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Xcel Energy													
PROJECT/ANALYSIS PARAMETERS				UNITS	AMR-Benefit	NOTES	INPUT OWNER	COST BASIS	INPUT EXPLANATION	CALCULATION METHODOLOGY	EXAMPLE CALCULATION	REFLECTED IN BUDGET?	TRACKING MECHANISM
GENERAL PARAMETERS													
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Meter Install Start Year			2022			Installation starts in this year		Communication and system installation begin this year in conjunction with meters pilot	TOD meters Pilot 2010-2020. These meters will be replaced by contractor in 2024 as no additional Company			Yes	
Number of Meter Installations - Initial Count-2010 filing	count		1,333,256			Actual meter population base				Per C&A, NDM will have all meter voltages depreciated by the end of 2010. Company does not track individual meter depreciation, but depreciates a mass asset.		Yes	
AMR Retirement/Failure rate	%		1.92%			Based on current average meter retirement rate		Based on current average meter retirement rate from 2014 to 2018				Yes	
AMR Meter Failure Rate	%		0.50%			Vendor's estimate, same as PGCs		Vendor estimate based on experience, same as PGCs	Percentage of meter failure	PROTECTED DATA BEGINS	PROTECTED DATA ENDS	Yes	No failure rate listed or benchmarking done with other companies because other don't have the same configuration
AMR-Average Blended (Residential) AMR Meter Cost (meter only) TOD	\$/unit			PROTECTED DATA BEGINS		Price per contract. Includes overheads, taxes and fixed costs 2010-2020				Cost includes complete NDM hardware bundle and configured in field, but does not include complete NDM deployment, including associated software and other costs.		Yes	
AMR-Average Blended (Res and Com) AMR Meter Cost (meter only) Year 1 and Beyond	\$/unit					Price per contract. Includes overheads, taxes and fixed costs. For period 2021-2024, price doesn't include replacement				Cost includes complete NDM hardware bundle and configured in field, but does not include complete NDM deployment, including associated software and other costs.		Yes	
AMR-Average Blended meter cost	\$/unit					meter price including taxes and overheads. Price to be available based on PGC's AMR estimate			Min price of residential and commercial customers			Yes	
AMR-Average Blended (Residential) Meter Installation Costs TOD	\$/unit					Per contract, installation costs (predominant) includes Weathering, Dispatch, and overheads.			Per contract, fixed price not to be escalated during TOD period			Yes	
AMR-Average Blended (Res and Com) Meter Installation Costs/ Year 1 and Beyond	\$/unit					Per contract, blended installation costs (predominant and commercial) includes Weathering, Dispatch, and overheads.			Per contract, fixed price not to be escalated during 2023-2024 deployment time			Yes	
AMR Meter Install Labor Cost- Blended (Res-Com)	\$/unit			PROTECTED DATA ENDS		Project Management estimated average installation cost based on PGC's estimate			Project Management estimated average installation cost based on PGC's estimate	Based on existing meters we have purchased	Not labor based and cost to replace AMR meters today.	Yes	Quoted for the meters that will be coming in as high level
AMR Meter Disposal CAP	\$/unit		3.6			Cost per meter. Separate from meter price				Company depreciates meters by voltage not by a single meter		Yes	
AMR Meter Disposal- O&M	\$/unit		0.8			Cost per meter						Yes	
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BENEFIT IMPACTS													
AMR Benefits Overview													
			100%										
CUST BENEFIT Reduction in bad debt write-off	\$		16,045,191			Prevent additional usage on accounts that are overdue		Average of 2014-2018 with an 8% benefit (based on 8 different trips without bad debt and used as 8% reduction). No current status in MN that would allow us to get credit	Benefit from remote disconnect	This benefit should not start until 2023 and is contingent on remote disconnection		Yes	
OBAM Costs savings from remote disconnect capability	\$		26,474,490			Assumes 70% of electric meter disconnections can be performed remotely and 80% of reconnections. This is an estimate of the number of meters that are reconnected and not collection and		80% recovery/Discount due to call and bad phone numbers	Reduction in labor costs for field collection. Trouble and meter group address efficiency gains (B&M). Includes insurance benefits. Do not factor in 11 channels	Currently 10 10% of all customers are eligible for remote disconnection. With AMR, company will propose to move to 80%. There are still questions regarding sales in MN. Maybe separate benefit discussed? Company?	Company's analysis looked for bad debt write-off to 8 utilities are per department and they averaged 6% improvement to the total dollar volume. Some of these utilities are comparable to Xcel and others not. Even though NDM is low, there is still opportunity	Yes	
OBAM Reduction in delay on arrival trips associated with outages	\$		6,363,198			Reduction in cost associated with On-ay Arrival. 50% reduction due to AMR		Arrears business case and PGC	Avoidance of trips			Yes	
OBAM Reduction in trips associated with Customer equipment damage	\$		7,014,175			50% reduction in field trips associated with customer equipment damage		Savings of dispatch labor and transportation costs. Arrears Effect Business Case SDR		Total customer equipment orders average 1,796 from 2014-2018. Cost for trip \$243, includes dispatch cost, trouble man, and transportation cost.		Yes	
OBAM Savings from reduction in theft	\$		15,425,312			Annual discounts to prevent usage on accounts that have had their service restored		More conservative than PGCs. What has been shown from other utilities	Savings from being able to use data and analytics from AMR meters (identify vulnerable and theft)	Based on 5 year average 2018 Residential and small C&A. Estimate 50% benefit for the first year- 2024		Yes	
CUST BENEFIT Reduced consumption on inactive meters	\$		22,868,244			50% reduction in field trips associated with voltage investigations		Absent a 20% benefit. Assumption is that RE can not disconnect benefits during winter months.	Ability to disconnect meters between seasons. "Unknown" user risk to work season.	This is reduced to 20% as compared to PGC at 10% due to Winter Microturbines.		Yes	
OBAM Reduced field trips for voltage investigations	\$		4,621,130			10% of capital spend savings associated with storm spend. 50% benefit in 2024 and 20% in 2023						Yes	
CAP Outage management efficiency (Storm Spend)- Capital	\$		19,371,803			0.1% of O&M spend savings associated with storm spend						Yes	
OBAM Outage management efficiency (Storm Spend)- O&M	\$		37,275			Benefits start in 2024 and associated with total meter count						Yes	
CUST BENEFIT Reduced outage duration benefit for customers	\$		25,064,446			Assumes 1% capital benefit will be achieved in reducing capital expenditures through more efficient installation and replacement of distribution assets			Benefit to the customer. Based on ICC Calculator from LBNL Lawrence Berkeley National Lab	Anticipated benefits associated with reduced outages and reduced outage duration benefit to customer		Yes	
CAP Efficiency gains in distribution management of reliability, asset health and capacity projects - Capital	\$		12,398,861			0.1% of O&M spend. 50% benefit in 2024			The Company's 1% estimated benefit is in alignment with the Arrears Effect Business Case	Efficiency gains associated with distribution reliability and asset health		Yes	
OBAM Efficiency gains in distribution management of reliability, asset health and capacity projects - O&M	\$		71,382			0.1% of O&M spend. 50% benefit in 2024						Yes	
OTHER AMR SERVICE COSTS IMPACTS													
Customer cost of utility (CCE) O&M only	\$		28,000			Estimated cost for the AMR drive to system						Yes	
C&A O&M at 10% discount (CCE) O&M only	\$		11,188			Estimated cost for the AMR drive to system						Yes	
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