

BUILD ON EFFICIENCY

Colorado Energy Performance Contracting Program



Energy Performance Contracting

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Colorado Energy Office - Senior Program Engineer

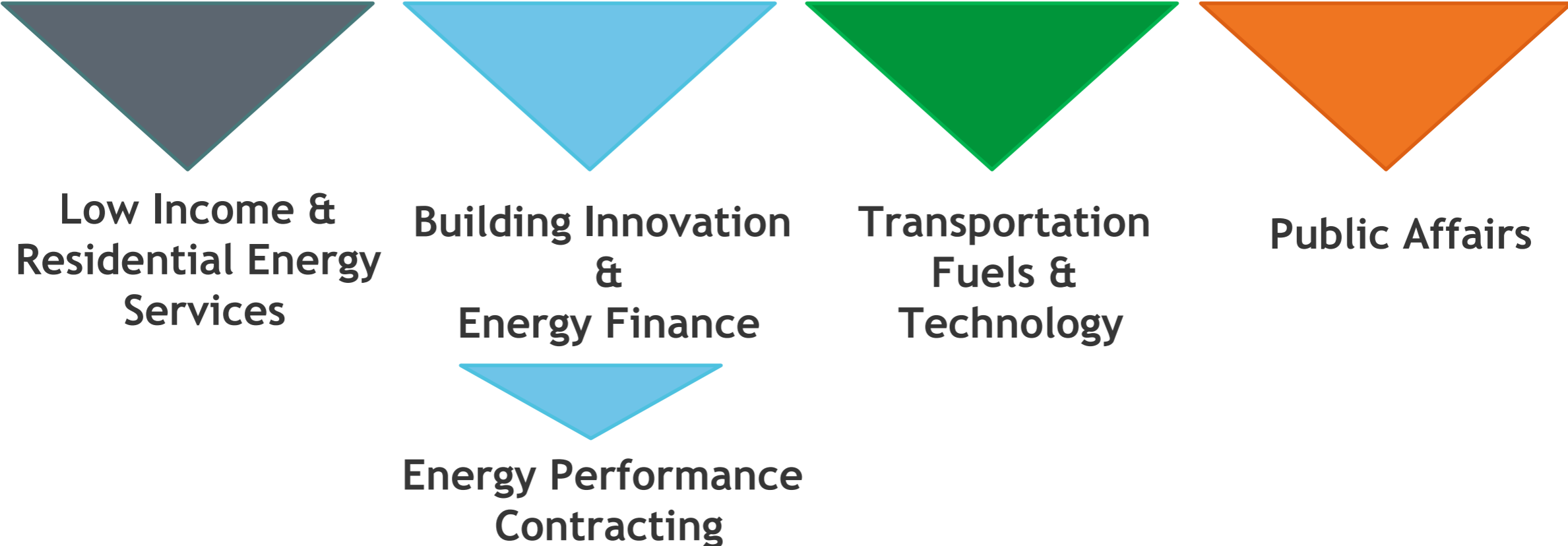


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Overview

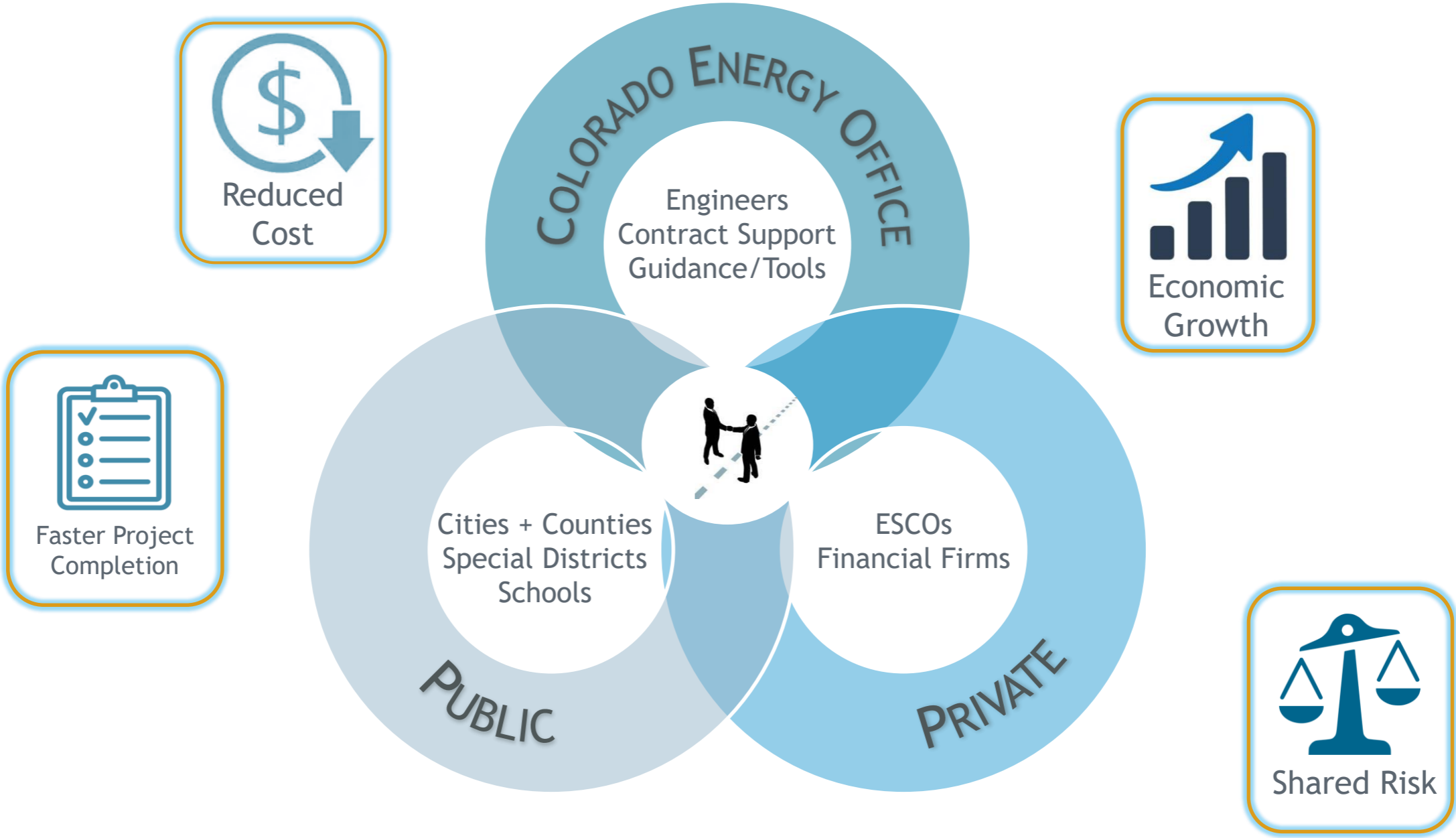
Our Mission

Reduce greenhouse gas emissions and consumer energy costs by advancing clean energy, energy efficiency, and zero emission vehicles to benefit all Coloradans



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Energy Performance Contracting Partnership



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The EPC 5-Step Process

MEASUREMENT & VERIFICATION ✓

- ENERGY PERFORMANCE CONTRACT
- FINANCING CONTRACT
- CONSTRUCTION

INVESTMENT GRADE AUDIT + PROJECT PROPOSAL CONTRACT

SELECTION OF A PRE-QUALIFIED ESCO - RFP

CLIENT COMMITMENT: (1) Build your team, (2) Sign MOU with CEO



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Support from Colorado Energy Office

- ✓ Standardized, state-approved documents
 - Developed by consensus, and approved by State Architect +AG + Controller
 - Toolkits, contracts, guidance, protocols on website
- ✓ Pre-qualified ESCOs
 - Engineering capacity and organizational strength
 - ESCOs contracted with the State
- ✓ CEO advice and technical support
 - MOU outlining CEO support
 - Dedicated technical team throughout life cycle of project-no charge!
- ✓ Private market-based financing
 - Active EPC finance community in CO

Conservation for Public Jurisdictions

PROBLEM

HIGH OPERATING \$ / η EQUIPMENT

SOLUTION

IMPROVEMENT & CONSERVATION MEASURES

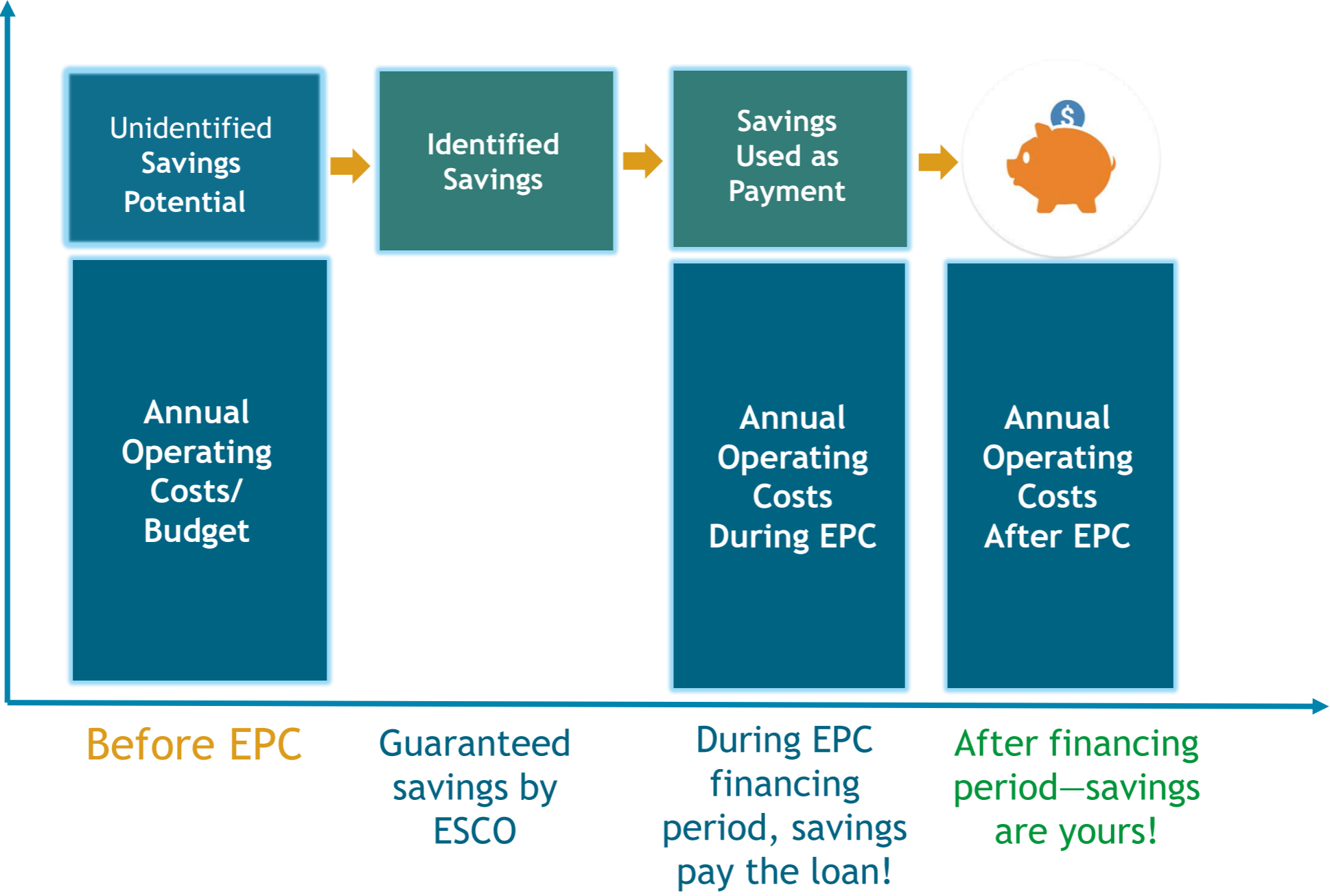
RESULTS

PROJECT FUNDED BY REDUCED CONSUMPTION



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Energy Performance Contracting (EPC)



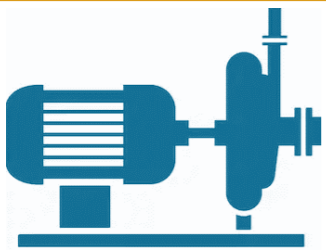
Energy Efficiency Measures



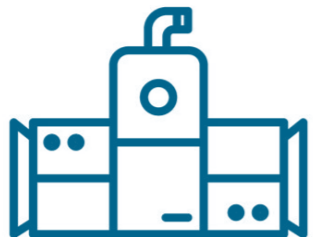
Lighting Upgrades



Boiler Replacements



Pumps & Fan Motor Upgrades



Chilled Water Systems



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Renewable Energy Measures



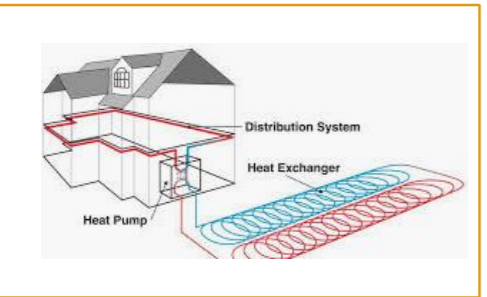
Community Solar Gardens/ Ground Mount Solar Arrays



Floating Solar Arrays



Wind & Hydroelectric Generation



Building Energy Systems: Geothermal, VRF



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Potential Project Size

Approximate Facility Size: 60,000 Square Feet

Average spend per square foot (Healthcare): \$4.03*

Estimated Annual Electric & Gas Costs: \$240,050

	Financing Term (Years)		
% Savings	10	15	20
10%	\$241,500.00	\$362,250.00	\$483,000.00
15%	\$362,250.00	\$543,375.00	\$724,500.00
20%	\$483,000.00	\$724,500.00	\$966,000.00
25%	\$603,750.00	\$905,625.00	\$1,207,500.00
30%	\$724,500.00	\$1,086,750.00	\$1,449,000.00

* Based on 2012 US DEO Commercial Building Energy Consumption Survey (CBECS) database for Inpatient Healthcare, South and West census regions



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The results, through FY19

PUBLIC SECTOR EPC PROGRAM RESULTS as of June 30, 2019

Facility investments	GUARANTEED ANNUAL UTILITY SAVINGS	ENERGY + WATER CONSERVATION MEASURES
\$586,523,957 Executed projects 208		HVAC improvements
Public clients 154	Electricity (kWh) 198.6 million	Boiler replacements
State agencies 8/18 Higher education 19/27	Natural gas, propane, heating oil & coal (therms) 10.7 million	Pumps, fans & drivers
Counties 23/64 School districts 58/182	Water (kgal) 507,560	Equipment controls
Municipalities 37/276 Special districts 9/?	Utility cost savings \$34.8 million	Lighting fixtures & controls
Public buildings 2583	Operations & maintenance (O&M) cost savings \$3.4 million	Occupancy sensors
Square feet improved 83.1 million sf		Operations & scheduling
<i>Office space, schools, housing, libraries, jails, hospitals, street lighting, water & wastewater facilities, swimming pools, ball fields</i>		Building envelope improvements
		Water efficiency (low flow fixtures, irrigation, evapotranspiration & cooling tower controls, ice machine & laundry conversions, pool covers, valve replacements)
		Street & traffic lights
		Renewable energy installations

