HUD EPC VIRTUAL INDUSTRY DAY

NOVEMBER 16, 2021
11AM-5PM EST

Hosted By
Office of Public and Indian Housing
Financial Management Division
Energy Branch

SESSION THREE – 3:15pm – 4:45pm

Beyond EPCs: Alternative Vehicles for Energy Conservation Projects

Moderated by Crystal Bergemann, HUD Senior Advisor on Climate

Bob Somers, President, 2RW

Phill Consiglio, President, The Consiglio Consulting Group

Calvin Roberts, UESC Business Consultant, Centerpoint Energy Inc.

Toby Chandler, Resiliency / Sustainability Development Manager, Southern Company

Will Volker, Principal, Efficiency Energy LLC

Bob Havlicek, Executive Director, Housing Authority of the County of Santa Barbara

CLOSING SESSION – 4:45pm -5:00pm

PANEL 4:
BEYOND EPC(S): Alternative Vehicles for Energy Conservative Projects

Moderator: Crystal Bergemann, Senior Advisor, Hud

Moderator: Robert R. Somers, II, P.E.
2RW Consultants, Inc.

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NOTICE PIH 2018-20

PARTNERING WITH UTILITY COMPANIES ON ENERGY PERFORMANCE CONTRACTS

EPC
UTILITY PARTNERSHIP PROGRAM
(UPP)

ADVANTAGES OF UTILITY PARTNERSHIPS

- Familiarity
- Expertise
- Motivation
- Financing

EPC=UESC+ESPC

HUD EPC Industry Day

- November 16, 2021
- Phill Consiglio

The Consiglio Consulting Group

Discussion Points

- What Type of Contracts are Included in the “Term Energy Performance Contacts” (EPC) and what are they
- What Federal Agency is the Lead for These Contracts
- Definition of a Utility Energy Services Contract (UESC)
- Definition of an Energy Savings Performance Contract (ESPC)

Type of Contracts

ESPCs and UESCs are contracts between a federal agency and another party—an energy service company or a utility, depending upon the contract type. In general, a federal agency agrees to pay an amount not to exceed the current annual utility costs for a fixed period of time to the company or utility, which finances and installs the energy-efficiency and renewable energy projects. The costs are repaid by the agency over the length of the contract. After the end of the contract, the agency benefits from any reduced energy costs as a result of the improvements.

What Federal Agency is the Lead for These Contracts

The Department of Energy's Federal Energy Management Program (FEMP) is the lead organization responsible for providing implementing rules and policies for ESPCs. FEMP also provides training, guidance, and technical assistance to aid federal agencies in achieving energy and water goals. Federal agencies are required to document progress toward energy-saving goals through annual reporting to the President and Congress.

FEMP compiles agency data annually. Between FY2005 and FY2017, investment in federal facility energy efficiency improvements totaled nearly $21.7 billion (in constant 2017 dollars): direct obligations funded $14.5 billion, ESPCs funded $5.7 billion, and UESCs funded $1.5 billion. A lack of consistency in reporting across agencies for projects makes it challenging to document the cost savings achieved solely from ESPCs or UESCs. The available data may provide insight into broad trends in federal energy and water consumption. Over available reporting time periods, total site-delivered energy use has declined, renewable electricity use has increased as a percentage of total electricity consumption, and water use has declined.

Utility Energy Services Contracts (UESC)

A UESC is a contract between a federal agency and the serving utility.- Under a UESC, the utility arranges financing for efficiency projects and renewable energy projects, and the costs are repaid by the agency over the length of the contract. The utility will provide a performance assurance plan but may or may not assume any risk that the project will pay for itself. Utilities are not required to provide guarantees that the improvements will generate energy cost savings sufficient to pay for the project. After the end of the contract, the agency benefits from reduced energy costs as a result of the improvements. The utility can provide financing through a third party, or the agency can use appropriated funds.

Utilities do UESC projects to Manage load by lowering demand, delay or eliminate need for new generation, meet state energy and renewable energy portfolio standards, provide good customer service and help agencies meet their energy goals

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Energy Savings Performance Contract (ESPC)

An ESPC is a multiyear contract between a federal agency and an energy service company. In general, under an ESPC, a federal agency agrees to pay an amount not to exceed the current annual utility costs for a fixed period of time (up to 25 years) to that company, which finances and installs facility improvements.

In return, the contractor assumes the performance risks of energy conservation measures during the contract period and guarantees that the improvements will generate energy cost savings sufficient to pay for the improvements over the length of the contract, as well as providing the energy services company a return on the investment. After the end of the contract, the agency benefits from reduced energy costs as a result of the improvements.

With Thanks

Questions and Answers

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UESC Executive Presentation

November 16, 2021

CenterPoint Energy

Agenda

Federal Customer Energy Goals and Requests

- UESC Contract Basics
- UESC Benefits to Federal Customer
- Why should Utility Care
- Utility Benefits from UESC Projects
- Utility Options to Support Federal Request
- Next Steps

What are UESCs?

Contracts that allow utilities to provide Federal agency sites in their service territory with comprehensive energy and water efficiency improvements and demand-reduction services.

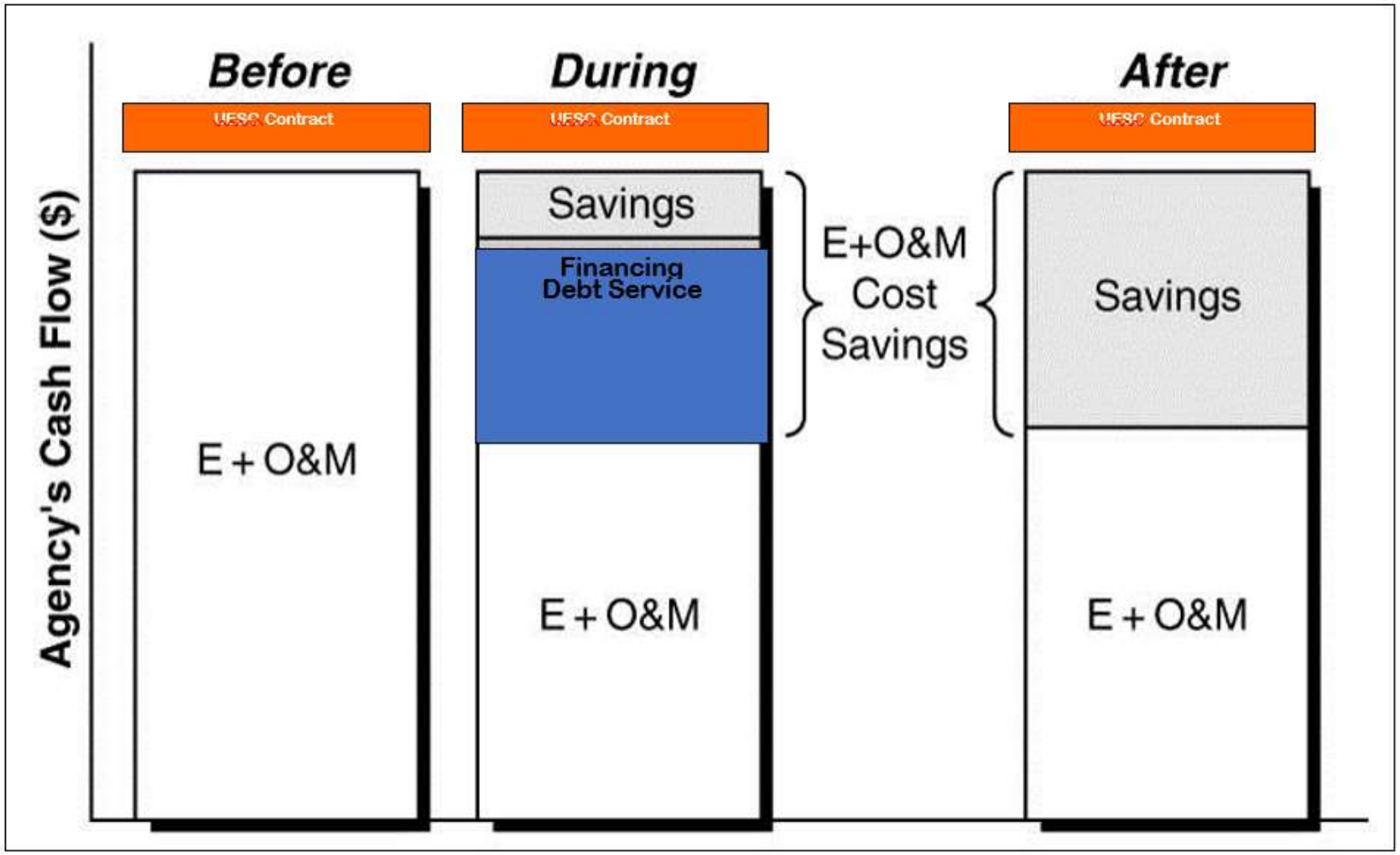
Utility + ESCO Partner	• Assesses the opportunities • Provides financing through a third party • Purchases the equipment and gets it installed • Assures equipment performance and standards of service
Agency	• Pays utility over term of contract from cost savings achieved

UESCs are Partnerships

UESC Contracting

- Utility / ESCO Partner provides capital costs; assesses opportunities; designs and implements approved projects which are paid out of energy, other savings, and/or appropriated funding
- Direct / Streamlined Contract with any Utility Provider in service area through either:
  - Utility Area Wide Agreement (Administered by GSA)
  - Basic Ordering Agreement (easily developed through COE)
- Efficient & effective “tool” to implement:
  - Supply Side initiatives
  - Demand Side energy and water efficiency projects
  - Renewable energy initiatives
- Projects from $10K to over $100M up to 25 years
- UESC projects can be funded through appropriations and financing
  - Any combination of appropriations and financing is allowed

UESCs Overview



Representative Potential UESC –Energy Conservation Measures (partial list)

Lighting/Lighting Controls

Building Management Systems And Controls

- Energy Monitoring & Control w/ Web-based Reporting
- Demand Response / Smart Grid

Building Re-Commissioning (RCX) HVAC System Renovation/Upgrades

Central Plants

- Steam Plant De-Centralization
- Chiller And Boiler Replacements/Upgrades
- Chiller System Optimization
- Chemical-Free Water Loop Treatment
- Heat Recovery / Thermal Energy Storage

Advanced Metering

On-site & Renewable Energy Generation

- Photovoltaic (PV)
- Combined Heat and Power
- Wind
- Landfill Gas or Biomass
- Waste Water Treatment Expertise
- Geo-thermal

Building Envelope Improvements

- Green Roof
- Re-glazing / Blast Protection
- Solar Wall
- Insulation, Infiltration Control

Water Conservation, Capture and Re-use





UESC Take Order (TO) Award Process

Overarching Documents

Step1: Government Agency Competitive Utility Selection

- Survey interest of eligible utilities
- Request For Proposal (RFP) to eligible utilities
- Utility and ESCO partner respond to RFP
- Provide fair consideration to interested utilities
- Agency selects utility
- BOA Established if utility does not have a GSA Areawide Contract.

Step2: Project Development

- Agency Authorization for Preliminary Assessment (PA) and Feasibility Study (FS)
- Utility & ESCO conduct / Agency evaluates PA
- Utility & ESCO conduct / Agency evaluates FS
- Agency requests firm-fixed price for project design and implementation
- Agency awards Task Order (TO) for design and implementation

Step3: Implement Design and Installation per TO

- Utility & ESCO submits design; agency reviews/approves
- Utility & ESCO install ECMs / Agency oversight
- Utility & ESCO perform / Agency receives O&M training, commissioning, etc.
- Utility & ESCO proves ECMs performance
- Agency accepts project

Step4: Post-Acceptance

- Invoices and Payments
- Ongoing performance assurance and annual savings verification
- Close out contract at end of term

Federal Agency Benefits of doing UESC projects

- Proven Contract – to meet executive mandates (energy, renewables, resiliency)
- Work with knowledgeable, trusted, professional energy partners
  - Established trusted sources, who know the facility and their energy needs
  - Leverage expert Energy Service Company (ESCO subcontractors)
- Fund infrastructure improvements from cost savings
- Replace outdated energy-consuming equipment
- **Customer driven**
  - **True collaborative project development & execution**
  - **Not a bid and spec environment – Utility focus on 100% customer satisfaction**
  - **No change order mentality**
  - **Government obtains products and systems of choice**
- Flexible and adaptable – financed (low interest rate) and/or appropriated funding
- Provides the ability to bundle longer and shorter payback energy measures
- To include operations and maintenance (O&M), measurement and verification (M&V), and performance assurance (PA), Replace and Repair (R&R) services

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DOD Energy Priority – Resilient

Mission Ready – Mission Assurance

1. **Mission One** - Focus on making installations and bases Mission Ready Assuring Mission Accomplishment
2. **Mission Assurance funding = Allocated Funds (O&M, SRM, QUTM, ERCIP) + Leveraged 3d party financed funds (ESPC, UESC, ESTCP, PPA, ESA, EUL).**
3. **Mission Assurance = Energy Security plus Sustainability (ES2)**
4. **Performance Contracts** (UESC and ESPC) are **combat multiplier** i.e. (ESPC + UESC) X (Available ES2 funding (SRM + QUTM) = Comprehensive Mission Assurance.
5. **UESCs and ESPCs enable** Holistic, Innovative Energy Solutions
6. **Complimentary and Cooperative Synergetic** Contract Utilization

- Mission Achievement Over All
- Reduce Energy Spend to Ensure Mission Assurance

BOA = Basic Ordering Agreement
ERCIP = Energy Resiliency Conservation Investment Program
ES2 = Energy Security and Sustainability
ESA = Energy Sales Agreements
ESPC = Energy Savings Performance Contracts
ESTCP = Environmental Security Technology Certification Program
EUL = Enhanced Use Leases
O&M = Operations & Maintenance
PPA = Power Purchase Agreements
SRM = Sustainability, Restoration & Modernization
QUTM = MDEP QUTM is Sustainment, Restoration and Modernization (SRM) funding and falls under Investment Category IFG10 in the Project Prioritization System (PPS). QUTM focuses on projects for energy and water conservation, renewable energy, utility modernization and energy security. QUTM is not to be used for routine SRM (e.g., roof replacement).
UESC = Utility Energy Services Contracts

Why Utility Should Care

- Energy and Water reduction Mandated – Federal Government must reduce energy and water with or without Utility
- Opportunity to add value and improve utility relationships with Federal Customer
- Opportunity to better understand Federal Customer's buying needs and decisions
- Expansion of current Service offerings
- Added Utility revenue stream (added income and/or less Utility maintenance under current contract)

Utility Benefits from UESC Projects

- Utility UESC - incentive to Federal Customer
- Increased reliability through improved customer load profiles – improved equipment
- Assist with Federal Customer executive goals
- Provide exemplary customer service
- Improved Customer – Utility Relationships
- Expansion of current Service Offerings

What Are Utility Execution Options?

1. Do nothing – Status Quo

2. Add Utility energy services personnel
   - Added cost
   - Increased risk
   - Focus on non-core-business

3. Team with a trusted ESCO partner - outsource
   - Offer broad range of leveraged service
   - Increase revenue
   - Minimal risk

Questions & Answers

Southern Company

HUD – Energy Performance Contracting (EPC)

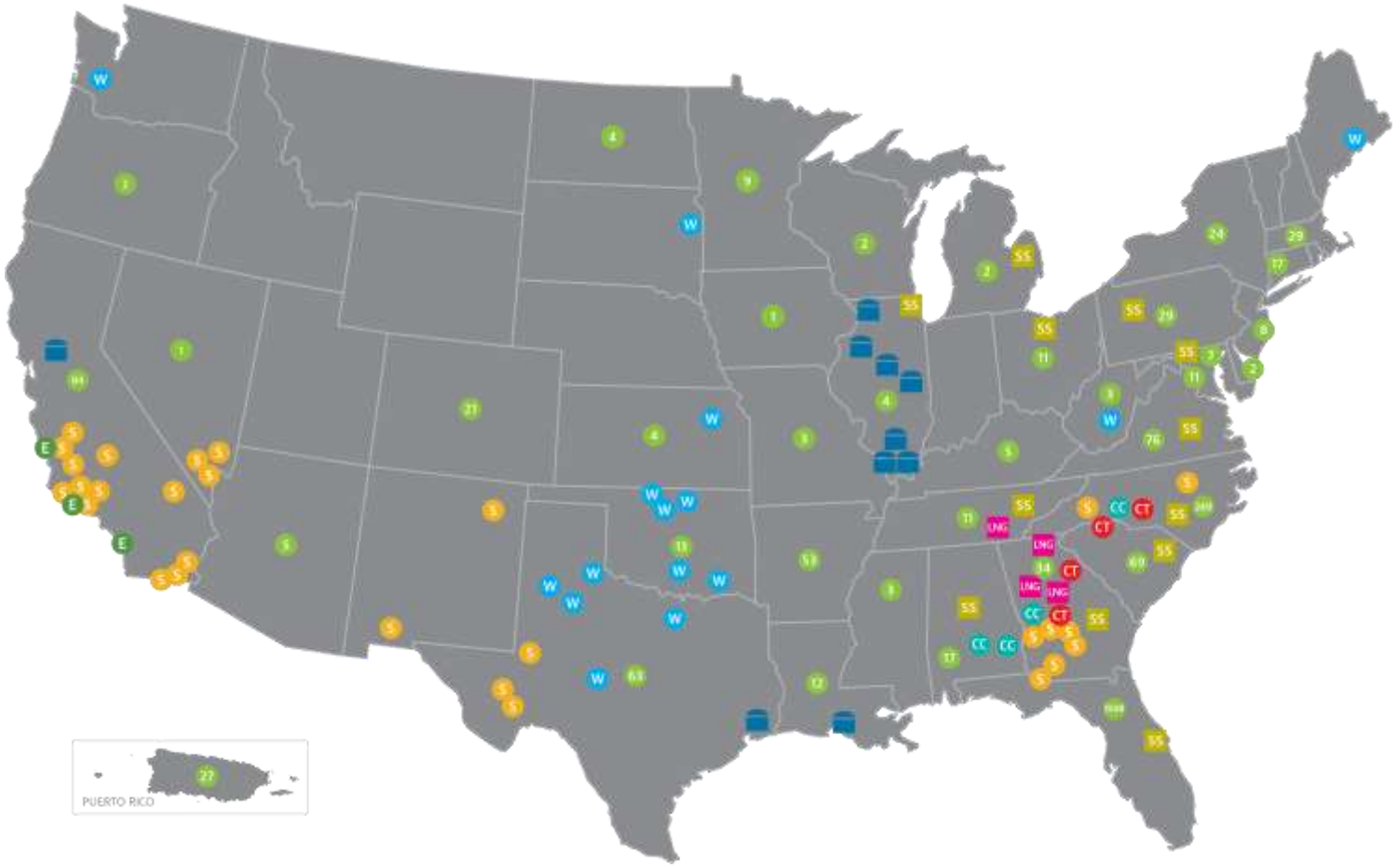
Utility Energy Services Contract (UESC)

Toby Chandler
November, 18 2021

We provide clean, safe, reliable, affordable energy and customized solutions

Service territories
- Electric
- Gas

Gas pipelines
- Southern Natural Gas
- Southern Company Gas
- Pipeline projects



Southern Power
- Combined-cycle facility
- Peaking facility
- Solar facility
- Wind facility
- Energy storage

Southern Company Gas
- LNG facilities
- SouthStar
- Natural gas storage

PowerSecure
- Owned and/or managed sites per state

Capabilities in
50 States

7
Electric & Natural Gas Utilities

9 Million
Customers

Approximately
28,000
Employees

Approximately
42,000 MW
of Generating Capacity

UESC Authority

- 42 USC 8256 – 2022 will mark 30 years of authority to enter into UESCs with your serving, franchised utility (electric, natural gas or water) Energy Policy Act 1992
  - (1) Agencies are authorized and encouraged to participate in programs to increase energy efficiency and for water conservation
  - (2) Each agency may accept any financial incentive, rebates, goods, or services generally available from utility
  - (3) Each agency is encouraged to design cost-effective demand management and conservation incentive programs to address the unique needs of facilities

- The regulated, franchised Utility is the prime contractor on the UESC with the Federal government / Public Housing Authorities

- UESCs are “open book” contracts, and the agency must review the utilities’ proposal to ensure the best deal for the government.

- 42 USC 8253, Section 432 allows agencies to use available appropriations or financing to implement their UESC projects. Agencies may use 100% appropriations, 100% financing or any combination of the two to achieve their

Energy Performance Contracts (EPC) Approved and Encouraged by HUD

• Notice PIH 2018-20; Partnering with Utility Companies on Energy Performance Contracts

• PURPOSE: This Notice serves to provide supplemental guidance for Notice PIH 2011-36 and any update thereto which concerns implementing Energy Performance Contracts (EPCs) at Public Housing Authorities (PHAs). This notice introduces a new initiative called the EPC Utility Partnership Program (UPP). The purpose of EPC-UPP is to encourage more PHAs, especially small- and medium-sized PHAs to consider the potential benefits of implementing an EPC in partnership with utility companies.

• Energy Performance Contracting (EPC [hud.gov])
  • Frozen Rolling Base (FRB)
  • Add On Subsidy (AOS)
  • Resident Paid Utilities (RPU)

UESC – Utility Energy Services Contract

- GSA Contract Number GS-00P-15-BSD-1133, 1134, 1136, & 1161 (SoCo)
- Direct / Sole / Limited Source Energy Services contract, Standard contract template
- Turnkey design / build contract, Simple and Flexible Energy Contracting Vehicle
- One team made of customer / Southern Company family to accomplish your goals

Goal of the UESC program

- Implement fuel neutral energy / water savings projects for

Federal Agencies Served – Energy Conservation Measures Delivered









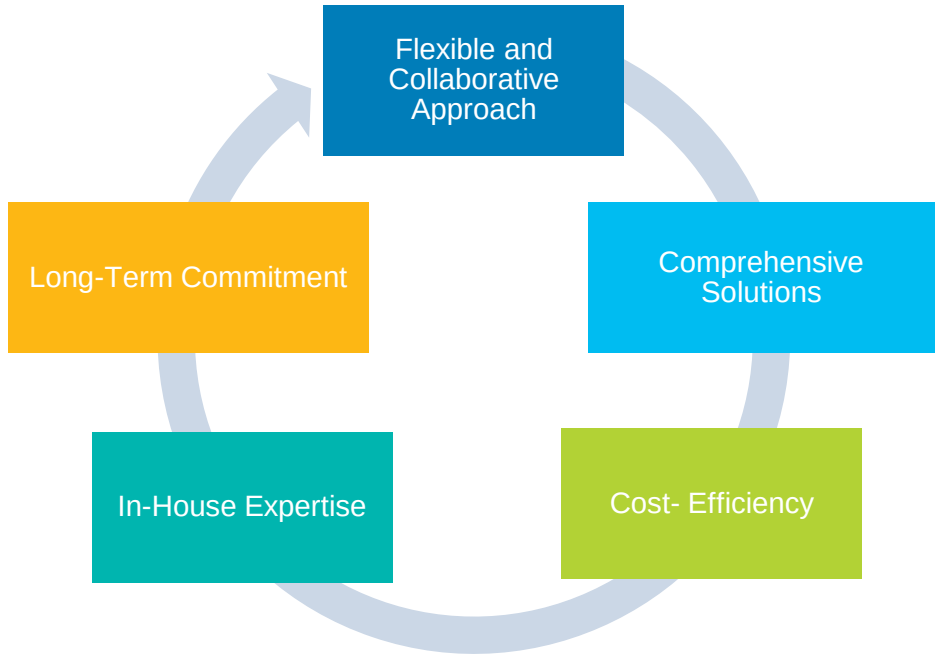





- LED Lighting Upgrades and Lighting Controls
- Water Conservation Measures: domestic water, cooling towers, irrigation systems
- Building Automation Systems (DDC)
- Commissioning, Re-Commissioning, and Retro-commissioning
- Air distribution system and Air handling unit upgrades
- HVAC, Chiller Replacements, and Central Plant Optimization
- Water Heater, Boiler Replacements and Decentralization of Heating systems
- Resiliency Measures: CHP, Prime Power, Back-up power, Microturbines, Microgrid
- Electrical upgrades: sub-stations, switch gear, voltage regulation, interconnection, transformers, battery storage, microgrids, DG
- Utility Privatization, Advanced Metering, and O&M Utilities
- Renewables: Solar Photovoltaic / Solar Thermal / Geothermal / Wind / Biomass
- Indoor Air Quality: UV lights, Dehumidification, Ozone, O2 Controls, Bipolar Ionization
- Building Envelope Measures: Insulation, Windows, Windows films, Caulking, Doors, Roof, Roof Coatings
- CNG stations, EV stations, EV ready charging

Why Southern Company or Your Local Serving Utility?

- Southern Company has local utilities, long-term commitment, Live and work in the same communities
- Electric / Gas Utility, expertise and experience
- 125 – 150 projects; $0.75 – 1.0B value
- Projects from $thousands to multi-millions
- Ability to self perform ECMs – Internal MEP
- Customer involvement throughout the process
- Commitment to customer satisfaction



Helpful Resources

- PIH-2018-20 Partnering with Utility Companies on Energy Performance Contracts
- Utility Energy Service Contract Guide | Department of Energy
- Utility Energy Service Contracts: Enabling Documents | Department of Energy
- Download Contracts/ Modifications | GSA
- Utilities Offering Federal Utility Energy Service Contracts | Department of Energy
- Utility Program Utility Partners | Department of Energy

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IRC 179D + Emission Offsets = $$$ to PHA's

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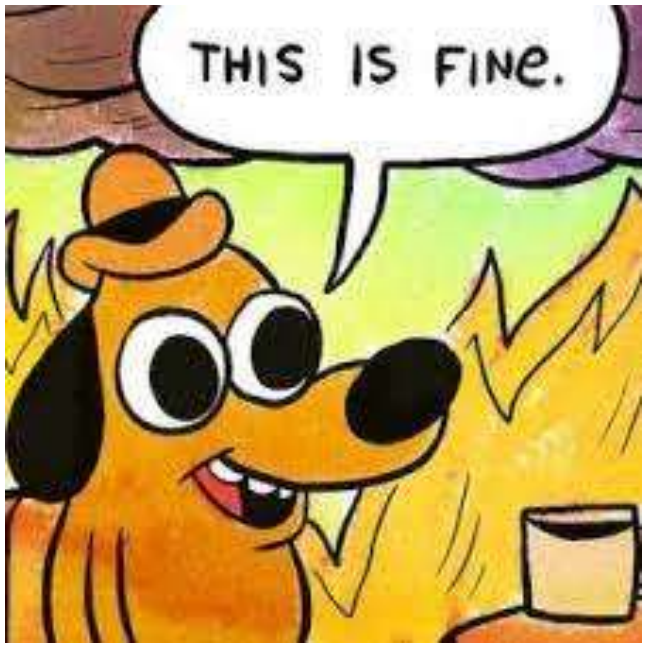
Climate and Environment

The world will burn through its ‘carbon budget’ in 11 years without big emissions cuts, scientists say

Global greenhouse gas emissions are almost back to pre-pandemic levels



Environment

Few willing to change lifestyle to save the planet, climate survey finds

Carbon emissions of richest 1% set to be 30 times the 1.5°C limit in 2030

How to spur change and derive supplemental revenues/savings from previous, current and planned projects at minimum draw to PHA resources and/or utilizing already existing contracts?

- Utility Rebates
- Tax-Free/Advantaged Borrowings
- Federal/State/Local Grants
- Tax Incentives (179D)
- GHG Offsets (45Q, GHG Credits)

Internal Revenue Code Section 179D Deduction for Energy Efficient Building Systems

- $1.80/sqft
  - Lighting
  - HVAC/Hot Water
  - Building Envelope
- 50% vs. ASHRAE 90.1
  - Lighting (25%)
  - HVAC/Hot Water (15%)
  - Building Envelope (10%)

- SPECIAL RULE for Government-Owned Buildings
- Transferable to Designer
  - Architect, Engineer, Contractor(s)
  - Consultants
  - ESCOs
  - Manufacturers

Internal Revenue Code Section 179D Deduction for Energy Efficient Building Systems

- Retroactive Opportunity
  - 2018-2021 Completions
- Program made PERMANENT in 2021
- Build Back Better Act Changes
  - Proposed increase to $2.5-$5/sqft

Sample 179D Project from PHA

	Design Build		HVAC Retrofits	
Area Affected	2,513,325	Sq ft	17,000,000	Sq ft
179 D Allocation	$ 0.60	Sq ft	$ 0.60	Sq ft
Commercial Building Tax Deduction	$1,507,995		$ 10,200,000	
Designer Tax Rate	25%	(TBD per filing)	25%	(TBD per filing)
Tax Benefit Value	$ 376,999		$ 2,550,000	
Certification and Filing Fees	$ (62,833)	(TBD per filing)	$ (425,000)	(TBD per filing)
Net Benefit	$ 314,166		$ 2,125,000	
PHA Rebate @50%	$ 157,083		$ 1,062,500	
179D EP Act Coordinator @20%	$ (31,417)		$ (212,500)	
Net to PHA	$ 125,666		$ 850,000	

179D Savings to notable PHAs

- NYC $200k to date
  - Design Build & HVAC Retrofits
- Chicago $125k to date
  - Lighting and HVAC Retrofits
- Boston $105k to date
  - Lighting and HVAC Retrofits

179D and District Energy

- Large Area (sqft) affected
- Multiple Buildings, Systems affected
- HVAC hot water, lighting, envelope
- Campus-wide CHP, Thermal Storage, Chillers Boilers etc.

179D Central Plant at PHA

Area Affected:			1,997,517	sqft
Approx Avg §179D Allocation	x	$	0.6000	/sqft
Commercial Building Tax Deduction		$	1,198,510	
Designer Tax Rate			32.60%	Fed
Tax Benefit Value		$	390,714	

Rebate to Government Entity	**$**	**208,802**	Value to DESIGNER	$	181,912
Less:			Less:		
EP Act Coord Fee	$	(31,320)	Certification, Legal, Accou	$	(72,500)
			Add:		
			Rebate Deductibility	$	68,069
Net Value to GOVT	$	177,482	Net Value to DESIGNER	$	177,482

179D translation to Emission Offsets

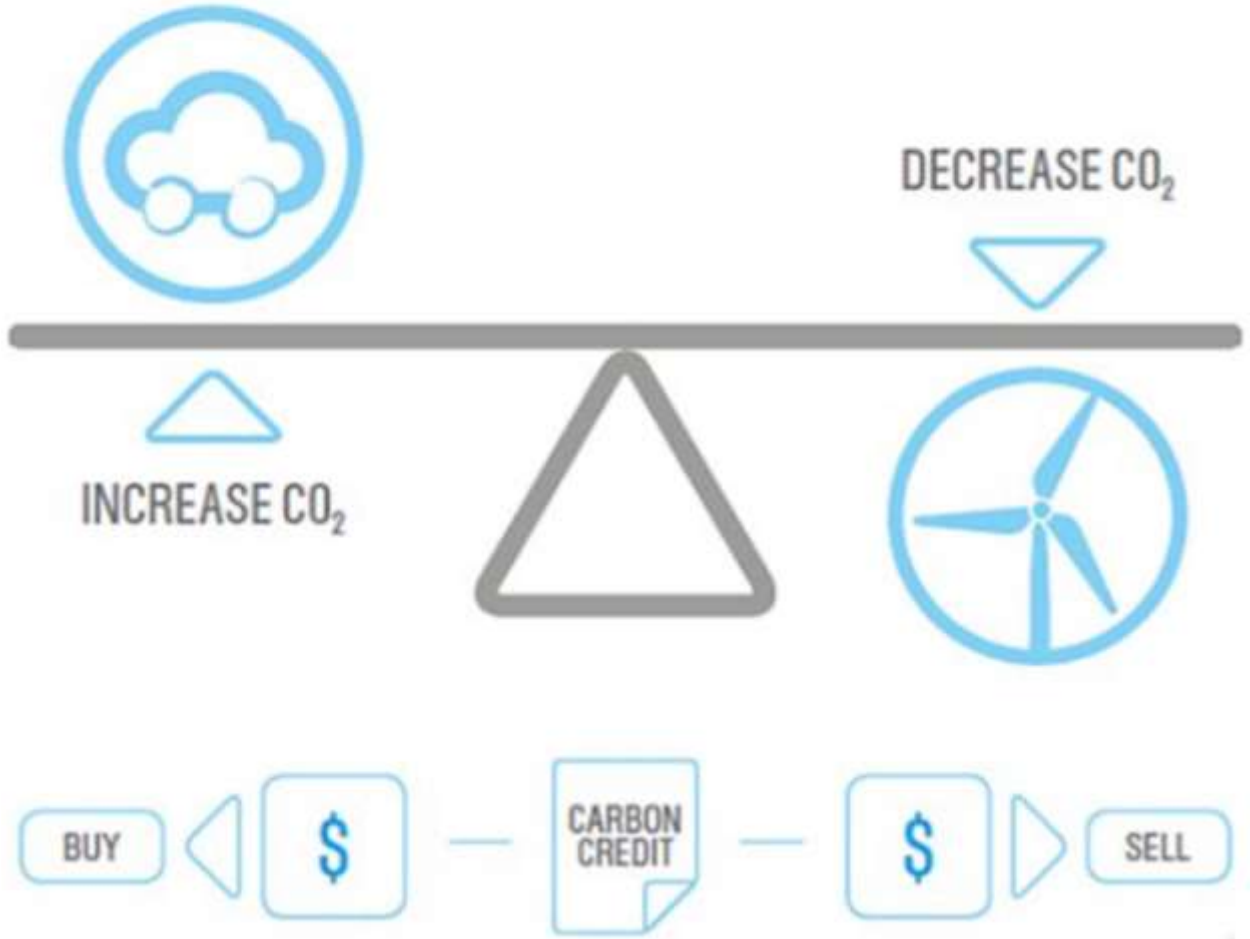
efficiencyenergy

Sequestra

Carbon Life Cycle Solutions

What are Carbon Credits & Emission Offsets?

Carbon offsets are created through sustainable projects that reduce GHG emissions or absorb carbon dioxide (CO_2).



One carbon credit represents 1 ton of CO2e reduced or avoided

What are Carbon Credits & Emission Offsets?

Carbon Markets

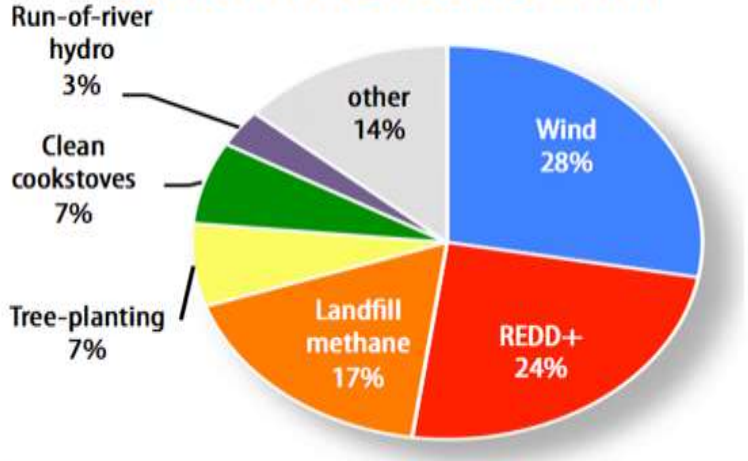
Compliance

Markets for carbon credits created by the need to ***comply*** with a regulatory act. In a Cap-and-Trade emissions reductions market, actors buy and sell carbon credits to comply with the cap or limit imposed on their emissions.

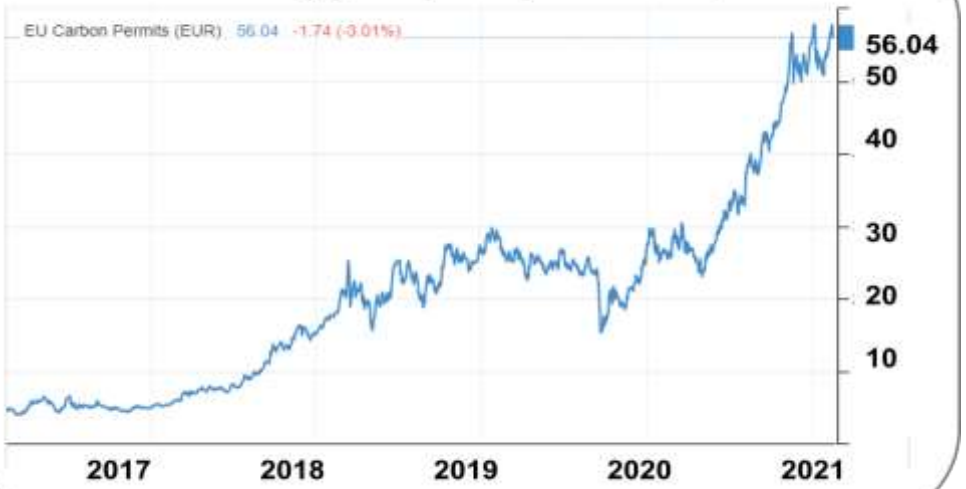
Voluntary

Carbon market that functions outside of compliance markets. Enabling businesses, governments, NGOs, and individuals to ***voluntarily*** offset their emissions by purchasing carbon credits.

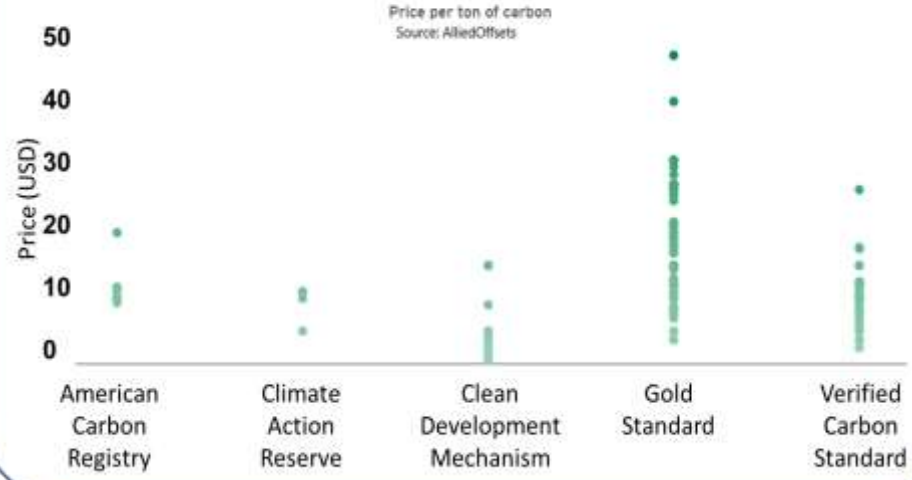
Sources of Carbon Credits



EU Emissions Trading System (EU ETS) Carbon Price / Ton of CO2e



Voluntary Carbon Market Price Range



Monetizing Carbon from Existing Municipal Housing Sustainability Projects

Solar PV

Lighting Upgrades

Sequestration

CHP

Building Envelope

EV Charging

Food Waste

Green Gas

Blockchain Carbon Credit Tokenization Platform

IBM

Data Acquisition & Carbon Offset Calculation Platform

Interface with Market

Local/Regional Regulated Market

Trading Desks

Exchanges

Offsetting Crypto

Consumers

Corporate

Quantifiable
Undisputable
Highly Valued

Annual CO2 potential from PHA EPCs

Project	Amount	Maturity	Elect Savings (kWh)	Gas Savings (therms)	CO2 Tons/Year	$100	$/ton
1	$14,000,000	11/20 yrs	1,699,397	563,805	6,500	$650,044.65	
2	$10,014,373	11/15 yrs	3,948,205	345,909	4,633	$463,259.50	
3	$7,376,625	11/20 yrs	2,005,213	65,975	3,648	$364,846.35	
4	$7,337,953	11/15 yrs	427,960	257,054	1,666	$166,580.98	
5	$11,959,870	15/20 yrs	1,662,711	76,244	1,583	$158,295.53	
6	$8,990,773	13/20 yrs	3,279,902	1,168	2,332	$233,164.09	
7	$7,494,029	11/20 yrs	1,726,251	178,979	2,173	$217,250.07	
8	$3,105,506	10/12	292,167	4,963	1,046	$104,645.03	
9	$2,957,063	6/15	160,674	0	114	$11,391.79	
10	$12,129,675	1/15	341,524	291,167	1,785	$178,532.56	
						$2,548,010.55	

Bottom Line

- Underutilized Incentives can provide Savings/Revenues from previous and planned investments in energy efficient buildings.
- Spread your dollars further and do more (green) good.

Action Item: Project Identification

- Placed in Service 2018-2020, 2021+
- New Construction, Lighting, HVAC, Envelope District Energy, Energy Performance Contracts
- Info Needed:
  - Area (sqft) Affected
  - Scope, Dates
  - Designer(s): Architect, Engineers, Contractor(s), ESCO, Consultant etc.
- Quantify Potential Incentive(s) and Offset(s)

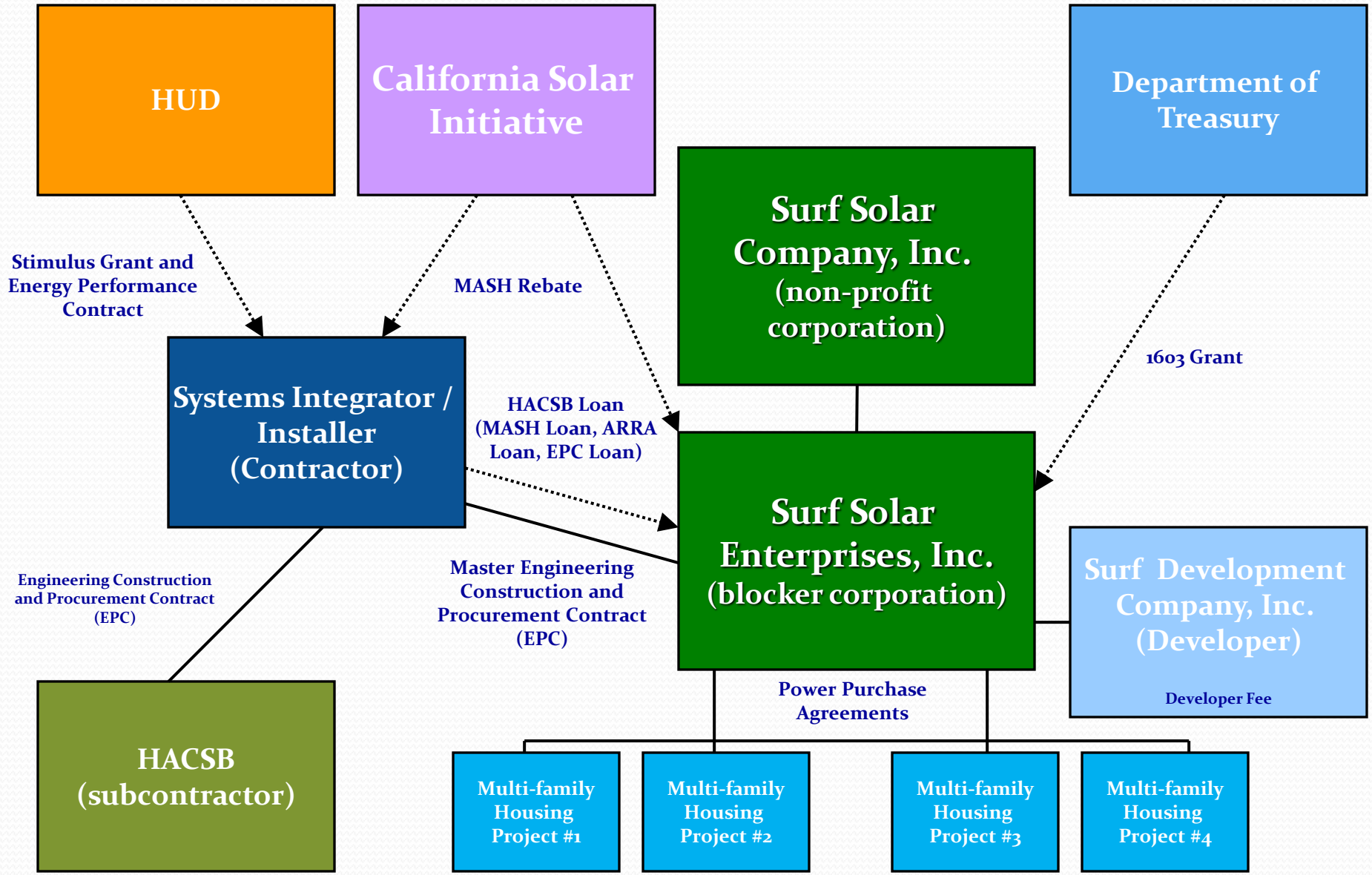
Solar Project

Housing Authority of the County of Santa Barbara

Executive Summary

- HACSB Proposed Captive Energy Company
- Financial Model – Sources
- Financial Model – Uses
- RFP Selection Criteria
- Planet Solar
- Timeline

HACSB – Proposed Captive Energy Company



Financial Model - Sources

Mash Rebate	$4,426,191
1603 Grant	3,882,915
Deferred Developer Fee	1,438,117
Deferred Contractor Fee	1,930,076
HACSB Loan	1,265,751
Total Sources	$12,943,049

Financial Model - Uses

PV System	$8,889,773
Contractor Fee	1,947,284
Construction Period Interest	222,244
Legal	95,455
Mash Application Fee	40,000
Accounting	23,000
Contingency	112,178
Consulting	175,000
Developer Fee	1,438,117
Total Uses	$12,943,049

RFP Selection Criteria

- Experience and Track Record (25%)
- Project Schedule and Timeline (20%)
- Photovoltaic System Design and Timeline (20%)
- Pricing (35%)

Planet Solar

- Very Competitive Pricing
- Best Selection of Materials
- Innovative Design Features
- Proposal Maximizes Available Rebates

Planet Solar Incorporated

Planet Solar

- Located in Santa Barbara
- Largest Installer in the County
- Uses U.S. Locally Made PV Panels (Camarillo)
- Installed First 100% Solar Neighborhood in SB County
- Worked with The City of SB Housing Authority

Planet Solar Incorporated

Timeline

- Approval and Signing of Contracts
- Ordering of Modules and Inverters
- Delivery to Property of Equipment
- Completion Date
- Placed in Service
- Final Completion