Montgomery County Commercial and Multi-Family EE Study
Synopsis and Next Steps

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Montgomery County, Maryland

Background of the Study

- Objective study prepared by a third party (ICF International, with MC Fuhrman Inc as the Prime).
- Identifies opportunities and potential to achieve a 25% reduction in energy consumption in the Commercial and Multi-Family sector within 10 years.
- Created in response to the recommendation of the Sustainability Working Group to identify a package of policies and programs to achieve the target.
- Designed to inform policy makers, and community members with regards to future policies and program options.
- Will inform one “leg” of the County’s energy strategy going forward.

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Specifically - What is the Study?

- Identified the "technical potential" of achieving a 25% reduction of the commercial and multi-family sectors collectively.
- Baselined and characterized the Commercial and Multi-Family sectors
- Identified policies that the County can employ to make reductions. Including, where possible, the technical, economic, logistical (and political) impediments/opportunities.
- Engaged stakeholders through a variety of means to identify their handling of energy consumption, perceptions related to specific policies and programs, and needs.

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What the Study is Not

- County's overall energy efficiency strategy.
  - The study will inform the development of an strategy to address commercial and multi-family energy consumption (underway)
- Comprehensive energy plan
  - The scope is primarily energy efficiency, touches on CHP, renewables etc but more detailed explanations of these topics are needed.
- Specific policy proposal
  - Discussions with legislators, stakeholders and other parties are needed before any proposed policy can be developed.
- Cure all

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Methodology

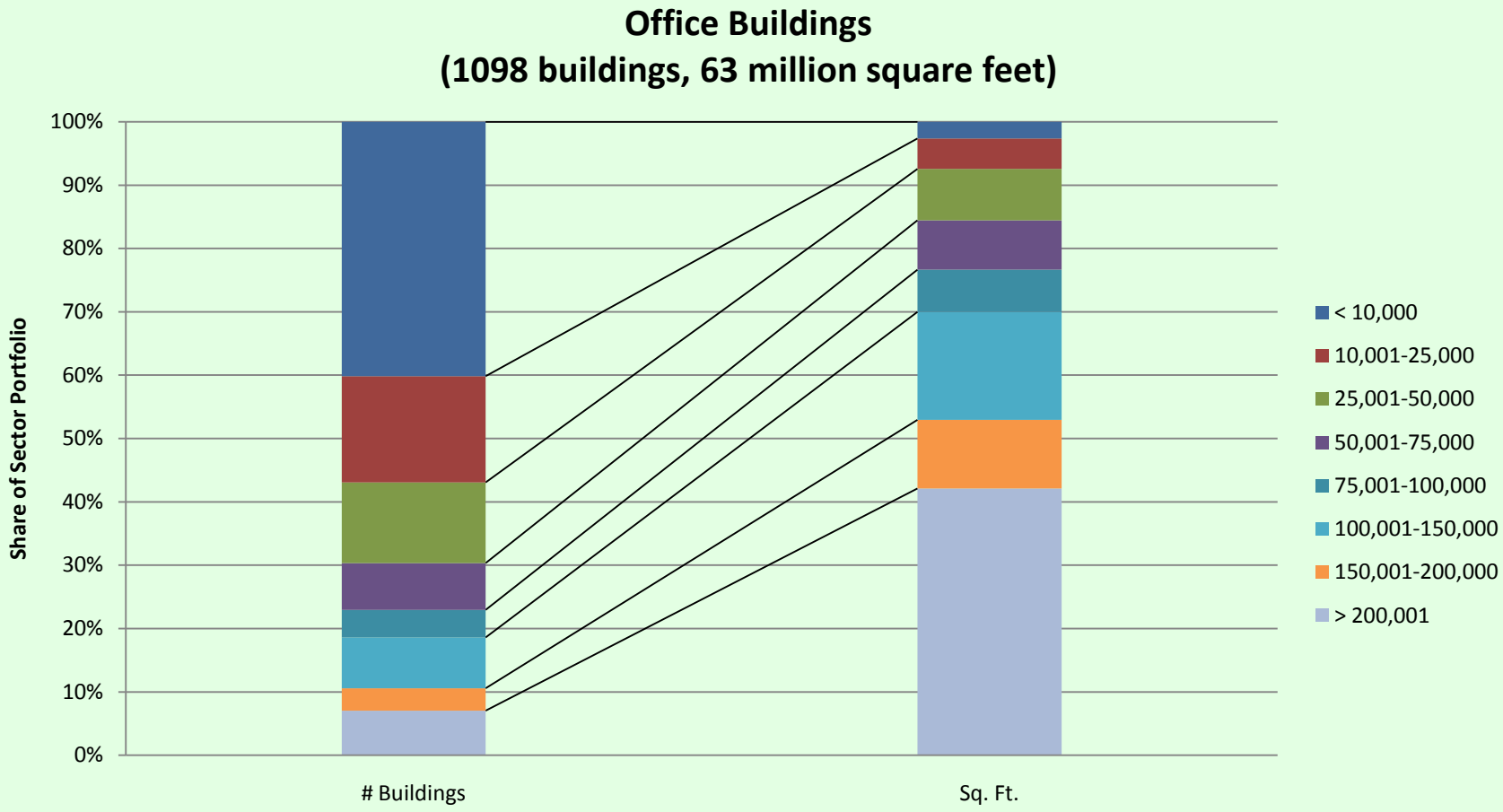
- ICF examined a wide array of datasets including County property tax records, Maryland PSC benchmarking reports, and co-star data to develop the baseline.
- Employed ICF's recognized EEPM model to assess the savings potential and costs related to a wide array of energy efficiency measures.
- Examined data from other jurisdictions, recognized sources and other programs to evaluate policy options.
- Incorporated data collected from a survey of key principal actors, focus groups and public comments.
- Pulled heavily on the work on the DOE SEE Action Committee.

Building Stock Characteristics

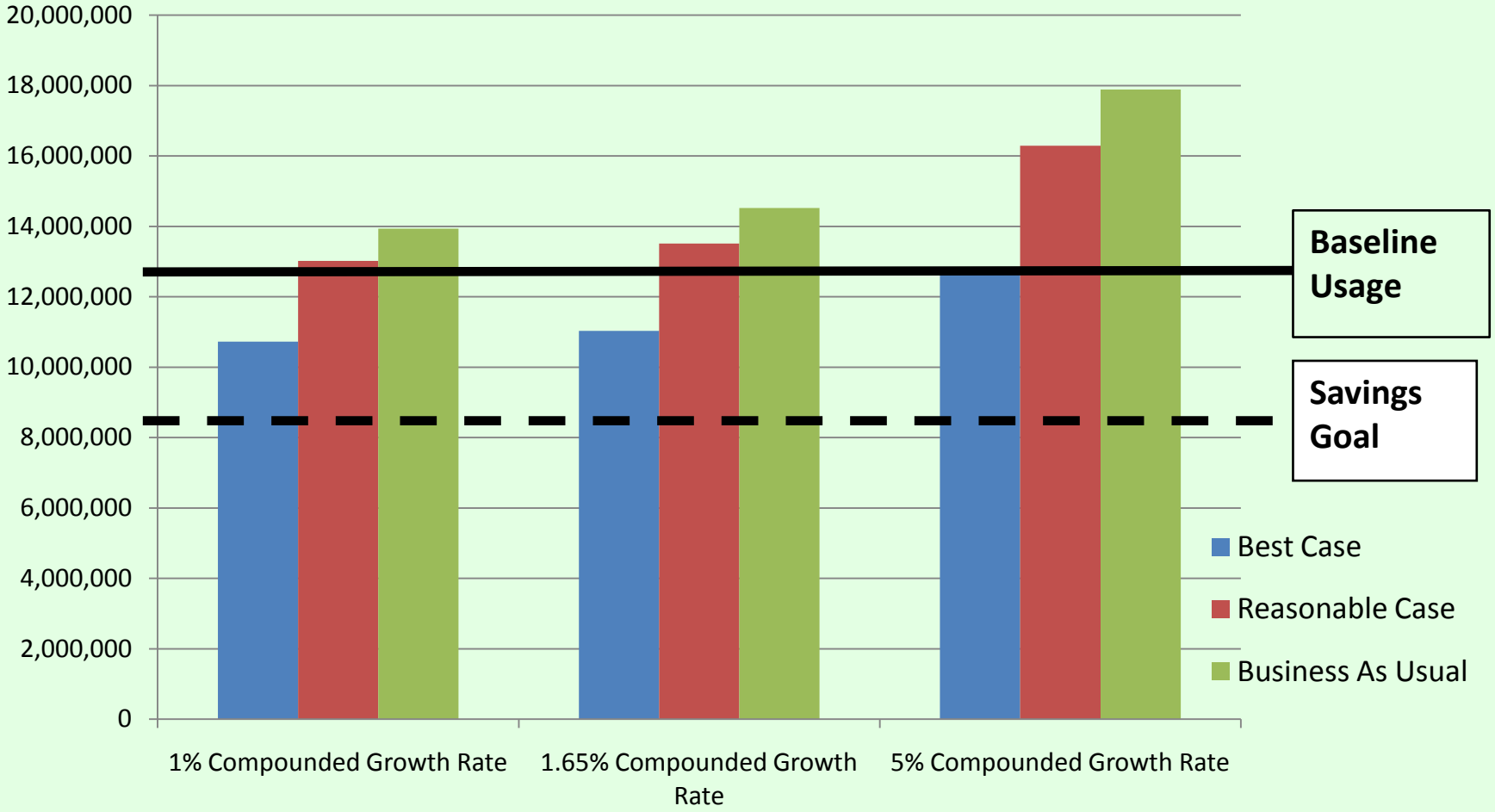
Sub-Sector	Number of buildings	Square Footage (million SF)	Average SF
Office	1098	63	57,377
Retail	1476	30	20,325
Warehouse	563	17	30,195
Lodging	37	3	81,082
Health	121	2.6	21,488
Hospitals	5	2	400,000
Restaurant	232	1.4	6,034
Grocery	72	1.3	18,056
Multifamily	1813	73	40,265

All data throughout this presentation developed by ICF under contract to the County.

Building Stock Characteristics

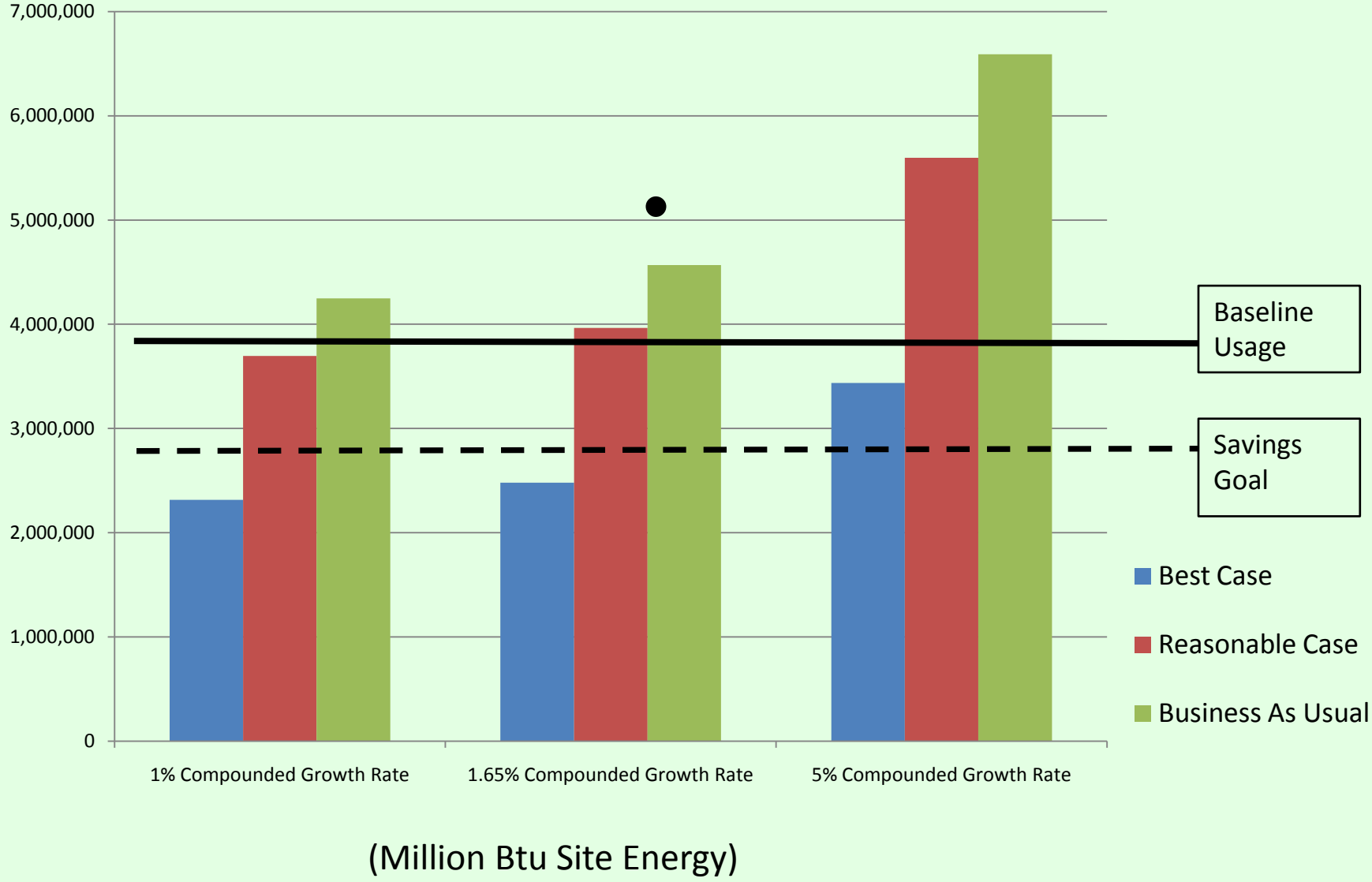


Commercial Energy Savings Potential (2022)



(Million Btu Site Energy)

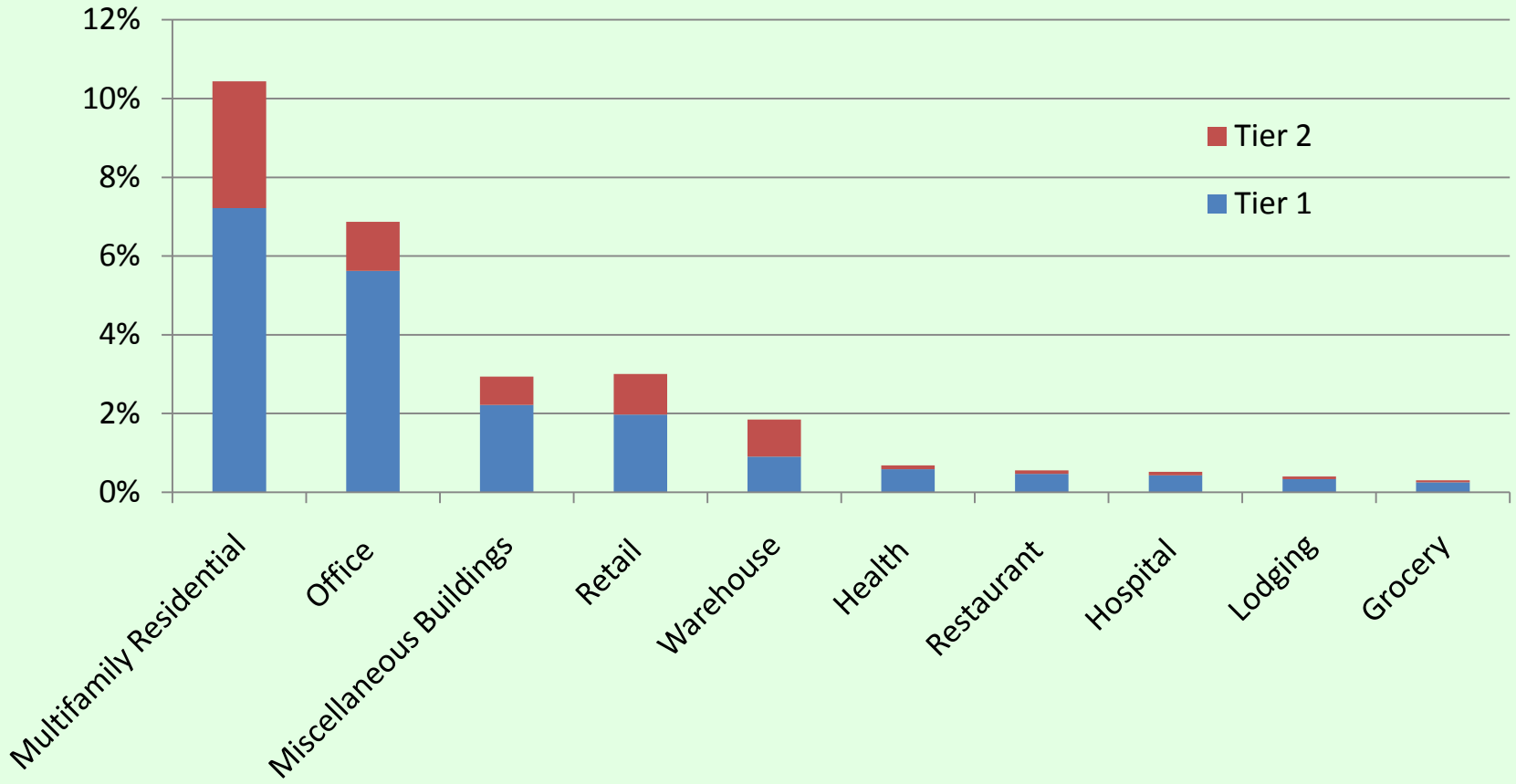
Multifamily Energy Savings Potential (2022)



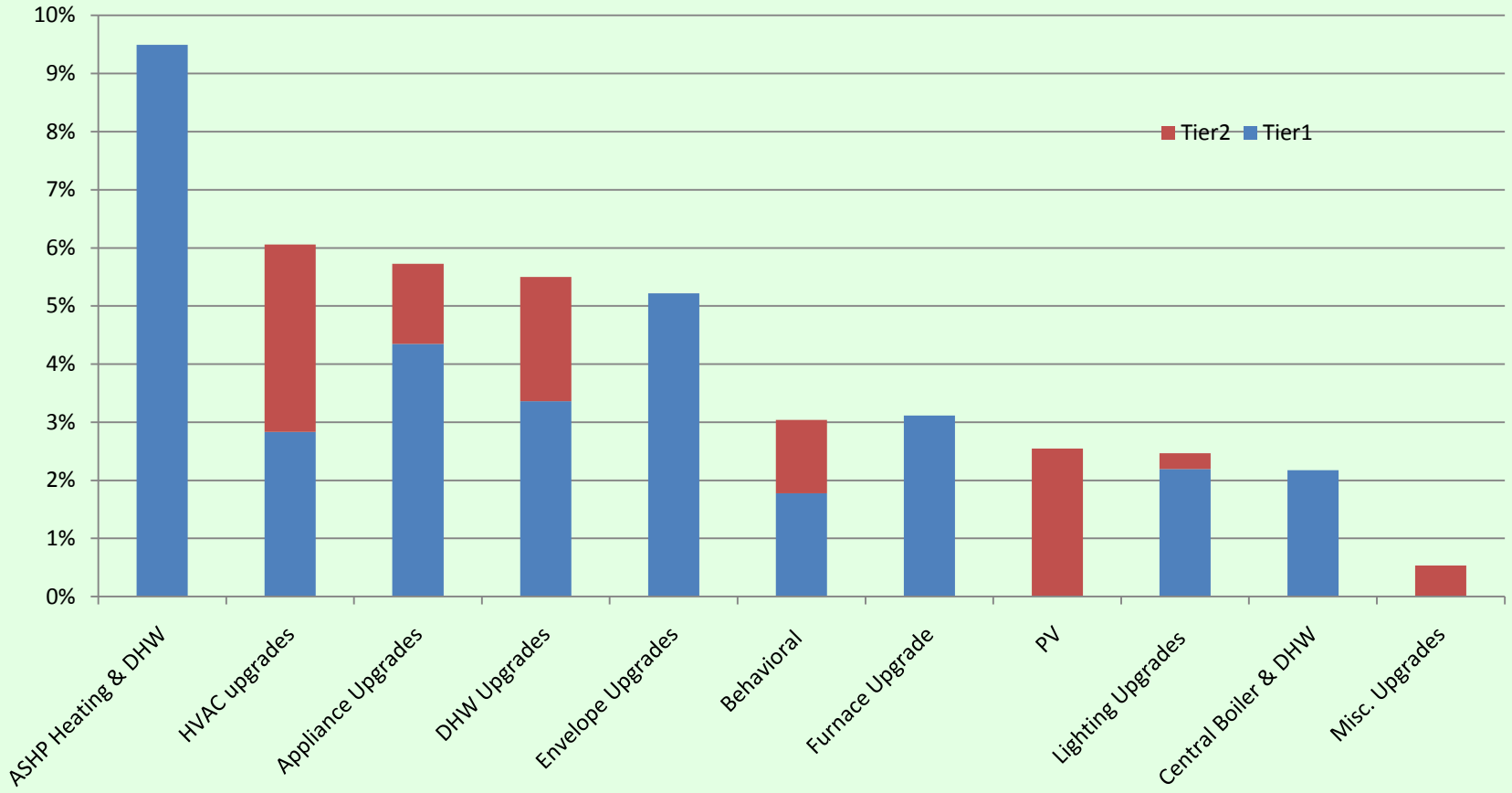
Combined Commercial/Multifamily Potential

Sector	Data Description	Electricity: Baseline MWh and % Savings	Fossil Fuel: Baseline therms and % Savings	Total Energy: Baseline Million BTU % Savings
Commercial	Baseline	1,976,615	56,265,770	13,168,550
	Technical Potential Savings	36.1%	8.4%	**22.1%**
Multifamily	Baseline	844,415	9,654,507	3,846,705
	Technical Potential Savings	46.8%	44.3%	**46.2%**
Total Commercial and Multifamily	Baseline	2,821,030	65,920,277	17,015,256
	Technical Potential Savings	39.3%	13.7%	**27.5%**

Energy Savings Potential (Sector)



Savings Potential Per Retrofit Type (Multi-Family Example)



Economics: Full Installed Cost Basis

Commercial

Discount Rate	Full Installed Costs ($M)	Lifetime Energy Savings ($M)*	PCT Test Scores**
5%	$7,497	$697	0.09
7.50%	$7,497	$599	0.08
10%	$7,497	$522	0.07

Multifamily

Discount Rate	Full Installed Cost ($M)	Lifetime Energy Savings ($M)*	PCT Test Scores**
5%	$1,180	$562	0.48
7.50%	$1,180	$469	0.40
10%	$1,180	$398	0.34

*Savings over the life of the measure, discounted to present value

**A score of 1.0 or greater indicates cost-effectiveness over the lifetime of the measure PCT (Participant Test) reflects the perspective of a typical building owner.

Economics: Incremental Cost Basis

Commercial

Discount Rate	Incremental Costs ($M)	Value of Energy Savings ($M)*	PCT Test Scores**
5%	$297	$428	1.38
7.50%	$297	$373	1.21
10%	$297	$329	1.07

Multifamily

Discount Rate	Incremental Costs ($M)	Value of Energy Savings ($M)*	PCT Test Scores**
5%	$285	$335	1.18
7.50%	$285	$282	0.99
10%	$285	$242	0.85

*Savings over the life of the measure, discounted to present value

**A score of 1.0 or greater indicates cost-effectiveness over the lifetime of the measure. PCT (Participant Test) reflects the perspective of a typical building owner.

Policy Analysis 10 Policies

- Community Energy Challenge
- Energy Performance Benchmarking and Disclosure
- Energy Assessment and Retro-Commissioning
- Building Energy Codes *(new construction and major renovation)*
- Building Energy Retrofit Requirements
- Energy Efficiency Tax Credit
- Property-Assessed Clean Energy Financing
- On-Bill Financing
- Green/Energy-Efficient Leasing
- Energy Efficiency Rebate and Grant Programs

Policy Analysis – Savings Estimates

Policy Category	Potential Savings	Assumptions
Mandatory RCx/audits	5.00%	10% average savings per building
Maximum building codes	5.00%	45% more stringent than current code; 1.7% growth scenario
Mandatory Retrofits	4.00%	Lighting measures only: interior, exterior, including parking lots
Mandatory benchmarking	2.00%	5% average savings per building
Community Challenge	2.00%	33% of office space participates, savings average 20%/building
Financing/tax credits	0.50%	County efforts cause 25% increase in utility program impacts

Consultant's Caveats

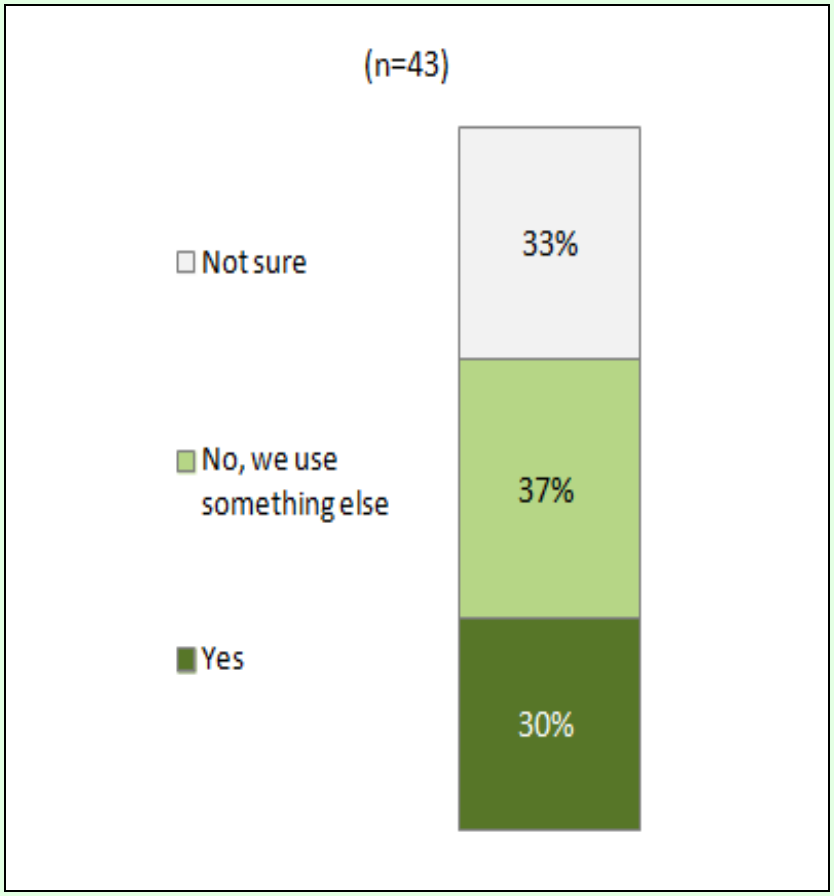
- Modeling methods are not precise—many assumptions required
- Savings are not additive—different scenarios draw on the same savings (e.g. benchmarking, RCx, community challenges)
- Several policy/program paths do show the potential to achieve a significant portion of technical potential
- A suite of coordinated policies would likely be needed to achieve significant impacts

Stakeholder Surveys and Feedback

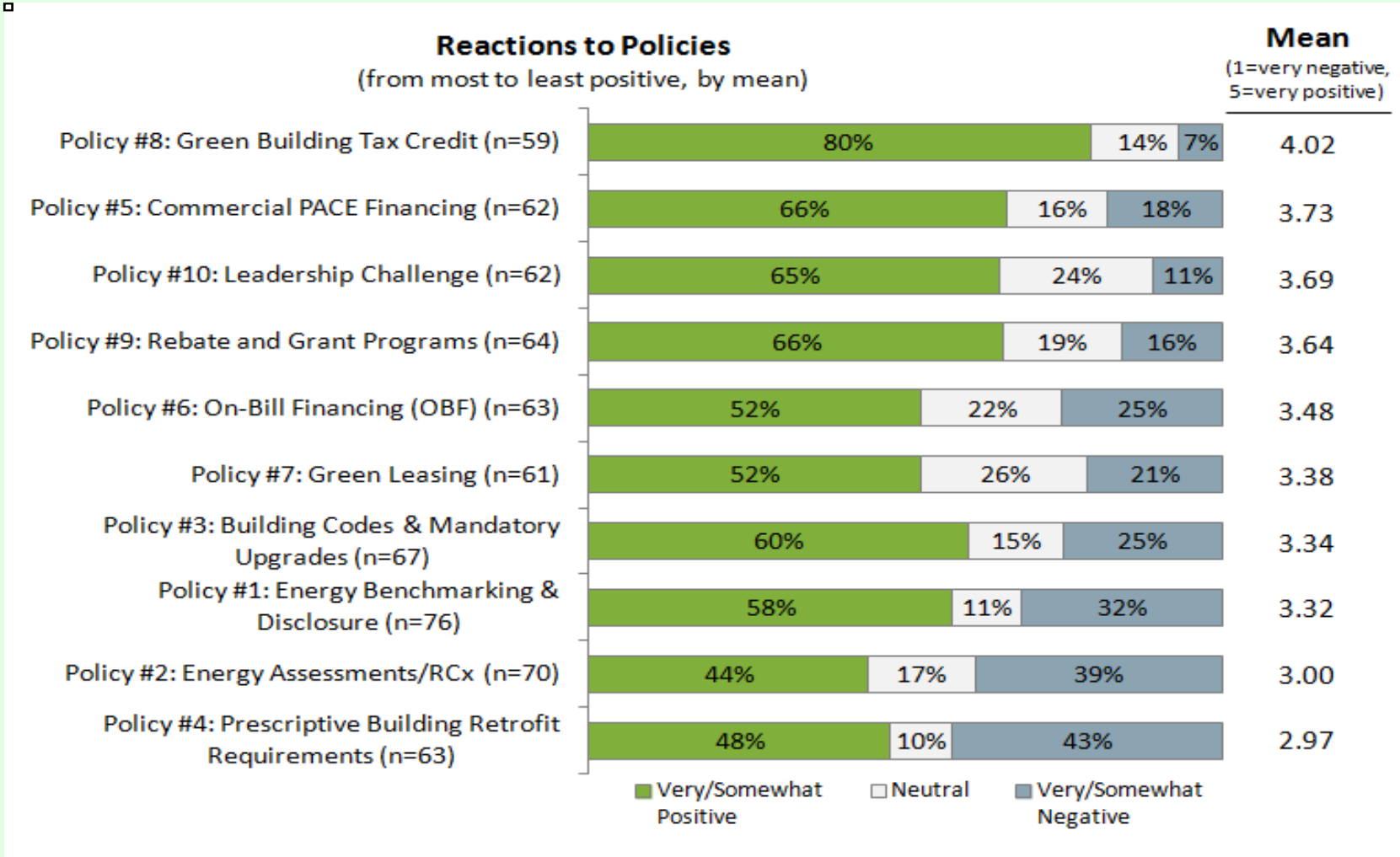
Involvement in Montgomery County Buildings	(n=88)	
Owners/Managers	54	61%
Own Only	14	16%
Manage Only	21	24%
Both Own and Manage	19	22%
Other Stakeholders	34	39%
Lease/Rent Space	11	13%
Provide Services to Commercial Buildings	8	9%
Lease/Rent Space and Provide Services	2	2%
Other	13	15%

Stakeholder Surveys and Feedback

Owners/Managers: Use of ENERGY STAR® Portfolio Manager to Track Energy Consumption

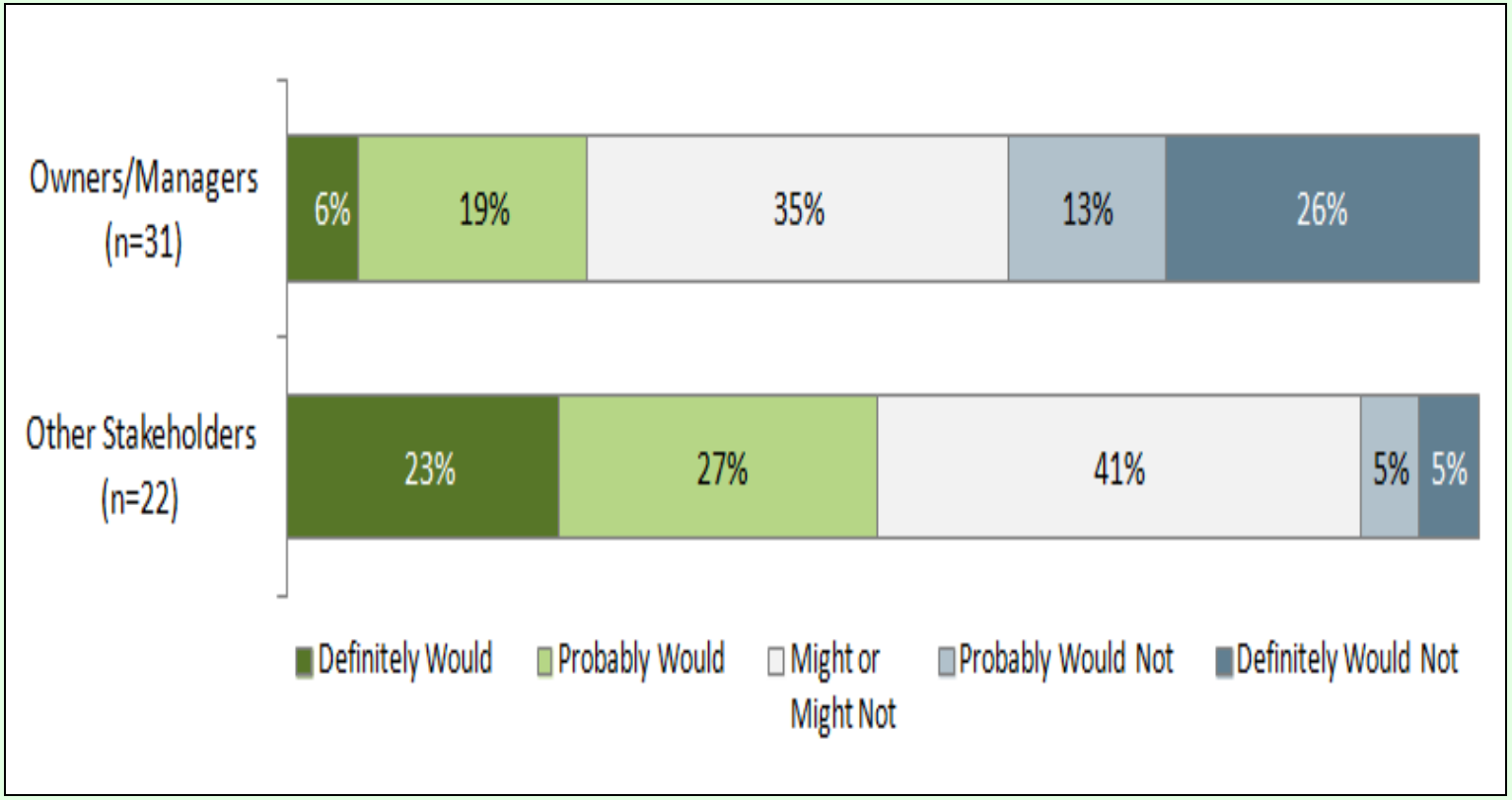


Stakeholder Surveys and Feedback



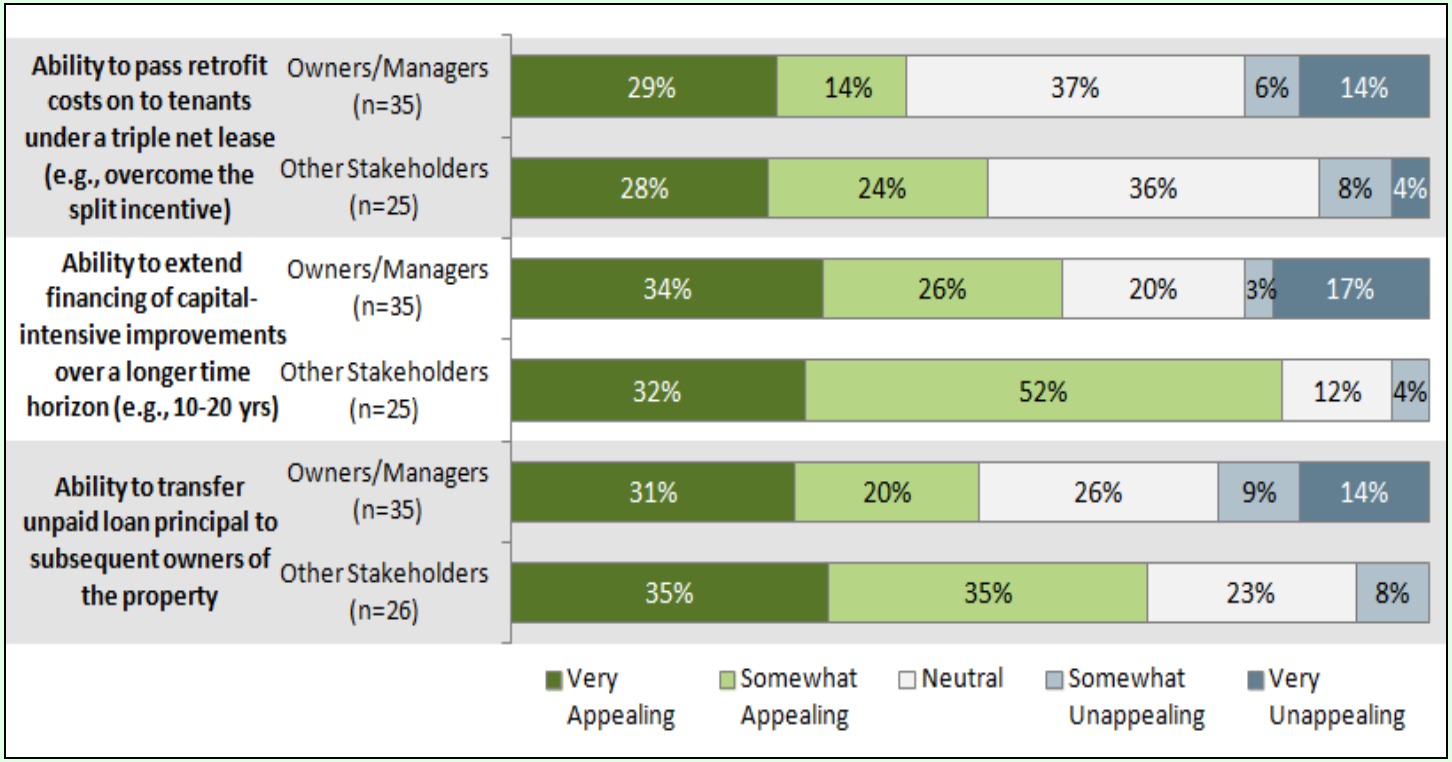
Stakeholder Surveys and Feedback

Willingness to Enter a Green Lease



Stakeholder Surveys and Feedback

Appeal of PACE Features



Top Level Consultant Recommendations

- Develop a suite of policies, leading with a “voluntary with backstop” approach.
- Invite building owners and managers to participate in a voluntary challenge, to get a larger portion of floor space committed to measuring and improving energy performance. (Similar to Arlington)
- Work with utility programs to provide benchmarking, retro-commissioning, energy audits, and equipment incentives.
- If the voluntary approach does not reach defined targets with specific timeframe, pursue mandatory approaches.
- The County will need implementation funding for any meaningful policy/program effort, for staffing, etc.

Supplemental (County Staff) Top Level Conclusions

- 80% of the square footage, including the most energy intensive sectors, can be addressed through targeted outreach to a small number of building owners/actors.
- Energy codes (IECC 2012 plus) and new construction are a high priority, we need to focus on the best buildings possible.
- Multi-family communities (both individually and master metered) are long neglected and have substantial savings opportunities.
- PACE, OBF and enhanced codes (beyond IECC 2012) cannot be considered stand alone policies and to be effective need to be coupled challenges and public private partnerships in a coordinated program “package”.
- Private sector momentum exists, small leverage through selected financial inducements and other “nudges” may yield significant gains.
- Occam's razor applies to programs, simplest (while not the cheapest) often most effective (e.g., tax credits, technical support, education and outreach)
- There are a lot of organizations working in this area (utilities, Chesapeake Crescent, State Energy Offices, MWCOG etc) we need to find a way we can work close coordination to avoid “stakeholder fatigue”

Regional Consideration/Implications/Questions

- A green/energy challenge incorporating features of Arlington and Denver could be a high priority. However, most of our larger property owners and managers are regional, can a regional campaign be effective, allow sufficient local latitude, and be financially sustainable?
- If a benchmarking/disclosure bill is implemented, can the requirements mirror that of DC?
- Can our various incentives be synchronized, for example if we would reformat some of our tax credits?
- What about multi-family, the study indicates that this should be one of the County's first targets?
- If selected mandates are considered, what is the risk of capital/business flight to neighboring jurisdictions?

What's Next?

- Public comments on the study are due September 22. Final study to be published in October. (See DEP website)
- Discussions needed with internal Departments, Council, legislators,, regional partners, and industry stakeholders to determine what policies become part of our strategy.
- We may consider establishing a "leadership network" to provide an avenue for private sector organizations to work collaboratively with the County to enhance awareness and develop nimble programs
- Considering a add-on "competitiveness study" to quantitatively examine the pros/cons of incentives and regulations on economic development.
- Consistent funding must be found, and programs must be scaled to funding expectations.

Questions

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