The Built Environment

Recommendations from other states

South Carolina

Energy Efficiency Programs, Funds, or Goals for Electricity (Residential, Commercial, and Industrial) [SC, RCI-1]

Increase the efficiency of electricity use ("energy efficiency") in the state through increased investment in energy efficiency programs run by utilities or others, energy efficiency funds, and/or energy efficiency goals. This policy would take a two-pronged approach to increasing the efficiency of electricity use in the state:

1. implementing new or expanding existing electric utility energy efficiency programs for all sectors; and
2. conducting consumer outreach on the value inherent in performance contracting and energy management programs for commercial, industrial, and institutional entities.

To implement expanded electric energy efficiency programs, South Carolina could revise existing statutes to clarify support and provide incentives for utility investments in cost-effective energy efficiency. The efficiency with which electricity is used today can be improved in countless applications across all sectors and throughout the state. These efficiency improvements can lead to increased productivity for a fixed amount of electricity input, or can produce the same results using less electricity. South Carolina's efforts to date offer substantial room for improvement. As a result, the state has "low-hanging fruit" compared to states with well-established energy efficiency programs.

The goals of this policy are to reduce electricity use, adjusted for growth, by 1% per year by 2015 and by 1.5% per year by 2020. The policy would apply to all electric utilities (public and private), and would affect customers in all sectors (residential, commercial, industrial, and institutional/government). This policy would also implement an educational awareness campaign showing the value inherent in performance contracting and energy management programs for commercial, industrial, and institutional entities.

Demand-Side Management/Energy Efficiency Programs, Funds, or Goals for Natural Gas, Propane, and Fuel Oil [SC, RCI-2]

Implement programs or policies to increase investment in demand-side management (DSM) programs for natural gas, propane, fuel oil, and other

combustion fuels. Energy efficiency has been shown to be an extremely cost-effective resource for reducing natural gas use. The high costs of propane and fuel oil point to the potentially significant value of implementing DSM for these fuels.

The goals of this policy are to reduce natural gas use, adjusted for growth, by 1% per year by 2015, and sustain annual savings through 2020 through implementation of energy efficiency programs. The policy would apply to natural gas utilities (public and private) and customers in all sectors. Similar goals should be set for other fuels, although they may need to be modified by the South Carolina Public Utility Commission due to the smaller number of affected parties who may have special circumstances. The goals may be accomplished through programs run by utilities or others, energy efficiency funds, and/or energy efficiency goals, and should be designed to complement RCI-1. To implement expanded DSM programs, South Carolina could existing statutes could be clarified to support utility investments in cost-effective energy efficiency at the levels indicated in this policy.

This policy would also conduct consumer outreach on the value of performance contracting and energy management programs for commercial, industrial, and institutional entities. This policy also considers efficiency gains to be achieved through fuel neutrality, which refers to encouraging fuel switching where it results in reduced GHG emissions, lower energy use, economic savings, or some other metric.

Incentives and Regulatory Reform to Promote Implementation of Renewable Energy Systems, Including Solar Hot Water (Residential, Commercial, and Industrial) [SC, RCI-3]

South Carolina is endowed with good, useful solar resources for water heating throughout the state. Leverage that potential through programs and policies that encourage consumers to switch from using fossil fuels to using solar energy for water-heating applications.

The goals of this policy are that, beginning in 2009, 1% per year of all South Carolina homes and suitable business facilities will have solar hot water installations, reaching 10% of all South Carolina homes by 2020. This policy also seeks to encourage businesses to adopt solar cooling technologies, which would have significant benefits in terms of reducing peak electricity demand.

Energy Management Training/Training of Building Operators [SC, RCI-4]

In many facilities, utility bills can be significantly decreased through more efficient equipment and building operation. Recommend the development and implementation of a statewide Energy Conservation Education and Training Program for energy managers and facility operators, to learn techniques for improving the efficiency of their steam, process heat, pumping, compressed air, motors, and other systems. Classes would be conducted at the state's Technical College Facilities, and could draw on or expand preparation classes available from the South Carolina Energy Office. Energy management training would include instruction in and demonstration of successful energy management programs throughout the state, using Winthrop University and other government projects as models. The South Carolina Energy Office would develop the course curricula (to include instruction in and demonstration of successful energy management programs) and requirements for licensing, as well as maintain a database of licensed professionals.

Starting in 2018, successful completion of this training would be required for energy managers and facility operators in all sectors (residential, commercial, industrial, and institutional) by a licensing requirement, and continuing education credits would be required annually. Companies could outsource energy management, energy planning, and facility operations, or they could retain licensed staff to oversee operations.

Incentives, Resources, and Regulatory Reform to Promote Energy Recycling, Including Combined Heat and Power [SC, RCI-5]

Combined heat and power (CHP) refers to any system that simultaneously or sequentially generates electric energy and utilizes the thermal energy that is normally wasted, significantly increasing efficiency over separate generation of electricity and thermal energy. Many CHP systems are capable of an overall efficiency of over 80%—double that of conventional systems.

Another significant advantage is the reduced transmission and distribution losses associated with centralized power generation. Existing data suggest the existence of a very large unrealized potential for CHP in South Carolina. However, energy recycling, including CHP, is challenged by several non-economic factors, such as regulatory and environmental permitting complexity or uncertainty, utility resistance to CHP because of potential loss of expected revenue, and increased complexity of facility design and operations. Additional installations of new CHP systems by residential, commercial, institutional, and industrial energy consumers, and continued operation or expansion of existing systems, could be encouraged through a combination of regulatory changes (starting with a review of state and regional policies on permitting, net metering, standby rates,

interconnection, and other issues affecting CHP), education and information transfer, and incentive programs.

Effort should be increased toward tapping into the unrealized potential for CHP and waste heat recovery in South Carolina, with a goal of installing 100 megawatts in 2011 and realizing 40% of the additional technical potential by 2020. (Existing CHP installations are not included in the 40% goal but should be kept in service.)

Incentives and Policies for Improving Building Efficiency, Including Building Energy Codes [SC, RCI-6]

Almost half of all U.S. GHG emissions annually are associated with the operation of RCI buildings, along with the embodied energy of building materials. Improving the energy efficiency of state and/or local buildings—for example, by strengthening building energy codes—will have a considerable immediate and ongoing impact on reducing building-sector GHG emissions. Although South Carolina law requires statewide use of the most up-to-date building codes as defined by the International Energy Conservation Code (IECC), conflicts between these codes and other provisions of state law have severely weakened the effectiveness of the codes.

Manufactured housing is exempt from South Carolina's building energy code. Instead, manufactured homes are subject to standards established by the U.S. Department of Housing and Urban Development. A significant percentage of South Carolinians reside in manufactured housing.

The state should take action to remove provisions of state law that conflict with IECC codes and address obstacles to renewable energy use, daylighting, and non-conventional energy-efficient building materials in buildings; improve statewide enforcement of both existing and new building codes at all levels; update South Carolina energy codes regularly; consider advanced codes (i.e., beyond IECC) as appropriate for the state; implement requirements and incentives for ENERGY STAR-certified manufactured housing and manufactured nonresidential buildings; and lobby for more stringent codes for manufactured housing at the federal level.

The goals of this policy are twofold: that 100% of South Carolina's local governments adopt and fully enforce the 2006 IECC in 2009 and the 2012 IECC in 2015; and, that ENERGY STAR-certified manufactured homes achieve 25% market penetration for new manufactured homes by 2010 and 75% by 2020.

Improved Design and Construction in New and Existing State and Local Government Buildings, "Government Lead by Example" [SC, RCI-7]

The state should undertake government-led, or "lead by example," initiatives and requirements that both help state and local governments achieve substantial energy cost savings and promote the adoption of clean energy technologies for significant GHC emission reductions in new and existing state and local government buildings.

This policy achieves GHG reductions by setting a goal for green power purchasing by state and local facilities, as well as conducting audits of energy performance and operations of state and other government buildings and using audit results to target and prioritize investments in improving government building energy efficiency. Other elements include developing green procurement strategies (such as state bulk purchase of high-efficiency appliances and equipment); providing financial and technical assistance and incentives for implementation of energy-saving projects in existing buildings and facilities; requiring that all state and local facilities implement an energy management program; implementing design features to reduce energy use within state-funded and other government buildings through incorporation of proven planning guides and regulations; and expanding A88 to include South Carolina school buildings. The effectiveness of this policy will be determined in part by sustained efforts to review and improve efficiency goals over time.

The goals of this policy are to procure and carry out a program to audit energy use and identify energy efficiency opportunities in state and local government buildings (existing, undergoing renovation, and under design), at a rate of 15% of these buildings per year over a 5-year period. In addition, this policy sets a goal that, by 2018, a minimum of 20% of electricity consumed by state and local facilities and schools should come from in-state renewable resources. The policy would apply to state government agencies, local governments, schools, and universities.

Participation in Voluntary Industry–Government Partnerships (Including Incentives) [SC, RCI-8]

Create a voluntary program in which businesses, government, and industry become partners in reducing the emission of process gases that have high global warming potentials. The program would be administered by state agencies and would provide technical assistance, networking, best practices exchange, and rewards and recognition (including tax incentives). Verification of emission reductions would be a critical element of this program.

The goals of this policy are to establish partnerships with industrial and other large users of energy (and/or of process gases that are GHGs) to encourage them to set emission reduction targets to return to 2000-level

emissions by 2012 and 10% below 2000-level emissions by 2020, or to meet or exceed state goals. The largest emitters would be approached first. The technical assistance, networking, reward, and recognition aspects of the program would be set up by 2009. This may be accomplished through expansion and modification of already-established programs.

Incentives and Policies for Improving Appliance Efficiency, Including Appliance Standards [SC, RCI-9]

Adopt a policy to ensure high energy efficiency of appliances in the state. First, this policy would establish and regularly update appliance efficiency standards at the state level, thereby reducing the market cost of energy efficiency improvements by incorporating technological advances into base appliance models. Second, this policy involves the creation of state sales tax exemptions or income tax credits for purchase of products certified as ENERGY STAR (a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy), designed to promote products exceeding the energy efficiency levels mandated by minimum federal and state standards in the marketplace.

The goals of this policy include implementing the efficiency standards for appliances not covered by federal standards, as recommended by the Appliance Standards Awareness Project; doubling market penetration of ENERGY STAR appliances in purchases made in the RCI sectors, where applicable, up to 100% by 2015; and achieving 100% market penetration of ENERGY STAR appliances in purchase transactions in which state funds are involved (state purchasing contracts, state grants or loans, etc.) by 2010.

North Carolina

Demand-Side Management Programs for the Residential, Commercial, and Industrial Sectors [NC, RC-1]

Very similar to South Carolina's RCI-2 recommendation with the exception that the goal is slightly different.

The goal for this option is to reach a level of DSM investment in North Carolina equal to 1.5% of utility revenues by 2012.

Examples of utility-funded programs that this option supports include:

- Residential building programs—including programs to promote higher efficiency new and existing homes, and the expanded use of renewable energy in residences, with specific programs focused on the often under-served low-income and rental properties segments;

- Commercial and industrial building programs, including efficiency programs for new and existing buildings, and renewable energy programs for commercial and industrial buildings; and
- Multi-sector strategies, including demand response and demand reduction programs, technical assistance, education, training, consumer outreach, and promotional activities to support the DSM programs, and grants, loans, performance contracting arrangements, and other incentive programs to provide financial support or incentives for implementation of DSM programs.

Expand Energy Efficiency Funds [NC, RCI-2]

Significantly increase the existing Public Benefits Charge to support more investments in energy efficiency and renewable energy options. The public benefits charge (sometimes call systems benefits charge) is a fee assessed to utility customers based on their usage of energy in a given time period. With deregulation in many states, utility commissions often lose the ability to require the electric utilities to have efficiency programs. The result in many states is the development of the public benefits charge, which is a non-bypassable charge on electric bills. The funds collected are then provided to a third party to provide energy efficiency programming. The CAPAG recommends that these increased public benefits charges be collected under the oversight of the NC Utilities Commission, and invested in residential, commercial, and industrial energy efficiency and renewable energy programs through one or more third-party administrators. Long-term consistency in management and dedicated application of funds collected via public benefits charges to the target programs will be crucial to the success of this initiative.

Investments in energy efficiency and renewable energy made using public benefits funds would be expected to span a wide variety of residential, commercial and industrial applications.

The goal is to provide public benefit charges adequate to implement energy efficiency and renewable energy programs comparable to the more effective public benefits charge-funded programs in the United States. Based on information on energy efficiency programs in other states, 1% of utility revenues was chosen as an appropriate public benefits charge goal for North Carolina at present.

Energy Efficiency Requirements for Government Buildings [NC, RCI-3]

Similar in concept to South Carolina's RCI-7, with more specific goals as outlined below:

- Adherence by new and renovated government buildings to specific energy-related guidelines providing considerable improvement in building energy performance relative to standard practice, with a specific goal of reducing the energy consumption per square foot of government building area in North Carolina by 20% by 2027.
- Revising administrative policies as needed to provide incentives for government organizations to invest in increased energy-efficient construction or building alterations.
- Extending green campus initiatives to all public academic and government campuses.
- Energy benchmarking, measurement, and tracking programs for municipal and state buildings.
- Energy efficiency and renewable energy requirements for new, renovated, and existing government buildings.

Market Transformation and Technology Development Programs
[NC, RCI-4]

Develop long-term and robust market transformation and technology development programs. Such programs must provide 1) consistent and enduring support for technology improvement and incorporation, 2) continued investment in technology development and integration, and 3) independent evaluation of the efficacy of the technologies.

This recommendation is broadly defined and does not address a particular technology or market. Rather, it addresses a method for bringing appropriate technologies and processes to the marketplace. Defined as such, the CAPAG recommends that the following components be included in market transformation strategies for North Carolina, though others can and should be included as well:

- Expand existing programs to promote the appropriate use of premium motors and drives in industrial applications.
- Provide renewed and intensified support for implementation of renewable energy applications such as solar water heaters.
- Target the early retirement of older appliances using a "bounty" program.
- Provide support for processes that recover waste heat from industrial applications, and promote the use of ground-source heat pumps by helping to identify and qualify appropriate applications in the residential, commercial and industrial sectors.
- Encourage national legislators to provide increased federal funding for the U.S. Environmental Protection Agency's ENERGY STAR program in order to identify and qualify a greater number of products under ENERGY STAR labeling.
- Encourage and enable smaller purchasers to act in aggregate groups to reduce costs and quantify emission reduction benefits from

technology and process improvements. This could include, for example, setting up programs to organize consumers and to work with them to provide information resources to evaluate and take advantage of savings emissions reduction opportunities.

- Provide a continuous funding level for near-term research and deployment of energy efficient technologies and processes, including providing stable or expanded state funding for existing programs and new initiatives.

Improved Appliance and Equipment Efficiency Standards [NC, RCI-5]

Similar to South Carolina's RCI-9 in that it recommends replicating the appliance and equipment efficiency standards adopted in other states for appliances not covered by federal standards. But it also recommends advocating for stronger federal appliance efficiency standards where doing so is technically feasible and economically justified.

It is recommended that development of new standards start in 2010, with implementation starting in 2012.

- Development of committee or other working group to develop recommendations on appliance standards (similar to, for example, the existing North Carolina group that considersbuilding code changes).
- Adoption of State-level Appliance Efficiency Standards, defined sufficiently broadly to include, for example, commercial sector and information technology (IT) equipment.
- The CAPAG voices support for adoption of more stringent federal-level appliance efficiency standards, and recommends that North Carolina's congressional delegation and state government officials voice support for such standards.
- Design standards for recycling of materials in appliances, and include water use reduction as a criterion for appliance efficiency improvement.
- Assistance programs to help low-income consumers with purchase of appliances meeting more stringent standards, so as to reduce the higher-first-cost burden of higher-efficiency appliances on those consumers.
- Introduce elevated energy standards for appliances and equipment purchased by public agencies.
- Encourage state agencies, utilities, and other organizations involved in appliance and equipment efficiency programs to work with manufacturers to identify devices where significant savings are possible, and to consider cost and technical impacts on manufacturers—and how to address those impacts—when setting new standards.

Building Energy Codes [NC, RCI-6]

Very similar to South Carolina's RCI-6 with a slightly different goal.

95% enforcement of existing building energy codes by 2008, and establishment and similar enforcement of a new energy code by 2010 that requires new North Carolina residences and commercial/industrial buildings to be 20% more efficient than buildings meeting current national building energy codes.

"Beyond Code" Building Design Incentives and Targets, Incorporating Local Building Materials and Advanced Construction [NC, RCI-7]

Develop incentives and targets to induce the owners and developers of new and existing non-government buildings to markedly improve the efficiency with which energy and other resources are used in those buildings, along with provisions for raising targets periodically and resources to help achieve the desired building performance. This option includes elements to encourage the improvement and review of energy use goals over time, and to encourage flexibility in contracting arrangements to encourage integrated energy and resource efficient design and construction.

- Promotion and Incentives for "beyond code" construction, using programs of various types to focus on specific sectors (new home construction, apartments, low income housing, commercial new construction, commercial renovation construction, and others), with improved design and construction standards and guidelines addressing multiple aspects of resource conservation.
- Promotion of energy technologies include solar water heating and solar heating/cooling building technologies, solar photovoltaic power on commercial buildings and many new homes, solar hot water heaters on homes and other buildings, new and existing lighting building energy technologies, and other applicable new technologies.

The goals of this option are to induce 5% of new residential buildings and 2% of new commercial buildings annually to go to "beyond code" energy use levels that improve energy performance over the average new building by 30%, to induce significant examples throughout the state of various building types that use 50% or less energy than is supported by the existing building code, and to provide incentives such that energy efficiency in 20% of existing buildings is increased by 15% by 2015, and energy efficiency in 20% of existing commercial buildings is increased by 20%.

Education (Consumer, Primary/Secondary, Post-Secondary/Specialist, College and University Programs) [NC, RCI-8]

Similar in concept to South Carolina's RCI-4, but goes beyond to expand education & training opportunities, including programs in primary/secondary schools.

Recommends that consumer and primary/secondary schools education programs focused on these issues be created, or augmented and expanded where they exist already. In addition, in order to effectively implement many of the other RCI options above, specific and targeted education (at the community college, university, and post-graduate levels), outreach, and licensing requirements will be required for professionals in a variety of building-related trades in order to ensure that those professionals have the expertise to support aggressive GHG mitigation options.

Elements of this option include:

- training, education, and certification for builders and contractors,
- training and certification of building code and other officials in energy code enforcement,
- energy management training of building operators,
- continuing education for building design professionals, including architects, engineers, developers, contractors, urban planners, and realtors,
- energy efficiency and related education introduced at community colleges and trade schools, consumer education and consumer information programs, and introduction/augmenting of energy and environmental curricula in schools.

Green Power Purchasing (required for State facilities) and Bulk Purchasing Programs for Energy Efficiency or Other Equipment [NC, RCI-9]

The use of "green power" should be significantly expanded, and public- and private-sector programs for the bulk purchase of high-efficiency appliances and equipment should be developed. "Green power" supplements the state's existing power supply with electricity generated from renewable resources like the sun, wind and organic matter. This option expands an existing voluntary North Carolina program by making green power purchases mandatory for State facilities.

Recommended goals include:

- State facilities purchase energy through NC GreenPower or a similar green power provider to cover 20% of their power needs by 2018, over and above the requirements of renewable generation within an Environmental Portfolio Standard or similar requirement applying to electricity suppliers. This target would be phased in starting in 2008.
- For bulk purchases – develop a program to address purchases of 10% of electricity-consuming equipment purchased annually by state agencies, and 1% of electricity-consuming equipment purchased annually by all commercial/institutional sector consumers. Devices purchased under the energy efficiency bulk purchase program would have a target consumption of 20% less electricity, on average, than devices that would otherwise have been purchased.

Distributed Renewable and Clean Fossil Fuel Power Generation
[NC, RCI-10]

Implementation of distributed renewable and clean fossil fuel power generation systems of less than 10 MW through a combination of regulatory changes and incentive programs.

Elements of this program include:

- Review existing net-metering policies, including policies that affect electricity consumers who install on-site combined heat and power or distributed generation fueled with renewable or fossil fuels.
- Review as needed, rate issues, including the potential for decoupling of utility revenues from sales and rate design, with a specific focus on the impacts of rate design on greenhouse gas emissions.
- Provide incentives, including, as needed, increasing existing tax and utility incentives, for renewable energy applications such as photovoltaics and other renewable power sources, sufficient to reach the renewable energy development goals below.
- Promote clean combined heat and power in all sectors through, for example, a combination of utility incentives, information provision, streamlining of connection requirements, providing low-interest loans, and/or tax credits for potential hosts/owners/developers of these systems.
- Funding of research and development for distributed renewable and clean fossil fuel power generation, and provide direct or indirect support for in-state commercialization and production of new or advanced technologies for distributed renewable and clean fossil fuel power generation.
- Encourage the development of building-integrated distributed renewable and clean fossil-fuel power generation.

The goal of the program would be to implement 25%–33% of North Carolina's combined heat and power potential by 2020. An additional 2% to 4% of all NC homes will have solar hot water installations by 2020. This option also includes the goal of implementing 35 additional MW of distributed renewable generation over and above renewable portfolio standard-related new generation by 2020.

Residential, Commercial, and Industrial Energy and Emissions Technical Assistance and Recommended Measure Implementation [NC, RCI-11]

Technical assistance should be provided to help identify options for energy consumers to reduce fossil energy use and to reduce non-energy emissions of GHGs, and consumers should be provided with information and incentives allowing them to follow-up on that assistance to implement recommended measures.

This initiative may include the following elements:

- Residential energy technical assistance for existing homes that identifies the most cost-effective energy efficiency measures for the individual homes visited. The technical assistance program can include diagnostic testing and analysis specific to the features of the home being investigated. The results reported to the homeowner can provide estimates of energy use, energy cost savings, and reductions in emissions due to implementation of the recommended measures.
- Commercial energy technical assistance for existing commercial buildings similar to the residential services, but most likely not including diagnostic testing. The analysis associated with technical assistance can also consider the benefit to the individual businesses visited of being served under alternative utility rate structures and of taking advantage of load control opportunities.
- Industrial energy technical assistance that identifies key efficiency measures, such as process heat changes, motor efficiency improvements, boiler efficiency provisions, compressed air system measures, as well as lighting and building envelope efficiency improvements. The industrial technical assistance program can identify opportunities for capture and use of process heat, as well as for implementation of combined heat and power. Opportunities for reducing the use of non-energy greenhouse gases can also be considered. Evaluation of the benefit to the individual plants visited of being served under alternative utility rate structures and assessments of load control opportunities can be included as well.
- The technical assistance programs can include follow-up mechanisms by which those who receive services are contacted at least twice after receiving the results to answer questions and give suggestions for

installing the recommended measures, and to provide access to incentives (such as grants to cover a portion of the incremental cost of efficiency improvements) and financial assistance (such as low-interest loans) to encourage implementation of recommendations.

Initial goals for this option are to provide over 10,000 residential technical assistance visits, 1,500 commercial building technical assistance visits, and 300 industrial technical assistance visits annually once the technical assistance programs are fully implemented, and to have over 50% of consumers provided with assistance visits implement measures providing at least 50% of the GHG emission reduction potential of the recommendations. These goals should be increased if needed, over time, to help to fully implement other RCI options.

Maryland

Amend State Building Codes to Improve Energy Efficiency

Amend existing building codes to incorporate green building design, construction and operation principles and minimum energy efficiency performance standards in order to establish a green building and energy efficiency minimum (or baseline).

Target concepts that potential legislation could address include:

- Building Permit Amendments
- Building Commissioning
- Measurement & Verification Plans
- Demand Ventilation
- Ventilation and Thermal Comfort
- New & Replacement Roofs
- New Household Appliances
- Parking Requirements
- Training Building Inspectors

Increase Availability of Energy Efficiency Information ["Another Option for Maryland"]

In addition to promoting "green buildings," encourage energy efficiency investments in existing and new buildings by making energy information available for homes and commercial buildings. Home buyers could determine not only if they could afford to buy the house, but also whether they could afford to live in it. Sellers would have an incentive to make energy-efficient investments in their property. The lending industry would benefit because a home buyer might be able to afford a larger mortgage if the operating costs of the home were lower.

Incentives for Green Buildings Beyond Minimum Code Requirements

Work in partnership with the business community and other interested parties to make sure that the cost-saving potentials associated with the different Green Building practices are well understood by developers, building managers, construction companies, investors and owners. Training programs could be developed and implemented to voluntarily extend Green Building practices.

Work in partnership with the business community and other interested parties to develop appropriate educational and outreach programs. Possible program funding sources could include existing tax incentives and revenues from RGGI's consumer benefit fund. Added construction costs for incorporating green practices could be financed by low-risk, low-interest bank loans premised on the borrower's lower monthly energy expenses, and tax-free savings funds to encourage citizens to save up for green building improvements.

Increase Lighting Efficiency Standards

Adopt legislation to prescribe a minimum level of operating efficiency for lighting devices by specified dates. The primary purpose of this legislation would be to phase out less efficient General Service Lighting Devices (i.e. Incandescent light bulbs) with General Services Lighting Devices that meet a minimum energy efficiency standard in lumens per watt.

Publicly Administered Energy Investment Fund

A publicly administered energy investment fund is a designated revenue stream that a state can use to fund energy efficiency programs. Sixteen states use public benefit funds to implement energy efficiency and renewable energy programs through utilities or third-party contractors. A publicly administered energy investment fund should be created a to help the State meet the EmPOWER Maryland energy efficiency goals using revenues generated from RGGI as a starting point.

Energy Efficiency Performance Standard

Adopt Energy Efficiency Performance Standard legislation requiring utilities to reduce electricity consumption and peak demand by a specified amount by implementing cost-effective programs targeted to consumers. An Energy Efficiency Performance Standard (EEPS) is mechanism to encourage more efficient generation, transmission, and use of electricity. State statutes or public utility commissions set targets for electricity demand

reduction by end-users and allow the utilities flexibility to achieve the targets through programs they manage.

EEPS Elements:

Goals – These require utilities to reduce a specified percentage of their electricity demand through end-user demand reduction by a specified date. Typically, energy reductions are ramped up incrementally. This gives utilities the chance to develop expertise in administering programs. In Maryland, the savings target could be pegged to the Governor's EmPOWER Maryland target of a15% per capita reduction in electricity use by 2015.

Interim Progress Reports – Utilities report on the progress of their energy efficiency programs as compared to the corresponding interim benchmarks in the statute or regulation. These are conducted on a regular multi-year cycle, such as every 2 or 3 three years. Progress is measured as a percent reduction of the prior year's sales.

Third Party Measurement and Verification – This ensures that utilities meet energy savings goals for programs they implement and protect consumers against paying for unrealized energy savings.

Incentives and Disincentives – If utilities establish an efficiency program and it falls below a specified percentage of the savings targets, they pay a penalty. If they greatly exceed the targets, they earn a specified percentage of the net benefits.

WashCOG ("National Capital Region Climate Report")

Energy Efficiency Measures

Regional Green Building Policy

- Implement a 2007 COG regional green building policy requiring all new public sector buildings to achieve LEED Silver levels and all private-sector commercial buildings to meet a regional LEED-certified plus standard or equivalent.
- Set energy performance goals for public buildings.
    - Benchmark energy performance in all buildings using common metrics (such as kWh/sf or BTU/sf) and readily-available tools such as ENERGY STAR®'s Portfolio Manager.
    - Set a goal for improving the energy performance of existing public sector buildings, to be achieved through retrofits for greater energy efficiency.

    - Develop educational campaigns for public sector employees to encourage energy conservation as a smart business practice.
- Develop incentives and educational outreach to improve the energy efficiency of existing private commercial and residential buildings.
- Identify best practices for improving energy utilization in existing buildings including energy performance contracting.
- Develop policies and programs that promote implementation of green affordable housing.

Energy Conservation and Efficiency

- Develop regional energy conservation goals and timetables.
- Develop a regional energy conservation and efficiency plan that supports meeting regional greenhouse gas emission reduction goals.
- Develop regional program for utilities to pay for home weatherization and recoup investment costs through utility bills.
- Explore provision of energy audits and energy retrofits for individuals and businesses through regional cooperative effort.
- In collaboration with local governments and area wastewater utilities, identify best practices and evaluate the potential for reducing greenhouse gas emissions through methane recapture and use of biosolids as a fuel as means for reducing energy requirements for operations at area wastewater treatment plants and landfills.
- Governments and businesses in the region conduct energy audits of buildings and operations (including fleets) to establish a performance baseline from which to measure future benefits from the energy efficiency measures they implement.

Local Governments Leading by Example: Energy Use

- Identify best practices to support reducing overall local government energy use by 15% by 2012.
- Examine the feasibility of setting a regional percentage goal for incorporating ENERGY STAR® standards in new buildings.
- Establish regional goal of 20% renewable energy purchase by 2015 by local governments.
- Evaluate regional cooperative purchase and/or reverse auctions to facilitate green power implementation among COG members.
- Consider a regional cooperative purchasing approach to facilitate cost-effective implementation.
- Examine options and develop plans for replacing street lights with energy efficient street lighting (LED or other options) across the region.
- Promote regional energy performance contracting to reduce energy use in public buildings.

- Develop a long-term goal for carbon neutrality for all government buildings.
- Enhance and expand existing recycling programs. Consider specific regional recycling goals.

Reduce Energy Consumption/Demand Management

- Develop partnerships with the private sector and other organizations.

    - Partner with the Greater Washington Board of Trade Green Committee and Potomac Conference to assist businesses with taking action to reduce greenhouse gas emissions and implement best practices.
    - Identify regional environmental and community group partners.
    - Partner with electric, gas, and water utilities on regional energy conservation and energy efficiency program outreach.
    - Partner with schools, universities, and local governments to establish the region as a leader in green teaching.
    - Partner with schools, universities, and local governments abroad to find and apply innovative lessons about climate mitigation, renewable energy and energy efficiency.
    - Identify and consider leading models in European metropolitan regions to inform the region on effective application of renewable energy from solar, wind and biomass sources.

Clean Energy Sources

Renewable Energy

- Establish the region as a leader in the production and use of renewable energy.
- Promote adoption of a 20% RPS (Renewable Portfolio Standard), including local government purchases.
- Work with jurisdictions exporting electricity into the metropolitan Washington region to encourage investments in clean low-emitting energy sources.

Regional Greenhouse Gas Reduction Initiative (RGGI)

- Advocate for expanding RGGI to DC and Virginia.
- Collaborate with RGGI to support implementation of energy conservation and renewable energy projects in the Washington region.

Additional Potential Advocacy Positions

State and Local Energy and Climate Policy

- Revise state and/or local building codes and ordinances to promote energy efficiency.
- Examine potential options for removing barriers that may prevent implementation of solar panel or other small-scale renewable energy installation.
- Advocate for adoption of Cool Schools or equivalent by local school boards or local governments.
- Advocate for the establishment of a 20% RPS in the District of Columbia and Virginia by 2020. Urge Public Service Commissions to focus on energy efficiency and demand reduction, maximizing use of renewable energy sources, and reducing use of coal for generating electricity.
- Advocate for the creation of state financial incentives for implementation of renewable energy and energy efficiency.
- Encourage state governments to meet the same energy conservation and green power goals as local governments in the Washington region.
- Support establishment of and funding for programs designed to supply locally-produced food to schools (e.g., Statewide farms to schools program).
- Evaluate the US Green Building Council's Leadership in Energy and Environmental Design -Neighborhood Development (LEED-ND) standards for its utility in guiding new development.

Federal Climate Policy

- Encourage the federal government to meet the same energy conservation and green power goals as local governments in the Washington region.
- Advocate for national financial incentives to promote the use of renewable energy implementation.
- Organize a consortia of local governments to apply for Energy Efficiency Block Grant funds as they become available.
- Support federal climate change legislation, including cap-and-trade mechanisms, to limit greenhouse gas emissions consistent with scientific recommendations to achieve climate stabilization. Advocate for local governments to be recipients of allowances or funds generated through auction of allowances.