



# **ADVANCED METERING INFRASTRUCTURE (AMI) PROJECT**

Project Status Report to NBEUB

For the Quarterly Period ending December 31, 2023

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## Background

New Brunswick Power Corporation (NB Power) is continuing to leverage technology advancements that will improve its ability to respond to changing customer expectations, address climate change, modernize the grid, and focus on continuous process improvement. New technologies such as Advanced Metering Infrastructure (AMI) will enable NB Power to improve its service to customers and help them better understand their electricity usage and use energy more wisely. AMI will help NB Power better manage the rising demand on the electricity system well into the future, while laying the groundwork for a wide range of new customer benefits.

AMI is foundational to the grid modernization program and involves three key technologies:

1. Advanced Meters
2. Head-End System (HES)
3. Meter Data Management System (MDMS)

These three AMI technologies, in combination with the associated communications network, are critical components of NB Power's overall grid modernization program.

The many benefits of AMI include providing tools and programs to give customers more control over their electricity consumption and costs and laying the groundwork for new customer-focused programs and services. Within NB Power's day-to-day operations, AMI will also increase efficiency of meter data collection, billing, and disconnects/reconnects. Power restoration will be improved as a result of quicker notification of outages which could reduce response time.

NB Power filed an application for AMI with the New Brunswick Energy and Utilities Board (NBEUB) on August 1, 2019, and the matter was heard by the NBEUB January 13-22, 2020. As a result of the requested and Board-approved delay due to the COVID-19 pandemic, on September 4, 2020, the NBEUB approved NB Power's AMI capital project application and work is underway with the project team and third-party vendors.

The NBEUB decision directed NB Power "to propose, at the next general rate application, a set of metrics or progress indicators to track the project. This should include progress indicators to track the rollout of the project, as well as its timeline, costs, and the realization of its quantified and non-quantified benefits. The proposal should also include a reporting and review schedule, and a communication plan for stakeholders

and ratepayers.”

NB Power proposed a reporting format in response to the directive. The format was reviewed and approved by the NBEUB on May 27, 2021 on a preliminary basis with specific conditions. This report complies with the approved format and conditions, which requires NB Power to provide this report electronically on a quarterly basis to the NBEUB and share the report on [www.nbpower.com](http://www.nbpower.com) for public access in both official languages.

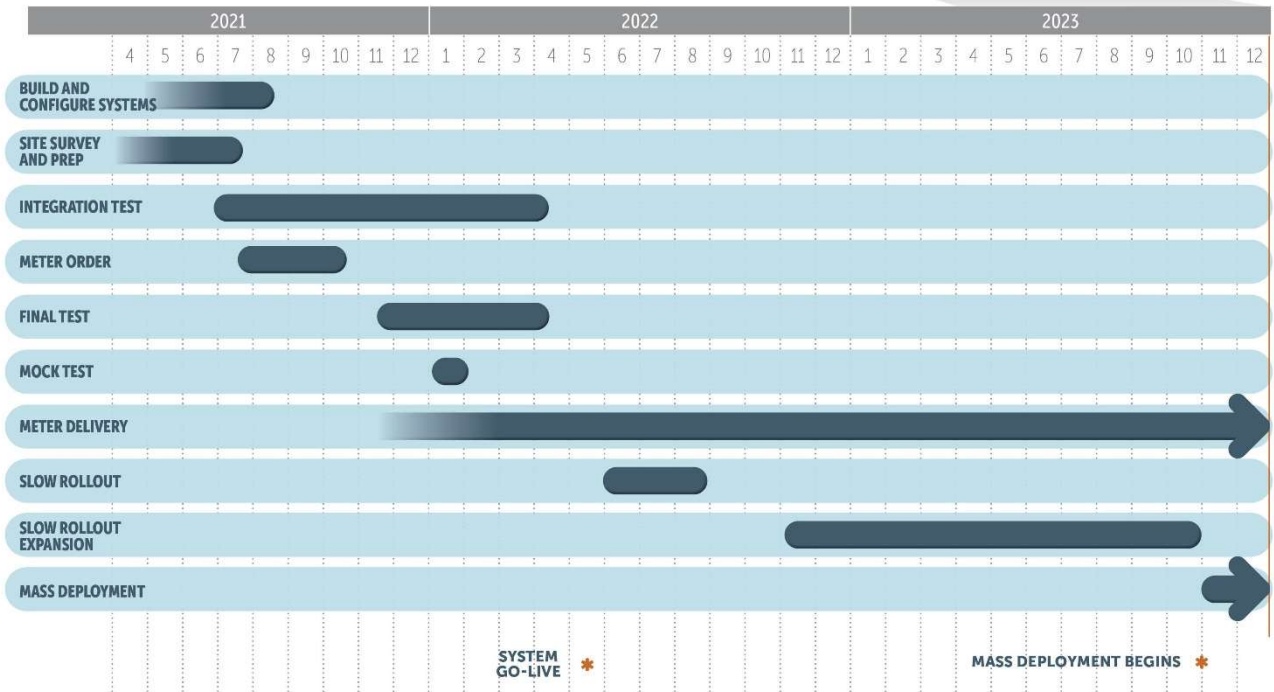
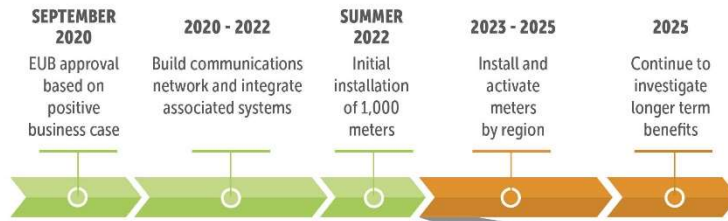
## Objective

The objective of this report is to provide a quarterly status update to the NBEUB on the AMI Project. This includes progress indicators tracking the project rollout, as well as its timeline, costs, and the realization of its quantified and non-quantified benefits, as compared to the AMI business case filed with the NBEUB in Matter 452. Updates on customer engagement and project risks are also provided in this report.

NB Power's AMI Project involves several key vendors to deliver on various aspects of the project, with NB Power project management providing oversight over the entirety of the project. The main vendors and their contributions are as follows:

- **Utegration** – experienced System Integrator providing technical oversight to the multiple elements requiring interfaces with NB Power's SAP enterprise asset management system and AMI related systems.
- **Itron** – Meters and Head End System
- **Siemens EnergyIP** – Meter Data Management System
- **Olameter** – deployment of new meters across the province

# Summary of Results as of Quarter ending December 31, 2023



## **Project Timeline**

- NB Power began mass deployment of smart meters on November 1, 2023
- Key activities in the last quarter focused on finalizing mass deploy ramp up activities and workshops (customer care, safety, workforce management, fleet, and facilities)
- Approximately 27,000 meters (7.8%) have been upgraded to AMI.
- NB Power has confidence in the supply of meters with over 220,000 delivered and delivery commitments that continue to be met.
- The project team continuously monitors for internal or external challenges that could impact the project timeline and/or budget and ensures mitigation plans are in place.

## Financial Results

The business case detailed the net present value of the lifecycle costs and benefits of AMI. NB Power will be reporting on AMI project costs presented in Matter 452 evidence, Table 2.3.1, lines 4-8. The sunk costs to the end of fiscal year 2018/19 are not included because they were not included in the costs in the business case or Table 3.2. Table 2.3.1 has been restated below to break out the costs into the categories presented in Matter 452 evidence Table 3.2. This includes all costs incurred in fiscal year 2019/20 to the completion of system-wide coverage of AMI that remains dependent on the receipt of meters. The table below represents project costs incurred to date.

Costs	Actuals to date (\$M)	AMI Project Costs Budget (\$M)	% of Total
3.2.1 AMI Capital	\$12.1	\$53.3	22.7%
3.2.2 AMI Operating	0.9	5.9	15.4%
3.2.3 MDM Operating	1.8	2.9	60.9%
3.2.4 Meter Installation Capital	0.8	11.5	7.1%
3.2.5 CIS/WFM/ESB Capital	7.1	8.8	80.2%
3.2.6 MDM Capital and AMI Project Team	10.1	8.0	126.8%
3.2.7 CIS/WFM/ESB Operating	3.1	3.5	90.1%
3.2.8 Corp Services & Other Capital	3.5	3.1	114.0%
3.2.9 Utility Tax	0.0	0.0	0.0%
3.2.10 Corp Services & Other Ops	0.5	0.3	197.9%
3.2.11 Pre-Engineering Capital	0.1	0.1	81.7%
<b>Total</b>	<b>\$40.0</b>	<b>\$97.2</b>	<b>41.1%</b>

Note to Reader: Financial tables reflect differences due to rounding

### Variance explanation:

- 3.2.1 AMI Capital – the bulk of this spending to date is for the installation of the network hardware and 27,000 AMI meters. The remaining budget is related to the cost of the meters. Spending in this category has started to ramp up now that mass deployment has started and will continue through the deployment period.
- 3.2.4 Meter Installation Capital – spending in this category has started now that mass deployment is underway and will continue to the end of the deployment period.
- 3.2.5 CIS/WFM/ESB Capital – the work in this category is related to system integration, specifically the contract with Utegration. This portion of the project is complete.

- 3.2.6 MDM Capital and AMI Project Team - covers the work to implement the MDM as well as the budget for the project team for the duration of the project. This cost category was almost completely spent at the end of December. Of the \$8.0 million budget in this cost category \$2.3 million (inclusive of contingency) was for the MDM contract that was not signed at the time that the business case was prepared. The final contract value was \$2.8 million putting this item \$0.5M over budget from the onset. The MDM has been implemented within the contract amount. The remaining \$5.7 million that was budgeted for the project team has been fully exhausted with 24 months of meter deployment remaining in the project schedule. Two of the main drivers of the increased cost of the project team is the ongoing delay in mass deployment of meters and the reliance on hired services as key members of the project team that were not anticipated when the business case was prepared.
- 3.2.7 CIS/WFM/ESB Operating – the implementation of the customer portal falls within this cost category. When the AMI business case was being developed it was assumed that NB Power would work with the contracted vendor who was hosting the portal for the Home Energy report to also offer the AMI portal and high bill alert program. When the work started on the AMI portal, procurement rules required NB Power to issue a request for proposal (RFP) for the service. This resulted in a significantly higher implementation cost as well as annual hosting costs that are higher than what was budgeted. Although the costs are higher, the portal will provide customers access to their consumption information as well as receive high usage alerts that will allow them to better manage their energy usage and lower their bills.
- 3.2.8 Corp Services & Other Capital is trending higher to date than budgeted due to the delays in the project resulting in increased interest and overhead carrying cost
- 3.2.9 Corp Services & Other Ops is trending higher to date than budgeted due an unforeseen escalation in the price of non-meter materials such as rings and seals.

All other project spending is on track and aligned to the scheduled work. NB Power continues monitor forecasted expenditures closely and works with vendors to mitigate cost pressures wherever possible.



## Fiscal Year Project Schedule

### Update:

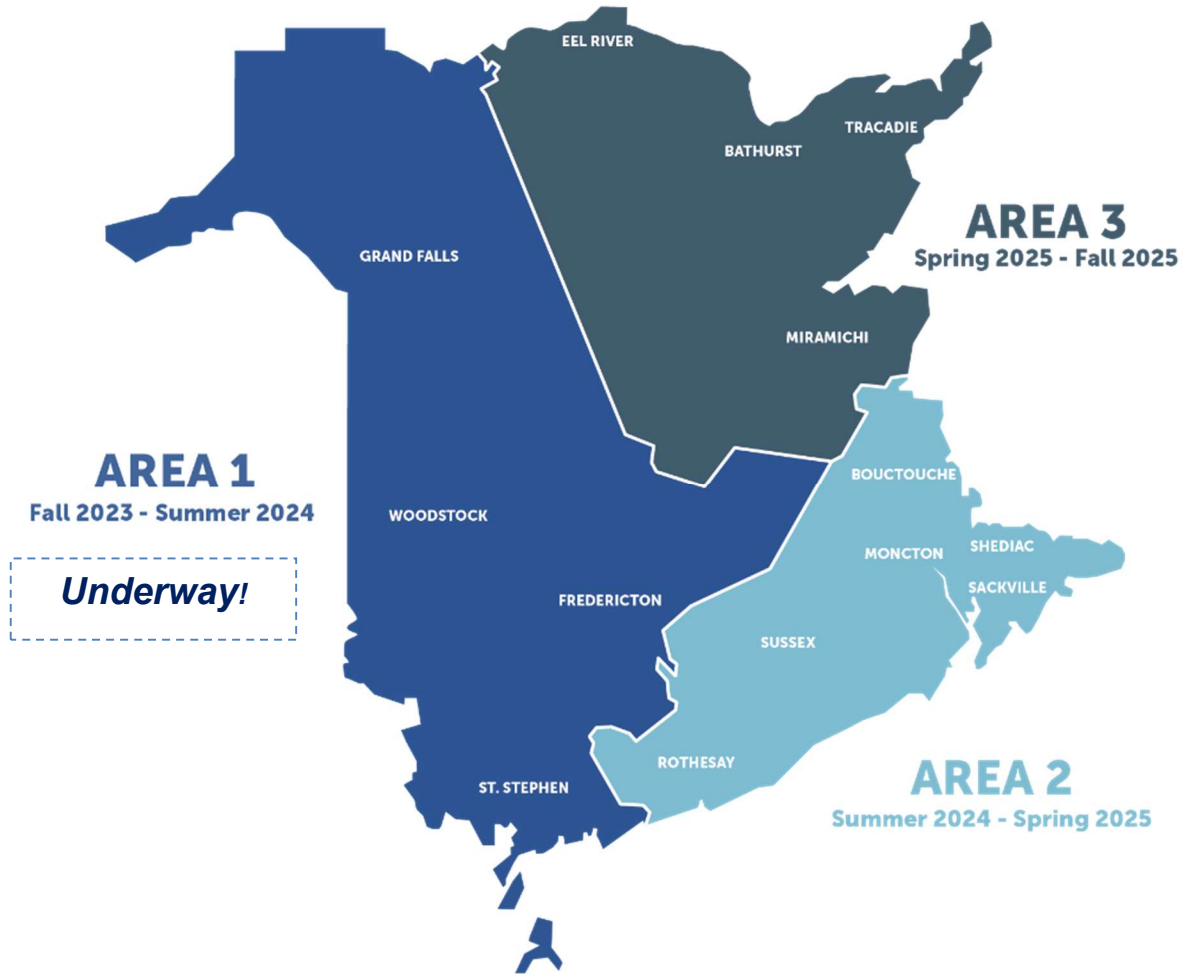
- Final AMI System work activities continued such as remaining development and test environment configuration. System sustainment documentations and support materials are complete.
- Customer Portal deployment postponed from Fall 2023 to early 2024.
- Completed all mass meter deployment ramp up and preparation activities and started mass meter deployment on November 1, 2023 in Area 1 (Fredericton, Grand Falls, Woodstock and St Stephen districts)
- Mass meter deployment preparations included: establishing a safety program, workforce management / recruitment, fleet provisioning and branding, warehouse stand up, inventory management, issue management processes and commencement of daily deployment operations
- Approximately 27,000 AMI meters have been deployed, including 7,300 in the Fredericton and Moncton regions that were used to test the system end-to-end, validate communications, and monitor the overall install experience with real customers. Mass meter deployment will continue through 2024 in Area 1
- The project remains on schedule to expand mass meter deployment to Area 2 (Moncton, Sussex, Rothesay, Shediac, Bouctouche) in the summer of 2024

## **Meter Deployment**

- As part of deployment of the three-phase transformer rated meter upgrades, we have 3,700 meters installed out of approximately 5,700. These upgrades are taking place separately from mass deployment due to the complexity of installation and will take up to 2 years to complete installations provincially.
- NB Power currently has over 220,000 meters in inventory, which represents 60 per cent of our forecasted meter delivery plan.
- Mass deployment of smart meters to NB Power customers started on November 1, 2023 with Area 1 (see below map) and to conclude within a 24-month period.

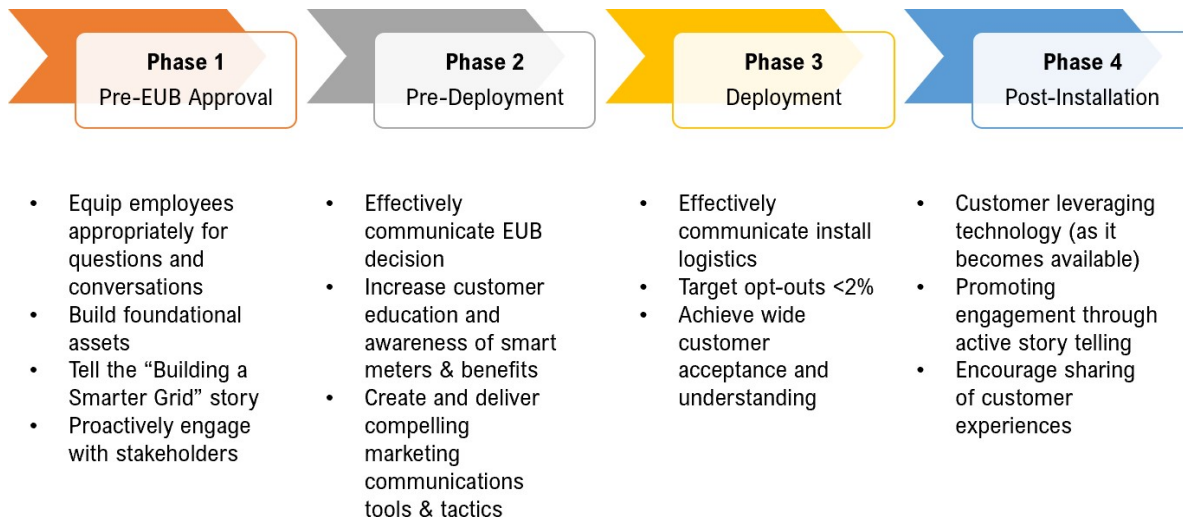
# Tentative Smart Meter Installation Map

This is based on initial plans and is subject to change.



# Stakeholder Engagement

The customer communications and engagement strategy includes four phases as illustrated by the diagram below.



## Update:

- Currently, as part of Phase 3, NB Power continues to follow the established notification process, communicating with customers, First Nations communities and other stakeholders in the areas of upcoming installations.
- Regular surveys are conducted with customers who receive meters. Overall results as of December 2023 found that:
  - 94 per cent felt neutral toward or satisfied with the overall meter upgrade experience
  - 68 per cent recalled receiving information prior to the installation
  - 83 per cent said the information received was helping in preparing them for what to expect at installation
- To date, 849 customers have requested to be placed on the Do Not Install list
  - This represents 0.2 per cent of our eligible customer base and is well below NB Power’s target of less than 2 per cent.
  - The following stakeholder outreach activities were conducted between October 1, 2023, and December 31, 2023: provided an update to the Municipality of St. Stephen
  - provided an update to the Milltown Activities Group
  - provided an update to the Lower Saint John River Hydro (Mactaquac) Community Liaison Committee
  - engagement with the Mayor of Fundy Shores
  - engagement with the Mayor of Saint Quentin
- NB Power’s Key Account Specialist team informed representatives from the following

municipalities about NB Power smart meter installations:

- Eastern Charlotte
  - Hartland
  - Oromocto
  - Carleton North
  - Nackawic-Millville
  - St Andrews
  - New Maryland
  - Upper Madawaska
  - Kedgewick
  - St. Jacques
  - St. Quentin
- 
- Outreach to FN communities continued including, virtual information session for St. Mary's First Nation leadership.
  - Internally, the AMI project team conducted regular updates for employees working in areas of the business affected by AMI. Project updates were shared on the employee website, including an announcement to kick off mass deployment.
  - Website information is updated regularly. A list of communities where installations are taking place and a page explaining 'what to expect during installation' was added.
  - Project leadership conducted visits with employees around the province to share the progress and answer questions.
  - There were 5,388 visits to the smart meter section of the website, a 289.9 percent increase over the previous quarter.

## Risks

NB Power's Enterprise Risk Management framework and process takes a strategic view of risk in all aspects of business management and is applied consistently at the strategic, business unit, program, and project level. NB Power manages risks, within its risk tolerance, consistently and comprehensively through a continuous, proactive, and dynamic process that identifies, understands, manages and communicates risks that may impact NB Power's strategic goals.

The following risks have been identified as items specific to the success of the overall AMI Project and are monitored and reported on monthly to the Strategic Portfolio Management – Executive Oversight Committee which is comprised of NB Power senior leadership including members of the executive team.

#	Risk		Mitigation Activity
1	Deliver timely customer benefits	Y ↔	Monitoring alignment of benefits as committed to project plan execution; working with benefit owners to ensure that the data and reporting is in place so NB Power can report on the benefits once meters are rolled out and benefits start to accrue.
2	Schedule accuracy	Y ↓	The team and SPMO continues to review and update all activities in the project schedule. The end result of this activity is a reconciliation of scope and budget to ensure alignment with the schedule.

Legend for Risk Indicator Results		
Green	Potential impact and/or probability of the risk occurring is low. Issues that have arisen or may arise are considered manageable in the normal course of operations.	≤ 59% of Key Risk Indicator targets are occurring
Yellow	Potential impact and/or probability of the risk occurring is medium. Issues have surfaced or remain present requiring focus.	≥ 60% of Key Risk Indicator targets are occurring
Orange	Potential impact and/or probability of the risk occurring is high. Serious issues exist which require close senior management attention.	≥ 75% of Key Risk Indicator targets are occurring
Red	Potential impact and/or probability of the risk occurring is very high or critical. Serious issues exist which require immediate senior management attention.	≥ 85% of Key Risk Indicator targets are occurring

Trend Indicator Legend					
↑	Significance is increasing	↔	Remaining the same	↓	Significance is decreasing

**Update:**

- Concerns regarding activities that have the potential to impact the project schedule and/or budget continue to be escalated to the appropriate vendor and management level.
- Implementation risks and issues are identified and managed weekly amongst the project team participants.
- Action plans for each of the above-noted risks are reviewed and updated monthly.
- A global supply issue related to the availability of semiconductors impacting the availability of meters is no longer an issue. NB Power continues to receive a steady supply of meters.
- All positions required to support meter deployment have been filled and no longer pose a risk to the project.

## Quantified Benefits Realized

The following table represents the benefits of AMI that were accepted by the Board in the decision of Matter 452. The majority of these benefits will be realized post full deployment of AMI.

The benefits are shown in present value and real dollars to provide a correlation between the accepted present value in the decision and the real dollar value that is targeted that NB Power will be tracking against over the life of the AMI meters.

Benefit	(PV \$ millions)	Target (Real \$ millions)	Actual	% Realized
Reduced Manual Meter Reading and Meter Service Order Benefits	39.9	65.9		
Avoided Cost of Meter Replacements	22.0	35.4		
Conservation Voltage Reduction	16.2	25.7		
Distribution Network Losses	15.0	25		
High Bill Alert	10.3	17.1		
Load Research Meters	5.2	8.5		
Net Metering	4.3	8.0		
Meter Services Manager Salary	1.8	3.0	0.3	10%
Avoided Cost of Meter Reading Vehicles	1.8	2.8		
Outage Restoration (Crew Management)	1.6	2.6		
Reduced Customer Inquiries	1.4	2.4		
Avoided Cost of Handheld System	1.4	2.2		
Avoided Cost of Meter Reading Supervisor	1.0	1.6		
Reduced Overtime for Meter Service Orders	0.6	1.0		
Total Benefits	\$122.4	\$201.1		

### Update:

All benefits will be realized post implementation of the smart meters except for the Meter Services Manager Salary. NB Power began realizing this benefit in fiscal year 2020/21 when the position was eliminated.



## **Non-quantified Benefits**

Non-quantified benefits will be measured and reported as they are realized throughout the meters' lifetime. Currently there is nothing to report.

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