Harnessing Data for Climate Action

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APSE – Better Neighbourhoods – 27th May 2026

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We are the funding authority for over **1100** Schools including:

Controlled, Catholic Maintained
Voluntary Grammar, Grant Maintained
Integrated and Irish Medium

Around **344,000** pupils are enrolled in schools in Northern Ireland

We maintain over **18,000** Statements of Special Educational Need each year

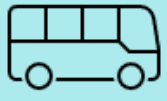
Over **140,000** meals are served every day in schools

We support **60,000** Students in Further and Higher Education

We are the managing authority for **552** Controlled Schools

£2.5 Billion Budget

We are the employing authority for around **44,500** teaching and support staff



We transport over **90,000** children every day in **817** buses

There are **21** Board Members and **6** Executive Directors

We are the funding authority for and provide support and services to **466** Maintained Schools

More than **300,000** young people take part in our Youth services

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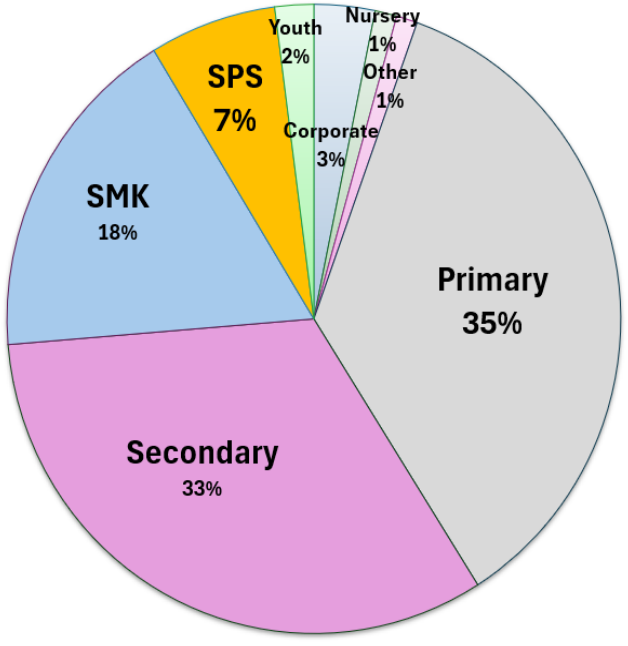
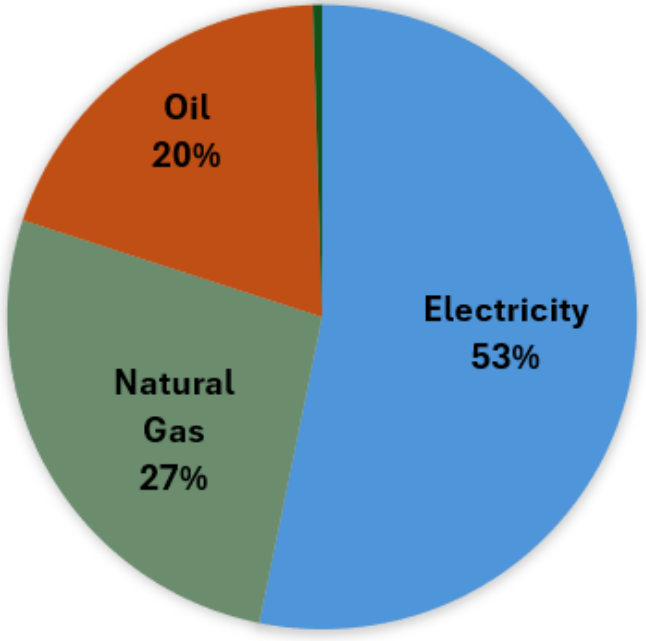
2024/25 Energy Spend

Total Energy Spend £42m

Spend by Category

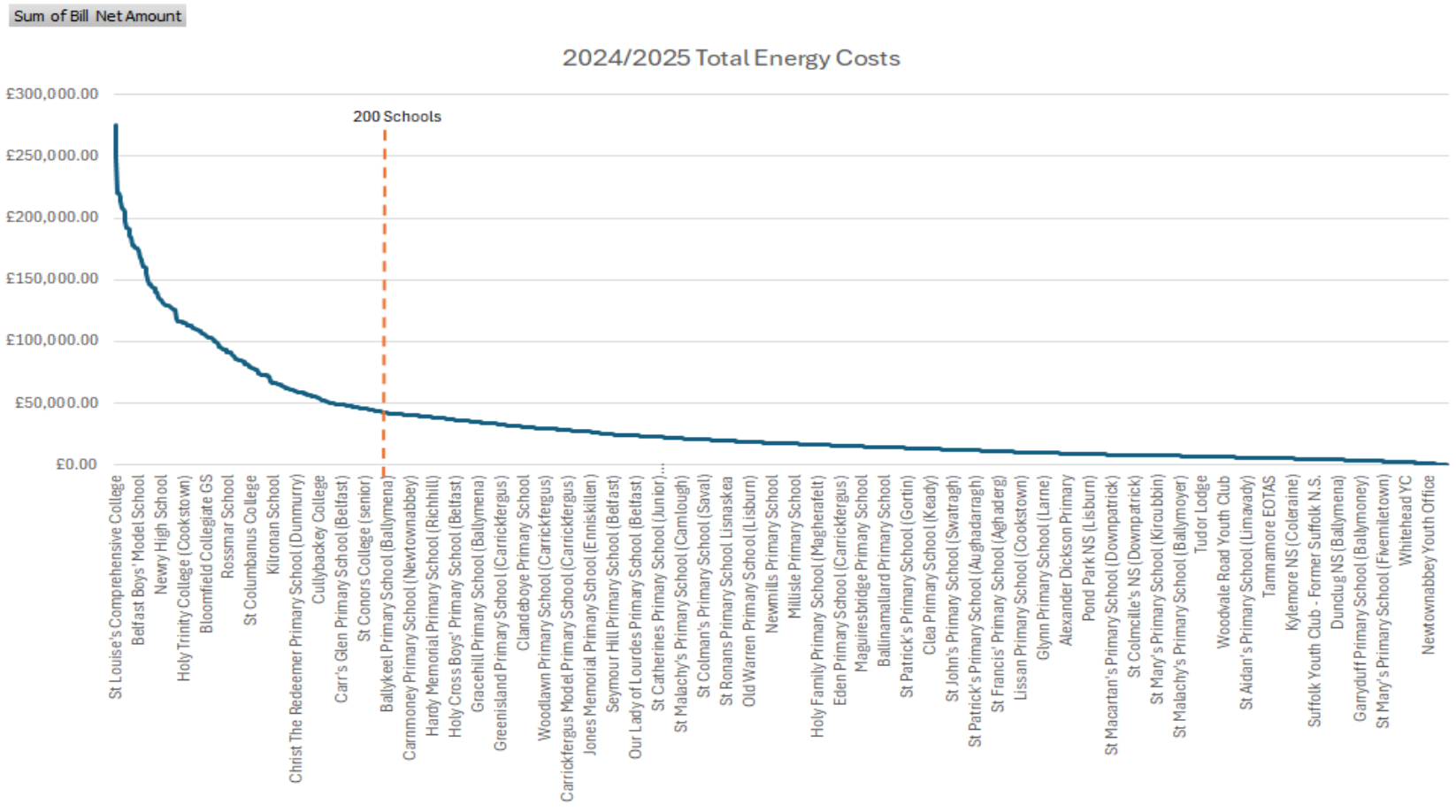


Spend by Energy Type



2,200 gas and electric meters across the EA Estate

Cost Distribution (2024/25)



Top 100 Schools
26% of Cost

Top 200 Schools
46% of Cost

16% of School's accounts for nearly half of utility costs

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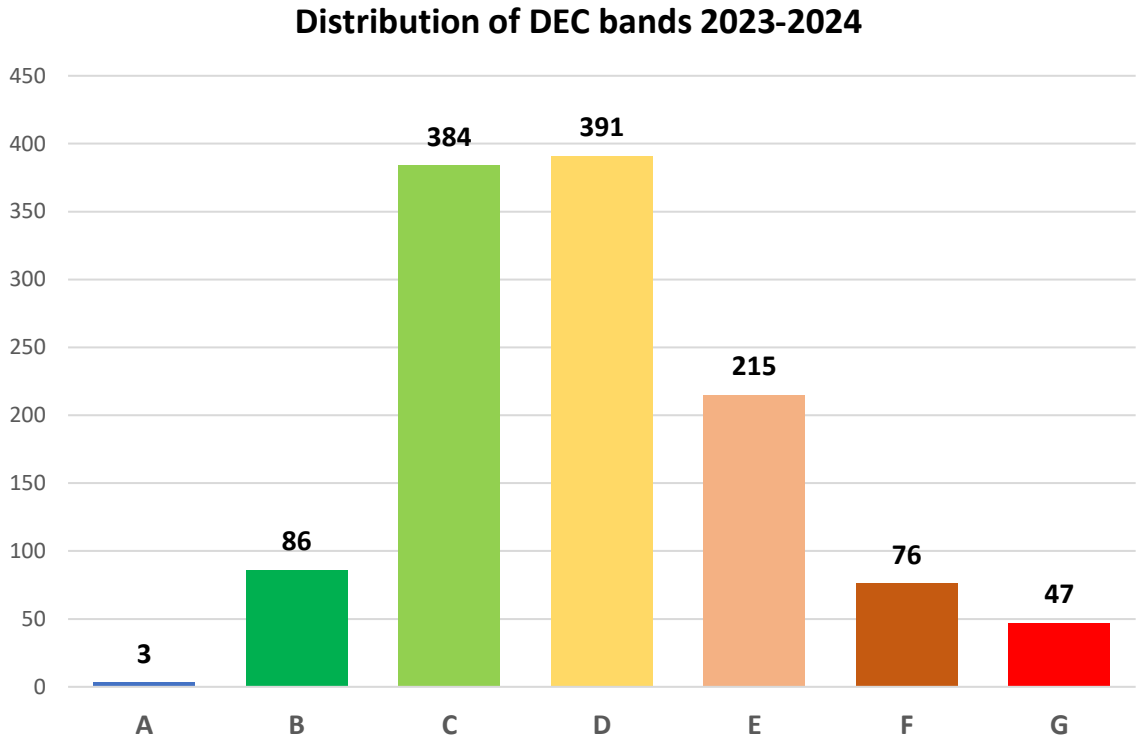
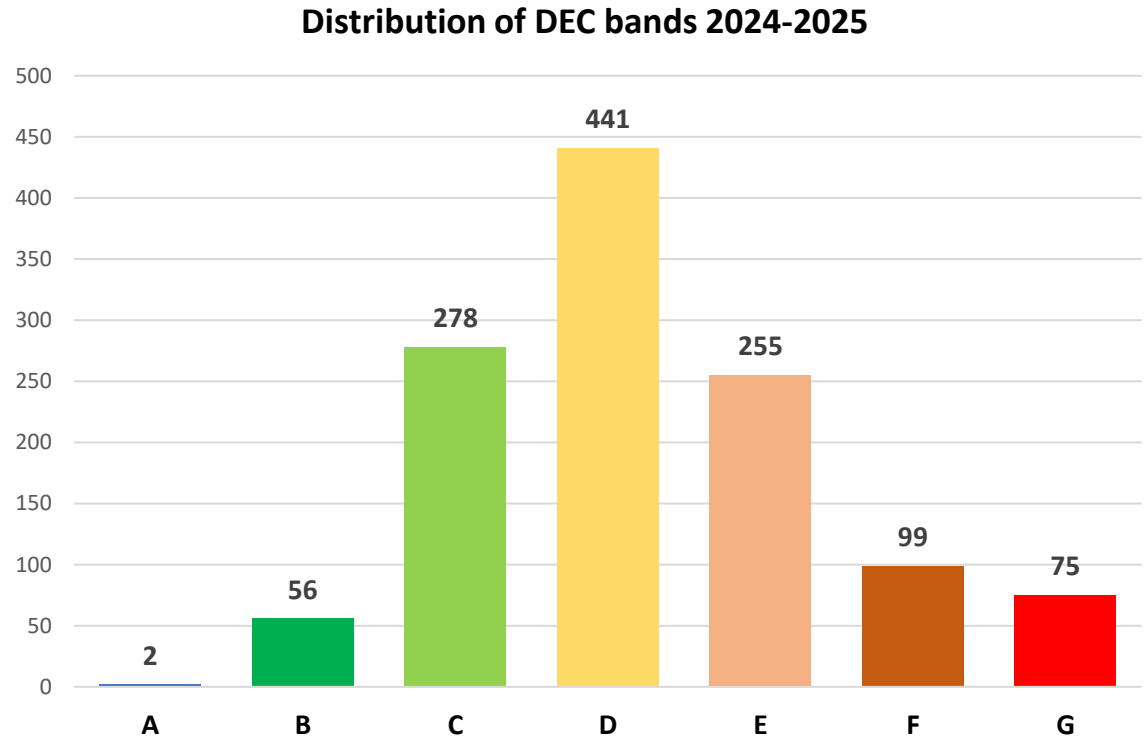
Baseline Energy Performance - 1200 Sites





*Following a data cleanse in 2024

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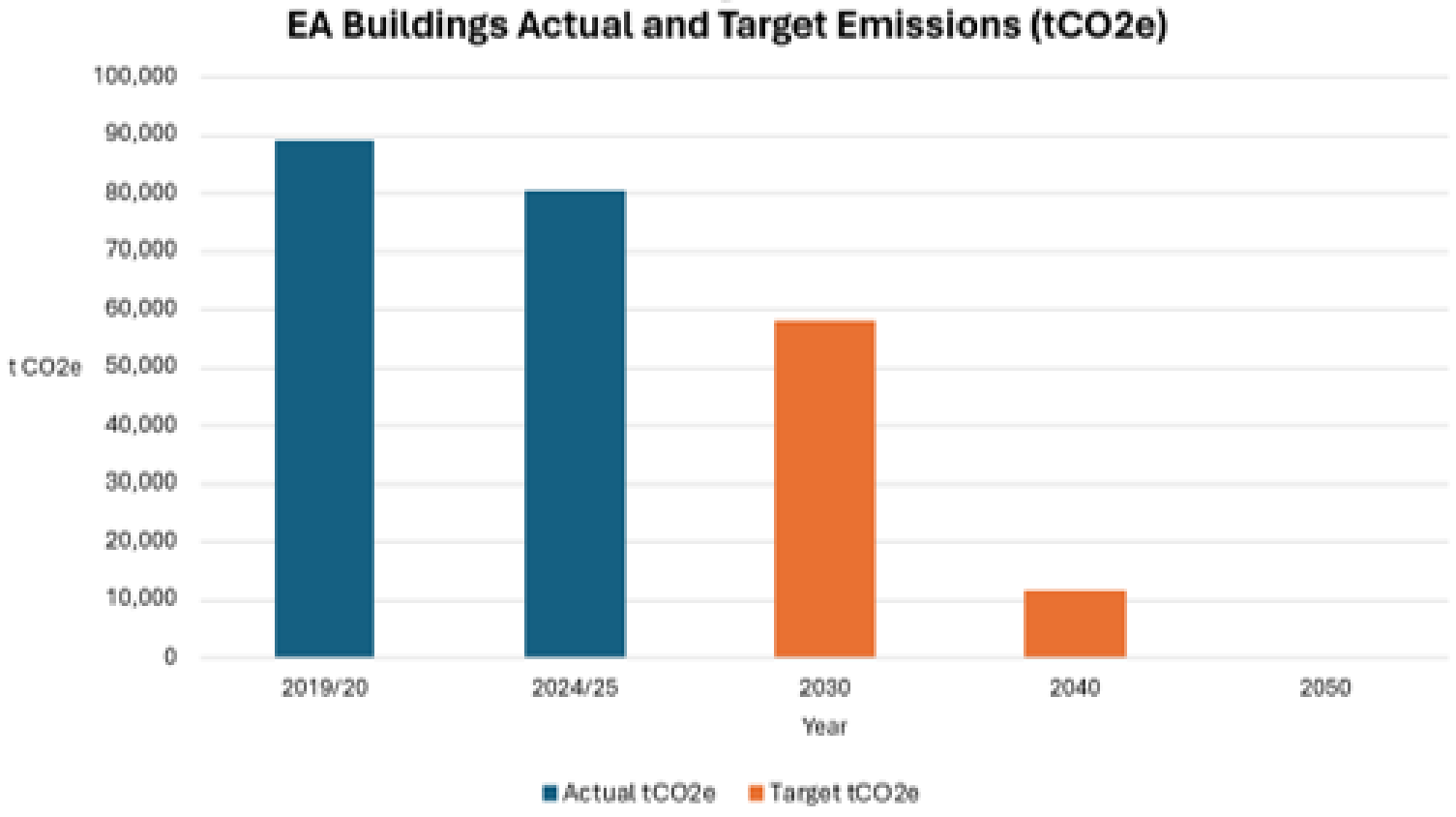
EA Building Emissions



EA needs to reduce carbon emissions from buildings by 22,000 tCO2e by 2030 to align with NI Climate targets

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The Challenge

- **Regulatory pressure** - the Climate Change Act (NI) 2022 is driving the need for more accurate, transparent, and frequent performance reporting.
- **Scale and complexity of the Estate and Asset Register -** covering the built environment and transport, making data capture resource-intensive and difficult to manage
- **Data challenges** - include gaps, accessibility, variable data quality.
- **Need to automate data capture -** due to fragmented data sources and the limited internal resource for data collection, cleansing, and validation.
- **Securing funding** – detailed data is required to inform robust business cases
- **Scale of decarbonisation challenge** -
  - EA needs to reduce its building emissions by 22,000 tCO2e by 2030
  - 2025/26 energy projects will deliver 3% of this
  - 2026/31 energy projects will deliver 20% of this

Utilising an SBRI to find a solution

What is an SBRI (Small Business Research Initiative)?

- Development of innovative solutions for the public sector
- Brings SMEs together with public sector

Two Aims

- Stimulate business through working with public sector
- Realise benefits for the public sector

- Pre Commercial Procurement not grant
- Find and eventually procure novel solution to existing problem
- Encourage creation of solutions which meet policy objectives
- 100% funded R&D (2 phases – Proof of concept, prototype)
- IP resides with the contractor
- Department for Economy: provides funding and SIB (and BSO/DC) provide project support

Objectives of SBRI

PLATFORM DEVELOPMENT AND HISTORICAL DATA CAPTURE

DATA ANALYSIS TO INFORM FUTURE INVESTMENT FOR DE-CARBONISATION

ENGAGEMENT WITH SCHOOLS

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Aims of the SBRI Project

- Meet Climate Change Act Reporting Requirements
- Data Analysis to Inform Decarbonisation Investment
- Engage with Schools
- Reduce Energy, Water and Waste Costs for Schools
- Putting Money Back into the Classroom

Common Problems in GHG Reporting

The solution is to automate estates and energy data capture, integrates procurement data for Scope 3, and then layer predictive analytics on top—so you can model scenarios like energy upgrades, estate changes, or supplier shifts.

CHALLENGE

Even when data exists, it's static - it doesn't help answer:

- what should we invest in?
- what impact will it have?
- how do we justify it?"

IMPACTS

That leads to:

- weak or delayed business cases
- difficulty securing funding
- decisions that aren't clearly linked to carbon outcomes

ECOSENSE OUTCOMES

- a continuous baseline
- forward-looking carbon modelling
- and defensible investment cases

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EcoSense by SustainIQ

SustainIQ is a Northern Irish based Sustainability Technology Provider operating globally across public and private sector helping them to report easily on their broad ESG impacts through out innovative data reporting platform.

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EcoSense by SustainIQ

Public bodies in Northern Ireland are under pressure to meet climate targets under the Climate Change Act (Northern Ireland) 2022, but most are still manually collecting estates and energy data and don't have a clear view of supply chain emissions.

The EcoSense Solution bespoke to Public Sector automates data capture across buildings and energy, extends that into Scope 3, and then uses predictive analytics to model future scenarios—so you can build defensible business cases for investment in carbon and energy reduction.

Supporting the Education Authority, helped us understand how to deliver this within public sector constraints.

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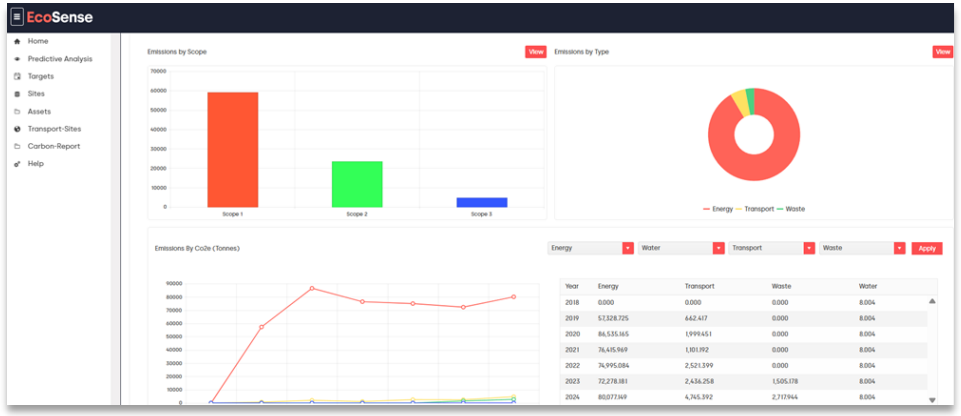
Easy to Use Reporting Platform

The collaboration between SustainIQ and EA created a custom-made GHG Analytics Dashboard, which has captured, baselined, tracked and reported high level carbon emissions across the legislative scopes (to include data across Energy Usage, Transport, Waste, Water & Biodiversity), Regions, type and individual schools, complete with a school infographic.

The platform used historic and live EA data and global data bases to create future predictive analytics to inform investment and includes a custom-made target builder to set EA internal targets.

Key Areas of Innovation:

- Automation of Data – IOT sensors, integration of existing software, manual forms, bulk uploads and QR codes,
- Predictive Analytics – Machine learning and AI



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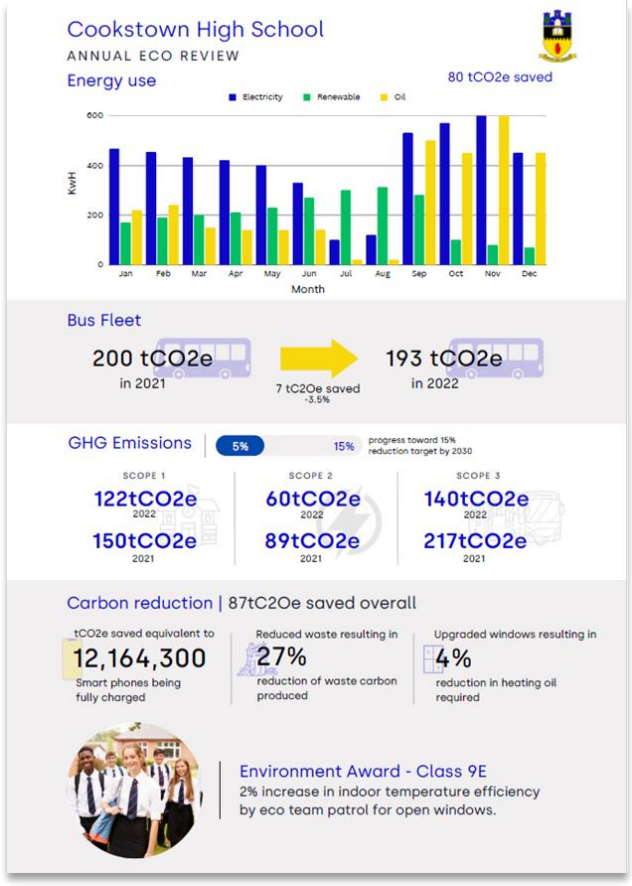
Data Analysis to Inform Decisions

Reduced Energy Waste –Schools were able to visualise carbon and financial savings in meaningful ways on an infographic e.g. Cookstown High School saved carbon to the equivalent of 12,164,300 smart phones being fully charged. The school received an Environmental Award.

Cost Savings and Improved Comfort - Overheating was identified as an issue in most schools, which can be a significant seizure risk for pupils in special schools. The project energy profile data collected via bespoke sensors helped secure funding to install heating controls in three special schools and Solar PV panels in one school in March 2025. This will reduce energy consumption by 1,086,000 kWh/yr, lower emissions by over 300,000 kg CO2/yr, and save over £155,000/yr which schools can reinvest in the classroom to benefit pupils' learning outcomes.

Energy audits in 12 schools, which informed business cases to the value of £1.6m for decarbonisation interventions in 2025/26. These recommendations were built into the carbon reduction strategy area of the platform.



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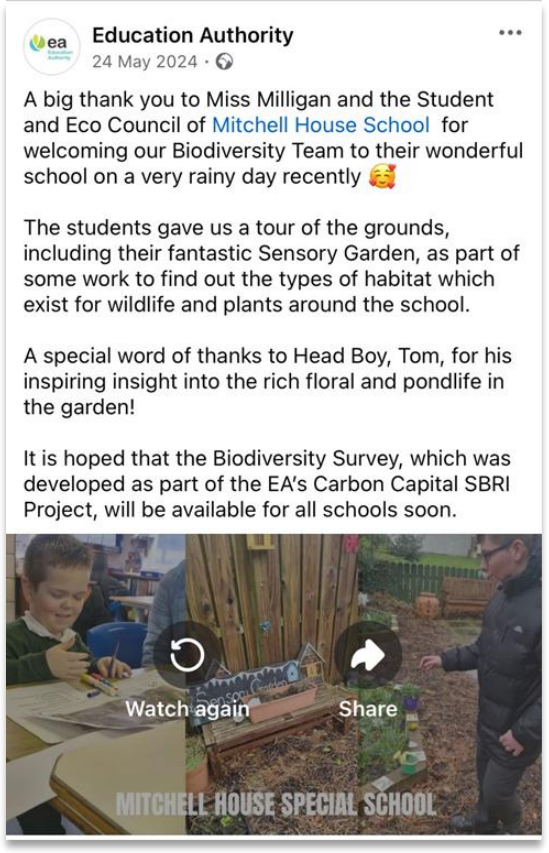
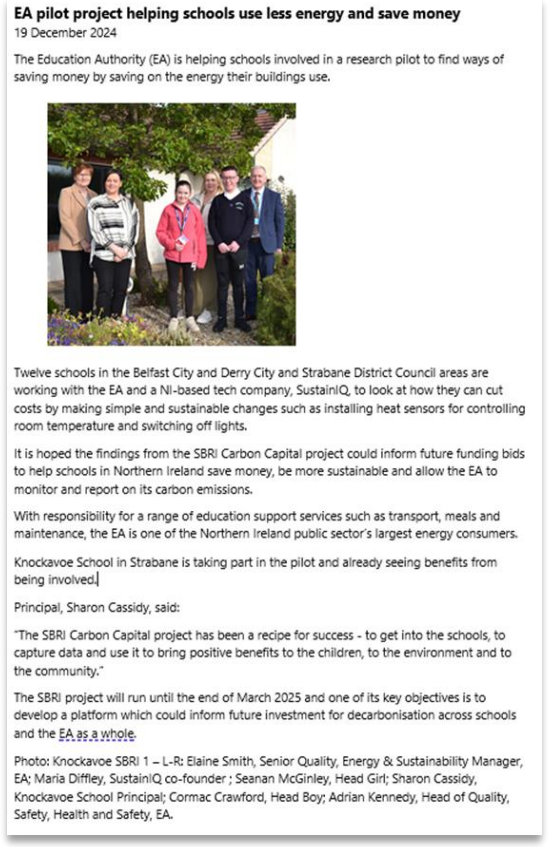
School Engagement

Participating schools are Sustainability and Climate Commission Exemplars, engaging with Government Bodies and Academia on best practices on energy efficiency and driving local sustainability efforts.

Pupils have led on GIS Mapping Projects (captured on EcoSense), planted trees to combat pollution and flooding, and participated in focus groups to shape their school's future.

Knockavoe School Principal:
"The project has been a recipe for success - to get into the schools, to capture data and use it to bring positive benefits to the children, to the environment and to the community."





EA pilot project helping schools use less energy and save money

19 December 2024

The Education Authority (EA) is helping schools involved in a research pilot to find ways of saving money by saving on the energy their buildings use.

Twelve schools in the Belfast City and Derry City and Strabane District Council areas are working with the EA and a NI-based tech company, SustainIQ, to look at how they can cut costs by making simple and sustainable changes such as installing heat sensors for controlling room temperature and switching off lights.

It is hoped the findings from the SBRI Carbon Capital project could inform future funding bids to help schools in Northern Ireland save money, be more sustainable and allow the EA to monitor and report on its carbon emissions.

With responsibility for a range of education support services such as transport, meals and maintenance, the EA is one of the Northern Ireland public sector's largest energy consumers.

Knockavoe School in Strabane is taking part in the pilot and already seeing benefits from being involved.

Principal, Sharon Cassidy, said:

"The SBRI Carbon Capital project has been a recipe for success - to get into the schools, to capture data and use it to bring positive benefits to the children, to the environment and to the community."

The SBRI project will run until the end of March 2025 and one of its key objectives is to develop a platform which could inform future investment for decarbonisation across schools and the EA as a whole.

Photo: Knockavoe SBRI 1 – L-R: Elaine Smith, Senior Quality, Energy & Sustainability Manager, EA; Maria Diffley, SustainIQ co-founder ; Seanan McGinley, Head Girl; Sharon Cassidy, Knockavoe School Principal; Cormac Crawford, Head Boy; Adrian Kennedy, Head of Quality, Safety, Health and Safety, EA.

Capital Energy Project Upgrades

2025/26

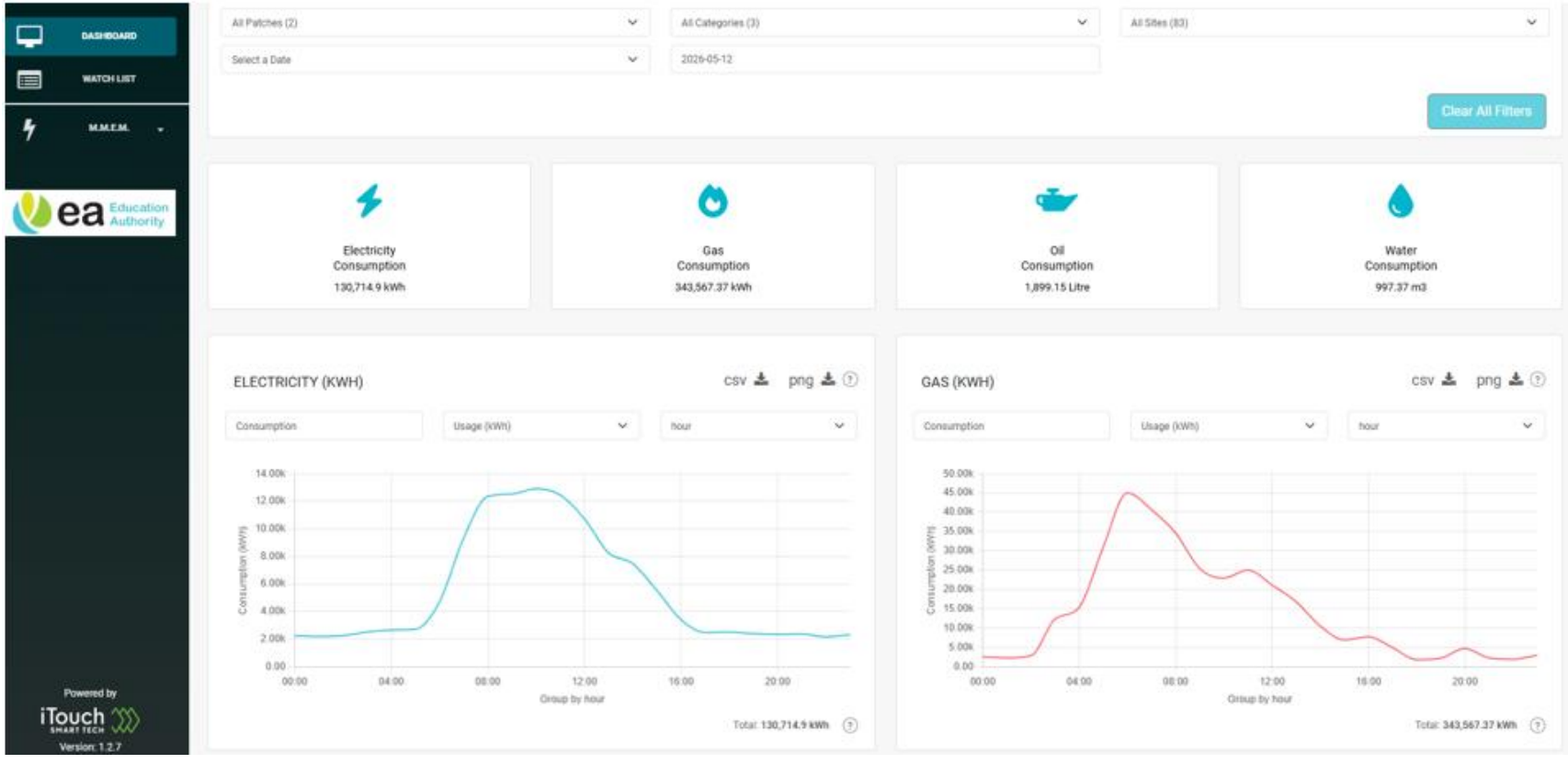
Capital funding from DE in December 2025 for delivery of:

- **Automated Meter Reading in 87 schools**
- **LED Lighting in 15 schools and**
- **Solar Panels in 14 schools**

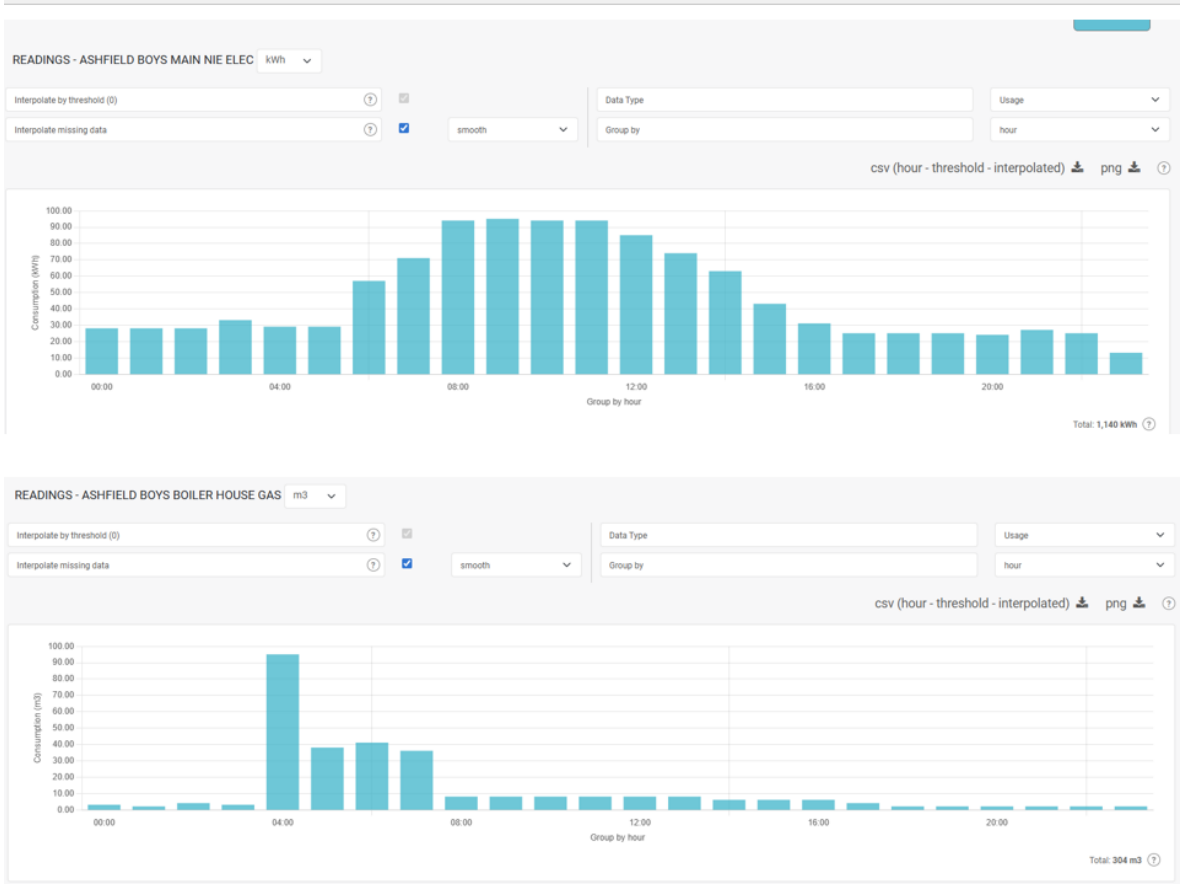
These projects should collectively deliver an annual energy saving of £606k and reduce annual carbon emissions by 780 tCO2e across the schools targeted.

This equates to 3% of the reduction EA need to achieve by 2030

Atlas Portal Automated Metering



Atlas Portal Base Load



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Planned Energy Programme (5 Years)

EA has profiled a Capital Energy Plan with DE for £24m over the next 5 years, which includes: Automated Metering, BEMS installations, LED light replacements, Solar PV installation and Fabric Improvements.

Targeting the highest electrical consuming schools for LEDs and Solar installations and the poorest performing schools for BEMS optimisation/installations.

	Year 0 2025/26	Year 1 2026/27	Year 2 2027/28	Year 3 2028/29	Year 4 2029/30	Year 5 2030/31	Grand Totals
DE Capital Funding	£3,160,000	£5,200,000	£4,800,000	£4,500,000	£4,500,000	£4,500,000	£26.7m
Energy Cost Avoidance	£606,000	£850,000	£675,000	£600,000	£600,000	£600,000	£3.9m
tCO2e saved	780	1,280	1,180	1,110	1,110	1,110	6570

Planned BEMS Optimisation 26/27

Heating – Top 13 Poorest Performing Belfast Schools

School	Sum of Bill Consumption	Max of Area Sqm	kWh/sqm	CIBSE Good practice	CIBSE Typical	Variance from G.P
St Teresa's NS Belfast	96,660	329	294	97	122	197
Cregagh PS	420,292	1,474	285	97	122	188
Blythefield PS (Belfast)	697,405	3,129	223	86	113	137
Glenveagh School	829,716	3,757	221	86	113	135
Holy Family PS (Belfast)	643,177	3,002	214	86	113	128
St Oliver Plunkett NS (Belfast)	76,510	369	207	97	122	110
St. Michaels	64,247	322	200	97	122	103
Bunscoil an Tsleibhe Dhuibh (Belfast)	254,120	1,293	197	97	122	100
Clarawood School	318,509	1,623	196	117	157	79
St Bernadette's NS (Belfast)	55,804	286	195	97	122	98
Holy Trinity PS (Belfast)	952,158	4,967	192	86	113	106
Bunscoil Phobal Feirste	394,271	2,075	190	97	122	93
Bunscoil Mhic Reachtain (Belfast)	123,323	674	183	97	122	86

Heat Pump Feasibility

Finaghy PS

Phoenix Gas partnered with EA to test the viability of a hybrid heating system at Finaghy Primary School.

A scoping exercise has confirmed its suitability and provided recommendation options, an analysis on the anticipated capex costs and an overview of associated operational costs and carbon reductions.

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Thank you

Questions?

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