Closing

&

recommendations
2012 Study Tour Key Topics

1. Long life pavements
   - Experience, design systems, use, durability & performance

2. High performance asphalt & binders
   - High modulus asphalt (EME, HiMA), modifiers

3. Sustainability
   - RAP/WMA, bitumen substitutes, carbon calculators & energy analysis
     climate change impacts, societal concerns

4. Health & Safety
   - Construction of road works, health considerations for bitumen and asphalt products

5. Procurement Systems
   - Proprietary products (Avis Technique, HAPAS, etc.), “green” procurement, REACH, responsible sourcing, PPP and contract models
2012 Study Tour
5 countries 19 days
Long life pavements

1. Australia would benefit from consideration of **endurance strain levels** in the design of flexible pavements and this should be **further investigated** (as also recommended after the 2010 AAPA study tour and some initiatives taken).

2. Any local development should **not rely on a significant amount of information** from Europe and the UK, as it is unlikely that the ELLPAG group will soon produce specific LLP design procedures. However, progress in Europe and the UK should be monitored, with a specific **focus on work being done at the TRL and Delft University**.

3. The best source of information to **calibrate local models** would be the **performance of existing pavements**, especially ones which had been **rehabilitated** (for which information on past traffic, pavement composition and failure mechanisms should be available).
2012 Study Tour - Recommendations

High performance asphalt & binders

1. Investigate the use in Australia of EME, being a dense graded with a high structural stiffness, superior permanent deformation resistance through the use of hard bitumens with a penetration value between 10 and 25, and good fatigue resistance through high binder contents.

2. Review the potential in Australia for an asphalt mix based upon high density packing of aggregates, using a binder with low content but modified with SBS, with the aggregate gradings altered to achieve a double gap grading.
Sustainability

1. Sustainable development offers opportunities and is not a threat.

2. Higher percentages of RAP should be promoted.

3. Waste products added to asphalt should not reduce quality or the ability to recycle.

4. Durability should be sought through higher quality production and paving.
Roadworks are a place of work, and the people there deserve just as much respect as you would expect at work. On busy roads, day and night, in all weathers, they risk their lives improving our highways. Keeping them open. When you see roadworks, reduce your speed, drive with more care and keep them safe.
Health & Safety

1. Review the Australian risk management guides on the use of bitumen

2. Communicate the hazard and exposure methodology in the safe use of bitumen

3. Promote the reduction of temperature in the use of bituminous products

4. Promote the use of lane shifting and contra-flow to improve quality, increase safety and reduce costs.
Rewards & Awards for Innovation in road products
Procurement Systems

1. Promote, and seek methods of establishing, a **national system to support innovation** in cost reducing road products and systems and their commercialization.

2. Support and motivate for the transfer to **functional specifications** and contracts.

3. Evaluate the Australian **greenhouse gas calculators in comparison to the European tools** to assess their value in comparing industry products and systems.
5th Eurobitume & Eurasphalt Congress

1. Treat the requirement for more sustainable practices and products as an opportunity and not a threat.

2. Improve sustainability through more durable pavements.

3. Improve sustainability by using cost effective products with lower CO\textsubscript{2} and energy footprints.

4. Preserve non-renewable natural materials by maximising their reuse and recycling.

5. Do not use asphalt or binders as a “dump” for undesirable materials.
Thanks for being here, read or scan the report, consider the recommendations!

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