

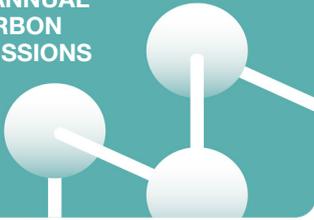
## Public Sector Decarbonisation Scheme (PSDS) Projects

Grant value  
**£17,277,892**



**3,457 tonnes**

REDUCTION  
IN ANNUAL  
CARBON  
EMISSIONS



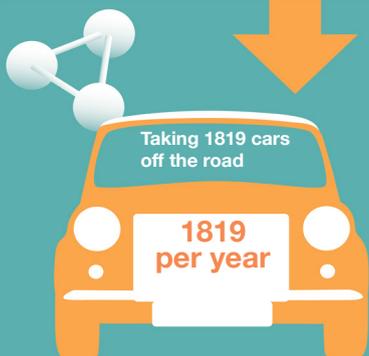
**91.8%**

REDUCTION IN  
ANNUAL GAS  
CONSUMPTION



**20,396,468 kWh**

REDUCTION  
IN ANNUAL  
CONSUMPTION



Leisure Energy assisted 9 Local Authorities with grant submissions and the installation of new technology to modernise, improve and decarbonise 14 leisure facilities to help meet their net zero targets.

These councils were successful in receiving total funding of £17,277,892. The works will assist with the Councils' commitment of working towards their carbon targets by reducing annual gas and electricity consumption and lowering the buildings' carbon footprint. In-depth energy surveys and technical details of the application were provided by Leisure Energy.

We directly project managed 8 leisure centre installations where Leisure Energy worked as Principal Designer and Contractor and provided an advisory role in-conjunction with Alliance Leisure for 6 of these projects.

### Technical Overview

Leisure Energy undertook an appraisal of the energy usage and condition of equipment for the submission of the grant documentation. Some of these facilities were constructed from as early as mid 20th century but all of them were in need of upgrades and changes in plant and technology to enable them to meet the emissions levels which would contribute to Council energy targets for net zero. Total energy usage of all sites in 2019/2020 was calculated as over 30 million kWh with a carbon emission level of approximately 6,015 tonnes across all the buildings. Energy saving measures were identified to give rise to savings in carbon emissions and gas usage if addressed by the grant money. Building issues included:

- Little or no renewable technology currently at the facilities such as solar panels
- CHPs were beyond economic life and oversized against requirements
- Many of the current boilers were not fully operational and subsequently unable to achieve the desired setpoints
- Chillers for the air conditioning units were functioning inefficiently
- Lighting lux levels were insufficient and lamps were inefficient
- Fan and pump motors were inefficient and often had no variable speed drives

### THE PUBLIC SECTOR DECARBONISATION SCHEME (PSDS)

- The Department for Business, Energy and Industrial Strategy (BEIS) launched the PSDS, which was delivered by Salix in September 2020.
- The scheme offered £1bn of grant funding for capital energy efficiency and heat decarbonisation projects within the public sector in England.
- Information about the PSDS and further schemes can be found on the Salix website [www.salixfinance.co.uk](http://www.salixfinance.co.uk)

## AIR SOURCE HEAT PUMPS

22 ASHP

over 7,000 kW of decarbonised heat

## SOLAR PHOTOVOLTAIC PANELS

3,300 panels

236 tonnes CO<sub>2</sub>



## Project summary

Upon award of the PSDS grant Leisure Energy's audit report had recommended that each Council carry out a suite of interdependent works at their leisure facilities.

## Energy Saving Measures across the 14 sites

- New air source heat pumps
- Installed low energy lighting and sensors
- Replacement AHU fan motors
- New solar photovoltaic panels
- Pool pump motor upgrades
- BEMS upgrade
- Battery Storage

### Air source heat pumps

22 ASHPs with appropriate LTHW heat exchangers to interface with the existing heating circuits and pool water pipework.

### Low energy lighting and sensors

We replaced thousands of light fittings with specialist low energy lighting in areas such as pool halls, sports halls, fitness suites, studios and squash courts as well as circulations areas, associated corridors and toilets.

These lamps will reduce electrical loads whilst improving existing illumination levels. Lighting controls, such as movement detection and daylight sensing, were used where possible.

### Replacement air handling units (AHU) and motors

We replaced 3 full AHUs and a further 14 fan motors and controls within air handling units in the facilities.

Built-in software and connectivity provides constant real-time monitoring of energy use, speed, torque and temperature which allows automatic diagnosis of HVAC system issues. This ensures maximum energy efficiency and enables future-proofing for demand side management.

### Solar photovoltaic panels

We installed over arrays of 3,300 photovoltaic solar panels on 12 centres' roofs expected to generate over 1 Million kWh of renewable electricity to reduce the amount needed from the grid.

### Pool water pumps and dosing system upgrades

To ensure that the chemical dosing, filtration and flow rates are maintained correctly, we installed variable speed drives across main, competitive, leisure and teaching pools. Some facilities also had dosing controllers and water quality control systems.

### Building energy management system (BMS) upgrade

At all sites BEMS works were carried out to integrate the new systems with existing and in some cases completely upgrade the BEMS.

### Battery Storage

Battery storage was introduced at the sites to assist the councils with storing cheaper night time electricity and the electricity generated during daylight hours by the solar panels. This can be discharged during times of higher utility prices to cut energy costs.

## Our clients

The Local Authorities who received the PSDS grant and included in this case study are:

Ashford Borough Council  
Derbyshire Dales District Council  
Hambleton District Council  
Harrogate Borough Council  
Hyndburn Borough Council  
Lichfield District Council  
North East Derbyshire District Council  
Teignbridge District Council  
Torbay Council

## Who we are

Leisure Energy is an energy saving consultancy, working with local authorities and leisure operators, helping them to understand their energy usage, manage it more efficiently by identifying energy saving measures through the installation or upgrade of plant and machinery, and usage adjustments.

## Contact us

For more information on how we can save you money, contact Neil Bland:  
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