Energy Supply & Demand (ESD) Technical Working Group

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			
ESD-1	Technology Research & Development with Near-term Commercial Opportunities	***Not Yet Quantified***					**Pending**
ESD-2	Technology Research & Development with Longer-term Commercial Opportunities	***Not Yet Quantified***					**Pending**
ESD-3	Renewable Energy Incentives and Barrier Removal	***Not Yet Quantified***					**Pending**
ESD-4	Electricity Transmission and Distribution Improvements	***Not Yet Quantified***					**Pending**
ESD-5a	Renewable Portfolio Standard	***Not Yet Quantified***					**Pending**
ESD-5b	Environmental Portfolio Standard	***Not Yet Quantified***					**Pending**
ESD-6	Safe & Environmentally Sound Nuclear Power	***Not Yet Quantified***					**Pending**
ESD-7	Integrated Resource Planning	***Not Yet Quantified***					**Pending**
ESD-8	Combined Heat and Power Systems	***Not Yet Quantified***					**Pending**
ESD-9	Power Plant Efficiency Improvements	***Not Yet Quantified***					**Pending**
ESD-10	Grace Period for Replacement of Carbon-Intensive Units	***Not Yet Quantified***					**Pending**

ESD-11	Waste-to-Energy	***Not Yet Quantified***	**Pending**
ESD-12	Demand-Side Management/Energy Efficiency Programs, Funds, or Goals for Electricity	***Not Yet Quantified***	**Pending**
ESD-13	Promotion and Incentives for Improved Design and Construction in the Private Sector	***Not Yet Quantified***	**Pending**
ESD-14	Improved Building Codes for Energy Efficiency	***Not Yet Quantified***	**Pending**
ESD-15	Training and Education for Builders and Contractors	***Not Yet Quantified***	**Pending**
ESD-16	More Stringent Appliance/Equipment Efficiency Standards	***Not Yet Quantified***	**Pending**
ESD-17	Consumer Education Programs	***Not Yet Quantified***	**Pending**
ESD-18	Incentives to Promote Implementation of Customer-Sited Renewable Energy Systems	***Not Yet Quantified***	**Pending**
ESD-19	Energy Efficiency Financing & Alternative Business Models	***Not Yet Quantified***	**Pending**
ESD-20a	Incentives for Voluntary Adoption of Performance Standards in Master Planned Community Development	***Not Yet Quantified***	**Pending**
ESD-20b	Energy Efficiency for New and Existing Low Income Units	***Not Yet Quantified***	**Pending**
ESD-21	Rate structures and Technologies to Promote Reduced GHG Emissions	***Not Yet Quantified***	**Pending**
ESD-22	Demand-Side Management/Energy Efficiency Programs, Funds, or Goals for Natural Gas	***Not Yet Quantified***	**Pending**
ESD-23	Decoupling	***Not Yet 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.

ESD-1. Technology Research & Development with Near-term Commercial Opportunities

Policy Description

R&D funding can be targeted toward a particular technology or group of technologies as part of a state initiative to build an industry around that technology in the state, and/or to set the stage for adoption of the technology for use in the state. For example, an agency can be established with a mission to help develop and deploy energy storage technologies. R&D funding can also be made available to any renewable or other advanced technology through an open bidding procedure (i.e., driven by bids received rather than by a focused strategy to develop a particular technology). Funding can also be given for demonstration projects to help commercialize technologies that have already been developed, but which are not yet in widespread use. Finally, funding could be targeted to increase collaboration among existing institutions in the state for R&D.

States can undertake initiatives focused on developing, promoting, and/or implementing one or more specific technologies that have the potential to reduce GHG emissions. Technologies could include, among others, hydrogen production and fuel cells for electricity storage, compressed air energy storage systems (to enable greater penetration of intermittent renewable technologies such as wind), or biomass co-firing. Biomass co-firing can be a low-cost, near-term means of converting biomass to electricity and displacing a fraction of coal use by adding up to 15% biomass in high-efficiency coal boilers.

Hydrogen is not an energy source, but rather an energy carrier. It must be produced from other energy resources, such as fossil fuels (coal, oil, gas), renewable electricity (wind, solar), renewable fuels (biofuels, LFG), or nuclear power. However, it may facilitate the avoidance of GHG emissions by storing energy produced when and where available to be used when needed. The net greenhouse gas implications of producing hydrogen depend on the energy resource from which it is produced. In order to produce hydrogen from fossil fuels with low greenhouse gas emissions, it would be necessary to do it in conjunction with CCS. Policies in support of this option would provide incentives to projects that help develop or deploy low-GHG hydrogen production technologies as well as advance the technology of efficiently storing electric energy as hydrogen and converting it back to electricity.

Policy Design

Goals: TBD [as approved by the TWG]

Timing: TBD – Operational in [year].

Parties Involved: TBD – [e.g., electric generating companies].

Other: TBD – [as 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 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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]

ESD-2. Technology Research & Development with Longer-term Commercial Opportunities

Policy Description

Advanced fossil technologies include more efficient and thus lower emitting generation technologies. Advanced fossil technologies combined with carbon capture and sequestration or reuse (CCSR) may have the potential to significantly lower CO_2 emissions associated with fossil-fuel based electricity generation.

Policies to encourage the development of these technologies may include mandates or incentives to use advanced coal technologies for new coal plants, such as a mandate that requires new fossil fuel-fired power plants to achieve a specific low net CO_2 emission rate. Alternatively, a mandate might require that all or a portion of new coal plants be of a certain type, such as Integrated Gasification Combined Cycle (IGCC). Incentives may take the form of direct subsidies or assistance in securing financing, and/or off-take agreements. A combination of mandates and incentives is also possible.

Policies to encourage CCS could include a state agency or department within an existing agency tasked with promoting CCSR, evaluation studies to identify geologically sound reservoirs, R&D funding to improve CCS technologies, and/or financial incentives or mandates to capture and store carbon or to capture and reuse it.

While separation, capture and transport of CO_2 are themselves mature technologies, only three industrial-scale storage projects are currently in operation: the Sleipner project in an offshore saline formation in Norway, the Weyburn EOR project in Canada, and the In Salah project in a gas field in Algeria. Further R&D funding to improve CCSR technologies and evaluation studies to identify geologically sound reservoirs will be needed for this technology to play a significant role in reducing GHG emissions.

Policy Design

Goals: TBD [as approved by the TWG]

Timing: TBD – Operational in [year].

Parties Involved: TBD – [e.g., electric generating companies].

Other: TBD – [as 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 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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]

ESD-3. Renewable Energy Incentives and Barrier Removal

Policy Description

This option addresses incentives for distributed renewable energy resources throughout the state, and the removal of barriers distributed renewable energy.

Examples of financial incentives to encourage investment in renewable energy resources include:

1) direct subsidies for purchasing/selling renewable technologies;
2) tax credits or exemptions for purchasing renewable technologies;
3) feed-in tariffs, which provide direct payments to renewable generators for each kWh of electricity generated from a qualifying renewable facility;
4) tax credits for each kWh generated from a qualifying renewable facility;
5) regulatory policies that provide incentives and/or assurance of cost recovery for utilities that invest in central station renewable energy systems; and
6) incentives for solar/thermal water heating to off-set the use of fossil fuels.

In addition, this policy option would make it a priority for the Legislature, the Public Service Commission, and other relevant state agencies to identify and rectify barriers which are impeding the development of renewable resources in the state.

Institutional and market barriers to the development of renewable energy include price distortions, failure of the market to value the public benefits of renewables and the social cost of fossil fuel technologies, inadequate information, institutional barriers to grid interconnection, high transaction costs because of small projects, high financing costs because of lender unfamiliarity and perceived risk. These can be overcome through a suite of financial and regulatory redresses as well as through information and public education campaigns.

Financial obstacles can be addressed through property tax exemptions, exclusions, and credits; personal income tax credits or deductions to cover the expense of purchasing and installing renewable energy equipment; loan programs to aid in financing the purchase of renewable energy equipment; and grant programs designed for research and development or to help a project achieve commercialization.

Regulatory policies can include solar or wind easements of access rights; development guidelines at the local level to enhance renewable energy generation (e.g. requiring proper street orientation); requirements that utilities provide information and utility leasing programs for renewable energy production to customers in remote regions.

Pricing and metering strategies can provide price signals and revenue streams to support investment in and optimal operations of renewable energy systems. Net metering is a policy that allows owners of grid-connected distributed generation (generating units on the customer side of the meter, often limited to some maximum kW level) that generate excess electricity to sell it back to the grid, effectively "turning the meter backward." Net metering provides several

incentives for renewable DG by reducing transaction costs (e.g., no need to negotiate contracts for the sale of electricity back to the utility) and increasing revenue by setting compensation at retail electricity rates rather than at utility avoided costs. In addition to net metering, pricing strategies of relevance to distributed renewable energy systems can include "time-of-use" rates. These are fixed rates for different times of the day and/or for different seasons which reflect the time-varying value of electricity.

Well-designed interconnection rules will ensure that distributed power products meet minimum requirements for performance, safety, and maintenance, at the same time significantly advancing the commercialization of these technologies. Such rules, generally developed and administered by a state's public utility commission, establish clear and uniform processes and technical requirements for connecting DG systems to the electric utility grid. Interconnection standards will reduce barriers to connection of DG systems to the grid. Connecting to the grid enables the facility to: a) purchase power from the grid to supply supplemental power as needed, for example, during periods of planned system maintenance, b) sell excess power to the utility, c) maintain grid frequency and voltage stability, as well as utility worker safety. This topic is of particular interest as the Energy Policy Act of 2005 (EPAct 2005) directs states to consider upgrading their standards for interconnecting small generators within one year of enactment. (http://www.epa.gov/chp/pdf/interconnection_factsheet.pdf).

Policy Design

Goals: TBD [as approved by the TWG]

Timing: TBD – Operational in [year].

Parties Involved: TBD – [e.g., electric generating companies].

Other: TBD – [as 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 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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]

ESD-4. Electricity Transmission and Distribution Improvements

Policy Description

Measures to improve transmission systems to reduce bottlenecks and enhance throughput may be required to satisfy long-term electricity demands and improve the efficiency of operations system wide. Opportunities may exist to substantially increase transmission line carrying capacity through the implementation of new construction and retrofit activities on the transmission grid, including incorporating advanced composite conductor technologies, capacitance technologies, and grid management software. Siting new transmission lines can be a difficult process given their cost and their local impact on the environment, and on the use, enjoyment, and value of property. Policy measures in support of this option could provide incentives to utilities to upgrade transmission systems and reduce barriers to siting of new transmission lines.

There are several energy efficiency measures that can be implemented to reduce the transmission and distribution line losses of electricity. Utilities use a variety of components throughout the transmission and distribution system to manage losses. Increasing the efficiency of these components can further reduce losses and associated GHG emissions. For example, the state of Vermont offers a rebate to encourage the installation of energy efficient transformers. Regulations, incentives, and/or support programs can be applied to achieve greater efficiency of transmission and distribution system components.

Policy Design

Goals: TBD [as approved by the TWG]

Timing: TBD – Operational in [year].

Parties Involved: TBD – [e.g., electric generating companies].

Other: TBD – [as 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 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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]

ESD-5a. Renewable Portfolio Standard

Policy Description

A renewable portfolio standard (RPS) is a requirement that utilities must supply a certain, generally fixed percentage of electricity from an eligible renewable energy source(s).

Policy Design

Goals: TBD [as approved by the TWG]

Timing: TBD – Operational in [year].

Parties Involved: TBD – [e.g., electric generating companies].

Other: TBD – [as 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 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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]

ESD-5b. Environmental Portfolio Standard

Policy Description

An environmental portfolio standard (EPS) expands that notion to include energy efficiency or other GHG emissions-reducing technologies as an eligible resource.

Policy Design

Goals: TBD [as approved by the TWG]

Timing: TBD – Operational in [year].

Parties Involved: TBD – [e.g., electric generating companies].

Other: TBD – [as 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 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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]

ESD-6. Safe & Environmentally Sound Nuclear Power

Policy Description

Nuclear power has historically presented a low-GHG source of electricity. However, no new commercial reactor has come on line in the US since 1996 due to extremely high capital costs, the absence of any plan or technology for permanent disposal of nuclear waste, and risks to public safety exemplified by high-profile accidents at Three Mile Island and Chernobyl. The current Administration has been supportive of nuclear expansion, emphasizing its importance in maintaining a diverse energy supply and its reputation for producing electricity with negligible pollutant emissions during operation. Congress has also offered significant financial subsidies for new nuclear plants in an effort to jump-start the industry, including limitations on liability for nuclear accidents.

Nuclear plant relicensing allows a nuclear power plant to extend the life of the facility for twenty years past its original 40-year license term. This is considered a low-cost and low-emissions source of energy because there is limited additional capital cost or additional embodied emissions associated with extending the life of fully depreciated and operating nuclear plants. The Nuclear Regulatory Commission (NRC), the nation's regulatory authority for nuclear power, considers the relicensing program one of its major cornerstones of current regulatory activity. A nuclear power plant uprating is a process whereby a licensee receives approval from the NRC to operate a plant at a higher power level than the level authorized in the original license.

Policy Design

Goals: TBD

Timing: TBD – Operational in [year].

Parties Involved: TBD – [e.g., electric generating companies].

Other: TBD – [as 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 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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]

ESD-7. Integrated Resource Planning

Policy Description

Integrated Resource Planning, or IRP, is planning process that strives to meet needs for electricity services in a manner that meets multiple objectives, such as least cost, meeting emissions standards, fuel diversity, RPS requirements, etc. An IRP process should include evaluation of all options, from both the supply and demand sides, in a fair and consistent manner, building in flexibility to account for future uncertainties. While originally targeted primarily towards cost minimization, IRP processes have increasingly considered the environmental risks and the potential costs associated with future regulation of GHGs.

Policy Design

Goals: TBD [as approved by the TWG]

Timing: TBD – Operational in [year].

Parties Involved: TBD – [e.g., electric generating companies].

Other: TBD – [as 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 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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]

ESD-8. Combined Heat and Power Systems

Policy Description

Combined heat and power can reduce GHG emissions by increasing the overall efficiency of fuel use. However, there are numerous barriers to combined heat and power (CHP), including inadequate information, institutional barriers, high transaction costs because of small projects, high financing costs because of lender unfamiliarity and perceived risk, "split incentives" between building owners and tenants, and utility-related policies like interconnection requirement, high standby rates, exit fees, etc. The lack of standard offer or long-term contracts, payment at avoided cost levels, and lack of recognition for emissions reduction value provided also creates obstacles. Policies to remove these barriers can include: improved interconnection policies, improved rates and fees policies, streamlined permitting, recognition of the emission reduction value provided by CHP and clean DG, financing packages and bonding programs, power procurement policies, education and outreach, etc.

Financial incentives for combined heat & power (CHP) could include:

1) direct subsidies for purchasing/selling CHP systems given to the buyer/seller;
2) tax credits or exemptions for purchasing/selling CHP systems given to the buyer/seller;
3) tax credits or exemptions for operating CHP systems;
4) feed-in tariff, which is a direct payment to CHP owners for each kWh of electricity or BTU of heat generated from a qualifying CHP system; and
5) tax credits for each kWh or BTU generated from a qualifying CHP system.

Combined heat and power (CHP) systems reduce fossil fuel use and greenhouse gas emissions, both through the improved efficiency of the CHP systems, relative to separate heat and power technologies, and by avoiding transmission and distribution losses associated with moving power from central power stations that are located far away from where the electricity is used. Potential elements of this option include:

- Promotion of the use of gas-fired CHP systems
- Promotion of the use of biomass-fired CHP systems
- Creation/expansion of markets for, and incentives designed to promote implementation of, CHP units in capacities suitable for residential, commercial, and industrial users.
- Provision of tax benefits, attractive financing arrangements, and other incentives to promote CHP technologies.

Potential supporting measures for this option include training/certification of installers/contractors, net metering and other pricing arrangements, establishment of clear, and consistent interconnection standards, and creation/support of markets for biomass fuels.

Pricing and metering strategies can provide price signals and revenue streams to support investment in and optimal operations of CHP systems. Net metering is a policy that allows

owners of grid-connected distributed generation (generating units on the customer side of the meter, often limited to some maximum kW level) that generate excess electricity to sell it back to the grid, effectively "turning the meter backward." Net metering provides several incentives for renewable DG by reducing transaction costs (e.g., no need to negotiate contracts for the sale of electricity back to the utility) and increasing revenue by setting compensation at retail electricity rates rather than at utility avoided costs. In addition to net metering, pricing strategies of relevance to CHP and distributed renewable energy systems can include "time-of-use" rates. These are fixed rates for different times of the day and/or for different seasons which reflect the time-varying value of electricity.

Policy Design

Goals: TBD [as approved by the TWG]

Timing: TBD – Operational in [year].

Parties Involved: TBD – [e.g., electric generating companies].

Other: TBD – [as 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 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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]

ESD-9. Power Plant Efficiency Improvements

Policy Description

Efficiency improvements refer to increasing generation efficiency at power stations through incremental improvements at existing plants (e.g., more efficient boilers and turbines, improved control systems, or combined cycle technology). Repowering existing power plants refers to switching to lower or zero emitting fuels at existing plants, or for new capacity additions. This includes use of biomass or natural gas in place of coal or oil. Policies to encourage efficiency improvements and repowering of existing plants could include incentives or regulations as described in other options, with adjustments for financing opportunities and emission rates of existing plants.

Policy Design

Goals: TBD [as approved by the TWG]

Timing: TBD – Operational in [year].

Parties Involved: TBD – [e.g., electric generating companies].

Other: TBD – [as 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 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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]

ESD-10. Grace Period for Replacement of Carbon-Intensive Units

Policy Description

A 'grace period' of a number of years during which time existing units (typically coal) that are scheduled to be shut-down and replaced by clean units are exempted from new CO_2 emission requirements or penalties, through either the shut-down date of the existing unit or the operational date of the new clean replacement unit.

Policy Design

Goals: TBD [as approved by the TWG]

Timing: TBD – Operational in [year].

Parties Involved: TBD – [e.g., electric generating companies].

Other: TBD – [as 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 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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]

ESD-11. Waste-to-Energy

Policy Description

The use of those elements of the municipal waste stream that are able to serve as fuel for electric generation. This option could be structured as either a mandate or an incentive program.

Policy Design

Goals: TBD [as approved by the TWG]

Timing: TBD – Operational in [year].

Parties Involved: TBD – [e.g., electric generating companies].

Other: TBD – [as 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 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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]

ESD-12. Management/Energy Efficiency Programs, Funds, or Goals for Electricity

Policy Description

This option focuses on increasing investment in electricity demand-side management programs through programs run by utilities or others, energy efficiency funds, and/or energy efficiency goals. These options are typically termed DSM activities, and may be designed to work in tandem with other strategies recommended by the ACTION TEAM that can also encourage efficiency gains.

The policy design includes two key and linked dimensions: achievable/desirable energy savings and policy/administrative mechanisms to achieve these savings. In order to implement expanded DSM programs, a number of mechanisms should be considered. Candidate mechanisms include revising existing statutes to enable utility investments in energy efficiency at the levels indicated above, to consider as potentially eligible programs that are cost-effective taking into account the valuation of for CO_2 emissions. Policy and administrative mechanisms that might be applied include regulator-verified savings targets, public benefit charges, portfolio standards, "energy trusts," integrated resource planning, performance-based incentives, decoupling of rates and revenues, and appropriate rate treatment for efficiency. Elements that might be considered in designing this option might include:

- Implementation/administration by utility (including municipal utilities and cooperatives), state agency, or third-party actors.
- Subsidized energy audits for homeowners, businesses, industries.
- Incentives for specific technologies, potential including (but not limited to) lighting, water heating, plug loads, networked personal computer management, power supplies, motors, pumps, boilers, customer-side transformers, water use reduction, ground-source heat pumps, and others.
- Energy efficiency reinvestment funds.

This policy may be broad in focus, or it can focus on specific market segments. Complimentary policies include appliance recycling/pick-up programs. Measures supporting this option might include consumer education, performance contracting, and energy end-use surveys.

Include municipal utilities and cooperatives.

Policy Design

Goals: In each sector—residential, commercial and industrial—reduce energy consumption relative to consumption in the prior year by 1.0% per year through 2012, then by 1.5% per year through 2015, and then 2.0% per year thereafter through 2030. This schedule will yield a cumulative reduction by 2030 of 31.5%.

Timing: 2010 is the first year of compliance.

Parties Involved: All electric utilities (public and private), regulators, and customers (all sectors).

Other: TBD – [as 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 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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]

ESD-13. Promotion and Incentives for Improved Design and Construction in the Private Sector

Policy Description

This policy provides incentives and targets to induce the owners and developers of new and existing residential buildings to improve the efficiency with which energy and other resources are used in those buildings, along with provisions for raising targets periodically and providing resources to building industry professionals to help achieve the desired building performance.

This policy can include 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. Additional potential elements of this option include:

- Target new, renovated, and/or existing buildings (retrofits).
- Set a cap on consumption of energy per unit area of floor space for new buildings.
- Encourage building commissioning and recommissioning, including energy tracking and benchmarking.
- Provide incentives, in the form of tax credits, DSM program support, financing incentives (such as "green mortgages"), or other inducements for retrofit of existing residential and commercial buildings.
- Encourage the use of alternative and local building materials and practices.

Potential supporting measures for this option include training and certification of building professionals, consumer and primary/secondary education, performance contracting/shared savings arrangements, and setting up of a clearinghouse for information on and access to software tools to calculate the impacts of energy efficiency and solar technologies for buildings.

Compliance with improved design and construction certifications (such as the LEED, Energy Star, Florida Green Building Coalition and other standards) does not guarantee actual performance at the meter. Incentives should be linked to demonstrated performance over time (e.g. as a rebate after a year of demonstrated performance) rather than when a certificate is awarded. Furthermore, the value of certifications should be judged against meaningful benchmarks based on community consumption standards developed for similar classes of homes.

This policy includes the promotion of and incentives for voluntary adoption of performance standards in Master Planned Community Developments. Over the last decade more than 1,000,000 new homes were built in Florida, with the majority in master planned community developments that are uniquely well equipped to integrate energy efficiency both into community designs and housing standards. Master planned community developments also strongly influence on-going community operations and standards through their organizational design of Home Owner Associations (and/or Community Development Districts). Developers can readily establish minimum performance standards (e.g., all homes shall be Energy Star

qualified) that can literally effect thousands of homes and strongly influence local standards of product performance and tradecraft. This policy offers the potential for developers to specify requirements that go well beyond code (and local standards) in terms of energy efficiency, which could qualify the community for carbon credits.

This policy also includes a focus on specific energy end-uses and technologies that target window AC units, lighting, water heating, plus loads, networked PC management, power supplies, motors, pumps, boilers, and others. Consumer products programs may include education, incentives, retailer training, and marketing and promotion.

Policy Design

Goals:

- Energy efficiency in master-planned community developments 10% higher than that required by HB 697 and HB 7135.
- Florida green building certification program developed for building professionals involved in the design and construction of residential buildings, such as architects and designers of residential buildings and residential developers and general contractors. An example is the Certified Green Building Professionals program administered by Build It Green for California building professionals.

Timing:

- For master-planned community developments, ramp up efficiency improvements above code beginning with 2% in 2010 to 10% in 2015.
- Have Florida certification program in place for building professionals by the end of 2010.

Parties Involved:

- Architects, building designers, engineers, developers, builders, contractors.
- Retailers of energy-efficient products.
- Manufacturers of alternative building products.
- Building association to develop and administer certification program.

Other: Indoor air quality standards, construction waste management and recycling plans and HVAC and lighting standards, including but not limited to energy efficiency and occupant health and safety, would be developed to complement energy efficiency codes.

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 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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]

ESD-14. Improved Building Codes for Energy Efficiency in Existing Buildings

Policy Description

Buildings are significant consumers of energy and other resources. Building energy codes can be an effective way to eliminate the least efficient energy approaches in new or renovated buildings. This policy sets a goal for reducing building energy consumption, to be achieved by increasing standards for the minimum performance of new and substantially renovated commercial and residential buildings through the adoption and enforcement of building codes. Building codes would be made more stringent via incorporation of aspects of advanced/next generation building designs and construction standards, such as sustainable design and green building standards.

Potential elements of a building code policy include:

- *Require high-efficiency appliances in new construction and retrofits.*
- *Training of building code and other officials in energy code enforcement.*
  Potential measures supporting this option can include consumer education, improved enforcement of building codes, training for builders and contractors, and development of a clearinghouse for information on and to provide access to software tools to calculate the impact of energy efficiency and solar technologies on building energy performance.
- *Energy rating systems for new and existing homes*
- *White Roofs, Rooftop Gardens, and Landscaping (including Shade Tree Programs)*
  High summer roof temperatures increase the need for more electricity for air conditioning, as well as producing black carbon from updrafts. Incentives for white roofs, rooftop gardens, and landscaping can lower electricity demand.
- *Promote Installation of Ductwork and Air Handlers in Conditioned Spaces*
  Approximately half of the energy demand in Florida's homes is for heating and cooling. Air handlers are generally in garages or occasionally in attic spaces. Ductwork is uniformly in attic spaces and exposed to very high (or low) temperatures. The energy costs associated with conduction and leakage losses can be reduced considerably by moving air handlers and ductwork into spaces within a home's conditioned envelope.

Policy Design

Recently, the Florida Legislature has passed legislation that sets new energy efficiency standards for the building code. HB 7135 directs the Florida Building Commission to select the most recent International Energy Conservation Code as a foundation code. HB697 targets a 20% increase in building code energy efficiency standards from 2007 levels by 2010. Furthermore, both HB 697 and HB 7135 require that code energy efficiency standards should be incrementally scaled up to 50% higher than 2007 levels by 2019.

Goals: Reduce energy consumption per square foot of floor space at new construction and renovated buildings by X% by 2030.

Timing: Operational in 2010.

Parties Involved: Florida Building Commission, Florida Department of Community Affairs.

Other: TBD – [as 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 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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]

ESD-15. Training and Education for Builders and Contractors

Policy Description

This policy option will include two facets of training and education for building professions:

1) Training and education for builders and contractors (e.g., HVAC sizing, duct sealing)
This option refers to an education and outreach program for building professionals to encourage incorporation of energy-efficiency and greenhouse gas emissions-reduction considerations. Examples include:

- Start programs to train builders and contractors on proper heating and air conditioning sizing and installation.
- Mandate that State Boards of Licensing for building professionals cover knowledge of the improved building codes and building energy performance requirements reflected in various policy options in licensing exams.
- Implement code training and technical assistance for builders and architects.

2) Energy Management Training/Training of Building Operators
Energy Management Training provides administrative and technical training for energy managers, school officials, building operators, and others responsible for energy-efficient facility operation. This policy could include:

- Training commercial building energy managers, for example by making use of the building operator training and certification program developed in the Pacific Northwest.
- Training industrial energy and facility managers in techniques for improving the efficiency of their steam, process heat, pumping, compressed air, motors, and other systems, perhaps dovetailing with the U.S. DOE in this area.

Policy Design

Goals: TBD [as approved by the TWG]

Timing: TBD – Operational in [year].

Parties Involved: TBD – [e.g., electric generating companies].

Other: TBD – [as 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 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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]

ESD-16. More Stringent Appliance/Equipment Efficiency Standards

Policy Description

Appliance efficiency standards reduce the market cost of energy efficiency improvements by incorporating technological advances into base appliance models, thereby creating economies of scale. Appliance efficiency standards can be implemented at the state level for appliances not covered by federal standards, or standards can be jointly developed by multiple states.

To ensure that appliances purchased in Florida maximize the cost-effective potential for energy efficiency and minimize GHG emissions, the following policy prescriptions should be considered:

- Improve appliance standards for appliances not regulated by federal standards.
- Lobby for more stringent appliance standards at the federal level. Require the preferential procurement of ENERGY STAR products if available (equipment, appliance, or technology) if state funds are involved (state purchasing contracts, state grants or loans, etc.)
- Provide Florida state sales tax exemptions, whether temporary or permanent, for ENERGY STAR-certified products.
- Establishment and enforcement of higher-than-federal state-level appliance and equipment standards (or standards for devices not covered by federal standards).
- Join with other states in adopting higher standards.
- Require high-efficiency appliances in new construction and retrofits.
- Uniform labeling standards for appliances.
- Set state minimum efficiency standards for appliances not covered by federal standards, as recommended by Appliance Standards Awareness Program (ASAP),[1] by 2010.
- Doubling the market penetration of ENERGY STAR appliances in purchases made in the residential, commercial, and industrial sectors, where applicable, up to 100%, by 2015.

Consumer education is a potential supporting measure for this option.

Policy Design

Goals: In the residential sector, achieve a cumulative 19% reduction in energy consumption relative to 2009 by reducing energy use by 1.0% per year (relative to consumption in the prior

[1] See http://www.standardsasap.org/documents/a062_sc.pdf. The analysis recommends standards for the following products: bottle-type water dispensers, commercial boilers, commercial hot-food-holding containers, compact audio products, DVD players and recorders, liquid immersion distribution transformers, medium-voltage dry-type distribution transformers, metal halide lamp fixtures, pool heaters, portable electric spas, residential furnaces and boilers, residential pool pumps, single-voltage external AC-to-DC power supplies, state-regulated incandescent reflector lamps, and walk-in refrigerators and freezers.

year) from 2010 through 2030. In the commercial and industrial sectors, achieve a cumulative 10% reduction in energy consumption relative to 2009 by reducing energy use by 0.5% per year (relative to consumption in the prior year) from 2010 through 2030.

Timing: Standards effective January 1, 2010.

Parties Involved: TBD – [e.g., electric generating companies].

Other: Florida Department of Environmental Protection, Florida Department of Revenue.

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 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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]

ESD-17. Consumer Education Programs

Policy Description

The ultimate effectiveness of emissions reduction activities in many cases depends on providing information and education to consumers regarding the energy and GHG emissions implications of consumer choices. Public education and outreach is vital to fostering a broad awareness of climate change issues and effects (including co-benefits, such as clean air and public health) among the state's citizens. Such awareness is necessary to engage citizens in actions to reduce GHG emissions in their personal and professional lives. Public education and outreach efforts should integrate with and build upon existing outreach efforts involving climate change and related issues in the state. Ultimately, public education and outreach will be the foundation for the long-term success of all of the mitigation actions proposed by the Florida Action Team, as well as those that may evolve in the future.

Policy Design

Goals: TBD [as approved by the TWG]

Timing: TBD – Operational in [year].

Parties Involved: TBD – [e.g., electric generating companies].

Other: TBD – [as 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 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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]

ESD-18. Incentives to Promote Implementation of Customer-Sited Renewable Energy Systems

Policy Description

Distributed electricity generation sited at residences and commercial and industrial facilities, and powered by renewable energy sources (typically solar, but also wind, small hydroelectric power sources, or biomass or biomass-derived fuels), displaces fossil-fueled generation and avoids electricity transmission and distribution losses, thus reducing greenhouse gas emissions. This policy can also encourage consumers to switch from using fossil fuels to using renewable fuels in applications such as water, process, and space heating, as well as to supply new energy services using fuels that produce low or no GHG emissions. Increasing the use of renewable energy applications in homes, businesses, and institutions in Florida can be achieved through a combination of regulatory changes and financial incentives. Potential elements of this option include:

- Solar roofs (roofing materials with built-in solar photovoltaic cells, or solar PV panels erected on roofs).
- Solar water heating and solar space heating systems.
- Wind power systems, particularly for rural areas.
- Biomass-fired generation, space, or water heating systems.
- Programs targeted at specific customer sectors (residential, commercial, industrial), or specific markets within sectors.
- Tax credits, and/or utility or other incentives to lower the first cost of distributed energy systems to users.

Potential supporting measures for this option include training/certification of installers/contractors, net metering and other pricing arrangements, interconnection standards, and creation/support of markets for biomass fuels.

Policy Design

Goals: TBD [as approved by the TWG]

Timing: TBD – Operational in [year].

Parties Involved: TBD – [e.g., electric generating companies].

Other: TBD – [as 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 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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]

ESD-19. Energy Efficiency Financing & Alternative Business Models

Policy Description

Energy efficiency financing programs provide low interest loans to the residential, commercial and industrial sectors in order to facilitate the adoption of energy saving measures. These low interest loans can often be facilitated through traditional lending mechanisms,[2] as well as through specially designated funds.

Policy Design

Goals: In each sector—residential, commercial and industrial—reduce energy consumption by a cumulative amount of 25% relative to 2010 consumption.

Timing: Funds operational in 2010 through 2020, with results tracked annually from 2011 through 2030. Achieve the 25% reduction in a ramped fashion, with 1.0% reductions in 2011 through 2014, relative to consumption in the prior year; 1.25% from 2015 through 2018; 1.5% from 2019 through 2022; and 1.75% from 2023 through 2030.

Parties Involved: Florida Department of Environmental Protection, Florida Department of Community Affairs.

Other: TBD – [as 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 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]

[2] For instance, see the Nebraska Dollar Energy Saving Loans, through which the Nebraska State Energy Office purchases half of each energy efficiency loan at a 0% interest rate so that the total interest paid by the borrower is half the market rate.

http://www.ase.org/content/article/detail/133

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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]

ESD-20a: Incentives for Voluntary Adoption of Performance Standards in Master Planned Community Development

Policy Description

Over the last decade more than 1,000,000 new homes were built in Florida. The majority of were in master planned community developments, which are uniquely well equipped to integrate energy efficiency both into community designs and housing standards. Master planned community developments also strongly influence on-going community operations and standards through their organizational design of Home Owner Associations (and/or Community Development Districts). Developers can readily establish minimum performance standards (e.g., all homes shall be Energy Star qualified) that can literally effect thousands of homes and strongly influence local standards of product performance and tradecraft. This policy offers the potential for developers to specify requirements that go well beyond code (and local standards – see 7.6) in terms of energy efficiency, which could qualify the community for carbon credits.

Policy Design

Goals: TBD – [as approved by the TWG]

Timing: TBD – [as approved by the TWG]

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

Other: TBD – [as 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 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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]

ESD-20b: Energy Efficiency for New and Existing Low Income Units

Policy Description

This option refers to grants and financing programs with the aim of improving energy efficiency in low income units. Improving energy efficiency in low income units can provide some of the most cost effective energy savings in the residential sector. Facilitating access to existing grants and providing new low interest energy efficiency loans can be effective mechanisms through which to realize those savings.

Policy Design

Goals: Achieve a cumulative 15% reduction in the use electricity and natural gas by low income housing units from the policy launch through to the end of 2020, relative to 2009 consumption level.

Timing: Policy in place effective January 1, 2010, reaching the 2020 goal by ramping up savings over time, starting with reduced energy consumption of 1.0% per year (relative to the prior year) through 2013; 1.5% per year through 2017; and then 2.0% through 2020.

Parties Involved: Florida Department of Environmental Protection, Florida Department of Community Affairs, US Department of Housing and Urban Development.

Other: TBD – [as 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 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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]

ESD-21. Rate structures and Technologies to Promote Reduced GHG Emissions

Policy Description

Time-of-use rates typically price electricity higher at times of higher power demand, and thus better reflect the actual cost of generation. Time-of-use rates may or may not have a significant impact on total GHG emissions, but do affect on-peak power demand and thus both the need for peaking capacity and fuel for peaking plants.

Tiered (increasing block) rates for electricity and natural gas use provide affordable base usage rates for consumers, but which increase with increasing consumption, hence providing a built-in rate incentive for energy conservation and energy efficiency.

Policy Design

Goals: Through tiered (increasing block) rates for electricity and natural gas, reduce electricity and natural gas consumption by the commercial and industrial sectors[3] by 10% of retail sales by the end of 2012.

Timing: New rate structure will begin on January 1, 2010.

Implementing Parties: All Florida utilities and utility customers, and the Florida Public Service Commission.

Other: TBD – [as 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 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]

[3] It is assumed that the main impact of this change in pricing will be on large industrial and commercial users.

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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]

ESD-22. Demand-Side Management/Energy Efficiency Programs, Funds, or Goals for Natural Gas

Policy Description

This option has most of the same attributes and options for design elements and implementation as ESD-12, but focuses on increasing investment in demand-side management programs related to the use of natural gas, propane (or liquefied petroleum gas—LPG), and fuel oil, through programs run by utilities or others, energy efficiency funds, and/or energy efficiency goals.

Policy Design

Goals: In each sector—residential, commercial and industrial—reduce energy consumption relative to consumption in the prior year by 1.0% per year through 2012, then by 1.5% per year through 2015, and then 2.0% per year thereafter through 2030. This schedule will yield a cumulative reduction by 2030 of 31.5%.

Timing: 2010 is the first year of compliance.

Parties Involved: All natural gas utilities (public and private), regulators, and customers (all sectors).

Other: TBD – [as 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 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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]

ESD-23. Decoupling

Policy Description

Traditional regulatory frameworks tie a utility's recovery of fixed costs of providing service (for example, infrastructure costs) to the quantity of energy sold. There is thus a perverse incentive for utilities to increase sales in order to increase revenues and minimize investments in energy efficiency (which will simply lead to lower than anticipated sales). This option includes the implementation of cost recovery rules that "decouple" the level of utility sales from net revenues earned by investor-owned utilities.

Implement rate structures and utility cost recovery rules that "decouple" the level of gas and electric utility sales from the net revenues earned by utilities. Decoupling should be geared exclusively to removing barriers to utility investment in programs to increase their customers' energy efficiency and reduce customer loads. Decoupling mechanisms should be carefully designed so as to avoid, as much as possible, adverse economic impacts on ratepayers so that factors other than energy efficiency investments—such as economic downturns—do not adversely affect rates, and to assure that the decoupling mechanism is fair to both consumers and shareholders.

Policy Design

Goals: Non-quantifiable; the resulting declines in energy use will be tied more directly to utility demand side management programs (ESD-12 and ESD-22) that will more successful due to decoupling.

Timing: New regulatory framework in place by January 1, 2010.

Parties Involved: Florida utilities and the Florida Public Service Commission.

Other: TBD – [as 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 approved by the TWG]

Estimated GHG Reductions and Costs or Cost Savings

Not-quantifiable

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 – [until CAT moves to final agreement]

Level of Group Support

TBD – [blank until completed by CAT]

Barriers to Consensus

TBD – [blank until completed by CAT]