

Ameresco

Carmarthenshire Council Energy Efficiency Project

November 2021

Prepared for:

low carbon  swansea bay
bae abertawe carbon isel

Presented by:
Austen Bamford – Business Development Manager
Laura Kavanagh – Senior Project Manager

Today's agenda

- Introduction to Ameresco
- Ameresco Projects – UK
- Carmarthenshire Council – Opportunity to completion
- Q&A

Austen Bamford

Client Liaison Officer and Business Development Manager



Laura Kavanagh

Senior Project Manager



Overview



About Ameresco

Ameresco (NYSE:AMRC) is a leading energy services company with a comprehensive portfolio of energy efficiency and renewable energy solutions.

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. Majority of projects are budget-neutral, funded by energy cost savings.

Customer Driven

Federal & Municipal Governments, Commercial & Industrial, Higher Ed, K12, Public Housing, Healthcare, Airports. Market reputation across North America & Europe for excellence in customer satisfaction.



\$7 Billion+ in energy solution projects, 260 MWe of Owned Assets in Operation



8,000+ Customers benefitting from energy efficiency measures and renewable energy generation



1,000+ Employees throughout North America and the United Kingdom



Up to 45% Energy cost savings with comprehensive, audit-based improvements



70+ Offices providing local expertise in markets served



In 2019, our renewable energy assets and customer projects delivered a carbon offset equivalent to **11,167,978 metric tons of CO₂**

Lines of Business



Smart Energy Solutions

- Implement comprehensive **energy efficiency** solutions and **infrastructure upgrades**
- Design, build and construct **distributed energy** resources, **microgrids**, battery storage, and **energy savings** projects



Operations & Maintenance

- A critical **capability and differentiator**
- Deliver on-site **technical expertise**
- **Fully maintained** and **routinely optimized** turnkey energy systems
- Strong source of **recurring revenue**



Ameresco Assets

- **269 MWe of company-owned** renewable energy projects spanning solar, landfill gas, RNG, and battery
- Over \$500M in **renewable power** projects
- **A substantial and growing portion of our earnings comes from recurring lines of business**

Cost Savings | Resiliency | Sustainability | Security

Ameresco's Advanced Technology Portfolio



Energy Efficiency

- Smart Building Automation & Controls
- Interior Lighting and Controls
- Water / Wastewater Efficiency & Recovery
- HVAC & Ventilation
- Boiler & Chiller System
- Industrial Optimization
- Building Envelope
- Advanced Metering
- LED Street & Area Lighting
- Smart Cities



Distributed Energy Generation, Storage & Microgrids

- Cogeneration Plants
- Solar (On-Grid & Off-Grid)
- Batteries and Energy Storage
- Biomass, Biogas, Landfill Gas to Energy, RNG
- Microgrid
- Geothermal
- Wind
- EV Charging



Infrastructure

- Utility Distribution System
- Retrofits/Expansion
- Modernization
- New Construction
- Monetization / Ownership & Operation



Energy Analytics and Supply Management

- Energy Analytics
 - AssetPlanner®
 - Measurement & Verification
 - Advanced Metering
 - VisionDSM (AEG)
- Energy Supply Management



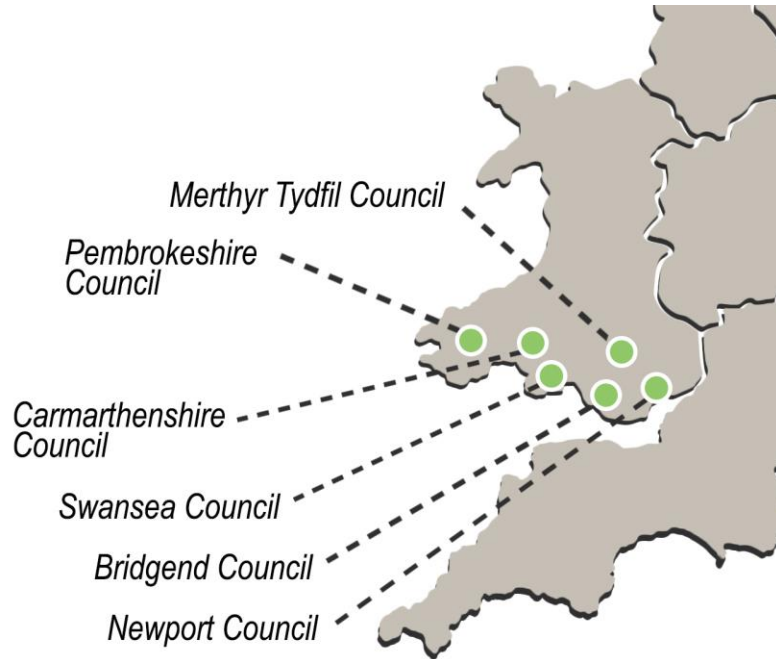
Operations and Maintenance

- Plant O&M
- Solar O&M
- Facility Management Services
- System Repair & Restoration
- Lighting System Maintenance
- Control System Predictive Maintenance

Ameresco Projects



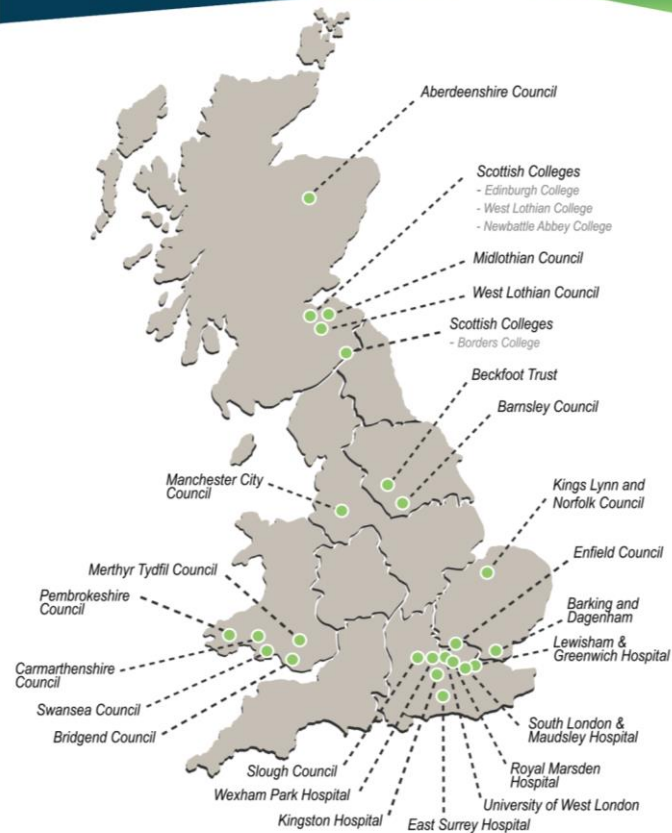
Welsh Presence



- Carmarthenshire County Council
- Swansea Council
- Merthyr Tydfil County Borough Council
- Bridgend County Borough Council
- Newport City Council
- Pembrokeshire County Council

Over £12 million of project work

Ameresco Projects UK



**WEST LOTHIAN COUNCIL
ROOFTOP SOLAR PV, EE RETROFIT**



**NHS WEXHAM PARK
GAS CHP AND HEATING NETWORK**



**ENFIELD COUNCIL
LED, SOLAR PV, BMS, FUEL CELL, CHP**



**GLAXOSMITHKLINE WARE
4MW GAS CHP AND HEATING NETWORK**



**MANCHESTER CITY COUNCIL
3.5MW ROOFTOP SOLAR PV, EE RETROFIT**



**BOROUGH COUNCIL OF KING'S LYNN
& WEST NORFOLK
CHP, LED, PV, STREET LIGHTING**



**SCOTTISH COLLEGES
CHP, VSD, BOILER REPLACEMENT, CALORIFIER UPGRADE,
LED, HVAC, AND CONTROLS**



**PEMBROKESHIRE COUNTY COUNCIL
LED LIGHTING, SOLAR PV, BMS, VSDS, BOILER
REPLACEMENT**



**SLOUGH COUNCIL
LED, SOLAR PV, BMS, BATTERY**

Manchester City Council

Project Description



Overview: Manchester City Council (MCC) have set a 2038 Carbon Zero target. We are working at 16 sites to deliver carbon savings to contribute significantly to this target. Working closely with energy teams as well as building operators to schedule with works that are ongoing at the buildings. MCC also have a heat network which we have advised that some of the sites are connected. Phase 2 will look at further de-carbonising heat in the wider portfolio.

- **CAPEX:** £16,800,000
- **Savings:** 20%
- **Payback:** 10 years
- **ECMs:** CHP, LED lighting, Solar PV, BMS, VSD, Micro-Grid and Battery Storage, ASHPs, GSHPs
- **Sites:** 16

Carmarthenshire Project



The Opportunity

- Issued as an open tender through the Re:Fit Framework
- 29 sites
- Based on Salix funding criteria
- Awarded to Ameresco Q4 2018
- IGP process
- Project completion August 2021

CARMARTHENSHIRE COUNTY COUNCIL

Public Sector Decarbonisation Scheme: Pathway to Net Zero

Carmarthenshire County Council (CCC) are leading in the public sector in their journey to meeting climate change commitments. In order to meet the net-zero carbon target by 2030, substantial reductions are being made in energy consumption and renewable generation is used across the council's estate. Following multiple site visits, in-depth data analysis and discussions with occupants of the buildings in scope, Ameresco have investigated and installed an extensive number of Energy Conservation Measures (ECMs).

Phase 1 is projected to save £315,726 and 675 tonnes of carbon equivalent (tCO₂e) each year - these savings being guaranteed by Ameresco under an Energy Performance Contract. Working with Ameresco has allowed us to accelerate the roll-out of our energy efficiency programme in a more comprehensive manner and at a greater pace than could be achieved using limited in-house resources. We look forward to developing further phases to help us become a net zero carbon local authority by 2030.

Anne Davies - Executive Board Member

- Significant reduction in carbon emissions and annual energy costs
- Optimal use of Carmarthenshire County Council funding
- Upgrades to ageing energy infrastructure
- Extended life and optimised operation of existing equipment
- Improved comfort levels for staff and building users

675 TONNES SAVED ANNUALLY

£315K ANNUAL ENERGY SAVINGS 2,085,537 KWH

468 KWH PEAK RENEWABLE GENERATION CAPACITY

BMS UPGRADE, VSD INSTALLATION

LED LIGHTING AND CONTROLS

BUILDING FABRIC IMPROVEMENT, POOL COVER, WATER SAVINGS

BOILER UPGRADE/OPTIMISATION, CHP, DISTRICT HEATING

The infographic features a circular inset image of a building roof with solar panels. At the bottom, there are four small rectangular images: solar panels, an indoor swimming pool, a boiler unit, and a control room with multiple screens.

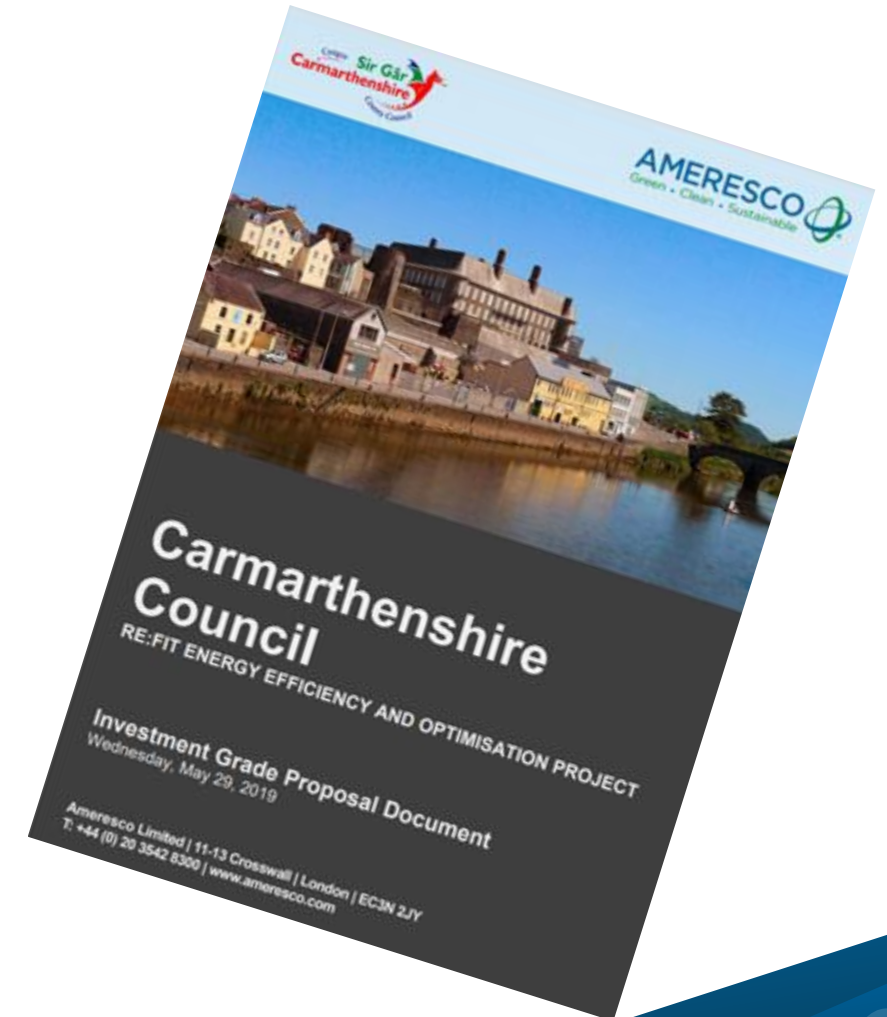
The process

HLA

1. Pre-survey Workshop
2. Determine Baseline Energy Usage with client team
3. Detailed surveys of all sites
 - I. Lighting Survey and Diagnostics
 - II. Mechanical & Electrical Services
 - III. Building Fabric Survey
 - IV. BEMS and Controls
 - V. Renewables
 - VI. Water Conservation measures
4. HLA Submission

IGP

5. Outline Design
6. Measurement & Verification (M&V) Plan
7. IGP Report with guaranteed savings and costs



Ameresco Proposed Solution

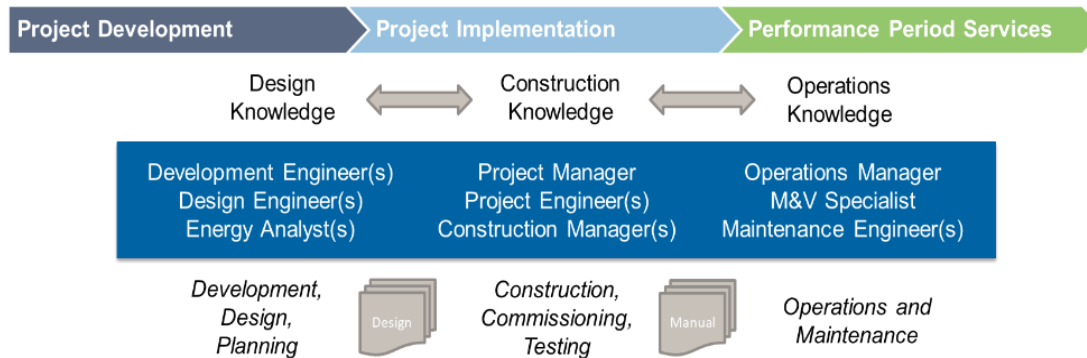
ECM #	ECM Description	Parc Dewi Sant Offices	Carmarthen Leisure Centre	Maes Llewelyn Care Home	Queen Elizabeth High School	Ysgol Dyffryn Aman (incl. Leisure Centre)	St. John Lloyd Catholic Comprehensive School	Ysgol y Dderwen	Model Church in Wales School	Bryn Teg Primary School	Ysgol Gymraeg Llangennech	Ysgol Gynradd Gymunedol Nantgaredig	Ysgol Gynradd Llannon	Ysgol Gynradd Gymunedol Cae'r Felin	Ysgol Gynradd Beca	Ysgol Gynradd Cynwyl Elfed	Ysgol Gynradd Wirfoddol Penboyr	Parc Myrddin Offices	Newcastle Emllyn Leisure Centre	Newcastle Emllyn Swimming Pool	Llandoverly Swimming Pool	Bro Myrddin Bowls Centre	Dinefwr Bowls Centre	Ammanford Library	Ysgol Maes y Gwendraeth (Drefach Site)	Llys y Bryn Care Home / Ty'r Gelli Sheltered Housing Complex	Ysgol Gyfun Emllyn	Ty Parcyrhun Offices	Coedcae Comprehensive School	Ysgol Glan y Mor	
1	LED Lighting Replacement	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
2	Lighting Controls	✓																									✓				
3	BMS Upgrade/Optimisation		✓	✓	✓		✓	✓		✓							✓				✓	✓			✓					✓	
4	VSD Installation/Optimisation		✓		✓	✓														✓	✓					✓					
6	Pipework Insulation		✓		✓																							✓			
8	Boiler Upgrade/Optimisation		✓	✓	✓					✓				✓			✓	✓								✓	✓	✓			
11	Solar Photovoltaic	✓	✓	✓				✓	✓		✓	✓	✓								✓					✓	✓			✓	
12	CHP and district heating		✓																												
13	Building Fabric Improvement														✓										✓		✓				
18	Pool cover		✓			✓														✓	✓										
20	Water Savings		✓																												

Project Challenges

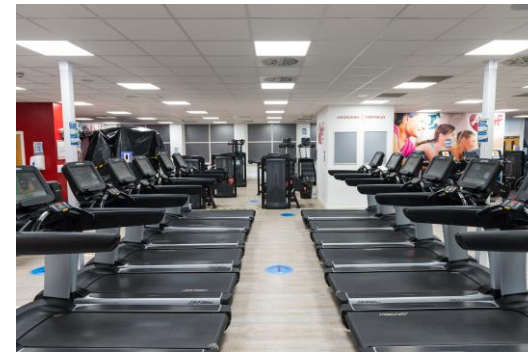
- Maintaining a safe environment
- Covid 19
- Project delivery timescales
- Communications

Solutions

- Principal Designer/Contractor under CDM 2015
- Comprehensive Safe Systems of Work
- Worker's daily toolbox talks
- Noise reduction technology
- Flexible approach – Covid 19
- Material delivery flow to maintain public access
- Continual liaison with Estates Team/Staff
- Structured meetings and regular reporting
- Knowledge transfer to maintain the design intent throughout the project
- Minimise disruption – lighting installations



Project Images



CARMARTHENSHIRE COUNTY COUNCIL

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Thank You & Questions