

Catalog of State Actions Residential, Commercial and Industrial (RCI) Technical Working Group

A catalog of state-level, GHG-reducing actions and policy options based on actions undertaken or considered by state, local and private actors. Brief descriptions of these options, and some of the related state actions underway, are available in a companion document.

Key to Future Rankings of Options in the Tables that Follow:

Potential GHG Emission Reductions <u>1/</u>	Potential Cost or Cost Savings <u>1/ 2/</u>
High (H): At least 1.0 million metric tons (MMt) carbon dioxide equivalent (CO ₂ e) per year by 2020 (~1% of current WA emissions)	High (H): \$50 per metric ton CO ₂ e (tCO ₂ e) or above
Medium (M): From 0.1 to 1.0 MMtCO ₂ e per year by 2020	Medium (M): \$5-50/tCO ₂ e
Low (L): Less than 0.1 MMtCO ₂ e per year by 2020, or 1 MMtCO ₂ e by 2050	Low (L): Less than \$5/tCO ₂ e
Uncertain (U): Not able to estimate at this time	Negative (Neg): Net cost savings
	Uncertain (U): Not able to estimate at this time
<u>1/</u> Several measures may overlap in terms of emissions reductions and/or cost impacts. Estimates assume measures would be implemented independently from other measures.	
<u>2/</u> Costs are denoted by a positive number. Cost savings (i.e., “negative costs”) are denoted by a negative number.	

Definition of “Priorities for Analysis”:

- **High:** High priority options will be analyzed first.
- **Medium:** Medium priority options will be analyzed next, time and resources permitting.
- **Low:** Low priority options will be analyzed last, time and resources permitting.

Notation of Options:

* **Options marked in bold with an asterisk (*)** indicate some of the related state actions that are approved or underway, as described further in the companion options description document. TWG members are encouraged to provide information on other relevant actions.

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RCI-1	ENERGY EFFICIENCY PROGRAMS, FUNDS, AND GOALS					
1.1	Demand-Side Management (DSM)/Energy Efficiency Programs, Funds, or Goals for Electricity (including expansion of same)*	H	Neg			Initiative 937 requires that “Each qualifying utility shall pursue all available conservation that is cost-effective, reliable, and feasible.” should provide incentives for consumers to adopt energy efficiency measures
1.2	Demand-Side Management (DSM) Energy Efficiency Programs, Funds, or Goals for Natural Gas, Propane, and Fuel Oil	H	Neg			<i>TWG comments:</i> Could include I-937-like requirements for gas utilities to acquire all cost effective conservation; should provide incentives for consumers to adopt energy efficiency measures
1.3	Business Energy Tax Credit	U	U			<i>TWG comments:</i> Could be applied to business and occupation taxes; perhaps similar to Oregon program. Consider focus on tax credits to promote energy efficiency, renewable energy investments, possibly including sales tax exemption for energy savings performance contracting for public agencies. Impact on government revenues a consideration, but stimulation of economy through market creation, re-spending of energy cost savings may offset revenue loss.

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1.4	Regional Market Transformation Alliance*	M	Neg			WA utilities are already members of the Northwest Energy Efficiency Alliance. <i>TWG Comments:</i> Consider more aggressive investment with manufacturers, bulk purchasing needed. Include using certification programs such as Energy Star by retailers and institutional purchasers.
1.5	Private/Public Efficiency Funds	U	U			<i>CAT Comment:</i> Can leverage innovation in financial services markets <i>TWG Comments:</i> Could provide low interest energy-efficiency loans and other services, support for neighborhood energy strategies; could be patterned after initiatives in other jurisdictions (Cambridge/London)
1.6	Appliance/Equipment/Building/Water Performance Requirements Linked to Property Sales (and Rental)	M	Neg to L	Costs could be significant for parties unable to pass on costs or recover energy savings (depending on how requirements are implemented)		<i>CAT Comment:</i> PSE notes that commercial sector and tenant/owner are among biggest challenges for DSM programs. <i>Note point-of-sale (and rental) ordinances in San Francisco, Austin, other cities</i> <i>TWG Comments:</i> Require heating, cooling, and water heating equipment to meet code when buildings are sold.

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RCI-2 BUILDINGS						
2.1	Advanced Building Codes for Energy Efficiency*	H	Neg to L			<p>WA Building Code Council has adopted rules addressing min. efficiency requirements to comply with state/federal mandates.</p> <p><i>TWG comments:</i></p> <p>Could include consideration of embodied energy, life-cycle emissions of building materials, and the inclusion of renewable energy in building codes. Consider basing residential building energy codes for application on a per capita basis rather than per square foot.</p> <p>Could include lighting efficiency and controls. Consider aggressively improve existing codes. Consider requiring PV and passive solar as part of the code in key heating degree zones.</p> <p>Consider including natural ventilation strategies in codes.</p> <p>Support enforcement of energy codes and/or reestablish special plans examiner program for non-residential energy code. Consider adding GHG impacts to State Building Code Council's charter or scope of responsibilities.</p>
2.2	<u>Promotion and Incentives for Improved Design and Construction</u>	M to H	Neg to H			City of Seattle's LEED Incentive for commercial projects; Seattle's

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	<u>(e.g. LEED, NAHB, Green Globes, Architecture 2030, and other guidelines) in the Private Sector</u>					Built Green Incentive for residential single and multi-family projects. <i>TWG Comments:</i> Could include consideration of embodied energy, life-cycle cost/impacts, renewability of building materials, capture of waste heat from power generation and industrial processes for use in homes and commercial buildings, lighting efficiency and controls. Establish aggressive energy consumption goal. Business assistance program to help identify and achieve GHG goals.
2.3	Improved Design and Construction* , “Government Lead-by-example”	M	Neg to H			Executive Order 05-01, directing adoption of green building practices in construction of new, some renovated existing state buildings (>25,000 ft ²); High-Performance Public Buildings bill (Chapter 39.35D RCW), requires all new state-funded facilities over 5,000 square to meet green building standards; Executive Order 05-01 mandates 10% reduction in State Agency energy purchases from 2003 levels by 9/1/2009; LEED silver standards for WA public buildings. <i>TWG Comments:</i> Apply integrated “whole system”

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						<p>or “clean sheet” design (across multiple issues), ensure that government procurement processes provide incentives to construct high-performance buildings. Require consideration of greenhouse gas emissions, and of options to reduce emissions, where and when government environmental review of projects takes place. Consider meeting Architecture 2030 goals for all government-owned buildings, providing incentives for improvement of government-leased space.</p>
2.4	Support for Energy Efficient Communities Planning, "Smart Growth"	L to M	U	Significant potential contribution to 2035/2050 goals.		<p><i>TWG Comments:</i> Could ensure that building codes support these goals over the long term. Consider administrative changes to enhance integrated design of communities and transport systems, options to reduce urban “heat island” effects. Condition hook-ups to city, county, and utility services on submission of GHG emissions reduction plans. Consider location to be part of a building’s GHG “footprint”.</p>
2.5	Establish Goals, Policies and/or Codes to Reduce Electricity Use for Heating/Drying	U	U			<p><i>TWG Comments:</i> Target improvement in fuel-cycle efficiency of supplying heating and drying energy</p>

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2.6	Energy Efficiency Improvement in Existing Buildings, with Emphasis on Building Operations	M to H	Neg. to L			<i>TWG Comments:</i> Consider incentives for improvement of the energy efficiency of the existing building stock. Focus on building operations, maintenance, and occupant behavior. Could include requirements for upgrading of buildings at time of resale. For medium to large business or agency, require a full time resource conservation manager on premises.
2.7	Reduction of Water Use	L to M	Neg to M			<i>TWG Comments:</i> Strategies to reduce water use and related energy consumption for water provision and treatment, with possible linkage to the Agriculture and Wastes TWG
2.8	Low Income Energy Programs	M to H	Neg. to M			General fund to supplement state’s weatherization and low-income home energy assistance program.
RCI-3	APPLIANCE AND EQUIPMENT (INCLUDING LIGHTING) STANDARDS					
3.1	More Stringent Appliance/Equipment/Lighting Efficiency Standards*	M	Neg			2005 Legislature adopted minimum efficiency standards for 12 products (RCW 19.260.040). State standards for four of these products were eliminated in 2006 legislation after stricter federal standards were established for those products. State standards for 8 types of products remain. <i>CAT Comment:</i>

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						Consider in particular the management of mercury from CFLs. Consider here (and other options) impact on the lower income groups. <i>TWG Comments:</i> Encourage national manufacturers to invest in improvements, and help to create markets. Consider other environmental impacts of efficient devices.
3.2	Ban the Sale of Incandescent Bulbs	M	Neg			
RCI-4 EDUCATION AND OUTREACH						
4.1	Consumer Education Programs	U	U			<i>TWG Comments:</i> Could include linkages of consumer education programs with retail sales organizations, requirement of consumer education at the time of sale, use of materials on environmental impacts education by governments to engage small businesses on GHG emissions reduction, promote lean manufacturing by industry
4.2	Energy Efficiency and Environmental Impacts Awareness in School Curricula	U	U			<i>TWG Comments:</i> Could include preparation of new curricula, including integrated design curricula.
4.3	Post-secondary Specialist Education and Certification for Building Energy	U	U			<i>TWG Comments:</i> Could begin with investment in

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	Efficiency Experts and Related Trades					pilot program at one or two leading schools – UW and/or WSU. Develop programs for integrated design.
4.4	Post-secondary College and University Programs	U	U			<i>TWG Comments:</i> Could begin with investment in pilot program at one or two leading schools – UW and/or WSU. Develop programs for integrated design.
RCI-5 PRICING AND PURCHASING						
5.1	Green Power Purchasing for Consumers	M	L to M			<i>TWG Comments:</i> Consider flexibility for end-use customers to purchase Green Power without geographical restrictions Create statewide stakeholder advisory group for utility programs.
5.2	Net-metering for Distributed Generation and Combined Heat and Power	U	U			<i>TWG Comments:</i> Consider incentives, elimination/reduction of financial, regulatory, and other barriers to implementation of systems including avoided cost barriers for CHP; simplification and standardization of permitting and prescreening of projects. Consider increase in existing capacity cap to 1 MW, allow aggregation if appropriate in commercial and/or agricultural applications.

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5.3	Rate structures and Technologies to Promote Reduced GHG Emissions (including Decoupling of Utility Sales and Revenues)	U	U			<p><i>CAT Comments:</i> Take into account PSE's experience in piloting time of use rates.</p> <p><i>TWG Comments:</i> Consider interaction of green building programs and rate structures. Could include different types of rate structures and bases (per occupant versus per square foot, for example) for rate structures, and metering/billing strategies and technologies to facilitate consumer decisions.</p>
5.4	Bulk Purchasing Programs for Energy Efficiency or Other Equipment	M	Neg.			<p><i>TWG Comments:</i> Consider encouraging public sector to invest to create markets, offer sales tax exemption for bulk purchase of Energy Star equipment.</p>
5.5	Sales tax credits	U	U			<p><i>TWG Comments:</i> Consider eliminating sales tax for certain energy-efficient products, Increasing taxes for products with efficiencies below specific baselines.</p>
RCI-6	CUSTOMER-SITED DISTRIBUTED ENERGY AND COMBINED HEAT AND POWER					
6.1	Provide Incentives to Promote and Reduction of Barriers to Implementation of Renewable Energy Systems*	M to H	L to M			Executive Order 05-01 mandates 10% reduction in State Agency energy purchases from 2003 levels by 9/1/2009, including through use of renewable energy.

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						<p><i>TWG Comments:</i> Consider incentives and barrier elimination, including avoided cost barriers for CHP For solar PV, consider expanded incentives to include commercial systems, offer B&O tax credits for commercial-scale systems, and offer low- or no-interest loans for commercial and residential systems. Could simplify and standardize permitting for industrial and large commercial systems; support land use prescreening efforts to support siting.</p>
6.2	Provide Incentives and Resources to Promote and Reduction of Barriers to Implementation of Combined Heat and Power (CHP, or “cogeneration”) and Waste Heat Capture	M to H	Neg. to M			<p><i>TWG Comments:</i> Could include incentives and barrier elimination, including avoided cost barriers for CHP; include options for capture of waste heat from power generation and industrial processes for use in homes and commercial buildings. Simplify and standardize permitting for industrial and large commercial systems; support land use prescreening efforts to support siting. Require fossil-fueled generation to be CHP. Encourage increasing overall on-site energy efficiency.</p>

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6.3	Enhance and Expand Thermal Energy Infrastructure for GHG Emissions Reduction	M	Neg. to H			<i>TWG Comments:</i> Could include expanded district heating, district-level planning for space conditioning, water heating, and process heating in general
6.4	Smart Electrical Grid	U	U			<i>TWG Comments:</i> Consider promoting a “smart electrical grid” that accommodates interconnection of distributed power generation, charging/accepting power from hybrid cars, electricity demand management via the grid, and other functions. Could also include issues related to ownership of distributed generation—municipal PV ownership. Spans RCI, ES TWGs, likely others. Collaboration on pilot development underway in WA.
RCI-7 GHG EMISSIONS-SPECIFIC GOALS AND POLICIES, INCLUDING PROCESS EMISSIONS						
7.1	GHG Cap and Trade Program (for RCI Sectors)	U (depends on cap level)	U			A number of considerations apply (see Summaries)
7.2	GHG or Carbon Tax	U (depends on tax level)	U			<i>TWG Comments:</i> Need to consider impacts of taxes on different groups, investment; implementation for fairness

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7.3	Switching to Lower GHG Fuels	M	L to M			<i>TWG Comments:</i> Switching to lower overall fuel-cycle GHG emissions. Encourage RD&D for cellulosic-based fuels
7.4	Policies and/or Programs Specifically Targeting Non-energy GHG Emissions	U	U			<i>TWG Comments:</i> Consider performance standards as an alternative to more prescriptive standards. Standards to require inclusion of fly ash in cement, and encourage use of innovative low-GHG cement fillers.
7.5	Negotiated/Voluntary Emissions or Energy Savings Agreements	U	U			<i>TWG Comments:</i> Consider incentives for voluntary reductions. Business assistance program to help identify and achieve GHG goals.
7.6	Research and Development - Carbon Sequestration and Removal for RCI Energy End-users	U	U			<i>TWG Comments:</i> Could include biomass gasification with use of resulting activated carbon
7.7	Identify GHG Emissions Impacts and Measures to Avoid, Minimize, or Mitigate them for Projects Requiring Government Review	U	U			<i>TWG Comments:</i> Consider requiring [SEPA] review to quantify GHG emissions and identify measures to avoid, minimize or mitigate emissions for projects requiring government review.
7.8	Identify GHG Emissions Impacts and Measures to Avoid, Minimize, or Mitigate them in Designing Rules and Regulations	U	U			<i>Added by the CAT.</i>

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RCI-8	PRODUCT CONSUMPTION AND DISPOSAL PRACTICES FOR REDUCED GHG EMISSIONS					
8.1	Appliance and Lighting Product Recycling and Design	M	U			Overall goal is reduction of GHG footprint of products and packaging; additional benefits include reduction of non-GHG pollutants, savings of materials. Could include design of product/packaging for use as clean fuel if not reused or recycled.
8.2	Labeling of Embodied Life-cycle Energy and Carbon Content of Products and Buildings	U	U			