

Whole-Site Energy Transformation for Education Estates

A single, UEC Energy-led service that cuts heat loss, reduces summer overheating, generates and stores clean power with no capital outlay, electrifies transport, and — under the new P441 settlement rules — turns surplus solar into income through the SENfA trading platform.

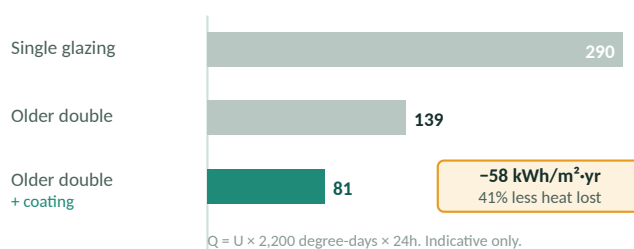
1 Low-E Window Insulation Coating

A spectrally selective low-emissivity coating applied directly to existing glass — no frame replacement, no disruption to teaching, and a fraction of the embodied carbon of new windows. It keeps paid-for heat inside in winter and rejects solar infrared in summer, addressing both heating cost and classroom overheating.

Performance measure	Before	After
U-value, older double glazing (NTU test)	2.63	1.54 W/m²K
U-value, modern double glazing (LJMU)	1.20	1.10 W/m²K
Solar heat gain, g-value (single glazing)	0.85	0.68
Infrared (heat) transmission blocked	—	83–85%+
UV blocked	—	99%
Condensation reduction	—	up to 50%
Service life / manufacturer warranty	20 yrs / 10 yrs	

Heat-loss figures are an indicative UEC calculation (U-value × typical UK heating degree-days) per m² of glass; site savings are confirmed at survey against actual glazing, orientation and heating hours. Performance data supplied by Window Insulation Ltd and published via UKGBC.

Annual heat loss per m² of glazing (kWh/m²-yr)



-41%

U-value, older double glazing

-20%

solar heat gain (g-value)

0

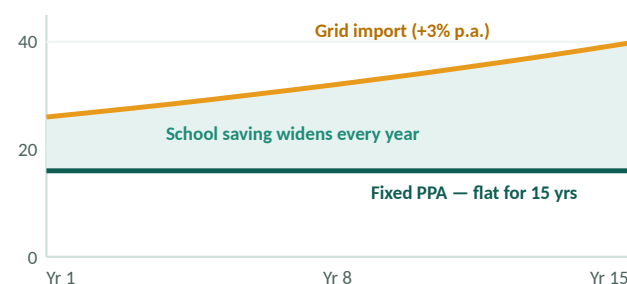
frames replaced

2 Solar PV & Battery — 15-Year Fixed-Price PPA

Solar PV and battery storage installed, owned, insured and maintained by our funding partner at **zero capital cost** to the school. The school buys the electricity generated on site at a single price per kWh, **fixed for 15 years and not linked to inflation**.

- **No capex, no borrowing** — preserves budgets and avoids lease-accounting complexity.
- **Flat, non-indexed rate** — every year the PPA price is worth less in real terms, while grid tariffs typically rise.
- **Battery shifts daytime surplus** into evening lettings and peak-rate periods, raising self-consumption.
- **Full O&M, monitoring and performance guarantee** included for the term.
- **Asset transfer option** at year 15 — free power thereafter for the remaining panel life.

Illustrative unit cost: grid import vs fixed PPA (p/kWh)



£0

upfront capital

15 yrs

price certainty

-34%

real-terms PPA rate by yr 15 (3% CPI)

Chart uses illustrative assumptions (26p/kWh grid import rising 3% p.a.; 16p/kWh PPA). Actual PPA rates are quoted per site following survey and yield modelling on the RECfA funding calculator at clean-energy-calculator.uk.

3 EV Charging & Solar Car Ports

Solar car ports turn staff and visitor parking into generating capacity — adding PV where roofs are full, fragile or heritage-constrained — while giving shaded, weather-protected parking. Integrated smart EV chargers are powered first by on-site solar and battery, with load management to stay within the school's supply capacity. Charging can be offered to staff, fleet minibuses and, out of hours, the local community on a paid tariff, creating a further income line.

- Canopy PV funded within the same PPA structure
- 7–22 kW AC and rapid DC options, OCPP smart-managed
- Grant and OZEV workplace-scheme eligibility checked
- Public / staff charging tariffs managed via back-office

Schools generate most when they need it least.

Weekends, half-terms and the six-week summer holiday coincide with peak solar output — so a well-sized school array can export a significant share of its annual generation. Today that surplus is sold back to a supplier at standard export rates. BSC Modification P441 'Creation of Complex Site Classes' is designed to change that, opening the way for schools to sell surplus to neighbouring organisations at a price that is better for both parties.

4 What P441 changes

Under the Balancing and Settlement Code, generation and consumption can currently only be netted across meters at a narrow set of "complex sites". Community and multi-party local schemes do not fit that definition, so electricity cannot be settled locally between a generator and a nearby user.

P441 introduces six defined Complex Site Classes and clarifies where import and export can be netted across multiple meters. Exelon has described the inability to net as the single largest barrier to making local supply economic, and industry has called the change one of the most important enablers since the end of the Feed-in Tariff.

Regulatory status (30 Sept 2026): The BSC Panel recommended approval and the Final Modification Report went to Ofgem in March 2026. On 27 August 2026 Ofgem sent P441 back to Exelon for further work limited to **aligning its decision and implementation timetable** with the linked REC (R0268) and DCUSA (DCP424) changes. The substance of the change was not rejected; an implementation date is now awaited. RECfA schools can be surveyed, funded and SENfA-ready now so they benefit from day one.

5 How SENfA works for a school

The SENfA platform matches a school's surplus generation with local off-takers — other schools in the trust, colleges, council buildings, leisure centres, businesses — and manages the metering, settlement and billing so the school simply receives a better price per exported kWh.

The value corridor for each exported kWh (illustrative p/kWh)

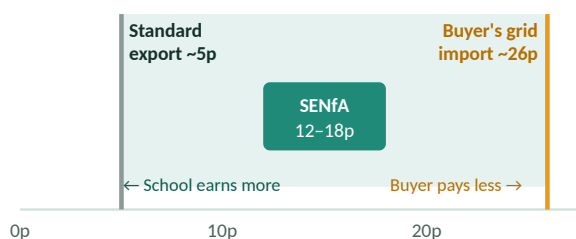


Illustration: 20,000 kWh annual surplus	Income
Standard export at ~5p/kWh	£1,000
SENfA local sale at 15p/kWh	£3,000
Additional income to the school, per year	+£2,000

Prices are illustrative, not offers. Achievable local sale prices depend on the P441 class applied, network and policy charges on the traded volume, supply-licence arrangements, and the counterparty. UEC models each site individually before any commitment.

6 How the RECfA programme delivers — led by UEC Energy

1 Assess

Half-hourly data review, site survey, glazing and overheating assessment, TM44/ESOS-grade reporting and a whole-site opportunity register.

2 Design & fund

PV, battery, car-port and coating designs; PPA, grant (SALIX / CIF) or lease funding routes compared on the RECfA calculator.

3 Deliver

Vetted installers, programmed around term dates and safeguarding; DNO applications, commissioning and handover managed end-to-end.

4 Optimise & trade

Performance monitoring, battery dispatch, EV tariff management and SENfA enrolment so surplus earns from day one of P441.

Why UEC Energy

UEC Energy is an independent energy compliance and renewables consultancy with around 25 years' sector experience, acting as the technical lead and operations partner for RECfA — the Renewable Energy Coalition for Academia, working collaboratively with DfE and DESNZ to bring clean, affordable energy to the UK's education estate. Independence means advice is driven by the school's outcome, not a single product.

ESOS Lead Assessor

TM44 Levels 3 & 4

ACSAP

dipACEA

MEI

MEMA

Book a no-obligation site review

Philip Emsley, Director, UEC Energy
Head of Operations, RECfA

✉ philip.emsley@uec-energy.co.uk

☎ 07738 549328

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