Appendix F – SRB Carbon Footprint Template

TRANSPORT SCOTLAND
CARBON MANAGEMENT SYSTEM

Road Infrastructure Projects Tool 2011v2.3

- Project Name - | 14 | May | 2012

Road Infrastructure Projects Tool

Use of the Tool

Welcome to Transport Scotland's Road Infrastructure Projects Tool, part of it's Carbon Management System (CMS) suite of tools.

The Tool should be used to estimate greenhouse gas (GHG) emissions associated with major road projects (MTRIPS Projects), structural maintenance and minor improvement schemes (Works Contracts).

The Tool has been designed to be used at specimen design, detailed design and construction stages. It can be used as an options analysis tool at each stage and will be used to provide a project 'carbon footprint' at construction stage to be recorded in Transport Scotland's CMS Annual Account.

Structure of the Tool

Navigate the tool using the tab menu above. Data entry tabs are all on the second row.

Project Details	Enter the project details on this page and define the type of project and project stage.
SHW series numbers	The Tool data entry tables are structured by the Specification for Highway Works (SHW) series numbers tabs. Design data should be entered for material quantities and their transportation. Estimated transport distances should be updated using construction data if a separate 'Construction data' tab is not present.
Waste	Enter data for site clearance and waste. (Design and construction data)
Plant & Utilities	Enter data for site vehicles, plant and site utilities. (Construction data only)
Construction data	Some SHW series tabs include a Construction Data tab. Where present, these should be completed with actual construction stage data recorded in the Roads Tool Contractor Data Template.
Asphalt CO_2	Asphalt embodied GHG emission factor estimator - allows the user to enter the details of their own asphalt mix.
Emissions Summary	The emissions summary page provides a detailed breakdown of the project GHG emissions.
Emission Factors	Lists the database of emission factors and references used in the Tool to calculate GHG emissions.
Method of Measurement	Defines how embodied GHG emissions are estimated for each element in the data entry tables including assumptions used.
User Guide	Provides guidance and instructions for each data entry tab and for guidance on using assumptions and making estimations.
Links	Useful links.

Quick Guide

Step 1: Use the Project Details tab to record the project type, project stage and key personnel.

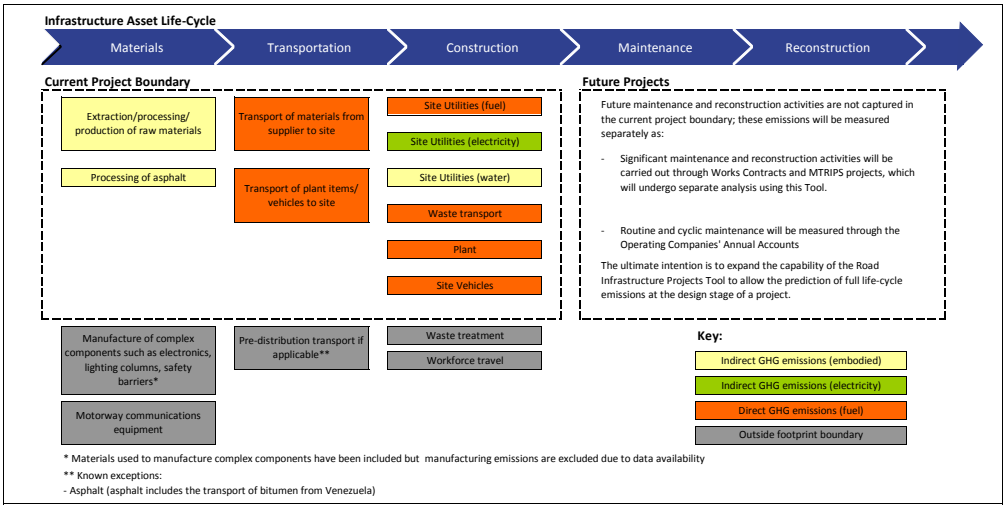
Step 2: At specimen design and detailed design stages enter material quantities from the Bill of Quantities, or relevant data source, and estimate transport distance (see User Guide) in each of the Specification for Highway Works (SHW) Series tabs Data Entry Tables and the Waste design Data Entry Table.

Step 3: At construction stage the Contractor Data Template should be used to collect details of actual material quantities delivered to site, their transport distances, plant fuel use and plant transport to site, waste arisings, waste management and waste transport.
Data from the Contractor Data Template should be transferred to the Tool (users can copy and paste):
- Materials and transport distances should be entered in the construction data tabs for Series 600, 700, 1700 and 1800.
- For all other SHW Series previously estimated transport distances in the Data Entry Tables should be updated with actual transport distances. Previously entered material quantities should be reviewed and updated if they differ significantly from the design quantities specified.
- Plant and Waste data should be entered in the Plant and Construction Waste tabs respectively from the Contactor Data Template.

Step 4: At the completion of each project stage (design or construction) the completed Tool should be returned to the relevant Transport Scotland Project Manager.

Project Footprint Boundary

The diagram below show the footprint boundary used by the CMS Roads Tool and how the CMS Annual Account captures data relating to maintenance, operation and reconstruction. The current project boundary shows the emissions currently considered by this tool.



* Materials used to manufacture complex components have been included but manufacturing emissions are excluded due to data availability

** Known exceptions:
- Asphalt (asphalt includes the transport of bitumen from Venezuela)

Material Embodied Emissions and Material Transport

The diagram below show the boundary conditions for material embodied emissions. The primary source of embodied emission factors used by this tool, the University of Bath ICE Database, uses a 'cradle-to-gate' boundary condition for most embodied emission factors. The CMS subsequently requires users to consider the transport from source (factory/ supplier gate) to site and plant used in construction.