National Highways Carbon Tool

E-learning Training Programme

Start Programme



National Highways Carbon Tool

E-learning Training Programme

Start Programme



Please use full screen mode and click the buttons to navigate through the programme

in the programme is a programme in the pr

Objectives of this programme

•To understand the principles behind the National Highways Carbon Tool and its key features; and

■To enable you to use the tool effectively to produce accurate carbon returns for National Highways.

Proceed to Menu Page



PROGRAMME MENU

Exit Programme

Module 1: Advantages of carbon accounting	2mins
Module 2: Key features of the tool	3mins
Module 3: Data boundaries	3mins
Module 4: Using the tool - step by step guide	3mins
Module 5: Tool outputs	1min

Module 1 – Carbon accounting

Click to start



Carbon accounting

Background

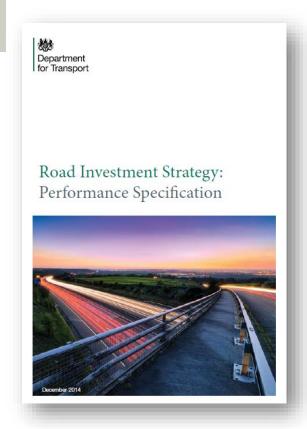
Carbon accounting is the process of measuring an organisations carbon emissions.

There are standardised approaches and guidance documents such as the Greenhouse Gas Protocol and the publicly available standard PAS2080. These resources give guidance how to measure carbon and what you should include in your calculations (known as boundaries). Module 3 will clearly explain for you where we have set these boundaries for our tool. Add image of current guide

Home Page



Carbon accounting



National Highway's Approach

The government monitors National Highway's performance in key areas through indicators, including carbon emissions.

With this in mind, we need to account not only for our own emissions, but also the emissions from our supply chain community to truly understand our role in promoting sustainable infrastructure.

Previous Page

Home Page

Carbon accounting

How you can support us

As part of our supply chain community, we need the information you provide to accurately account for the carbon emissions of construction and maintenance activities on our network.

This data will allow us to provide accurate reports on our carbon performance and will give us the opportunity to drive down carbon emissions where possible.

Previous Page

Home Page

Proceed to module 2

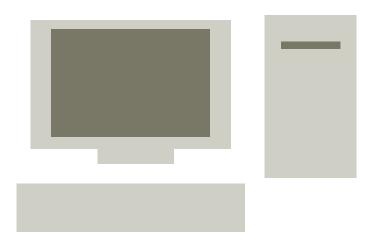
Module 2 – Key tool features

Click to start



Key Requirements

Carbon Returns



You save each carbon return on your local drive/desktop. You download a new version of the carbon tool from the National Highways website for each submission period. This helps minimise errors experienced within the tool.

Previous Page

Home Page

2

Key benefits

Report monthly or quarterly

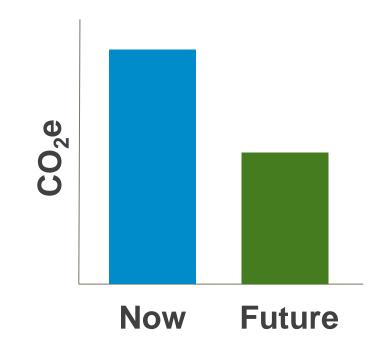
The tool allows carbon returns to be entered monthly or quarterly, as instructed by National Highways for the various contracts.

Previous Page

Home Page

Carbon management not carbon counting

The tool collects sufficient data to enable analysis of the most carbon intensive areas of our construction and maintenance activities. This supports carbon reduction decision making.



Previous Page

Home Page

Traceable data sources

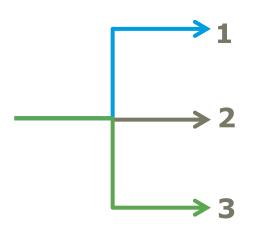


We need you to keep hold of the data sources that you use to fill in the tool (receipts, delivery notes, EPDs etc.) for the duration of the contract, so that we can audit the data in our carbon accounts should we be required to do so.

Previous Page

Home Page

A large number of items to choose from



There are a large number of items in the tool, split across a number of recognisable highways specific categories to reduce the need to do your own calculations and estimations. For example, you only need to choose the diameter of a pipe you have used and enter its length rather than having to calculate the weight of plastic in that pipe.

Previous Page

Home Page

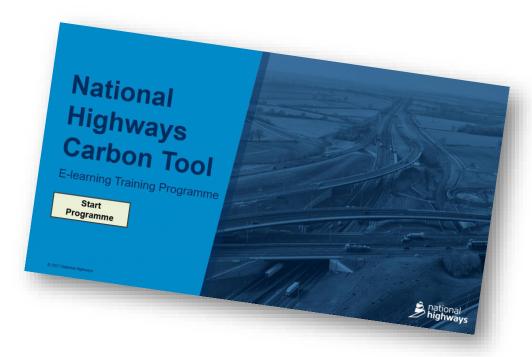
Accessible guidance

The tool guidance is provided in a range of formats and is intended to be concise and easy to read.

In addition to this e-learning training programme, there is a more in-depth guidance document and guidance within the tool itself. It is mandatory that you refer to these documents to understand what the requirements are.

Previous Page

Home Page



Key benefits: Questions

Which of these are benefits of the tool?

Carbon management not carbon counting

Traceable data sources

Download a new version of the carbon tool for each submission period

Reducing the amount of data collected

Reporting monthly or quarterly as instructed by NH

Accessible guidance

Previous Page

Home Page

Answers

2 Key benefits: Answers

Carbon management not carbon counting

Traceable data sources

Download a new version of the carbon tool for each submission period

Reducing the amount of data collected

Reporting monthly or quarterly as instructed by NH

Accessible guidance

Previous Page

Home Page

Proceed to module 3

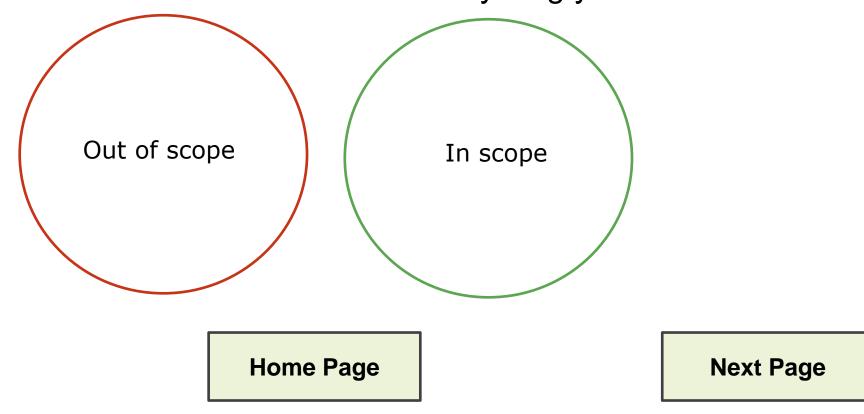
Module 3 – Data boundaries

Click to start



Data boundaries

Before collecting and putting data into the tool, it is important to know the boundaries for your data collection. This will make sure you don't miss anything you need to include and don't include anything you shouldn't.



Data boundaries

The tool collects data under the following 10 categories, the boundaries for each of these will be clearly defined in the following pages.

- 1. Bulk Materials
- 2. Earthworks
- 3. Fencing, Barriers and Road Restraint Systems
- 4. Drainage
- 5. Road Pavements
- 6. Street Furniture and Electrical Equipment
- 7. Civil Structures and Retaining Walls
- 8. Fuel, Electricity and Water
- 9. Business and Employee Transport
- 10.Waste

Categories 1-7 can be thought of as the 'Materials' categories.

Previous Page

Home Page

Data boundaries Categories 1-7 (Materials)

Categories 1-7 will require the following data:

- Quantities of materials this period
- Distance from the supplier to the site
- The % of bulk materials used in each of the other categories (for bulk materials only)
- Forecast amount of material for next period (for bulk materials only)

Materials need to be recorded as they are delivered to your site/ reporting area, all construction and maintenance materials that enter your site must be recorded.

Previous Page

Home Page

Data boundaries Categories 1-7 (Materials)

You should record materials when they are delivered, not when they are used, as this will not capture everything, such as over-ordering of materials that become waste.

For Category 1 (Bulk Materials) you will need to forecast what materials you are anticipating to receive in the next reporting period. This can be an estimate; it may be helpful to base this estimate on the construction/maintenance programme.

Previous Page

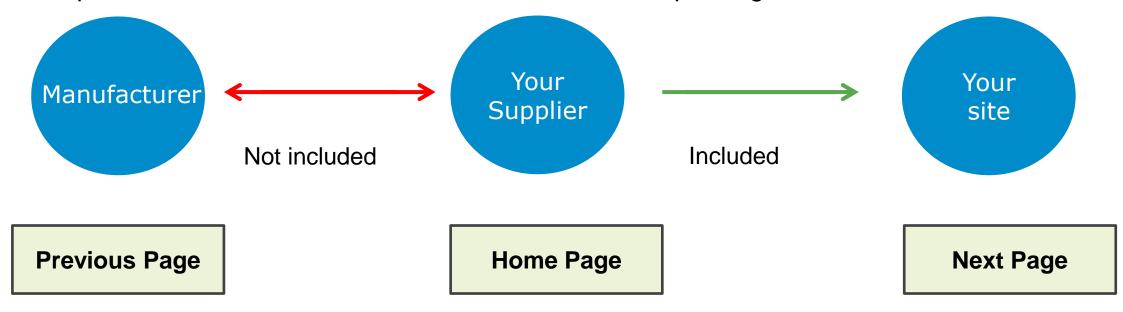
Home Page

Data boundaries

Categories 1-7 (Transport of materials)

You should record transport of a material as the distance from **your supplier** to **your site**. You do not need to record any transport prior to your supplier or the return leg of the journey (the tool will account for the return journey and number of journeys automatically).

For example: If by road your concrete supplier is 16km from your site, you must record a transport distance of 16km and select the mode of transport e.g. van or HGV.



Data boundaries Category 8 Energy, Fuel and Water

All energy (electricity, gas etc.), fuel (petrol, diesel etc.) and water used for the reporting contract should be recorded. This includes use for both welfare purposes and construction/maintenance purposes. This consists of, but is not limited to:

- Site offices / buildings within construction / maintenance area (does not include buildings owned by the reporting contractor but outside the construction site or maintenance area, such as head offices).
- Mobile plant including site vehicles;
- Fixed plant; and
- On site accommodation.

Note this does not include any company vehicles used for business travel or employee commuting as this is covered in category 9.

Previous Page

Home Page

Data boundaries Category 9 Business and Employee Transport

Business Transport

All company vehicles and public transport used for business purposes must be recorded. This should be captured by recording the distance they have travelled (note that fuel use for on-site vehicles should be recorded within category 8).

Employee Transport

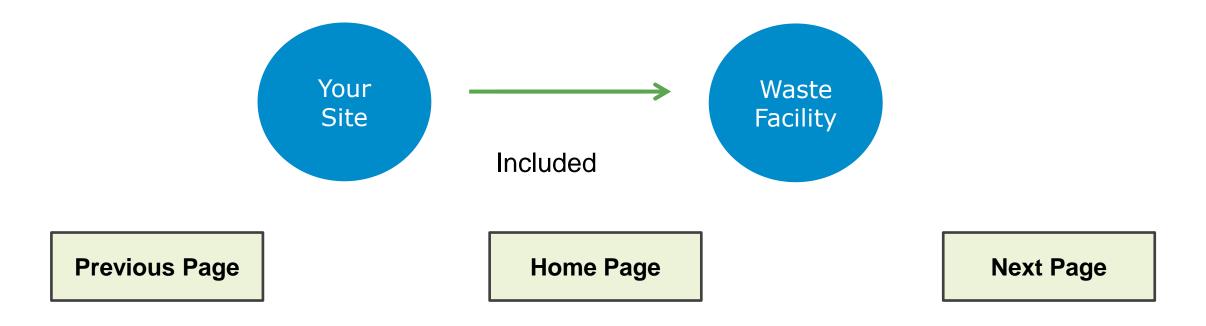
Staff commuting to site should be recorded in km. This includes all construction site maintenance area workers, including both your direct employees and Tier 1 subcontractors. It is appreciated that this may involve an element of estimation.

Previous Page

Home Page

Data boundaries Category 10 Waste

The weight of all waste materials leaving the site /area must be recorded. You must also include the distance from your site to the receiving waste facility and how the waste will be dealt with at the facility (recycled, landfill etc.). All of this information should be available from your waste transfer/consignment notes.



Data boundaries Data collection pro-forma

We appreciate that collecting all this data can take time and will require other people to collect data for you. To help with this process we have created a data pro-forma for you to distribute to colleagues or sub-consultants to aid recording this data. This is available in within the full guidance document.

Data collection Record Sheet To complete the Highways England carbon tool you will need the followin information. You do not need to fill in every box, just the items appropriate for you C6/8 (Gen 0, ST1 C12/15 (Gen 2, ST 3) tonnes tonnes General fill/aggregate lecycled site-won fill/aggregate ecycled imported

Previous Page

Home Page

Proceed to Module 4

Module 4 – Using the tool - step by step guide

Click to start



Using the tool

This step by step guide will help take you through using all the tools basic functions.

When following each step, please read the text carefully and click where necessary to proceed.

You may find it useful to have the tool and full guidance document open as you go through this guide.

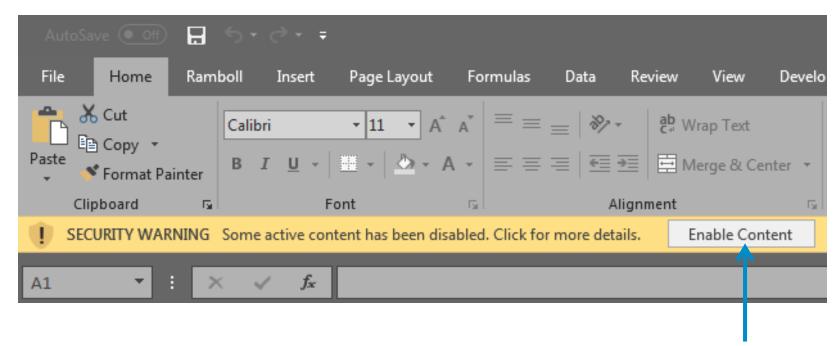
Before you start using the tool make sure it is saved on your local drive or desktop.

Home Page

When using the tool remember that cells formatted like this:

will require you to enter some data.

Step 1 Enabling Macros

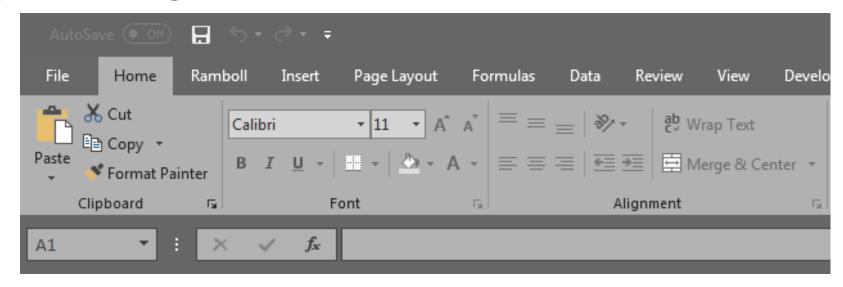


When you first open the tool you will need to click here to enable macros (the exact wording in the yellow banner may vary depending the version of excel you are using). This is essential to be able to use the tool correctly. Try it now.

Previous Page

Home Page

Step 1 Enabling Macros



You will now see the banner has gone and macros are enabled. This means the buttons in the tool will now work. If the yellow banner did not appear and you cannot use the buttons in the tool please refer to the full guidance document.

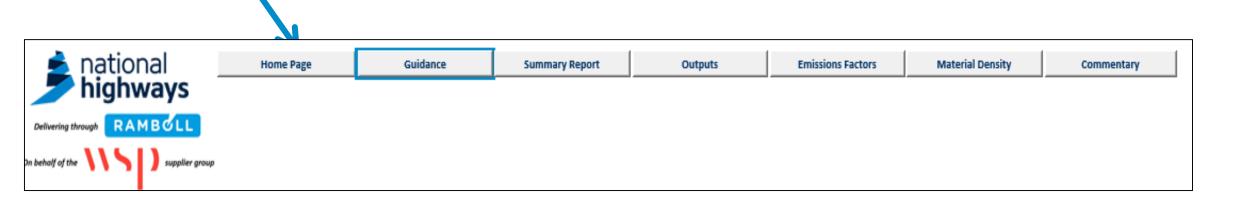
Click next step to learn about navigating through the tool.

Previous Page

Home Page

Next Step

When you open the tool for the first time you will see the guidance page. After enabling macros please take a few minutes to read this the first time you use the tool. The guidance page will always be available to refer to should you need it. Now click on the 'home page' button to proceed.



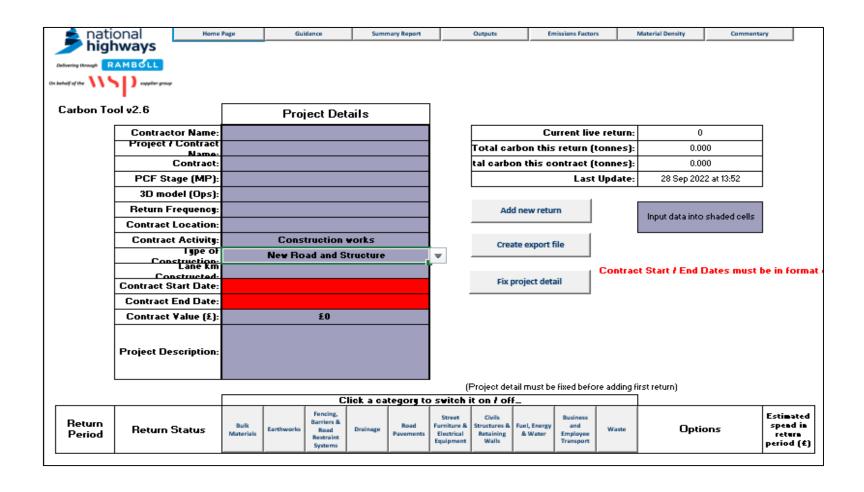
Previous Page

Home Page

This is the homepage. Here you will enter your project details, create your carbon returns and export your data. All of this will be covered in the following steps of this programme.

Click next step to learn about adding your project details.

Previous Page



Home Page

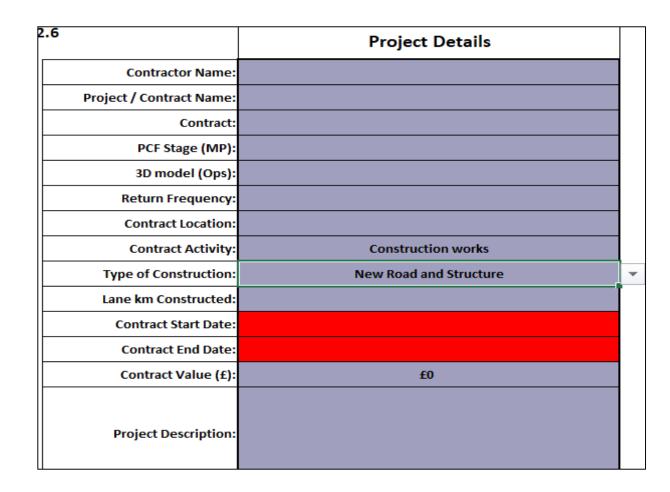
Step 2 Project Details

You will need to enter your project details into the Home Page. All of the purple formatted cells require your input. These questions can only be answered once (although the contract start date, end date and value can be edited)

You will need to fix the details by clicking on the button below. You will no longer be able to edit them.

Fix project details

Previous Page



Home Page

Step 2 Project Details

You will see that some cells have now turned white, these can no longer be changed and are 'fixed' for all future carbon returns for this contract.

Click next step to learn about adding a carbon return.

.6	Project Details						
Contractor Name:	Example LTD						
Project / Contract Name:	Example Motorway Limited						
Contract:	Regional Delivery Programme (RDP)						
PCF Stage (MP):	6						
3D model (Ops):	N/A						
Return Frequency:	Monthly						
Contract Location:	Area 7 - Leics, Notts, Lincs, Derbyshire						
Contract Activity:	Construction works						
Type of Construction:	Road Widening						
Lane km Constructed:	100						
Contract Start Date:	01/03/2024						
Contract End Date:	04/06/2026						
Contract Value (£):	£10,000,000						
Project Description:	Widening of junction at East bound of M69 to improve congestion and reduce accidents.						

Previous Page

Home Page

Next Step

Step 3 Creating a Carbon Return

To create a carbon return you will need to **click the 'Add new return'** button.

Add new return

Create export file

A carbon return is an accurate and complete summary of the carbon emissions associated with the activities of a contractor in the supply chain for a given period; inputting data into the National Highways carbon tool produces a carbon return. The full guidance document provides definitions for other terms used in the tool.

Click a category to switch it on / off													
Return Period	Return Status	Bulk Materials	Earthworks	Fencing, Barriers & Road Restraint Systems	Drainage	Road Pavements	Street Furniture & Electrical Equipment	Civils Structures & Retaining Walls	Fuel, Energy & Water	Business and Employee Transport	Waste	Options	Estimated spend in return period (£)

Previous Step

Home Page

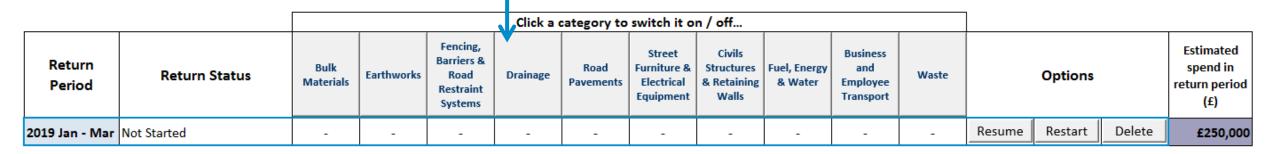
Step 3 Creating a Carbon Return

Add new return

Create export file

You will now see that a new carbon return has been added to the table on the Home Page (as shown below). Each time you add a new return, each return will appear in this table as a new row and the status of the return will update as you progress.

You can also 'switch off' categories that you know you will not need to use. Try switching off the drainage category by clicking the heading in the table.



Previous Step

Step 3 Creating a Carbon Return

Add new return

Create export file

You will now see that the cell below the Drainage heading has turned grey indicating that you do not need to input data into this category.

You will also notice you are required to provide your spend for the period in the column on the right of the table. This only needs to be an estimate.

Click next step to learn about entering data into the tool.

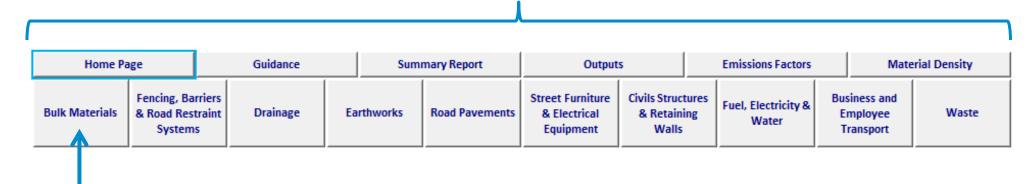
					Click a	category to	switch it o	n / off									
Return Period	Return Status	Bulk Materials	Earthworks	Fencing, Barriers & Road Restraint Systems	Drainage	Road Pavements	Street Furniture & Electrical Equipment	Civils Structures & Retaining Walls	Fuel, Energy & Water	Business and Employee Transport	Waste		Options		Estimated spend in return period (£)		
2019 Jan - Mar	Not Started	-	-	-		-	-	-	-	-	-	Resume	Restart	Delete	£250,000		

Previous Step

Home Page

Step 4 Adding Data

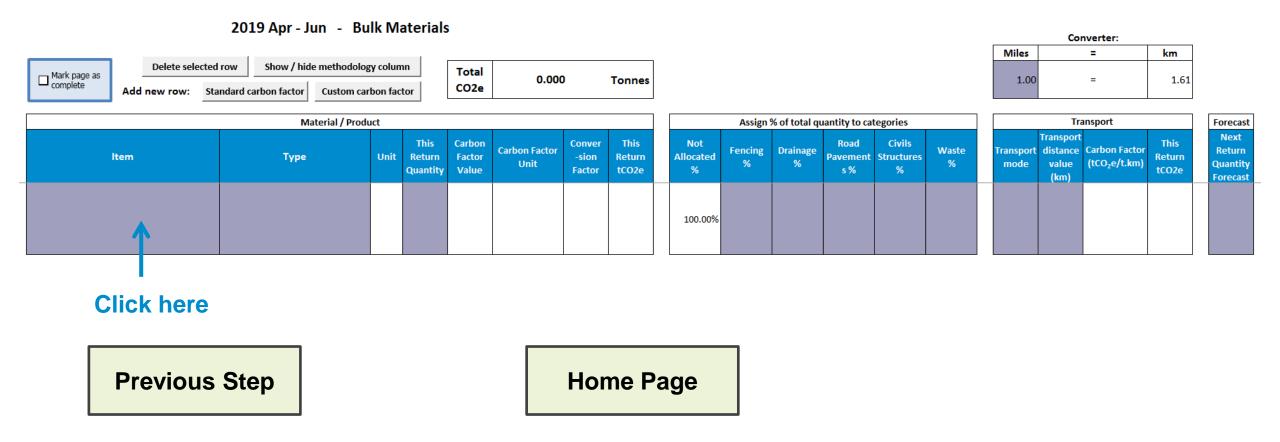
The top row of menu buttons allow you to view various information about the tool as well as allowing you easy access to the Home Page where your carbon returns are stored.



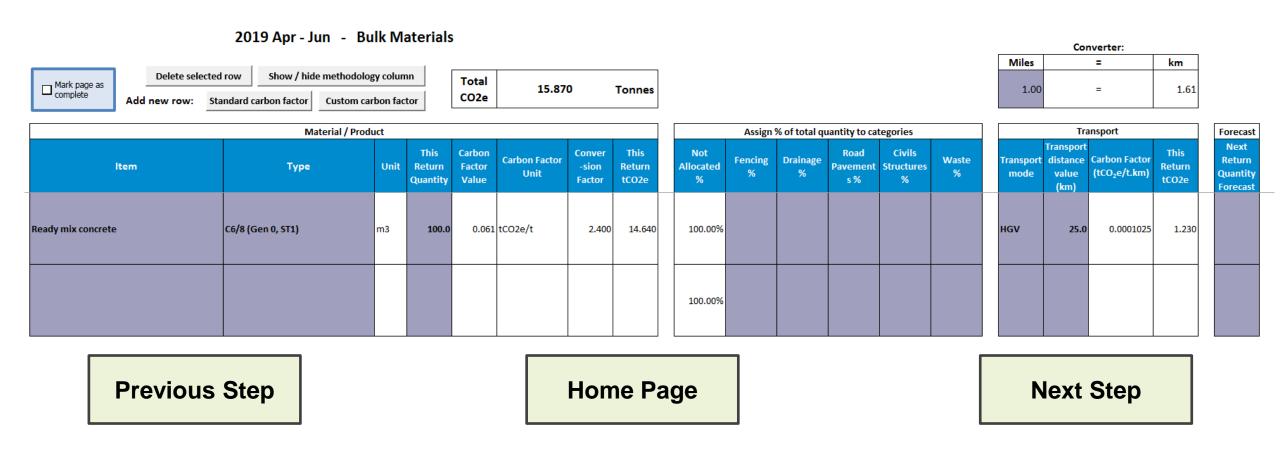
Once you have created or resumed a carbon return a second row of menu buttons will appear at the top of the page. The bottom row of menu buttons are the 'categories' where you need to input your data. Click the first category "Bulk Materials" to see an example of how to add data.

Previous Step

Once you have selected a category you will be presented with a data input table such as this. The first row of the table will automatically appear, each of the purple cells in this row requires you to insert data. To add data you will need to choose an item by clicking on the purple cells.



A row has been added for ready mix concrete. The input unit is cubic m³; 100m³ of concrete was delivered by HGV from a supplier 25km from the site. This data has been entered below. Click next step to learn about how to assign these bulk materials to the other categories in the tool.



For the Bulk Materials category, you are required to assign a percentage of the bulk materials used in the other categories. For example if you have entered 100 tonnes of concrete into the bulk materials category, 60% may have been used in drainage works, 20% for fencing, 10% for road pavements and 10% was wasted. A realistic estimate for this is acceptable

You are also required to estimate how much of each of the bulk materials are to be used in the next reporting period. Click on the purple cells to add the data.

	Assign 9	% of total qu	antity to cat	tegories			Forecast			
Not Allocated %	Fencing %	Drainage %	Road Pavement s %	Civils Structures %	Waste %		Transport distance value (km)	Carbon Factor (tCO ₂ e/t.km)	This Return tCO2e	Next Return Quantity Forecast
100.00%						HGV	25.0	0.0001025	1.230	

Previous Step

For the Bulk Materials category, you are required to assign a percentage of the bulk materials used in the other categories. For example if you have entered 100 tonnes of concrete into the bulk materials category, 60% may have been used in drainage works, 20% for fencing, 10% for road pavements and 10% was wasted. A realistic estimate for this is acceptable

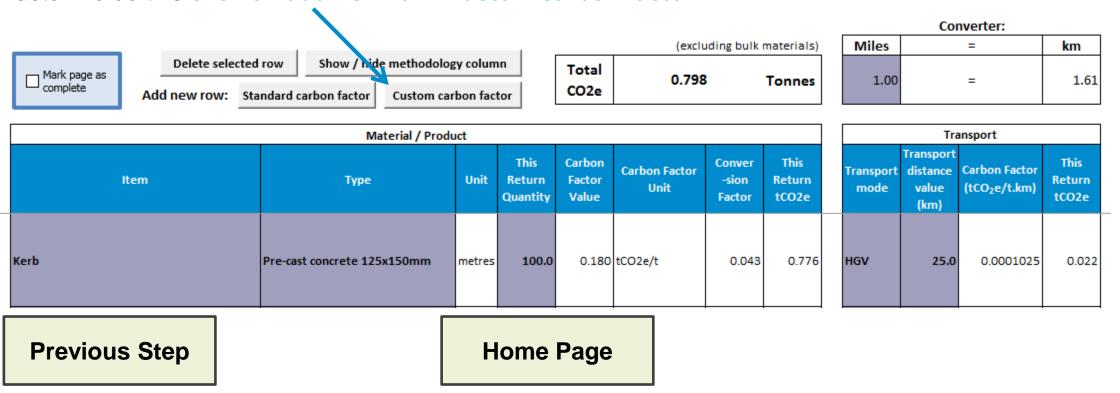
You are also required to estimate how much of each of the bulk materials are to be used in the next reporting period. Click next step to learn about adding custom carbon factors.

	Assign 9	% of total qu	antity to cat	tegories			Forecast			
Not Allocated %	Fencing %	Drainage %	Road Pavement s %	Civils Structures %	Waste %		Transport distance value (km)	Carbon Factor (tCO ₂ e/t.km)	This Return tCO2e	Next Return Quantity Forecast
0.00%	20.00%	60.00%	10.00%		10.00%	HGV	25.0	0.0001025	1.230	150.0

Previous Step

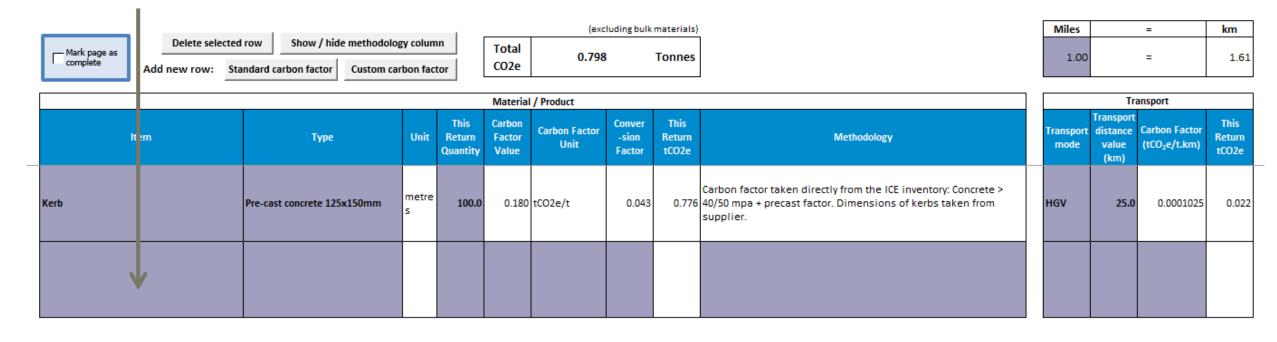
Home Page

See here a row has been added to the road pavements category for Pre-cast concrete kerbs. The input unit is metres; 100m of kerb were delivered by HGV from a supplier 25km from the site. This data has been entered below. If you know that the carbon factor for a material is not appropriate for the item you are using or you have a more accurate value available to you, you are encouraged to input your own custom carbon factor. To do this click on add new row 'Custom carbon factor'.



Additional columns will become purple so you can enter your own carbon factor and methodology. To add data you will need to choose an item by clicking on the purple cells of the bottom row.

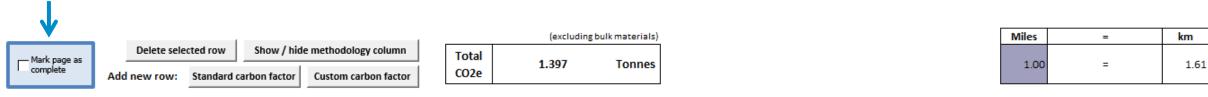
Click here



Previous Step

Remember to **click "mark page as complete"** once you have finished entering all the data in each category.





				Material	/ Product					Tra	insport	
İtem	Item Type		This Carl Unit Return Fac Quantity Val		Carbon Factor Unit	Conver -sion Factor	This Return tCO2e	Methodology	Transport mode		Carbon Factor (tCO ₂ e/t.km)	This Return tCO2e
Kerb	Pre-cast concrete 125x150mm	metre s	100.0	0.180	tCO2e/t	0.043	0.776	Carbon factor taken directly from the ICE inventory: Concrete > 40/50 mpa + precast factor. Dimensions of kerbs taken from supplier.	HGV	25.0	0.0001025	0.022
Kerb	Pre-cast concrete 125x150mm	metre s	100.0	0.120	tCO2e/t	0.047	0.564	Carbon factor provided by our Kerb supplier (Example Kerbs Ltd.). Carbon factor value from product specification document. Carbon factor lower due to type of concrete used. Weight per metre is slightly higher.	HGV	36.0	0.0001025	0.035

Previous Step

Kerb

Step 4 Adding Data Continued

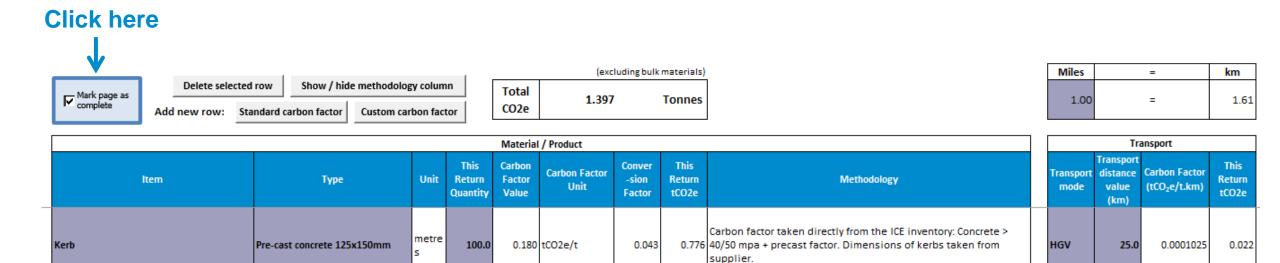
Pre-cast concrete 125x150mm

Click next step to learn about creating your export file.

metre

100.0

0.120 tCO2e/t



Previous Step

Home Page

0.047

Carbon factor provided by our Kerb supplier (Example Kerbs Ltd.).

0.564 Carbon factor value from product specification document. Carbon factor

lower due to type of concrete used. Weight per metre is slightly higher.

Next Step

0.0001025

0.035

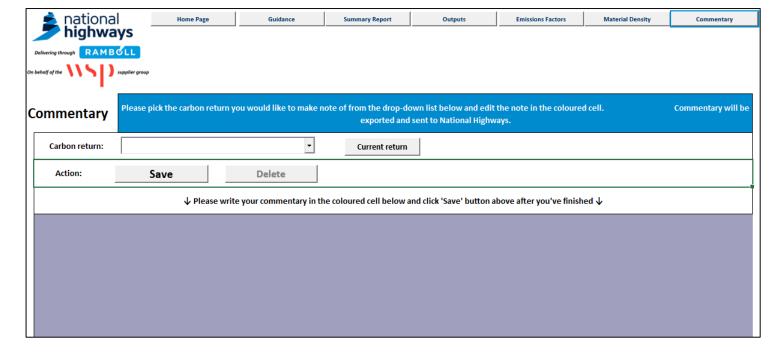
HGV

Step 5 Adding Commentary & Electronic Signature

Click here



Please populate the commentary tab, selecting the correct return period and provide a narrative summary to justify your carbon emission totals. Electronic declaration signature is required to ensure assurance checks have been completed prior to submission to National Highways within the commentary box.



Previous Step

Home Page

Step 6 Creating Your Export File

Once you have entered data into each of the category pages and marked them complete the status of the return on the Home Page will turn green:

Return Period	Return Status	Bulk Materials	Earthworks	Fencing, Barriers & Road Restraint Systems	Drainage	Road Pavements	Street Furniture & Electrical Equipment	Civils Structures & Retaining Walls	Fuel, Energy & Water	Business and Employee Transport	Waste		Options		Estimated spend in return period (£)
2019 Jan - Mar	Complete	Complete	Complete	Complete		Complete	Complete	Complete	Complete	Complete	Complete	Resume	Restart	Delete	£250,000

Add new return

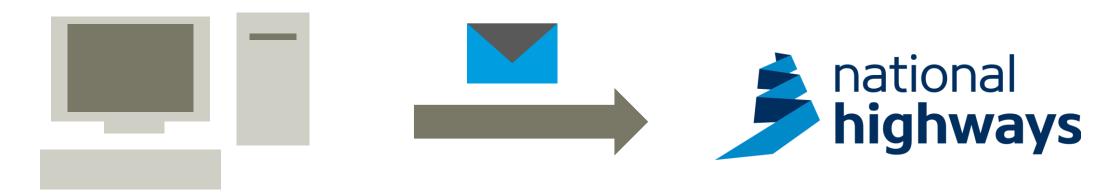
Create export file

The data is now ready to be sent to National Highways. To do this **click the 'Create export file' button**. This will create the file you need to send to us.

Previous Step

Step 7 Send Us Your Carbon Return

Once you have created your export file, please email both the Export file and completed Carbon Tool to us at carbon.reporting@nationalhighways.co.uk so we can analyse your results. Please include in the email 'subject', the project or area name, submission period and supplier.



Previous Step

Home Page

Step 8 Save Your Data!

Once you have finished inputting your data and returned to the Home Page, please save and close the excel tool. Please reopen the tool and check each tab to ensure data has not gone missing.

Now you have finished inputting your data and sent it to National Highways,

click save



Keep a saved version of that carbon submission on your local drive for future audit purposes.

Next Carbon Return

The next time you come to enter a new carbon return, please download a new version of the carbon tool from the National Highways website and repeat steps 3 to 10 for each month/quarter.

Previous Step

Home Page

Proceed to Module 5

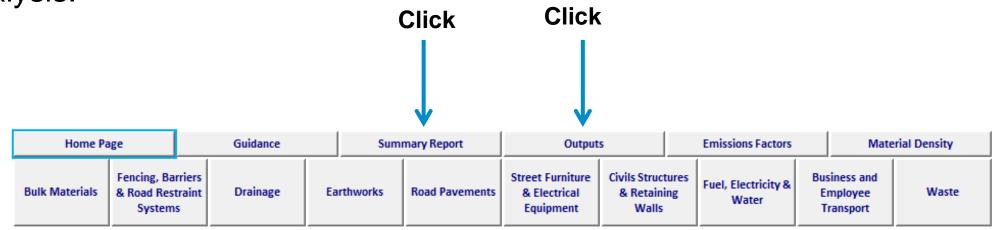
Module 5 - Tool outputs

Click to start



Summary Report and Outputs

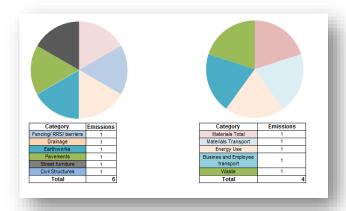
The tool produces a series of charts and summary data for analysis. It also produces an output table, which you can extract to complete your own analysis.



Tool outputs

Summary report

This report contains graphs outlining the headline figures from your data.



Outputs

This page contains all the data you have input into the tool in one table.

Return	Total	(of which Transport)	Bulk Materials	(of which Transport)	Earthworks	(of which Transport)	Fencing, Barriers & Road Restraint Systems	(of which Transport)	Drainage	(of which Transport)	Road Pavements	(of which Transport)	Street Furniture & Electrical Equipment	(of which Transport)	Civils Structures & Retaining Walls	(of which Transport)	Fuel, Energy & Water
Total all returns	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015 Apr - Jun	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Previous Page

Home Page

Finish

Thank you for using the National Highways Carbon Tool E-learning Training Programme Please refer to the full guidance document for further detail

Restart Programme

Press 'Esc' key to exit full screen mode

