Report Name	**Streamlined Energy and Carbon Report (SECR) Period covering academic year 2019-20**
Department	**Responsibility of Estates & Facilities**
Created by	**Snr Estates Coordinator**
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Streamlined Energy and Carbon Reporting (SECR)

The Bedford College group SECR Greenhouse Gas Emissions are presented according to guidance from BEIS and the Energy Managers Association. Figures have been collated using Government issued Greenhouse Gas carbon emission multipliers, and applied to College data streams within the scopes (1,2,3) below.

The 2019-20 reporting period includes the previous 2018-19 period as required to provide a base case comparison.

Results

Scope 1 Direct emissions from gas / oil / biomass / transport fuel

year	Nat gas kWh	Heating oil Litres	Biomass fuel (T)	Estates fuel spend £	tCO2e
18/19	8,382,352	110,787	7.45	£29,535	1,907
19/20	8,448,991	100,905	nil	£17,358	1,869

Scope 2 Indirect emissions from purchased electricity

year	electricity kWh	tCO2e
18/19	6,622,755	1,693
19/20	4,970,379	1,143

Scope 3 Indirect emissions from staff car mileage

year	Miles claimed	tCO2e
18/19	437,088	128
19/20	338,703	96

Total emissions

year	Total tCO2e
18/19	3,782
19/20	3,108

Intensity factor - relating emissions to area of occupied built estate

year	kgCO2e	Building area m2	Kg/CO2e per m2
18/19	3,782,000	100,110	**37.78**
19/20	3,108,000	101,213	**32.58**

Analysis

2019-20 emissions are lower than for the previous year. The single greatest reason has been the first COVID shutdown which fell within the August 2019 to July 2020 reporting period. It reduced vehicle traffic, building occupation levels, and the associated heating demand, and particularly, electrical plug-load demand.

In addition to lower electrical consumption, the Government GHG carbon emission multiplier for electricity was reduced to reflect growing wind derived power within the electrical grid. This compounded the reduction in calculated emissions.

Carbon reduction measures undertaken

The College supports Net Zero carbon neutrality by 2050, and has undertaken some measures to offset the (typical non-COVID) annual CO2 emissions of approximately 3,700 tonnes as follows:

Heat distribution and control improvements:
G*enius-hub* for local zone / room controls improve over whole building controls by allowing tailored heating to partial building use without heating unused areas.

Lower Carbon transport:
Electric cars charging points at Cauldwell and Shuttleworth campuses were installed,

LED lighting:
Failed lights are replaced with plug-in LED types where possible as standard. A large installation was also undertaken at the main school building of the Bedford Sixth Form.

Renewable energy:
Photovoltaic generation has offset CO2 emissions from grid electricity as shown below:

18-19	15.7 tCO2e
19-20	14.9 tCO2e

Conversion from Oil to electric heating:
Shuttleworth campus has converted some key buildings to air source heat pumps with improvements on operational and CO2 emissions performance.

Additional feasibility assessments
Other potential measures were also investigated and discounted due to limitations such as poor ROI, product immaturity, applicability, etc. These include voltage optimisation, combined heat and power, hydrogen boilers, and on-site battery storage. It is expected some of these measures will become viable in future.