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## MEMO

To: NC RCI Technical Working Group  
CC: DENR Staff  
From: Alison Bailie and David Von Hippel, CCS  
Re: Consolidation of Catalog of North Carolina RCI Options  
Date: June 15, 2006

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At the 3<sup>rd</sup> TWG call (June 6), it was agreed that prior to TWG members “voting” on which of the Policy Options in the Catalog of State Climate Mitigation Options should be considered high priority for further elaboration and analysis, it would be very helpful to consolidate the list of options into a group of more aggregate options. Following our e-mail to the TWG soliciting suggestions for consolidation, TWG members Len Hoey and Jeff Tiller have provided ideas for consolidation, and these ideas, together with thoughts from Alison and David, have been used to produce the following draft consolidation of options, in order to make the number of options to be considered more manageable. For those of you who missed the call, the call summary should be available within the next week at the usual website location: [http://www.ncclimatechange.us/Residential\\_Commercial\\_Industrial.cfm](http://www.ncclimatechange.us/Residential_Commercial_Industrial.cfm).

The following is a grouping and listing of the proposed aggregated options for RCI to consider. We’ve given these new, aggregated options a different numbering system (RCI-A.1, -A.2, etc.) to distinguish these new, aggregated options from those previously in the catalog. Each aggregate title is followed, in parentheses, by a listing of options from our previous catalog that would be included, either directly or as “supporting policies” (see definition below) under the aggregated option.

## **NEW LISTING OF CONSOLIDATED POLICY OPTIONS**

### **RCI-A. Energy Efficiency Programs, Funds, and Goals**

- A.1 Demand Side Management Programs (**includes old 1.1, 3.16, 6.3, 6.7, 6.8, 6.9**)
- A.2 Expand Energy Efficiency Funds (**includes old 1.2, 5.4, 6.7, 6.8, 6.9, 9.3, 9.12**)
- A.3 Energy Efficiency Requirements -- e.g. Utility Portfolio Standards or Utility Savings Goals (**includes old 1.1, 3.16, 6.7, 6.8, 6.9**)
- A.4 Market Transformation and Technology Development Programs (**includes old 1.4, 6.1, 6.3, 6.6, 6.7, 6.8, 6.9, 9.2, 9.12, 9.13**)

### **RCI-B – Appliance Standards**

- B.1 State Level Appliance Efficiency Standards and State Support for Improved Federal Standards (**old 2.1, 2.2**)

### **RCI-C – Building Efficiency Improvement**

- C.1 Building Energy Codes (**includes old 3.1, 3.3, 3.4, 3.13, 3.14, 3.15, 3.17, 3.18, 3.19, 6.9, 9.2, 9.10**)
- C.2 Building Commissioning, Recommissioning, and Retrocommissioning (**includes old 3.3, 3.5, 3.6, 3.9, 3.13, 3.14, 3.21, 5.4, 6.9, 9.2, 9.4, 9.8, 9.9, 9.10, 9.12, 9.13**)
- C.3 “Beyond Code” Building Design Incentives and Mandatory Programs (**includes old 3.2, 3.3, 3.9, 3.10, 3.13, 3.14, 3.16, 3.18, 3.21, 5.4, 6.7, 6.8, 6.9, 9.1, 9.2, 9.8, 9.9, 9.12, 9.13**)
- C.4 Support Smart Growth Designs (**includes old 3.10, 3.11, 3.14, 3.20, 3.21, 9.10**)
- C.5 Comprehensive State Survey of Energy and Water Efficiency Features in Existing Residential and Commercial Buildings (**includes old 3.21, 9.12**)
- C.6 Alternative Building Materials and Construction Practices (**includes old 3.3, 3.7 through 3.10, 3.17, 3.18, 3.19, 6.4, 6.7, 7.4, 9.2, 9.12, 9.13**)

### **RCI-D – Education, Promotional Programs, and Specialist Training**

- D.1 Consumer Education Programs (**old 4.1**)
- D.2 Introduce in Primary and Secondary School Curriculum (**old 4.2**)
- D.3 Post-secondary and Specialist Education for Building Energy Efficiency Experts and Related Trades (**includes old 3.3, 3.4, 3.6, 3.13, 9.12, 9.13**)
- D.4 Post-secondary College and University Programs (**includes old 3.10, 9.8**)

### **RCI-E – Regulatory Policies in Support of Energy Efficiency and Renewable Energy**

- E.1 Review Net Metering Policies and Utility Rate Reform (**includes old 5.3, 5.5**)

**RCI-F – Pricing and Purchasing**

- F.1 Green Power Purchasing (required for state facilities) and Bulk Purchasing Programs for Energy Efficiency or Other Equipment (**includes old 5.1, 5.2, 9.1**)

**RCI-G – Combined Heat and Power, Distributed Renewable Power**

- G.1 Support for Implementation of Clean Combined Heat and Power (**includes old 5.3, 5.5, 6.2, 6.5, 9.10, 9.12, 9.13**)
- G.2 Distributed Renewable and Clean Fossil Fuel Power Generation (**includes old 5.3, 5.5, 6.1, 6.5, 9.10, 9.12, 9.13**)

**RCI-H – Industrial Sector Policies and Goals, and Non-Energy Emissions/CO<sub>2</sub> Process Emissions**

- H.1 Industrial Sector Emissions Cap and Trade Programs (**old 8.2**)
- H.2 Non-Energy Emissions Reduction Initiatives (**includes old 7.1, 7.3, 7.4**)
- H.3 Industrial Energy Audits and Recommended Measure Implementation (**includes old 6.6, 7.2, 9.5, 9.6, 9.7, 9.12, 9.13**)
- H.4 Voluntary Emissions Reduction Measures (**includes old 8.1, 8.3 through 8.5, 9.5, 9.6, 9.10, 9.12, 9.13**)

**RCI-I – Other Policies**

- I.1 Water Use Reduction (**includes old 3.21, 9.11**)

Our proposal is that this consolidated list be used as a starting point for voting on TWG priorities for further analysis. Please review the consolidation suggested here, and provide any alternative consolidations or suggested changes.

We have sent a “ballot” accompanying this memo that we hope you will use to indicate your priorities among these options for further elaboration and analysis, and send back to us for tallying. You will also, on the ballot, have an opportunity to provide ideas for further consolidation, or to suggest modifications to this consolidation, which is very much a draft for your review. We will discuss both the voting results and the consolidated list at our next TWG meeting on June 29<sup>th</sup>.

You are of course welcome and encouraged to provide your comments and suggestions during our next TWG call, but you are also encouraged to write down your thoughts and provide them to David and Alison by e-mail. If we have your thoughts in writing, it will help the process of modifying the consolidated list along, and also help us to quickly identify areas of agreement, disagreement, or uncertainty to pursue in the TWG call. The substance of any comments provided by e-mail will be discussed in the TWG call. To facilitate our review and, as appropriate, compilation of the comments provided by e-mail, we would request that you get comments to us on or before June 21, but comments e-mailed after that date will also be appreciated.

## Cross-Reference Table of Policy Options

The table below cross-references the previously discussed policy options from the “catalog” with the above consolidated options in categories A through I, as indicated by a **X**. An **S** indicates an option that could be considered a “supporting policy” for a consolidated option. As in the Catalog, options marked with an asterisk (\*) indicate options that are at least partially “base case” policies, i.e., that have been considered or undertaken at some level in North Carolina, options marked with a double asterisk (\*\*) indicate options that are included as recommendations in the September 1, 2005 NC DENR Report under the Clean Smokestacks Act of 2002, and options marked with a triple asterisk (\*\*\*) indicate options that are included in or consistent with recommendations by the North Carolina Legislative Commission on Global Climate Change.

Old No.	GHG Reduction Policy Option from Existing Catalog of Options	Consolidated Policy Options																							
		A.1	A.2	A.3	A.4	B.1	C.1	C.2	C.3	C.4	C.5	C.6	D.1	D.2	D.3	D.4	E.1	F.1	G.1	G.2	H.1	H.2	H.3	H.4	I-1
<b>1.</b>	<b>Energy Efficiency Programs, Funds, and Goals</b>																								
1.1	Demand Side Management (DSM) Programs for electricity, natural gas, propane, fuel oil* ***	X		X																					
1.2	Expand Energy Efficiency Funds (e.g. Public Benefit Funds) administered by State agency, utility, or 3rd party (e.g. Advanced Energy Corporation)** ***		X																						
1.3	Energy Efficiency Requirements (e.g. Utility Savings Goals or Energy Portfolio Standards) **			X																					
1.4	Market transformation and technology development programs				X																				
<b>2.</b>	<b>Appliance Standards</b>																								
2.1	Development of State-level Appliance Efficiency Standards*					X																			
2.2	State Voices Support for Adoption of More Stringent Federal-level Appliance Efficiency Standards					X																			
<b>3.</b>	<b>Buildings</b>																								
3.1	Improved Building Codes**						X																		
3.2	Promotion and Incentives for Improved Design and Construction* ***								X																

Old No.	GHG Reduction Policy Option from Existing Catalog of Options	Consolidated Policy Options																								
		A.1	A.2	A.3	A.4	B.1	C.1	C.2	C.3	C.4	C.5	C.6	D.1	D.2	D.3	D.4	E.1	F.1	G.1	G.2	H.1	H.2	H.3	H.4	I-1	
3.3	Training and Education for Builders and Contractors *						S	S	S			S			X											
3.4	Training of Building Code and other Officials in Energy Code Enforcement*						S								X											
3.5	Building Commissioning and Recommissioning, including Energy Tracking and Benchmarking							X																		
3.6	Energy Management Training/Training of Building Operators*							S							X											
3.7	Increased Use of Blended Cement (substituting fly ash or other pozzolans for clinker reduces CO <sub>2</sub> emissions)											X														
3.8	Reduction of Emissions from Diesel Engines Used in New Construction Developments											X														
3.9	Support for growth and health of the residential building performance specialist industry.							S	S			S														
3.10	Continuing Education for building Design Professionals, including architects, engineers, developers, contractors, urban planners, and realtors									S	S					X										
3.11	Promote work scheduling and telecommuting as means of reducing building energy consumption										X															
3.12	Promotion of the use of locally created and available building materials											X														
3.13	Energy efficiency and related education introduced at community colleges and trade schools ***						S	S	S			S			X											
3.14	Clearinghouse for information on and access to software tools to calculate impact of energy efficiency and solar technologies for buildings ***						X	S	S	S		S														
3.15	Improved enforcement of building codes See also 3.1 and 3.4						S																			
3.16	Add Photovoltaic Panels on New Commercial Buildings and Many New Homes; Add Solar Hot Water Heaters on Homes and Other Buildings	X		X						X																
3.17	Cap on Consumption of Energy per Unit Area of Floorspace for New (?) Buildings						X																			

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		A.1	A.2	A.3	A.4	B.1	C.1	C.2	C.3	C.4	C.5	C.6	D.1	D.2	D.3	D.4	E.1	F.1	G.1	G.2	H.1	H.2	H.3	H.4	I-1
3.18	Solar Hybrid Lighting			X			X		X																
3.19	Increase Flexibility within Building Codes for Use of Non-conventional Energy-efficient Building Materials						X						X												
3.20	Promote SmartGrowth designs that also reduce energy and water consumption in buildings									X															
3.21	Comprehensive Survey of Energy and Water Efficiency Features in Existing Residential and Commercial Buildings <sup>1</sup>	S	S	S				S	S	S	X														S
<b>4.</b>	<b>Education and Outreach</b>																								
4.1	Consumer education programs**	S	S	S	S	S	S	S									X								
4.2	Introduce in School Curriculum**	S	S	S	S	S	S	S										X							
<b>5.</b>	<b>Pricing and Purchasing</b>																								
5.1	Green Power Purchasing*																				X				
5.2	Bulk Purchasing Programs for Energy Efficiency or other Equipment (Public or Private sector)																				X				
5.3	Review net-metering policies																	X		S	S				
5.4	Performance-based Contracting for funding of energy efficiency improvements		S					S	S																
5.5	Utility Rate Reform																	X		S	S				
<b>6.</b>	<b>Technology-Specific Policies</b>																								
6.1	Incentives for Renewable Energy Applications ***				X																	S			
6.2	Clean Combined Heat and Power *																				X				
6.3	Appliance Recycling/Pick-Up Programs*	X			S																				
6.4	White Roofs, Rooftop Gardens (Green Rooftops), and Landscaping*												X												
6.5	Promotion of distributed generation by renewables and clean fossil fuels ***																				X	X			
6.6	Capture and use process heat from industrial and commercial operations				X																	X		X	
6.7	Solar-powered (absorption) Air Conditioning for residential and Commercial Applications	X	X	X	X					X			X												

<sup>1</sup> This option added in response to an e-mail from a TWG member after the 6/6/06 TWG meeting.

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6.8	Promotion of Ground-source Heat Pumps for Residential and Commercial Heating and Cooling	X	X	X	X				X																
6.9	Focus on specific end-uses/technologies	X	X	X	X		S	S	S																
<b>7.</b>	<b>Non-Energy Emissions (HFCs, PFCs, SF<sub>6</sub>, CO<sub>2</sub> Process Emissions)</b>																								
7.1	Participation in Voluntary Industry-Government Partnerships																					X		X	
7.2	Process Changes/ Optimization																			S	S	X	S		
7.3	Leak Reduction /Capture, Recovery and Recycling of Process Gases																			X	X		X		
7.4	Use of Alternative Gases											X										X		X	
<b>8.</b>	<b>GHG Emissions-Specific Goals and Policies</b>																								
8.1	Support for switching to less carbon-intensive fuels (coal and oil to natural gas or biomass)																							X	
8.2	Industry-Specific Emissions Cap and Trade Programs																			X					
8.3	Voluntary Emissions Targets for Industrial Operations																							X	
8.4	Small-source Aggregation																			X				X	
8.5	Negotiated Emissions or Energy Savings Agreements*																							X	
<b>9.</b>	<b>Other</b>																								
9.1	Government Agency Requirements and Goals (including procurement)*								X										X						
9.2	Focus policies and programs for building energy efficiency on specific market segments* **	S	S	S	S		S	S	S			S													
9.3	Reinvestment Fund*		X																						
9.4	Municipal Energy Management							X																	
9.5	Focus on Small and Medium Enterprises (SMEs)*																			S	S	S	S		
9.6	Industrial ecology/ by-product synergy																			S	S	X	S		
9.7	Industrial Audits* ***																					X			
9.8	Extend green campus initiatives to all university buildings*							X	X							X									

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		A.1	A.2	A.3	A.4	B.1	C.1	C.2	C.3	C.4	C.5	C.6	D.1	D.2	D.3	D.4	E.1	F.1	G.1	G.2	H.1	H.2	H.3	H.4	I-1
9.9	Energy benchmarking, measurement, and tracking programs for municipal and state buildings*							S																	
9.10	Integration with Regional Demand Response Initiatives/recommendations*	S					S	S		S									S	S					S
9.11	Water use reduction																								X
9.12	Funding of Research and Development for Energy Efficiency, Renewable Energy, Other GHG Reduction Strategies***	S	X	S	S			S	S		S	S			S				S	S	S	S	S	S	
9.13	Direct or Indirect support for commercialization and production; Indirect support for development***	S	S	S	X			S	S			S			S				S	S	S	S	S	S	