Government Policy (GP)
Technical Work Group (TWG)

Summary List of Pending Priority Policy Options for Analysis

	Policy Option	GHG Reductions ($MMtCO_2e$)			Net Present Value 2009–2025 (Million $)	Cost-Effectiveness ($/tCO_2e$)	Level of Support
		2015	2025	Total 2009–2025			
GP-1	Targets, Reporting, Funding and Accountability Measures	*Not Quantified*					Pending
GP-2	Public Awareness and Education	*Not Quantified*					Pending
GP-3	Inter-Government and Inter-Sector Planning Coordination and Assistance	*Not Quantified*					Pending
GP-4	"Green" Business Development Policies	*Not Quantified*					Pending
GP-5	Introduce Core Competencies Into Professional Licensing Programs	*Not Quantified*					Pending

GHG = greenhouse gas; $MMtCO_2e$ = million metric tons of carbon dioxide equivalent; $/tCO_2e$ = dollars per metric ton of carbon dioxide equivalent.

Note: The numbering used to denote the above pending priority policy options is for reference purposes only; it does not reflect prioritization among these important draft policy options.

GP-1. Targets, Reporting, Funding, and Accountability Measures

Policy Description

The State of Florida is committed to significant reductions in greenhouse gas (GHG) emissions and has established an emissions inventory, forecasting, reporting, and registry functions in state agencies, specifically in the Florida Department of Environmental Protection (DEP). The state is also process of establishing a Renewable Portfolio Standard (RPS) and an Energy Efficiency Portfolio Standard (EEPS). (See Related Policies and Programs below for specifics.) HB 7135 established the Florida Energy and Climate Commission (FECC) demonstrating the state's long-term commitment to reduce the carbon footprint. It is strongly recommended that the state develop a steady funding source, such as a "Systems Benefit Charge" (SBC) to provide funding to assist in achieving targets for renewable energy and energy efficiency. This will be key to achieving significant GHG emissions reductions.

Further descriptions of these functions are included here:

Florida set of GHG emissions reductions targets, as established under Executive Order 07-126. Specifically, the targets are 10% below current levels by 2012, 25% below current levels by 2017, and 40% below current levels by 2025. The following policy recommendations support these targets, but recognize that in the future revisions may be needed due to scientific and technological advances. A review process will be necessary to review and revise targets.

GHG emissions inventories and forecasts are essential for understanding the magnitude of all emission sources and sinks (anthropogenic and natural), the relative contribution of various types of emission sources and sinks to total emissions, and the factors affecting trends over time. Inventories and forecasts help to inform policy makers and the public on statewide trends, opportunities for mitigating emissions or enhancing sinks, and verifying GHG reductions associated with implementation of GHG-reduction action plan and other initiatives.

GHG reporting supports the tracking and management of emissions over time. GHG reporting can help sources identify emission reduction opportunities and reduce risks associated with possible future GHG mandates. Tracking and reporting of GHG emissions can also help in the construction or revision of periodic state-GHG inventories. GHG reporting is a prerequisite for sources to participate in GHG-reduction programs, opportunities for recognition, and a GHG-emission registry, as well as to secure "baseline protection" (i.e., credit for early reductions).

RPS is a requirement that utilities must supply a certain, generally fixed percentage of electricity from an eligible renewable energy source(s). More than two-dozen states have an RPS in place. About 25 states currently have some sort of SBC in place. These funds are typically generated as a charge on the electric bill and are used to ensure that the RPS and EEPS are met. The Energy Supply and Demand (ESD) Technical Work Group (TWG) is proposing ESD-2, an environmental portfolio standard (EPS) that expands the notion to include energy efficiency, or other GHG emissions-reducing technologies, as an eligible resource. Since the latest legislation has separated an EEPS from RPS this discussion treats these two items separately. A clearly

defined value for a renewable energy target (for example, 20% by 2020, as the Governor has suggested) and a clearly defined value for the energy efficiency target must be specified. The funding for each of these two important, yet distinct, ways to meet GHG-reduction targets must also be separated. Once renewable and efficiency targets have been set, they must be measured and verified constantly along with their impact on GHG reductions. Developing a mechanism to catalogue the GHG reductions in a registry is imperative to securing the veracity of the reductions and the value of that reduction as a tradable financial instrument. The Government Policy (GP) TWG suggests that consideration also be given to a broader environmental-attributes registry that may be linked to water-pollution trading credits, as well as GHG reductions.

A GHG registry enables the recording of GHG-emission reductions in a central repository with "transaction ledger" capacity to support tracking, management, and "ownership" of emission reductions; establish baseline protection; enable recognition of environmental leadership; and provide a mechanism for regional, multistate, and cross-border cooperation. Properly designed registry structures also provide a foundation for possible future trading programs. Florida is a member of The Climate Registry (TCR), and as such can take advantage of the programs and protocols offered by TCR to member jurisdictions.

Policy Design

To support these initiatives, mechanisms must be created to:

- Periodically, review and revise established goals or targets for statewide GHG-emission reductions, RPS, and energy efficiency targets, and review the effectiveness of use of the SBC to meet goals or targets.
- Establish renewable and energy efficiency targets and mandatory GHG-emissions reporting, inventory, and forecasting functions at state agencies. Also, develop an inventory and forecast system that is aligned with national protocols and tailored to specific emissions/sinks found in Florida.
- Provide technical assistance to emissions reporters and encourage participation.
- Institute an accountability program to measure and report progress in reducing GHG emissions. This program would allow the state to keep track of emission reductions and help determine what is and what is not working.
- Measure and report on research and development (R&D), job creation, and new business investment resulting from related "green" economy programs, and review the effectiveness of state funds used to promote those programs.
- The Action Team recommends that Florida establish GHG-reduction targets for state and local government operations and school districts, with an emphasis on energy efficiency for transportation and non-transportation uses to meet the targets. The establishment of these targets will be helpful in setting an example for nongovernmental entities, and will help agencies to focus on performing the necessary analysis. Reductions should be reported at the agency level. Thus, state and local government agencies or departments would first need to develop GHG-emissions inventory data that is agency or department specific, ideally building on existing energy-use reporting data. This would become the baseline data for ongoing emission-reduction activities and measurement, which could be included in annual

reporting for all entities. Agency or department reports would be aggregated into a summary report reflecting state GHG emissions. A multiagency group should oversee the ongoing climate efforts of the government's agencies or departments, review their performance, and provide guidance, resources, shared approaches, and recognition to agencies or departments and their employees working to reduce the government's GHG emissions.

Goals:

Beginning in 2010, the FECC should review progress toward achieving goals, and review and affirm or propose revisions to the goals every 3 years, assuming the necessary resources are available to properly complete this review.

- The FECC should coordinate with the U.S. Environmental Protection Agency (US EPA) and TCR on the development of a mandatory federal GHG reporting rule (see FY2008 Consolidated Appropriations Amendment).[1]
  - This GHG rule will define sources, thresholds for reporting, and frequency of reporting. The GHG rule can be used to define reporting standards for previous year's emissions.
  - The rule will apply to the following gases: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6).
  - Forecasting of GHG emissions will be included as part of the state responsibilities. In forecasting future GHG emissions, treatment of uncertainties should be transparent, be as consistent as possible across sectors and time, and to the extent possible, reflect multiple scenarios.
- Inventory and other related information shall be gathered for all previous years through 1990.
- Progress reports should be made available to the public by every reporting period, at a minimum.

Timing:

- Implementation of a GHG inventory for previous years shall continue.
- Timing of the current GHG inventory and forecasting efforts shall proceed as initiated under the Action Team process. Future efforts shall be based on the timing of the US EPA reporting rule.

Parties Involved:

- DEP, FECC, the Public Service Commission (PSC), state agencies, and local and regional governments.
- Forecast assistance will need to be provided by other various state agencies.

Other:

[1] 110th US Congress, First Session, H.R. 2764: Consolidated Appropriations Act, 2008, http://www.govtrack.us/congress/billtext.xpd?bill=h110-2764, see Title II, Administrative Provisions, US EPA (Including Rescission of Funds), pages 284 and 285.

Implementation Mechanisms

TBD—[as approved by the TWG]

Related Policies/Programs in Place

Governor's Executive Order 07-126 established GHG-reduction goals for state agencies of a 10% reduction from current emission levels by 2012, a 25% reduction from current levels by 2017, and a 40% reduction from current levels by 2025.

Governor's Executive Order 07-128 established reduction goals to 2000 levels by 2017, to 1990 levels by 2025, and by 80% of 1990 levels by 2050. The Governor's Order also required adoption of the California motor vehicle emission standards. The standard is a 22% reduction in vehicle emissions by 2012, and a 30% reduction by 2016.

The Executive Office of the Governor is tracking and reporting financial savings and emissions reductions associated with Executive Order 07-126 via the Florida Government Carbon Scorecard. Executive Order 07-128 direction provides for "Policies for emission reporting and registry that measure and document emission reductions."

Recent actions in FL: As a result of EO 07-127, the PSC held a series of workshops on RPS in 2007. They took comments on how to define what is renewable, at what level the standard should be set, and what the state wishes to achieve by setting an RPS. A report will be provided to the PSC this year on the findings and recommendations will follow on rulemaking.

Florida Energy Bill—HB-7135:

~3 page summary of the other states RPSs here.

~3 page summary of the other states Energy Efficiency Programs here

~3 page summary of the other states PBFs here.

Type(s) of GHG Reductions

TBD—[as needed and approved by the TWG]

Estimated GHG Reductions and Costs or Cost Savings

To be determined (TBD)—[as approved by the TWG]

Data Sources: [TBD, as approved by the TWG]

Quantification Methods: [e.g., full life-cycle analysis with supply/demand equilibrium adjustments on TWG approval]

Key Assumptions: [TBD, as approved by the TWG]

Key Uncertainties

TBD—[as needed and approved by the TWG]

Additional Benefits and Costs

TBD—[as needed and approved by the TWG]

Feasibility Issues

TBD—[as needed and approved by the TWG]

Status of Group Approval

Pending.

Level of Group Support

TBD—[blank until Action Team meeting #7 or #8]

Barriers to Consensus

TBD—[blank until final vote by the Action Team]

GP-2. Public Awareness and Education

Policy Description

Focusing on public awareness and education is predicated on the fact that if Florida wants to be recognized as an eco-literate state, it can do so only if efforts are embraced and actions are taken by everyone—from high level policy makers at one end of the citizenry, to individuals at the other.

The goal is for every man, woman, and child in Florida—young and old, those in Florida's cities and those on the beaches, those in the research labs and those in the orange groves—to know that Florida, like Oregon, Washington, and California, will be recognized for its commitment at all levels to the environment. Accordingly, there must be an expectation for all Floridians to do their part to protect, to sustain, to restore, and, most importantly, to re-engage in a dialogue with the state's most precious resources and our silent partners in life: our land, our water, and the air we breathe.

The efforts Florida undertakes to educate its citizens will be a reflection of the urgency with which it views climate change, the precariousness of the environment, and the need to conserve existing energy sources while creating newer, more viable ones. Education at all levels must begin immediately if Florida is to take the next critical steps to become a national leader.

Policy Design

Floridians doing their part assumes that individual citizens know what can and should be done, and are provided the tools and the incentives to do it. This is the core role of public awareness and education, and policy design in this area is a three-step process: (1) identify the relevant audiences and sectors for purposes of optimal communication; (2) determine what to communicate and how to begin what, if designed correctly, will be perceived as a dialogue; and (3) feedback must be gathered via that dialogue to determine the extent to which the information, tools, assistance, and incentives provided are understood, useful, and worthwhile. If so, then magnitude is increased. If not, then corrections need to be made before proceeding further.

Because the second and third steps are more operative than policy-driven, they will need to be addressed in greater detail at a later point in time. They move beyond policy design and into policy implementation. Once entertained, the individual strategies will ultimately populate a toolbox of potential actions, large and small, general and specific to sub-audiences. However, it is not too early at the policy formation stage to consider the general audience clusters that will need to be considered.

Traditional Education as a Target Audience

The traditional audience of a K–20-education system is entirely relevant and must be in play. Learning the alphabet of eco-literacy must begin in preschool and kindergarten, with successive and increasingly sophisticated lessons, applications, and connections throughout the formative years so that, as a generous by-product, more middle and high school students are comfortable in and, therefore, exploring the possibilities of science, technology, engineering, and mathematics

as professions. Progress in this area will entail ensuring that eco-literacy curricula and performance standards are created for science and social studies programs, and that "eco-literacy-across-the-curriculum" is explored and rewarded.

Similarly, the state's colleges and universities need to make the cultural shift away from viewing eco-literacy as synonymous with environmental science programs only. Rather, eco-literacy should be a component that transverses the traditional boundaries of the academy—into programs in architecture and building construction, throughout regional planning and health care administration degrees, and, most assuredly through our business schools—so that graduates can begin to challenge the unspoken financial argument currently being made for *not* addressing the environmental and energy issues of today. In summation, a sustained and comprehensive eco-literacy component for K–20 must be a part of the 21st century curriculum.

Also of relevance in postsecondary education is the appreciation and support for the R&D that will assist in creating Florida's green economy. Alternate energy sources, as well as the many forms that energy efficiency may take—from the creation of composite materials to the planning necessary for transportation configurations—must continue to be valued and recognized as central to the larger issue of eco-literacy.

Other Target Audiences

Beyond the audience afforded by traditional education, Florida must devote its time, energy, and resources to increasing awareness and engaging the public-at-large with regard to the good decisions in personal and professional lives that can be made to favorably impact climate change and energy. These include the decisions of individuals and groups of community-based organizations, business leaders, institutions, visitors, and, most importantly, average Floridians. Florida must determine how to market the savings associated with reducing the carbon footprint of all of these constituents.

All across the wide range of corporate and economic activities, education and awareness efforts can assist to incorporate climate change efforts into business plans and best practices. Among these sectors are Florida's growing high tech industry, its agricultural base, and its historical strength in tourism, all three of which will be enormously impacted by climate change and energy crises.

One concept that is being recommended is a "Florida Climate Challenge" that would encourage citizens to voluntarily sign up for, and accept the challenge of, measuring their "footprint" and then reducing it by some target level, with measurement tools, information, and advice available through a state Web site.

Target Audience: State, Regional, and Local Government Entities

While at one end of the spectrum attention must be placed on the general public as a critical audience for education and public awareness, at the other end government at all levels will be a key to ramping up and building on individual successes. In the same manner that good governments coordinate, communicate, share, and incent one another in times of emergencies, such as hurricanes, Florida needs the same communicative network to focus and assist on energy and climate issues. One strategy at the state level, for example, might be to form a climate change education and outreach council assigned the task of coordinating information and efforts

regarding climate-change action plans, best practices, and associated policies. In turn, local and regional government entities need to consider structures that will enhance education and public awareness.

To conclude, good policy design regarding education and public awareness will be fleshed out in these areas:

- Audience and sub-audience identification;
- Message, tools, and incentives creation;
- Communication systems developed or adapted and tested; and
- Feedback assessment, corrections made as necessary, and magnitude increased.

Goals: TBD.

Timing: TBD.

Parties Involved: TBD.

Other: TBD—[as needed and approved by the TWG]

Implementation Mechanisms

The Governor should form a climate change education and outreach committee (coordinated by DEP) to educate the public and other audiences regarding climate change action plan, associated policies, and to oversee outreach activities. The committee should be formed of appointees and supported by outreach coordinators from relevant state agencies (e.g., energy supply, forestry, agriculture). The committee should address the following:

- Create and maintain one or more "outreach coordinator" positions in relevant executive agencies, specifically tasked with climate change issues;
- Assess the level (establish a baseline) of public understanding of the impacts of climate change and of (proposed) state-specific actions to deal with climate change; and
- Establish a recurring awards program to recognize leadership and attainment of goals and objectives of the Florida climate change action plan.

Increase awareness and engage in climate change actions in personal and professional lives.

- Educate broadcasters, reporters, editorial boards, and others about climate change, the risks it imposes, and state subset of solutions. Work with state broadcasters and print media associations to develop and run public service announcements (PSAs) concerning climate change.
- Create the "Florida Climate Challenge" program, perhaps through the education and outreach committee, using a state climate-change Web site for the public. The Web site would include a clearinghouse of climate change information and resources specific to Florida. The Web site would challenge Floridians to "sign up" and pledge to measure (through a Web-based

survey tool) their carbon footprint, and then make changes to lifestyle, appliances, or other changes to reduce emissions, and register the reductions on the site.

- Work with existing business outreach efforts to customers to enhance awareness of climate change issues and opportunities.
- Provide and advertise marketplace incentives to adopt and purchase goods with the minimum climate change "footprint."

Integrate climate change into educational curricula, post-secondary degree programs, and professional licensing (see policy GP-5) to address the multidisciplinary approach to reduce adverse climate-change effects.

- Ensure performance standards for science and social studies in climate change public education (K–12); identify gaps in climate change education, and specific curricula to fill any gaps.
- Integrate "best practices" into public school design and construction and use this as a means to educate the public about how to educate students (and parents) firsthand in their communities and colleges.
- Organize groups of educators to identify, assemble, and employ climate change curricula appropriate to specific age groups. Make curricula and associated materials available to educational courses that are not publicly funded.
- Integrate climate change into core college curricula and promote research into climate change and solutions at state universities; develop university "Centers of Excellence" on climate issues, new approaches, and technologies.
- Develop assessment tools to determine the impact of climate change curricula.
- Include climate change discussions at state-funded venues, such as science centers, zoos, and museums.

Related Policies/Programs in Place

TBD—[as needed and approved by the TWG]

Type(s) of GHG Reductions

TBD—[as needed and approved by the TWG]

Estimated GHG Reductions and Costs or Cost Savings

TBD—[as approved by the TWG]

Data Sources: [TBD, as approved by the TWG]

Quantification Methods: [e.g., full life-cycle analysis with supply/demand equilibrium adjustments on TWG approval]

Key Assumptions: [TBD, as approved by the TWG]

Key Uncertainties

TBD—[as needed and approved by the TWG]

Additional Benefits and Costs

TBD—[as needed and approved by the TWG]

Feasibility Issues

TBD—[as needed and approved by the TWG]

Status of Group Approval

Pending.

Level of Group Support

TBD—[blank until Action Team meeting #7 or #8]

Barriers to Consensus

TBD—[blank until final vote by the Action Team]

GP-3. Inter-Government and Inter-Sector Planning Coordination and Assistance

Policy Description

Given the high priority of climate change mitigation in the State of Florida, numerous state and local government agencies are tasked with implementing climate policies or, at a minimum, integrating energy efficiency principles into their operations. Efficient coordination among agencies and between state and local government will enhance overall effectiveness, reduce overlap, and eliminate barriers to GHG-mitigation efforts. Fortunately, many of Florida's cities and counties have embraced the mission; at least 70 mayors have signed the U.S. Conference of Mayors' (USCM) Climate Protection Agreement and with it ambitious reduction goals. Eight or more counties have joined International Council for Local Environmental Initiatives (ICLEI), the Cool Counties program, or similar efforts. Many Florida local jurisdictions, large and small, embarked on GHG-reduction efforts more than a decade ago, and therefore have wisdom and best practices worthy of replication.

Local governments will be among the state's most vital partners in addressing climate change. Decisions regarding land use, transportation, land conservation efforts, landscaping requirements, solid waste management, water distribution and, in public power communities, energy supply, are all made at the local level. Planning agencies will need to coordinate, especially those with a role in transportation infrastructure, as transit offers among the most potent reduction opportunities. The built environment/building efficiency is also a significant contributor to GHG emissions, and is an immediately accessible and active sector that could benefit from policy support. Development patterns present another key area, as denser land-use patterns and smaller homes help reduce trips and save energy.

The State of Florida is unique in that it has an existing comprehensive planning framework for coordinating state, regional, and local action on issues of importance. Furthermore, the regional planning councils (RPCs), in partnership with the Department of Community Affairs (DCA), have been tasked with planning and coordinating intergovernmental solutions to issues of state and regional concern. Florida statutes identify the RPCs as Florida's *"only multi-purpose regional entity that is in a position to plan for and coordinate intergovernmental solutions to growth-related problems on greater-than-local issues, provide technical assistance to local governments, and meet other needs of the communities in each region."* To facilitate and expedite climate change mitigation and adaptation efforts throughout the state, Florida should work through the RPCs and the local government comprehensive-planning process to improve coordination and ensure that each level of government is working toward the same goals in a mutually supportive and consistent manner.

It is anticipated that the federal Energy Efficiency and Conservation Block Grant Program (EECBG), which has been passed by both houses of Congress and is currently in the appropriations process, will establish a program similar to the Community Development Block Grant (CDBG). Local governments will be eligible for federal grants, based on population, to address local opportunities to save energy and reduce emissions. The initial year's grant requirements will incorporate planning and forecasting efforts. The State of Florida would be

well served to assist cities and counties in their efforts to obtain these funds, coordinate efforts with nongovernmental partners, and apply them toward the most fruitful emission-reduction opportunities.

"Leading-by-Example" is one of the most effective ways for governments to convey the importance of climate response to the broader public. State government can help lead the way and build on the existing work that is well underway at local and regional levels by collecting and facilitating access to information about best practices; providing cost-benefit analyses of the various approaches available to local governments in a fiscally constrained environment; documenting the economic benefits or payoffs for local governments, their constituencies, and businesses who are considering the implementation of "green" practices; eliminating state subsidies or favorable tax treatment for programs or policies that work contrary to GHG-reduction efforts; identifying and eliminating state policies that unduly contribute to the generation of GHG emissions; finding ways to say "yes" to local and regional partnerships and solutions; funding the Florida Green Governments Grant Program and similar programs that support local and regional government initiatives; and expediting state-level review and decision-making processes, if applicable, to facilitate implementation of local and regional efforts. Creating a statewide infrastructure or action plan to achieve GHG reductions will allow all coordinating agencies to be on the "same page." In addition, determining regional GHG averages, and encouraging use of a consistent system for local governments to quantitatively assess their reduction progress, would facilitate their engagement in this effort and allow them to gauge their progress and efficacy.

As documented in the "Plans and Planners" document, there are multiple agencies and jurisdictions with overlapping authority to plan and regulate a wide range of activities that directly or indirectly impact emissions. The Action Team proposes to directly improve coordination and consistency between these agencies and jurisdictions relative to GHG issues.

In its "States Guidance Document: Policy Planning to Reduce Greenhouse Gas Emissions" (Second Edition, 1998), the US EPA addresses the process of planning, implementing, and administering climate-change mitigation programs. Specific topics addressed include the actors who affect climate-change program design, political considerations related to climate-change program development, treatment of time perspectives, interactions between various agencies that are internal and external to state governments, general program administration, and program financing. While primarily focused on implementation efforts by states, the key points highlighted by the US EPA can be applied to all levels of governments and organizations pursuing climate-change program development and implementation. A key point of the document discusses the coordination of climate change programs and interaction between agencies. In its report, the US EPA identifies coordination among various state agencies, as well as between federal, states, and local governments, as a critical factor for success.

Policy Design

To accomplish the goals set forth above, the following is recommended:

- Coordinate federal, state, regional, and local government roles and policy, with regard to climate change impacts and response to coordinate activities and programs, to facilitate rapid and meaningful actions on the part of government decision makers.
- Work through the RPCs to improve coordination and collaboration of multi-sector, multiagency partners, create consistency in local government comprehensive plans with GHG reduction and climate change adaptation, develop regional implementation goals and benchmarks, and reach agreement on strategies to reduce GHG emissions. The Comprehensive Planning Process offers a consistent venue and format for this effort throughout the state. *(Note: HB 697 provides significant direction in the area of transportation, comprehensive planning, and GHG-emissions reduction.)*
- Establish incentives or mandate programs for local governments to undertake inventories and GHG-reduction initiatives for local government planning, facilities, and operations. *(Note: The Florida Legislature passed HB 7135 which establishes, in part, a "Florida Green Governments Grants Act," providing for grants to be awarded "to local governments in the development of programs that achieve green standards." Although it was not funded this year, establishment of the program and the statement of legislative is an important step forward.)*
- Provide technical support to local governments to enable them to access federal funding for inventories and GHG reductions, such as through the federal EECBG program, and encourage use of consistent reporting and information sharing. *(Discussion note: Establishing a system to collectively inventory and report may be more effective.)*
- Work with the Florida Association of Counties (FAC), Florida League of Cities (FLC), Florida League of Mayors (FLM), local governments and regional leagues of cities, and the RPCs to reach agreement on one or more standardized methodologies for emissions measurement and reporting (e.g., the ICLEI method), and fund software licenses. Encourage regional collaborations, particularly in more rural areas.
- Celebrate successes; publicize and reward "best practices" for governments. *(Note: Focusing on tangible and verifiable results may be more effective than rewarding "best practices." Bringing attention to local governments that have successfully determined their existing emissions levels, set reduction goals and have the documentation that they have been met.)*
- Provide educational opportunities and information to public, private, and nonprofit policy makers at the state and local levels.
- Require state and regional agencies and departments to review policies and funding programs to consider and promote emissions reductions.
- Coordinate overlapping planning authorities to promote consistent regard for energy use and emissions reduction efforts.
- Coordinate transportation and land-use planning between local, state, and regional agencies for GHG-reduction benefits by consolidating and funding regional land use and transportation planning functions through the RPCs, and addressing funding barriers to reduce access, linkage, and service level problems. The broad range of state infrastructure investments should be linked to improved transportation and land uses that encourage a reduction in vehicle miles traveled (VMT) and GHG emissions, improved energy efficiency,

affordable housing proximate to urban work centers, and progress toward other sustainability and quality of life measures. Utilize performance-based methodologies that promote the reduction of GHG emissions, for example, transportation methodologies that support mass transportation and a reduction in VMT.

Goals: Implement the near-term proposals as soon as possible. Candidates include: incentives or programs for local governments to undertake inventories and GHG-reduction initiatives for local government planning, facilities, and operations; technical support to local governments to enable them to access federal funding for inventories and GHG reductions; publicize and reward "best practices" for governments; and requiring state and regional agencies and departments to review policies and funding programs.

Timing: TBD—[as approved by the TWG]

Parties Involved: TBD—[as approved by the TWG]

Other: TBD—[as needed and approved by the TWG]

Implementation Mechanisms

TBD—[as approved by the TWG]

Related Policies/Programs in Place

Legislation has been filed that contains incentives, encouragement, and assistance to local governments in establishing GHG-reduction targets and plans.

(Insert or reference summary of local government actions and initiatives in Florida)

Type(s) of GHG Reductions

TBD—[as needed and approved by the TWG]

Estimated GHG Reductions and Costs or Cost Savings

TBD—[as approved by the TWG]

Data Sources: [TBD, as approved by the TWG]

Quantification Methods: [e.g., full life-cycle analysis with supply/demand equilibrium adjustments on TWG approval]

Key Assumptions: [TBD, as approved by the TWG]

Key Uncertainties

TBD—[as needed and approved by the TWG]

Additional Benefits and Costs

TBD—[as needed and approved by the TWG]

Feasibility Issues

TBD—[as needed and approved by the TWG]

Status of Group Approval

Pending.

Level of Group Support

TBD—[blank until Action Team meeting #7 or #8]

Barriers to Consensus

TBD—[blank until final vote by the Action Team]

GP-4. "Green" Business Development Policies

Policy Description

Climate change impacts are likely to have significant effects on all sectors of Florida's economy. Some sectors will face acute challenges, while others will enjoy substantial growth opportunities. GHG mitigation and climate adaptation are also likely to create entirely new economic and employment opportunities. Substantial investment is expected in energy efficiency implementation and renewable energy technologies. These investments hold the promise of diversifying and strengthening the Florida economy.

While there are economic opportunities, there will be costs associated with the transition to a low-carbon economy. However, it is widely considered that the costs associated with inaction are far greater than the investments associated with GHG reductions. Major studies indicate that the sooner actions are undertaken, the lower the costs to society. The result is an increasing sense of urgency, as well as an informed understanding that successful responses must be scaled to meet the challenge at hand.

Successful state GHG-reduction efforts are highly dependent on active participation of the business community, particularly in the energy, agriculture, transportation, development, construction, and manufacturing sectors. Efforts must also be made to prepare and train the skilled workforce to enable new technologies to rapidly assimilate into the marketplace. All of these investments hold the promise of diversifying and strengthening Florida's economy. The intent of this policy is to encourage and facilitate the involvement of funding and investment sources, business interests, and entrepreneurs in quickly seizing business opportunities related to GHG reductions and climate change solutions.

The state will benefit by early identification of business opportunities associated with climate change by increasing its global competitive advantage and job creation within the state.

The state may also consider providing strategic support to existing critical economic sectors, such as tourism and other natural resource-based industries that may experience stress.

Potential funding sources include philanthropic organizations, high net-worth individuals, or others interested in supporting innovative market solutions that are environmentally effective. Recognizing that fortunes are likely to be made in the "new energy economy," for-profit investors, pension funds, mutual funds, and venture capitalists may be looking to fund similar business opportunities. Although technology entrepreneurs are often cited as offering potential climate-change solutions, equally progressive solutions may lie in the fields of law, accounting, marketing, production, and even government relations and lobbying. The objective of this policy option is to leverage a state's specific talents and natural resources for climate change solutions into securing the business opportunities and market advantages that well-supported "early bird" efforts are likely to reap in a carbon-constrained world. This policy intent is also to ensure Florida has in place a qualified workforce with the appropriate skill sets within these existing and emerging sectors to capture these investments as effectively as possible.

Policy Design

Successful state GHG-reduction efforts are highly dependent on active participation of the business community, particularly in the energy, agriculture, transportation, development, construction, and manufacturing sectors. The intent of this policy is to encourage and facilitate the involvement of funding and investment sources, business interests and entrepreneurs in pursuing business opportunities associated with GHG reductions and climate change solutions as quickly and as significantly as possible.

Florida should foster R&D associated with GHG-emission reduction, renewable energy and energy efficiency technologies. The State of Florida should consider whole life cycle costs of potential energy technologies. The state should also promote business, job development, and workforce training in alternative, low-carbon fuels and vehicles, and other alternative, low-carbon technologies, such as energy efficiency.

The Office of Tourism and Economic Development (OTTED) and Enterprise Florida—in conjunction with the FECC—should undertake an analysis to look at new opportunities and at economic sectors that may be negatively impacted. Particular attention should be paid to the potential impact on Florida's tourism and other natural resource-based economic sectors.[2]

Florida should commit to a comprehensive process of mapping labor resources (traditional and non-traditional) and assets capable of implementing workforce solutions to provide much needed awareness of the scope and scale of the challenge. An assessment should be made of key skilled trades, manufacturing, and other energy-related educational programs, from secondary to post-secondary, to determine if sufficient programs are in place to meet the need ahead. Industry-recognized certifications associated with greening Florida's economy should be identified and supported as stipulated in Florida's Career and Professional Education Act. Further, Florida should strengthen, encourage and guide, when necessary, the integration of workforce and economic development efforts distributed among industry, economic development organizations, educational institutions, and labor organizations that will ensure maximum mutual benefit, align public and private resources, and heighten cooperation toward the common goal of GHG-emission reductions.

The state should unify existing resources and entities with those created under the 2008 Florida Energy Bill (FECC, Florida Energy Systems Consortium [FESC]) to support businesses in greening their operations and promote business development opportunities in climate protection and adaptation, including seeking or stimulating funding investments. This can be accomplished by the following:

- Undertaking an analysis of potential opportunities in "green" industry development and targeting those technologies for which Florida has an advantage. Examples include energy efficiency implementation from building retrofits to waste heat recovery and renewable technologies, such as ocean wave and current energy, wind power, solar thermal and photovoltaic (PV), biomass, and biofuels.

[2] See Draft Florida Adaptation Catalog.)

- Analyzing targeted incentives to promote private investment in these technologies or industries, such as tax credits, investment in academic programs and research, grant funding and investment in workforce development.
- Promoting the use of commercially ready technologies through a targeted RPS, an EEPS, building codes, appliance standards, rebates and tax incentives (sales, property or investment).

Other measures to accomplish this might include instituting a "business incubator" program to attract and support new business development related to the new energy economy (see Florida Institute for Sustainable Energy [FISE] housed at the University of Florida [UF]).

Florida should offer incentive points for competitive grant programs for state-to-business economic development for businesses that have undertaken GHG-reduction and energy efficiency programs.

The designation or creation of a clearinghouse entity would enable matching technology developers and other climate solution entrepreneurs with necessary financing more effectively and expeditiously. As a result, the state's ability to identify and secure early business opportunities associated with climate change may be enhanced, increasing its global competitive advantage and increase job creation within the state.

The state should promote low-carbon fuels and vehicles through government actions with public education campaigns, tax/service and other incentives, and encouragement.

Recognizing the nexus between water treatment and use, and energy production and consumption, the state should promote the use and development of water conserving products and technologies, such as those certified through US EPA's WaterSense program or the Florida Water Star public education program initiated by the St. Johns River Water Management District and being adopted around the state.

Having a government focal point for promoting the development of climate protection businesses would enhance the efficiencies of such an effort.

Goals:

- To meet the GHG reduction goals set out in the 2007 executive orders (80% below 1990 levels by 2050, with interim goals of 1990 levels by 2017.
- Determine funding resources to best manage and accomplish target goals.
- Review and determine green investment opportunities suitable for the state.
- Review and determine workforce needs for greening Florida's economy.

Timing: TBD

Parties Involved: FECC (Office of the Governor), DEP, Florida Department of Transportation (FDOT), PSC, Florida Fish and Wildlife Commission (FWC), Florida Building Commission (FBC), the OTTED (Office of the Governor), Enterprise Florida, and Workforce Florida.

Implementation Mechanisms

State agency rulemaking—FBC, DEP, and PSC.

Related Policies/Programs in Place

The Action Team, in their Phase I deliberations, recommended further examination of ways the state can support public and private efforts to develop alternative fuels and technologies in Florida. The Action Team also recommended that policies be developed that promote the use of low-carbon vehicles. There are several state and federal grant programs, some administered through the Florida Energy Office (FEO), that attempt to incentivize the use of these fuels and vehicles.

- 10% target for renewable fuels
- PSC—RPS
- Florida Energy Efficiency and Conservation Act (FEECA)
- 2008 Florida Energy Bill (HB 7135)
- Grants and incentive—DEP, Florida Department of Agriculture and Consumer Services (FDACS)
- Workforce development
- Florida Water Star and related water-conservation programs
- Best practices from other states/region

Type(s) of GHG Reductions

- **Improving energy efficiency in buildings and appliances**: This type of reduction represents a large grouping of negative-cost options and includes: lighting retrofits; improved heating, ventilation, air conditioning (HVAC) systems, building envelopes, and building control systems; and higher performance standards for consumer and office electronics and appliances, among other options. While this category of abatement options would cost the least from a societal point of view, persistent barriers to market efficiency need to be overcome.
- **Increasing fuel efficiency in vehicles and reducing carbon intensity of transportation fuels**: Much of this form of GHG reduction would come from fuel economy packages (e.g., lightweight, aerodynamics, turbo-charging, drive-train efficiency, reductions in rolling resistance) and increased use of diesel for light-duty vehicles (LDV). Though the savings from fuel efficiency may offset incremental cost of the abatement option over a vehicle's 12- to 15-year life cycle, these options require up-front investment by automakers, and thus higher vehicle costs for consumers. Low-carbon fuels, such as cellulosic biofuels, could abate significant levels of GHG emissions (100 megatons to 370 megatons if undertaken nationally), though this potential is highly dependent on innovation rates and near-term commercialization of these technologies. Plug-in hybrid vehicles offer longer-term potential if vehicle cost and performance improves and the nation moves to a lower-carbon electricity supply.

- **Pursuing various options across energy-intensive portions of the industrial sector:** Involves a multitude of fragmented opportunities within specific industries (e.g., equipment upgrades, process changes) and across the sector (e.g., motor efficiency, combined heat and power [CHP] applications). Despite offering direct bottom-line benefit, these options must complete for capital and, without clear incentives to control GHG emissions, may not receive funding.
- **Expanding and enhancing carbon sinks:** Increasing forest stocks and improving soil management practices are relatively low-cost options. Capturing them would require linkages to carbon-offset mechanisms to access needed capital, plus improved monitoring and verification.
- **Reducing the carbon intensity of electric power production:** This potential derives from a shift toward renewable energy sources (primarily wind and solar), additional nuclear capacity, improved efficiency of power plants, and eventual use of carbon capture and storage technologies on coal-fired electricity generation. Options in the power sector are among the most capital-intensive. These options also tend to have the longest lead times, given bottlenecks permitting, materials and equipment manufacturing, and design, engineering, and construction.

Estimated GHG Reductions and Costs or Cost Savings

Data Sources: American Council for an Energy Efficient Economy (ACEEE)—potential for efficiency and renewables.

Quantification Methods: TBD

Key Assumptions: [TBD, as approved by the TWG]

Key Uncertainties

- Cost of carbon
- Federal in international policy
- Workforce development—The ability to produce the necessary talent

Additional Benefits and Costs

Additional Benefits

Tax Dollars

Costs

Public Health

Feasibility Issues

- Wind
- Carbon capture and storage
- Potential for biomass

- Costs

Status of Group Approval

Pending—[until Action Team moves to final agreement at meeting #7 or #8]

Level of Group Support

TBD—[blank until Action Team meeting #7 or #8]

Barriers to Consensus

TBD—[blank until final vote by the Action Team]

GP-5. Introduce Core Competencies Into Professional Licensing Programs

Policy Description

Many professional associations are already providing continuing education or educational opportunities to their constituencies on climate change, GHG emissions, and energy efficiencies. It is critical that Florida's licensed professionals responsible for the design, development, and construction of Florida's built environment incorporate climate change and energy-efficient technologies, materials and design into their projects to facilitate the reduction of GHG emissions. Therefore, the state needs to establish and administer core competency requirements for licensed professionals providing site and architectural design, site engineering, site construction, building construction, and building operations efficiencies services. The state also needs to require professional organizations, in support of their respective professional membership, to develop and administer continuing education programs that specifically address new technologies, standards, and materials designed to reduce GHG emissions and promote energy efficiency.

Additionally, within Florida's university system, design and engineering programs should establish required courses of study that specifically teach to the issues and importance of climate change mitigation and energy efficiency toward establishing a sustainable Florida.

Policy Design

Introduce core competencies on climate change into professional licensing programs (e.g., energy efficiency in site and architectural design, engineering design, building construction, maintenance and operation, use of recycled materials, use of local materials, and environmental design practices).

Targeted professions should include, but not be limited to:

- Architecture
- Interior design
- Civil engineering
- Environmental engineering
- Building inspectors
- Code compliance officers
- Building trades (e.g., plumbing, HVAC)
- General contractors (site and building)
- Real estate
- Building operators
- Landscape architecture

- State certified teachers

Specific climate change-related questions will be added to the respective state licensure examinations. To maintain professional licenses within the designated design professions, the state will require the respective professional organizations to develop and administer continuing education programs that reinforce the importance of reducing GHG emissions and promoting energy efficiency.

In addition, to ensure that the state's universities educate and prepare our future design and engineering professionals in the urgency and importance of designing and developing for a sustainable Florida, the state's university design and engineering programs will develop and administer required courses of study, within the respective disciplines, that specifically teach to the issues and importance of GHG-emission reduction, climate change mitigation and energy efficiency. The State of Florida will expand its relationship with professional associations, universities and other educational institutions to encourage and enable the development of curricula to carry out this mandate.

Goals: To reduce GHG emissions through the application of best practices of climate change mitigation, by ensuring that Florida's licensed professionals largely responsible for the design, development and construction of the Florida built environment are knowledgeable and current on GHG emission reduction and climate change technologies, materials and design, development and construction standards. Through ongoing education of licensed professionals, current and new technologies, materials, and design, development, and construction standards will be applied to new and redeveloped projects in Florida's communities.

Timing: By 2010, all professional licence testing and exams for the professionals described above shall be modified to address policies and best practices for reduction of GHG emisions and energy efficiencies. Additionally, professional organizations will be required to develop continuing education programs that directly address new technologies, materials, and design, development, and construction standards that can be used to reduce GHG emissions, address climate change issues, and improve energy efficiency.

Parties Involved: Florida Department of Business and Professional Regulation (DBPR), DEP, FECC, statewide professional organization, and state universities.

Other: TBD—[as needed and approved by the TWG]

Implementation Mechanisms

TBD—[as approved by the TWG]

Related Policies/Programs in Place

TBD—[as needed and approved by the TWG]

Type(s) of GHG Reductions

TBD—[as needed and approved by the TWG]

Estimated GHG Reductions and Costs or Cost Savings

TBD—[as approved by the TWG]

Data Sources: [TBD, as approved by the TWG]

Quantification Methods: [e.g., full life-cycle analysis with supply/demand equilibrium adjustments on TWG approval]

Key Assumptions: [TBD, as approved by the TWG]

Key Uncertainties

TBD—[as needed and approved by the TWG]

Additional Benefits and Costs

TBD—[as needed and approved by the TWG]

Feasibility Issues

TBD—[as needed and approved by the TWG]

Status of Group Approval

Pending.

Level of Group Support

TBD—[blank until Action Team meeting #7 or #8]

Barriers to Consensus

TBD—[blank until final vote by the Action Team]