Coos-Curry Electric Co-op, Inc.

Port Orford， Oregon

Automatic Meter Reading System
Financial Planning Analysis

March 14, 2006

Prepared by:

Cooperative
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Coos-Curry Electric Co-op, Inc.

Executive Summary

A - Overview

Thank you for using the NRECA AMR Payback Evaluation Tool to assist you with determining cost and benefits that would result through implementation of an AMR system at your Cooperative. Based on your inputs and your Form 7 data, the following charts and graphs describe potential savings and the breakeven point for the project you defined. The Payback Evaluation Tool is intended to be a part of the management decision process at your Cooperative. This tool will realistically inform your management about the financial impact that would result from implementation of AMR.

Cooperatives that have implemented AMR have cost and benefit experiences which have been quantified and categorized by the National Consulting Group. The quantifiable experiences have been modeled to create financial and resource planning factors for your consideration. This report has been created by the model using your metering, customer service, operations and financial information as well as your Form 7 data.

The Payback Evaluation Model has considered many of the cost and benefit parameters for system implementation. Items such as project management, employee retention, capital expenditures and operational and maintenance costs have been balanced with savings through reduced metering, marketing, finance and operations costs. Statistics for your Cooperative as compared to US and state medians are described in section 2. Section 3, Potential Savings details what returns should be expected from the AMR system. These details are presented in both annual dollar savings per category and in a pie chart to compare savings from each of the sources. In Section 4, you will see a summary of the investments required to purchase, install and operate an AMR system. Finally, Section 5 details Net Present Value (NPV), Payback and Cash Flow results for your Cooperative.

This report will provide you with most of the information required to make a Go/No-Go decision for investing in an AMR system. However there may be other functions that you would like to consider. If you would like to consider integrating AMR with such systems as SCADA, Capacitor Control, Outage Management, Workforce Management or others. Or, if you would like to expand the application of AMR to Feeder Automation, Demand Response, Time-of-Use Metering and/or Prepayment Metering. You may need to have this model expanded to assist you. For these cases, the National Consulting Group can assist you with making an informed decision.

In addition to the above functions, this report does not consider one important system component that is required for an AMR system to operate effectively. This component is the communications medium from your control center to substations. This function is not considered here for a variety of reasons. Simply put, the decision for this communications channel may be as simple as using a channel of your 900 MHz radio system (which makes it irtually cost free) or it may involve other decisions related to strategicdirection of your cooperative. You should engage a specialist in this area to assist with the decision. The specialist may be an employee from your Cooperative, an outside consultant or someone from NRECA's National Consulting Group. Whichever specialist you choose, you must ensure that the specialist considers: bandwidth requirements for required AMR functions, support of appropriate data security, availability and reliability, Cooperative strategic direction, appropriate capital and operational costs and long-term support of the chosen technology.

Finally, qualitative issues such as Cooperative image, market presence and employee satisfaction are not addressed in this model. One qualitative area that does warrant consideration by Cooperative management is for Coops that use members to read their own meters. All of the coops studied that switched from member read meters to AMR believe that member satisfaction improved dramatically with the switch.

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2 - Benchmarking and Statistics

Below are statistics calculated for your Cooperative based on Form 7 data. Your data points are then compared to median data for your State and for all Coops in the United States. These statistics are presented for your reference and should be reviewed in context. As an example, overtime hours may be 20% above or below benchmark medians and still meet your management objectives for headcount, total cost structure, member service levels, etc. These benchmarks/statistics can also be caused by an anomaly for a specific year due to a severe storm, personnel issues or other one-time event. However, these statistics may point out issues that deserve management attention or could result in benefits from implementation of an AMR system.

Through Cooperative experiences, AMR has been shown to offer strong potential to reduce system losses, improve operational effectiveness related to outage and overtime management and to reduce labor requirements in the field and of back-office personnel. For these reasons, some statistics that deserve special attention are:

- **System Losses -** Implementation of AMR at many cooperatives has been shown to reduce system losses through improved meter calibration and accuracy, improvements to commercial and industrial metering performance and faster identification of energy diversion. Your losses combined with you calibration and test procedures are evaluated in this report.
- **Overtime Hours/Total Hours** - Overtime costs can be reduced through the implementation of AMR through reduced customer service calls, more efficient outage handling and through better system mapping.
- **Outage-Hours/Member** - Outage duration can be reduced through the implementation of AMR. This reduction has not been quantified statistically for a variety of reasons. It is presented here in order for you to track it over time in the future
- **Consumers per Employee** - The number of consumers/employee and when viewed in relation to your overtime hours and outage hours can provide backup information as to whether AMR might be able to assist you in reducing your overtime hours.

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B - Benchmarking and Statistics (Continued)

In Figure 1 below, the center columns have indicators as to how your Coop's statistics compare to National and State medians. If you are +/- 5% then a "**-**" is used, otherwise up and down arrows are used. If your coop is either 20% greater or smaller than the median in your state or in the US, it is flagged by red up/down arrows. This is done to highlight your attention to an item out of the norm with other Cooperatives, it does not necessarily judge whether the impact is positive or negative.

Coos-Curry Electric Co-op, Inc. Statistics

2003 Data for:	Coos-Curry Electric Co-op, Inc. Value	vs. US & State		US Median (2003)	Your State's Median (2003)
System Losses (%)	3.19%	▼	▼	6.68%	7.27%
Overtime Hours/Total Hours (%)	4.27%	▼	▲	4.82%	3.43%
Number of Consumers/Mile	10.26	▲	▲	5.68	4.26
Outage-Hours/Member	6.48	▲	▲	3.25	4.90
Number of Employees	67	▲	▲	43	22
Operating Revenue / MWH	$74	—	▲	$74.22	$65.26
Consumers per Employee	246	—	▲	266	198
Average Rate/Hour	$33.81	▲	▲	$21.14	$29.20
Price/Residential kWh	$0.077	—	—	$0.0787	$0.0721
Avg Monthly kWh/Residential	1063	—	—	1103	1089
MWH Sold/1000	325	▲	▲	211	117
Number of Members	16,496	▲	▲	11,174	4,299

Figure 1

Coos-Curry Electric Co-op, Inc.

Executive Summary

C - Potential Savings

Based on Cooperative experience, potential savings derived from Automated Meter Reading can be grouped into five areas. The figures below reflect annual savings potential reflected in Dollars and in a pie chart to delineate shares of savings by category. These numbers reflect savings potential in today's Dollars. The categories are described as follows:

⇨ **Reduction of Metering Losses** - Potential savings due to improved meter calibration, test and audit characteristics of AMR and solid state meters. Savings potential is greater if you plan on using solid-state meters which have installation and site audit capabilities (for polyphase meters) and more stable accuracy response. Of course, solid state meters cost more, therefore the total payback must be evaluated to determine the proper type of meter for you.

⇨ **Savings in Meter Reading Costs** - These savings are typically the easiest to identify except for member-read Cooperatives. Your current annual costs are shown in Figures 3.

Coos-Curry Electric Co-op, Inc. uses employees to read meters.

The model has taken into account as many of the costs attributable to your staff's meter reading function as possible. These include all people directly or indirectly associated with the tasks, vehicles, handheld computers, fuel and maintenance charges. It is very important for the Cooperative to consider the reduction of these costs when looking at the payback. It is easy to claim that these costs will go away but if the people involved do not leave through attrition or fill roles whose costs are completely covered by other needs then the payback of an AMR system will be exaggerated.

⇨ **Finance Cost Savings** - These savings are easily quantified. While the share of savings from this category is typically less than the other areas, these savings flow naturally from automation and do not dictate reduction of labor/loss of jobs.

⇨ **Customer Service Savings** - Cooperative experience with AMR typically includes a perceived improvement to service level by members. Most often, this improvement comes from the ability to answer questions with near real-time response. The benefit to the Cooperative is that AMR allows many daily tasks to be done remotely. High bill complaints, correcting improperly read meters, final meter readings for member move-outs and move-ins can all be done remotely. In addition, for cases where habitually delinquent accounts require (if allowed) hard disconnects, AMR can increase employee safety while reducing costs to implement the disconnect. An observed benefit of formal process for remote disconnects is that many Cooperatives have seen a reduction in the amount of delinquent accounts after implementation.

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Executive Summary

C - Potential Savings (Continued)

⇨ **Operational Savings** - Operational savings are savings observed through the reduction of costs not covered in the Meter or Member Service Departments. Most of these savings will occur through a reduction of overtime expenses. AMR has been shown to improve quality of system maps - ensuring that electric service to members is properly documented. It has also been used to improve efficiency of outage restoration. Both of these areas result in improved efficiencies for line crews when resolving member needs. Cooperatives that integrate AMR with Outage Management and/or SCADA see greater operational efficiencies due to the higher level of automation.

For your Cooperative, you will have to review your operational costs in the statistics of Figure 1 to determine if overtime reduction is achievable and desirable. You should balance potential reduction in overtime with your staff levels and your ratio of consumers to employees to determine if overtime reduction will have a net positive effect or if it might force you to consider hiring more full-time employees.

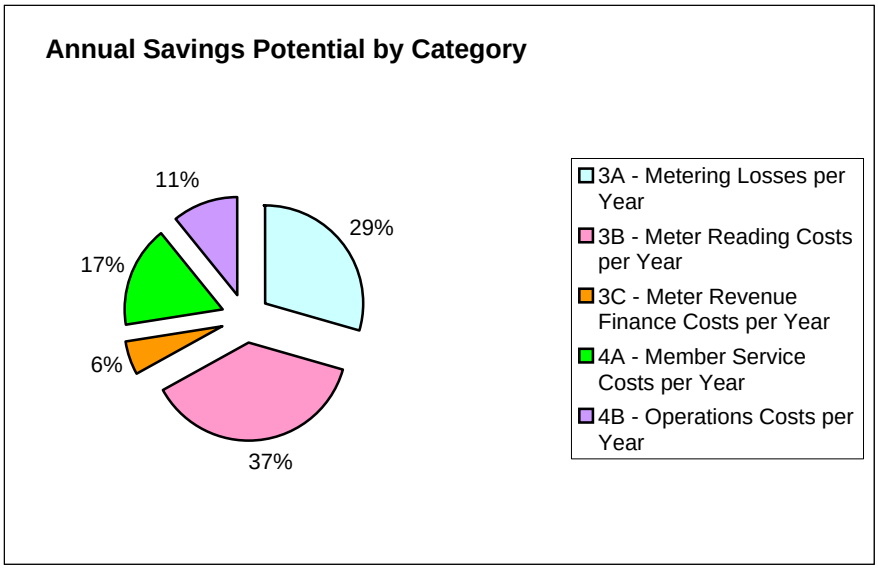

Figure 2

Coos-Curry Electric Co-op, Inc.

Executive Summary

C - Potential Savings (Continued)

Potential Annual Savings		
3A - Metering Losses per Year		$ 297,174
3B - Meter Reading Costs per Year		$ 379,820
3C - Meter Revenue Finance Costs per Year		$ 57,363
4A - Member Service Costs per Year		$ 168,960
4B - Operations Costs per Year		$ 108,851

Figure 3

In Figure 4 below, you will see how annual savings develop over the years. Your Project Implementation schedule is the largest single determinant as to how these costs develop. Shorter schedules typically generate faster growth of savings. There are implementation methods targeting high return applications which could improve payback; however, this would need to be considered in greater detail for your Cooperative. The National Consulting Group could assist you with this effort.

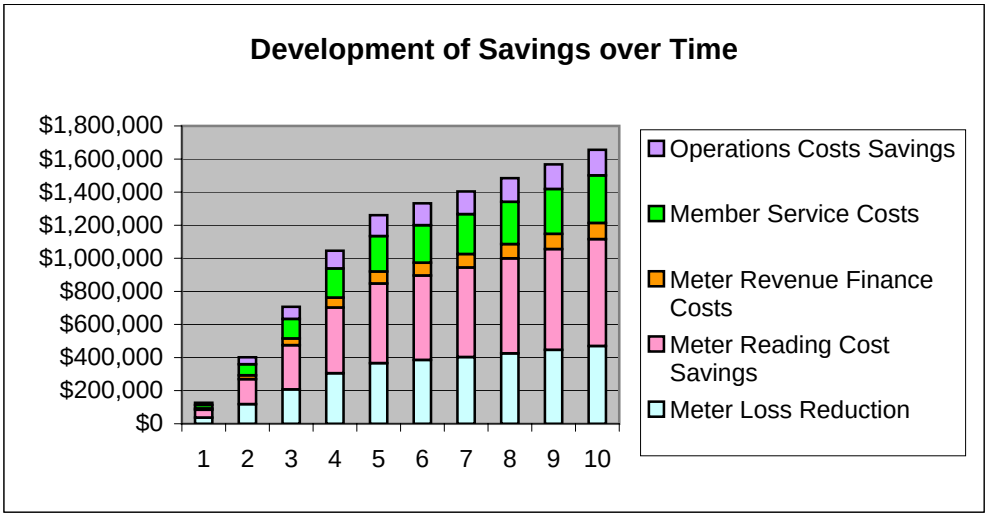

Figure 4

The total savings for **Coos-Curry Electric Co-op, Inc.** over the 10 year planning period and based on the inputs provided is projected to be **$10,985,575 .** Changes to any of your assumptions will have an impact on this number.

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D - System Costs

Costs for an AMR system that will fit your needs are described in this section. To vary and compare your options, you will need to save a file for each set of your assumptions and make multiple projections. Costs presented herein are a breakdown of total costs for 10 years for capital and expense items. Capital costs include: master station hardware and software, substation controllers and Injection and line conditioning , AMR meters and labor for installation of meters and substation equipment. Expense items include: operations personnel & employee retention, training costs, vendor service fees and miscellaneous expenses.

Based on your input, Figure 5 shows total expenditures for the ten year planning period. The inputs used for this calculations are the costs for equipment and labor as shown in the SystemsCosts. In addition, meter growth rates and inflation rates were used as shown below. Figure 6 is a pie chart representation of Capital Costs.

Inflation rate	Annual rate of growth of meter quantity		Vendor
4.00%	Single-phase **2.00%**	Polyphase **1.00%**	**Cannon**

10-Year Projection of Total System Costs	
Capital Costs	
Master Station Hardware & Software	$37,500
Substation Controllers, Injection & Line Equip.	$306,922
AMR Meters	$3,166,337
Installation Labor	$392,252
Project Management & Consulting	$121,695
Sum of Capital Costs	**$4,024,706**
10 Year Sum of Annual Expenses	
Operations Personnel & Retention	$628,294
Training Costs	$22,012
Vendor Service Fees	$111,835
Miscellaneous Fees	$451,978
Sum of Annual Expenses	**$1,214,120**
Sum of all Costs for 10-Year Planning Period	**$5,238,826**

Figure 5

Coos-Curry Electric Co-op, Inc.

Executive Summary

D - System Costs (Continued)

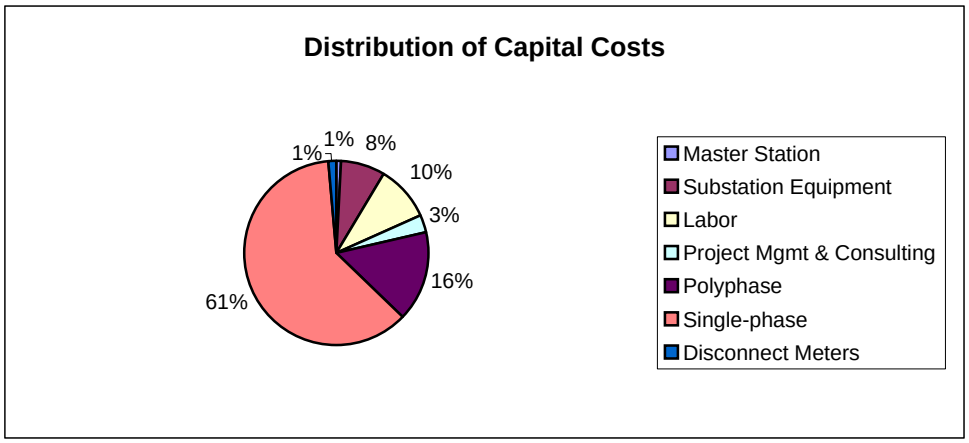

Figure 6

The principal financial justification of AMR projects is to utilize communication technology to reduce labor costs and improve member services. Operational expenses in years after project implementation should be low. Figure 7 presents annual expense and capital costs for your Cooperative for the 10-year planning period. The major determinant to the shape of the curve is the number of years devoted to project implementation. The shorter the period to get equipment installed the faster you get to reduce expenses and increased returns.

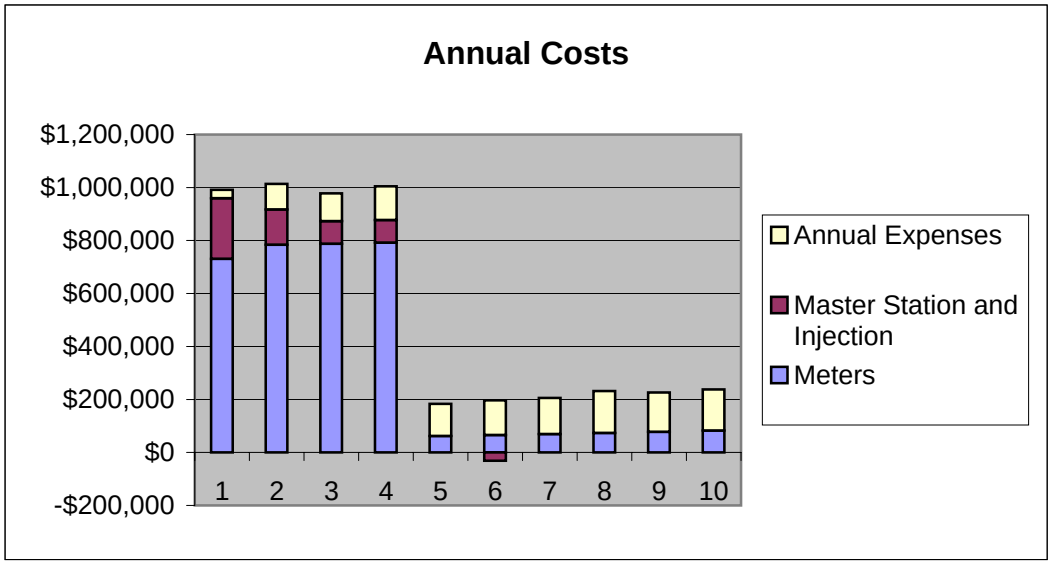

Figure 7

Coos-Curry Electric Co-op, Inc.

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E - Estimates of Financial Returns

Based on your Form 7 data and the operational inputs you provided, your potential savings and systems costs are summarized in the following graphs and tables . These figures include the Net Present Value (NPV) for a ten-year period of system operation using your Cost of Capital (which is also presented).

The breakeven point and net present value presented below must be evaluated by your cooperative's management and consultants to determine whether the investment is appropriate and advisable. This analysis provides you with financial measures. You must factor in the other aspects of the decision making process such as comparisons of returns from this investment versus other potential investments. You must also consider your personnel issues. If you have many employees near the retirement age of have difficulty retaining personnel then a decision to automate may make more sense for you. If you are overstaffed and cannot easily reduce your staff levels right away, then waiting may be appropriate. Finally, member satisfaction and employee safety may make a difference in your case.

Financial Measures	
Net **P**resent **V**alue	**$1,879,543**
Finance Rate	**5.25%**
Breakeven Point	**5.539 Years**
Benefit/Cost Ratio	**2.02**

Figure 8

In the curve below (Figure 9) you will see the estimate of your breakeven point for the project as configured. This graph is configured with the red bars representing accumulated costs for the 10-year period. Green bars represent accumulated benefits. The yellow line represents the accumulated difference between costs and benefits. This curve does not consider any financing costs, they are presented in Figure 10.

In Figure 10, data is presented with the option of financing the system at the rate and for the period you defined earlier. Depending on your financing terms, it is quite possible that your system could achieve positive cash flow within one or two years. Be careful when reviewing Figures 9 & 10, the vertical scales could be different.

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E - Estimates of Financial Returns (Continued)

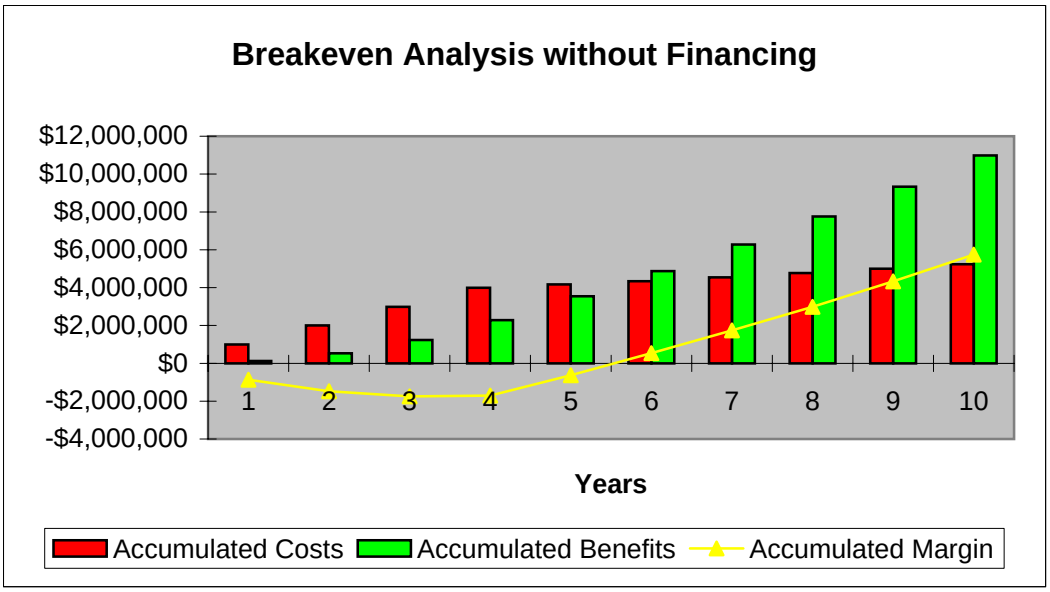
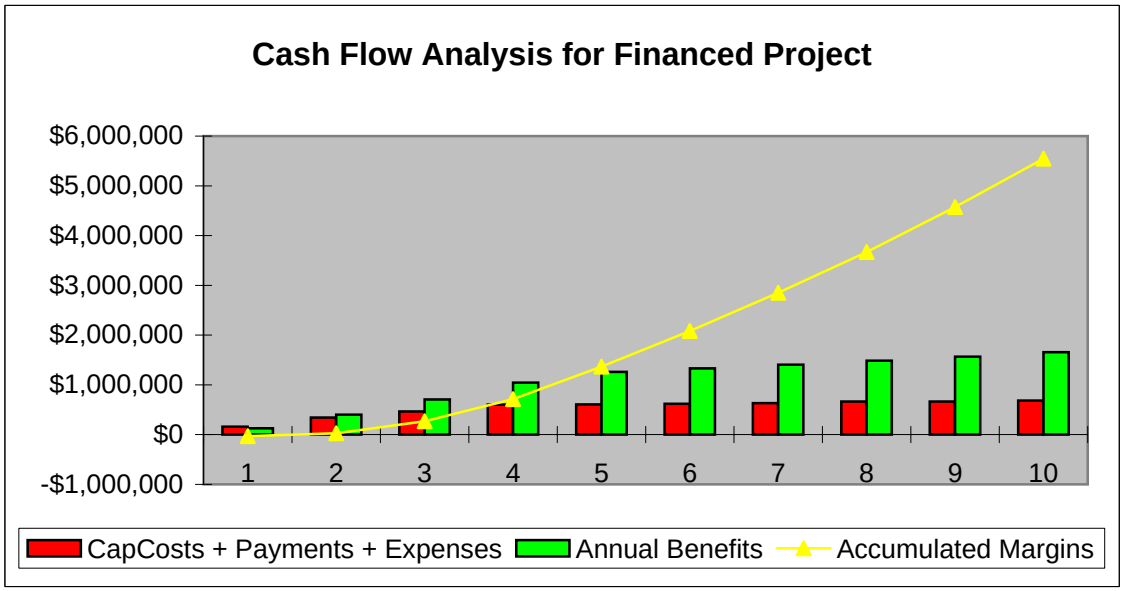


Figure 9



Period		Rate	Amount Financed
10	years	**5.25%**	**100%**

Figure 10

Vendor:
Cannon

Coos-Curry Electric Co-op, Inc. Ten Year Cash Flow Summary

Capital Costs for Project Delivery

Project Year	1	2	3	4	5	6	7	8	9	10
Meters and Installation										
1-Phase (Units)	3974	4292	4299	4305	337	344	351	358	365	373
1-Phase Meter Costs ($)	$487,561	$526,566	$527,346	$528,141	$48,423	$51,367	$54,490	$57,803	$61,318	$65,046
1-Phase Meter Installation ($)	$55,640	$62,494	$65,090	$67,796	$5,526	$5,862	$6,218	$6,596	$6,997	$7,423
Form 3S (Units)	75	76	77	77	2	2	2	2	2	2
Form 3S Meter Costs ($)	$13,875	$14,153	$14,154	$14,155	$330	$344	$360	$376	$393	$411
Form 3S Meter Installation ($)	$1,500	$1,591	$1,655	$1,721	$36	$37	$39	$41	$43	$44
DC + LC (Units)	75	75	75	75	0	0	0	0	0	0
DC + LC Device Costs ($)	$14,625	$14,625	$14,625	$14,625	$0	$0	$0	$0	$0	$0
DC + LC Meter Installation ($)	$2,250	$2,340	$2,434	$2,531	$0	$0	$0	$0	$0	$0
3-Phase (Units)	214	222	222	222	9	9	9	9	9	9
3-Phase Meter Costs ($)	$144,113	$149,877	$149,935	$149,993	$6,948	$7,298	$7,666	$8,052	$8,458	$8,884
3-Phase Meter Installation ($)	$11,209	$12,123	$12,613	$13,123	$540	$568	$596	$626	$658	$691
Meters	$730,772	$783,769	$787,851	$792,086	$61,803	$65,477	$69,370	$73,495	$77,867	$82,500
Substation and Master Station Equipment										
Basic Master Software & Hardware	$37,500	$0	$0	$0	$0	$0	$0	$0	$0	$0
Opt Master Software & Hardware	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Substation Communication Master	$52,581	$52,581	$52,581	$52,581	$0	$0	$0	$0	$0	$0
Substation/Bus Interface Hardware	$700	$700	$700	$700	$0	$0	$0	$0	$0	$0
Substation Installation Cost	$7,000	$7,000	$7,000	$7,000	$0	$0	$0	$0	$0	$0
Feeder Hardware	$8,375	$68,675	$23,450	$23,450	$0	-$30,150	$0	$0	$0	$0
Feeder Hardware Installation Cost	$500	$4,100	$1,400	$1,400	$0	-$1,800	$0	$0	$0	$0
Project Management and Delivery	$121,695	$0	$0	$0	$0	$0	$0	$0	$0	$0
Master Station and Injection	$228,351	$133,056	$85,131	$85,131	$0	-$31,950	$0	$0	$0	$0

Vendor: Cannon

Coos-Curry Electric Co-op, Inc. Ten Year Cash Flow Summary

Annual Expenses and Benefits

Project Year	1	2	3	4	5	6	7	8	9	10
Estimated Expenses										
Service Fees: AMR Vendor	$0	$7,800	$8,112	$8,436	$8,774	$9,125	$9,490	$9,869	$10,264	$10,675
Service Fees: 3rd Party Vendors	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Master Station Hardware Upgrades	$0	$0	$0	$13,498	$0	$0	$0	$15,791	$0	$0
Substation Equipment Upgrades	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Training	$0	$2,080	$2,163	$2,250	$2,340	$2,433	$2,531	$2,632	$2,737	$2,847
AMR Meter Repairs	$0	$929	$5,237	$9,857	$16,295	$21,251	$22,500	$23,823	$25,224	$26,708
Consumables	$25,000	$26,000	$27,040	$28,122	$29,246	$30,416	$31,633	$32,898	$34,214	$35,583
System Management	$7,250	$60,320	$62,733	$65,242	$65,242	$67,852	$70,566	$73,389	$76,324	$79,377
Personnel Retention	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Employee Retention	$7,250	$60,320	$62,733	$65,242	$65,242	$67,852	$70,566	$73,389	$76,324	$79,377
Annual Expenses	$32,250	$97,129	$105,285	$127,406	$121,898	$131,077	$136,719	$158,402	$148,764	$155,189
Estimated Benefits										
Inflation Ratio	1.00	1.04	1.08	1.12	1.17	1.22	1.27	1.32	1.37	1.42
Growth of residential meters	1.00	1.02	1.04	1.06	1.08	1.10	1.13	1.15	1.17	1.20
Meter Loss Reduction [1]	$37,147	$118,216	$207,319	$305,308	$366,095	$385,441	$402,641	$424,687	$446,462	$469,795
Meter Reading Cost Savings	$47,477	$151,092	$267,131	$396,722	$480,963	$510,205	$541,226	$574,132	$609,039	$646,069
Meter Revenue Finance Costs	$7,170	$22,819	$40,344	$59,916	$72,638	$77,055	$81,740	$86,710	$91,981	$97,574
Member Service Costs	$21,120	$67,212	$118,831	$176,479	$213,953	$226,961	$240,760	$255,399	$270,927	$287,399
Operations Costs Savings	$13,606	$42,452	$73,583	$107,137	$127,340	$132,433	$137,731	$143,240	$148,970	$154,928
Totals	$126,521	$401,791	$707,209	$1,045,561	$1,260,989	$1,332,095	$1,404,098	$1,484,167	$1,567,379	$1,655,765

[1] Meter Losses are largely dependent upon meter test, calibration and audit procedures. If procedures are improved then Meter Loss Reduction will be maximized. Solid State meters can also improve results. They do so by reducing the drift associated with electromechanical meters and also through features and functions such as socket/wiring verification. If electromechanical meters are used and audit/test processes are poor, then losses will rise to previous levels.

Vendor: Cannon

Coos-Curry Electric Co-op, Inc. Ten Year Cash Flow Summary

Financial Summary

Project Year	1	2	3	4	5	6	7	8	9	10
Cost Summary without Financing										
Annual Costs	$991,372	$1,013,953	$978,267	$1,004,622	$183,700	$164,604	$206,089	$231,898	$226,631	$237,689
Accumulated Costs	$991,372	$2,005,325	$2,983,593	$3,988,214	$4,171,915	$4,336,519	$4,542,608	$4,774,505	$5,001,136	$5,238,826
Annual Benefits	$126,521	$401,791	$707,209	$1,045,561	$1,260,989	$1,332,095	$1,404,098	$1,484,167	$1,567,379	$1,655,765
Accumulated Benefits	$126,521	$528,312	$1,235,521	$2,281,081	$3,542,070	$4,874,165	$6,278,263	$7,762,430	$9,329,810	$10,985,575
Annual Margin	-$864,851	-$612,162	-$271,058	$40,939	$1,077,289	$1,167,491	$1,198,008	$1,252,270	$1,340,748	$1,418,076
Accumulated Margin	-$864,851	-$1,477,013	-$1,748,072	-$1,707,133	-$629,844	$537,647	$1,735,655	$2,987,925	$4,328,673	$5,746,749
Cash Flow with Financing										
Total Capital Costs	$959,122	$916,824	$872,982	$877,216	$61,803	$33,527	$69,370	$73,495	$77,867	$82,500
Financed Cap Costs	$959,122	$916,824	$872,982	$877,216	$61,803	$33,527	$69,370	$73,495	$77,867	$82,500
Remaining Cap Costs (Referred to below as "CapCosts")	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Payment to Finance Agency (Referred to as below "Payments")	$125,723	$245,902	$360,334	$475,321	$483,422	$487,816	$496,910	$506,543	$516,750	$527,565
Annual Expenses (Referred to below as "Expenses")	$32,250	$97,129	$105,285	$127,406	$121,898	$131,077	$136,719	$158,402	$148,764	$155,189
CapCosts + Payments + Expenses	$157,973	$343,031	$465,619	$602,726	$605,319	$618,894	$633,629	$664,946	$665,514	$682,754
Annual Benefits	$126,521	$401,791	$707,209	$1,045,561	$1,260,989	$1,332,095	$1,404,098	$1,484,167	$1,567,379	$1,655,765
Annual Margins	-$31,452	$58,760	$241,590	$442,835	$655,669	$713,201	$770,469	$819,222	$901,865	$973,011
Accumulated Margins	-$31,452	$27,308	$268,898	$711,732	$1,367,402	$2,080,603	$2,851,072	$3,670,293	$4,572,159	$5,545,170
Benefit/Cost Ratio									2.02	
Project Net Present Value									$1,879,543	

Coos-Curry Electric Co-op, Inc. Project Schedule & Finance

4A - Project Implementation Schedule

Our meters will be installed over a period of 4 years.

Project Year	1	2	3	4	5	6	7	8	9	10	TOTALS
Meter Installation											
Total 1-Phase units incl. growth	15,897	16,215	16,539	16,870	17,207	17,552	17,903	18,261	18,626	18,998	18,998
1-Phase implementation Plan	3,974	4,292	4,299	4,305	337	344	351	358	365	373	18,998
Total Form 3S units incl. growth	300	302	303	305	306	308	309	311	312	314	314
Form 3S implementation Plan	75	76	77	77	2	2	2	2	2	2	314
Total DC + LC units	300	300	300	300	300	300	300	300	300	300	3,000
DC + LC implementation Plan	75	75	75	75	0	0	0	0	0	0	300
Total 3-Phase units incl. growth	854	863	871	880	889	898	907	916	925	934	934
3-Phase implementation Plan	214	222	222	222	9	9	9	9	9	9	934

Our substation equipment will be installed over a period of 4 years.

Project Year	1	2	3	4	5	6	7	8	9	10	TOTALS
Substation Equipment											
Total Number of Substations	14	14	14	14	14	14	14	14	14	14	14
Substation Communication Master	4	4	4	4	0	0	0	0	0	0	14
Line interface hardware	4	4	4	4	0	0	0	0	0	0	14
Substation Installation Cost	4	4	4	4	0	0	0	0	0	0	14
Repeaters	7	-7	4	4	0	7	0	0	0	0	14
Capacitor Blocking Units	1	10	4	4	0	-5	0	0	0	0	14

Master software & hardware is assumed to be installed in the first year. If you desire to change this assumption, enter the data into the fields below. Data should be entered in $, not units.

Project Year	1	2	3	4	5	6	7	8	9	10	TOTALS
Master Station Equipment and Project Management											
Basic software & hardware	$37,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$37,500
Optional software & hardware	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Project Management & Delivery	$121,695	$0	$0	$0	$0	$0	$0	$0	$0	$0	$121,695

Coos-Curry Electric Co-op, Inc. Project Schedule & Finance

4B - Financial Parameters

1	Escalation Rate to apply to Labor & Product Costs	4.0%	per annum
	Note: the inflation rate will be applied to all labor. It will also be applied to products purchased beyond the time specified above in implementation schedule. It will also be included in all calculations of benefits from system installation.		
2 a	Percentage of job to be financed	100%	
b	Discount Rate to apply to Project Financing	5.3%	per annum
c	Term for Project Financing	10	years (no decimals)
3	Cost of Capital at your Cooperative (if not previously entered on sheet "3-MeterData")	11.4%	per annum

Coos-Curry Electric Co-op, Inc. Form 7 Inputs

In the spaces below, please enter the requested data from your Form 7 report.

Operating revenue	24,083,818	Part A	Line 1b	Total Miles Energized	1,608	Part B	Line 8b
Service Interruptions	6.48	Part G	Line 1b	Num. Of Full Time Emp.	67	Part H	Line 1
Emp. Hrs. Regular	124,957	Part H	Line 2	Emp. Hrs. Overtime	5,570	Part H	Line 3
Payroll Expensed	2,767,053	Part H	Line 4	Payroll Capitalized	1,646,617	Part H	Line 5
Payroll Other	-	Part H	Line 6	Residential Consumers	14,070	Part O	Line 1a column b
Residential kWh Sold	180,109,119	Part O	Line 1b column c	Residential Revenue	13,934,109	Part O	Line 1c column c
Res Seasonal Consumer	95	Part O	Line 2a column b	Res. Seasonal kWh	555,504	Part O	Line 2b column c
Res Seasonal Revenue	56,564	Part O	Line 2c column c	Irrigation Consumers	422	Part O	Line 3a column b
Irrigation kWh Sold	3,967,198	Part O	Line 3b column c	Irrigation Revenue	461,106	Part O	Line 3c column c
C&I Cons <1000KVA	1,905	Part O	Line 4a column b	C&I KWh Sold <1000KVA	99,027,861	Part O	Line 4b column c
C&I Rev <1000KVA	6,932,156	Part O	Line 4c column c	C&I Cons >1000KVA	3	Part O	Line 5a column b
C&I KWh Sold >1000KVA	40,926,504	Part O	Line 5b column c	C&I Rev >1000KVA	2,244,870	Part O	Line 5c column c
# of other Consumers	3	Part O	Line 9a column b	Other kWh Sold	392,843	Part O	Line 9b column c
Other Revenue	85,395	Part O	Line 9c column c	Total Num. Consumers	16,496	Part O	Line 10 column b
Total kWh Sold	324,979,029	Part O	Line 11	kWh Own Use	844,110	Part O	Line 14
Total kWh Purchased	336,558,996	Part O	Line 15	Total kWh Generated	0	Part O	Line 16
Interchange kWh Net	0	Part O	Line 18	System Peak	84,261	Part O	Line 19

Coos-Curry Electric Co-op, Inc. Meter Background

6A - Meter Population

				Check Value
1	Current number of 1-phase meters	15,897	Thank you	
1a	Current number of 1-phase meters Form 3S meters	300	Thank you	
1b	% 1-Phase meters that are solid state	1%	Is check value correct?	159
2	Current number of 3-phase meters	854	Thank you	
2a	% 3-Phase meters that are solid state	60%	Is check value correct?	512
3	Expected annual growth rate of new Residential meter installations (%)	2.00%	Is check value correct?	318
3a	Expected annual growth rate of Form 3S meter installations (%)	0.50%	Is check value correct?	2
4	Expected annual growth rate of new C&I meter installations (%)	1.00%	Is check value correct?	9
5	% of 1-phase meters to be read by AMR System	100%	Is check value correct?	15,897
5a	% of Form 3S meters to be read by AMR System	100%	Is check value correct?	300
6	% of 3-phase meters to be read by AMR system	100%	Is check value correct?	854
7	% of 1-phase meters to be replaced with new meters due to AMR	100%	Is check value correct?	15,897
7a	% of Form 3S meters to be replaced with new meters due to AMR	100%	Is check value correct?	300
8	% of 3-phase meters to be replaced with new meters due to AMR	100%	Is check value correct?	854
9	% of new 1-phase AMR meters that will be solid-state	100%	Is check value correct?	15,897
9a	% of new Form 3S AMR meters that will be solid-state	100%	Is check value correct?	300
10	% of new 3-phase AMR meters that will be solid-state	100%	Is check value correct?	854
11	Do you regularly test and calibrate your 1-phase and 3-phase meters ?	Yes ○ / No ◉	Select yes only if you have a formal testing process	
13	Do you perform regular audits of your 3-phase meter installations?	Yes ○ / No ◉	Select yes only if you have a formal auditing process	

Coos-Curry Electric Co-op, Inc. Meter Background

6B - Current Meter Reading Process

Which describes Meter Reading at your Cooperative?

1	Members read their own meters and we check them	○
	We use a third-party meter reading service (staff may read some meters)	○
	We use our own staff to read most of our meters	◉

1a Members read their own meters and we check them

1b We use a third-party meter reading service (staff may read some meters)

Coos-Curry Electric Co-op, Inc. Meter Background

1c	We use our own staff to read most of our meters			
1	How many Meter Readers do you employ?	5.00	Average annual salary?	$33,900
2	How many Meter Clerks do you employ?	1.00	Average annual salary?	$40,660
3	How many Meter Supervisors do you employ?	0.00	Average annual salary?	$0
4	What is your lost time due to injury (hrs/month)?	20.00	Overhead rate?	45%
5	How many vehicles do you have?	5	Average cost/vehicle?	$25,000
6	Average number of miles driven by each vehicle each day?	150	Vehicle life (yrs)?	5
7	How many days of year for each vehicle	220	Cost per Gallon of Gas	$2.50
8	How many handhelds do you have?	6	Average cost/handheld?	$8,000
9	Annual maintenance cost/handheld?	$2,000	Handheld life (yrs)?	5

Coos-Curry Electric Co-op, Inc. Meter Background

6C - Meter Reading Finance Costs

Meter Reading Finance Costs quantify the carrying costs of delivered yet unbilled energy which can be invoiced faster through the use of AMR. This will generally occur if you read the meters via handhelds or other techniques and dump the data once a week instead of daily. It will also occur with member-read systems. AMR can automate your process to dump the data daily and may also automate the data transfer process both of which can reduce the number of days outstanding.

Additionally, the following data entries address financial benefits that some Cooperatives have seen from locating faulty or dead meters faster (such as irrigation sites cases where energy flows to the customer but the meter is not measuring accurately if at all). Finally, use this section to address financial carrying costs of bad receivable accounts due to habitually delinquent accounts. Labor costs to visit sites for dead meters and delinquent accounts (to disconnect service) are covered in the sheet entitled "4-ApplicationInput".

Below enter your Cooperative's Cost of Capital.

Your Cooperative's Cost of Capital is: **11.4%**

Below, for each bucket, select either: a) the type of customer (Residential, Small C/I, Large C/I or Total C/I) **and** a percentage of revenue delayed **or** b) the total revenue delayed for each bucket. Then enter the average number of days delayed for each bucket. For example, if a batch of customer meters are read on a Monday and the handheld data does not get transferred until the following Monday then the "Average # of days carried per month" is 7 for that group. The model will output the carrying costs for each bucket in the right hand column. This delay is calculated on a monthly basis on this sheet and expanded to an annual basis in the sheet entitled "5-Review of Savings".

	Type of customer	Percent of revenue affected	or	Monthly Revenue Carried	Average # of days carried per month		Monthly Carrying costs
Example	Residential	25%		$ 291,472	24	=>	$2,120
1	Residential	100%		$ 1,165,889	8	=>	$2,887
2	Total C/I	100%		$ 764,752	8	=>	$1,894
3				$ -		=>	$0
4				$ -		=>	$0
5				$ -		=>	$0
6				$ -		=>	$0
7				$ -		=>	$0
8				$ -		=>	$0
9				$ -		=>	$0
10				$ -		=>	$0
				Total Monthly Meter Reading Finance Costs			**$4,780**

Coos-Curry Electric Co-op, Inc. Application Input

7A - Monthly Service Costs

	Item	Your Input	As a % of Members	Costs per trip that are not recovered	Total Cost per Month	Coop Avg. applied to your # of members.	Coop Average Monthly Cost
1	Number of move-ins move-outs per month	120	0.73%	$45.00	$5,400	240	$10,810
2	Number of customer re-reads per month	13	0.08%	$45.00	$585	26	$1,168
3	Number of bill errors per month	9	0.05%	$45.00	$405	N/A	N/A
4	Number of unnecessary outage visits per month	7	0.04%	$70.00	$490	13	$915
5	Number of dead meters found per month	3	0.02%	$45.00	$135	12	$519
6	Number of disconnect trips per month	150	0.91%	$45.00	$6,750	292	$13,132
7	Number of Power Quality trips per month	6	0.04%	$45.00	$270	12	$519

7B - Operations Input

1	Average $/hour of regular time for field personnel	$31	**1A** - Will you Integrate AMR with SCADA or Outage Mgmt? Coops that have integrated these functions have seen a 20% - 30% drop in Overtime hours. Without integration, 10% is a typical reduction.	AMR only ○
2	Average $/hour of overtime for field personnel	$62		SCADA or OMS ◉
3	Demand rate paid to G&T for demand-based voltage reduction.	$1		SCADA and OMS ○
4	Number of Substations	14	What is your overhead rate?	45.00%

Coos-Curry Electric Co-op, Inc. — Summary of Savings Potential

3A - Metering Losses per Year			More	**$297,174**
1	1-phase meter calibration & testing		$138,508	See "More" above
2	3-phase meter calibration & testing		$27,729	See "More" above
3	3-phase meter application audit		$69,322	See "More" above
4	Number of dead meters found per month		$1,620	Site visits only
5	We expect to reduce diversion by [1]	0.25%	$59,996	
	[1] Industry estimates of diversion savings are 0.5% - 2.0% for all utilities. Average estimated diversion savings for surveyed Coops is 0.50%.			
3B - Meter Reading Costs per Year				**$379,820**
1	Primary Meter Reading Costs		$379,820	
2	Special Reads and Backups		$0	
3C - Meter Revenue Finance Costs				**$57,363**
1	Primary meter reading finance costs		$4,780	
2	Dead or inaccurate meter finance costs		$0	
3	Delinquent account finance costs		$0	
4A - Member Service Costs per Year				**$168,960**
1	Move-Ins/Move-Outs		$64,800	
2	Customer Re-Reads		$7,020	
3	Number of bill errors per month		$4,860	
4	Number of unnecessary outage visits per month		$5,880	
5	Costs of Poor Pay/Disconnects		$81,000	Site visits only
6	Power quality visits		$3,240	
7	Avoided load survey costs per year		$2,160	
4B - Operations Costs per Year				**$108,851**
1	Overtime Management		$100,149	
2	Feeder Voltage Management Benefits		$0	
3	Demand Based Voltage Reduction @	$1 /kW	$8,702	
4	Other miscellaneous annual savings		starting in year	
	Note: line 4 savings are not added to item 4B total they are detailed in sheets 8, 9 and 10.		ending in year	

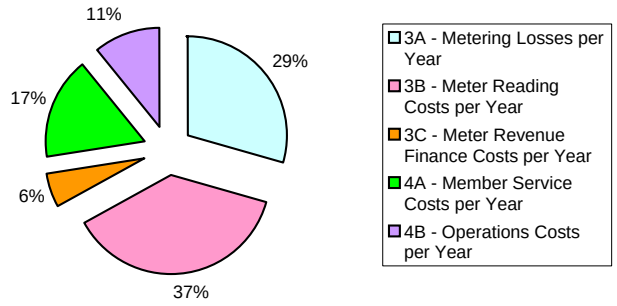
More Information

Coos-Curry Electric Co-op, Inc.

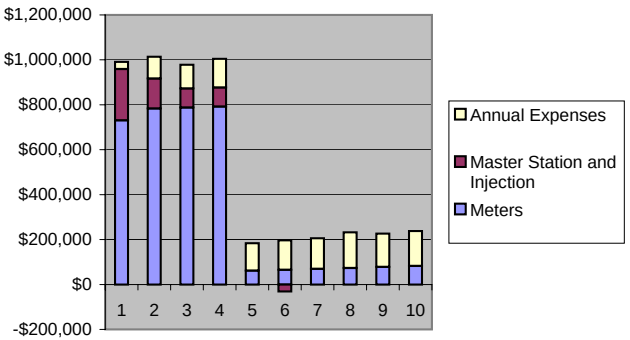
Decision Dashboard for AMR Planning

	I want to change the item below -	from:	to:
1	Energy diversion reduction (see sheet 5 for original)	0.25%	
2	Number of years for AMR meter implementation (see sheet 7 for original)	4	
3	Residential Meter Growth (see sheet 3 for original)	2.00%	
4	Escalation (Inflation) Rate (see sheet 7 for original)	4.00%	
5	Vendor (see sheet 6 for original)	Cannon	
6	Number of disconnect collars (see sheet 6 for orginal)	300	
7	% of Single Phase Meters replaced due to AMR (see sheet 3 for original)	100%	

Annual Savings Potential by Category



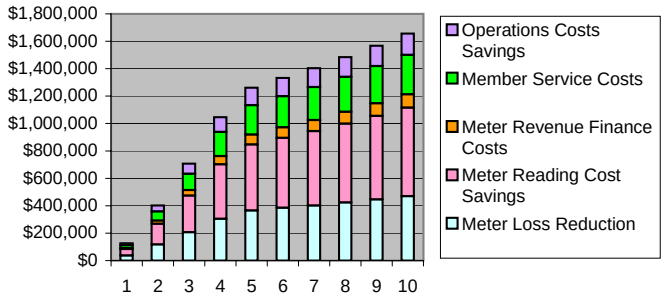
Annual Costs



Financial Measures	
Net Present Value	$1,879,543
Finance Rate	5.25%
Breakeven Point	5.539 Years
Benefit/Cost Ratio	2.02

10-Year Projection of Total System Costs	
Sum of Capital Costs	$4,024,706
Sum of Annual Expenses	$1,214,120
Sum of All Costs for 10-year Planning Period	$5,238,826

Development of Savings over Time



Breakeven Analysis without Financing