



**MINNESOTA**  
Climate Change  
Advisory Group



# RCI Technical Work Group Teleconference Meeting #11

4 January 2008

# Today's Agenda

- Call to order
- Roll Call of TWG members and public
- Review and approval of summary of TWG call #10 (December 16, 2007) (on web)
- Review of RCI option proposal rewrites/proposals
- Review of key assumptions
- Review of revised standalone mitigation option results
- Proposal for integration of options
- Call to the public
- Announcements

# Review of RCI option write- ups/proposals

# Revisions to the RCI Option Write-ups

- Several options have been edited and or proposed for substantive revision:
  - RCI-1: Proposed edits by Chuck Dayton (sent on 13 December)
  - RCI-2: Proposed edits by Chuck (sent on 6 December) and proposed substantive revisions sent by Sheldon on 6 December)
  - RCI-3: Proposed edits by Chuck Dayton (sent on 6 December)
  - RCI-4: Proposed edits by Chuck Dayton (sent on 6 December)
  - RCI-5: Proposed edits by Chuck Dayton (sent on 6 December)
  - RCI-6: NA
  - RCI-7: NA
  - RCI-8: Proposed edits by Chuck Dayton (sent on 6 December)
  - RCI-9: NA
  - RCI-10: NA

# Review of Key Assumptions

# Cost & performance assumptions for electric supply resources

- These are important because they are used to calculate avoided costs against which RCI options are compared. The results below integrate recent decisions by the ES TWG

Assumed cost and performance characteristics of new capacity in MN

	Cost component						Source	EPC Percentage
	Overnight Capital	Trans	Fixed O&M	Variable O&M	Cap factor	Heat rate		
	2005 \$/kW	2005 \$/kW	2005 \$/kW-yr	2005 mills/kWh	%	btu/kWh		
Pulverized coal	2,350	0	34.30	1.60	85%	9,200	NETL	2%
IGCC	2,705	0	37.00	3.80	80%	9,000	NETL	2%
Hydroelectric	1,530	0	13.13	3.30	47%	10,107	EIA	2%
Natural Gas CT	643	0	3.36	11.40	15%	10,807	EIA	2%
Natural Gas CC	826	0	9.40	4.20	65%	6,990	NETL	2%
Nuclear	1,982	0	63.88	0.47	84%	10,400	EIA	2%
Other	0	0	0.00	0.00	0%	0	EIA	2%
Other Gas	0	0	0.00	0.00	0%	0	EIA	2%
Geothermal	1,880	0	154.92	0.00	50%	36,025	EIA	2%
MSW	2,441	0	107.50	0.01	75%	13,648	EIA	2%
Landfill gas	1,627	0	107.50	0.01	75%	13,648	EIA	2%
Biomass	2,806	0	50.18	2.96	75%	8,911	EIA	2%
Solar	4,406	80	10.99	0.00	35%	10,280	EIA	2%
Wind	1,845	80	28.51	0.00	35%	10,280	EIA	2%
Petroleum	630	0	11.40	3.36	10%	10,807	EIA	2%
Pumped Storage	0	0	0.00	0.00	0%	0	EIA	2%

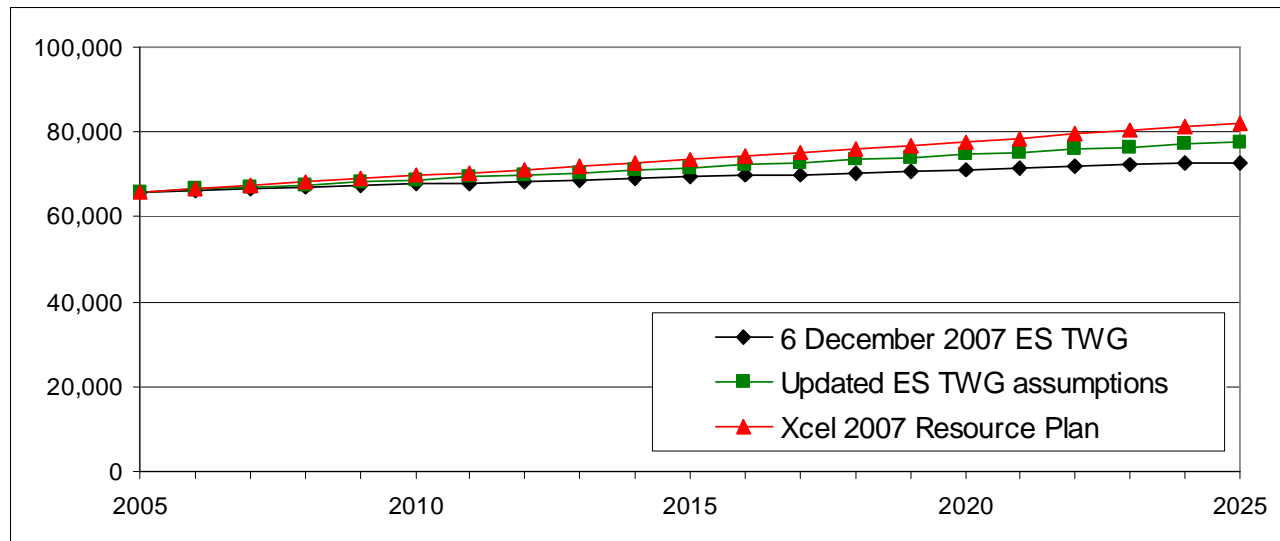
# Avoided cost results for electric system expansion in MN

## Estimated MN Avoided costs for electricity (2005\$/MWh)

Cost Component	Reference Scenario #2
Capacity	72
Transmission	2
Fixed O&M	6
Variable O&M	4
Fuel	31
<b>Total</b>	<b>115</b>

# Electricity sales projection

- The projected electricity sales results below (in GWh) are based on a comparison of recent/ updated TWG decisions and the recently published Xcel 2007 Resource plan
- The sales projection corresponding to the green line has been used for the analysis (annual sales growth rate = 0.82%/year)



# Review of revised RCI Results

# Summary of Results

	GHG Reductions (million tonnes CO <sub>2</sub> e)		Cumulative (2005-20)	NPV of Costs (E6 2005\$)	Cost of Saved Carbon (2005\$/tCO <sub>2</sub> e avoided)
	Annual				
	2015	2020			
RCI-1	5.6	13.1	122.6	-\$5,824	-\$48
RCI-2	0.0	0.0	0.1	-\$31	-\$402
RCI-3	0.6	0.9	11.1	-\$296	-\$27
RCI-4	1.0	5.0	33.1	-\$327	-\$10
RCI-5	0.0	0.1	0.5	-\$2	-\$5
RCI-6	0.3	1.3	8.3	-\$307	-\$37
RCI-7	0.0	0.1	0.7	-\$21	-\$28
RCI-8	<i>not quantified</i>				
RCI-9	<i>not quantified</i>				
RCI-10	0.8	1.4	15.3	-\$1,390	-\$91

# RCI-1: Utility Conservation Improvement Program

## Summary of changes in analysis:

- Updated results for new avoided costs from ES TWG
- Updated results assuming program spending to achieve efficiency reduction keeps pace with inflation
- Also considered a 2%/year energy efficiency target, all else remaining equal
- Current version of the analysis is in a file called “RCI-1 (version 3).xls”

# The summary results for RCI-1 are as follows:

GHG Reductions (million tonnes CO2e)			NPV of Costs (E6 2005\$)	Cost of Saved Carbon (2005\$/tCO2e avoided)
Annual		Cumulative		
2015	2025			
5.6	13.1	122.6	(\$5,824)	-47.5

# Key assumptions underlying analysis of RCI-1:

2008	Assumed start year for the new CIP legislation
1.5%	Estimate of annual level of savings in electricity sales associated with new CIP legislation (%/yr)
0.5%	Estimate of level of electricity savings already embedded in electricity sales, not including effect of new CIP legislation (%/yr)
1.0%	RCI TWG estimate of the incremental effect of new CIP legislation on electricity savings (%/yr)
0.82%	Energy supply TWG estimate of annual growth rate in electricity sales, including effect of new CIP legislation (%/yr)
\$52	2003 expenditures by regulated utilities (million \$)
\$325	2003 savings from utility expenditures (GWh)
15	Average lifetime of measures (years)
4,875	Lifetime savings from 2003 utility expenditures (GWh)

## Levelized cost associated with 2003 program spending (2005 \$/MWh of sales avoided)

<i>NPV (million 2005\$/MWh)</i>	\$160
<i>Real levelized cost (2005\$/MWh)</i>	\$15.4

## Levelized cost associated with future cost effectiveness of the MN CIP (2005\$ per MWh of sales avoided)

<i>Growth rate in program spending (%/yr)</i>	2.5%
<i>Most recent estimate - all costs (2005\$/MWh)</i>	\$22.3

# The results for RCI-1 (Utility Conservation Improvement Program) assuming a 2%/year energy efficiency target (as opposed to 1.5%), as else being equal as follows:

GHG Reductions (million tonnes CO2e)			NPV of Costs (E6 2005\$)	Cost of Saved Carbon (2005\$/tCO2e avoided)
Annual		Cumulative		
2015	2025			
8.2	18.5	176.0	(\$8,384)	-47.6

# RCI-2: Improved uniform statewide building codes

## Summary of changes in analysis:

- Updated results for new avoided costs from ES TWG
- Included natural gas savings
- Current version of the analysis is in a file called “RCI-2 (version 3).xls”

# The results for RCI-2 (Improved uniform statewide building codes) are as follows:

**Summary**

	GHG Reductions (million tonnes CO2e)			NPV of Costs (E6 2005\$)	Cost of Saved Carbon (2005\$/tCO2e avoided)
	Annual		Cumulative		
	2015	2025			
Electricity	0.003	0.004	0.059	-25.1	-422.6
Natural gas	0.001	0.001	0.017	-5.9	-347.7
Total	0.004	0.005	0.077	-31.0	-401.7

# Key assumptions underlying analysis of RCI-2:

Start-up year for uniform statewide codes

2009

Improvement of building code relative to the current code in areas where it HAS BEEN adopted and IS BEING enforced

	Residential	Commercial
Improvement of building code relative to the current code in areas where it HAS BEEN adopted and IS BEING enforced	0%	0%
Improvement of the building code relative to the current code in areas where it has NOT been adopted	3%	5%
Percent of the state population covered by current building code	85%	85%
Future enforcement coverage of the building code	100%	100%
Annual electricity savings by 2025 (GWh)	1.9	2.1
Annual natural gas savings by 2025 (billion btu)	11.4	7.8

Improvement of the building code relative to the current code in areas where it has NOT been adopted

Percent of the state population covered by current building code

Future enforcement coverage of the building code

Annual electricity savings by 2025 (GWh)

Annual natural gas savings by 2025 (billion btu)

Marginal resource associated with electricity savings

coal & natural gas, prorata (default)

# RCI-3: Green building guidelines and standards based on the "Architecture 2030 Challenge"

## Summary of changes in analysis:

- Reduced the default assumption for new buildings applying guidelines from 100% to 80% (default)
- Added capability for assessing the impacts of applying the guidelines to renovations of the existing building stock
- Assumed 5% (default) of the annual existing building stock being renovated is subject to the new guidelines
- Current version of the analysis is in a file called "RCI-3 (version 3).xls"

# The summary results for RCI-3 are as follows:

**Summary**

Residential Sector  
 Commercial Sector  
 Total

GHG Reductions (million tonnes CO2e)			NPV of Costs (E6 2005\$)	Cost of Saved Carbon (2005\$/tCO2e avoided)
Annual		Cumulative		
2015	2025			
0.366	0.567	6.7	-173	-26
0.250	0.374	4.5	-123	-27
0.616	0.941	11.1	-296	-27

# Key assumptions underlying analysis of RCI-3:

Assumed CO2 reduction targets to meet the Architecture 2030 Challenge (% relative to Reference Case)																				
2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
0%	0%	0%	0%	0%	60%	62%	64%	66%	68%	70%	72%	74%	76%	78%	80%	82%	84%	86%	88%	90%

## Percentage of new buildings subject to the new guidelines

	1	
1	Use	80%
2	User-defined	

80% since not user-defined, ignore value in cell at left

## Annual percentage of the existing building stock subject to renovation

	1	
1	Use	5%
2	User-defined	

10% since not user-defined, ignore value in cell at left

## Percentage of annual renovated building stock subject to the new guidelines

	1	
1	Use	50%
2	User-defined	

50% since not user-defined, ignore value in cell at left

## Real discount rate

	1	
1	Use	5%
2	User-defined	

4% since not user-defined, ignore value in cell at left

## Payback period for efficient equipment (years)

	1	
1	Use	14
2	User-defined	

10 since not user-defined, ignore value in cell at left

## Lifespan for efficient equipment (years)

	1	
1	Use	30
2	User-defined	

30 since not user-defined, ignore value in cell at left

1/2/2008

# RCI-4: Combined Heat and Power

## Summary of changes in analysis:

- Updated results for new avoided costs from ES TWG
- Reduced the default assumption from 100% of the technical potential to 50% (default)
- Current version of the analysis is in a file called “RCI-4 (version 3).xls”

# The summary results for RCI-4 are as follows:

**Summary**

GHG Reductions (million tonnes CO2e)		Cumulative	NPV of Costs (E6 2005\$)	Cost of Saved Carbon (2005\$/tCO2e avoided)
Annual				
2015	2025			
0.96	4.95	33.1	-327	-9.9

# Key assumptions underlying analysis of RCI-4:

Start-up year for CHP

2013

Incremental installed CHP by 2025 (MW)

1,050

Marginal resource associated with electricity savings

coal & natural gas, prorata (default)

## Combined heat and power (CHP) cost and performance

Parameter	2010					2025				
	NG	Biomass	Coal	electricity	oil	NG	Biomass	Coal	electricity	oil
Average full-capacity-equivalent hours of operation	5,000	5,000	5,000			5,000	5,000	5,000		
Fraction of new capacity	90%	5%	5%			83%	18%	0%		
Average net heat rate by fuel (btu per kWh)	10,000	13,000	12,000			10,000	13,000	12,000		
Useable cogenerated heat output (% energy input)	40%	40%	40%			40%	40%	40%		
Fraction useable heat output replacing space/water/process heat	90%	90%	90%			90%	90%	90%		
Fraction of CHP heat output displacing thermal energy	75%	5%	0%	15%	5%	75%	5%	0%	15%	5%
Net efficiency of displaced boiler/heater thermal energy	85%	80%	80%	92%	80%	85%	80%	80%	92%	80%
Average overnight installed capital costs by fuel type (2005\$/kW)	\$2,000	\$2,500	\$2,500			\$2,000	\$2,500	\$2,500		
CHP transmission cost (2005\$/kW)	\$0	\$0	\$0			\$0	\$0	\$0		
Economic life of system (years)	20	20	20			20	20	20		
Fixed O&M costs (2005\$/kW)	0	0	0			0	0	0		
Variable O&M costs (2005 \$/MWh)	16.00	20.00	20.00			16.00	20.00	20.00		

# RCI-5: Reduction of high GWP emissions

## Summary of changes in analysis:

- Updated results to account for new information from the CA Air Resources Board
- Current version of the analysis is in a file called “RCI-5 (version 2).xls”

# The summary results for RCI-5 are as follows:

		GHG Reductions (million tonnes CO2e)			NPV of Costs (E6 2005\$)	Cost of Saved Carbon (2005\$/tCO2e avoided)
		Annual		Cumulative		
		2015	2025			
<b>Cost-effective Summary (with threshold)</b>						
<b>Electric transmission</b>						
	<i>Recycling equipment</i>	0.00	0.01	0.07	-2.66	-36.28
	<i>Leak detection/repair</i>	0.00	0.00	0.00	0.00	0.00
	<i>Total</i>	0.00	0.01	0.07	-2.66	-36.28
<b>Semiconductors</b>						
	<i>NF3 remote clean technology</i>	0.00	0.00	0.00	0.00	0.00
	<i>Point of use plasma</i>	0.00	0.00	0.00	0.00	0.00
	<i>Thermal destruction</i>	0.00	0.00	0.00	0.00	0.00
	<i>Catalytic destruction</i>	0.00	0.00	0.00	0.00	0.00
	<i>Total</i>	0.00	0.00	0.00	0.00	0.00
<b>Refrigerants</b>						
	<i>Distributed systems</i>	0.00	0.00	0.00	0.00	-23.71
	<i>Ammonia secondary loop system</i>	0.00	0.00	0.00	0.00	0.00
	<i>HFC secondary loop system</i>	0.00	0.00	0.00	0.00	0.00
	<i>Mobile air conditioning</i>	0.00	0.00	0.00	0.00	0.00
	<i>Total</i>	0.00	0.00	0.00	0.00	-23.71
<b>Solvents</b>						
	<i>Alternative solvents</i>	0.02	0.05	0.41	0.37	0.88
	<i>NIK replacements</i>	0.00	0.00	0.00	0.00	0.00
	<i>Retrofit options</i>	0.00	0.00	0.00	0.00	0.00
	<i>Total</i>	0.02	0.05	0.41	0.37	0.88
<b>Total</b>		<b>0.02</b>	<b>0.05</b>	<b>0.49</b>	<b>-2.30</b>	<b>-4.70</b>

# Key assumptions underlying analysis of RCI-5:

Assumed start year for the option

2009

Implementation ramp-up schedule

1

1	Linearly up to maximum by 2025 (default)
2	User-defined ramp-up period

Real discount rate

5%

Cost effectiveness threshold (2005\$/tCO<sub>2</sub>e avoided)

\$15.0

Inflation rate

1

1	Use	2.50%
2	User-defined	

Global warming potential

HFC-134a	1,300
SF-6	23,900

# RCI-6: Non-utility strategies and incentives

## Summary of changes in analysis:

- Reduced technical visit schedule to account for potential overlap with utility activities
- Current version of the analysis is in a file called “RCI-6 (version 4).xls”

# The summary results for RCI-6 are as follows:

**Summary**

	GHG Reductions (million tonnes CO2e)			NPV of Costs (E6 2005\$)	Cost of Saved Carbon (2005\$/tCO2e avoided)
	Annual		Cumulative		
	2015	2025			
Residential Sector	0.1	0.7	4.7	-1	-0.3
Commercial Sector	0.1	0.5	2.9	-293	-99.6
Industrial Sector	0.0	0.1	0.6	-13	-21.5
Total	0.3	1.3	8.3	-307	-37.0

# Key assumptions underlying analysis of RCI-6:

Start-up year for option	<b>2013</b>
Average energy savings from measures (% relative to Reference Case)	
<i>Residential sector</i>	<b>13%</b>
<i>Commercial sector</i>	<b>13%</b>
<i>Industrial sector</i>	<b>15%</b>
Annual technical assistance visits	
<i>Residential sector</i>	<b>1,000</b>
<i>Commercial sector</i>	<b>150</b>
<i>Industrial sector</i>	<b>30</b>

# RCI-7: Conservation Improvement-Type Program for Propane and Fuel Oil Efficiency

## Summary of changes in analysis:

- This option is recently completed. The results shown here represent the first draft
- Current version of the analysis is in a file called “RCI-7 (version 1).xls”

# The summary results for RCI-7 are as follows:

## Summary

fuel oil  
propane  
Total

GHG Reductions (million tonnes CO2e)			NPV of Costs (E6 2005\$)	Cost of Saved Carbon (2005\$/tCO2e avoided)
Annual		Cumulative		
2015	2025			
0.048	0.050	0.741	-20.48	-27.63
0.000	0.000	0.006	-0.12	-18.88
0.048	0.051	0.747	-20.59	-27.55

# Key assumptions underlying analysis of RCI-7:

Assumed start year for the option	2009	
Equipment efficiency improvement target for <b>fuel oil</b>	85%	
Ramp-up period for achieving the efficiency improvement target for <b>fuel oil</b> in MN (years)	5	
Equipment efficiency improvement target for <b>propane</b>	90%	
Ramp-up period for achieving the efficiency improvement target for <b>propane</b> in MN (years)	5	
Percentage of new <b>fuel oil</b> use subject to the new efficiency standards	100%	
Percentage of new <b>propane</b> use subject to the new efficiency standards	100%	
Percentage of existing <b>fuel oil</b> use subject to the new efficiency standards	50%	
Percentage of existing <b>propane</b> use subject to the new efficiency standards	50%	
	fuel oil	propane
Payback period for efficient equipment (years)	14	6
Lifespan for efficient equipment (years)	30	8

# RCI-8: Energy Performance Disclosure

**This is a non-quantified option**

# **RCI-9: Promote Technology-Specific Applications to Reduce GHG Emissions**

**This is a non-quantified option**

# RCI-10: Appliance Standards

## Summary of changes in analysis:

- This option is recently completed. The results shown here represent the first draft
- Current version of the analysis is in a file called “RCI-10 (version 1).xls”

# The summary results for RCI-10 are as follows:

## Summary

electricity  
natural gas  
Total

GHG Reductions (million tonnes CO2e)			NPV of Costs (E6 2005\$)	Cost of Saved Carbon (2005\$/tCO2e avoided)
Annual		Cumulative		
2015	2025			
0.7	1.2	14.1	-1,247	-89
0.1	0.1	1.2	-143	-120
0.8	1.4	15.3	-1,390	-91

## Key assumptions underlying analysis of RCI-10:

- Scaled results of a 2005 national study<sup>1</sup> that assessed what states could do to strengthen appliance standards  
Focus is on the following technologies:

#	Technology	2020 savings		2030 savings		NPV (2030)	
		TWh	trillion btu	TWh	trillion btu	billion \$	Start year
1	Ceiling fan lights	18.9	197	18.9	190	13	2007
2	Commercial clothes washers	0.3	9	0.3	9	0.9	2007
3	Commercial ice-makers	0.6	7	0.6	6	0.4	2007
4	Commercial refrigerators & freezers	2.4	25	2.4	24	1.3	2010
5	Commercial unit heaters	0	39	0	55	3	2007
6	Dehumidifiers	1	10	1.1	11	0.7	2007
7	Digital cable & satellite boxes	1.4	14	1.4	14	1.2	2007
8	Digital television adapters	0.3	3	0	0	1.1	2007
9	Exit signs	1.7	18	2.9	29	1.4	2007
10	External power supplies	4.9	51	4.9	49	3.3	2007
11	Large commercial packaged AC & heat pumps	1.5	16	2.2	22	0.9	2010
12	Low-voltage dry-type transformers	3.1	32	5.4	54	2.6	2007
13	Medium-voltage dry-type transformers	2.7	28	4.7	47	2.4	2007
14	Metal halide lamp fixtures	9	93	14.4	144	7.3	2008
15	Pre-rinse spray valves	0	56	0	56	8	2007
16	Reflector lamps	3.9	40	3.9	39	2.6	2007
17	Torchiere lighting fixtures	11.8	123	11.8	119	8.4	2007
18	Traffic signals	1.3	13	1.3	13	0.6	2007
	total	64.8	774	76.2	881	59.1	

<sup>1</sup> "Leading the Way: Continued Opportunities for New State Appliance and Equipment Efficiency Standards", 2005, by Steven Nadel, Andrew deLaski, Jim Kleisch, and Toru Kubo, available at <http://www.standardsasap.org/documents/a051.pdf>;

# Proposal for integration of options

# Coverage of RCI options of types of energy resources

Option #	Option Name	Electricity	Natural gas	Fuel oil	Propane	biomass	other fuels
RCI-1	Maximize Savings from the Utility Conservation Improvement Program (CIP)	X					
RCI-2	Improved uniform statewide building codes	X	X				
RCI-3	Green building guidelines and standards based on the "Architecture 2030 Challenge"	X	X	X	X		X
RCI-4	Incentives & Resources to Promote CHP	X	X	X		X	X
RCI-5	Reduction of high GWP emissions						
RCI-6	Non-utility strategies and incentives	X	X	X		X	X
RCI-7	Conservation Improvement-Type Program for Propane and Fuel Oil Efficiency			X	X		
RCI-8	Energy Performance Disclosure	<i>not quantified</i>					
RCI-9	Promote Technology-Specific Applications to Reduce GHG Emissions	<i>not quantified</i>					
RCI-10	Appliance Standards	X	X				
<b>Coverage by number of options</b>		<b>6</b>	<b>5</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>3</b>

# Electricity Proposal

Option #	Option Name	Electricity	Potential overlap with RCI-1?	Justification	Proposal for GHG reduction credit in integrated analysis
RCI-1	Maximize Savings from the Utility Conservation Improvement Program (CIP)	X	NA	NA	100%
RCI-2	Improved uniform statewide building codes	X	No	Savings would be incremental to the CIP	100%
RCI-3	Green building guidelines and standards based on the "Architecture 2030 Challenge"	X	No	Savings would be incremental to the CIP	100%
RCI-4	Incentives & Resources to Promote CHP	X	No	Savings would be incremental to the CIP	100%
RCI-5	Reduction of high GWP emissions				
RCI-6	Non-utility strategies and incentives	X	No	Savings would be incremental to the CIP	100%
RCI-7	Conservation Improvement-Type Program for Propane and Fuel Oil Efficiency				
RCI-8	Energy Performance Disclosure	<i>not quantified</i>			
RCI-9	Promote Technology-Specific Applications to Reduce GHG Emissions	<i>not quantified</i>			
RCI-10	Appliance Standards	X	Yes	High efficiency appliances a likely utility strategy to achieve CIP targets	50%

1/2/2008

Minnesota Climate Change Advisory Group  
[www.mnclimatechange.us/](http://www.mnclimatechange.us/)

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Center for Climate Strategies  
[www.climatestrategies.us](http://www.climatestrategies.us)

# Natural Gas Proposal

Option #	Option Name	Natural gas	Potential overlap with RCI-3?	Justification	Proposal for GHG reduction credit in integrated analysis
RCI-1	Maximize Savings from the Utility Conservation Improvement Program (CIP)				
RCI-2	Improved uniform statewide building codes	X	NA	Savings would be incremental to the "Architecture 2030 Challenge"	100%
<b>RCI-3</b>	<b>Green building guidelines and standards based on the "Architecture 2030 Challenge"</b>	X	NA	NA	100%
RCI-4	Incentives & Resources to Promote CHP	X	No	Savings would be incremental to the "Architecture 2030 Challenge"	100%
RCI-5	Reduction of high GWP emissions				
RCI-6	Non-utility strategies and incentives	X	No	Savings would be incremental to the "Architecture 2030 Challenge"	100%
RCI-7	Conservation Improvement-Type Program for Propane and Fuel Oil Efficiency				
RCI-8	Energy Performance Disclosure	<i>not quantified</i>			
RCI-9	Promote Technology-Specific Applications to Reduce GHG Emissions	<i>not quantified</i>			
RCI-10	Appliance Standards	X	Yes	Savings would be incremental to the "Architecture 2030 Challenge"	50%

# Fuel oil Proposal

Option #	Option Name	Fuel oil	Potential overlap with RCI-7?	Justification	Proposal for GHG reduction credit in integrated analysis
RCI-1	Maximize Savings from the Utility Conservation Improvement Program (CIP)				
RCI-2	Improved uniform statewide building codes				
RCI-3	Green building guidelines and standards based on the "Architecture 2030 Challenge"	X	No	Savings would be incremental to fuel oil/propane conservation	100%
RCI-4	Incentives & Resources to Promote CHP	X	No	Savings would be incremental to fuel oil/propane conservation	100%
RCI-5	Reduction of high GWP emissions				
RCI-6	Non-utility strategies and incentives	X	No	Savings would be incremental to fuel oil/propane conservation	100%
RCI-7	<b>Conservation Improvement-Type Program for Propane and Fuel Oil Efficiency</b>	X	NA	NA	100%
RCI-8	Energy Performance Disclosure	<i>not quantified</i>			
RCI-9	Promote Technology-Specific Applications to Reduce GHG Emissions	<i>not quantified</i>			
RCI-10	Appliance Standards				

# Propane Proposal

Option #	Option Name	Propane	Potential overlap with RCI-7?	Justification	Proposal for GHG reduction credit in integrated analysis
RCI-1	Maximize Savings from the Utility Conservation Improvement Program (CIP)				
RCI-2	Improved uniform statewide building codes				
RCI-3	Green building guidelines and standards based on the "Architecture 2030 Challenge"	X	No	Savings would be incremental to fuel oil/propane conservation	100%
RCI-4	Incentives & Resources to Promote CHP				
RCI-5	Reduction of high GWP emissions				
RCI-6	Non-utility strategies and incentives				
RCI-7	<b>Conservation Improvement-Type Program for Propane and Fuel Oil Efficiency</b>	X	NA	NA	100%
RCI-8	Energy Performance Disclosure	<i>not quantified</i>			
RCI-9	Promote Technology-Specific Applications to Reduce GHG Emissions	<i>not quantified</i>			
RCI-10	Appliance Standards				

# Biomass Proposal

Option #	Option Name	Biomass	Potential overlap with RCI-4?	Justification	Proposal for GHG reduction credit in integrated analysis
RCI-1	Maximize Savings from the Utility Conservation Improvement Program (CIP)				
RCI-2	Improved uniform statewide building codes				
RCI-3	Green building guidelines and standards based on the "Architecture 2030 Challenge"				
<b>RCI-4</b>	<b>Incentives &amp; Resources to Promote CHP</b>	<b>X</b>	<b>NA</b>	<b>NA</b>	<b>100%</b>
RCI-5	Reduction of high GWP emissions				
RCI-6	Non-utility strategies and incentives	<b>X</b>	<b>No</b>	<b>Savings would be incremental to CHP</b>	100%
RCI-7	Conservation Improvement-Type Program for Propane and Fuel Oil Efficiency				
RCI-8	Energy Performance Disclosure	<i>not quantified</i>			
RCI-9	Promote Technology-Specific Applications to Reduce GHG Emissions	<i>not quantified</i>			
RCI-10	Appliance Standards				

# Other Fuels Proposal

Option #	Option Name	Other fuels	Potential overlap with RCI-3?	Justification	Proposal for GHG reduction credit in integrated analysis
RCI-1	Maximize Savings from the Utility Conservation Improvement Program (CIP)				
RCI-2	Improved uniform statewide building codes				
<b>RCI-3</b>	<b>Green building guidelines and standards based on the "Architecture 2030 Challenge"</b>	<b>X</b>	<b>NA</b>	<b>NA</b>	<b>100%</b>
RCI-4	Incentives & Resources to Promote CHP	X	No	Savings would be incremental to the "Architecture 2030 Challenge"	100%
RCI-5	Reduction of high GWP emissions				
RCI-6	Non-utility strategies and incentives	X	No	Savings would be incremental to the "Architecture 2030 Challenge"	100%
RCI-7	Conservation Improvement-Type Program for Propane and Fuel Oil Efficiency				
RCI-8	Energy Performance Disclosure	<i>not quantified</i>			
RCI-9	Promote Technology-Specific Applications to Reduce GHG Emissions	<i>not quantified</i>			
RCI-10	Appliance Standards				