



The Carbon Infrastructure Transformation Tool

White Paper



UNIVERSITY OF EDINBURGH
Business School

Contents



Introduction



The Carbon Infrastructure Transformation Tool (CITT) automatically integrates emissions data with output from Estimators, Planners and BIM Technicians, to provide a bottom up, granular assessment of carbon impacts of an infrastructure project at the resource level, greatly simplifying carbon assessment and intervention processes for all users.

Whilst there are a number of carbon management tools available to industry, none integrate with contractors' costing and planning processes and so assessments are either too high level for any reliable insight, or lead to increased labour costs for data input. The open access CITT solution works seamlessly in the background, meaning no additional time is taken to identify "hot-spots" of a project, delivering a step change in carbon management on infrastructure projects.

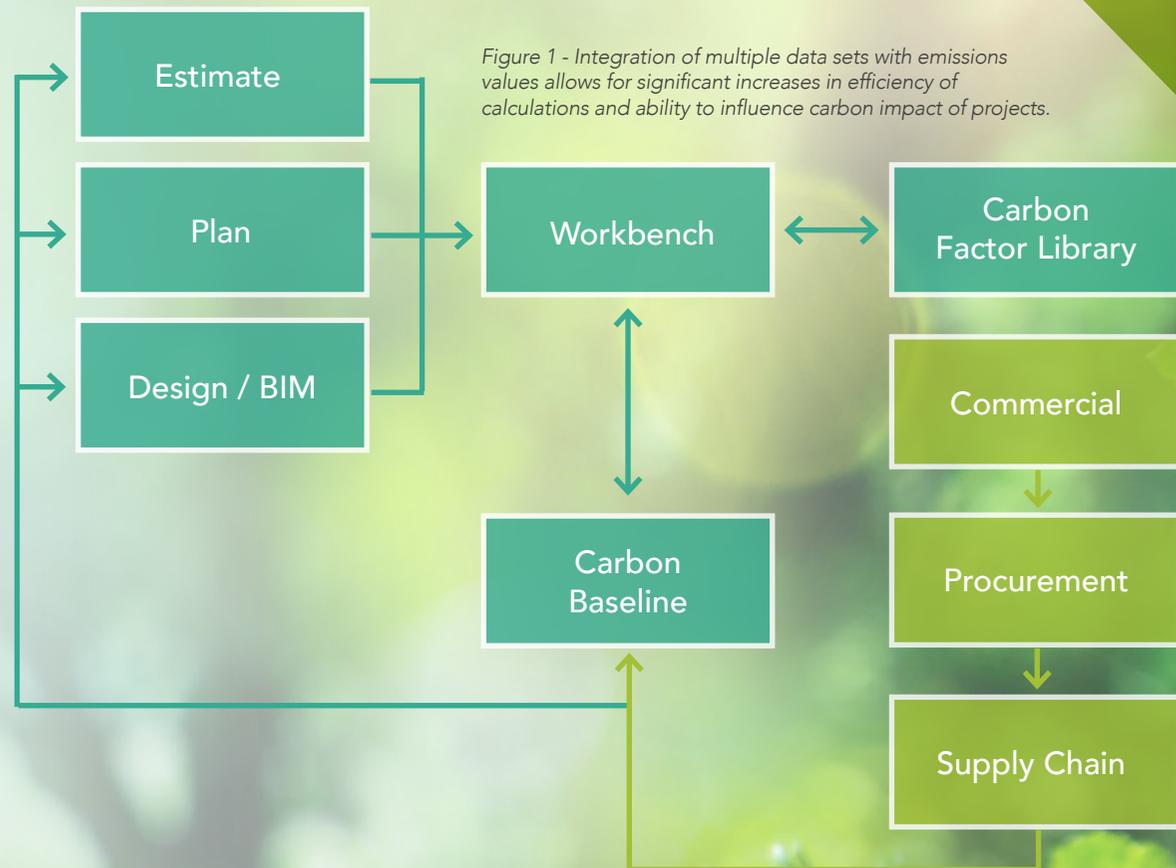


Figure 1 - Integration of multiple data sets with emissions values allows for significant increases in efficiency of calculations and ability to influence carbon impact of projects.

Benefits



Rollover icons below for more information.

In order to ensure the full potential of the CITT is realised across industry we have been engaging various stakeholders from across the sector to develop an understanding of where key challenges lie and how these can be overcome in future. This briefing paper highlights the results of this research through articulation of key barriers as well as potential solutions to overcome them.

Barriers



Throughout the development process we have engaged industry partners to enhance our understanding of key barriers to the adoption of the CITT. Through structured interviews, project trials and workshops we have identified three key barrier types;

Click on icons below for more information.

Technological barriers



Technological barriers relate to the design, use or performance of the process. Understanding these barriers will enable the project team to ensure the tool is serving as broad an audience as possible without adding complexity to their roles.

- ✘ Cross platform integration**
If the CITT is poorly integrated with other platforms, it won't deliver the value it promises.
- ✘ Ownership**
If the CITT is to be used across industry, it is important a neutral organisation hosts it to enhance uptake and use.
- ✘ Coding structures (sector-wide)**
In order to minimise time requirements aligned coding structures should be required.
- ✘ Data security**
Ensuring that data are collected and used in a way that does not give risk to the data owner.
- ✘ Data consistency (sector-wide)**
Due to lack of a standardised library, there is a risk of inconsistent data being used, which could undermine the quality of the output.

Organisational barriers



Organisational barriers refer to barriers that occur within organisations and can relate to acceptance of the process underpinning the CITT or interactions between organisations on a project.

Developing an understanding of how organisations view these barriers will provide a framework for future iterations to be developed through a more collaborative approach to low carbon solutions.

✘ **Data acquisition (technological)**

There is no formal process for collecting data from suppliers.

✘ **Resistance to change (sector-wide)**

Individual employees within organizations can be unwilling to change longstanding working habits.

✘ **Internal fragmentation (sector-wide)**

Communication links between different disciplines can hinder new ideas and makes it difficult to work together.

✘ **Silo mentality**

The CITT requires collaboration between disciplines within an organization and between stakeholders across a value chain. Fluid movement, and consistent coding, of data are needed. There is a perceived risk that without relevant training this won't occur.

✘ **Leadership**

There is often an absence of designated personnel to deliver a low carbon agenda.

Sector-wide barriers



Sector-wide barriers detail challenges relating to acceptance of the low carbon agenda across industry. Enhancing our understanding of these barriers will guide our research to help overcome them, allowing broad adoption of the tool by stakeholders from across the value chain.

✘ **Education (organisational)**

Perceived lack of knowledge in the sector, and the need for education regarding low carbon concerns and initiatives.

✘ **Collaborative frameworks (organisational)**

A lot of collaboration is required to get the best out of the CITT.
A risk to the project is that frameworks for collaboration aren't perceived to be strong enough across industry.

✘ **Targets and requirements**

Lack of clearly defined sectoral targets and contractual obligations to reduce carbon.

✘ **Standard carbon library (technological)**

There is a need for a central carbon library to ensure consistency between projects.

✘ **Other tools (technological)**

With other tools on the market, what is the unique selling point of this tool, and why should others adopt this tool?

Solutions



Solutions to the above barriers can be boiled down to five key areas:

***Rollover** icons below for more information.*

Project primary contact



If you are interested in trialling the tool
and want information please contact:



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