



ISCA 'Infrastructure Sustainability' Rating Tool and Low Carbon Tendering

A Collaborative Project between the Sustainable Built Environment National Research Centre (SBEnc) and the CRC for Low Carbon Living

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Contents

1. Introduction.....	4
1.1 Overview of Project.....	4
2. Current level of coverage of ‘Low Carbon’ items in the ‘IS rating tool’	6
2.1 Overview of the ‘IS Rating Tool’	6
2.2 List of Low Carbon tendering related credits in the ‘IS rating Tool’	7
3. How the ‘IS Rating Tool’ can support Low Carbon Tendering	9
3.1 Tenderer Documentation and Low Carbon Readiness	9
3.1.1 <i>Provision of industry based evidence templates</i>	9
3.1.2 <i>Provision of an indication of ‘Tenderer Low Carbon Readiness’</i>	9
3.1.3 <i>Informing pre-qualification of Tenderers</i>	10
3.2 Credits Directly Related to ‘Low Carbon Readiness’	11
3.2.1 <i>Energy and Carbon</i>	11
Ene-1 Energy and carbon monitoring and reduction (4.67).....	11
Ene-2 Energy and carbon reduction opportunities (4.67).....	12
Ene-3 Renewable energy (1.17).....	13
3.2.2 <i>Procurement and Purchasing</i>	14
Pro-1: Commitment to Sustainable Procurement (1.25)	14
Pro-2: Identification of suppliers (1.25)	15
Pro-3: Supplier evaluation and contract award (1.25).....	16
Pro-4: Managing supplier performance (1.25)	17
3.2.3 <i>Materials</i>	17
Mat-1 Materials lifecycle impact measurement and reduction (6.29)	17
Mat-2 Environmentally labelled products and supply chains (0.74).....	18
3.2.4 <i>Innovation</i>	20
Inn-1: Innovation (5.00).....	20
3.3 Credits In-Directly Related to ‘Low Carbon Readiness’	21
3.3.1 <i>Management Systems</i>	21
Man-1: Sustainability leadership and commitment (1.07).....	21
Man-2: Management system accreditation (0.43)	22
Man-3: Risk and opportunity management (0.86)	22
Man-4: Organisational structure, roles and responsibilities (1.07)	23
Man-5: Inspection and auditing (0.86).....	24
Man-6: Reporting and review (0.86).....	25
Man-8: Decision-making (3.21)	26
3.3.2 <i>Climate Change Adaptation</i>	27
Cli-1: Climate change risk assessment (2.50)	27
Cli-2: Adaptation options (2.50)	29
4. Client Actions Related to ‘IS Rating Tool’ rating and Low Carbon Outcomes.....	30
4.1 General Items	30
4.1.1 <i>Specification of minimum rating score</i>	30
4.1.2 <i>Scoping out of Credits</i>	30

4.2 Energy and Carbon	30
4.2.1 Nomination of preferred energy saving options (Ene-1 and Ene-2)	30
4.2.2 Nomination of preferred renewable energy options (Ene-3)	30
4.3 Procurement and Purchasing	31
4.3.1 Preferred aspects to include in sustainability procurement (Pro-1)	31
4.3.2 Preferred questions to be included in pre-qualification questionnaire (Pro-2)	31
4.3.3 Preferred criteria to be included in supplier evaluation (Pro-3)	31
4.3.4 Nomination of objectives and/or targets for suppliers (Pro-4)	31
4.4 Materials 32	
4.4.1 Provision of Reference Design (Mat-1)	32
4.4.2 Preferred 'Environmental Labels' or product certification (Mat-2)	32
4.5 Innovation	32
4.5.1 Preferred areas of innovation	32
4.6 Management Systems	32
4.6.1 Preferred inclusions in sustainability policies (Man-1)	32
4.6.2 Preferred risks and opportunities to be explored (Man-3)	32
4.6.3 Preferred responsibilities for sustainability-related roles (Man-4)	33
4.6.4 Preferred inspection and auditing criteria (Man-5)	33
4.6.5 Preferred sustainability reporting topics (Man-6)	33
4.6.6 Preferred decision making aspects (Man-8)	33
4.7 Climate Change Adaptation	34
4.7.1 Nomination of climate change risks	34
4.7.2 Nomination of climate change risks	34
5. Potential Key Further Research Areas aligned to the 'IS Rating Tool'	35
5.1 Knowledge Sharing	35
5.2 Climate Change Projections and Assessment	35
5.3 Low Carbon Risk Identification	35
5.4 Energy and Carbon	35
5.4.1 Scope 3 Emissions	35
5.4.2 Management Plan	35
5.5 Benchmark Innovation	36
5.6 Australian Sustainable Procurement Guidelines	36
5.7 Renewable Energy Investigations	36
5.8 Investigating the potential to 'Game the Rating'	36

1. Introduction

1.1 OVERVIEW OF PROJECT

Road agencies face growing pressure to respond to issues related to climate change, resource shortages, and shifting transport mode preferences. A key part of this response will be to reduce the dependency on fossil fuel based energy (and the associated greenhouse gas emissions) of transport infrastructure. As part of the Sustainable Built Environment National Research Centre the research team from the Curtin University Sustainability Policy Institute is developing a project focused on the strategies and solutions for the future of roads. This project initially had two components and in 2014 a third was added in collaboration with the CRC for Low Carbon Living. The three components are as follows:

1. Technologies and Processes for the Future of Roads: The first component responds to the understanding that a number of recent advances in technologies and processes need to be investigated for their sustainability and suitability for Australian road agencies. Building on the previous research findings the first stage of the project focuses on three key areas selected by SBEnc Core Members, namely:
 - a. The inclusion of onsite renewable energy generation technologies as part of road and transport infrastructure,
 - b. The potential for automated motorways to reduce traffic fuel consumption (referred to as 'Smart Roads'), and
 - c. The reduction of energy demand of route and signal lighting on main roads.

Given the rapid growth of innovation and commercialisation in these areas it is important to ensure a rigorous investigation is undertaken to inform appropriate consideration as part of current and future projects. This area of the project will deliver the following industry outcomes:

- *Key Topic Reports*: Each of the three areas of investigation will deliver an industry report of the findings.
- *Directions Report*: The findings will inform the development of a report to present a 'Directions Report for 21st Century Technologies and Processes for Road Agencies', highlighting key findings of the key topic reports.

2. Sustainability Reporting and the Future of Roads: The second component investigates sustainability assessment and reporting tools to identify opportunities to provide greater value to road and transport agencies. This area of the project will deliver the following industry outcomes:
 - *Review of Sustainability Reporting Frameworks*: The research team will undertake a review of existing sustainability assessment and reporting frameworks related to the road and transport sector to identify specific areas of value.

- *Identify Tangible Benefits from use of Sustainability Reporting:* The research team will work with partners to identify the value created by the use of aspects of sustainability assessment and reporting frameworks (namely the 'IS Tool') related to specific projects.
3. Low Carbon Tendering informed by Sustainability Performance and Reporting Tools: The third component focuses on the value sustainability performance and rating tools can play in supporting low carbon tendering, in collaboration with the CRC for Low Carbon Living and UrbanGrowth NSW. This area of the project will deliver the following industry outcomes:
- *ISCA 'Infrastructure Sustainability' Tool and Low Carbon Tendering:* The process will involve participation in the 'IS Rating Tool' training course and meetings with ISCA to identify the value that can be provided by the tool to inform low carbon aspects of project tendering, relevant to both road and transport projects (SBEnrc) and land development projects (CRC). This will include identification of low carbon related items in the 'IS Rating Tool', identification of aspects of the tool to add value to low carbon tendering, client actions related to tool rating and low carbon outcomes, and areas of potential further research.
 - *Investigate the 'Low Carbon Readiness' of Supply Chains:* The research team will investigate the level of low carbon readiness of the supply chain through an industry survey. The survey will be based on the evidence requirements related to low carbon outcomes in the 'IS Rating Tool'. Areas of investigation will include: Energy and Carbon, Materials, Procurement, Climate Change Adaptation, and Management Systems. Recommendations will be made as to the consideration of the level of low carbon readiness as part of the tender design and assessment.

This joint project represents the first collaboration between the two national research centres and stands to provide both sets of partners with strong and tangible results.

2. Current level of coverage of 'Low Carbon' items in the 'IS rating tool'

2.1 OVERVIEW OF THE 'IS RATING TOOL'

Developed and administered by the Infrastructure Sustainability Council of Australia (ISCA), the 'IS rating tool' is designed to be used to evaluate the sustainability of infrastructure across design, construction, and operational phases. The tool can be used for 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 credit 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.

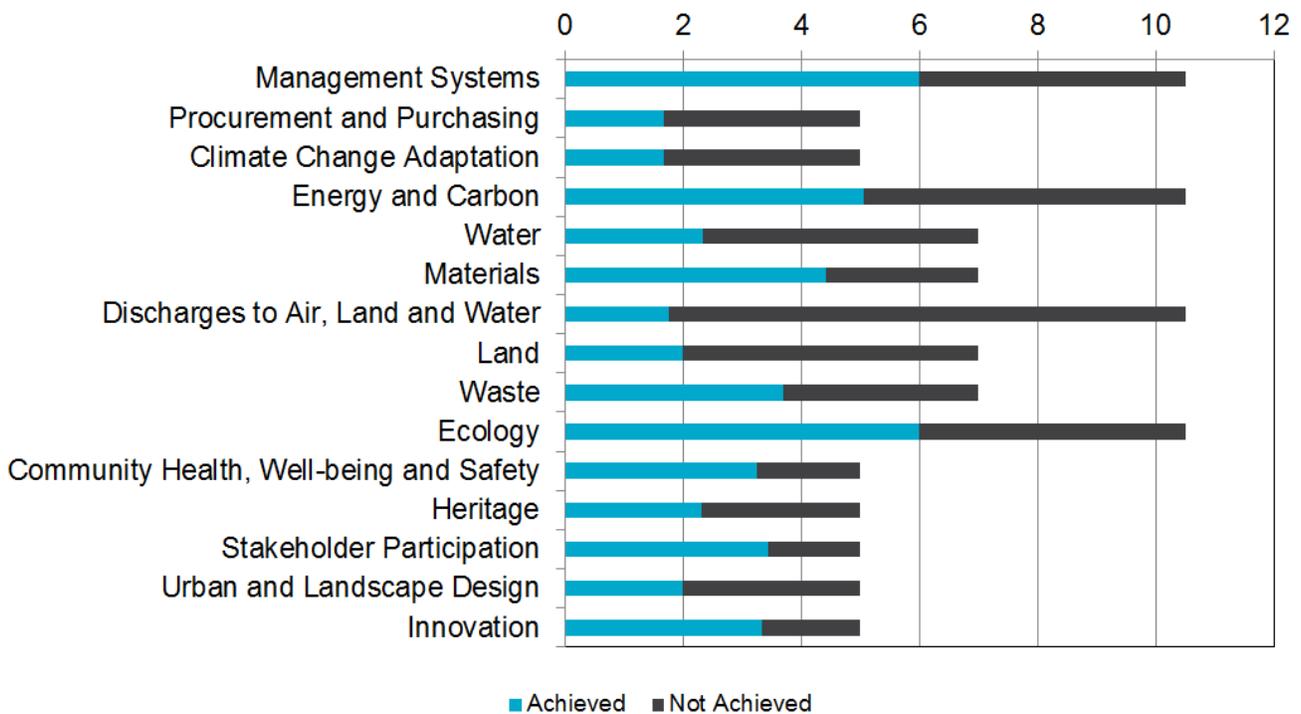
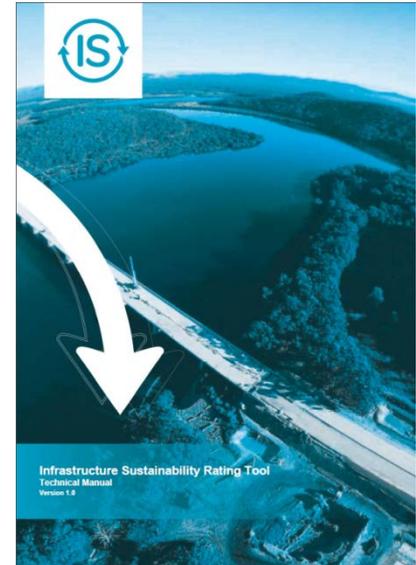


Figure 1: An example of IS rating tool outputs.

Source: ISCA (2014)

2.2 LIST OF LOW CARBON TENDERING RELATED CREDITS IN THE 'IS RATING TOOL'

The following is a list of credits that are related to 'low carbon tendering'. The table identifies those credits deemed to be 'directly' related to low carbon living and those that are 'in-directly related'.

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

Code	Credit	Evidence requirements relevance to Low Carbon Tendering
Credits Directly Related to 'Low Carbon Readiness' (27.54 Total Points Possible)		
Energy and Carbon		
Ene-1 4.67	Energy and carbon monitoring and reduction	Evidence of the modelling and monitoring of actions to reduce energy use and greenhouse gas emissions (Scope 1, 2, and 3 emissions).
Ene-2 4.67	Energy and carbon reduction opportunities	Evidence that opportunities to reduce energy use and greenhouse gas emissions are identified and implemented.
Ene-3 1.17	Renewable energy	Evidence that renewable energy opportunities have been investigated and implemented.
Procurement and Purchasing		
Pro-1 1.25	Commitment to sustainable procurement	Evidence of a commitment to sustainable procurement that includes environmental, social and economic considerations.
Pro-2 1.25	Identification of suppliers	Evidence of supplier pre-qualification questionnaires including items related to the presence and implementation of a sustainability policy.
Pro-3 1.25	Supplier evaluation and contract award	Evidence of sustainability consideration in supplier evaluation criteria and contract documentation, including provision for auditing.
Pro-4 1.25	Managing supplier performance	Evidence of the sustainability performance monitoring of suppliers, with active management of non-compliance and rewards available.
Materials		
Mat-1 6.29	Materials lifecycle impact measurement and reduction	Evidence of the modelling and monitoring of materials lifecycle impacts across infrastructure lifecycle, and demonstrated reductions.
Mat-2 0.74	Environmentally labelled products and supply chains	Evidence of the use of major material products with environmental credentials nominated or approved by ISCA.
Innovation		
Inn-1 5.00	Innovation	Evidence of contribution to broader market transformation towards sustainable development, locally, nationally and internationally.
Credits In-Directly Related to 'Low Carbon Readiness' (15.5 Total Points Possible)		
Management Systems		
Man-1 1.07	Sustainability leadership and commitment	Evidence of a commitment to sustainability through a sustainability policy and inclusion in management plans and project contracts.
Man-2 0.43	Management system accreditation	Evidence of accreditation of asset management systems to ISO14001 standard for environmental management systems.
Man-3 0.86	Risk and opportunity management	Evidence of the assessment of environmental, social, and economic risks and opportunities in a risk register with annual reviews.
Man-4	Organisational structure,	Evidence of a member of the project senior management with central

1.07	roles and responsibilities	responsibility for managing sustainability, with position description.
Man-5 0.86	Inspection and auditing	Evidence of regular environmental and sustainability inspection of on-site performance and reported auditing of the management system.
Man-6 0.86	Reporting and review	Evidence of sustainability reporting that is reported to senior management and the public and involves community participation.
Man-8 3.21	Decision-making	Evidence of decision making guidelines that evaluate options by considering environmental, social, and economic aspects.
Climate Change Adaptation		
Cli-1 2.50	Climate change risk assessment	Evidence of the assessment of climate change risks, including direct, indirect and flow on risks with system and regional implications.
Cli-2 2.50	Adaptation options	Evidence of the assessment and implementation of climate change adaptation measures for extreme, high and medium risks.

* This is default 'As Built' rating point value including all credits.

3. How the 'IS Rating Tool' can support Low Carbon Tendering

The following section outlines a number of ways that the IS rating tool can potentially support low carbon tendering. The development of the section was assisted by participation in the IS Foundation Training by ISCA, discussion with Rick Walters from the ISCA team, and feedback from the SBEncr partners.

3.1 TENDERER DOCUMENTATION AND LOW CARBON READINESS

3.1.1 Provision of industry based evidence templates

- Provides an industry supported tool to standardise documentation related to low carbon project/asset performance that can be requested as part of pre-qualification or tender documentation, such as:
 - *Materials Calculator*: Potential to align quantity surveying / bill of materials reporting to the 'Materials Calculator' to simplify comparisons and estimate the low carbon performance (along with other sustainability related aspects). The calculator also allows both a 'reference design' and an 'actual design' where tenderers can differentiate low carbon additions to the design and quantify the impact on performance in both a tonnes CO₂e measure and a generic sustainability measure, 'eco-points'. This is important as there is often a lack of time at the tender assessment stage to investigate innovative technologies or processes and undertake specific comparisons with standard designs to identify the low carbon contribution.
 - *Risk and Opportunity Management*: Potential to align risk management documentation by tenderers to requirements of IS rating. Evidence for rating includes a list of possible low carbon related risks and opportunities and suggested ways to treat these risks/opportunities.
 - *Sustainable Procurement*: Potential to align sustainable procurement documentation by tenderers to requirements of IS rating. Evidence for rating includes a procurement policy, supplier pre-qualification questionnaires, supplier contracts, supplier evaluation criteria and audit reports, documentation identifying sustainability related objectives and/or targets for suppliers, supplier sustainability performance monitoring reports showing objectives and targets and corrective actions taken to address non-compliances or poor performance, and a supplier reward program (or similar) and examples of rewards given for sustainable procurement.

3.1.2 Provision of an indication of 'Tenderer Low Carbon Readiness'

- Using selected IS rating tool evidence requirements to indicate low carbon readiness for tender comparison. This could be done on a tender by tender basis or through a

survey of the supply chain to gain an overall sense of industry readiness (as is being undertaken as part in subsequent stages of this project).

- Tenders are beginning to set a minimum 'IS rating tool' overall score to be met in the project/asset and then specify the required scores for those credits related to low carbon performance, such as those identified in Table 1. This may include direction as to the appropriate scoping out of specific credits based on project/asset makeup. Some aggregation of credit scores might also be considered at a category level (or even combination of categories to provide a 'low carbon' sub-set score).

3.1.3 Informing pre-qualification of Tenderers

- Inform pre-qualification assessment through the provision of appropriate forms of evidence documents aligned to the 'IS rating tool' related to low carbon performance, such as the presence of a sustainable procurement policy, ability to identify climate change projections, suitable skills amongst the project team (e.g., includes IS accredited professionals) etc. This sort of pre-qualification could be incorporated into current national road pre-qualification processes to streamline and standardise industry approaches and performance.

3.2 CREDITS DIRECTLY RELATED TO ‘LOW CARBON READINESS’

For each of the credits that are either directly or in-directly related to low carbon tendering the following part outlines the aim of the credit, the evidence required, the points available, and highlights the support provided for low carbon tendering.

3.2.1 Energy and Carbon

Ene-1 Energy and carbon monitoring and reduction (4.67)

Aim: To reward monitoring and minimising of energy use and GHG emissions across the infrastructure lifecycle.

Evidence: Asked to provide evidence of initiatives taken to reduce energy use and GHG emissions.

Awarding of Points: Points are awarded as follows,

- 1.56 pts for provision of a report on initiatives undertaken to reduce energy use and GHG emissions, including a summary of actual and modelled GHG emissions across the infrastructure lifecycle,
- 3.11 pts for the above evidence along with a report comparing actual and modelled GHG emissions to a reference footprint,
- 4.67 pts for the above evidence along with a method for identifying significant sources of Scope 3 emissions.

Support for Low Carbon Tendering: This credit directly relates to low carbon tendering by requesting evidence of the modelling and monitoring of actions to reduce energy use and greenhouse gas emissions (Scope 1, 2, and 3 emissions).

Indication of ‘Low Carbon Readiness’: This is a very strong indicator of low carbon readiness as if tenderers perform well against this credit, it is likely that they have process for modelling and monitoring energy use and greenhouse gas emissions, and using the outputs to inform the selection of actions to be taken.

Key Points for Low Carbon Outcomes: The IS rating tool technical manual provides additional guidance as to the interpretation of this credit with the following of particular relevance to low carbon tendering:

- It is encouraged that monitoring and reporting be undertaken in line with the NGER Reporting Guidelines.
- It is recommended that reporting includes: total energy use and greenhouse gas emissions both during design and construction, and over the full life of the infrastructure; monthly energy use and greenhouse gas emissions; and annual operational energy use and greenhouse gas emissions over the forecast life of the asset.

- Carbon offsets can be used to achieve greenhouse gas emissions reductions but it must be demonstrated that they are only used when other options have been exhausted (such as design, efficiency improvements, sourcing renewable energy, and sourcing low-emissions energy.)

Ene-2 Energy and carbon reduction opportunities (4.67)

Aim: To reward identification and implementation of opportunities to reduce energy use and GHG emissions.

Evidence: Asked to provide evidence of design reports and as built drawings demonstrating carbon reductions.

Awarding of Points: Points are awarded as follows,

- 1.56 pts for provision of a report outlining how opportunities to reduce energy use and GHG emissions from Scope 1 and 2 and land clearing have been identified and implemented.
- 3.11 pts for the above evidence along with a report demonstrating how all feasible opportunities with a financial payback period of four years or less have been implemented,
- 4.67 pts for the above evidence along with an opportunity analysis that covers Scope 3 energy use and emissions, and evidence that at least one opportunity with a financial payback period of more than four years has been implemented, and demonstration that feasible opportunities to reduce peak demand on electricity grids have been considered and implemented.

Support for Low Carbon Tendering: This credit directly relates to low carbon tendering by requesting evidence that opportunities to reduce energy use and greenhouse gas emissions are identified and implemented.

Indication of 'Low Carbon Readiness': This is a very strong indicator of low carbon readiness as if tenderers perform well against this credit, it is likely that they have process for analysing opportunities to reduce energy use and greenhouse gas emissions across the infrastructure lifecycle. Further that they have the ability to identify specific opportunities with both less than and greater than a four year payback period, including consideration of reductions to peak demand on electricity.

Key Points for Low Carbon Outcomes: The IS rating tool technical manual provides additional guidance as to the interpretation of this credit with the following of particular relevance to low carbon tendering:

- Land clearing or land use change impacts are to be included in opportunity analysis.
- The method to undertake the opportunity analysis is not specified however it must comply with ISO 50001 International Standard for Energy Management.

- The Federal Government Energy Efficiency Opportunities program is directly referenced as a supporting resource.
- Marginal abatement cost curves are recommended for achieving a 'fair comparison and prioritisation of opportunities to reduce greenhouse gas emissions.
- It is recommended that an energy and Carbon Management Plan be developed or embedded in existing management plans, to include: 'The process used to identify opportunities to reduce energy use and GHG emissions, a list of all the opportunities identified (with explanations), the process used to analyse and evaluate opportunities, commitments to implement particular opportunities during delivery and operation, and explanations of why other identified opportunities were not taken up.

Ene-3 Renewable energy (1.17)

Aim: To reward investigation of, and use of, renewable energy.

Evidence: Asked to provide evidence of design reports, management plans, and monitoring reports demonstrating the use of renewable energy.

Awarding of Points: Points are awarded as follows,

- 0.39 pts for provision of a report demonstrating that opportunities for the use of renewable energy has been fully investigated,
- 0.78 pts for the above evidence along with a report demonstrating that 20-40% of energy is from renewable sources for the infrastructure lifecycle.
- 1.17 pts for the above evidence along with a report demonstrating that greater than 40% of energy is from renewable sources for the infrastructure lifecycle.

Support for Low Carbon Tendering: This credit directly relates to low carbon tendering by requesting evidence that renewable energy opportunities have been investigated and implemented.

Indication of 'Low Carbon Readiness': This is a very strong indicator of low carbon readiness as if tenderers perform well against this credit, it is likely that they have a process for investigating the potential use of renewable energy in the project and taking action to implement specific options.

Key Points for Low Carbon Outcomes: The IS rating tool technical manual provides additional guidance as to the interpretation of this credit with the following of particular relevance to low carbon tendering:

- Options for renewable energy are considered to have been fully investigated if it includes:
 1. Establishing criteria for deciding whether to invest in a renewable energy option,
 2. Identifying renewable energy options available to the project or asset,

3. Assessing each option against the criteria to enable a decision on which options to implement,
 4. Justifying the options selected for implementation and the options not selected,
 5. Investigating at least three renewable energy technologies or fuel types.
- The purchase of standard grid electricity that is partially supplied from renewable sources does not qualify for this credit as it ‘requires specific support for new renewable energy’.
 - The use of carbon offsets for this credit is acceptable as long as it is demonstrated that the offsets are sourced from renewable energy projects.

3.2.2 Procurement and Purchasing

Pro-1: Commitment to Sustainable Procurement (1.25)

Aim: To reward commitment to sustainable procurement.

Evidence: Asked to provide a procurement policy for the project, or other high level document, to demonstrate a commitment to sustainable procurement.

Awarding of Points: Points are awarded as follows,

- 0.42 pts if it includes a commitment to require environmental aspects be considered,
- 0.84 pts if it includes consideration of environmental, social, and economic aspects, and
- 1.25 pts if it is publically available and embedded into overall sustainability objectives and/or targets.

Support for Low Carbon Project Tendering: This credit directly relates to low carbon tendering by requesting evidence of a commitment to sustainable procurement that includes environmental, social and economic considerations.

Indication of ‘Low Carbon Readiness’: This is a strong indicator of low carbon readiness as if tenderers perform well against this credit, they will potentially increase, or at least reinforce, their commitment to incorporate sustainability (and therefore to some degree low carbon tendering) into their procurement on the project i.e. through their supply chain.

Key Points for Low Carbon Outcomes: The IS rating tool technical manual provides additional guidance as to the interpretation of this credit with the following of particular relevance to low carbon tendering:

- It is deemed that senior management is commitment is essential to achieving sustainable procurement outcomes,

- Making a policy available to a client and/or other stakeholders is not sufficient to demonstrate that it has been publically stated, and it should not have to be requested to be viewed.

Pro-2: Identification of suppliers (1.25)

Aim: To reward the identification of suitable suppliers and the incorporation of sustainability criteria in the engagement process.

Evidence: Asked to provide a pre-qualification questionnaire, evidence of forward commitment procurement, and evidence of engagement with potential suppliers.

Awarding of Points: Points are awarded as follows,

- 0.42 pts for provision of a pre-qualification questionnaire including questions related to an environmental policy and its implementation,
- 0.84 pts for the above evidence and including questions related to a sustainability policy and its implementation,
- 1.25 pts for the above two items and evidence of a commitment to purchase ‘*a product or service that currently does not exist, at a specified future date, providing it can be delivered to agreed performance levels and cost.*’

Support for Low Carbon Project Tendering: This credit directly relates to low carbon tendering by requesting evidence of supplier pre-qualification questionnaires including items related to the presence and implementation of a sustainability policy.

Indication of ‘Low Carbon Readiness’: This is a strong indicator of low carbon readiness as if tenderers perform well against this credit, they will have data to compare suppliers based on the existence and implementation of both an environmental and sustainability policy (that are very likely to include items related to energy and greenhouse gas emissions). This will put them in a strong position to select products and services from suppliers with demonstrated sustainable procurement offerings.

Key Points for Low Carbon Outcomes: The IS rating tool technical manual provides additional guidance as to the interpretation of this credit with the following of particular relevance to low carbon tendering:

- The method to demonstrate implementation is noted to be flexible, and the credit is ‘assessing the quality of information requested, not the quality of responses received from suppliers’,
- It is deemed acceptable for ‘organisations to only apply these practices to suppliers of high impact procurement category goods and services’.
- Achieving Level 3 requires at least one example of forward commitment procurement, which is explained to involve ‘an agreement to purchase a product or service that

currently does not exist, at a specified future date, providing it can be delivered to agreed performance levels and costs'. The manual also states that a further requirement is that there is 'engagement with potential suppliers to explain sustainability requirements and expectations in advance'.

Pro-3: Supplier evaluation and contract award (1.25)

Aim: To reward the consideration of sustainability in supplier evaluation and contract documentation.

Evidence: Asked to provide supplier evaluation criteria, contract documentation including sustainability requirements, summary of scheduled and completed audits, and audit reports.

Awarding of Points: Points are awarded as follows,

- 0.42 pts for provision of supplier evaluation criteria,
- 0.84 pts for the above evidence and contract documentation clearly identifying sustainability requirements of the supplier,
- 1.25 pts for the above two items and a summary of scheduled and completed audits and audit reports.

Support for Low Carbon Project Tendering: This credit directly relates to low carbon tendering by requesting evidence of sustainability consideration in supplier evaluation criteria and contract documentation, including provision for auditing.

Indication of 'Low Carbon Readiness': This is a strong indicator of low carbon readiness as if tenderers perform well against this credit, they will have a process to evaluate the sustainability aspects of suppliers using qualitative means (that are very likely to include items related to energy and greenhouse gas emissions), and to embed such aspects into contract documentation.

Key Points for Low Carbon Outcomes: The IS rating tool technical manual provides additional guidance as to the interpretation of this credit with the following of particular relevance to low carbon tendering:

- This credit does not apply to the Design Rating,
- The supplier contracts need to incorporate specific sustainability objectives and/or targets,
- The evaluation of suppliers must incorporate at least one 'sustainability (non-financial) criterion and the weighting of the non-financial criteria must be greater than 20% in total'.

Pro-4: Managing supplier performance (1.25)

Aim: To reward the adoption of measures to ensure long-term implementation of sustainability initiatives for the duration of contracts.

Evidence: Asked to provide documentation identifying sustainability related objectives and/or targets for suppliers, sustainability performance monitoring reports, and a supplier reward program.

Awarding of Points: Points are awarded as follows,

- 0.42 pts for provision of documentation identifying sustainability related objectives and/or targets for suppliers,
- 0.84 pts for the above evidence and supplier sustainability performance monitoring reports showing objectives and targets and corrective actions taken to address non-compliances or poor performance,
- 1.25 pts for the above two items and a supplier reward program (or similar) and examples of rewards given.

Support for Low Carbon Project Tendering: This credit directly relates to low carbon tendering by requesting evidence of the sustainability performance monitoring of suppliers, with active management of non-compliance and rewards available.

Indication of 'Low Carbon Readiness': This is a strong indicator of low carbon readiness as if tenderers perform well against this credit, they will have a process to monitor the sustainability performance of suppliers against specific objectives, targets and/or indicators (that are very likely to include items related to energy and greenhouse gas emissions) and will have a process in place to actively manage non-compliance.

Key Points for Low Carbon Outcomes: The IS rating tool technical manual provides additional guidance as to the interpretation of this credit with the following of particular relevance to low carbon tendering:

- This credit does not apply to the Design Rating,
- For level 2, evidence from at least three example contracts is requested,
- For level 3, evidence of contract managers working with suppliers to identify emerging or new sustainability opportunities is requested,
- It is deemed acceptable for 'organisations to only apply these practices to suppliers of high impact procurement category goods and services'.

3.2.3 Materials

Mat-1 Materials lifecycle impact measurement and reduction (6.29)

Aim: To reward design and practice that reduces lifecycle environmental impacts of materials.

Evidence: Asked to provide a completed copy of the materials calculator, or other suitable Lifecycle Assessment technique.

Awarding of Points: Points are awarded as follows,

- 2.10 pts for provision of copy of the materials calculator, or equivalent, to demonstrate that monitoring and modelling of materials lifecycle impacts has been undertaken across the infrastructure lifecycle.
- 4.19 pts for provision of copy of the materials calculator, or equivalent, to demonstrate that monitoring and modelling demonstrates a reduction in material lifecycle impacts compared to a reference case.
- 6.29 pts for provision of copy of the materials calculator, or equivalent, to demonstrate that monitoring and modelling demonstrates a *significant* reduction in material lifecycle impacts compared to a reference case.

Support for Low Carbon Project Tendering: This credit directly relates to low carbon tendering by requesting evidence of the modelling and monitoring of materials lifecycle impacts across infrastructure lifecycle, and demonstrated reductions.

Indication of 'Low Carbon Readiness': This is a strong indicator of low carbon readiness as if tenderers perform well against this credit, they will have a process to model and monitor the materials lifecycle impacts across infrastructure lifecycle (that are very likely to include items related to energy and greenhouse gas emissions), and identify and implement actions to reduce them.

Key Points for Low Carbon Outcomes: The IS rating tool technical manual provides additional guidance as to the interpretation of this credit with the following of particular relevance to low carbon tendering:

- The term modelling refers to 'reasonable estimates or predictions'.
- The number of points is determined by using the ISCA Materials Calculator, however an equivalent lifecycle assessment technique may be used upon agreement with ISCA.
- The Materials Calculator output needs to be dated and signed as a true record by the 'engineer of record' or other responsible professional.
- ISCA may require proof of the claimed quantities and services used in the form of purchase requisitions and invoices for the project/asset.

Mat-2 Environmentally labelled products and supply chains (0.74)

Aim: To reward procurement of major materials that have environmental labels or are from sustainable supply chains.

Evidence: Asked to provide a report showing the use products with specified environmental credentials, along with a product certificate.

Awarding of Points: Points are awarded as follows,

- 0.25 pts for provision of a report showing the use products with one of the following environmental credentials (Ecospecifier Green Tag, Good Environmental Choice Australia, ISEAL Alliance compliant, or other ISCA approved Type 1 Environmental label), including product certificates,
- 0.49 pts for the above evidence with 10-20% of material/products by value with the above credentials, including product certificates,
- 0.74 pts for the above evidence with greater than 20% of material/products by value with the above credentials, including product certificates.

Support for Low Carbon Project Tendering: This credit directly relates to low carbon tendering by requesting evidence of the use of major material products with environmental credentials nominated or approved by ISCA.

Indication of 'Low Carbon Readiness': This is a strong indicator of low carbon readiness as if tenderers perform well against this credit, they will have experience in procuring products with recognised environmental credentials (that are very likely to include performance related to energy and greenhouse gas emissions).

Key Points for Low Carbon Outcomes: The IS rating tool technical manual provides additional guidance as to the interpretation of this credit with the following of particular relevance to low carbon tendering:

- This credit does not apply to the Design Rating,
- The points allocated are based on the proportion of products or materials that have achieved the listed environmental credentials.
- The products or materials must be used on the permanent infrastructure which makes up the project or asset.

3.2.4 Innovation

Inn-1: Innovation (5.00)

Aim: To reward pioneering initiatives in sustainable design, process or advocacy.

Evidence: Asked to provide a design or investigation report demonstrating the use of a technology or process that is a 'first' either in the state or territory, in Australia or in the world, or to demonstrate a contribution to the wider market transformation towards sustainability.

Awarding of Points: Points are awarded as follows,

- 1.67 pts for provision of a report demonstrating the use of an innovative technology or process that is 'first' in the state or territory, or substantially contributes to the broader market transformation towards sustainability in the state or territory, or an initiative that viably demonstrates sustainability outside the current scope of the rating tool.
- 3.33 pts for the provision of a report demonstrating the use of an innovative technology or process that is 'first' in Australia, or substantially contributes to the broader market transformation towards sustainability in Australia.
- 5.00 pts for the provision of a report demonstrating the use of an innovative technology or process that is 'first' in the world, or substantially contributes to the broader market transformation towards sustainability in the world.

Support for Low Carbon Project Tendering: This credit directly relates to low carbon tendering by requesting evidence of contribution to broader market transformation towards sustainable development, locally, nationally and internationally.

Indication of 'Low Carbon Readiness': This is a strong indicator of low carbon readiness where the contribution is in areas related to reducing energy use or greenhouse gas emissions reductions. If tenderers perform well against this credit, they will have demonstrated leadership in their sector in innovating solutions for low carbon outcomes.

Key Points for Low Carbon Outcomes: The IS rating tool technical manual provides additional guidance as to the interpretation of this credit with the following of particular relevance to low carbon tendering:

- The innovation must have been implemented,
- Initiatives claimed to be a 'first' must 'demonstrate that the initiative is either first, or if not, that it was in place prior to the ISCA awarding the initiative for another infrastructure project'.
- Initiatives that claim to be a contribution to the market need to demonstrate the development of a 'product to comply with an IS rating tool requirement that was previously unavailable in the market'.

3.3 CREDITS IN-DIRECTLY RELATED TO ‘LOW CARBON READINESS’

3.3.1 Management Systems

Man-1: Sustainability leadership and commitment (1.07)

Aim: To reward a commitment to sustainability.

Evidence: Asked to provide a sustainability policy or equivalent, management plans, project contracts, and evidence that sustainability policies have been made public.

Awarding of Points: Points are awarded as follows,

- 0.36 pts for provision of a sustainability policy or equivalent including commitments to mitigate negative environmental, social, and economic impacts, that are embedded into sustainability objectives and/or targets.
- 0.71 pts for provision of for the above evidence and project contracts to demonstrate such sustainability objectives and/or targets have been reflected in project contracts,
- 1.07 pts for provision of for the above evidence and evidence that sustainability commitments go beyond mitigating negative impacts to restorative actions, and these commitment are publicly stated. Further, for operation, there is a commitment to continuous improvement in sustainability performance.

Support for Low Carbon Project Tendering: This credit in-directly relates to low carbon tendering by requesting evidence of a commitment to sustainability through a sustainability policy and inclusion in management plans and project contracts.

Indication of ‘Low Carbon Readiness’: This is a medium strength indicator of low carbon readiness as if tenderers perform well against this credit, they will have incorporated commitments to mitigating negative environmental, social and economic impacts into key documents (which are very likely to include commitment related to reducing impacts from energy consumption and greenhouse gas emissions).

Key Points for Low Carbon Outcomes: The IS rating tool technical manual provides additional guidance as to the interpretation of this credit with the following of particular relevance to low carbon tendering:

- Policies must have been in place for the entire duration of the relevant Rating phases and must be endorsed by senior management,
- Every policy commitment must have at least one objective and/or target linked to it,
- Evidence of implementation of the policy is not required as this is covered in other credits.

Man-2: Management system accreditation (0.43)

Aim: To reward the adoption of accredited management systems that support sustainability.

Evidence: Asked to provide accreditation certificates.

Awarding of Points: Points are awarded as follows,

- 0.43 pts for provision of accreditation certificates to demonstrate that the project or asset management systems have accreditation to all of the following: ISO14001 (Environment), ISO9001 (Quality), and AS/NZS4801 (OH&S) or equivalent.

Support for Low Carbon Project Tendering: This credit in-directly relates to low carbon tendering by requesting evidence of accreditation of asset management systems to ISO14001 standard for environmental management systems.

Indication of 'Low Carbon Readiness': This is a medium strength indicator of low carbon readiness as if tenderers perform well against this credit, they will have a process to develop an environmental management system (which is very likely to include items related to energy and greenhouse gas emissions). Further if the tender has accreditation to ISO 14064 they will have a system for measuring, quantifying, and reducing greenhouse gas emissions.

Key Points for Low Carbon Outcomes: The IS rating tool technical manual provides additional guidance as to the interpretation of this credit with the following of particular relevance to low carbon tendering:

- Projects may be 'managed under an accredited parent or client organisation's management system but where this is the case, project management documents must state this. In these circumstances, parent organisations must have audited the project at least annually or at least once for projects which are shorter than one year in duration'.

Man-3: Risk and opportunity management (0.86)

Aim: To reward the assessment of sustainability risks and opportunities to inform project management.

Evidence: Asked to provide a risk register, minutes of risk assessment meetings and records of risk reviews.

Awarding of Points: Points are awarded as follows,

- 0.43 pts for provision of a risk register, minutes of risk assessment meetings, and records of risk reviews demonstrating environmental, social and economic risks have been assessed and updated at least annually.

- 0.86 pts for provision of a risk register, minutes of risk assessment meetings, and records of risk reviews demonstrating environmental, social and economic opportunities have been assessed and updated at least annually.

Support for Low Carbon Project Tendering: This credit in-directly relates to low carbon tendering by requesting evidence of the assessment of environmental, social, and economic risks and opportunities in a risk register with annual reviews.

Indication of 'Low Carbon Readiness': This is a medium strength indicator of low carbon readiness as if tenderers perform well against this credit, they will have a process to assess environmental, social, and economic risks and opportunities (which, if comprehensive is very likely to include items related to energy and greenhouse gas emissions).

Key Points for Low Carbon Outcomes: The IS rating tool technical manual provides additional guidance as to the interpretation of this credit with the following of particular relevance to low carbon tendering:

- The risk register must include estimates of the level of risk, suggested controls to treat or manage the risk, or justification of acceptance of the risk,
- The term 'opportunities' is intended to mean 'risks with positive consequences.
- A sustainability initiatives register would meet the requirement for opportunity assessment.

Man-4: Organisational structure, roles and responsibilities (1.07)

Aim: To reward the allocation of responsibility for sustainability appropriately.

Evidence: Asked to provide organisational chart(s), position description(s) that detail sustainability-related role(s) and responsibilities, evidence that a principle participant is an 'IS Accredited Professional'.

Awarding of Points: Points are awarded as follows,

- 0.36 pts for provision of an organisational chart(s) and position description(s) that detail sustainability-related role(s) and responsibilities,
- 0.71 pts for provision of for the above evidence and evidence that a principle participant is an 'IS Accredited Professional', along with a letter of appointment or position description, and evidence of their ongoing involvement,
- 1.07 pts for provision of for the above and evidence that an independent sustainability professional is engaged to monitor and review sustainability performance.

Support for Low Carbon Project Tendering: This credit in-directly relates to low carbon tendering by requesting evidence of a member of the project senior management with central responsibility for managing sustainability, with position description.

Indication of 'Low Carbon Readiness': This is a medium strength indicator of low carbon readiness as if tenderers perform well against this credit, they will have a member of senior management with responsibility for managing sustainability, a principle participant who is an IS Accredited Professional, and a process to engage an independent sustainability professional (all of which are very likely to have responsibilities or expertise in areas related to energy and greenhouse gas emissions).

Key Points for Low Carbon Outcomes: The IS rating tool technical manual provides additional guidance as to the interpretation of this credit with the following of particular relevance to low carbon tendering:

- ISCA considers the role with 'central responsibility' for managing sustainability if that person or persons 'have specific accountabilities in relation to decision making and management of sustainability including environmental, social and economic aspects and this should make up more than 50% of their role',
- The participation of the 'IS Accredited Professional' must be demonstrated throughout the relevant rating phases,
- The independent sustainability professional needs to have 'qualifications in an environmental, social or economic field, and at least 10 years' experience practicing in one or more of these aspects and at least five years' experience providing sustainability advice'.

Man-5: Inspection and auditing (0.86)

Aim: To reward regular inspection of on-site performance and auditing of the management system.

Evidence: Asked to provide a summary of scheduled and completed inspections and audits, a sample of internal inspection reports, audit reports, and details of auditor qualifications.

Awarding of Points: Points are awarded as follows,

- 0.43 pts for provision of a summary of scheduled and completed inspections and audits, including a sample of internal inspection reports, audit reports, and auditor qualifications, for:
 - o Internal environmental inspections of site management undertaken weekly during construction and monthly during operation,
 - o Internal environmental audits of the management system undertaken at least quarterly.
 - o External environmental audits of the management system undertaken at least annually.

- 0.86 pts for provision of a summary of scheduled and completed inspections and audits, including a sample of internal inspection reports, audit reports, and auditor qualifications, for:
 - o Internal sustainability inspections of site management undertaken weekly during construction and monthly during operation,
 - o Internal sustainability audits of the management system undertaken at least quarterly.
 - o External sustainability audits of the management system undertaken at least annually.

Support for Low Carbon Project Tendering: This credit in-directly relates to low carbon tendering by requesting evidence of regular environmental and sustainability inspection of on-site performance and reported auditing of the management system.

Indication of 'Low Carbon Readiness': This is a medium strength indicator of low carbon readiness as if tenderers perform well against this credit, they will have a process for undertaking both environmental and sustainability inspections of site management and audits of management systems (both of which are very likely to have elements related to energy and greenhouse gas emissions).

Key Points for Low Carbon Outcomes: The IS rating tool technical manual provides additional guidance as to the interpretation of this credit with the following of particular relevance to low carbon tendering:

- Internal audits must be conducted by a person who is qualified to meet the competency requirements of ISO19011:2011, or equivalent,
- External audits are to be conducted by a suitably qualified auditor who is 'not part of the project or asset management team'; however they 'may be from a parent company, a client, or a third party'.
- Sustainability inspections must use a 'checklist which covers environmental, social and economic aspects and the inspection must be documented in a report'.

Man-6: Reporting and review (0.86)

Aim: To reward regular, comprehensive and transparent sustainability reporting and review.

Evidence: Asked to provide a sustainability report, minutes of senior management review meetings, action plans, and evidence that sustainability reports are made public with minutes of community meetings.

Awarding of Points: Points are awarded as follows,

- 0.29 pts for provision of a sustainability report that includes sustainability objectives or targets with indicators and areas for improvement identified, evidence that

sustainability performance is reported to management annually, and evidence that sustainability performance is reviewed at least annually by senior management with minutes of senior management review meetings.

- 0.57 pts for provision of for the above evidence and action plans or similar that demonstrate how improvements and/or changes have been made to the management system as a result of management review.
- 0.86 pts for provision of for the above evidence and evidence that sustainability performance is reported to management quarterly, sustainability performance is reported publically at least annually, and the management review incorporates community participation.

Support for Low Carbon Project Tendering: This credit in-directly relates to low carbon tendering by requesting evidence of sustainability reporting that is reported to senior management and the public and involves community participation.

Indication of ‘Low Carbon Readiness’: This is a medium strength indicator of low carbon readiness as if tenderers perform well against this credit, they will have a process for creating a sustainability report that has objectives, targets, and indicators and identifies areas for improvements (which is very likely to have elements related to energy and greenhouse gas emissions).

Key Points for Low Carbon Outcomes: The IS rating tool technical manual provides additional guidance as to the interpretation of this credit with the following of particular relevance to low carbon tendering:

- The technical manual highlights the Global Reporting Initiative and states that ‘while reporting in accordance with GRI guidelines is not required for this credit, sustainability reports that comply with GRI guidelines (at level C or higher) are deemed acceptable’.
- The sustainability report must be specific to the project or asset, unless ‘relevant project details are reported in a separable subset’.

Man-8: Decision-making (3.21)

Aim: To reward incorporating sustainability aspects into decision making.

Evidence: Asked to provide decision-making guidelines, or equivalent, along with a design report or similar evidence of implementation of the above guidelines for one or more significant issues.

Awarding of Points: Points are awarded as follows,

- 1.07 pts for provision of evidence of a decision making process that considers options including business as usual and proven approaches taken in comparable situations, evaluates options primarily on the basis of financial aspects but considering environmental, social and economic aspects qualitatively through risk assessment,

constraint analysis or other non-scored means, and evaluates options based on the forecast useful life of infrastructure asset.

- 2.14 pts for provision of evidence as above and evidence of a decision making process that evaluates options by considering environmental, social and economic aspects through the use of multi-criteria analysis or other scored means, on the forecast useful life of the infrastructure asset.
- 3.21 pts for provision of the above evidence and evidence of a decision making process that considers options including business as usual, non-asset, technical limits, and an option that specifically aims to address sustainability aspects, evaluates options by considering environmental, social and economic aspects through incorporating their value into cost-benefit analysis or other quantified means, and evaluates options based on the forecast useful life of infrastructure asset and using social rates of return for discounting.

Support for Low Carbon Project Tendering: This credit in-directly relates to low carbon tendering by requesting evidence of decision making guidelines that evaluate options by considering environmental, social, and economic aspects.

Indication of 'Low Carbon Readiness': This is a medium strength indicator of low carbon readiness as if tenderers perform well against this credit, they will have a process for evaluating options by considering environmental, social, and economic considerations (which is very likely to have elements related to energy and greenhouse gas emissions).

Key Points for Low Carbon Outcomes: The IS rating tool technical manual provides additional guidance as to the interpretation of this credit with the following of particular relevance to low carbon tendering:

- The evaluation must consider the 'forecast useful life of the infrastructure, rather than take a narrow view of just operating or capital costs and benefits',
- For Level 2, 'the analysis must incorporate at least one sustainability (non-financial) criteria and the weighting of the non-financial criteria must be greater than 20% in total'.
- For Level 3, 'Cash flow discounting used in the analysis must use social rates of return for discounting (typically less than 5%) and provide justification. Higher rates of return tend to rapidly de-value the future and therefore do not provide proper consideration of the forecast useful life of the infrastructure asset'.

3.3.2 Climate Change Adaptation

Cli-1: Climate change risk assessment (2.50)

Aim: To reward the assessment of climate change risks.

Evidence: Asked to provide a climate change study report, a risk register or report, minutes of meetings and a model(s) of impacts from high and extreme priority climate change risks.

Awarding of Points: Points are awarded as follows,

- 0.83 pts for provision of evidence that a readily available climate change projection is identified and adopted for the asset region over the forecast useful life of the asset, and a direct climate change risks to the asset over the forecast useful life are identified and assessed.
- 1.67 pts for provision of evidence as above and evidence that a number of readily available climate change projections were identified and adopted for the asset region over the forecast useful life of the asset, the climate change risk assessment also considered indirect climate change risks to the asset, and a multi-disciplinary team participated in identifying climate change risks and issues.
- 2.50 pts for provision of the above evidence and evidence of the use of an appropriate model to obtain site specific climate change projections, or justification for why site-specific modelling was not required. Also evidence that the climate change risk assessment also considered flow on climate change risks to and from the asset that have regional or whole of infrastructure system implications, that modelling is undertaken to characterise the likely impacts of the projected climate change for all High and Extreme priority climate change risks, and that a comprehensive set of affected external stakeholders participated in identifying climate change risks and issues.

Support for Low Carbon Project Tendering: This credit in-directly relates to low carbon tendering by requesting evidence of the assessment of climate change risks, including direct, indirect and flow on risks with system and regional implications.

Indication of 'Low Carbon Readiness': This is a medium strength indicator of low carbon readiness as if tenderers perform well against this credit, they will have a process to identify climate change risks both at the regional and project site level (which are likely to include risks related to ongoing fossil energy use and greenhouse gas emissions generation) that involves a multi-stakeholder team and considers affected external stakeholders.

Key Points for Low Carbon Outcomes: The IS rating tool technical manual provides additional guidance as to the interpretation of this credit with the following of particular relevance to low carbon tendering:

- The manual refers users to 'AS/NZS ISO 31000:2009 Risk management - Principles and guidelines' and 'AS 5334-2013 Climate change adaptation for settlements and infrastructure - A risk based approach'.

Cli-2: Adaptation options (2.50)

Aim: To reward the assessment and implementation of climate change adaptation measures.

Evidence: Asked to provide a risk register or report, along with report(s) or management plans demonstrating that adaptation measures from the risk register have been implemented.

Awarding of Points: Points are awarded as follows,

- 0.83 pts for provision of evidence that adaptation options to treat all extreme and high priority climate change risks are identified and assessed for implementation, adaptation measures to treat all extreme and high priority climate change risks are implemented, and that after treatment there are no extreme priority residual climate change risks.
- 1.67 pts for provision of evidence as above and evidence that adaptation options to treat all medium priority climate change risks are identified and assessed for implementation, and adaptation measures to treat all medium priority climate change risks are implemented.
- 2.50 pts for provision of the above evidence and evidence of that the optimal scale and timing of options is addressed (which may be triggered by when a specific climate threshold is likely to be achieved), and that after treatment there are no high priority residual climate change risks.

Support for Low Carbon Project Tendering: This credit in-directly relates to low carbon tendering by requesting evidence of the assessment and implementation of climate change adaptation measures for extreme, high and medium risks.

Indication of 'Low Carbon Readiness': This is a medium strength indicator of low carbon readiness as if tenderers perform well against this credit, they will have a process to assess and implement climate change adaptation measures (which are likely to include measures related to energy use and greenhouse gas emissions).

Key Points for Low Carbon Outcomes: The IS rating tool technical manual provides additional guidance as to the interpretation of this credit with the following of particular relevance to low carbon tendering:

- For level 3 it is noted that 'Some climate change risks are best not treated immediately' as 'the impact may not occur for many decades, a satisfactory treatment may not yet be available, or greater certainty about climate change projections is required before a difficult decision can be made'.

4. Client Actions Related to 'IS Rating Tool' rating and Low Carbon Outcomes

The following section presents a number of possible ways that clients can include items in requests for tenders that align with the IS rating tool. The items were identified by the research team and informed by participation in the IS Foundation Training by ISCA and discussion with Rick Walters from the ISCA team.

4.1 GENERAL ITEMS

4.1.1 *Specification of minimum rating score*

Where the project/asset is anticipated to apply for an IS rating the client may request details on how credits will be achieved, potentially requesting details on particular ones that are of interest to the client or align with the client's objectives and requirements for sustainable procurement. This may be used to both assess the tender submission and also to influence the project development.

4.1.2 *Scoping out of Credits*

According to the IS rating tool, 'Credits can be scoped out if they are truly not applicable to the project or asset. They cannot be scoped out simply because they were outside the scope or very difficult to achieve. Note that for a certified rating, credits scoped out must be agreed with ISCA. Scoped out credits assume a weight of zero and therefore do not contribute to the overall score.' Hence as part of request for tender documentation the client can nominate credits that are assumed to be scoped out, assuming this has been agreed with ISCA. This will allow a level playing field for tenderers, especially when the request for tenders nominates a minimum IS rating tool score.

4.2 ENERGY AND CARBON

4.2.1 *Nomination of preferred energy saving options (Ene-1 and Ene-2)*

As part of this category projects are rewarded for monitoring and minimising of energy use and GHG emissions across the infrastructure lifecycle. Clients may nominate preferences for energy saving initiatives for specific projects to focus tenderers in areas of most interest to the client.

Energy saving options: A preference for plant fuel efficiency improvements.

4.2.2 *Nomination of preferred renewable energy options (Ene-3)*

As part of this category projects are rewarded for investigating, and using, renewable energy. Clients may provide a list of preferred renewable energy sources for specific projects to focus tenderers in areas of most interest to the client. Further the client may nominate specific criteria to be used by tenderers to assist selection of renewable energy options, and may nominate preferred options for carbon offsetting, should this be proposed.

Renewable energy options: A preference for onsite solar energy generation.

4.3 PROCUREMENT AND PURCHASING

4.3.1 Preferred aspects to include in sustainability procurement (Pro-1)

As part of this category projects are rewarded for having a commitment to sustainable procurement. Clients may nominate specific low carbon related aspects that it would prefer be included in such documentation.

Sustainability procurement aspects: A preference for a commitment to sourcing local materials.

4.3.2 Preferred questions to be included in pre-qualification questionnaire (Pro-2)

As part of this category projects are rewarded for the identification of suitable suppliers and the incorporation of sustainability criteria in the engagement process. As part of the evidence requirement there is a request to provide a pre-qualification questionnaire that involves sustainability criteria. Clients may nominate specific low carbon related aspects that it would prefer be included in the questionnaire.

Pre-qualification questions: A preference for a question on the ability of the supplier to provide reduced transport and logistics fuel consumption.

4.3.3 Preferred criteria to be included in supplier evaluation (Pro-3)

As part of this category there is a requirement to provide evidence of the consideration of sustainability in supplier evaluation and contract documentation. Clients may nominate specific low carbon related aspects that it would prefer be included in supplier sustainable evaluation criteria, and in supplier contracts.

Supplier evaluation criteria: A preference for criteria around the ability of the supplier to provide a product or service that reduces the construction phase greenhouse gas emissions.

4.3.4 Nomination of objectives and/or targets for suppliers (Pro-4)

As part of this category there is a requirement to provide evidence of the provision of sustainability related objectives and/or targets for suppliers. Clients may nominate specific low carbon related objectives and/or targets would prefer be included. Further, ISCA accepts such supplier objectives to be formalised only in the case of 'high impact procurement goods and services', which the client may identify in tendering documentation.

Supplier objectives and targets: A preference for a supplier objective reducing greenhouse gas emissions associated with the delivery of the product or service.

4.4 MATERIALS

4.4.1 Provision of Reference Design (Mat-1)

As part of the category projects are rewarded for design and practice that reduce lifecycle environmental impacts of materials. Clients may set the reference design to be used by all tenderers as the assumed business as usual option. This can be done by populating the ISCA Materials Calculator for the reference (or base) design. If this is done the reference design can be verified by ISCA prior to the request for tender. This will streamline and reduce risk in the tender process and assist in comparisons of tenderers on low carbon grounds and also general sustainability.

4.4.2 Preferred 'Environmental Labels' or product certification (Mat-2)

As part of this category projects are rewarded for procurement of major materials that have environmental labels or are from sustainable supply chains. The client may nominate a preference for a particular environmental label or product certification scheme that is suitable for low carbon outcomes. Note that if this is not one of the ISCA preferred ones listed in the technical manual it may be possible to gain approval from ISCA for a specific preference.

Environmental Label: A Preference for Good Environmental Choice Australia products.

4.5 INNOVATION

4.5.1 Preferred areas of innovation

As part of this category projects are rewarded for pioneering initiatives in sustainable design, process, or advocacy. Clients may nominate a preference for areas of low carbon innovation.

Innovation: Preference for innovation in the use of alternate cements.

4.6 MANAGEMENT SYSTEMS

4.6.1 Preferred inclusions in sustainability policies (Man-1)

As part of this category projects are rewarded for a commitment to sustainability, and in particular to both mitigate and contribute to restorative actions across a range of negative environmental, social, and economic impacts. Clients may nominate a preference for low carbon commitments by tenderers.

Sustainability Commitment: Preference for commitment related to contributing to the mitigation of climate change.

4.6.2 Preferred risks and opportunities to be explored (Man-3)

As part of this category projects are rewarded for the assessment of sustainability risks and opportunities to inform project management. Clients may nominate a preference for low carbon related risks and opportunities to be explored by tenderers.

Low carbon risks: Preference for consideration of threats from a greater frequency and intensity of natural disasters.

Low carbon opportunities: Preference for consideration of opportunities associated with providing local energy supply or co-generation opportunities with surrounding infrastructure.

4.6.3 Preferred responsibilities for sustainability-related roles (Man-4)

As part of this category projects are rewarded for the allocation of responsibility for sustainability appropriately. Clients may nominate a preference for low carbon items to be included in position descriptions for sustainability related roles in project teams.

Sustainability-related roles: Preference for inclusion in position description of duties related to identifying opportunities to showcase new products with low carbon performance.

4.6.4 Preferred inspection and auditing criteria (Man-5)

As part of this category projects are rewarded for regular inspection of on-site performance and auditing of the management system. Clients may nominate a preference for low carbon criteria to be included in inspections and audits.

Low carbon audits: Preference for investigation of performance of management system to achieve a reduction in plant and equipment fuel consumption onsite.

4.6.5 Preferred sustainability reporting topics (Man-6)

As part of this category projects are rewarded for regular, comprehensive, and transparent sustainability reporting and review. Clients may nominate a preference for low carbon topics to be included in sustainability reports, which may include performance against specific goals or targets set by external bodies.

Low carbon reporting: Preference for inclusion of reporting on levels of greenhouse gas emissions from project operations.

4.6.6 Preferred decision making aspects (Man-8)

As part of this category projects are rewarded for incorporating sustainability aspects into decision making. Clients may nominate a preference for low carbon aspects to be included in the decision making process and included in guidelines.

Low carbon decision making: Preference for inclusion of fuel efficiency of plant and equipment in procurement decision making processes.

4.7 CLIMATE CHANGE ADAPTATION

4.7.1 Nomination of climate change risks

As part of this category projects are rewarded for assessing climate change risks. Clients may nominate a preference for a particular climate change projection(s) to be used, along with a preferred list of potential risks and impacts to be included in the assessment.

Climate change projections: Preference for the use of climate change projections that have been endorsed by a University in Australia.

Climate change risk: Preference for the use of the new AS 5334-2013 standard as the basis of the consideration of climate change risks.

4.7.2 Nomination of climate change risks

As part of this category projects are rewarded for the assessment and implementation of climate change adaptation measures. Clients may nominate a preference for particular climate change adaptation measures to be assessed for implementation.

Climate change adaptation: Preference for the assessment and implementation of climate change adaptation options that strengthen the resilience of existing infrastructure.

5. Potential Key Further Research Areas aligned to the 'IS Rating Tool'

The following section presents a selection of potential key further research areas for discussion by the Project Steering Group. The items were identified by the research team and informed by participation in the IS Foundation Training by ISCA and discussion with Rick Walters from the ISCA team.

5.1 KNOWLEDGE SHARING

Opportunity to assist projects with 'Man-7: Knowledge Sharing' through involvement in the SBEnrc and the CRC for Low Carbon Living.

5.2 CLIMATE CHANGE PROJECTIONS AND ASSESSMENT

Opportunity to assist partners and the industry to undertake or identify appropriate climate change projections (both national and site specific) as per the requirements of 'Cli-1: Climate Change Risk Assessment'. There is the potential to then to support the identification of risk (direct and in-direct) on-site and flowing on from the project, along with identifying likely impacts and potential solutions (building on SBEnrc Project 1.3 FoR3).

5.3 LOW CARBON RISK IDENTIFICATION

Opportunity to assist partners to identify low carbon related risks and opportunities for projects to inform Man-3.

5.4 ENERGY AND CARBON

5.4.1 Scope 3 Emissions

Assist the sector through the development of an industry wide method for identifying significant sources of Scope 3 emissions (Ene-1).

5.4.2 Management Plan

Opportunity to assist partners and the industry to develop energy and carbon management plans for projects. According to the 'IS rating tool', the management plans should document:

- a. The process used to identify opportunities to reduce energy use and GHG emissions,
- b. A list of all the opportunities identified (with explanations),
- c. The process used to analyse and evaluate opportunities,
- d. Commitments to implement particular opportunities during delivery and operation and
- e. Explanations of why other identified opportunities were not taken up.

5.5 BENCHMARK INNOVATION

The innovation category rewards initiatives to address a sustainability issue in a way that is deemed to be a ‘*First*’ in the state or territory, in Australia, and Internationally, and contributes to a ‘*Market Transformation*’. Hence benchmarking of the level of innovation in low carbon and built environment may provide a consistent basis for comparison of what is considered a ‘first’.

5.6 AUSTRALIAN SUSTAINABLE PROCUREMENT GUIDELINES

The development of a guideline or handbook to inform sustainable procurement in the built environment that aligns to the ‘IS rating tool’ and draws on the strengths of similar international guidelines (like BSI 2010). This could potentially be an extension to the CRC project involving ISCA. It could also contribute to a Guideline on Infrastructure Planning that is under development by ISCA.

5.7 RENEWABLE ENERGY INVESTIGATIONS

It is suggested that SBEnc Project 1.22 consider using the structure provided in the ‘IS rating tool’ Technical Manual for investigating the use of renewable energy in projects (‘Ene-3: Use of Renewable Energy’), namely:

- Establishing criteria for deciding whether to invest in a renewable energy option,
- Identifying renewable energy options available to the project or asset,
- Assessing each option against the criteria to enable a decision on which options to implement,
- Justifying the options selected for implementation and the options not selected, and
- Investigating at least three renewable energy technologies. Possible renewable energy technologies could include large and small-scale wind power, solar photovoltaic power, solar thermal heat and power, bioenergy and biofuels (i.e. fuel switching).

5.8 INVESTIGATING THE POTENTIAL TO ‘GAME THE RATING’

Considering the use of the IS rating tool in projects is set to increase and that project contracts are increasingly likely to carry a minimum score it is recommended that an investigation be undertaken to identify the potential for gaming the rating to achieve a higher level. This will be important as tenders may seek to take steps that on paper deliver stronger rating scores however the contribution to sustainability or low carbon living is not delivered as anticipated. As a starting point for this discussion it is recommended that the following questions to be investigated related to low carbon tendering include:

- *Gaming the ‘eco-points’*: The materials calculator uses ‘eco-points’ to assess the score and the criteria for these points is not provided in the technical manual. It may be the

case that a tweaking of the materials calculator with the knowledge of the specifics of the 'eco-points' can lead to a gaming of the score.

- *Identifying credits that are higher risk:* There may be some credits that require greater investment in time and resources to achieve a particular score than others which may result in a preference from contractors to undertake the task that delivers the credit points with the minimal investment, this may or may not lead to similar sustainability, or low carbon, dividends from the project.
- *Identifying credits that are easy to score in:* As above it may be of value to investigate the credits related to low carbon living that require less investment in time and resources to achieve points with an intention to see if the resulting impact on low carbon operation is enhanced or detracted.