review, the Companies shall request an Electric System Impact Assessment from the relevant electric distribution system operators. This electrification impact assessment shall include, at a minimum, cost and timing estimates for any required electric system upgrades.

- The LDCs will engage the electric distribution system operators to review load increases as a result of an NPA solution as required by the Step Zero Electric Analysis

- The system impact assessment will also include cost and timing estimates for any required electric upgrades.

- Customer and system data must be provided to the electric distribution system operators for them to do a system impact assessment.*

- The electric distribution system operators will provide the electric rate impact test (eRIM) as part of the BCA.

*Note: The LDC may only provide information to the electric distribution system operators which is covered by the Data Waiver the Companies have requested from the Department, an NDA is signed by the electric distribution system operators in question, or the information is generally publicly available. Data Waiver pending Department approval.

Process Flow

- Project Identification ✓
- Initial Viability Testing ✓
- System Feasibility Review ✓
- Electric System Review ✓
- **Benefit Cost Analysis**
- Project Authorization
- Project Prioritization
- Project Execution

- The Department's Order directs the Companies to conduct a benefit cost analysis (BCA) to evaluate NPAs. D.P.U. 20-80-B, at 98 n.66.

For every project which passes the initial viability test and the Electric System Impact Assessment, the Companies shall furnish a BCA that includes one or more of the following tests as appropriate - a gas and electric rate impact measure (RIM), a participant cost test (PCT), and a total resource cost test (TRC). For the TRC, the Companies shall use the most currently approved TRC in the 3-year Energy Efficiency Plan with all applicable values.

Participant Cost Test

Cost	Benefit
Behind the Meter Costs such as heating systems, appliances, weatherization, electrical upgrades	Funding availability through the state's EE program
Increase in electric energy bills	Federal and other non-EE related incentives, tax benefits, grants, or funding opportunities
	Behind the Meter investment
	Electric rate subsidies made available through the NPA Project

Gas Rate Impact Measure

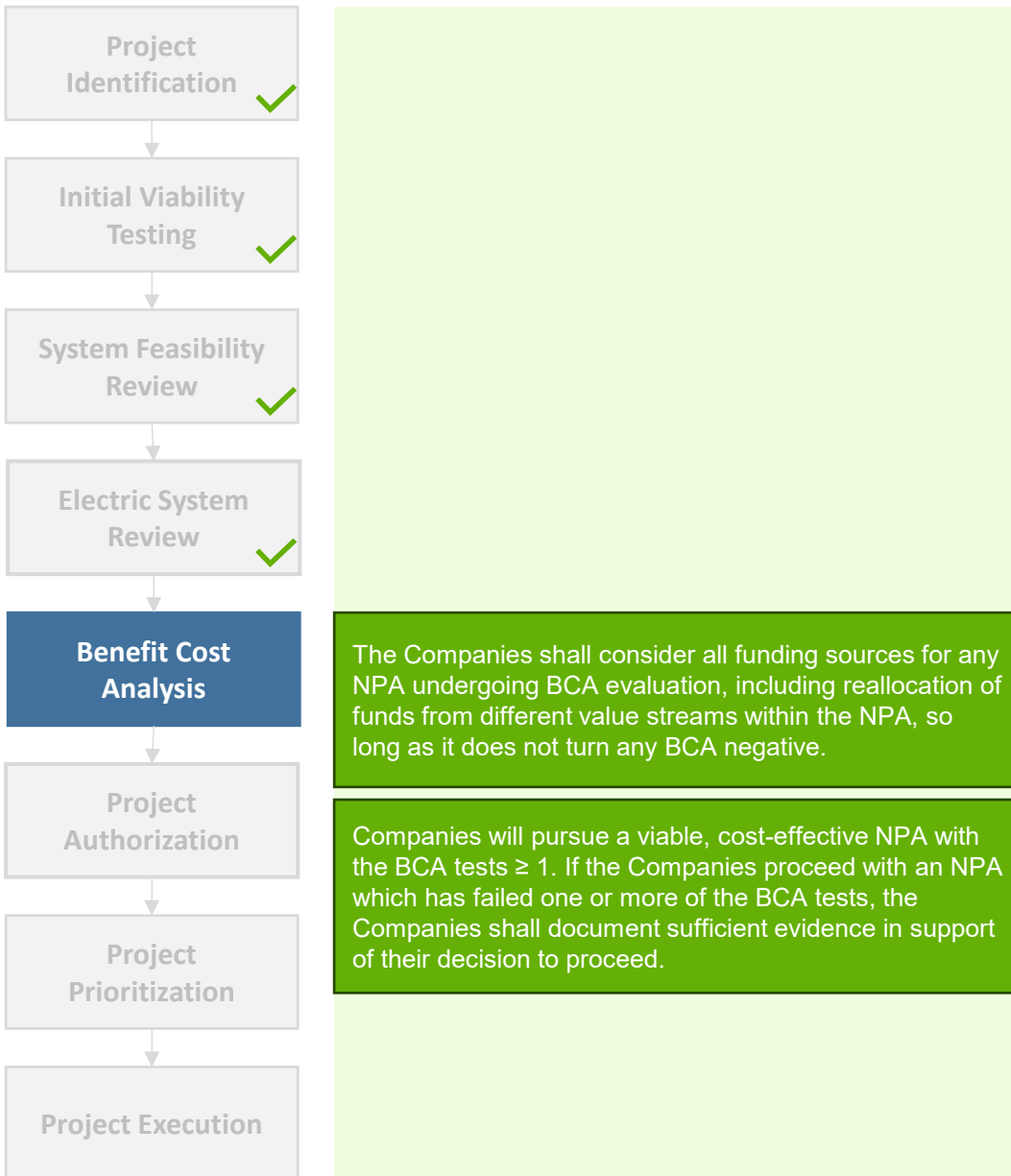| Cost	Benefit
Lost Revenue from electrified customers	Avoided revenue requirements stemming from the avoided capital investments.
Remaining Capital Investments and the resulting net present value revenue requirements.	Avoided gas supply cost through a demand-reduction induced price effect (DRIPE)

Electric Rate Impact Measure

Cost	Benefit
Net present value revenue requirements from incremental capital investments	Increased electric revenues from electrified customers
Negative electric supply cost impact from reverse demand-reduction induced price effect (DRIPE)	

Total Resource Cost Test

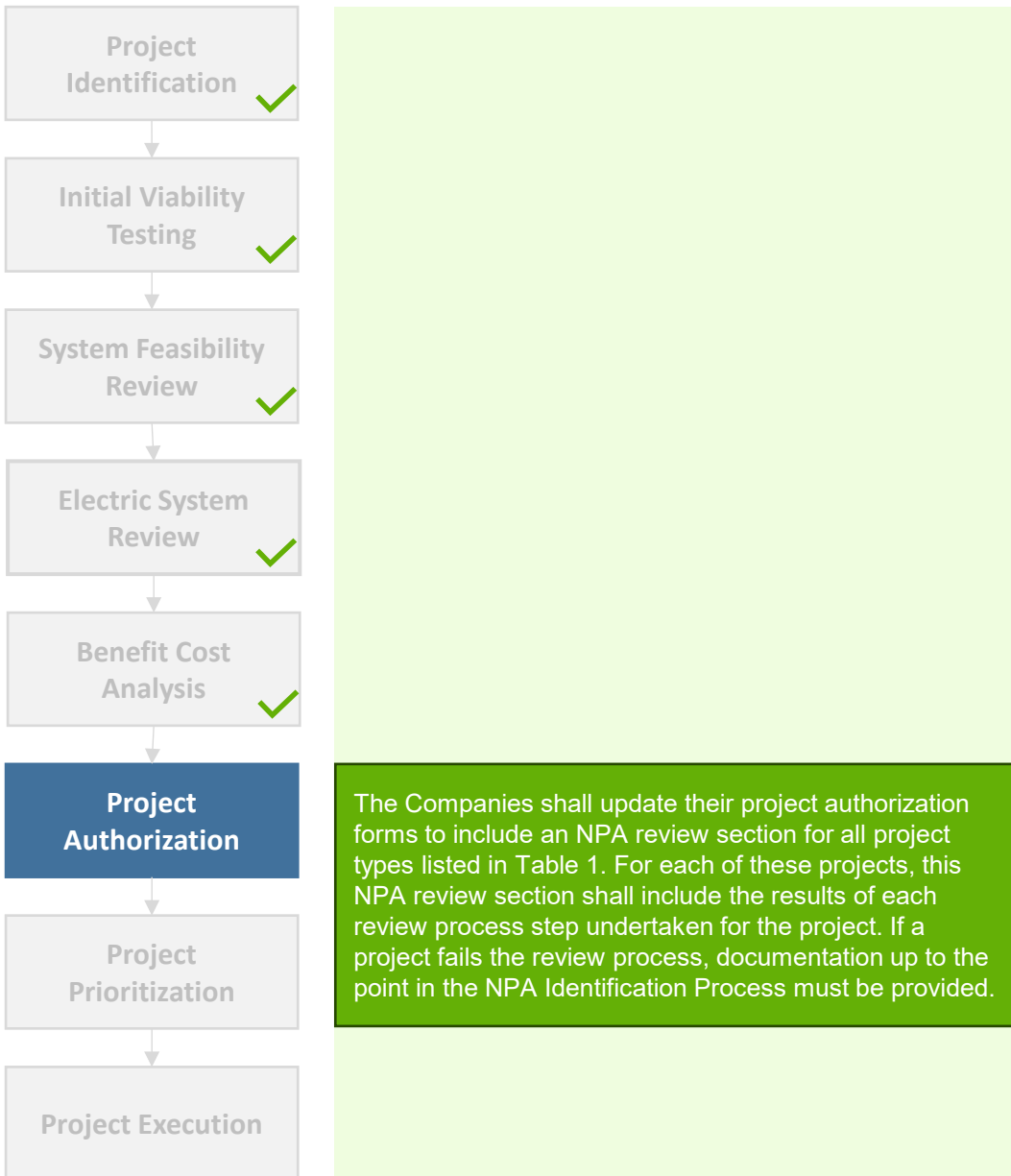| Cost	Benefit
Project Implementation Cost	Electric Avoided Costs
Performance Incentive Costs	Gas Avoided Costs
Project Participation Cost	Delivered Fuel Avoided Costs
	Other Resource Benefits
	Non-Energy Impacts
	Social Cost of Carbon

Benefit Cost Analysis (2/2)

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Project
Identification ✓
     ↓
Initial Viability
Testing ✓
     ↓
System Feasibility
Review ✓
     ↓
Electric System
Review ✓
     ↓
Benefit Cost
Analysis
     ↓
Project
Authorization
     ↓
Project
Prioritization
     ↓
Project Execution
```

The Companies shall consider all funding sources for any NPA undergoing BCA evaluation, including reallocation of funds from different value streams within the NPA, so long as it does not turn any BCA negative.

Companies will pursue a viable, cost-effective NPA with the BCA tests ≥ 1. If the Companies proceed with an NPA which has failed one or more of the BCA tests, the Companies shall document sufficient evidence in support of their decision to proceed.

- The Companies may offer incremental funding for NPA Projects to help offset the costs for customers. These incremental funds, which may include grants and other outside funding, must be accounted for in the appropriate BCA.
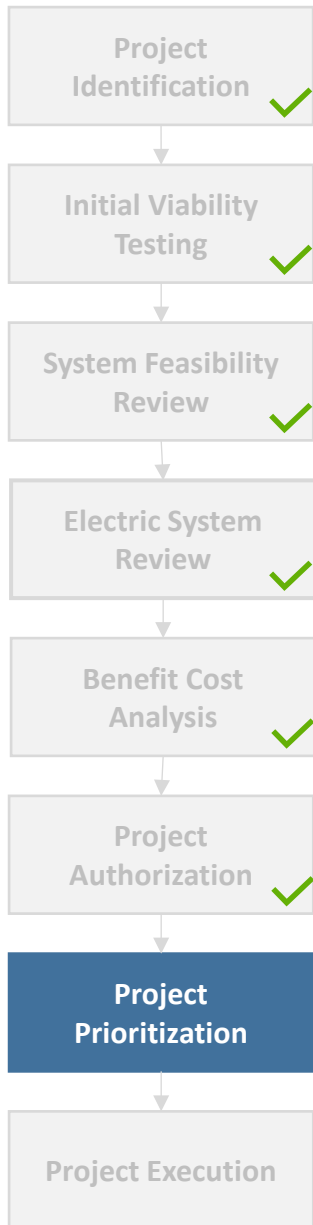
- Companies will pursue a viable, cost-effective NPA. A cost-effective NPA is defined as an NPA with BCA tests ≥1. However, the Companies may also consider proceeding with an NPA if one or more BCAs are negative as long as the remaining BCAs are positive, the project is not cost-prohibitive, and other external circumstances make the NPA the more favorable option.

Project Authorization

Project Identification ✓

Initial Viability Testing ✓

System Feasibility Review ✓

Electric System Review ✓

Benefit Cost Analysis ✓

Project Authorization

Project Prioritization

Project Execution

The Companies shall update their project authorization forms to include an NPA review section for all project types listed in Table 1. For each of these projects, this NPA review section shall include the results of each review process step undertaken for the project. If a project fails the review process, documentation up to the point in the NPA Identification Process must be provided.

- All Companies have internal project authorization and approval processes which approve solution design and budget allocation to a specific project. These processes generally include a documented Project Authorization Form which outlines the need, impact of the need, the preferred solution, and all alternatives considered.

- The Companies will be updating these documentation and authorization process to include the NPA Identification Process and projects will only be able to proceed to implementation if they have provided sufficient evidence through the NPA Identification Process.

Project Prioritization

| Project Identification ✓ |
| Initial Viability Testing ✓ |
| System Feasibility Review ✓ |
| Electric System Review ✓ |
| Benefit Cost Analysis ✓ |
| Project Authorization ✓ |
| **Project Prioritization** |
| Project Execution |

If NPA projects must be prioritized for execution, the Companies shall prioritize the projects by and in the order of their impact to EJCs, avoided GHG emissions, and avoided gas capital. Prioritization will also consider project need and timing, ability to execute, customer needs, and other factors that may impact project success, such as the need to coordinate with state or municipal work.

If more NPAs are identified than can be reasonably implemented in a specific timeline the Companies shall consider prioritizing their NPA projects in this order:

I. Projects in EJCs will be given highest priority.

II. Projects will then be prioritized based on their net avoided GHG emission reductions.

III. Projects will lastly be prioritized based on the amount of avoided capital on the LDCs system.

This prioritization ensures focus on NPA efforts in alignment with stated objectives and directives.

Prioritization should also take note of timeline needs, compliance obligations, state and municipal project coordination, and customer specific issues that may impact execution timeline

Project Execution

Project Identification ✓

Initial Viability Testing ✓

System Feasibility Review ✓

Electric System Review ✓

Benefit Cost Analysis ✓

Project Authorization ✓

Project Prioritization ✓

Project Execution ▶ **Customer Engagement** ▶ **Impacts to Project Implementation**

Customer Education, Engagement and Commitment

Customer Education, Engagement and Commitment

New Customers

Existing Customers

The Companies shall engage all new gas customer requests with alternative options and require each customer to sign the "Customer Acknowledgement" form that they have been informed and have chosen to proceed with gas or an NPA solution.

- Each LDC has implemented a process to educate prospective customers about alternatives to natural gas.

- The LDCs requests these potential customers examine alternative options prior to agreeing to new natural gas service.

- Customers are required to sign a "Customer Acknowledgement" form, acknowledging their awareness of non-gas options available to them and their decision to move forward with natural gas before the LDCs will proceed with the installation of a new gas service or additional gas equipment.

- Residential single service and small commercial service requests:

  - Provided with the form describing non-gas options. LDCs may make information available via links to MassSave or a company web page

- Residential subdivisions and large commercial and industrial customers:

  - Provided with the form and the LDC will discuss project-specific alternatives with these customers.

Customer Education, Engagement and Commitment

New Customers

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Existing Customers

Each Company shall develop a Customer Engagement Framework informed through the targeted electrification pilots

- The success of implementing NPAs depends on customers exercising their choice to adopt an alternative energy option.

- LDCs have an obligation to provide safe and reliable service to their customers.

- The LDCs are committed to engaging with customers regarding the availability of NPAs which can avoid potential stranded investments while providing safe and reliable service to remaining customers at an affordable cost.

- Each LDC will develop a customer education, engagement and commitment process to ensure that customers have sufficient information available to make an informed decision to participate in the NPA project.

- Each LDC will work closely with its customer and energy efficiency teams to develop an engagement strategy which fits its customer base, geographic region and demographics best, while setting a specific priority on EJCs.

  - The LDCs intend to apply lessons learned from their upcoming Pilots to this process.

- LDCs expect to gain an understanding of customer reactions and concerns associated with full removal of natural gas service, as well as effective education strategies.
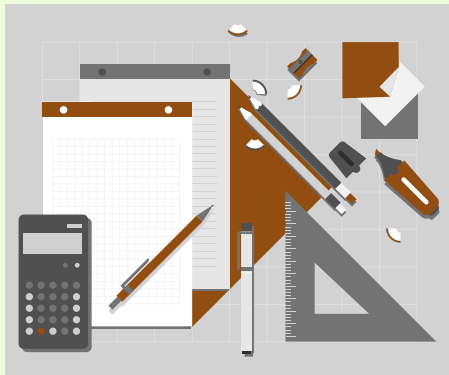
Impacts to Project Implementation

Impacts to Project Implementation

Non-Gas Customers

Changes in Project Viability

The Companies will only consider the natural gas customers within an NPA Service Area at time of project authorization.

- There will be customers, within a NPA Project area, that do not have natural gas service or have certain applications on delivered fuels.

- As part of an NPA, the LDCs will only consider these customers which are required to avoid the traditional gas investment.

- Incremental and project specific funding made available by the LDCs for an NPA Project will not be made available for non-gas applications.

- During the NPA implementation period, the LDCs would not be accepting new gas connections in the discrete NPA project area.

Impacts to Project Implementation

Non-Gas Customers

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Changes in Project Viability

The Companies may evaluate the NPA in the event of emergent situations or changes in customer participation. The Companies shall make all necessary investments to deal with emergent situations where applicable without impacting the prudency review of the NPA decision.
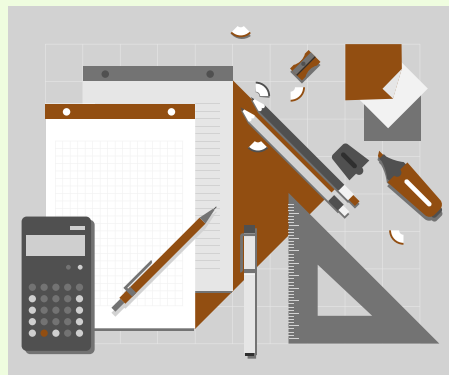
- Unpredictable circumstances:

  - Emergent field conditions may force an LDC to make unplanned system investments

  - The required level of electrification to avoid the gas capital investment cannot be met due to changes in customer commitment

| Circumstances	Examples	Cancellation Criteria
Company/Asset Condition	Emergency gas pipe issue	Requires new asset investment negating the economics of the NPA/BCA
	Estimated cost increases	Cost increases negates economics of the NPA/BCA
Customer Participation	Customer terminates their participation	Entire NPA scope cannot be completed; Company may choose to offer remaining customers option to electrify
	New property owner refuses to participate	

Framework Updating

Framework Updates

Updates

The Companies are required to update the NPA Framework at a minimum every 5-years and submit the updated version to the Department for review with each CCP filing. Specifically, the Companies shall provide updates on technologies and solutions which may act as NPAs, the BCA, and Community Engagement topics. The Companies shall solicit stakeholder feedback for each iteration it submits to the Department.

- Regular updates to the Framework as experiences are gained through the process.

- A specific update cycle will allow for consistency and the chance to make updates with lessons learned.
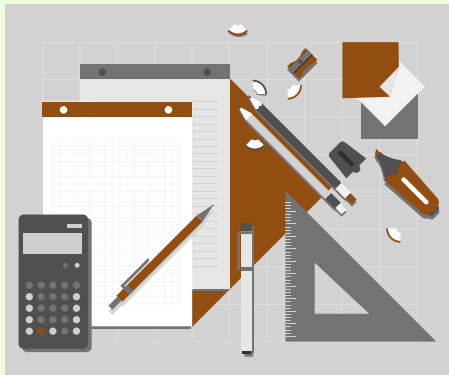
- The LDCs will provide an updated NPA Framework, if appropriate, through the CCP filing process.

- The LDCs will work with stakeholders to make updates.

Summary of NPA Identification Requirements

Summary of NPA Identification Requirements (1-7)

Requirement Number	Requirement
1	The Companies shall initiate the NPA Identification Process as defined in this NPA Framework for all projects identified as requiring such review.
2	The Companies shall review viable NPA candidates with the following NPA technologies and solutions, or combination of solutions, as defined in Table 2 and provide results of said evaluation.
3	All projects within the applicable programs will be run through an initial viability test to evaluate if projects are viable NPAs candidates.
4	For all projects which pass the Initial Viability Testing, the Companies shall produce a System Integrity Review. LDCs may also conduct a Customer Viability review following the Gas System Integrity review to gauge the likelihood that customers would be willing and able to electrify.
5	For all projects which pass the Gas System Integrity Review, the Companies shall work with the corresponding electric distribution system operators to attain a Step Zero Electric System Review.
6	For every project which passes the system feasibility review, the Companies shall request an Electric System Impact Assessment from the relevant electric distribution system operators. This electrification impact assessment shall include, at a minimum, cost and timing estimates for any required electric system upgrades.
7	For every project which passes the initial viability test and the Electric System Impact Assessment, the Companies shall furnish a BCA that includes one or more of the following tests as appropriate - a gas and electric rate impact measure (RIM), a participant cost test (PCT), and a total resource cost test (TRC). For the TRC, the Companies shall use the most currently approved TRC in the 3-year Energy Efficiency Plan with all applicable values.

Summary of NPA Identification Requirements (8-16)

Requirement Number	Requirement
8	The Companies shall consider all funding sources for any NPA undergoing BCA evaluation, including reallocation of funds from different value streams within the NPA, so long as it does not turn any BCA negative.
9	Companies will pursue a viable, cost-effective NPA with the BCA tests ≥ 1. If the Companies proceed with an NPA which has failed one or more of the BCA tests, the Companies shall document sufficient evidence in support of their decision to proceed.
10	The Companies shall update their project authorization forms to include an NPA review section for all project types listed in Table 1. For each of these projects, this NPA review section shall include the results of each review process step undertaken for the project. If a project fails the review process, documentation up to the point in the NPA Identification Process must be provided.
11	If NPA projects must be prioritized for execution, the Companies shall prioritize the projects by and in the order of their impact to EJCs, avoided GHG emissions, and avoided gas capital. Prioritization will also consider project need and timing, ability to execute, customer needs, and other factors that may impact project success, such as the need to coordinate with state or municipal work.
12	The Companies shall engage all new gas customer requests with alternative options and require each customer to sign the "Customer Acknowledgement" form that they have been informed and have chosen to proceed with gas or an NPA solution.
13	Each Company shall develop a Customer Engagement Framework informed through the targeted electrification pilots
14	The Companies will only consider the natural gas customers within an NPA Service Area at time of project authorization.
15	The Companies may evaluate the NPA in the event of emergent situations or changes in customer participation. The Companies shall make all necessary investments to deal with emergent situations where applicable without impacting the prudency review of the NPA decision.
16	The Companies are required to update the NPA Framework at a minimum every 5-years and submit the updated version to the Department for review with each CCP filing. Specifically, the Companies shall provide updates on technologies and solutions which may act as NPAs, the BCA, and Community Engagement topics. The Companies shall solicit stakeholder feedback for each iteration it submits to the Department.

QUESTIONS?