

Consultancy

The Tarbase Domestic Model, emanating from the Tarbase research project mentioned above (www.tarbase.com), enables the carbon emissions of a specific house (and occupant) type to be modelled against a baseline, which is then compared to a refurbishment scenario accounting for a range of technological and behavioural changes (and, where necessary, climatic change and energy tariff variations).

The model encompasses bespoke models of significant complexity, within a framework that is efficient to use for a large number of variants. This tool, verified by Ofgem and AEA Technologies, is available as part of a consultancy service offered by UERG for assessing suitable choices for low-carbon dwellings.

Typical output from the model is shown below, though figures can be tailored to suit a particular project.

Input page

The input page allows the user to put in typical dimensions, location (based on climates for various city locations) and thermal properties of the building, along with heating systems, fuel types and energy tariffs.

An additional input page is included that accesses an electrical appliance database, so that the user can tailor the

model to a specific occupancy type with a specific selection of domestic appliances

Output page

A standardised output page is produced that overviews the carbon-savings predicted from the range of technologies selected. Unlike other models, this includes the consumption and savings of electrical appliances (if required), along with changes to the building fabric, lighting, heating system, micro-generation and heat pump technology. There is also an option to

	tCO ₂	kgCO ₂ /m ²	tCO ₂	kgCO ₂ /m ²
BASELINE CO₂	3.3	72.2	2.2	47.0
REFURB CO₂	1.3	27.2	0.5	10.1
% Saving	62.3		78.4	

include a change to certain externalities, such as climate (i.e. allowing for future warming), carbon intensity of electricity and thermal comfort temperature for inside the building.

Graphical output

For more in-depth analysis of results, a series of graphs are generated that highlight various aspects of energy use pre- and post- retrofit. This can be useful for understanding the causes of carbon emissions in the home, and the refurbishment choices that are most likely to succeed in reducing both these emissions and energy bills.

Additional output can be tailored depending on the requirements of the user.

If you require more information or would like to enquire as to consultancy fees for this service, please contact Dr David Jenkins (D.P.Jenkins@hw.ac.uk)

