

TEACH THE FUTURE – NET ZERO SCHOOLS

INTRODUCTION

This document has been prepared to summarise the methodology behind the statement:

PART 2

8. Net-zero educational buildings

All providers of education must ensure that:

- (a) By 1 January 2022 all new educational buildings must be designed and constructed to ensure that they are net zero emissions buildings, and deliver a net biodiversity gain, and
- (b) all existing educational buildings must be refurbished, renovated or retrofitted to achieve net zero emissions buildings status by no later than 1 January 2030.

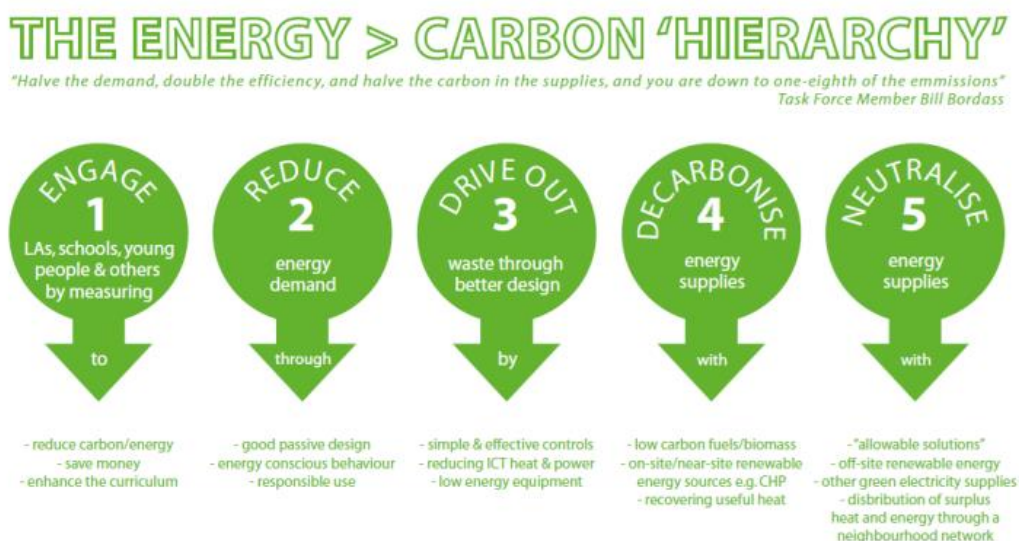
9. Infrastructure investment

The Secretary of State shall establish a grant fund of not less than £23.37 billion to assist providers of education with their obligations under section 8.

The Secretary of State may by regulations prescribe the manner and form in which applications may be made by providers of education for access to this grant fund.

METHODOLOGY STATEMENT

The assumed technical approach to modelling the changes required has been taken to mirror the technical recommendations within the January 2010 publication by the Department for Children, School and Families entitled Road to Zero Carbon, Final Report of the Zero Carbon Task Force. This approach is summarised by the diagram below. To produce a basis of validation of the cost rates per m² assumed in the calculations, a modelled school for each of Primary and Secondary has been modelled in software called [RETScreen](#). These models are available on request to anyone interested.



The £23.37 billion is assessed based upon the following numbers. For the purposes of the Climate Emergency Education Act, the figures are rounded to £23.37 billion.

Marginal improvement cost of all new schools being Net Zero from 2022 onwards	£	9,557,189,000
Retrospective improvement cost for all existing schools (exc. maintenance spend)	£	13,810,968,000
TOTAL	£	23,368,157,000

The methodology behind each component calculation is as follows:

All floor area, building type and condition analysis was taken from the Property Data Survey Programme (<https://www.gov.uk/government/publications/property-data-survey-programme>).

1. Marginal improvement cost of all new schools being Net Zero from 2022 onwards

- a. To assess the cost of all new schools being moved to Net Zero, the cost of a Net Zero school was assessed per m2.
- b. To conduct this analysis, two methods were taken, each to validate each other:
 - i. The first was to model a concept school of the size of the average primary and the average secondary school in the UK. The cost rates used in the assessment were taken from SPONS 2018 (construction industry price book). This model was conducted in RETScreen.
 - ii. The second was to compare actual Net Zero schools (as measured by having an EPC rating of less than 0) to the typical cost of school construction. The typical cost of school construction used was taken from the National School Delivery Cost Benchmarking study undertaken in 2017. The cost of the Net Zero school was taken from actual examples of Net Zero schools. The comparison between was then drawn per m2 on an average basis. The calculated cost premium for a Net Zero school is £598.67 per m2.
- c. The cost of new builds was then assessed based upon the planned school building as declared in Government policy statements.
- d. Only the marginal improvement cost is presented compared to the National School Delivery Cost Benchmarking study as all other costs would be incurred for educational need fulfilment rather than for the explicit achievement of the Net Zero commitment.
- e. All figures were then adjusted for assumed inflation over the period of the commitment.
- f. As the target number of new schools is largely only enough to fulfil additional educational need, all new schools are considered to be for additional fulfilment only.

2. Retrospective improvement cost for all existing schools (exc. existing maintenance spend)

- a. To assess the cost of upgrading all existing schools being moved to Net Zero, the cost of Net Zero remedial action was assessed per m2.
- b. To conduct this analysis concept school models of the size of the average primary and the average secondary school in the UK were constructed via RETScreen. The cost rates used in the assessment were taken from SPONS 2018 (construction industry price book).
- c. The figures were then corrected based upon the current progress towards Net Zero which was assessed using the EPC rating dataset for educational buildings, where an EPC rating of 0 is defined as a Net Zero school (or net zero energy).
- d. All figures were then adjusted for assumed inflation over the period of the commitment.
- e. As the target number of new schools is largely only enough to fulfil additional educational need, all existing schools are assumed to be included in the scope of the transition to Net Zero.
- f. The calculated cost of transition per square meter to a Net Zero school is £287.41 per m2.