Sector Breakout Summary – 11/18/19 EE Workshop

Efficient Buildings

Goal 1: Expand the coordination, engagement and education of thought leaders, policy makers, and all levels of consumers on energy efficiency issues.

Benefit Analysis
- Increased code enforcement
- Consumers/homeowners would have more disposable income
- Healthier buildings, improved comfort
- Educated owners/buyers will make EE decisions
- Consumer savings
- Workforce development
- Cooperating with pre-existing programs plus pushing for more partnering projects (e.g. nonprofits and state housing)

Regulatory Reform
- Adopt current energy codes
- Balance affordable with efficient (consumers and policy makers)
- Smarter / more efficient regulations
- Legislative education to lead to better options
- EE in IRP (Integrated Resource Plan) planning
- Better compliance when better understanding
- EE standards for landlords who receive state funding

Education/Outreach
- Defining current standards and identifying room for improvement
- Solar / EE coordination
- Consumers/homeowners will make better choices
- Coordinated approach to industry training for EE and solar professionals
- Homeowner expectation / understanding of EE
- Promoting the need for EE building and rehab
- Accountability for the “real” steps for EE
- Voice for non-lobbyist
- EE Education to the non-interested consumer to understand benefits of EE

Financing Models
- OBF (on-bill financing)
- Work with lenders to offer better rates for efficient homes (mortgage/financing)
- Direct rebates
- Support for Green Bank programs
• ESCOs (Energy Service Companies)
• Banks – low interest loans
• Great use of incentives from education
• Current grants – why they work / don’t work
• Stakeholder coordination to develop better financing mechanisms

**Grid Integration**
• Battery storage
• EVs
• Grid resiliency benefits
• This is opaque to general public – need education
• Performance incentives
• Reductions can be made to peak demand

**Equity**
• One stop shop / portal
• Toolkit for renters
• More programs for low-income ratepayers / better access to EE opportunities
• Need purposeful outreach to underserved communities
• People understand what is available to them

**Goal 2: Create accessible and adequate funding mechanisms for cost-effective efficiency investments**

**Benefit Analysis**
• Energy efficiency = Save $$$
• Lower out of pocket costs / lower energy burden
• Accessible programs to make EE upgrades more affordable

**Regulatory Reform**
• Grandfather existing manufactured homeowners $ into bans
• Up front funding aid to broader demographic
• Reform utility cost-effectiveness test
• More funding dedicated to weatherization programs
• Create tax and/or rebate incentives for EE in all sectors
• Upfront cost of updating IECC for new homes vs. payback over 30 years
• Residential and Commercial PACE (Property Assessed Clean Energy)
• Extend requirement for state agency EE with dedicated funding mechanisms or ability to retain savings

**Education/Outreach**
• Legislative education re: needs (all sectors)
• Educating congress on barriers to better loans for workforce housing
• Make specific efforts to communicate re: what is available – one stop shop expansion
• EE label program for consumers
• Regulatory - manufactured home land owners
• Foster community partners that have EE goals
• Better appraisals for EE buildings

**Financing Models**
• State dollars vs. IOU dollars
• Work with lenders to recognize and reward EE buildings with lower rates/faster pay down
• Tax credits for existing building EE upgrades
• Co-op / rural programs
• More networking and support for non-profits
• Funding to protect community $ while upgrading
• Incentives for homebuilders to balance costs of EE in new homes
• Grants for places of worship – scipl.org

**Grid Integration**
• EVs
• GEBs
• Batter storage
• Make sure storage batteries included in funding

**Equity**
• More attention to unintended consequences (e.g. mobile home bans)
• More programs from co-ops
• Low cost energy efficient home options
• Gentrification

**Goal 3: Employ equitable and transparent processes to reduce energy burdens for vulnerable communities by pursuing an equitable and just transition to an energy efficiency economy**

**Benefit Analysis**
• Protection for renters and pre-existing home owners
• Decreased air emissions, health benefits
• Train/deploy energy auditors at low or no cost to resident
• Healthier and safer buildings
• EE buildings cost less to maintain over the entire life of the structure – save $$
• Community improvement, more uptake of available resources or incentives

**Regulatory Reform**
• Adopt up to date codes and standards
• At least minimal codes for rental property
• Incentivize use of EE certification programs like LEED, CHiP, etc. (voluntary, not mandatory)
• Lessen the gap between EE goal and minimum standards while protecting residents / business owners
• Tax implications for multifamily rental, etc.
• Multifamily for profit buildings – existing code standards
• Allow homes/building to be truly off-grid if desired (no mandate to connect to utility)

Education/Outreach
• Use of energy auditors to determine best way to spend improvement $$
• EE “Roadshow”
• Net zero home options and education

Financing Models
• Direct rebates
• Manufacturing credit – direct rebate
• “Cash for clunkers” for old mobile homes
• Increase participation across income levels, sectors, etc. leads to more effective design
• Combine renewable, EE and housing rules for best outcome
• Identify grants – what works? What doesn’t? What’s needed?

Grid Integration
• Grid efficient buildings

Equity
• EE for rental housing
• Workforce development
• More low-cost ownership choices for low income
• Staff projects with unemployed or underemployed SC residents
• Local zoning that traps homeowner in inefficient homes (inadvertently)

Energy Equity / Energy Burden

Goal 1: Expand the coordination, engagement and education of thought leaders, policy makers, and all levels of consumers on energy efficiency issues.

Benefit Analysis
• Rebates
• Workforce development in low income communities

Regulatory Reform
• Media campaign w/funding
• Leased property standards

**Education/Outreach**
• PLAIN LANGUAGE
• Public service announcements (PSAs)
• Community forums / meeting
• Bill inserts
• Sticker disclosures (e.g. w/car purchase or scate(?) system)
• Videos, social media
• Marketing w/specific demographics (generally)
• Legislator education (consumers, lobbyists)
• Energy democracy
• Energy equity partnering with Housing Trust Fund and Weatherization Assistance Program

**Financing Models**
• Public benefit fund
• Stacking of financing/grants (e.g. housing, energy)

**Grid Integration**
• Community energy grid

**Equity**
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**Goal 2: Create accessible and adequate funding mechanisms for cost-effective efficiency investments**

**Benefit Analysis**
• Workforce development assistance for new small business startups both for- and non-profit

**Regulatory Reform**
• Transparent fees on bills

**Education/Outreach**
• What is available?

**Financing Models**
• Partnerships / coordinated efforts (ex. Dept of Education and Energy)
• On bill financing
• Public Benefit Fund
Goal 3: Employ equitable and transparent processes to reduce energy burdens for vulnerable communities by pursuing an equitable and just transition to an energy efficiency economy

Benefit Analysis
- Energy efficiency upgrades, training for low income people in partnership with community-based organizations

Regulatory Reform
- Cost-effectiveness test changes
- Energy efficiency on-bill financing that is more affordable to low income homes (e.g. 200% of poverty level)
- Automatic enrollment into programs
- Landlord incentives (caveat – rent can’t go up immediately)

Education/Outreach
- Legislator education
- Local official education

Financing Models
- More funding for utility programs

Utility Programs

Goal 1: Expand the coordination, engagement and education of thought leaders, policy makers, and all levels of consumers on energy efficiency issues.

Benefit Analysis
- Improved PR
• Align cost of programs with benefits – Utility pay for energy system benefits, health insurance pay for health benefits
• Emphasis on health and cost savings rather than efficiency
• Decreased collection costs
• Increased profit
• Increased customer stability / payments

*Regulatory Reform*
• Expand neighborhood programs
• Energy efficiency target % goal
• Mandatory TOU (Time of Use)

*Education/Outreach*
• Ombudsman
• Energy navigator
• Energy office expands its EE education/awareness – focused on consumer
• Expansion of successful LMI (low to moderate income) programs
• Maintain a steering/advisory committee for EE roadmap and energy plan
• Utilize apps more
• Energy office outreach
• Utility outreach (bill inserts, email, direct mail, etc)
• Cross organization / industry stakeholder working groups
• School-based (adulting)
• Utility partnership with technical schools and community colleges on internship program

*Financing Models*
• On-bill financing for customers
• Health insurance pays for health benefits
• Forgivable loans (over time)
• Green Bank as one stop shop place for $ (private and public)

*Grid Integration*
• Peak shaving
• Power quality
• Pay As You Go
• AMI penetration

*Equity*
• Draft and adopt just transition policy
• Additional assistance for vulnerable populations
• Diverse energy efficiency service provider / trade ally program
Goal 2: Create accessible and adequate funding mechanisms for cost-effective efficiency investments

*Benefit Analysis*
- Increased customer stability / lower connection costs
- Healthier home, more stable community

*Regulatory Reform*
- Public benefits fund
- Cost effectiveness tests
- Opt-out reform
- Federal barriers to leveraging funds

*Education/Outreach*
- One-stop information clearing house
- More integration w/non-profit programs
- Trade off of comfort vs. bill savings

*Financing Models*
- On-bill financing
- Forgivable loans (over time)
- Health insurance companies pay for health benefits
- Low interest / low payment loans
- State tax credit for residential EE
- Green Banking

*Grid Integration*
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*Equity*
- On-bill financing with consumer protections
- Heirs property (title issue)
- Avoid cross-subsidization
- Expand WAP (Weatherization Assistance Program) qualification (above poverty line)
- Programs for vulnerable populations (especially elderly)
- Expand LIHEAP and/or weatherization assistance program

Goal 3: Employ equitable and transparent processes to reduce energy burdens for vulnerable communities by pursuing an equitable and just transition to an energy efficiency economy

*Benefit Analysis*
- EE jobs, especially in rural SC
• Increased small business ownership

*Regulatory Reform*
• Eliminate federal barriers
• Consistent application of energy code requirements
• Expand EE measures (add fridge, etc.)
• Increase solar access (HOAs can currently prevent homeowners from installing solar)

*Education/Outreach*
• Expand collaboratives
• Workforce training
  o HVAC
  o Weatherization
  o Rural SC
  o Installation
• Rural trade ally development and involvement

*Financing Models*
• On-bill financing
• Helping EE businesses with startup
• Utility financing (gas/electric/water)

*Grid Integration*
• Locational benefits / discounts

*Equity*
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*Financing Mechanisms*

**Goal 1:** Expand the coordination, engagement and education of thought leaders, policy makers, and all levels of consumers on energy efficiency issues.

*Benefit Analysis*
• Economic benefits for consumers
• Environmental benefits
• Lower maintenance / operating costs

*Regulatory Reform*
• Identify regulatory models that allow utilities to deliver EE
• Utilities incentivized to educate customer
• Overall of utility billing systems
• Measuring and allocating risk
**Education/Outreach**
- Create more awareness of private EE financing mechanisms
- Conference held to educate
- Technical assistance funded to educate
- Internal approval processes
- Engage commercial sector in barriers to EE financing

**Financing Models**
- Ensure utilities are familiar with Pay-As-You-Save (on-bill) financing mechanisms
- Performance contracting OBF
- Engage with healthcare sector to identify healthcare benefits of EE
- Matching together / leveraging multiple funding sources
- Rebates
- Appropriate enforcement / penalties
- Unrealized savings
- Loan terms

**Grid Integration**
- Educate stakeholders on EE as a least cost resource
- Work with disaster relief and rebuilding agencies to build EE into rebuilding

**Equity**
- Develop “non-credit score” ways of financing EE
- Incentivize landlords to upgrade w/no negative results to tenants

**Goal 2: Create accessible and adequate funding mechanisms for cost-effective efficiency investments**

**Benefit Analysis**
- Economic development

**Regulatory Reform**

**Education/Outreach**
- Central information source for all funding sources (private and public sources)
- Series of meetings to discuss private finance for EE
- Understanding demand charges / TOU rates

**Financing Models**
- USDA Rural Economic Development grant
- Co-op board decision to prioritize EE
• NRCS grants to farmers (FSA – Farm Service Agency)
• Bonds (higher education, etc)
• Non-recurring surplus
• Master lease
• Converting housing stock
• LIHTC (Low income Housing Tax Credit)
• Connecting willing developers of funding
• JEDA conduit funds
• Dept. of Commerce
• CPID (Comprehensive Permanent Improvement Plan
• EPC

Grid Integration
• Finding willing developers to work in target areas (e.g. rural communities)
• Grouping ECMs for performance contracting w/cash-neutral finance
• Comingling EE w/deferred maintenance

Equity
• Multifamily “gap fillers” between investor $ and funding sources (e.g. IRS tax credits, tax equity financing, etc.)
  o Not all multifamily made equal

Goal 3: Employ equitable and transparent processes to reduce energy burdens for vulnerable communities by pursuing an equitable and just transition to an energy efficiency economy

Benefit Analysis
• Lower power bill
• Enhanced environment
• Health
• Non-energy benefits (might be regulatory)

Regulatory Reform
• Utilities prohibited from considering non-energy benefits in cost benefit analysis

Education/Outreach

Financing Models
• Ensure return on investment
• Cash-positive or cash-neutral financing
• Shared revenue streams in loans
• Difference between “artificial” and private markets
• Lobbying for governmental funding / surpluses
Grid Integration

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Equity

- Enabling all ratepayers / citizens access to EE finance

Non-profit and Public Entities

Goal 1: Expand the coordination, engagement and education of thought leaders, policy makers, and all levels of consumers on energy efficiency issues.

Benefit Analysis

- Research and development
- Education of available funding, loans, grants, capital availability
- Require meters on all new construction and meter old buildings as well
- Analysis – develop a way to measure where we are – decide where we want to go
- M&V of energy performance contracts by third party
- Enlist energy utilities to identify the large energy use categories (customer classes)
- Quantify best practices across building types and sectors
- Non-profit collaboration and cost sharing
- Use 3rd party review for energy planning and projects

Regulatory Reform

- Require LEED EB for all public facilities
- Legislature to extend 20 x 2020 legislation with a new goal
- Greater input from NGOs/NPDs in developing and implementing regulatory policy
- Need to increase green building standard to Gold or higher
- Need better energy codes
- Statutory initiatives for EE pilots
  - Net zero buildings
  - Smart grid
  - Carbon reduction strategies
  - Deep energy retrofits (40-70%)
- Goals for EVs (buses and cars) – Proterra (buy local)
- Goals for zero energy buildings
- Mandates with rewards
- Set target levels for energy use in school districts / universities (i.e. energy use/sq.ft or /student)
- Allow all non-energy related measures to help pay for performance contracting
- Gather baseline data
- Stricter implementation of not following new law/code
- Benefits of updated energy code and standards
**Education/Outreach**
- What is our energy footprint?
- Reconvene Green Procurement Task Force
- Expand a Green Procurement Task Force to non-profits, schools and local governments
- Develop partnerships with universities to provide energy audit services
- Partner with tech schools
- Leadership support
- Research and education programs and activities developed and administrated by Clemson, USC and SC State University
- Use knowledge and resources of public colleges and universities to promote EE recommendations
- Partner with K-12 schools to incorporate EE in curriculum and case studies

**Financing Models**
- Give agencies money from savings for more programs
- Larger grants for public entities
- State grants or incentives
- Grant funding
- Funding to demonstrate EPC financing or create best practices
- EE and renewable benefits to state and local government tax base
- Revolving funds
- Visible savings models shown (examples provided for similar size structures with case studies)
- Identify funding that entities can apply for to encourage EE
- Funding energy audits and retrofit efforts

**Grid Integration**
- Need renewable companies at the table
- Long term benefits of EE and distributed generation resourcers (solar)

**Equity**
- Data should be public
- Rewards for reaching goal
- Compare like entities (K-12, Gov’t buildings, orgs) – know kw/sq.ft or kw/student or employee
- Close the gap of EE finance by create financing based on need or ability to pay
- Coordinate with full spectrum of non-profits to ensure all sectors are included
- Technical training for EE to develop the next generation of providers
- Transparency

**Goal 2: Create accessible and adequate funding mechanisms for cost-effective efficiency investments**
Benefit Analysis

- ROIs completed prior to project – analyzed after project to guarantee savings were met (performance contract style)
- Fund greenhouse gas studies with 3rd party
- Fund health related research (air quality, water quality, land pollution)
- Analyze % of budget used for EE – set a target number

Regulatory Reform

- Require energy manager position for agencies that use over x% of $ on energy
- Monitoring of all funding organizations to determine fair and equitable funding practices
- Legislative fix for EPC process for state buildings
- Avoid beautification and energy efficiency regulatory conflict
- Require agencies that have Bas to use it to turn lights off and scale back HVAC
- Renewable portfolio requirements for energy utilities
- System benefit charge / utility rider (develop programs targeted to schools, labs, universities, etc)
- HUD’s multifamily pay for performance program
- Coordinate with the Housing Finance Agency for efficient allowances for new construction

Education/Outreach

- DOE website to list all available funding – loans, grants, energy incentives, rebate programs
- Use workers from Tech level training programs for public projects
- Innovative partnerships with tech schools and universities for workforce development
- Push outreach programs to be used by all state agencies – require collaboration
- Incorporate EE education and support for all non-profits
- Not all have internet, smart phone access – need print collateral

Financing Models

- Set aside a portion of funding for EE projects (state funding)
- Pursue EE-related drives/campaigns to entice donors/supporters to give (tie to an initiative, possibly?)
- Leverage funds using identified finance models
- Alternatives to tax credits that NPs and public entities could leverage
- Revolving funds – regional, state, or local
- Expanding ConserFund and ConserFund + programs
- Funding for technical resources and professionals to begin EE process
- Create EE tax credits for owners of affordable housing
- Establish a recurring revenue source for public benefit fund
Grid Integration
- Study and strategic deployment of energy storage by utilities for EE and grid

Equity
- All users should be able to qualify for financing
- Clearinghouse listing of funding resources (grants, etc.)
- Workforce development in underserved, rural communities thru partnerships with K-12 and private sector

Goal 3: Employ equitable and transparent processes to reduce energy burdens for vulnerable communities by pursuing an equitable and just transition to an energy efficiency economy

Benefit Analysis
- Take advantage of value-added engineering available through vendors
- Assess the economic benefits of planning for resilience

Regulatory Reform
- Require regionalization or combining resource use
- Staff diversity in all pillars
- Legislature to provide resources to underserved communities for EE as part of resilience
- Develop consolidated contracts for EE improvement projects and services

Education/Outreach
- Partnerships with tech schools to provide energy services, expertise to underfunded entities
- Various entities to meet and share ideas and progress for energy projects yearly (*communication*)
- Workforce development programs through tech schools for targeted communities

Financing Models
- Identify potential partnerships or collaborations (help bear the costs)
- Public/private partnerships
- Developing larger performance contracts to cover multiple public entities
- Utility program for non-profits to execute performance contracts
- Government groups combine EEMs to go into one performance contract
- State agencies pool resources – District Energy Program
- Performance-based energy optimization contracts
- Identify EE funding sources / share information with public and non-profit entities

Grid Integration
- Renewables for resilience
- Coordinate with local gov’ts on microgrids
- Allow customer more control over source of energy
Equity

- Size considered
- Tiered metric system or goals for EE (based on entity’s budget)
- Consider health effects of energy use
- Programs that enable underfunded K-12s to do EE projects
- Fees based on income, family size (e.g. deposit / reconnect fees)
- State-funded EE projects for K-12 districts