

AMI Background and Analysis

PRESENTED TO CITY OF LOMPOC UTILITY COMMISSION 5-12-25

What is AMR (Automatic Meter Reading)

- ▶ kWh usage is retrieved by automatic means once-per-month.
- ▶ Data collected by drive-by or walk-by readers.
- ▶ One-way communication only.

What is AMI (Advanced Metering Infrastructure)

- ▶ Communication is more automated and provides near real-time, two-way interactions with meters.
- ▶ Key role of AMI systems is to collect actionable data so a utility can be better informed and prepared to respond to current issues, identify shifting trends, and be better equipped to strategize for the future.
- ▶ Provides the utility a better understanding of the quality and distribution of energy and allows for a better-informed utility to be more directed in efforts to improve utility reliability.

Pilot Project for local apartment complex

- ▶ Began in early 2023.
- ▶ 378 AMI meters currently installed and operating.
- ▶ To expand project, an RFP was required due to procurement policies.

Timeline of AMI RFP process

Month	Milestone
March 2024	Contracted consultant to assist with RFP development
April 2024	RFP development initiated
May 2024	RFP No. 3076 was published
June/July 2024	RFP evaluation of all respondents
July 2024	Respondents narrowed to four – demonstrations conducted
August/October 2024	Additional vendor evaluations
October 2024	Technical evaluation team selects Eaton as the preferred vendor
October 2024	Initiation of contract terms and conditions
May 2025	Approval of contract and project sought by City Council

How much will the AMI system cost

	Per contract	Total for 15-year life
One-time purchase cost	\$3,638,978.00	\$3,638,978.00
Annual costs	66,378.00	995,670.00
Total cost over 15-year life		\$4,634,648.00
Average cost-per-year		308,976.53

Options to fund an AMI system

- ▶ CARB restricted funds
- ▶ City Customer revenue from electric utility bills

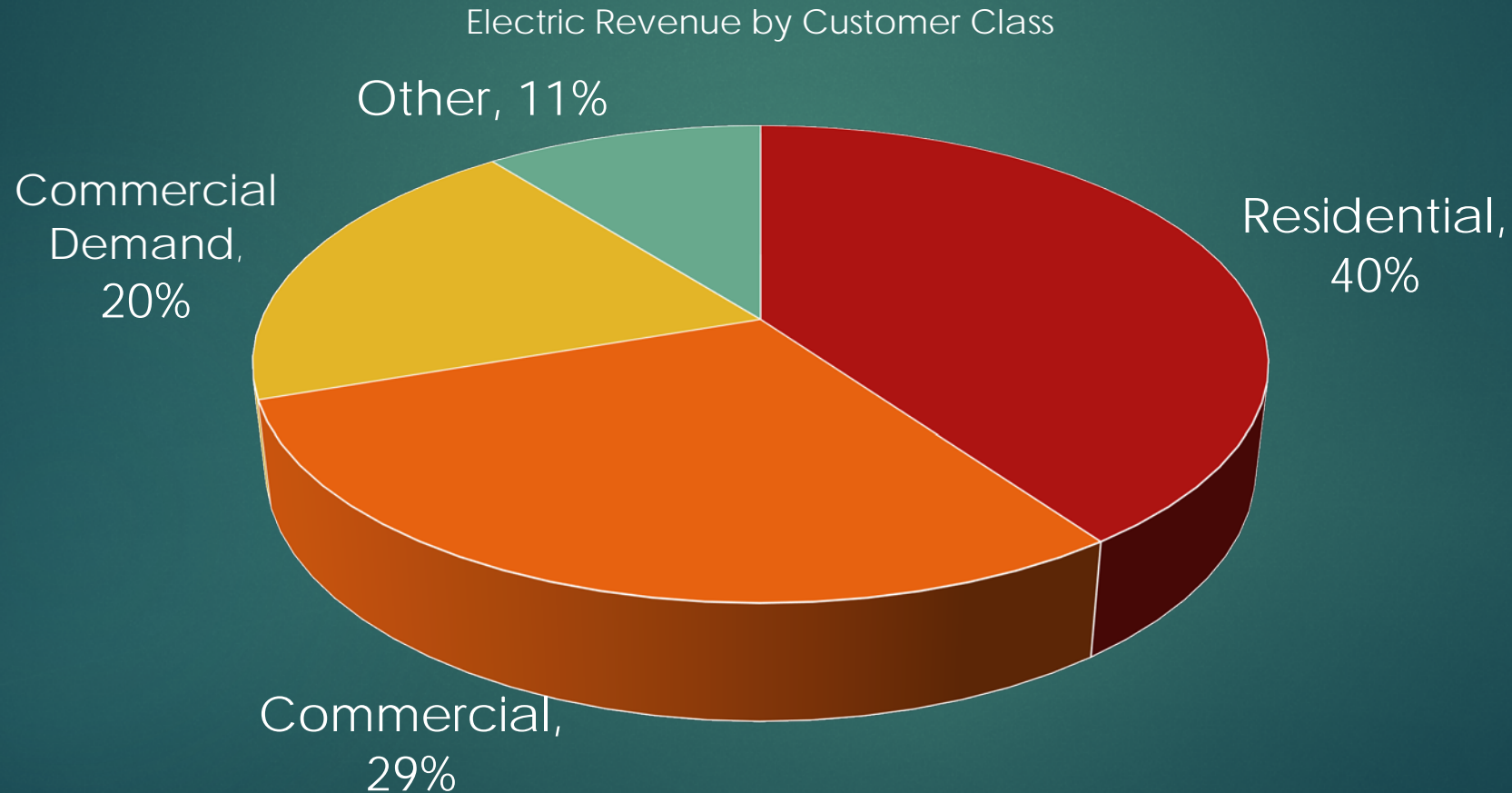
CARB Restricted Funds

- ▶ Funds are for projects that will reduce greenhouse gas emissions. The City of Roseville used CARB funds to help fund their AMI project – completed in June 2024.
- ▶ City of Lompoc has about \$5.5M as of 12-31-24 and have received over \$1M per year the past 3 years.
- ▶ Recent uses:
 - ▶ Matching funds on an EV charging grant,
 - ▶ contributing to the NCPA Geothermal plant costs,
 - ▶ converting city lines from 4kv to 12kv, and
 - ▶ refunds to customers.
- ▶ AMI metering and infrastructure was an approved use by Lompoc City Council.

Customer Electric Revenue

- ▶ Total cost of project averaged over 15,049 customers is \$307.97 per customer.
- ▶ This is a misleading calculation based on how the City bills for electric service.

Sources of Electric fund revenue



Cost of AMI project by customer class

11

Class	Share of total cost	Annual cost	Percent share of project
Residential	1,863,191.95	124,212.80	40%
Commercial	1,366,341.06	91,089.40	29%
Commercial Demand	915,201.42	61,013.43	20%
Other	489,913.56	32,660.90	11%
Total	4,634,648.00	308,976.53	100%

Residential Customer snapshot

12

▶ Energy Rate (as of 7/1/25)	.20396 per kWh
▶ Monthly customer charge	\$5.00
▶ Average monthly usage	328 kWh
▶ Average bill (current)	\$70.00 (per month)
▶ Average bill (as of 7/1/25)	\$72.07 (per month)
▶ Share of project (40%)	\$1,863,191.95
▶ Cost per year	\$124,212.80
▶ Cost per kWh/year	0.00232 per kWh
▶ Cost per customer per month	\$0.76
▶ % of bill to AMI project	1.06%

Commercial Customer snapshot

13

▶ Energy Rate (as of 7/1/25)	.2737 per kWh
▶ Monthly customer charge	\$10.00
▶ Average monthly usage	2,019 kWh
▶ Average bill (current)	\$530.54 (per month)
▶ Average bill (as of 7/1/25)	\$562.54 (per month)
▶ Share of project (29%)	\$1,366.341.06
▶ Cost per year	\$91,089.40
▶ Cost per kWh/year	0.00286 per kWh
▶ Cost per customer per month	\$5.78
▶ % of bill to AMI project	1.03%

Benefits to Customers

- ▶ Access to current usage data through web portal to help them understand high bills by providing hourly usage data.
- ▶ No risk for paying high pole-cut fee if City cannot access their meter to turn-off service.
- ▶ In case of service disconnection, customer would have more immediate reconnection after payment is made.

Benefits to City

- ▶ Greater data for evaluating load on current equipment and maximizing equipment service life.
- ▶ By utilizing data from AMI systems, staff can better ensure maximum service life on equipment by identifying and responding to issues such as overloading transformers as power demand grows.
- ▶ Utilized current AMR system to identify vulnerabilities related to increased power demand.

Benefits to City

- Improved system monitoring can lead to:
 - ▶ Better voltage regulation
 - ▶ Improved capacitor & regulator placement
 - ▶ More accurate voltage-drop analysis
 - ▶ Better load studies/analysis
 - ▶ Improved reliability

Benefits to City

17

- Improved reliability monitoring can lead to:
 - ▶ Improved outage response
 - ▶ Proper system-protection analysis
 - ▶ Decrease in outages/time of outages, raising reliability indices
 - ▶ Better management of critical assets (transformers, capacitors, wire, cable, etc.)
 - ▶ Provide a near real-time connection to customers
 - ▶ Provide actionable information to customers and utility staff

Benefits to City

18

- ▶ Staff Efficiency and Safety benefits
 - ▶ Access to current read data for closing accounts.
 - ▶ More efficient and safer process for disconnects and reconnects.
 - ▶ Pole-cut disconnections are no longer needed.

Summary

- AMR systems are good at doing what they do, reading meters.
 - ▶ It will be harder for utilities to justify the expense of a system limited to reading meters.
 - ▶ Looming end of service life for existing AMR system is also a point of consideration
 - ▶ We have time, but not much time.
 - ▶ The benefits of AMI tend to provide a more palatable and sensible return on investment for today's utilities.
 - ▶ More data = Better informed decision making.
 - ▶ Better informed utilities = More responsive utilities = Cost savings by maximizing equipment service life
 - ▶ Equipment costs are demonstrably increasing, and we should be maximizing that service life by utilizing analytics that allow us to identify issues so we can be more responsive and less reactive.
- Moving into the future, upgrading to an AMI system will give us the tools required to better strategize and prepare for the challenges the utility faces as the cost of maintenance rises, and power demand increases.

Questions?

Presented by:

Robert Cross, Financial Services Manager

Jason Grossberg, GIS Technician II

Mike Luther, Interim Utility Director

Christie Donnelly, Management Services Director