



# Investigating the ‘*Low Carbon Readiness*’ of Built Environment Supply Chain

*A CRC for Low Carbon Living and Sustainable Built Environment National Research Centre (SBEnrc) initiative by Curtin University in Collaboration with UrbanGrowth NSW*

## Project Team

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## **Acknowledgement**

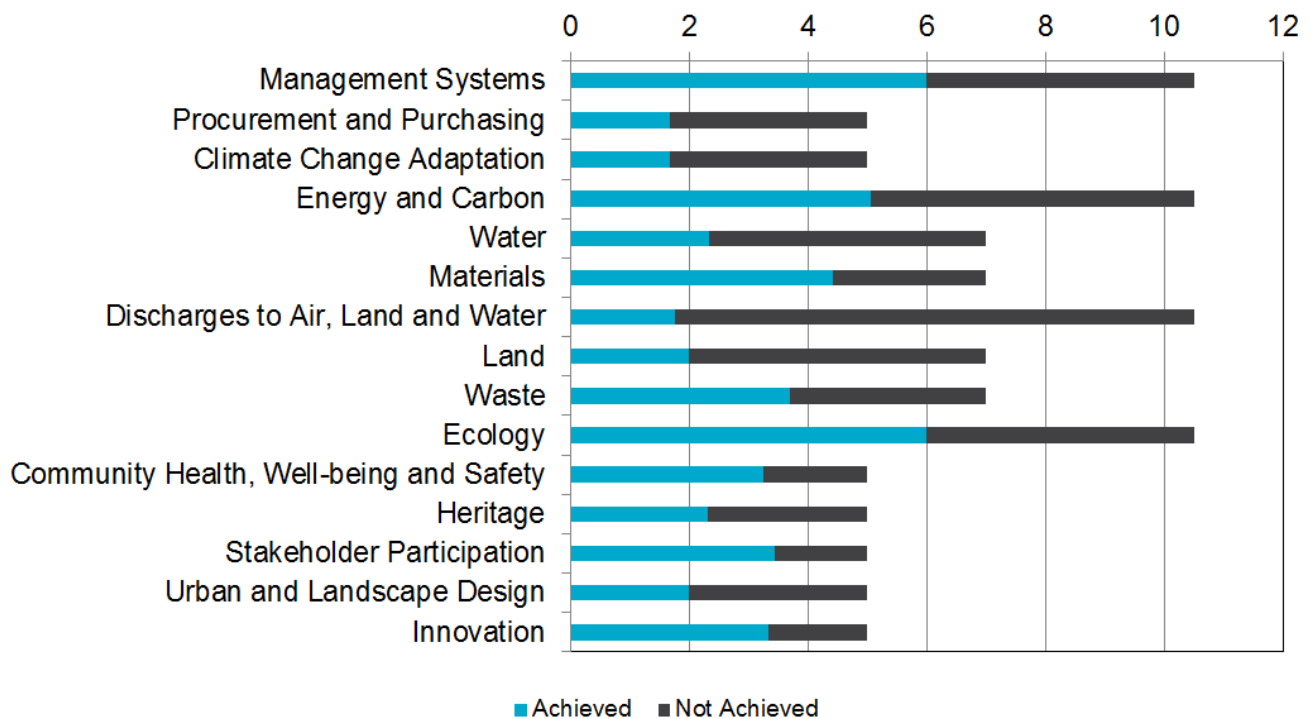
This report has been developed as part of a collaboration between the *CRC for Low Carbon Living* and the *Sustainable Built Environment National Research Centre (SBEnrc)*. The project is supported by CRC partner UrbanGrowth NSW and SBEnrc partners the QLD Department of Transport and Main Roads, Main Roads Western Australia, NSW Roads and Maritime Services, the Infrastructure Sustainability Council of Australia (ICSA), and Roads Australia.

## 1. Selection of Industry Benchmark for Survey

### 1.1 OVERVIEW OF THE 'IS TOOL'

Developed and administered by the Infrastructure Sustainability Council of Australia (ISCA), the 'IS Tool' is designed to be used to evaluate the sustainability of infrastructure across design, construction, and operational phases. The tool can be used as part of a self-assessment as well as being able to be formally certified as 'Commended', 'Excellent', or 'Leading'. Considering specific themes within a range of social, economic and environmental sustainability categories across each project, the users of the rating tool nominate a performance level (1, 2, or 3) that they believe they have achieved for each element and provide supporting evidence as outlined in the tool's technical manual.

An assessment is carried out and based on predetermined weightings designed into the tool, the overall rating is calculated, and compared to a possible level of achievement. For example Figure 1 shows a sample rating across the various performance areas with a score of 6 attained for 'Management Systems' out of a possible 10.5.



**Figure 1:** An example of IS Rating Tool outputs.

Source: ISCA (2014)

## 1.2 LIST OF LOW CARBON TENDERING RELATED CREDITS IN THE 'IS TOOL'

Table 1 presents a list of the 43/105 possible points related to 'Low Carbon Tendering'.

**Table 1:** Summary of 'IS Rating Tool' credits related to Low Carbon Tendering

Code	Credit	Points
<b>Directly Related to Low Carbon Tendering</b>		
<b>Energy and Carbon</b>		
Ene-1	Energy and carbon monitoring and reduction	4.67
Ene-2	Energy and carbon reduction opportunities	4.67
Ene-3	Renewable energy	1.17
<b>Procurement and Purchasing</b>		
Pro-1	Commitment to sustainable procurement	1.25
Pro-2	Identification of suppliers	1.25
Pro-3	Supplier evaluation and contract award	1.25
Pro-4	Managing supplier performance	1.25
<b>Materials</b>		
Mat-1	Materials lifecycle impact measurement and reduction	6.29
Mat-2	Environmentally labelled products and supply chains	0.74
<b>Innovation</b>		
Inn-1	Innovation	5.00
<b>Total Points Directly Related to Low Carbon Tendering (/100)</b>		<b>27.54</b>
<b>In-Directly Related to Low Carbon Tendering</b>		
<b>Management Systems</b>		
Man-1	Sustainability leadership and commitment	1.07
Man-2	Management system accreditation	0.43
Man-3	Risk and opportunity management	0.86
Man-4	Organisational structure, roles and responsibilities	1.07
Man-5	Inspection and auditing	0.86
Man-6	Reporting and review	0.86
Man-7	Knowledge sharing	2.14
Man-8	Decision-making	3.21
<b>Climate Change Adaptation</b>		
Cli-1	Climate change risk assessment	2.50
Cli-2	Adaptation options	2.50
<b>Total Points In-Directly Related to Low Carbon Tendering (/100)</b>		<b>15.5</b>

## 2. Supply Chain 'Low Carbon Readiness' Questionnaire

The following questions should be answered 'Yes', 'No', 'Not Applicable' or 'I Don't Know'. We ask that answers are an honest representation of your organisation's systems and capability as responses may influence future minimum evidence requirements requested as part of pre-qualification and project tenders by UrbanGrowth NSW.

### 2.1.1 Management Systems

1. Does your company have a 'Sustainability Policy' or equivalent that includes commitments to mitigate negative environmental, social, and economic impacts? [Man-1]

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes,

- a. Does it include your greenhouse gas emissions performance?
- b. Are commitments embedded into sustainability objectives or targets? (L1)
- c. Are sustainability objectives or targets reflected in project contracts? (L2)
- d. Is it publically accessible? (L3)
- e. Is there a commitment to continual improvement? (L3)
- f. Do commitments go beyond mitigating negative impacts to restorative actions (i.e. net positive benefits for society and the environment)? (L3)

2. Is your company accredited under ISO14001, ISO9001, and AS/NZ4801 or other similar accreditation? [Man-2]

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

3. Does your company have a process for identifying risks related to sustainability (including estimate of risk level and controls to treat risk) [Man-3] (L1)

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes,

Does this include consideration of carbon related risks?

4. Does your company have a process for identifying opportunities related to sustainability [Man-3] (L2)

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes,

Does this include consideration of carbon risks and opportunities?

5. Does your company have a member of the project senior management team with central responsibility for managing sustainability? [Man-4] (L1)

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes,

a. Does this include low carbon outcomes?

b. Is this person an IS Accredited Professional? (L2)

c. Is the sustainability performance monitored and reviewed by an independent sustainability professional? (L3)

6. Does your company have a process for undertaking **environmental** inspections and audits of site management? [Man-5] (L1)

'Yes',  'No', or  'I Don't Know'

If Yes,

a. Do they consider low carbon aspects, such as greenhouse gas emissions?

b. Are internal inspections undertaken at least weekly during construction and monthly during operation?

c. Are internal audits of the management system conducted at least quarterly?

d. Are external audits of the management system undertaken at least annually?

7. Does your company have a process for undertaking sustainability inspections and audits of site management? (L2)

*Note: Sustainability inspections must use a checklist which covers environmental, social and economic aspects and the inspection must be documented in a report. In practice, coverage of environmental, community and local business issues meets this requirement.*

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes,

- a. Do they consider low carbon aspects, such as greenhouse gas emissions?
- b. Are internal inspections undertaken at least weekly during construction and monthly during operation?
- c. Are internal audits of the management system conducted at least quarterly?
- d. Are external audits of the management system undertaken at least annually?

8. Does your company have an environmental management system?

'Yes',  'No', or  'I Don't Know'

9. Does your company undertake sustainability reporting? [Man-6]

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes,

- a. Does it use the Global Reporting Initiative (GRI) framework?
- b. Does it include sustainability objectives, targets or indicators? (L1)
- c. Does it identify areas for improvement in sustainability areas? (L1)
- d. Does it include Low Carbon related objectives, targets or indicators?
- e. Does it identify Low Carbon areas for improvement?
- f. Is it reported to senior management annually? (L1)
- g. Is it reported to senior management quarterly? (L3)
- h. Is it reported to the public at least annually? (L3)

10. Is the sustainability performance of the company reviewed formally by senior management at least annually? [Man-6] (L1 + above)

Note; *Senior Management refers to the top level of operational management within the project or asset management organisation.*

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes,

- a. Does it result in plans to improve/change the project or management system? (L2 + above)
- b. Does it include community participation? (L3 + above)

11. Does your company have a process for sustainability knowledge sharing? [Man-7] (L1)

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes,

- a. Is the Sustainability knowledge within the project captured and shared? (L1)
- b. Is Sustainability knowledge outside the project captured and shared within the project? (L2)
- c. Does the knowledge sharing extend beyond the project to parent organisations and other key stakeholders? (L2)
- d. Does the knowledge sharing extend to the wider industry? (L3)
- e. Does this knowledge include 'mistakes' as well as 'good practices'? (L3)

If yes, what forms of knowledge sharing does your company use?

- a. Internal training sessions,
- b. Company newsletters,
- c. Internal intranet site,
- d. Public website.

12. Does your decision making process include environment, social, and economic aspects? [Man-8]

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes,

- a. Are they considered qualitatively through a risk assessment, constraint analysis or other non-scored means?

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes, are they evaluated based on the forecast useful life (design life) of the infrastructure asset? (L1)

- b. Are they evaluated using a multi-criteria analysis (or other scored means)?

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes, are they evaluated based on the forecast useful life (design life) of the infrastructure asset? (L2)

- c. Are they evaluated as part of cost-benefit analysis (or other quantified means)?

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes, are they evaluated based on the forecast useful life (design life) of the infrastructure asset and using social rates of return for discounting? (L3)

- d. Does this consider options including business as usual options and proven approaches taken in comparable situations? (L1)

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes, does this include non-asset options, technical limits, and an option that specifically aims to address sustainability aspects? (L3)

### 2.1.2 Procurement

13. Does your company have a commitment to sustainable procurement? [Pro-1]

*Note: According to the Australian Procurement and Construction Council, 'Sustainable Procurement' can be defined as 'a process whereby organisations meet their needs for goods, works and utilities in a way that achieves value for money on a whole-life basis in terms of generating benefits not only to the organisation, but also to society and the economy, whilst minimising damage to the environment' (APCC 2007).*

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes,

- a. Does this require environmental aspects be considered? (L1)

- b. Does this require social and economic aspects be considered? (L2)



- c. Does this include low carbon aspects?
- d. Are these commitments publically stated? (L3)
- e. Are the commitments embedded into sustainability objectives and/or targets for suppliers? (L3)

14. Does your company ask suppliers about their sustainability performance? [Pro-2]

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes,

- a. Does this include details of environmental policy and its implementation? (L1)
- b. Does this include details of sustainability policy and its implementation? (L2)
- c. Does this include details of low carbon related policy and its implementation?
- d. Do you use forward commitment procurement to stimulate innovation related to sustainability? (L3)
- e. Do you engage with suppliers to explain sustainability (including low carbon) requirements and expectations and their importance in the bid process? (L3)

15. Does your company's supplier evaluation criteria include sustainability considerations?

[Pro-3]

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes,

- a. Is it evaluated using qualitative criteria (non-scored)? (L1)
- b. Is it evaluated using multi-criteria analysis (or other scored means)? (L2)
- c. Do your supplier contracts include sustainability objectives and/or targets? (L2)
- d. Do you include low carbon considerations, such as greenhouse gas emissions?

16. Does your company have a process to audit the sustainable procurement tenders of your suppliers? [Pro-3]

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes,

- a. Does it verify claims made in tender documents? (L3)

- b. Does it identify areas of key risk (environmental, social, and economic)? (L3)
- c. Does it identify areas for improvement which need to be considered for possible inclusion in the contract negotiation and terms? (L3)

17. Do you impose sustainability objectives on your suppliers? [Pro-4] (L1)

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes,

- a. Do they include low carbon objectives?
- b. Do you monitor their performance for the duration of the contact? (L2)
- c. Do you actively manage non-compliance or poor sustainability performance? (L2)
- d. Do you work with suppliers to identify any emerging or new sustainability opportunities? (L3)
- e. Do you encourage and reward success in achieving sustainability outcomes? (L3)

### **2.1.3 Energy and Carbon**

18. Do you have a process to model the energy use and GHG emissions of a project over the infrastructure lifecycle [Ene-1] (L1)

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes,

- a. Do you have a process to decide where to take action to reduce energy use and greenhouse gas emissions? (L1)
- b. Do you have a process to monitor the actions taken? (L1)
- c. Is the modelling and monitoring report audited internally? (L1)
- d. Is the modelling and monitoring report subject to external audit? (L2)

19. Do you have a process to identify and implement opportunities to reduce energy use and GHG emissions? [Ene-2]

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes,

- a. Does this include all NGER Scope 1 and 2 energy use and emissions? (L1)

- b. Does this include all NGER Scope 3 energy use and emissions? (L3)
- c. Does this include options to specifically reduce peak demand on energy grids? (L3)

20. Do you have a process to quantify the payback period of feasible options to reduce energy use and GHG emissions? [Ene-2]

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes,

- a. Do you have experience in implementing those with a four year or less payback period? (L2 + above)
- b. Do you have experience in implementing those with a more than four year payback period? (L3+)

21. Do you use 'energy and carbon management' plans or similar in projects? [Ene-2 notes]

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If No, do you think it would be useful in your projects?

22. Do you have a process to fully investigate opportunities for the use of renewable energy in projects? [Ene-3] (L1)

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes,

- a. Do you have the potential to provide between 20 and 40% of energy (including electricity and fuels) from renewable sources for the life of the infrastructure lifecycle? (L2)
- b. Do you have the potential to provide greater than 40% of energy from renewable sources for the infrastructure lifecycle? (L3)

#### **2.1.4 Materials**

2. Does your company undertake the modelling and monitoring of lifecycle impacts of materials used e.g. Lifecycle Assessment (LCA)? [Mat-1] (L1)

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

23. Does your company make material selection choices considering embodied energy? [Mat-1] (L1)

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes, for what materials:

- a. Asphalt,
- b. Concrete,
- c. Aggregates,
- d. Steel,
- e. Aluminium,
- f. Glass,
- g. Timber,
- h. Piping,

24. Do you use products with 'eco-labelling'? [Mat-2] (L1)

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes, which ones:

- Ecospecifier Green Tag labelling,
- Good Environmental Choice Australia Ecolabel (or GBCA BEP) labelling,
- An ISEAL Alliance compliant whole supply chain Stewardship Scheme certification,
- Other ISCA approved Type 1 Environmental label.

If Yes, what percentage of materials or products are certified?

- less than 10%
- between 10 and 20% (L2)
- more than 20% (L3)

### **2.1.5 Climate Change Adaptation**

25. Do you have a process to identify and adopt a suitable climate change projection(s) for the asset region over the useful life of the asset? [Cli-1] (L1)

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes, can you obtain a site specific projection or justify why it's not required? (L3)

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

26. Do you have a process to identify and assess climate change risks to the asset over the forecast useful life (design life)? [Cli-1]

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes,

- a. Does this assessment consider direct risks to the asset? (L2)
- b. Does this assessment consider in-direct risks to the asset? (L2)
- c. Does the assessment involve a multi-disciplinary team? (L2)
- d. Does the assessment consider flow-on risks to and from the asset that have regional or whole of infrastructure system implications? (L3 + above)
- e. Does the assessment include modelling of likely impacts for all High and Extreme climate change risks? (L3+)
- f. Does the assessment involve affected external stakeholders? (L3+)

27. Do you have a process to identify and implement climate change adaptation measures? [Cli-2] (L1)

'Yes',  'No',  'I Don't Know', or  'Not Applicable'

If Yes,

- a. Do you have a process to implement measures to treat extreme and high risks? (L1)
- b. Do you have a process to implement measures to treat medium risks? (L2)
- c. Do you have a process to identify the optimal scale and timing of treatment options? (L3)