

Carbon planning tool

October 2016

At the Environment Agency we are taking a whole life approach to carbon, actively focusing on low carbon solutions, through which we can benefit from reduced costs and improved efficiency.

We are looking to share this knowledge and service to others within the Flood and Coast Risk Management community.

Contact: Carbonplanningtool@environment-agency.gov.uk

Why?

The [Government's Construction Industry Strategy](#) identified links between reductions in carbon and reductions in costs. The overarching recommendation of this report is that Government and industry clients should work together to make carbon reduction a requirement on all of their infrastructure projects and programmes by 2016.

It's Environment Agency's aim to promote low carbon solutions and incentivise our suppliers through carbon target setting. We're promoting this as part of our e:Mission 2020 sustainability plan.

The new Carbon Planning Tool provides a mechanism to enable low carbon solutions to be promoted through the capital delivery options and decision-making process.

What?

The new Carbon Planning Tool provides a mechanism for assessing carbon over the whole life of built assets. It aligns with our Project Cost Tool creating a link between carbon and cost. The Carbon Planning Tool enables solution options through development of whole life carbon models. It captures data that will allow us to set supplier carbon targets and supports the promotion of reduced carbon solutions on our construction works.

The Carbon Planning Tool consists of two component parts:

1. Carbon Modelling Tool (top-down whole life carbon assessment and options).

This is used during the project appraisal phase to enable quick and simple carbon assessment to inform the solution selection process

2. Carbon Calculator and Carbon Calculator (bottom-up whole life carbon assessment)

Carbon Calculator assessments are detailed carbon assessments that are incrementally built up during the delivery phase, following selection of a preferred project solution option.

Where?

For further information on how to access this service please contact Carbonplanningtool@environment-agency.gov.uk

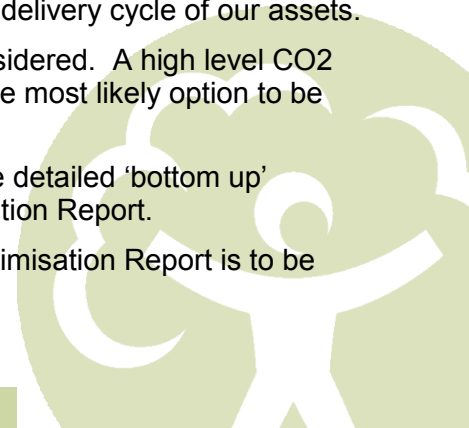
When?

The aim is to make carbon part of the decision making process throughout the delivery cycle of our assets.

At Strategic Outline Business Case (SOC) up to 5 scheme options can be considered. A high level CO₂ assessment 'top down' approach is made using the Carbon Modelling Tool. The most likely option to be progressed at this stage forms the CARBON BASELINE for the project.

At Outline Business case (OBC) when the preferred option is chosen, the more detailed 'bottom up' Carbon Calculator is to be completed this is supported by the Carbon Optimisation Report.

Full Business Case (FBC) an update of the Carbon Calculator and Carbon Optimisation Report is to be undertaken.



At the end of construction, a final update of the Carbon Calculator reporting the actual carbon usage from the construction phase and expected operational carbon usage is done, supported by the Final Carbon Report.

The following assessments and reports should be forwarded to Carbonplanningtool@environment-agency.gov.uk

- Carbon Modelling Tool assessment
- Carbon calculator and Carbon Optimisation Report (at Outline Business Case stage)
- Carbon calculator and Final Carbon Report (at end of construction)

The final Carbon Calculator assessments are used to create data points within the Carbon Modelling Tool other information is used to share best practice and lessons learnt across the flood and coastal risk management community.

How?

A focus on low carbon choices will lead to reduced cost and improved efficiency. To reduce carbon emissions for the whole life of the project and get the wider benefit, assessments should be made initially at the early option appraisal stage.

Considering carbon in a proactive way is key to making good project choices that will positively impact on carbon, cost and efficiency.

Case study: Cement-free concrete

The design and construction of the flood defences at Woodbridge, Suffolk required improvements to the existing sheet piled wall.

The solution was to strengthen the support behind the wall.

The project team recognised that this resulted in a significant volume of mass concrete. The embodied carbon in a typical concrete mix is considerable. To reduce this, the contractor trialled a new innovative cement-free product.

This was used to replace cement whilst maintaining similar strength and significantly reducing the embodied carbon.

Carbon saving = 7.8 tonnes



Would you like to know more?

Please contact Carbonplanningtool@environment-agency.gov.uk

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www.gov.uk/environment-agency