

SASBE 2012

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CIB INTERNATIONAL CONFERENCE ON

Smart and Sustainable Built Environments

Evaluation of Green Public Road Procurement in Australia: Current Practices and Gaps to Fill

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The Problem

GHG reduction target in Australia: 20 by 20

Public road procurement

- Driving initiatives for change
- Impact on emissions from construction, materials, and operations

Green procurement

- GHG emissions minimization
- Project delivery lifecycle

The Study Process Review

5 states, 96% of total in AU

- Queensland
- New South Wales
- Victoria
- Western Australia
- South Australia

12 Interviews

Document review

The Framework

Project delivery lifecycle



Findings

Strategic Planning Phase

Project delivery lifecycle		PROCUREMENT PROCESS	Queensland	New South Wales	Victoria	Western Australia	South Australia	
STRATEGIC PLANNING PHASE	Environmental policies and strategies	Federal/state policies	√		√	√	√	
		Federal/state regulations						
		Process standards/guidelines					√	
		Road authority environmental/ sustainability policy	√	√	√	√	√	
		Road authority environmental/ sustainability strategy	√	√	√	√		
		Environmental management system (EMS)		√	√	√	√	
		GHG reduction action plan		√	√	√		
	Industry information and prequalification		GHG reduction guidelines for designers			√	√	√
			GHG reduction guidelines for contractors			√	√	√
			Designer prequalification rel. to GHG					
		Contractor prequalification rel. to GHG				√		

Findings

Project Development Phase

Project delivery lifecycle		PROCUREMENT PROCESS	Queensland	New South Wales	Victoria	Western Australia	South Australia
PROJECT DEVELOPMENT PHASE	Project options, risks and opportunities assessment	Environmental risk or sustainability assessment rel. to GHG (internal or external)		√	√	√	
		Carbon/GHG calculation (road construction)		√	√	√	√
		Carbon/GHG calculation (road operation)		√	√		√
		Mass-haul optimisation plan					√
		Alignment/scope revision based on GHG					√ *
		Material revision based on GHG					
		Delivery method selection based on GHG					
	Tender and contract requirements and incentives	GHG reduction plan required					√
		EMS required		√		√	√
		Mass-haul optimisation required/encouraged					√
		Carbon neutrality required					
		Environmental audit required		√	√		√
		Lifecycle analysis required					
		Shared costs of emission reduction or offset				√	
	Non-cost criteria for contractor selection	Shared rewards for superior performance				√	
		GHG/carbon calculations				√	
		GHG reduction plan				√	
		Lifecycle analysis					
		Green materials				√	
		Biofuels					
Mass-haul optimisation plan							
Sustainability rating				√			

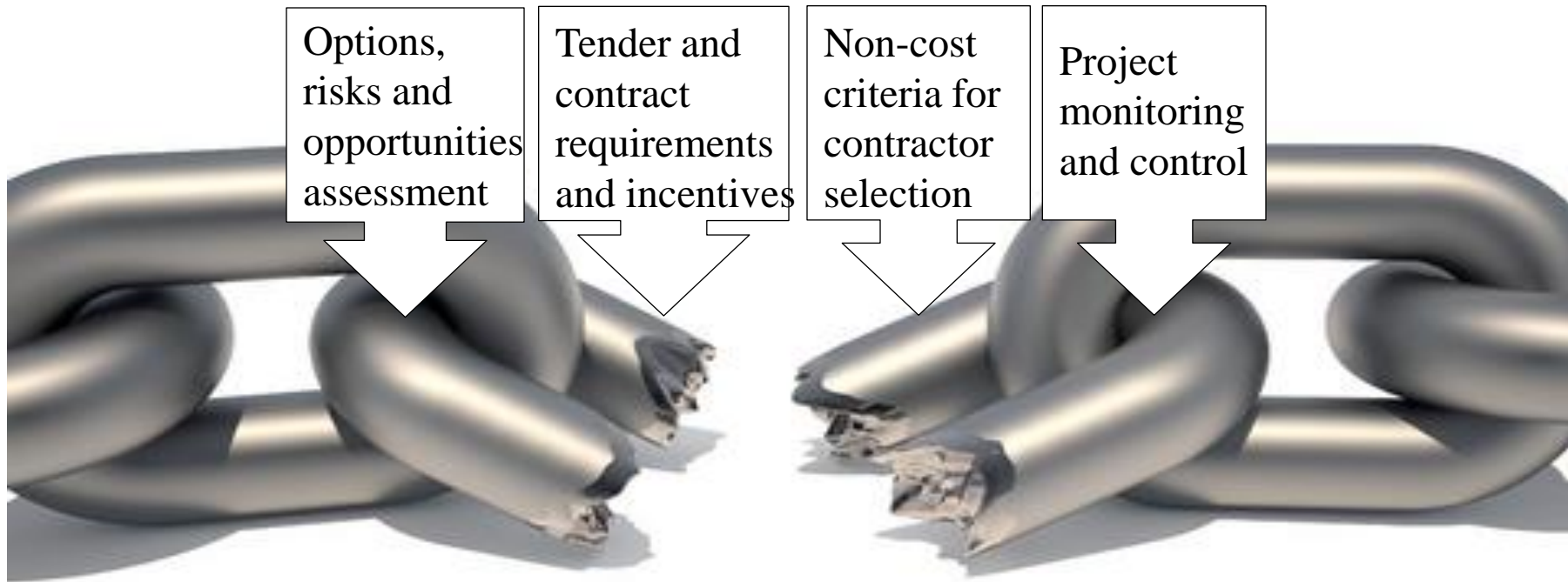
Findings

Project Implementation Phase

Project delivery lifecycle		PROCUREMENT PROCESS	Queensland	New South Wales	Victoria	Western Australia	South Australia
PROJECT IMPLEMENTATION PHASE	Project monitoring and control	Environmental audits			√	√	
		Monitoring of fuel consumption			√		
		GHG reporting			√		
		Database of carbon calculations			√		
		Project environmental report			√	√	
		Road operations related GHG reporting				√	
	Feedback and renewal	Project reviews incl. GHG					
		Best practice case studies for industry			√	√	
		Public cross-project environmental report (inc. GHG)	√	√	√		√
		GHG reduction strategy review					
	Preferred contractor status based on GHG performance						

Findings

Process Gaps



Conclusions

Further R&D on:

1. **Standardised procedures and guidelines**
2. **Linking GHG assessment and reduction with the project overall risk management framework**
3. **Non-financial costs (i.e., costs to the environment) as a project planning and contractor selection device**
4. **Incentives for GHG reduction in design and construction contracts**
5. **GHG emissions baseline setting, monitoring, and reviewing**
6. **Incorporating mass-haul optimisation in green procurement as an actively managed area by the client**

THANK YOU

QUESTIONS...

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