



# Funding Energy Efficiency and Renewable Energy

## Michigan School Business Officials

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# Introductions



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## Presentation Objectives

- Steps to **reducing energy costs**, while **improving indoor environments**
- **Different approaches for funding projects** — including grants, rebates and low-interest loans
- **Reducing environmental impacts, increasing comfort for security and staff, and freeing up funds** that can be reallocated for your district's needs



# About Ameresco

Ameresco (NYSE:AMRC) is a leading comprehensive cleantech integrator and renewable energy asset developer, owner and operator.

Founded in 2000 | Public in 2010

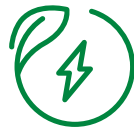


## Comprehensive Portfolio

Objective approach and in-house technical expertise delivers the most advanced technologies to meet the unique needs of each customer. Addressing decarbonization, resiliency, cost savings and more as a full-service, long-term energy partner.

## Customer Driven

Federal Government, Public Sector, Utilities, K-12 Schools, Higher Education, Healthcare, Commercial & Industrial, Public & Community Housing, Transportation. Market reputation across North America & Europe for excellence in customer satisfaction.



**\$14+ Billion** in energy projects deployed since company inception



**3+ GWe** of renewable energy resources contracted or managed (solar, BESS, wind, biogas, RNG, operations & maintenance, etc.)



**1,500+ Employees** throughout North America and Europe



**60+ Offices** providing local expertise in markets served



Embracing **innovation** through tailored projects aligned to customers goals



Committed to reduce our customers' carbon footprints by a cumulative **500 million metric tons by 2050**

# K-12 Schools

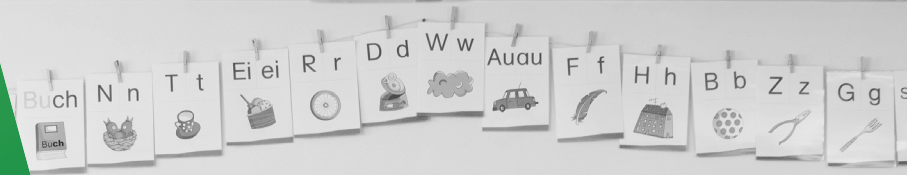
For nearly 24 years, Ameresco's track record of energy conservation and cost savings has contributed to the improved quality of K-12 school environments. Ameresco offers the expertise, innovative engineering, and creative financial options needed to reduce costs and energy demand to make classrooms more sustainable places for children to learn and grow.



**\$1.5B+**  
**50+ MWe**  
**Contracted**



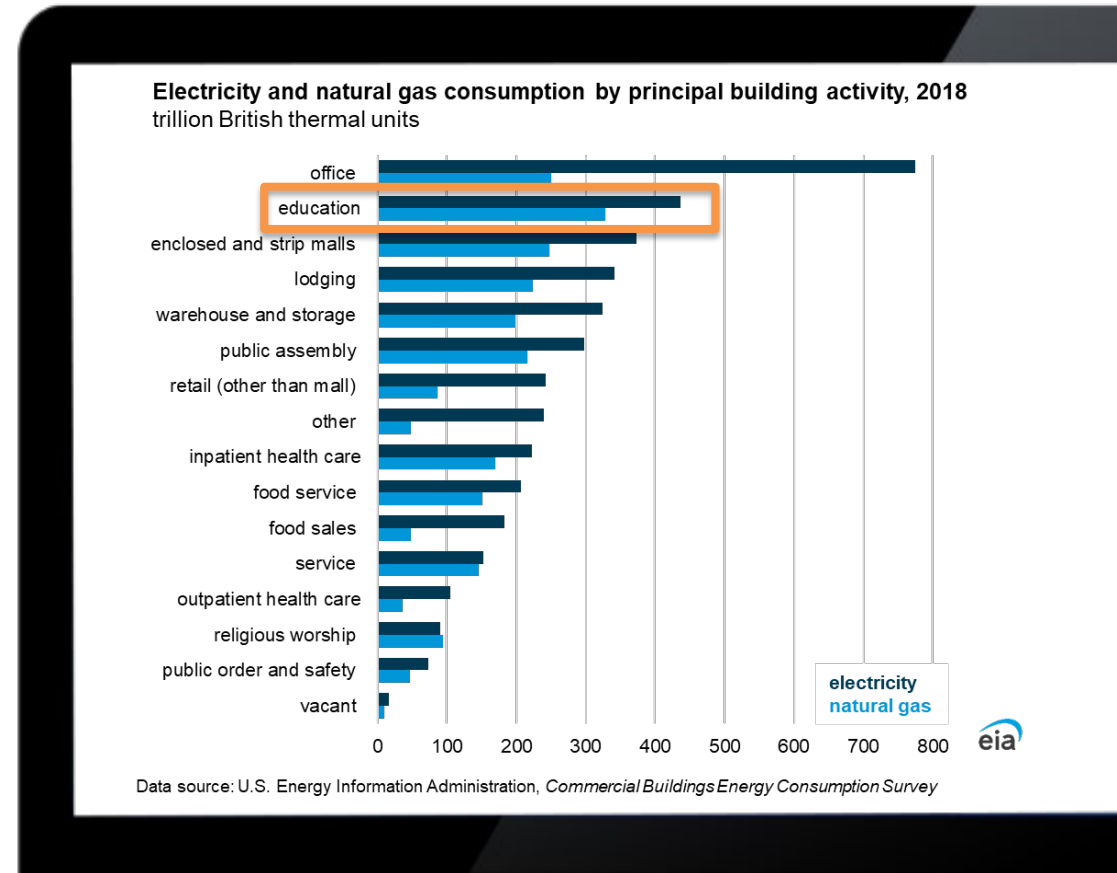
# Managing Utilities & Energy in Schools



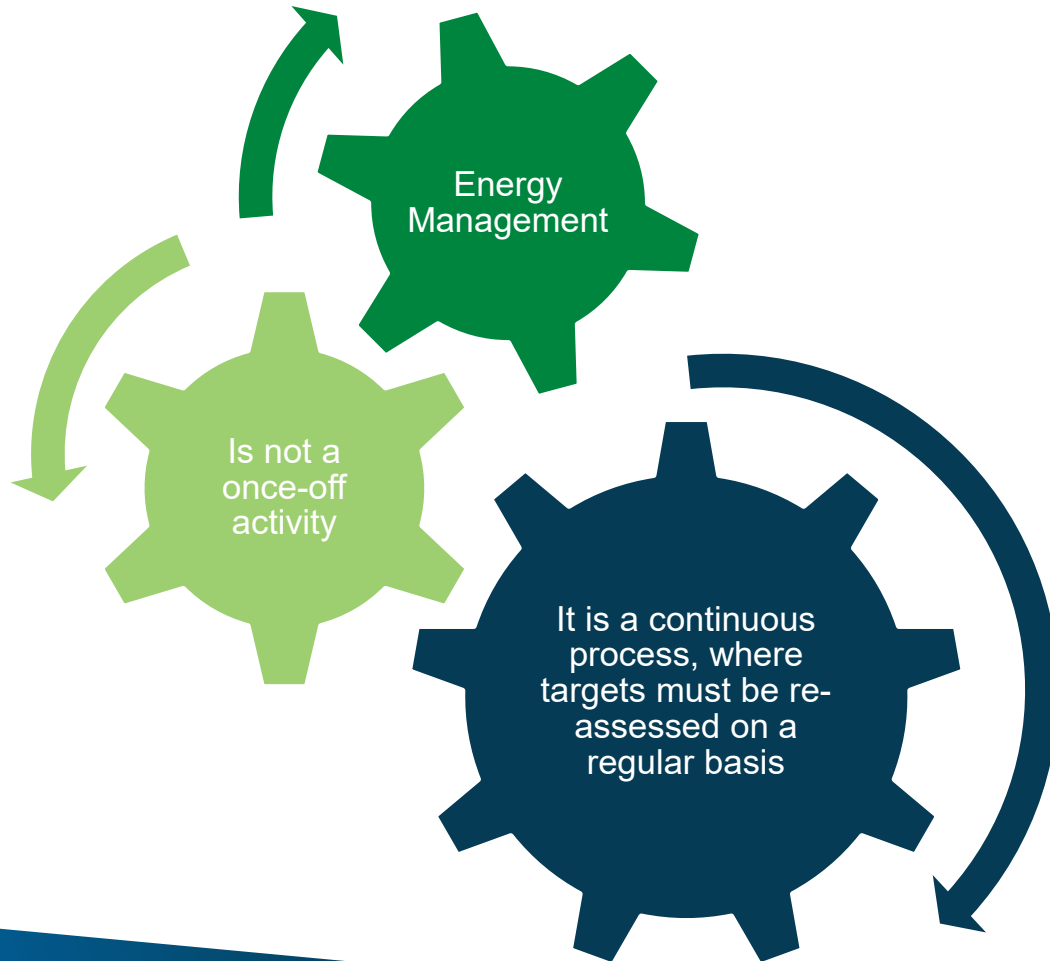
# Challenges Facing Administrators

## “Education wastes \$2.4B a year in energy an amount equivalent to 40M text books”

- K-12 spends nearly \$8B in energy per year with 30% inefficiency, 2nd largest expense to salaries (DOE).
- Education sector uses the most natural gas per SF and the 2nd most electricity (see right).
- Among the principal building activities, education (31,100 sf) was the second largest building type to lodging. (DOE)
- Half of all main shift workers worked in office and education buildings in 2018. (DOE)
- Aging facilities combined with limited school budgets result in an estimated \$270 billion needed for deferred maintenance (DOE).
- Funding is tight and schools struggle to pay for repairs and renovations.
- Everyone wants to be “Green” but not in the “Red”.
- Facility staff has poor visibility into energy consumption.



# What is Energy Management?



- **Process of monitoring, controlling, and managing the Three C's:**
  - Cost (\$/sq ft)
  - Consumption (BTU/Sq Ft)
  - Carbon (Tons Co2)
- **Human Element** – People need be educated and engaged
- **Equipment Element** – Building infrastructure needs to be controlled, maintained, and monitored
- **Process Improvement Element** – Not a one-time project or activity, it is a continuous process

# Energy Management

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**Less Efficient Schools:** 3x more energy, spend \$60-\$100 more per student and have less \$\$\$ for classroom education

- 5%-15% energy savings reduction by implementing low cost/no cost measures (DOE)
- 15%-40% energy savings reductions by implementing an energy efficiency project / performance contract
- **K-12 schools can save up to 50% on energy use if they optimize their lighting equipment and operations (DOE)**
- Energy management can help administrators create positive public image
- Active energy management helps contribute to reducing fossil fuel usage and emissions
- Serves as an educational tool and models positive behaviors for students, if applicable





# Ways to Fund



# Grants – Inflation Reduction Act

## The Inflation Reduction Act (IRA)

provides unprecedented amounts of funding – nearly \$369 billion in direct investment to ensure energy security, reduce carbon emissions, increase energy innovation, and support environmental justice objectives with direct support for underserved communities. The bill includes a wide range of clean energy provisions that support energy efficiency, solar, storage, microgrids, electric vehicles, and more, with the goal of reducing carbon emissions by approximately 40 percent by 2030.

With customized solutions ranging from solar, microgrids and battery energy storage, to renewable natural gas, EV infrastructure and innovative financing structures, Ameresco is your long-term partner for the clean energy transition.

## Production Tax Credits

- **Clean Electricity:** Up to 2.5 cents per kWh of renewable or zero-carbon electricity, including solar
- **Clean Hydrogen:** Up to \$3 per kilogram of clean hydrogen produced

## Investment Tax Credits

- **Clean Electricity and Energy Projects:** Up to 30% for renewable or low carbon energy projects
- **Expanded Eligibility:** Standalone energy storage, biogas, microgrid controllers now eligible for ITC
- **Geothermal Heating:** Up to 30% of investment in geothermal heating and cooling
- **Interconnection Costs:** Interconnection costs now eligible for ITC for projects under 5 MW

## Production, Investment Tax Credit Bonuses

- **American-Made:** Up to 10% bonus for meeting certain domestic content requirements
- **Energy Communities:** Up to 10% bonus for projects located in brownfields or communities connected to fossil fuel development
- **Low Income Communities:** Up to 10% bonus for ITC projects located in low-income communities or on tribal lands; up to 20% for projects in low-income residential communities through competitive allocation process

## Direct Pay Option

- A mechanism that allows an entity to claim a tax credit as a rebate, the Direct Pay Option is a part of the IRA for tax-exempt entities such as nonprofits, state and local governments, public schools and universities, and rural cooperatives, providing them a new tool to fund clean energy projects.

# Available Tax Incentives

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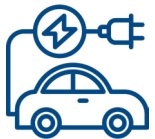
## Clean Energy

- Production Tax Credit (45) / Clean Electricity Production Credit (45Y) (After 2024)
- Investment Tax Credit (48) / Clean Electricity Investment Credit (48E) (After 2024)



## Energy Efficiency

- Energy Efficiency Commercial Buildings *Deduction* (179D)



## Alternative Transportation

- Alternative Fuel Refueling Property Credit (30C)
- Qualified Commercial Clean Vehicles (45W)

## Other Tax Incentives Extended or Introduced Under IRA:

- Carbon sequestration
- Sustainable fuels (clean hydrogen, biodiesel, renewable diesel, sustainable aviation fuel)
- Manufacturing
- Zero-emissions nuclear power
- New energy efficient homes and residential energy efficiency improvements
- Residential clean energy
- Clean vehicles

# Enhancements to ITC/PTC

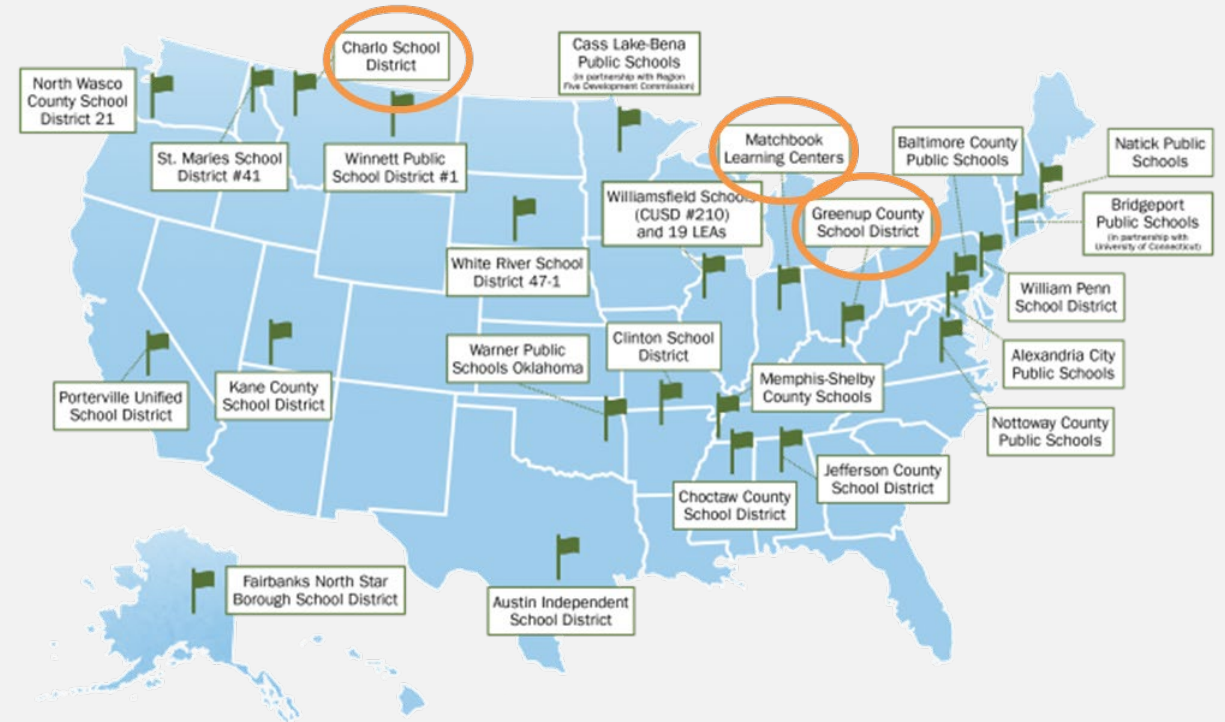
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- Solar now eligible for ITC or PTC
- New technologies eligible for ITC if placed in service after Dec 31, 2022
  - Solar energy
  - Geothermal
  - Fiber-optic Solar
  - Fuel cell
  - Microturbine
  - Small wind
  - Offshore wind
  - Combined heat and power
  - Waste energy recovery
  - Energy & thermal storage technology
  - Biogas property
  - Microgrid controllers
  - Dynamic glass
  - Fuel cells using electromechanical processes
  - Linear generators
- Interconnection property eligible for ITC if project < 5 MW
- Storage systems > 5 kwh
- Microgrid controls between 4 kw and 20 MW

# Grants – Renew America’s Schools: 2023 Selections

## 24 selectees, \$178 million awarded

- 15 selectees have schools located in a Justice40 community, 5 in Tribal areas
- Combined free & reduced-price lunch average of 70%
- 23 selectees are Title 1 schools
- 14 selectees are in a rural locale
- Requested Improvements:
  - 88% HVAC
  - 71% lighting
  - 65% mention transition to electrification
  - 58% envelope / roof
  - 54% controls
  - 42% renewables + battery



# 2024 Renew America's Schools Prize



	PHASE 1 <b>Prize</b> PORTFOLIO + TEAM	PHASE 2 <b>Cooperative Agreement</b> STRATEGIC PLAN + ENERGY AUDITS	PHASE 3 <b>Cooperative Agreement</b> IMPLEMENTATION
<b>Number of Anticipated Awardees</b>	Up to 23 winners. Minimum of 10 schools per portfolio selected.		
<b>Award</b>	\$300K cash prize each	\$500K – \$1M*	\$7M – \$14M*
<b>Cost Share</b>	No cost share required	Minimum 5%	Minimum 25%
<b>Total Award Funding (\$180M)</b>	Up to \$6.9M	\$10 – \$15M	\$150 – \$170M

\*Winner will receive funding based on portfolio size

## Timeline:

- **Phase 1 Opens:**  
March 20, 2024
- **Phase 1 Submission Deadline:** June 13, 2024
- **Evaluation Period:**  
June – July 2024
- **Winner Notification:**  
August 2024 (anticipated)

# Grants: K-12 Schools

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## 1. Renew America's Schools

- DOE competitive grants to schools for energy efficiency & clean energy improvements at K-12 schools. Priority for schools with renovation/repair needs, lower-income schools, and schools using performance contracting. Authorized for 5 years.
- Next application deadline: **Spring 2024**

## 2. Addressing Air Pollution at Schools

- \$37.5M in competitive grants to monitor & reduce air pollution and GHG emissions at schools in low-income communities
- Next application deadline: **Late 2024**

## 3. Clean School Bus Program

- \$5B from EPA for a school bus replacement grant to reduce emissions. State/local governments, eligible contractors, and nonprofit school transportation assoc. are eligible. Half of funds are authorized for zero-emission school buses and half for alternative fuels and zero-emission school buses
- Next application deadline: **1/31/24**

## 4. Greenhouse Gas Reduction Fund

- Creates a new \$27B "green bank" through EPA. Includes three funding buckets:
- **\$7B Solar for All program** provides 60 grants to states, tribes, municipalities and nonprofits for residential and community solar in low-income areas.
- **\$14B National Clean Investment Fund** Funds 2-3 national green banks
- **\$6B Clean Communities Investment Accelerator** Funds 2-7 hub nonprofits to rapidly scale the capacity of CDFIs, credit unions, local green banks, housing finance agencies, etc. to provide financing to households, schools, small businesses in low-income areas
- For schools, this program can support "school building space and water heating grid-interactive electrification and energy efficiency" and similar projects.

## 5. ESSER

## 6. **Potential tax credits**

- Solar, storage, microgrid (Sec. 48 ITC)
- Building efficiency – lighting, HVAC, and envelope (179D)
- EV charging stations (Sec. 30C)
- Electric school buses (Sec. 45W)
- Direct pay
- Bonus Credits (domestic content, energy communities, low income communities)

# Utility Rebates

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## Providers

- DTE
- Consumers Energy
- AEP
- Municipalities
- CO-Ops

## Improvements

- Lighting
  - Fixtures
  - Controls
- HVAC
  - BMS
  - VFD's
- Insulation
- Boiler tune-ups
- Steam Traps
- Roofing
- Etc...

## Administration

- Utility Program Admins (Energy Advisors)
  - Franklin Energy
  - DNV
  - Energy Sciences
  - Clear Result
- Trade Ally (Pre-registered Contractors)
  - Local Contractor
  - Self Perform

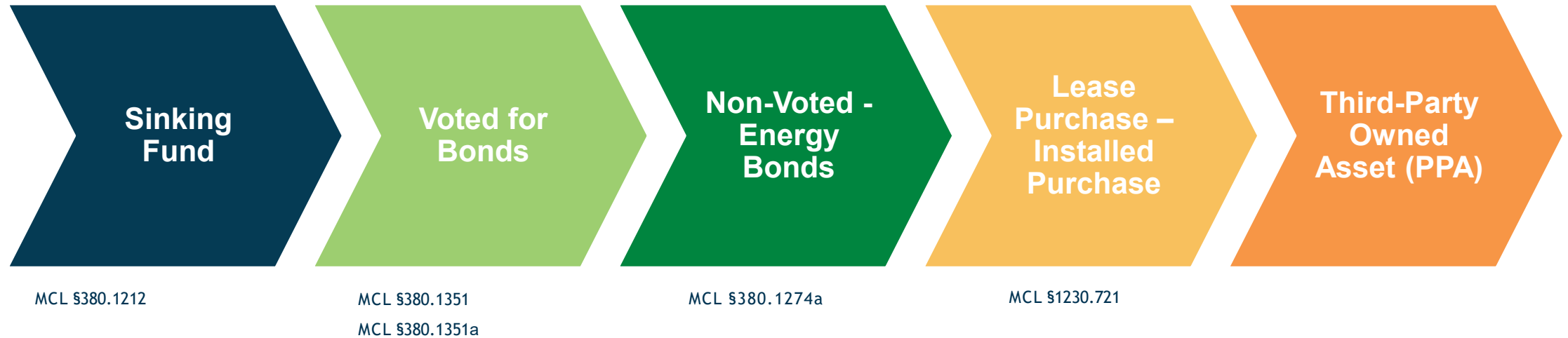


# Financing Options



# Spectrum of Flexible Financial Models

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# Performance Contracting



## **Contract Type:** Energy Saving Performance Contract (ESPC)

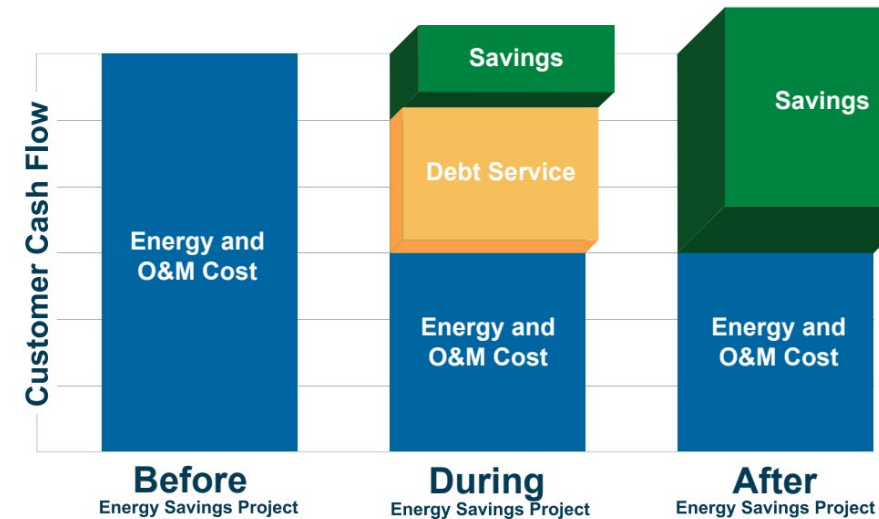
With an ESPC, clients can leverage energy and operating cost savings to generate capital to renew facilities and building systems. ESPCs provide a simple solution to a big challenge: completing necessary infrastructure upgrades when budgets are too tight or non-existent. Ameresco's comprehensive approach to managing an ESPC is designed to ensure that we deliver the maximum value for the lowest possible cost.

### Benefits:

- Budget-neutral mechanism finances using future savings - the money you are already spending on monthly utility bills and related operating costs is used to finance energy infrastructure & facility improvements
- Ameresco provides or sources all capital required in identifying and installing new or upgraded energy-efficient equipment
- At the end of the ESPC, the customer owns all the improvements and receives all the continuing savings
- No upfront CAPEX required for projects
- Resulting energy savings contribute to decarbonization goals

### Considerations:

- Financing is on-balance sheet, on-credit obligation by customer
- May be perceived as credit-neutral due to savings and savings guarantee
- Client responsible for ongoing O&M after performance period



*Illustration only. % of savings varies from project-to-project*

# Third-Party Owned Assets



## ***Contract Type: Power Purchase Agreement (PPA)***

PPAs can be an effective financing option that provide a reliable source of clean energy for the length of the contract. This energy procurement option eliminates the challenge posed by operating and maintaining renewable energy systems for organizations constrained by budgets but strive to reduce carbon footprint through renewable resources.

### **Benefits:**

- Client purchases energy (electric, thermal, etc.) as off-taker for a set term
- Can be coupled with local incentives & tax credits for competitive open market pricing
- No CAPEX required - helps mitigate the costs of renewable energy development
- Ameresco absorbs costs associated with the design, construction, and O&M
- Client not responsible for O&M

### **Considerations:**

- Proximity or location to distributed assets where power is being generated
- Multiple term length options available





# Case Study: School District #1

	ECM Investment	Total Annual Savings	Electricity Saved (kWh)	Natural Gas Saved (MMBTU)	Carbon Offset Saved (Tons CO <sub>2</sub> )	Cars Per Year Saved	15 Year Cum Cash Flow	Simple Payback
<b>Total</b>	\$1,010,563	\$99,056	747,125	5,665	661	159	\$765,253	9.6 yrs

Implemented Projects	RCx Winning Measures	Annual Savings
<ul style="list-style-type: none"> <li>Lighting Retrofits</li> <li>Ice Storage Optimization</li> <li>Controls Integration</li> <li>Chiller Replacement</li> <li>Water Deduct Meter</li> <li>Remote Monitoring</li> <li><b>Retro-Commissioning</b></li> </ul>	<b>Scheduling/Setpoint Optimization</b>	\$10k
	<b>Simultaneous Heating/Cooling</b>	\$8k
	<b>Over Ventilating on Gym AHUs</b>	\$3k
	<b>VFD Control Sequences</b>	\$3k
	<b>Overrides on DA Static Setpoint, Exhaust Fans, OA Dampers</b>	\$3k
	<b>DHW Economy Mode</b>	\$2k
	<b>Building Envelope</b>	\$1k
	<b>Total Estimated Savings</b>	<b>\$30k</b>
<b>Overall Project Payback of 1 Year</b>		



# Case Study: School District #2

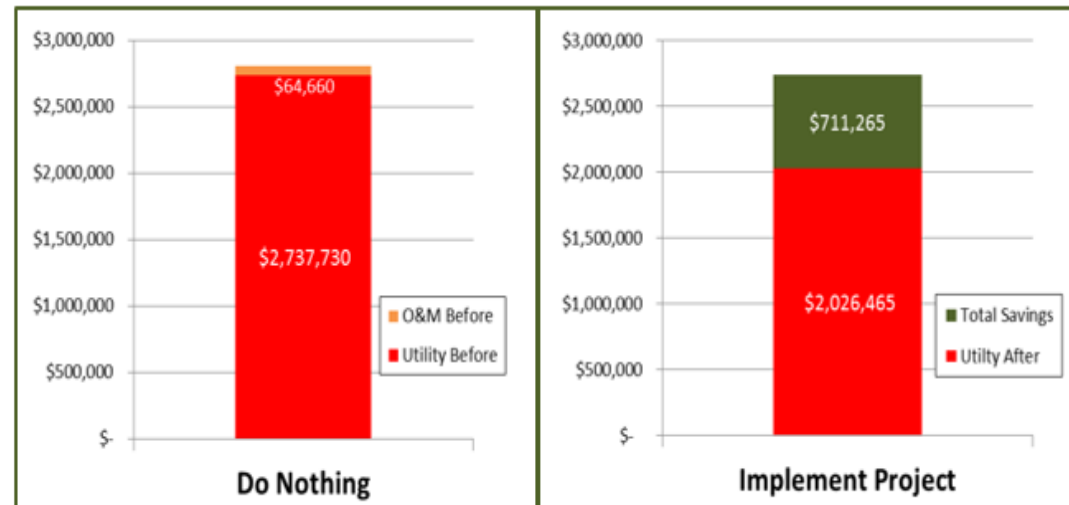
	ECM Investment	Total Annual Savings	Electricity Saved (kWh)	Natural Gas Saved (MMBTU)	Carbon Offset Saved (Tons CO <sub>2</sub> )	Cars Per Year Saved	15 Year Cum Cash Flow	Simple Payback
<b>Total</b>	\$873,296	\$70,260	430,527	1,580	381	75	\$15,745	11.8 yrs

## Implemented Projects

- Lighting Retrofits
- Motors & VFD's
- Retro-Commissioning
- Advanced Controls
- Duct Repair
- Roof Top Units

## Energy Management Cost of Inaction

Over a 15-year period, this school would pay an extra \$711K to their utilities if no action is taken on these projects.



# What Others are Doing

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## District #1

- Bond Work
- No Sinking Fund
- Energy Bond
- IRA Grant Dollars
- DTE/CE Rebates



## District #3

- Small Rural
- Sinking Fund
- Limited Community Support for Voted-Bond
- Energy Bond



## District #2

- Sinking Fund
- Energy Bond
  - Lighting/Water/Controls
- Bond Proposal in 7-10yrs



## District #4

- Multi-Series Bond
- No Sinking Fund
- Large Roofing Needs
- IRA for Solar – Direct Pay



# Question & Answer



Thank You!

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