Infrastructure Sustainability Council of Australia

EIANZ presentation

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Improving the productivity & liveability of industry & communities through sustainability in infrastructure

A growing local to global community of practise through

ISCA

Members

ISCA Infrastructure Sustainability Council of Australia

ISCA's Mandate

Ratings

- Ratings
- Support/ Advisory
- IS Supply

Knowledge

- Training
- Professional Accreditation

Community

- Membership
- Awards
- Events
- Advocacy

Sharing of leading practices

Sustainable infrastructure through

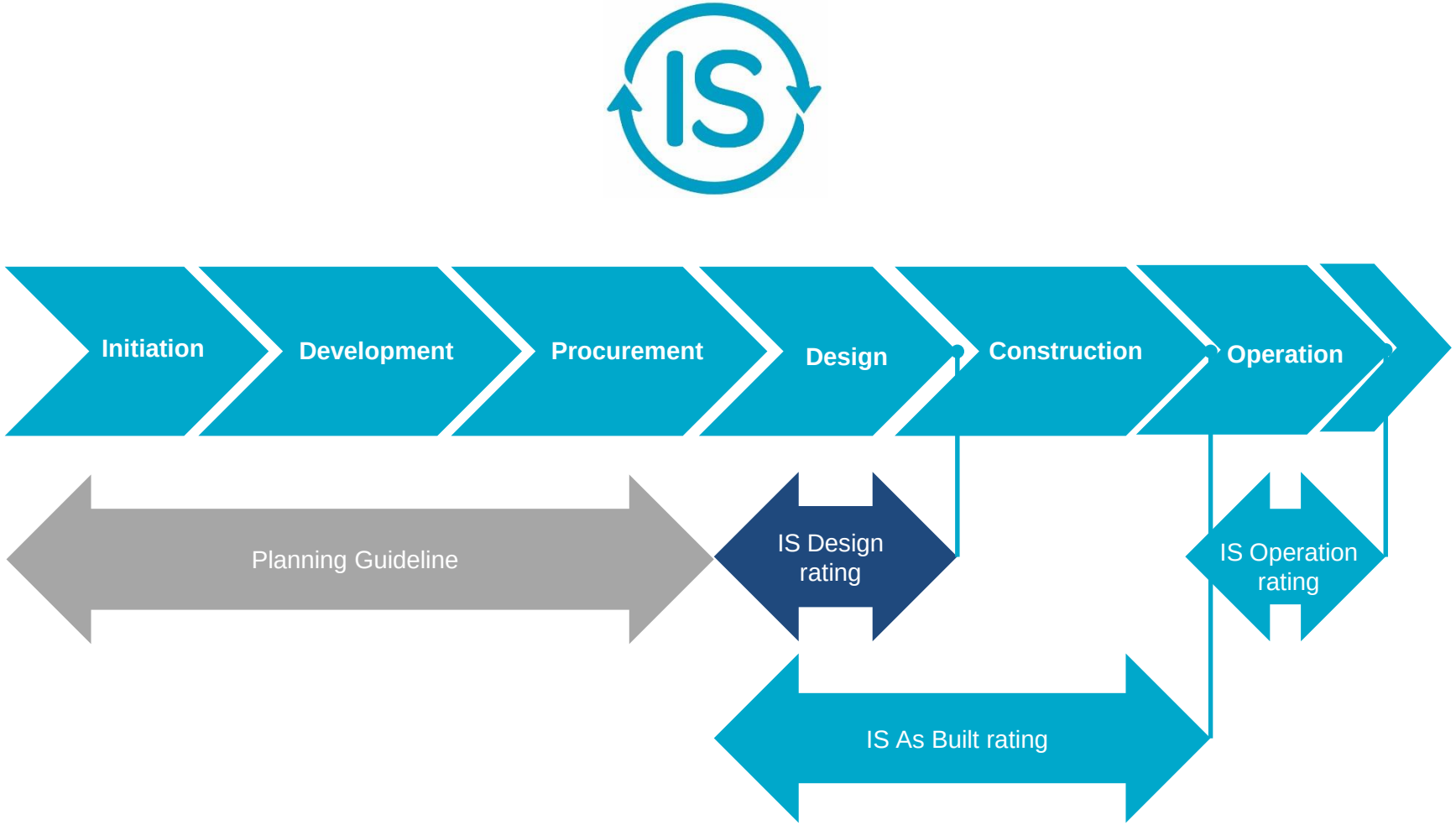
INFRASTRUCTURE SUSTAINABILITY AND THE IS SCHEME

What is Infrastructure Sustainability?

Sustainable infrastructure (Brookings Institution article 2016) is socially, economically and environmentally sustainable.

Infrastructure sustainability (IS Technical Manual) ," … infrastructure that is planned, designed, constructed and operated to optimise environmental, societal and economic outcomes over the long term".

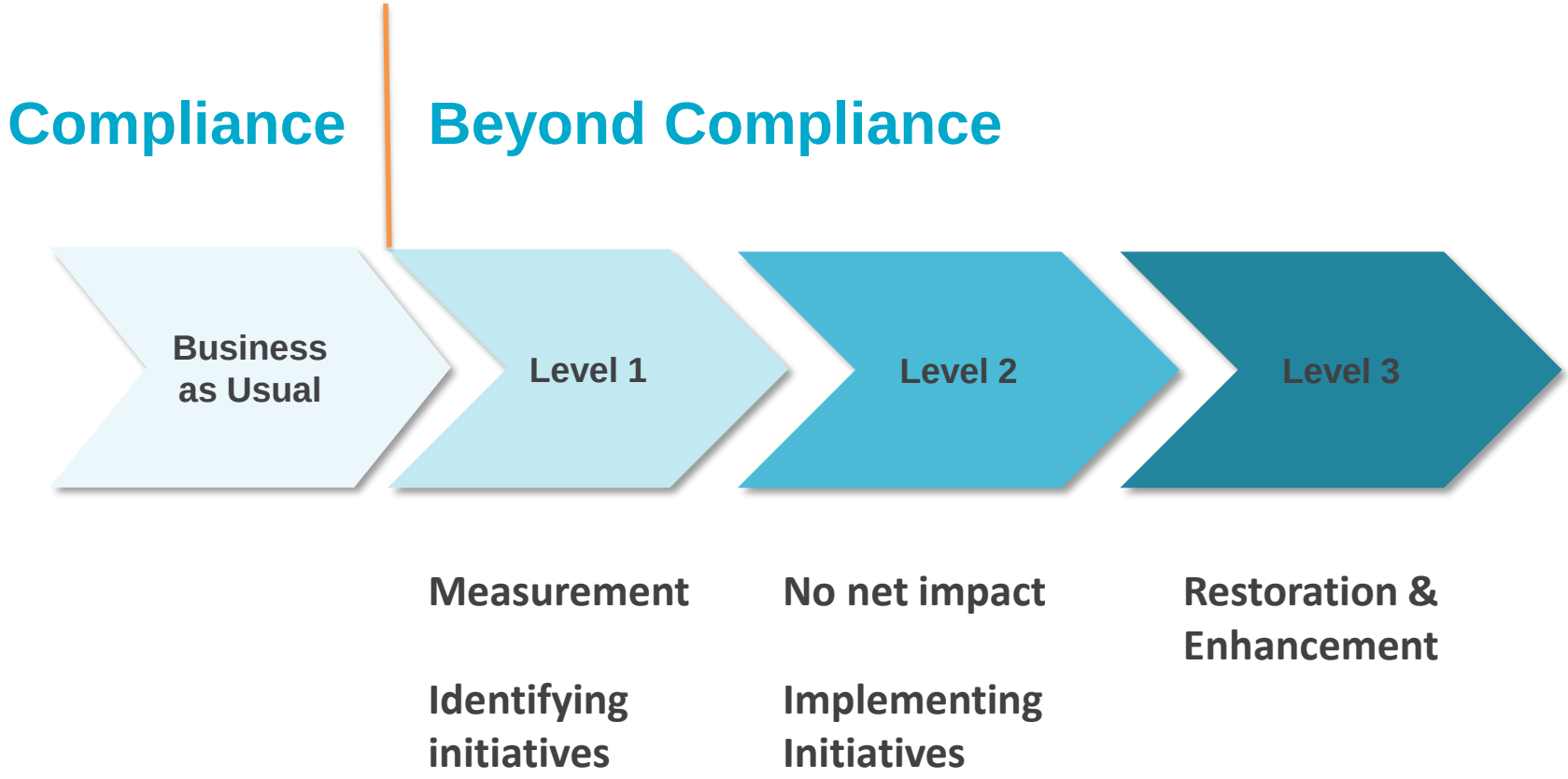
IS rating scheme



IS Themes & Categories

Themes	Categories	Gov	Ecom	Env	Soc
Management and Governance	Management Systems	●	●	●	●
	Procurement and Purchasing	●	●	●	●
	Climate Change Adaptation	●	●	●	
Using Resources	Energy and Carbon		●	●	
	Water		●	●	
	Materials		●	●	
Emissions, Pollution and Waste	Discharges to Air, Land and Water			●	
	Land			●	●
	Waste			●	
Ecology	Ecology			●	
People and Place	Community Health, Well-being and Safety		●		●
	Heritage				●
	Stakeholder Participation	●			●
	Urban and Landscape Design			●	●
Innovation	Innovation	●	●	●	●

Benchmarking



IS Rating Levels

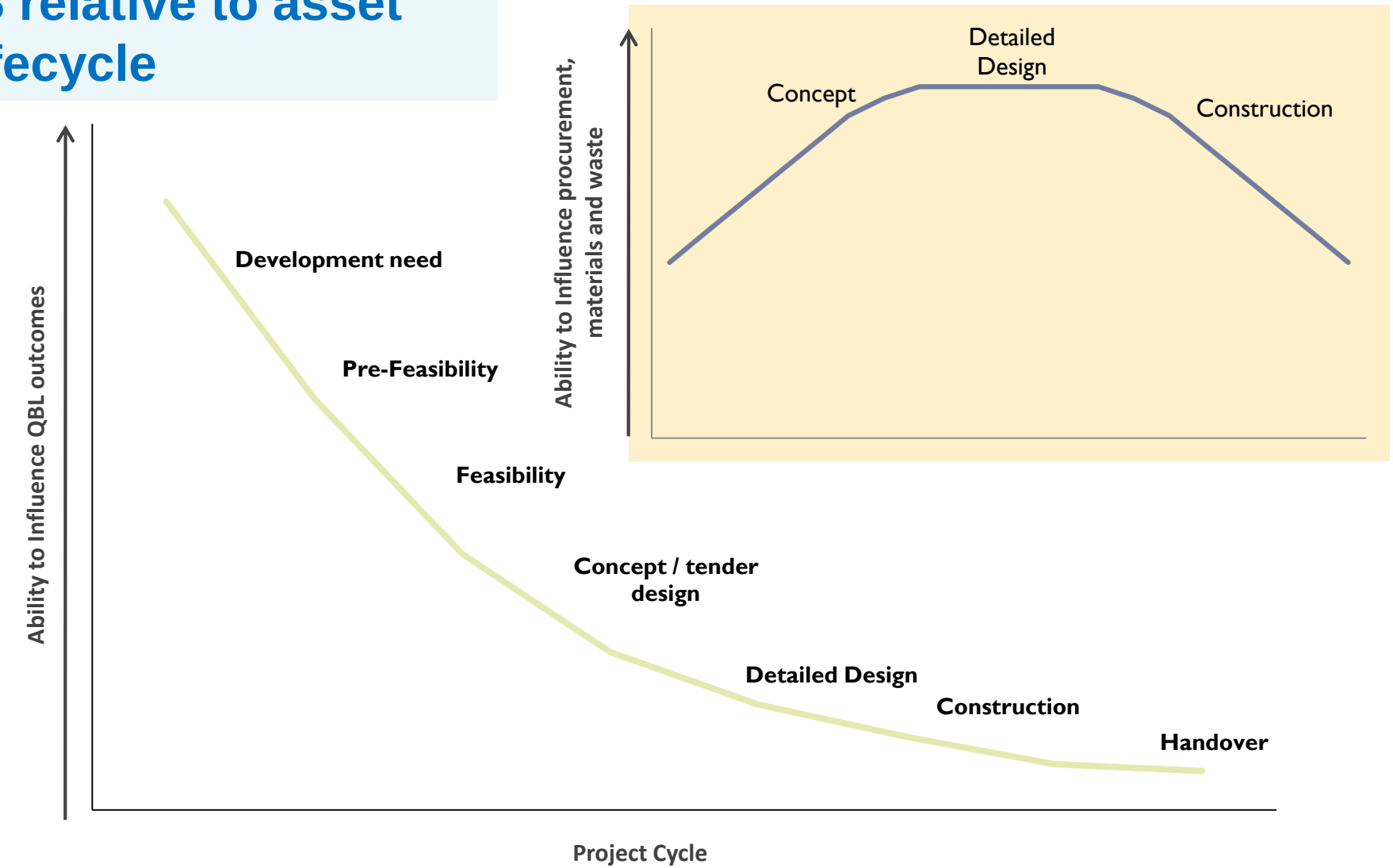
25-49 points

50-74 points

75-100 points

The total score is calculated with points from a total across 44 or 47 different topic areas “credits”

IS relative to asset lifecycle



IS rating scheme update

VERSION 2.0

Infrastructure Sustainability Council of Australia

Scheme intent and design principles

Scheme Intent

"To advance infrastructure sustainability by providing guidance for designers, builders, owners, operators and investors to make decisions that optimise the environmental, social and economic outcomes of infrastructure.

To achieve this through an evidence-based assessment and verification scheme and the sharing of leading practices."

Design Principles

1. Beyond compliance
2. Does not reward minimum standards
3. Measures outcomes first then processes and inputs
4. Globally applicable with local adaptations
5. Quantitative where possible
6. Material to achieving intent
7. Evidence-based
8. Scalable
9. Considers each phase in the infrastructure life cycle

Aligning with global sustainability frameworks

- Processes will be reviewed to bring them in alignment with international standards such as ISEAL and ISO 9001
- Aligning to GRI Aspects, UNGC Principles, Sustainable Development Goals and assist in the implementation of PRI for infrastructure investment

Content development

IS v2.0

Governance	Economic	Environment	Social
Context	Business Case	Energy & Carbon	Stakeholder engagement
Leadership	Benefits Realisation	Natural Hazards	Community legacy
Sustainable Procurement		Green Infrastructure	Heritage
Resilience		Pollution	Workforce
Innovation		Resource Recovery	Cultural Consideration
		Water	
		Materials	
		Ecology	

Major updates
New categories

New categories

Economic theme

- To reward decisions that consider the full triple bottom line
  - Valuing externalities
  - Risk and uncertainty
  - Equity
  - Financial sustainability
  - Transparency
  - Benefits realisation

New categories

Workforce sustainability

- Diversity and inclusion
- Employing minority groups
- Workplace culture
- Education and training
- Workforce planning

New categories

Resilience

- Working with 100 resilience cities to understand infrastructure's role in city resilience

Green infrastructure

- Rewarding the consideration and incorporation of green infrastructure such as WSUD, green roofs and walls, water recycling, landscaping features etc

Industry traction of the IS rating scheme

IS TRACTION

Traction Australia & New Zealand

Registrations

Projects / Assets

Capital Value

$79.1

billion

Certifications

Capital Value

$16.0

billion

Registrations by asset type

Complete		Active
16 ($13.4 billion)	**ROAD**	24 ($30.8 billion)
13 ($8.9 billion)	**RAIL**	26 ($51.2 billion)
5 ($1.2 billion)	**PORT**	0 (-)
1 (-)	**AIRPORT**	2 ($0.2 billion)
7 ($0.4 billion)	**WATER**	4 ($0.4 billion)
0 (-)	**ENERGY**	2 ($0.2 billion)
1 (-)	**OPEN SPACE**	2 (-)
2 ($8.6 billion)	**CONFIDENTIAL**	4 ($1.1 billion)

IS rating

CASE STUDIES

Whitsundays STP Upgrades

Proserpine and Cannonvale sewage treatment plants in North Queensland were upgraded to serve growing communities and meet the most stringent effluent discharge requirements to protect the Great Barrier Reef. They will also provide benefits to the local community by reducing sewage overflows, noise and odour.

$45 million Capital Value	Water Infrastructure Type	Design & As Built Rating Type
IS AS BUILT V1 EXCELLENT Rating	D&C Delivery Type	Queensland Region

Asset Performance

Efficiency Gains

- >$1 million saved through implementation of sustainability initiatives
- 400% return on investment
- Total saved in construction = $1.1M
- Total annual operational savings = $182,000

Industry transformation

- World first use of innovative nitrogen effluent removal technology (Parallel Nitrification and De Nitrification)
- First certified IS rating

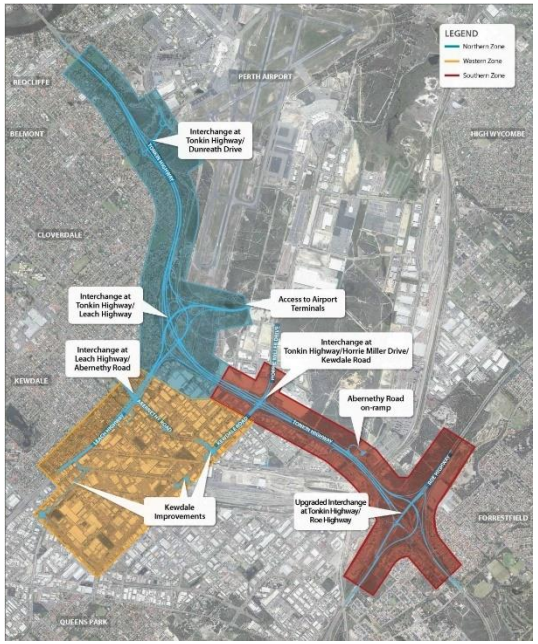
Sustainability Outcomes

- 305 MWh electricity saved over operational life – thus a 14% reduction equating to $75,000 saving/year
- Ecological value enhanced through >5,000 m^2 of regenerated native habitat and 1,000 m^2 of wetland
- Carbon saved over infrastructure lifecycle (tCO2e): 20,510
- Water saved over infrastructure lifecycle (ML): 2,966
- Materials lifecycle impact reduction (Ecopoints): 5,578
- Materials lifecycle impact reduction (tCO2e): 3,149

Gateway WA

Major upgrade of the road network surrounding Perth Airport, and the freight and industrial hubs of Kewdale and Forrestfield.

5 interchanges. 165 lane km. 12 bridges. 3 bath structures.



$1 billion Capital Value	Road Infrastructure Type	Design & As Built Rating Type
IS AS BUILT V1 EXCELLENT Rating	D&C Delivery Type	Western Australia Region

Asset Performance

Efficiency Gains

- $4 million invested in sustainability
- $8 million saved from sustainability investment
- 32,000m^3 diverted from landfill costing $1.3 million and saving $6 million

Risk Management

- Local Aboriginal committee engaged to come up with how the urban design could enhance the heritage for the area.

Industry transformation

- The largest infrastructure project ever undertaken by Main Roads Western Australia.
- LED street lights – first in WA
- Roe/Berkshire interchange design – first in Australia

Sustainability Outcomes

- Reduced usage high-energy virgin materials
- 10% reduction in asphalt
- Approximately $6 million and 2,300 tonnes of CO_2e saved.
- Preserved virgin resources and reduced landfill.
- Reduced import material by approximately 21%

Auckland Airport

Auckland Airport is the key gateway into New Zealand. It handles 14.5 million passengers each year and includes international and domestic terminals.

-	Airport	Operation
Capital Value	Infrastructure Type	Rating Type
IS OPERATION PILOT COMMENDED	Operation	New Zealand
Rating	Delivery Type	Region

Asset Performance

Risk Management

- Identified key risk areas: Ecology, Community Participation, Waste

Governance

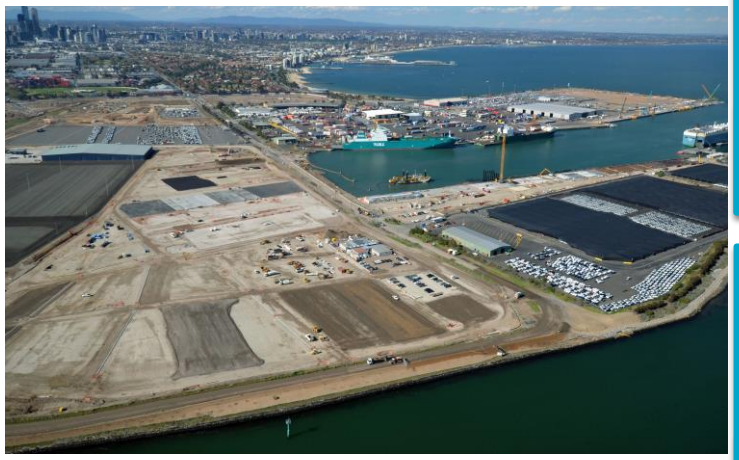
- Asset owner benchmarking current airport assets to establish objectives and targets for on-going maintenance and operations
- Informing the sustainability strategy and road map for new 10 year airport master plan

Industry transformation

- Sustainability strategy and road map for 10 year master plan

Webb Dock Automotive Terminal

Webb Dock Automotive Terminal is located in the Port of Melbourne and facilitates the Import, Export and storage of automotive vehicles, heavy machinery & other miscellaneous items. The facility will accommodate over 6000 vehicles in phase 1, rising to over 12000 for phase 2.



$63 million Capital Value	Port Infrastructure Type	Design & As Built Rating Type
IS AS BUILT V1 EXCELLENT Rating	D&C Delivery Type	Victoria Region

Asset Performance

Efficiency Gains

- Construction site office & amenities were powered using a Remote Area Power System [RAPS] for the construction phase of the project. The pioneering system utilises batteries, solar panels and a biodiesel generator coordinated by a central automated system. Generators were run ~8 hrs a day (BAU 24 hrs) reducing the project's costs and greenhouse gas emission profile.
- LED used for majority of building & facility lighting saving over 40% in energy consumption and reducing maintenance costs.

Risk Management

- LED lighting improved picture quality in CCTV security system.

Governance

- Owner & contractor commitments regarding sustainability were built into the project contract and publically stated online
- Early engagement with suppliers and subcontractors.

Industry transformation

- Learnings and sustainability initiatives were shared within and outside of the project

Recognising business performance

ISUPPLY

ISupply

Step 1

Join

Become an ISCA member

Step 2

Training

At least 1 employee is trained

Step 3

Submit

Submit a claim for a service or product

ISCA Infrastructure Sustainability Council of Australia

ISCA Supplier Directory

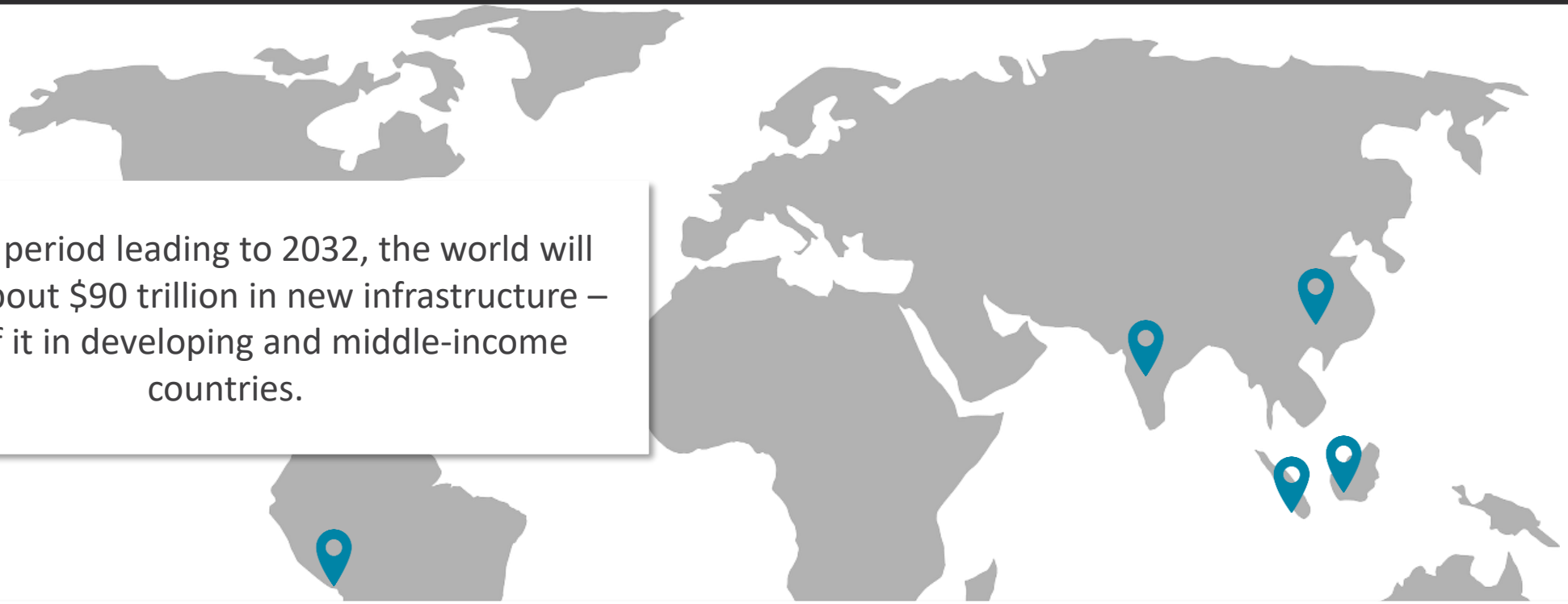
Directory includes:

- Supplier profile
- Products and services included in ISCA tools
- Associated sustainability benefits
- Links to:
  - Evidence
  - IS supplier contact

IS International rating tool v1.0 (Pilot)

IS INTERNATIONAL

The need for a global infrastructure sustainability rating scheme



Over the period leading to 2032, the world will require about $90 trillion in new infrastructure – most of it in developing and middle-income countries.

Provides the nexus between ‘infrastructure sustainability and ‘sustainable infrastructure’ and can be utilised by sovereigns, donors, multi-laterals, institutional investors, funding agencies and project delivery partners to measure, and achieve, long term improved asset performance across the quadruple bottom line

Development Process

IS International Features

An adjustment based on IS v1.2 Design and As Built

Robust and maintains the IS rating scheme **core principles** (third party assured, beyond BAU, evidence based etc.)

Aligns with the **UN Sustainable Development Goals**

Flexible, using materiality principals, and can be applied to any region or Country, and can easily be adapted for the local context

Support **local capability in infrastructure sustainability** and provide the support/training to facilitate best for asset outcomes

Easy to use and **cost effective** while still demonstrating leadership in infrastructure sustainability

SUMMARY & CLOSE

Sustainability is good business practice

- Get connected in the industry – Join ISUPPLY
  - Contact us info@isca.org.au
- Register for a rating
- Become and IS accredited professional

Thank you

QUESTIONS?