Conservation Improvement Program (CIP)
BENCOST FOR GAS CIPS-- Cost-Effectiveness Analysis

Company:

Minnesota Energy Resources

Global Inputs

Input Data		Escalation Rate
1) Retail Rate (\$/Dth) =	\$17.22 Residential \$15.90 Commercial	4.00%
2) Non-Gas Fuel Retail Rate (\$/Fuel Unit) = Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	\$0.00	2.16%
3) Commodity Cost (\$/Dth) =	\$4.27	4.00%
4) Demand Cost (\$/Unit/Yr) =	\$129.27	4.00%
5) Peak Reduction Factor =	1.00%	
6) Variable O&M (\$/Dth) =	\$0.05	4.00%
7) Non-Gas Fuel Cost (\$/Fuel Unit) =	\$0.00	2.16%
8) Non-Gas Fuel Loss Factor	0.00%	
9) Gas Environmental Damage Factor =	\$0.3800	2.16%
10) Non Gas Fuel Environmental Damage Factor =	\$0.00	0.00%
11) Participant Discount Rate =	2.55% Residential 7.30% Commercial	
12) Utility Discount Rate =	7.30%	
13) Societal Discount Rate =	2.55%	
14) General Input Data Year =	2016	
15) Project Analysis Year 1 = 15a) Project Analysis Year 2 = 15b) Project Analysis Year 3 =	2017 2018 2019	

Company Minnesota Energy Resources Project TOTAL CIP - 2018 Resources Project ToTAL CI		А	ВС	D	E	F	G	Н
Company: Minnesotis Energy Resources	1	Concernation Improvement Program (CID)		RENEELT COS	ST FOR CAS CIPS Cost.Effectiveness Analysis			
Input Data Second Year	3	Conservation improvement Program (CIP)						
Reput Data	4							
	5	Project: TOTA	L CIP - 2018	5				
Refail Ratie (SDPh) = \$11.72	7	nput Data		К		s	econd Year	
Escalation Rate = 4.00% 16a Administrative & Operating Costs = \$3.254.32	8	•		_			occiia i cui	
160 Non-Class Fuel Retail Rate (\$Fuel Unit) = \$0.00 160 Total Utility Project Costs = \$11,815,320								
Non-Gas Fuel Rotali Rate \$11,615,320 Escalation Rate = \$11,615,320 Escalation Rate = \$2,16% 17) Direct Participant Costs (SPart.) = \$252 30 Commodity, Cost (SDIN) = \$4,27 18) Participant Non-Energy Costs (Annual SPart.) = \$0 Cost Summary \$252 30 Commodity Cost (SDIN) = \$4,27 18) Participant Non-Energy Costs (Annual SPart.) = \$0 Cost Summary \$0 Cost Sum	10	Escalation Rate =	4.00	6	· · · · · · · · · · · · · · · · · · ·			
Ecadation Rate = 2.16% Non-Gas Fuel Units (e. MWh, Gallons, etc.) = 17) Direct Participant Costs (SPart.) = \$252 30 20 20 20 20 20 20 2	11	2) Non Con Fuel Potail Pota (\$/Fuel Unit) =	¢0.00	1	•			
Non-Gas Fuel Units (e. WM), Callons, etc) = 17) Direct Participant Costs (\$Part.) = \$252	13				Total Offing Project Costs –		\$11,010,020	
Commodity Cost (S/Dth) = \$4.27 18) Participant Non-Energy Costs (Annual S/Part) = \$0 0.00%	14		2.10	•	17) Direct Participant Costs (\$/Part.) =		\$252	
Scalation Rate = 4.00% Escalation Rate = 0.00%	15	·						
Demand Cost (\$UnitYr) = \$129.27 19) Participant Nor-Energy Savings (Annual \$IPart) = \$0	16 17							
10 Demand Cost (\$\text{\$\text{UnitY}\$} = \$129.77	18	LocaldiiOH Naie -	4.00	70	Localation rate -		0.00%	
11.5 1.5	19	4) Demand Cost (\$/Unit/Yr) =					\$ 0	
30 Sea Reduction Factor = 1.00% 20) Project Life (Years) = 11.5 31 Variable O&M (S/Dh) = \$0.05 21) Avg. Dth/Part. Saved = 5.44 52 Escalation Rate = 4.00% 22) Avg. Non-Gas Fuel Units/Part. Saved = 0.00 7 Non-Gas Fuel Cost (\$\struct{\structure}\text{Unity} \text{Units}\text{Part. Saved} = 0.00 7 Non-Gas Fuel Cost (\$\structure\text{Unity} \text{Units}\text{Part. Saved} = 0.00 8 Source 22) Avg. Non-Gas Fuel Units/Part. Saved = 0.00 9 Source 22) Avg. Non-Gas Fuel Units/Part. Used = 0.00 9 Source 22) Avg. Non-Gas Fuel Units/Part. Used = 0.00 9 Source 22) Avg. Non-Gas Fuel Units/Part. Used = 0.00 9 Source 22) Avg. Non-Gas Fuel Units/Part. Used = 0.00 9 Source 22) Avg. Non-Gas Fuel Units/Part. Used = 0.00 9 Source 22) Avg. Non-Gas Fuel Units/Part. Used = 0.00 9 Source 22) Avg. Non-Gas Fuel Units/Part. Used = 0.00 9 Source 22) Avg. Non-Gas Fuel Units/Part. Used = 0.00 9 Source 22) Avg. Non-Gas Fuel Units/Part. Used = 0.00 9 Source 22) Avg. Non-Gas Fuel Units/Part. Used = 0.00 9 Source 22) Avg. Non-Gas Fuel Units/Part. Used = 0.00 9 Source 22) Avg. Non-Gas Fuel Units/Part. Used = 0.00 9 Source 22) Avg. Non-Gas Fuel Units/Part. Used = 0.00 9 Source 22) Avg. Non-Gas Fuel Units/Part. Used = 0.00 9 Source 22) Avg. Non-Gas Fuel Units/Part. Used = 0.00 9 Source 22) Avg. Non-Gas Fuel Units/Part. Used = 0.00 9 Source 22) Avg. Non-Gas Fuel Units/Part. Used = 0.00 9 Source 22) Avg. Non-Gas Fuel Units/Part. Used = 0.00 9 Source 22) Avg. Non-Gas Fuel Units/Part. Used = 0.00 9 Source 22) Avg. Non-Gas Fuel Units/Part. Used = 0.00 9 Source 22) Avg. Non-Gas Fuel Units/Part. Used = 0.00 9 Source 22) Avg. Non-Gas Fuel Units/Part. Used = 0.00 9 Source 22) Avg. Non-Gas Fuel Units/Part. Used = 0.00 9 Source 22) Avg. Non-Gas Fuel Units/Part. Used	20	Escalation Rate =	4.00	6	Escalation Rate =		0.00%	
3 Variable O&M (\$IDIth) = \$0.05	21 22	5) Peak Reduction Factor =	1 009	/ 6	20) Project Life (Years) =		11.5	
Solidation Rate Solidation	23	. san noddolloll i dolol –	1.00	•	20) Sjoot Ello (Touro)		11.0	
22) Aya Non-Gas Fuel Units/Part. Saved = 0.00	24				21) Avg. Dth/Part. Saved =		5.44	
7 Non-Gas Fuel Cost (S/Fuel Unit) = \$0.00 \$2a) Avg Additional Non-Gas Fuel Units/ Part. Used = 0.00 Escalation Rate = 2.16% 23) Number of Participants = 93,777 26 Non-Gas Fuel Loss Factor 0.00% 24) Total Annual Dth Saved = 509,758 29 Gas Environmental Damage Factor = \$0.3800 Escalation Rate = 2.16% 25 Incentive/Participant = \$57 26 Incentive/Participant = \$57 27 27 28 28 28 28 28 2	25 26	Escalation Rate =	4.00	6	22) Avg Non Con Fuel Units/Part Sound -		0.00	
Secalation Rate = 2.16% 23) Number of Participants = 93,777 8) Non-Gas Fuel Loss Factor 0.00% 24) Total Annual Dth Saved = 509,758 9) Gas Environmental Damage Factor = \$0.3800 5 Escalation Rate = 2.16% 25) Incentive/Participant = \$57 10) Non Gas Fuel Environmental Damage Factor = \$0.00 Escalation Rate = 0.00% 11) Participant Discount Rate = 2.55% 12) Utility Discount Rate = 2.55% 13) Societal Discount Rate = 2.55% 14) General Input Data Year = 2016 15) Project Analysis Year 3 = 2019 15) Project Analysis Year 3 = 2019 16		7) Non-Gas Fuel Cost (\$/Fuel Unit) =	\$0.00)				
23 Number of Participants = 93,777 3 Non-Gas Fuel Loss Factor 0.00% 24 Total Annual Dth Saved = 509,758 9 Gas Environmental Damage Factor = \$0.3800 Escalation Rate = 2.16% 25 Incentive/Participant = \$57 10 Non Gas Fuel Environmental Damage Factor = \$0.00 Escalation Rate = 0.00% 25 Incentive/Participant = \$57 11 Participant Discount Rate = 2.55% 25 12 Utility Discount Rate = 2.55% 25 13 Societal Discount Rate = 2.55% 25 14 General Input Data Year = 2016 25 15 Project Analysis Year 1 = 2017 15a Project Analysis Year 3 = 2019 25 2 Cost Summary 2nd Yr Test Results Triennial NPV B/C Utility Cost per Participant = \$123.86 Ratepayer Impact Measure Test \$18,463,890 2.71 Utility Cost per Dth \$4.77 25 Societal Test \$12,288,665 1.42 14 Test Results \$12,288,665 1.42 15 Project Cost per Dth \$4.77 25 Project Test \$12,288,665 1.42 16 Project Cost per Dth \$4.77 25 Project Test \$12,288,665 1.42 17 Participant Participant Part Dth \$4.77 25 Project Test \$12,288,665 1.42 18 Project Participant Participant Part Dth \$4.77 25 Project Test \$12,288,665 1.42 18 Project Participant Part Dth \$4.77 25 Project Test \$12,288,665 1.42 18 Project Participant Part Dth \$4.77 25 Project P	28				,g , tadiaona Sao , doi onito i dit. oood -		0.00	
24) Total Annual Dth Saved = 509,758	29			,	23) Number of Participants =		93,777	
9) Gas Environmental Damage Factor = \$0.3800	_	B) Non-Gas Fuel Loss Factor	0.00	%	24) Total Appual Dth Saved -		E00.750	
Escalation Rate = 2.16% 25) Incentive/Participant = \$57	31	9) Gas Environmental Damage Factor =	\$0.3800)	24) Total Allitual Dtfl Saveu =		JU9,158	
10) Non Gas Fuel Environmental Damage Factor = \$0.00	33				25) Incentive/Participant =		\$57	
Escalation Rate = 0.00%	34	40.11 0 5 15 1 1 1 1 5						
11) Participant Discount Rate = 2.55% 12) Utility Discount Rate = 7.30% 12) Utility Discount Rate = 7.30% 13) Societal Discount Rate = 2.55% 14) General Input Data Year = 2016 15) Project Analysis Year 1 = 2017 15a) Project Analysis Year 2 = 2018 15c) Project Analysis Year 3 = 2019 25c) Project Analysis Year 2 = 2018 25c) Project Analysis Year 3 = 2019	35 36							
11) Participant Discount Rate = 2.55%	37	Estatation rate -	0.00	· u				
12) Utility Discount Rate = 7.30%	38	11) Participant Discount Rate =	2.55	6				
13) Societal Discount Rate = 2.55% 14) General Input Data Year = 2016 15) Project Analysis Year 1 = 2017 15a) Project Analysis Year 2 = 2018 15c) Project Analysis Year 3 = 2019 Cost Summary 2nd Yr Test Results Triennial NPV B/C Utility Cost per Participant = \$123.86 Ratepayer Impact Measure Test (\$71,476,052) 0.29 Cost per Participant per Dth = \$69.09 Utility Cost Test \$18,463,890 2.71 Lifetime Energy Reduction (Dth) 6,117,099 Societal Test \$12,288,665 1.42	39	10) Hillity Discount Date -	7.00	/				
13) Societal Discount Rate = 2.55%	40	12) Utility Discount Rate =	7.30	/ 0				
14) General Input Data Year = 2016 15) Project Analysis Year 1 = 2017 15a) Project Analysis Year 2 = 2018 15c) Project Analysis Year 3 = 2019 2 2 2 2 2 2 2 2 2		13) Societal Discount Rate =	2.55	6				
15) Project Analysis Year 1 = 2017 15a) Project Analysis Year 2 = 2018 2019 20	43							
15) Project Analysis Year 1 = 2017 2018 2019		14) General Input Data Year =	201	6				
15a) Project Analysis Year 2 = 2018 2019	45 46	15) Project Analysis Year 1 =	201	7				
15c) Project Analysis Year 3 = 2019								
Cost Summary 2nd Yr Test Results Triennial NPV B/C	48		201	9				
Cost Summary 2nd Yr Test Results Triennial NPV B/C	49 50							
Cost Summary 2nd Yr Test Results NPV B/C	51					Triennial	Triennial	
Utility Cost per Participant = \$123.86 Ratepayer Impact Measure Test (\$71,476,052) 0.29 Cost per Participant per Dth = \$69.09 Utility Cost Test \$18,463,890 2.71 Lifetime Energy Reduction (Dth) 6,117,099 Societal Cost per Dth \$4.77	52	Cost Summary	2nd Yr		Test Results			
Cost per Participant per Dth = \$69.09 Utility Cost Test \$18,463,890 2.71	53 54	Itility Cost per Participant =	¢122 Q		Ratenaver Impact Measure Test	(\$71 <i>\</i> 76 052\	0.20	
Utility Cost Test \$18,463,890 2.71 Lifetime Energy Reduction (Dth) 6,117,099 Societal Test \$12,288,665 1.42 Societal Cost per Dth \$4.77 \$4.77					natepayer impact measure rest	(\$11,410,052)	0.29	
Societal Test \$12,288,665 1.42 D Societal Cost per Dth \$4.77	56				Utility Cost Test	\$18,463,890	2.71	
Societal Cost per Dth \$4.77	57	Lifetime Energy Reduction (Dth) 6	,117,099			A42		
	58 59	Societal Cost per Oth	\$4 77		Societal Test	\$12,288,665	1.42	
Faiticipalit 1881 BIUZ.32/ D// 3.43	60	Docietai Oost per Dili	ψ + .11		Participant Test	\$102,327,627	5.45	

	A	В	С	D	T E	l F	G	Н
1					•			-
3	Conservation Improvement Program (CIP	?)			ST FOR GAS CIPS Cost-Effectiveness Analysis Minnesota Department of Commerce, January 26, 2006			
4	Company:	Minnesota En	ergy Resources		miniesota Department of Commerce, Sandary 20, 2000			
5	Project:	TOTAL LOW I		_				
6 7	Input Data			R		e,	econd Year	
8	input Data			•	-	36	econu rear	
9	1) Retail Rate (\$/Dth) =		\$17.22		16) Utility Project Costs			
10	Escalation Rate =		4.00%		16a) Administrative & Operating Costs =		\$1,535,530	
11	2) Non-Gas Fuel Retail Rate (\$/Fuel Unit) =		\$0.00		16b) Incentive Costs = 16c) Total Utility Project Costs =	-	\$0 \$1,535,530	
13	Escalation Rate =		2.16%		Total dulity Project Costs –		\$1,555,550	
14	Non-Gas Fuel Units (ie. kWh,Gallons, etc)	=			17) Direct Participant Costs (\$/Part.) =		\$ 0	
15	•		64.07		19) Participant Non Energy Costs (Assural C/Dest.) -		ው ስ	
16	3) Commodity Cost (\$/Dth) = Escalation Rate =		\$4.27 4.00%		18) Participant Non-Energy Costs (Annual \$/Part.) = Escalation Rate =		\$0 0.00%	
18							0.0070	
	4) Demand Cost (\$/Unit/Yr) =		\$129.27		19) Participant Non-Energy Savings (Annual \$/Part) =		\$0	
20	Escalation Rate =		4.00%		Escalation Rate =		0.00%	
22	5) Peak Reduction Factor =		1.00%		20) Project Life (Years) =		14.6	
23	C) V:		60.05		OA) Aver Dille IDent Covered -		40.00	
24 25	6) Variable O&M (\$/Dth) = Escalation Rate =		\$0.05 4.00%		21) Avg. Dth/Part. Saved =		10.80	
26			7.0070		22) Avg Non-Gas Fuel Units/Part. Saved =		0.00	
27	7) Non-Gas Fuel Cost (\$/Fuel Unit) =		\$0.00		22a) Avg Additional Non-Gas Fuel Units/ Part. Used =		0.00	
28 29	Escalation Rate =		2.16%		23) Number of Participants =		888	
	8) Non-Gas Fuel Loss Factor		0.00%		20) Number of Fattopants –		000	
31					24) Total Annual Dth Saved =		9,592	
32 33	Gas Environmental Damage Factor = Escalation Rate =		\$0.3800 2.16%		25) Incentive/Participant =		\$0	
34	Estatation Nate -		2.10/0		20) moonavon antoipant –		Ψ	
	10) Non Gas Fuel Environmental Damage F	actor =	\$0.00					
36 37	Escalation Rate =		0.00%					
-	11) Participant Discount Rate =		2.55%					
39	,							
40 41	12) Utility Discount Rate =		7.30%					
	13) Societal Discount Rate =		2.55%					
43	,							
	14) General Input Data Year =		2016					
45 46	15) Project Analysis Year 1 =		2017					
47	15a) Project Analysis Year 2 =		2018					
	15c) Project Analysis Year 3 =		2019					
49 50								
51						Triennial	Triennial	
52	Cost Summary	1st Yr	2nd Yr	3rd Yr	Test Results	NPV	B/C	
53 54	Utility Cost per Participant =	#DIV/0!	\$1,729.20	#DIV/0!	Ratepayer Impact Measure Test	(\$2.70£.78 <i>1</i> \)	0.19	
	Cost per Participant = Cost per Participant per Dth =	#DIV/0! #DIV/0!	\$1,729.20 \$160.09	#DIV/0! #DIV/0!	natepayer impact measure rest	(\$2,796,784)	0.19	
56					Utility Cost Test	(\$771,541)	0.46	
57	Lifetime Energy Reduction (Dth)	143,878			Conintal Took	(\$E00 E04)	0.00	
58 59	Societal Cost per Dth	\$10.41			Societal Test	(\$502,591)	0.66	
60		¥.0.11			Participant Test	\$2,888,287	n/a	

	A	В	С	D	Е	F	G	Н
1	Conservation Improvement Program (CII	D)		BENEET COS	T FOR GAS CIPS Cost-Effectiveness Analysis			
3	Conservation improvement Program (Cir	Ρ)			innesota Department of Commerce, January 26, 2006			
4 5			ergy Resources		, , , , , , , , , , , , , , , , , , ,			
5	Project:	: TOTAL RESID	ENTIAL	Б				
6 7	Input Data			R		Se	econd Year	
8	•			-				
	1) Retail Rate (\$/Dth) =		\$17.22		16) Utility Project Costs			
10 11	Escalation Rate =		4.00%		16a) Administrative & Operating Costs =		\$2,393,539	
_	2) Non-Gas Fuel Retail Rate (\$/Fuel Unit) =		\$0.00		16b) Incentive Costs = 16c) Total Utility Project Costs =		\$2,709,384 \$5,102,923	
13	Escalation Rate =		2.16%		100) Fotal Guilty Froject Goote		ψ0,102,020	
14	Non-Gas Fuel Units (ie. kWh,Gallons, etc.	:) =			17) Direct Participant Costs (\$/Part.) =		\$98	
5	3) Commodity Cost (\$/Dth) =		¢4.27		19\ Dartiginant Non Energy Costs (Appual \$/Dart \ =		\$ 0	
17	Escalation Rate =		\$4.27 4.00%		18) Participant Non-Energy Costs (Annual \$/Part.) = Escalation Rate =		0.00%	
8								
	4) Demand Cost (\$/Unit/Yr) =		\$129.27		19) Participant Non-Energy Savings (Annual \$/Part) =		\$0	
20 21	Escalation Rate =		4.00%		Escalation Rate =		0.00%	
22	5) Peak Reduction Factor =		1.00%		20) Project Life (Years) =		12.7	
23	6) \/ariabla 08M (¢/D45) =		ሰ ስ ስር		21) Avg. Dth/Dart. Cayed -		0.00	
24 25	6) Variable O&M (\$/Dth) = Escalation Rate =		\$0.05 4.00%		21) Avg. Dth/Part. Saved =		2.06	
26			1.0070		22) Avg Non-Gas Fuel Units/Part. Saved =		0.00	
27	7) Non-Gas Fuel Cost (\$/Fuel Unit) =		\$0.00		22a) Avg Additional Non-Gas Fuel Units/ Part. Used =		0.00	
28 29	Escalation Rate =		2.16%		23) Number of Participants =		86,552	
	8) Non-Gas Fuel Loss Factor		0.00%		20) Number of Fatticipants -		00,002	
31					24) Total Annual Dth Saved =		178,053	
32 33	9) Gas Environmental Damage Factor = Escalation Rate =		\$0.3800 2.16%		25) Incentive/Participant =		\$31	
34			2.1070		20) moentiven antoipant –		ΨΟΊ	
35	10) Non Gas Fuel Environmental Damage F	Factor =	\$0.00					
36 37	Escalation Rate =		0.00%					
	11) Participant Discount Rate =		2.55%					
39								
l0 l1	12) Utility Discount Rate =		7.30%					
	13) Societal Discount Rate =		2.55%					
13	,							
	14) General Input Data Year =		2016					
5	15) Project Analysis Year 1 =		2017					
7	15a) Project Analysis Year 2 =		2018					
8	15c) Project Analysis Year 3 =		2019					
19 50								
51						Triennial	Triennial	
52 53	Cost Summary	1st Yr	2nd Yr	3rd Yr	Test Results	NPV	B/C	
	Utility Cost per Participant =	#DIV/0!	\$58.96	#DIV/0!	Ratepayer Impact Measure Test	(\$27,373,166)	0.29	
55	Cost per Participant per Dth =	#DIV/0!	\$76.29	#DIV/0!		(, , , ,		
56	Lifetime France Deduction (Dth.)	0.044.004			Utility Cost Test	\$6,166,430	2.30	
57 58	Lifetime Energy Reduction (Dth)	2,314,694			Societal Test	\$5,184,493	1.49	
59	Societal Cost per Dth	\$4.58					1.10	
60					Participant Test	\$40,169,115	5.86	

Ш	A	В	С	D	E	F	G H
2	Conservation Improvement Program (CIP)			BENEFIT CO	ST FOR GAS CIPS Cost-Effectiveness Analysis		
3	oonoorvation improvement rogram (on)				Minnesota Department of Commerce, January 26, 2006		
<u>4</u> 5			ergy Resources ERCIAL / INDU				
6	Fioject. IV	OTAL COMIN	ERCIAL / INDU	C			
7	Input Data			_		Second	Year
9	1) Retail Rate (\$/Dth) =		\$15.90		16) Utility Project Costs		
10	Escalation Rate =		4.00%)	16a) Administrative & Operating Costs =		\$976,846
11					16b) Incentive Costs =	\$2	,610,504
	2) Non-Gas Fuel Retail Rate (\$/Fuel Unit) =		\$0.00		16c) Total Utility Project Costs =	\$3	,587,350
13	Escalation Rate = Non-Gas Fuel Units (ie. kWh,Gallons, etc) =		2.16%)	17) Direct Participant Costs (\$/Part.) =		\$2,387
15	Non-Gas i dei Offits (ie. kwif,Galiofis, etc) –				17) Direct Farticipant Costs (\$/Fart.) –		φ2,307
	3) Commodity Cost (\$/Dth) =		\$4.27		18) Participant Non-Energy Costs (Annual \$/Part.) =		\$0
17 18	Escalation Rate =		4.00%)	Escalation Rate =		0.00%
19	4) Demand Cost (\$/Unit/Yr) =		\$129.27		19) Participant Non-Energy Savings (Annual \$/Part) =		\$0
20	Escalation Rate =		4.00%)	Escalation Rate =		0.00%
	5) Peak Reduction Factor =		1.00%)	20) Project Life (Years) =		10.8
23	,		**				50.00
24 25	6) Variable O&M (\$/Dth) = Escalation Rate =		\$0.05 4.00%		21) Avg. Dth/Part. Saved =		50.83
26	Escalation Nate -		4.0070	•	22) Avg Non-Gas Fuel Units/Part. Saved =		0.00
27	7) Non-Gas Fuel Cost (\$/Fuel Unit) =		\$0.00		22a) Avg Additional Non-Gas Fuel Units/ Part. Used =		0.00
28 29	Escalation Rate =		2.16%)	23) Number of Participants =		6,337
	8) Non-Gas Fuel Loss Factor		0.00%)	20) Hambor of Fartoparito		0,007
31	0.0 5		#0.0000		24) Total Annual Dth Saved =		322,113
33	Gas Environmental Damage Factor = Escalation Rate =		\$0.3800 2.16%)	25) Incentive/Participant =		\$412
34					,		•
35 36	10) Non Gas Fuel Environmental Damage Factorial Escalation Rate =	tor =	\$0.00 0.00%				
37	Escalation Rate -		0.0076)			
	11) Participant Discount Rate =		7.30%)			
39 40	12) Utility Discount Rate =		7.30%				
41	12, Santy Discount Nate -		7.5076	•			
	13) Societal Discount Rate =		2.55%)			
43	14) General Input Data Year =		2016				
45	,		2010	•			
46	15) Project Analysis Year 1 =		2017				
	15a) Project Analysis Year 2 = 15c) Project Analysis Year 3 =		2018 2019				
49	100/110/00t/maryord 10ar 0 =		2013	•			
50						-	<u></u>
51 52	Cost Summary 1s	st Yr	2nd Yr	3rd Yr	Test Results		nnial //C
53	•						
	Utility Cost per Participant =	#DIV/0!	\$566.10	#DIV/0!	Ratepayer Impact Measure Test	(\$34,941,704)	0.33
55 56	Cost per Participant per Dth =	#DIV/0!	\$58.09	#DIV/0!	Utility Cost Test	\$13,872,922	5.15
57	Lifetime Energy Reduction (Dth)	3,543,243			•	. , ,	
58 59	Societal Cost per Dth	\$4.43			Societal Test	\$8,145,970	1.52
60	Societal Cost her Dill	\$4.43			Participant Test	\$37,151,807	3.64

	A	В	С	D	T E	F	G	Н
1			, ,		•		<u> </u>	
3	Conservation Improvement Program (CIP	P)			ST FOR GAS CIPS Cost-Effectiveness Analysis Minnesota Department of Commerce, January 26, 2006			
4	Company:	Minnesota En	ergy Resources		willinesota Departifient of Confinence, January 20, 2000			
5	Project:							
6 7	Innuit Data			R		0.	econd Year	
8	Input Data			•		30	econd rear	
9	1) Retail Rate (\$/Dth) =		\$17.22		16) Utility Project Costs			
10	Escalation Rate =		4.00%		16a) Administrative & Operating Costs =		\$535,865	
11	0) Non Con Evel Botail Bota (6/Evel Heit) -		#0.00		16b) Incentive Costs =		\$0 \$535,865	
13	2) Non-Gas Fuel Retail Rate (\$/Fuel Unit) = Escalation Rate =		\$0.00 2.16%		16c) Total Utility Project Costs =		\$333,003	
14	Non-Gas Fuel Units (ie. kWh,Gallons, etc)	=	2.1070		17) Direct Participant Costs (\$/Part.) =		\$ 0	
15	·		04.07		40\D (': 1\D E 0 1 (A 10\D 1)			
16	3) Commodity Cost (\$/Dth) = Escalation Rate =		\$4.27 4.00%		18) Participant Non-Energy Costs (Annual \$/Part.) = Escalation Rate =		\$0 0.00%	
18	Localdion rate –		7.0070		Econicion Maio -		0.0070	
19	4) Demand Cost (\$/Unit/Yr) =		\$129.27		19) Participant Non-Energy Savings (Annual \$/Part) =		\$0	
20 21	Escalation Rate =		4.00%		Escalation Rate =		0.00%	
22	5) Peak Reduction Factor =		1.00%		20) Project Life (Years) =		19.1	
23	0) \		***		04) A - DII /D + O - I		04.04	
24 25	6) Variable O&M (\$/Dth) = Escalation Rate =		\$0.05 4.00%		21) Avg. Dth/Part. Saved =		21.24	
26	Localation Nate -		4.0070		22) Avg Non-Gas Fuel Units/Part. Saved =		0.00	
27	7) Non-Gas Fuel Cost (\$/Fuel Unit) =		\$0.00		22a) Avg Additional Non-Gas Fuel Units/ Part. Used =		0.00	
28 29	Escalation Rate =		2.16%		23) Number of Participants =		190	
	8) Non-Gas Fuel Loss Factor		0.00%		23) Number of Farticipants –		190	
31					24) Total Annual Dth Saved =		4,035	
32 33	Gas Environmental Damage Factor = Escalation Rate =		\$0.3800 2.16%		25) Incentive/Participant =		\$0	
34	Listalation Nate –		2.1070		23) Incentiver attorpant –		ΨΟ	
35	10) Non Gas Fuel Environmental Damage F	actor =	\$0.00					
36 37	Escalation Rate =		0.00%					
	11) Participant Discount Rate =		2.55%					
39	,							
	12) Utility Discount Rate =		7.30%					
41 42	13) Societal Discount Rate =		2.55%					
43	,		2.3070					
	14) General Input Data Year =		2016					
45 46	15) Project Analysis Year 1 =		2017					
47	15a) Project Analysis Year 2 =		2018					
	15c) Project Analysis Year 3 =		2019					
49 50								
51						Triennial	Triennial	
52	Cost Summary	1st Yr	2nd Yr	3rd Yr	Test Results	NPV	B/C	
53 54	Litility Cost per Participant -	#DIV//01	¢2 020 24	#DIV//01	Ratepayer Impact Measure Test	(\$1.212.000\	0.00	
55	Utility Cost per Participant = Cost per Participant per Dth =	#DIV/0! #DIV/0!	\$2,820.34 \$132.79	#DIV/0! #DIV/0!	natepayer impact weasure rest	(\$1,212,990)	0.22	
56					Utility Cost Test	(\$154,812)	0.69	
57	Lifetime Energy Reduction (Dth)	80,708			On sintal Total	051040	1.10	
58 59	Societal Cost per Dth	\$6.47			Societal Test	\$54,816	1.10	
60		ψ0.11			Participant Test	\$1,680,471	n/a	

	A B		С	D	E	F	G	
1	Concernation Improvement Program (CID)			DENIEET CO	ET FOR CAS CIRS Cost Effectiveness Analysis			
2	Conservation Improvement Program (CIP)				ST FOR GAS CIPS Cost-Effectiveness Analysis finnesota Department of Commerce, January 26, 2006			
4	Company: Minneso	ta Energy Re			····· ·, · · · · · · · · · · · · · · ·			
5 6	Project: 4U2			R				
7	Input Data			ĸ		Se	cond Year	
8	•							
	1) Retail Rate (\$/Dth) =		\$17.22		16) Utility Project Costs		#000 CCF	
10 11	Escalation Rate =		4.00%		16a) Administrative & Operating Costs = 16b) Incentive Costs =		\$999,665 \$ 0	
	2) Non-Gas Fuel Retail Rate (\$/Fuel Unit) =		\$0.00		16c) Total Utility Project Costs =		\$999,665	
13	Escalation Rate =		2.16%		.,, , .,		,,	
14	Non-Gas Fuel Units (ie. kWh,Gallons, etc) =				17) Direct Participant Costs (\$/Part.) =		\$0	
15 16	3) Commodity Cost (\$/Dth) =		\$4.27		18) Participant Non-Energy Costs (Annual \$/Part.) =		\$0	
17	Escalation Rate =		4.00%		Escalation Rate =		0.00%	
18	0.0		0.100 ==		40.5 5		4-	
19 20	4) Demand Cost (\$/Unit/Yr) = Escalation Rate =		\$129.27 4.00%		19) Participant Non-Energy Savings (Annual \$/Part) = Escalation Rate =		\$0 0.00%	
20 21	Lacalation Nate -		4.0070		Localation Nate -		0.00%	
22	5) Peak Reduction Factor =		1.00%		20) Project Life (Years) =		11.4	
23 24	6) Variable O&M (\$/Dth) =		\$0.05		21) Avg. Dth/Part. Saved =		7.96	
25	Escalation Rate =		\$0.05 4.00%		21) Avg. Duvratt. Saveu -		1.90	
26					22) Avg Non-Gas Fuel Units/Part. Saved =		0.00	
27	7) Non-Gas Fuel Cost (\$/Fuel Unit) =		\$0.00		22a) Avg Additional Non-Gas Fuel Units/ Part. Used =		0.00	
28 29	Escalation Rate =		2.16%		23) Number of Participants =		698	
30	8) Non-Gas Fuel Loss Factor		0.00%		20) Hambor of Futuripunto –		030	
31					24) Total Annual Dth Saved =		5,556	
32 33	Gas Environmental Damage Factor = Escalation Rate =		\$0.3800 2.16%		25) Incentive/Participant =		\$0	
34	Escaiation Nate -		2.10/0		20) mooniive/i artioipant –		ΨU	
35	10) Non Gas Fuel Environmental Damage Factor =		\$0.00					
36	Escalation Rate =		0.00%					
37 38	11) Participant Discount Rate =		2.55%					
39								
	12) Utility Discount Rate =		7.30%					
41 42	13) Societal Discount Rate =		2.55%					
43	, Costata Diocount Plato -		2.0070					
44	14) General Input Data Year =		2016					
45 46	15) Project Analysis Year 1 =		2017					
40 47	15a) Project Analysis Year 1 =		2017					
48	15c) Project Analysis Year 3 =		2019					
49 50								
50 51						Triennial	Triennial	
52	Cost Summary 1st Yr	2nd Yr	r ;	3rd Yr	Test Results	NPV	B/C	
53 54	Litility Cost per Participant - 400/	/OI 64	1 /22 10	#DIV//OI	Patengyer Impact Measure Teet	(¢1 E00 7E0\	0.47	
55	Utility Cost per Participant = #DIV/ Cost per Participant per Dth = #DIV/		1,432.19 \$179.91	#DIV/0! #DIV/0!	Ratepayer Impact Measure Test	(\$1,592,760)	0.17	
56					Utility Cost Test	(\$612,400)	0.34	
57	Lifetime Energy Reduction (Dth) 66	6,677			Continue	/AF00.000°	0.40	
58 59	Societal Cost per Dth \$	14.62			Societal Test	(\$523,032)	0.46	
		11.02						

	A	В	С	D	E	F	G	Н
2	Conservation Improvement Program (CIP)			BENEFIT CO	ST FOR GAS CIPS Cost-Effectiveness Analysis			
3				Approved by I	Minnesota Department of Commerce, January 26, 2006			
4 5		innesota En es Rebates	ergy Resources					
6	i iojest. N	es itebates		R				
_	Input Data			-		Sec	ond Year	
8	1) Retail Rate (\$/Dth) =		\$17.22		16) Utility Project Costs			
10	Escalation Rate =		4.00%		16a) Administrative & Operating Costs =		\$891,574	
11					16b) Incentive Costs =		\$2,087,384	
	2) Non-Gas Fuel Retail Rate (\$/Fuel Unit) =		\$0.00		16c) Total Utility Project Costs =		\$2,978,958	
13 14	Escalation Rate = Non-Gas Fuel Units (ie. kWh,Gallons, etc) =		2.16%		17) Direct Participant Costs (\$/Part.) =		\$365	
15					17) Direct Faitiopant Costs (whatt) =			
	3) Commodity Cost (\$/Dth) = Escalation Rate =		\$4.27		18) Participant Non-Energy Costs (Annual \$/Part.) =		\$0	
17 18	Escalation Rate =		4.00%		Escalation Rate =		0.00%	
19	4) Demand Cost (\$/Unit/Yr) =		\$129.27		19) Participant Non-Energy Savings (Annual \$/Part) =		\$0	
20 21	Escalation Rate =		4.00%		Escalation Rate =		0.00%	
	5) Peak Reduction Factor =		1.00%		20) Project Life (Years) =		11.1	
23	•							
24 25	6) Variable O&M (\$/Dth) = Escalation Rate =		\$0.05 4.00%		21) Avg. Dth/Part. Saved =		6.97	
26	Escalation Nate -		4.0070		22) Avg Non-Gas Fuel Units/Part. Saved =		0.00	
27	7) Non-Gas Fuel Cost (\$/Fuel Unit) =		\$0.00		22a) Avg Additional Non-Gas Fuel Units/ Part. Used =		0.00	
28 29	Escalation Rate =		2.16%		23) Number of Participants =		20,432	
	8) Non-Gas Fuel Loss Factor		0.00%		20) Number of Fullopants –		20,402	
31	0.0 5		***		24) Total Annual Dth Saved =		142,428	
33	Gas Environmental Damage Factor = Escalation Rate =		\$0.3800 2.16%		25) Incentive/Participant =		\$102	
34			2.1070		20) moonavon anapane		Ψ10Z	
	10) Non Gas Fuel Environmental Damage Fac	tor =	\$0.00					
36 37	Escalation Rate =		0.00%					
38	11) Participant Discount Rate =		2.55%					
39 40	12) Utility Discount Rate =		7.30%					
41	12) Ounty Discount Rate =		7.30%					
42	13) Societal Discount Rate =		2.55%					
43	14) Conoral Input Data Year -		2016					
44 45	14) General Input Data Year =		2016					
46	15) Project Analysis Year 1 =		2017					
47 48	15a) Project Analysis Year 2 = 15c) Project Analysis Year 3 =		2018 2019					
49	130) FTOJECT ATIATYSIS TEAT 3 =		2019					
50								
51 52	Cost Summary 1s	st Yr	2nd Yr	3rd Yr	Test Results	Triennial NPV	Triennial B/C	
53	Sost Guilliary 18	ət 11	4IIU II	JIU II	rear reamina	INFV	DIC	
54	Utility Cost per Participant =	#DIV/0!	\$145.80	#DIV/0!	Ratepayer Impact Measure Test	(\$19,722,326)	0.29	
55 56	Cost per Participant per Dth =	#DIV/0!	\$73.24	#DIV/0!	Utility Cost Test	\$5,407,129	2.95	
57	Lifetime Energy Reduction (Dth)	1,709,134			,	ψο, 101, 120		
58	Societal Cost per Dth	64.70			Societal Test	\$3,443,182	1.42	
59 60	Societal Cost per Dth	\$4.76			Participant Test	\$28,340,534	4.90	

	A B	3	С	D	E	F	G	Н
1	Concertation Improvement Breazem (CID)			DENIEEIT CO	ST FOR GAS CIPS Cost-Effectiveness Analysis			
3	Conservation Improvement Program (CIP)				Minnesota Department of Commerce, January 26, 2006			
4	Company: Minneso	ota Ener			ministrate of commorce, canaday 20, 2000			
5	Project: Home E	nergy E						
6	Innuit Data			R			Second Year	
7 8	Input Data			•	-		econd Year	
	1) Retail Rate (\$/Dth) =		\$17.22		16) Utility Project Costs			
10	Escalation Rate =		4.00%		16a) Administrative & Operating Costs =		\$1,090,629	
11					16b) Incentive Costs =		\$622,000	
	2) Non-Gas Fuel Retail Rate (\$/Fuel Unit) =		\$0.00		16c) Total Utility Project Costs =		\$1,712,629	
13	Escalation Rate =		2.16%					
14 15	Non-Gas Fuel Units (ie. kWh,Gallons, etc) =				17) Direct Participant Costs (\$/Part.) =		\$975	
	3) Commodity Cost (\$/Dth) =		\$4.27		18) Participant Non-Energy Costs (Annual \$/Part.) =		\$0	
17	Escalation Rate =		4.00%		Escalation Rate =		0.00%	
18			4.					
19	4) Demand Cost (\$/Unit/Yr) =		\$129.27		19) Participant Non-Energy Savings (Annual \$/Part) =		\$0 0.00%	
20 21	Escalation Rate =		4.00%		Escalation Rate =		0.00%	
22	5) Peak Reduction Factor =		1.00%		20) Project Life (Years) =		20.0	
23	,				, , ,			
24	6) Variable O&M (\$/Dth) =		\$0.05		21) Avg. Dth/Part. Saved =		30.43	
25 26	Escalation Rate =		4.00%		22) Avg Non-Gas Fuel Units/Part. Saved =		0.00	
26 27	7) Non-Gas Fuel Cost (\$/Fuel Unit) =		\$0.00		22a) Avg Additional Non-Gas Fuel Units/ Part. Used =		0.00	
28	Escalation Rate =		2.16%				0.00	
29					23) Number of Participants =		1,055	
30	8) Non-Gas Fuel Loss Factor		0.00%		007.114		00.400	
31	9) Gas Environmental Damage Factor =		\$0.3800		24) Total Annual Dth Saved =		32,100	
33	Escalation Rate =		2.16%		25) Incentive/Participant =		\$590	
34							****	
35	10) Non Gas Fuel Environmental Damage Factor =		\$0.00					
36	Escalation Rate =		0.00%					
37 38	11) Participant Discount Rate =		2.55%					
39	11) 1 artioipant Discount Nate -		2.00/0					
40	12) Utility Discount Rate =		7.30%					
41								
42 43	13) Societal Discount Rate =		2.55%					
44	14) General Input Data Year =		2016					
45	11) Sonoral Input Data Todi -		2010					
46	15) Project Analysis Year 1 =		2017					
47	15a) Project Analysis Year 2 =		2018					
48	15c) Project Analysis Year 3 =		2019					
49 50								
51						Triennial	Triennial	
52	Cost Summary 1st Yr	2	2nd Yr	3rd Yr	Test Results	NPV	B/C	
53			04.000.0=	IIDN 1101		(0= 0=0 10 ::	-	
54 55	Utility Cost per Participant = #DIV Cost per Participant per Dth = #DIV		\$1,623.35	#DIV/0! #DIV/0!	Ratepayer Impact Measure Test	(\$7,272,424)	0.27	
56	Cost per Participant per Dth = #DIV	V/U!	\$85.39	#DIV/U!	Utility Cost Test	\$1,145,037	1.72	
57	Lifetime Energy Reduction (Dth) 64	42,006				ψ1,170,001	1.72	
58	. ,				Societal Test	\$2,526,378	2.22	
59	Societal Cost per Dth	\$3.22						
60					Participant Test	\$12,971,344	13.9352187	

	A	В	С	D	T E	F	G	Н
1		•			•			
3	Conservation Improvement Program (CIF	?)			ST FOR GAS CIPS Cost-Effectiveness Analysis Minnesota Department of Commerce, January 26, 2006			
4	Company:	Minnesota En	ergy Resources		milliesota Department of Commerce, Sandary 20, 2000			
5	Project:	CI Rebate	•					
6 7	Input Data			С		e,	econd Year	
8	IIIput Data			-		30	conu rear	
9	1) Retail Rate (\$/Dth) =		\$15.90		16) Utility Project Costs			
10	Escalation Rate =		4.00%		16a) Administrative & Operating Costs =		\$808,408	
11	0\ N O F D-t D-t (\$/F H)		60.00		16b) Incentive Costs =		\$2,475,606 \$3,284,014	
13	2) Non-Gas Fuel Retail Rate (\$/Fuel Unit) = Escalation Rate =		\$0.00 2.16%		16c) Total Utility Project Costs =		\$ 3,204,014	
14	Non-Gas Fuel Units (ie. kWh,Gallons, etc)) =	2.1070		17) Direct Participant Costs (\$/Part.) =		\$10,411	
15	,				, , ,			
16 17	3) Commodity Cost (\$/Dth) = Escalation Rate =		\$4.27 4.00%		18) Participant Non-Energy Costs (Annual \$/Part.) = Escalation Rate =		\$0 0.00%	
18	Escalation Nate -		4.00 //		E-Joanation I vale -		0.00 /6	
19	4) Demand Cost (\$/Unit/Yr) =		\$129.27		19) Participant Non-Energy Savings (Annual \$/Part) =		\$0	
20 21	Escalation Rate =		4.00%		Escalation Rate =		0.00%	
	5) Peak Reduction Factor =		1.00%		20) Project Life (Years) =		11.0	
23	•				, , ,			
	6) Variable O&M (\$/Dth) = Escalation Rate =		\$0.05 4.00%		21) Avg. Dth/Part. Saved =		215.42	
25 26	Localdiion rate -		4.00%		22) Avg Non-Gas Fuel Units/Part. Saved =		0.00	
27	7) Non-Gas Fuel Cost (\$/Fuel Unit) =		\$0.00		22a) Avg Additional Non-Gas Fuel Units/ Part. Used =		0.00	
28	Escalation Rate =		2.16%		22) Number of Participants -		4.400	
29 30	8) Non-Gas Fuel Loss Factor		0.00%		23) Number of Participants =		1,432	
31	0) 11011 040 1 401 2000 1 40101		0.0070		24) Total Annual Dth Saved =		308,488	
32	9) Gas Environmental Damage Factor =		\$0.3800		05) 11 10 11 1		0 4 7 00	
33 34	Escalation Rate =		2.16%		25) Incentive/Participant =		\$1,729	
35	10) Non Gas Fuel Environmental Damage F	actor =	\$0.00					
36	Escalation Rate =		0.00%					
37 38	11) Participant Discount Rate =		7.30%					
39	11) Farticipant Discount Nate –		7.5070					
40	12) Utility Discount Rate =		7.30%					
41	13) Societal Discount Poto =		O EE0/					
42 43	13) Societal Discount Rate =		2.55%					
44	14) General Input Data Year =		2016					
45	45) Desired Australia V		0017					
46 47	15) Project Analysis Year 1 = 15a) Project Analysis Year 2 =		2017 2018					
48	15c) Project Analysis Year 3 =		2019					
49	, ,							
50 51						Trionnial	Triennial	
	Cost Summary	1st Yr	2nd Yr	3rd Yr	Test Results	Triennial NPV	Triennial B/C	
53	•							
54	Utility Cost per Participant =	#DIV/0!	\$2,293.31	#DIV/0!	Ratepayer Impact Measure Test	(\$33,322,407)	0.33	
55 56	Cost per Participant per Dth =	#DIV/0!	\$58.97	#DIV/0!	Utility Cost Test	\$13,427,385	5.39	
57	Lifetime Energy Reduction (Dth)	3,393,366				Ţ.0, IZI,000	0.00	
58		A4.55			Societal Test	\$7,512,330	1.49	
59 60	Societal Cost per Dth	\$4.52			Participant Test	\$35,162,751	3.53	
J					i urtioipalit 100t	ψυυ, 102,7 υ Ι	5.55	

	A B		С	D	Е	F	G	Н
1	Concernation Improvement Breaven (CIB)			DENIEEIT COC	T FOR CAS CIDS Cost Effectiveness Analysis			
3	Conservation Improvement Program (CIP)				ST FOR GAS CIPS Cost-Effectiveness Analysis finnesota Department of Commerce, January 26, 2006			
4	Company: Minnesot				, , , , , , , , , , , , , , , , , , ,			
5	Project: Multifami	ily		•				
6 7	Input Data		'	С		s	econd Year	
8	•				-		coona roui	
	1) Retail Rate (\$/Dth) =		\$15.90		16) Utility Project Costs			
10	Escalation Rate =		4.00%		16a) Administrative & Operating Costs =		\$133,392	
11	2) Non-Gas Fuel Retail Rate (\$/Fuel Unit) =		\$0.00		16b) Incentive Costs = 16c) Total Utility Project Costs =	•	\$131,648 \$265,041	
13	Escalation Rate =		2.16%		Total offinity Project Costs –		φ203,041	
14	Non-Gas Fuel Units (ie. kWh,Gallons, etc) =		2.1070		17) Direct Participant Costs (\$/Part.) =		\$45	
15	·		64.07					
16 17	3) Commodity Cost (\$/Dth) = Escalation Rate =		\$4.27 4.00%		18) Participant Non-Energy Costs (Annual \$/Part.) = Escalation Rate =		\$0 0.00%	
18			1.0070				0.0070	
19	4) Demand Cost (\$/Unit/Yr) =		\$129.27		19) Participant Non-Energy Savings (Annual \$/Part) =		\$0	
20 21	Escalation Rate =		4.00%		Escalation Rate =		0.00%	
22	5) Peak Reduction Factor =		1.00%		20) Project Life (Years) =		8.1	
23	,				, , , ,			
24	6) Variable O&M (\$/Dth) =		\$0.05		21) Avg. Dth/Part. Saved =		2.28	
25 26	Escalation Rate =		4.00%		22) Avg Non-Gas Fuel Units/Part. Saved =		0.00	
27	7) Non-Gas Fuel Cost (\$/Fuel Unit) =		\$0.00		22a) Avg Additional Non-Gas Fuel Units/ Part. Used =		0.00	
28	Escalation Rate =		2.16%					
29 30	8) Non-Gas Fuel Loss Factor		0.00%		23) Number of Participants =		4,827	
31	O) NOIFORS I UEI LOSS I ACIOI		0.00%		24) Total Annual Dth Saved =		11,022	
32	9) Gas Environmental Damage Factor =		\$0.3800		,			
33	Escalation Rate =		2.16%		25) Incentive/Participant =		\$27.27	
34 35	10) Non Gas Fuel Environmental Damage Factor =		\$0.00					
36	Escalation Rate =		0.00%					
37	44) B. (1) (B)		7.000/					
38 39	11) Participant Discount Rate =		7.30%					
	12) Utility Discount Rate =		7.30%					
41								
42 43	13) Societal Discount Rate =		2.55%					
	14) General Input Data Year =		2016					
45	11) Sonoral Impat Data Todi -		2010					
46	15) Project Analysis Year 1 =		2017					
47 48	15a) Project Analysis Year 2 = 15c) Project Analysis Year 3 =		2018 2019					
48 49	130) FTOJECT ATIATYSIS TEAT 3 =		2019					
50								
51	Coat Summan	013	V.,	2-4 V-	Took Dooulto	Triennial	Triennial	
52 53	Cost Summary 1st Yr	2nd `	If .	3rd Yr	Test Results	NPV	B/C	
54	Utility Cost per Participant = #DIV/		\$54.91	#DIV/0!	Ratepayer Impact Measure Test	(\$1,158,239)	0.30	
55	Cost per Participant per Dth = #DIV/		\$43.66	#DIV/0!	Here a cr			
56 57	Lifetime Energy Reduction (Dth) 99	9,198			Utility Cost Test	\$249,469	2.01	
58	Enougy reduction (Dul)	2,100			Societal Test	\$317,880	1.93	
59	Societal Cost per Dth \$	\$3.44						
60					Participant Test	\$1,328,901	7.60	

BENEFIT COST FOR GAS CIPS - Cost-Effectiveness Analysis Approved by Minnesota Department of Commerce, January 26, 2006		Α	В	С	D	E	F	G
Approved by Minnesota Energy Resources	1	0 (1) (0)		•	DENEET OO	27 FOR CAR CIPO O 1 FW 1' A 1 '		•
Company, Minnesola Energy Resources Project: 0 R Second Year		Conservation Improvement Program (CIP)				· · · · · · · · · · · · · · · · · · ·		
Project 0 Proj	4	Company: I	Minnesota Ene	ergy Resources	Approved by I	minicional Department of Commerces, bundary 20, 2000		
Second Year	5			.,				
1	6				R			
1	_	Input Data			-		Se	econd Year
Escalation Rate = 4,00% 16a) Administrative & Operating Costs = 5196	9	1) Retail Rate (\$/MCF) =		\$17.22		16) Utility Project Costs		
11	10							\$199,276
12 20 Non-Cas Fuel Retail Bate (SFuel Unit) = \$0.00 16c) Total Utility Project Costs = \$199 \$	11					, ,		\$0
Non-Gas Fuel Units (ie. kWh, Gallons, etc) = 17, Direct Participant Costs (\$Part.) = 17, Direct Participant	12	2) Non-Gas Fuel Retail Rate (\$/Fuel Unit) =		\$0.00				\$199,276
15	13	Escalation Rate =		2.16%				
16 3 Commodify Cost (\$MOF) = \$4.27 18 Participant Non-Energy Costs (Annual \$\text{Part}.) =	14	Non-Gas Fuel Units (ie. kWh,Gallons, etc) =	:			17) Direct Participant Costs (\$/Part.) =		\$0
Escalation Rate = 4,00% Escalation Rate = 0,00	_	3) Commodity Cost (\$/MCE) =		¢/ 27		18) Participant Non-Energy Costs (Appual \$/Part \ =		\$ 0
19	_							0.00%
19		_oodidaon rato		7.00/0				0.0070
21	19							\$0
Speak Reduction Factor = 1.00% 20) Project Life (Years) = 22 3) Pack Reduction Factor = 1.00% 20) Project Life (Years) = 23 40		Escalation Rate =		4.00%		Escalation Rate =		0.00%
323 234 6) Variable O&M (\$MCF) = \$0.05 21) Avg. MCF/Part. Saved = \$2.06 \$2.0		5) Poak Poduction Factor -		1 000/		20) Project Life (Vears) =		3
March Dear		O) FEAR REGUCTION FACION =		1.00%		20) F10Jett Lile (1eals) –		3
Escalation Rate = 4,00% 22) Avg Non-Gas Fuel Units/Part. Saved = 22) Avg Non-Gas Fuel Units/Part. Saved = 22) Avg Additional Non-Gas Fuel Units/Part. Used = Escalation Rate = 2,16% 23) Number of Participants = 63 23) Number of Participants = 63 24) Total Annual Dth Saved = 24) Total Annual Dth Saved = 25 Incentive/Participant = 2,16% 25 Incentive/Participant =		6) Variable O&M (\$/MCF) =		\$0.05		21) Avg. MCF/Part. Saved =		0.03
27 7 Non-Gas Fuel Cost (\$/Fuel Unit) = \$0.00 22a) Avg Additional Non-Gas Fuel Units/ Part. Used =	25							
Escalation Rate = 2.16% 23) Number of Participants = 63 30) Non-Gas Fuel Loss Factor 0.00% 31 32 32 39) Gas Environmental Damage Factor = \$0.3800 33 34 35 36 37 37 38 31 39) Incentive/Participant = \$0.00 39 39 30 30 30 30 30 30 30 31 31 32 32 34 35 36 37 37 38 31 31 31 32 32 33 33 34 35 36 37 37 38 38 39 40 41 41 42 43 43 43 44 41 43 45 46 47 47 47 48 48 49 49 49 40 40 40 41 41 42 43 45 46 47 47 48 48 49 49 49 40 40 40 40 40 40 40 40 40 40 40 40 40	26	7) N O F 10 1/2/5 11110		***				0.00
23) Number of Participants = 63 30 8) Non-Gas Fuel Loss Factor 0.00% 31 31 24) Total Annual Dth Saved = 32 4) Total Annual Dth Saved = 32 5) Incentive/Participant = 32 5) Incentive/Participant = 32 5) Incentive/Participant = 33 5 10) Non Gas Fuel Environmental Damage Factor = 30 00 6 5 10) Non Gas Fuel Environmental Damage Factor = 30 00 6 5 10) Non Gas Fuel Environmental Damage Factor = 30 00 7 10) Non Gas Fuel Environmental Damage Factor = 30 00 7 10) Non Gas Fuel Environmental Damage Factor = 30 00 7 10) Non Gas Fuel Environmental Damage Factor = 30 00 7 10) Non Gas Fuel Environmental Damage Factor = 30 00 7 10) Non Gas Fuel Environmental Damage Factor = 30 00 7 10) Non Gas Fuel Environmental Damage Factor = 30 00 7 10) Non Gas Fuel Environmental Damage Factor = 30 00 7 10) Non Gas Fuel Environmental Damage Factor = 30 00 7 10) Non Gas Fuel Environmental Damage Factor = 30 00 7 10) Non Gas Fuel Environmental Damage Factor = 30 00 7 10) Non Gas Fuel Environmental Damage Factor = 30 00 7 10) Non Gas Fuel Environmental Damage Factor = 30 00 7 10) Non Gas Fuel Environmental Damage Factor = 30 00 7 10) Non Gas Fuel Environmental Damage Factor = 30 00 7 10) Non Gas Fuel Environmental Damage Factor = 30 00 7 10) Non Gas Fuel Environmental Damage Factor = 30 00 7 10) Non Gas Fuel Environmental Damage Factor = 30 00 7 10						22a) Avg Additional Non-Gas Fuel Units/ Part. Used =		0.00
30 30 30 30 30 30 30 30		Escalation Rate =		2.10%		23) Number of Participants =		63,128
24) Total Annual Dth Saved = 29) Gas Environmental Damage Factor = \$0.3800 33		8) Non-Gas Fuel Loss Factor		0.00%		Lof Hambol of Full lopulito -		00,120
Escalation Rate = 2.16% 25) Incentive/Participant = 344 345 345 345 345 345 345 345 345 345	31	•				24) Total Annual Dth Saved =		1,827
34 35 10) Non Gas Fuel Environmental Damage Factor = \$0.00								
10) Non Gas Fuel Environmental Damage Factor = \$0.00 Escalation Rate = 0.00% 17) Participant Discount Rate = 2.55% 10) Utility Discount Rate = 7.30% 11) Societal Discount Rate = 2.55% 13) Societal Discount Rate = 2.55% 14) General Input Data Year = 2016 15) Project Analysis Year 1 = 2017 15a) Project Analysis Year 2 = 2018 15c) Project Analysis Year 3 = 2019 17iennial Triennia Triennial Triennia Triennia Triennial Triennia	33	Escalation Rate =		2.16%		25) Incentive/Participant =		\$0
Escalation Rate = 0.00% 11) Participant Discount Rate = 2.55% 12) Utility Discount Rate = 7.30% 13) Societal Discount Rate = 2.55% 14) General Input Data Year = 2016 15) Project Analysis Year 1 = 2017 15a) Project Analysis Year 2 = 2018 15c) Project Analysis Year 3 = 2019 15d Triennial Triennia Trien		10) Non Gas Fuel Environmental Damage Fac	ctor =	\$0.00				
11 Participant Discount Rate = 2.55%								
11 Participant Discount Rate = 2.55%	37			2.2370				
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13 Societal Discount Rate = 2.55%		12) Utility Discount Rate =		7.30%				
43 44 14 General Input Data Year = 2016 45 45 46 47 47 47 47 47 47 47		13) Societal Discount Rate =		2 55%				
144 General Input Data Year = 2016	43	, Sasiotal Diocount Nato -		2.0070				
46 15) Project Analysis Year 1 = 2017 15a) Project Analysis Year 2 = 2018 15c) Project Analysis Year 3 = 2019 15c) Project Analysis Year 3 = 2018 15c) Project Analysis Year 2 = 2018 15c) Project Analysis Year 3 = 2018 15c) Project Analysis Year 3 = 2018 15c) Project Analysis Year 2 = 2018 15c) Project Analysis Year 3 = 2019 15c) Project Analysis Year	44	14) General Input Data Year =		2016				
15a) Project Analysis Year 2 = 2018 2019		45.5						
15c) Project Analysis Year 3 = 2019	46 47	15) Project Analysis Year 1 =						
49 1 1 1 1 1 1 1 1 1								
50 51 52 Cost Summary 1st Yr 2nd Yr 3rd Yr Test Results NPV B/C				2013				
52 Cost Summary 1st Yr 2nd Yr 3rd Yr Test Results NPV B/C	50							
	51	0.10	4 4 4 4	0 IV	0.17	T 10 "		Triennial
∪∪ 		Cost Summary	1st Yr	2nd Yr	3rd Yr	lest Results	NPV	B/C
		Utility Cost per Participant =	#DIV/0!	\$3 16	#DIV/0!	Ratepaver Impact Measure Test	(\$247,912)	0.11
	55					pust modelle 100t	(\$\pi_11,512)	V.11
Utility Cost Test (\$155,685)	56					Utility Cost Test	(\$155,685)	0.16
		Lifetime Energy Reduction (MCF)	5,480			- · · · - ·	/A / = 4 C	
	58	Societal Cost per MCE	605.40			Societal Test	(\$159,338)	0.18
	59 60	Sucietal Cost per MCF	\$35.46			Participant Test	\$100 942 n/s	a