

Breakout Session 2

Question 5



Question 5

- When evaluating materials, technologies and practices that are intended to be more sustainable in terms of the specifications/regulations, and contractor incentives:
 - What are the pros and cons of each?
 - What is the role of LCA in each?
 - What are the motivators for industry (how, who, when, incentivizing, innovation)?
 - If using incentives instead of prescriptive mandates, specifications, and regulations:
 - What are some ideas for how to set that up and what would be the role of LCA?
 - What is needed in LCA to make that work?
- How would that work in a Design/bid/build (low-bid) delivery system versus a Design/build or Design/build/maintain delivery system?

Group 1

- Facilitator
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- Members:
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 - G. Elkins
 - H. Larsen
 - R. Henkensiefken
 - M. Nobakht
 - A. Farina
 - X. Xu
 - S. Pincelt

Q5: Pros and cons of regulations when evaluating materials, technologies and practices that are intended to be more sustainable

Pros	Cons
<ul style="list-style-type: none">• Easy to implement	<ul style="list-style-type: none">• Some regulations may favor larger companies
<ul style="list-style-type: none">• Easy to apply quality assurance	<ul style="list-style-type: none">• Unintended consequences (problem shifting), e.g. anti-strip or sub-optimization of other categories
<ul style="list-style-type: none">• Establish clear thresholds	<ul style="list-style-type: none">• May not be performance-based
<ul style="list-style-type: none">• Uniformity and consistency in results	<ul style="list-style-type: none">• Limit innovations
<ul style="list-style-type: none">• Right thing to do	<ul style="list-style-type: none">• Potential of contradictory regulation, e.g. water & low carbon fuel
	<ul style="list-style-type: none">• Scare tactic

Q5b: The role of LCA in the regulations and contractor incentives

Regulations	Incentives
<ul style="list-style-type: none">• Provide guidelines to enhance sustainability	<ul style="list-style-type: none">• Allow contractors to present their best performance
<ul style="list-style-type: none">• Quantify the impacts	<ul style="list-style-type: none">• Increase competitiveness
<ul style="list-style-type: none">• Identify the hot spots	<ul style="list-style-type: none">• Potential for better outcome and cost-saving
<ul style="list-style-type: none">• Provide measuring metrics	<ul style="list-style-type: none">• Long-term benefits
<ul style="list-style-type: none">• Create a demand for environmental information	
<ul style="list-style-type: none">• Create better environmental performance	
<ul style="list-style-type: none">• Increase environmental awareness	

Q5c: The motivators for industry (how, who, when, incentivizing, innovation)

- Threat of regulation
- Public relation (industry image)
- Competitiveness edge
- Potential economic advantage

Q5d: If using incentives instead of prescriptive mandates, specifications, and regulation:

- i. What are some ideas for how to set that up and what would be the role of LCA?
- ii. What is needed in LCA to make that work?
- iii. How would that work in a DBB delivery system vs. a DB/DBM delivery system?

- Monetize environmental impacts
- Bid preference based on environmental priorities
- Development of LCA contract-friendly
- Having LCA set up in the DBB allows introducing the maintenance phase in LCA, and allows the contractors to foresee the future impacts on pavements

Group 2

- Facilitators
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 - A. Saboori
- Members:
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 - O. Hasan
 - A. Brown
 - T. Wilson
 - E. Coleri
 - F. Farshidi
 - J. Mack
 - M. Lanotte
 - R. Geisen

Q5

- When evaluating materials, technologies and practices that are intended to be more sustainable in terms of the specifications/regulations, and contractor incentives, there are some conditions need to be evaluated:
 - It depends on the status of the technology (If the technology is largely available/implementable) – i.e. WMA technology 20 years ago and now
 - Major question in determining which option is better depends on who is going to carry the risk
 - Alternatives should be made available to the contractors if incentive approach is chosen
 - The answer to this question depends on the size of the contractor to take on new technologies (industry is carrying a risk by developing and investing on new technology and business failures can happen)

Q5

Specification		Contractor Incentive	
Pros	Cons	Pros	Cons
Meet the target	Agency risk	Motivates innovation	Ensuring the future performance of the technology and quality of the final product
Introducing new technologies	Suppress innovation		
Easier selection bw/ bids and contractor			

Q5

- Role of LCA:
 - Allows baseline comparison with a condition that agency needs to provide baseline data analysis
 - Evaluates agencies ability to assess sustainability performance
 - Allows prioritizing needs (reducing congestion, construction emissions or thinking long terms with use-phase considerations)
 - Impact of each phase can be captured (material production, construction, or use phase) so agency can interpret the outcome of LCA relative to their objectives
- Motivators for industry
 - Industry are already taking the lead
 - Cost saving
 - Market share gain
 - Can be part of their public relation (PR) efforts

Q5

- What needs to be done for incentive method:
 - Give breathing room to contractors and be more flexible with them when they are implementing new technologies
 - Staged implementation (monitor performance, incentivize for a period of time and then mandate)
 - Pilot studies to trigger innovation
 - Analogy to performance based specifications: smoothness and density specifications work well and similar concepts can be used to try and implement alternative technologies with contractor incentive method
- What needs to be done in LCA:
 - LCA should answer uncertainty considerations especially for the use-phase models and allow agencies to make informed decisions for short- long-term planning and risk planning

Q5

- How would that work in a design/bid/build (low-bid) delivery system versus a Design/build or Design/build/maintain delivery system?
 - Low-bid: limited chance of implementation and can only allow incremental changes
 - If we can build bonuses in to the contract (like a separate incentive item in contract), then low-bid can also work
 - Design/build/maintain can be the more appropriate (example of agencies owns toll roads)