

# Los Alamos Department of Public Utilities (DPU)

## Draft AMI Economic Study




















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August 26, 2015

EXPERIENCED ■ INDEPENDENT ■ RESPECTED

# Why is Los Alamos Interested in AMI?

 Tangible benefits in model <i>(Economic benefits visible in PSE business case)</i>  Intangible benefits <i>(Not visible in the PSE business case)</i> <b>Interest Areas</b>	Stakeholder Benefits				
	Customer Service	Rates Impact	Power Quality	Reliability	Conservation
Operations and labor efficiencies	 				
End of line voltage readings					
Improved outage identification and restoration management				 	
Web portal access to account	 				
Time of use billing (PTR, CPP, others)					
Prepaid metering					
Additional load control (future)					

## Scenario Quick Comparison

Variable Component	Scenario 1	Scenario 2	Scenario 3
<b>AMI Technology</b>	Tower (Similar to Tantalus)	RF Mesh (Similar to L+G)	RF Mesh (Similar to L+G)
<b>MDMS</b>	Yes	Yes	Yes
<b># of AMI Meters/Modules Deployed</b>	24,593	24,593	24,593
<b>Deployment Time</b>	1 Year	1 Year	1 Year
<b>Meter Acc. Increase</b>	1.9%	1.9%	1.9%
<b>Assumed Meter Acc.</b>	98%	98%	98%
<b>Residential Disconnects</b>	10%	10%	100%

## Scenario Comparison

- **Scenario #1:**
  - Based on a licensed tower or point-to-multipoint system (similar to a hybrid-mesh system)
  - Replaces all single phase and poly-phase meters
    - Water and Gas meters typically do not need to be changed, AMI modules are fitted to existing meters (with exception to Gas disconnects)
  - A full system MDMS factored in
  - 10% of all the residential electric and gas meters would be fitted with an under glass disconnect
  - Assumed a 5% water loss savings having leak detect.

# AMI Scenario 1

Variable Component	Scenario 1
AMI Technology	Tower (Similar to Tantalus)
MDMS	Yes
# of AMI Meters/Modules Deployed	24,593
Deployment Time	1 Year
Meter Acc. Increase	1.9%
Assumed Meter Acc.	98%
Residential Disconnects	10%

# AMI Scenario 1: Costs/Benefits

**15 Year Net Present Value (nearest \$100k)**      \$      **40,000**  
**Internal Rate of Return**      **8.5%**  
**Discounted Breakeven Year**      **15**

## Total Benefits

### Benefit Category

	15 Yr PV	Benefit per Meter	% of Total Benefit
Avoided Meter Replacement and Present Meter Reading System Costs	\$ 1,636,000	\$ 66.51	30%
Meter Accuracy Savings	\$ 1,407,000	\$ 57.19	26%
Reduction in Connects/Disconnects/Off-cycle Read Costs	\$ 1,133,000	\$ 46.08	21%
Meter Reading Savings - On-Cycle	\$ 437,000	\$ 17.75	8%
Water Loss Reduction	\$ 337,000	\$ 13.69	6%
High Bill and Estimate Call Savings & Works Comp Reduction	\$ 248,000	\$ 10.10	5%
Theft Protection	\$ 189,000	\$ 7.68	3%
Outage Management (No lights calls, crew optimization)	\$ 62,000	\$ 2.51	1%
Peak Time Rebate	\$ 0	-	0%
Cash flow - reduced short term interest	\$ 0	-	0%
<b>Benefits Total</b>	<b>\$ 5,448,000</b>	<b>\$ 221.53</b>	<b>100%</b>

## Total Capital Costs

### Capital Cost Category

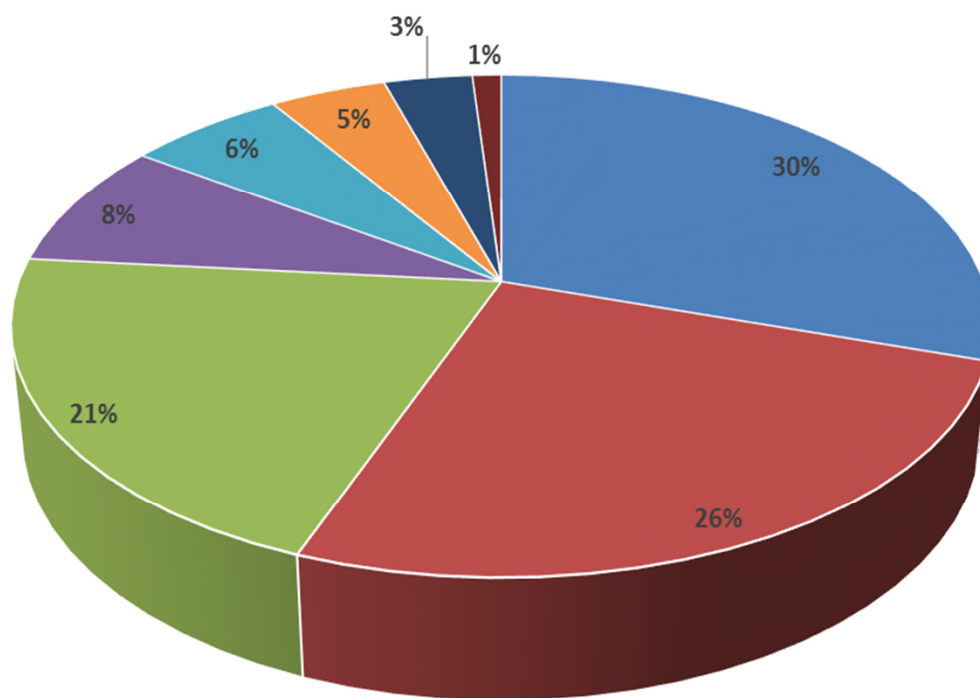
	15 Yr PV	CC Per Meter	% of Total CC
AMI Meters/Modules	\$ 2,431,000	\$ 98.85	51%
3rd Party Meter Installation Including Socket Repairs	\$ 1,056,000	\$ 42.93	22%
AMI Infrastructure	\$ 924,000	\$ 37.57	20%
Meter Data Management System	\$ 123,000	\$ 4.98	3%
AMI Software	\$ 93,000	\$ 3.79	2%
3rd Party Integration and Project Management	\$ 95,000	\$ 3.85	2%
Backhaul Communications Allocation	\$ 7,000	\$ 0.30	0%
Direct Load Control Devices	\$ 0	-	0%
<b>Total Operating and Maintenance Cost</b>	<b>\$ 4,729,000</b>	<b>\$ 192.27</b>	<b>100%</b>

### O&M Cost Category

	O&M Cost	% of Total O&M Cost
AMI Network Operations	\$ 0	0%
Recurring Communications Costs	\$ 6,000	1%
AMI Vendor Recurring Fees	\$ 314,000	46%
MDMS Vendor Recurring Fees	\$ 366,000	53%
Tower Lease Recurring Fees	\$ 0	0%
AMI Field Area Network FTE Costs	\$ 0	0%
	<b>\$ 686,000</b>	<b>100%</b>

# AMI Scenario 1: Benefits

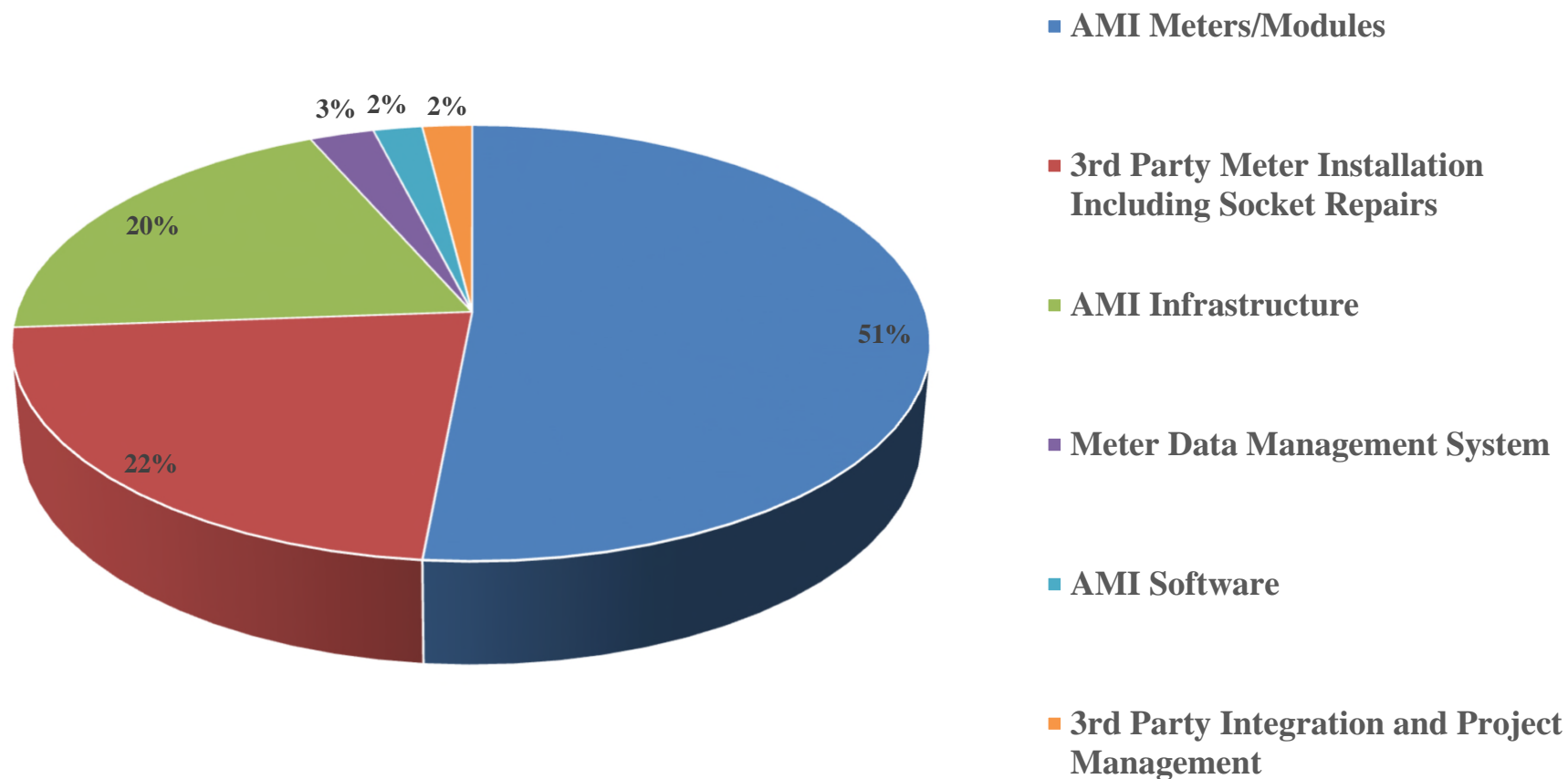
15 Year Benefits by Category



- Avoided Meter Replacement and Present Meter Reading System Costs
- Meter Accuracy Savings
- Reduction in Connects/Disconnects/Off-cycle Read Costs
- Meter Reading Savings - On-Cycle
- Water Loss Reduction
- High Bill and Estimate Call Savings & Works Comp Reduction
- Theft Protection
- Outage Management (No lights calls, crew optimization)

# AMI Scenario 1: Costs

## 15 Year Costs by Category





# AMI Scenario 1: Cash Flow

Cumulative Project Nominal Cash Flow

