FLORIDA BUILDING COMMISSION
FLORIDA ENERGY CODE WORKGROUP
OCTOBER 14, 2009—MEETING VII
OPTIONS/RECOMMENDATIONS EVALUATION WORKSHEET

ACCEPTABILITY RANKING EXERCISE

This list of options is a preliminary list and is not meant to be an exhaustive list. All of the options regarding cost effectiveness test were extracted the FSEC Report: "Energy Efficiency Cost-Effectiveness Tests for Residential Code Update Process", and the balance were proposed by members during meetings. During the meeting(s) members are asked to propose any additional option(s) they would like the Workgroup to evaluate, and to develop and rank options, and following discussions and refinements, may be asked to do additional rankings of the options if requested by a Workgroup member. Members should be prepared to offer specific refinements to address their reservations. The following scale will be utilized for the ranking exercises:

Acceptability Ranking Scale	***4 = acceptable,*** *I agree*	***3 = acceptable,*** *I agree with* ***minor reservations***	***2 = not acceptable, I*** *don't agree unless* ***major reservations*** *addressed*	***1 = not acceptable***

WORKGROUP'S OPTIONS EVALUATION PROCESS OVERVIEW

For each key topical issue area the following format will be used:

* Overview of the option will be provided by proponent,
* Questions and answers on the option,
* General discussion with Workgroup members on the topic/issue,
* Refinements proposed to existing options (to enhance option's acceptability),
* Public input on option or sweet of options,
* Acceptability ranking of options (new, or any a Workgroup member proposes to be re-evaluated),
* Information needs identified.

For each of the key topical issue areas, member's will be asked to identify a range of potential options for the Workgroup to consider. Issues and Options will be organized to address the tasks assigned by the Florida Building Commission and the Florida Legislature. A preliminary list of options will be drafted and the Workgroup may discuss and add any additional relevant options they deem appropriate. When available, staff will provide information from data collections, research studies, and other pertinent sources to the Workgroup. Members and staff should request any information they feel necessary for evaluating an issue, option or range of options. Once ranked by the Workgroup, options achieving a consensus level of support will be listed within relevant key topical issue areas. Options with 75% or greater number of 4's and 3's in proportion to 2's and 1's shall be considered consensus options/recommendations.

1. ENERGY EFFICIENCY COST-EFFECTIVENESS TESTS FOR RESIDENTIAL AND COMMERCIAL CODE CONSENSUS RECOMMENDATIONS; DEFINITION OF CONSUMER

These recommendations are archived in the Workgroup's agenda packet.

2. DEVELOP A STRATEGIC PLAN FOR INCREASED EFFICIENCY REQUIREMENTS REQUIRED BY LAW FOR FUTURE FBC EDITIONS

The Legislature established a schedule for increases in building energy efficiency requirements. This task expands the study of energy conservation measures for residential buildings to investigation of efficiency options for commercial buildings and the development of a plan to implement the requirements of the new law. Section 553.9061 "Scheduled increases in thermal efficiency standards." was created to establish percent increases in efficiency to be implemented in the 2010, 2013, 2016 and 2019 Code. With the adoption of the Glitch Amendments to the 2007 Edition of the Florida Building Code and the revisions to Rule 9B-13 Thermal Efficiency Standards, the Commission implemented a strategy for increasing the energy efficiency provisions of the Code by 15%. The Commission's Energy Code Workgroup and Energy TAC are working with stakeholder to evaluate options for achieving an additional 5% increase for the 2010 Edition of the Code, and for achieving the progressive increases in efficiency required for subsequent editions of the code.

Energy act of 2008 (HB 7135) directs the Commission to include, as a minimum, certain technologies for achieving enhanced building efficiency targets established by the Act in the Florida Energy Code. The Building Code act of 2008 (HB 697) directs the Commission to facilitate and promote the use of certain renewable energy technologies.

GOAL
Implement the energy efficiency standards increases established by s. 553.9061, F.S.

OBJECTIVE
Develop long range strategic plan for how to comply with statutory schedule of efficiency increases.

TASKS

1. Evaluate how to provide for future flexibility to implement efficiency increases for the broadest range of housing prices.
2. Compare characteristics of FEECBC to IECC for flexibility to achieve higher efficiency standards.
3. Develop strategic plan for FBC energy standards compliance methods.
4 Integrate FEECBC and IECC to implement the strategic plan for the 2010 FBC.

Task/Analysis:

Task 1:

- Identify compliance methods used in current national model and Florida energy codes.
- Identify compliance method characteristics that provide for future flexibility of efficiency increases.

Task 2:

- Create a matrix of IECC and FEECBC characteristics.
- Evaluate for flexibility to implement future efficiency increases.

Task 3:

- Select compliance method characteristics that provide the maximum potential to implement the 553.9061 mandated efficiency increases to form the strategic plan.

Task 4:

- Develop a draft of the energy standards chapters for the 2010 FBC.

Issues for Evaluation:

- *Review the adequacy of the current Code's accounting for the list of technologies recognized in statute.*
- *Identify technologies not yet in Code and prioritize for adding capability to consider.*
- *Conduct a cost/benefit analysis for ECMs using the new economic test rule for the 2010 Edition of the Code.*
- *Consider whether certifications of compliance with "above code programs" should be recognized in lieu of Code documentation and inspection.*
- *Evaluate FEECBC/IECC integration for 2010 FBC.*

STRATEGIC PLAN CRITERIA

1. The Strategic Plan must implement s.553.9061(1), F.S., scheduled increases in the Code's energy performance standard.
2. The Strategic plan must consider cost effectiveness of the incremental changes in efficiency required by the Code.
3. The Strategic Plan must implement s.553.73(6)(a), F.S., selection of the IECC as a foundation code and its modification to maintain the efficiencies of the Florida Energy Efficiency Code for Building Construction, s.553.901, F.S..
4. The Strategic Plan must implement s.553.9061(2), F.S., requiring the Code to recognize including energy efficiency performance options and elements including but not limited to:
   Solar water heating; Energy efficient appliances; Energy efficient windows, doors and skylights; Low solar absorption roofs/cool roofs; Enhanced ceiling and wall insulation; Reduced leak duct systems; Programmable thermostats; and Energy efficient lighting systems.
5. The Strategic Plan should identify compliance methods with the best potential for complying with the schedule for increasing efficiency standards.
6. The Strategic Plan should be adaptable for all potential mandated efficiency performance standard increase schedule.
7. The Strategic Plan should allow flexibility for builders to choose different ways to adapt their construction.
8. The Strategic Plan should provide flexibility appropriate to product innovation.
9. The Strategic Plan should provide for easy measurement and demonstration of compliance with the energy efficiency increases required by s.553.9061, F.S..
10. The Strategic Plan should require that compliance meets an equivalent energy standard regardless of the compliance method.

Compliance Method Relative to Criteria Evaluation Exercise

	IECC Prescriptive		IECC Component Performance		IECC Performance		FEC Prescriptive		FEC Performance	
	Agree	Dis.	Agree	Dis.	Agree	Dis.	Agree	Dis.	Agree	Dis.
Criteria 1										
Criteria 2										
Criteria 3										
Criteria 4										
Criteria 5										
Criteria 6										
Criteria 7										
Criteria 8										
Criteria 9										
Criteria 10										

In order to evaluate a strategy for achieving the increased efficiency requirements required by law for future FBC editions:

Consider the 10 strategic plan criteria adopted to meet the increased efficiency requirements required by law for future FBC editions.

Consider the 5 compliance methods available for meeting Energy Code requirements, and evaluate which combination of compliance methods will best meet the 10 criteria for achieving the required efficiencies.

Below are Draft Options for Achieving the Required Energy Efficiency Increases for the Florida Energy Code. Evaluate each option relative to the 10 criteria and how well it achieves the required efficiencies.

1. Adopt the IECC as the Foundation Code for the Florida Energy Code.

	4=acceptable	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Initial Ranking 10/14/09				
Revised				

Members Comments and Reservations (10/14/09):

2. Adopt the IECC Prescriptive method for the Florida Energy Code.

	4=acceptable	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Initial Ranking 10/14/09				
Revised				

Members Comments and Reservations (10/14/09):

3. Adopt the IECC Component Performance method for the Florida Energy Code.

	4=acceptable	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Initial Ranking 10/14/09				
Revised				

Members Comments and Reservations (10/14/09):

4. Adopt the IECC Performance method for the Florida Energy Code.

	4=acceptable	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Initial Ranking 10/14/09				
Revised				

Members Comments and Reservations (10/14/09):

5. Adopt the FEC Prescriptive method for the Florida Energy Code.

	4=acceptable	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Initial Ranking 10/14/09				
Revised				

Members Comments and Reservations (10/14/09):

6. Adopt the FEC Performance method for the Florida Energy Code.

	4=acceptable	*3= minor reservations*	*2=major reservations*	*1= not acceptable*
Initial Ranking 10/14/09				
Revised				

Members Comments and Reservations (10/14/09):

3. ENERGY CONSERVATION MEASURES FOR REPLACEMENT OF AIR CONDITIONING EQUIPMENT RECOMMENDATIONS

These recommendations are archived in the Workgroup's agenda packet.

4. SPECIFIC BUILDING OPTIONS TO ACHIEVE ENERGY EFFICIENCY IMPROVEMENTS

Section 553.9061 (2) The Florida Building Commission shall identify within code support and compliance documentation the specific building options and elements available to meet the energy performance goals established in subsection (1). Energy-efficiency performance options and elements include, but are not limited to: (a) Solar water heating. (b) Energy-efficient appliances.
(c) Energy-efficient windows, doors, and skylights. (d) Low solar-absorption roofs, also known as "cool roofs." (e) Enhanced ceiling and wall insulation. (f) Reduced-leak duct systems.
(g) Programmable thermostats. (h) Energy-efficient lighting systems.

Issues for Evaluation:

- Solar water heating.
- Energy-efficient appliances.
- Energy-efficient windows, doors, and skylights.
- Low solar-absorption roofs, also known as "cool roofs."
- Enhanced ceiling and wall insulation.
- Reduced-leak duct systems.
- Programmable thermostats.
- Energy-efficient lighting systems.
- Water source, geo-thermal HVAC systems.
- Solar photovoltaic systems.
- variable refrigerant flow mechanical systems.
- Data center efficiencies.
- Under-floor duct systems.
- Induction lighting and new lighting technologies.
- Passive energy efficient design and day-lighting.
- Building envelop efficiencies.

5. OPTIONS FOR ADDRESSING HUMIDITY AND MOISTURE CONTROL PROBLEMS FOR HOT AND HUMID CLIMATES

Issues for Evaluation:

- *Minimum efficiency equipment can result in problems with indoor humidity control for situations where AC equipment is oversized and sensible heat loads are diminished by advanced ECMs relative to latent loads contributed by outdoor moisture infiltration/diffusion and indoor moisture generation.*
- *Energy conservation achieved by sensible load reduction measures must be balanced with equipment requirements for improved moisture removal and latent loading control measures.*
- *High efficiency variable speed and variable capacity AC systems provide load matching capability and increase moisture removal effectiveness.*
- *Building envelope tightening to limit outdoor moisture infiltration/diffusion typically reduce air exchange resulting in building performance characteristics that may lead to required forced air ventilation of homes.*
- *Forced ventilation of homes will require preconditioning of ventilation air to remove moisture to achieve indoor humidity control.*

6. OPTIONS FOR DESIGN CRITERIA FOR ENERGY EFFICIENT POOLS

The Energy Act of 2008 (HB 7135) directs adoption of pool pump efficiencies in the 2010 FBC. During discussions with the Florida Spa and Pool Association regarding energy efficiency requirements for pool pumps members suggested improved efficiency could be achieved through criteria for pool hydronic system design.

This task will be evaluated by: Pool Efficiency Subcommittee to the Energy Code Workgroup.

Issues for Evaluation:

- *Pool pump standards.*
- *Pool plumbing system design.*
- *Performance and prescriptive compliance paths for pools.*
- *Credits for alternative energy sources for pool heating, lighting and pumping.*

7. EVALUATE REQUIREMENTS FOR GREEN ROOFS RECOGNITION IN FLORIDA BUILDING CODE

This task will be evaluated by: Green and Energy Efficient Roofs Subcommittee to the Florida Energy Code Workgroup.

Issues for Evaluation:

- *Green roof energy performance, structural and water protection characteristics in Florida environment.*
- *Cool roof options and energy performance in Florida environment.*
- *Alternative roof systems and components effect on roof/ceiling heating cooling loads and calculations for Florida environment (solar pool heater and DHW thermal arrays, pv arrays, pv roof tiles, mass and metal roof covering, evaporatively cooled, radiant barrier systems).*