2011 STUDY TOUR

Bitumen Imports

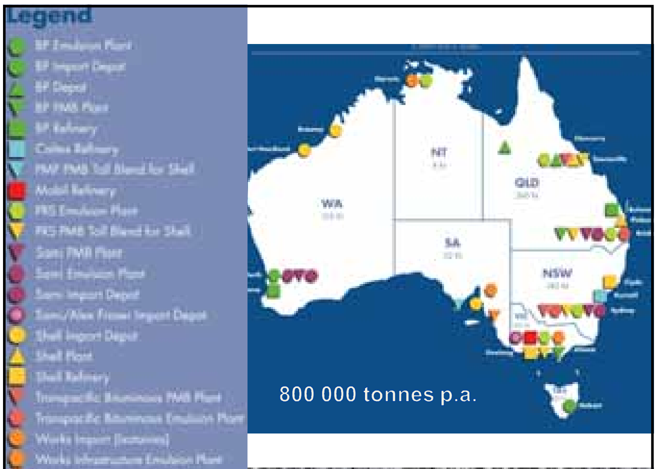
- an Australian perspective

Presentation

- HISTORY
- CHANGE DRIVERS
  - Negative
  - Positive
- PROCESS
- CURRENT POSITION
- OBSERVATIONS

HISTORY

- Refineries in Australia were at major state centres (Shell, BP, Mobil, Caltex)
- Bitumen and lubes produced from sour (high sulphur) crudes
- Bitumen cutback with diesel or petrol and shipped to regional stripping refineries
- Rail used for long haulage to inland regional distribution points
- PMB & some emulsion facilities linked to major & regional centres



CHANGE DRIVERS – negatives (1)

- Small size of refineries (in world terms) – lack of capex on upgrades
  (economic size 400 000 bpd Australian 80 to 100 000 bpd – limited upgrade potential)
- Bitumen high sulphur crudes (sour) slowed fuels production, difficulty of excess sulphur
- Growing demand for fuels – different sweet crudes – higher output for fuel production
- Indigenous sweet crudes available, and lower cost – quicker supply

CHANGE DRIVERS – negatives (2)

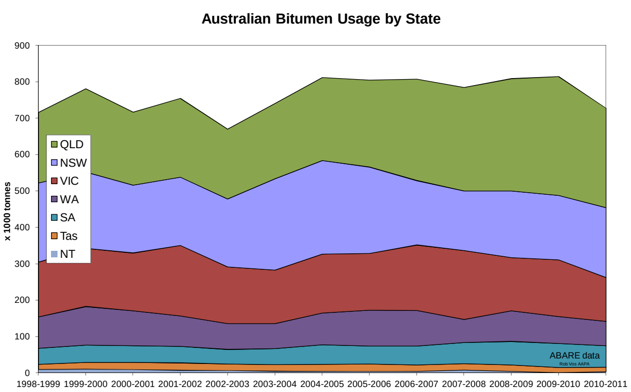
- Diesel sulphur content 0.05% motivates use of light crudes – diesel stripping from bitumen not possible at this level of sulphur
- Sulphur market at over capacity – having to pay to dispose of it (explosives, fertiliser)
- Closing of lube plants – sour crudes & efficiencies of scale
- Refineries stopped bitumen production – fuels only
- Smaller refineries closed

It helps to have high level support / need!!!!!!!!!

We need a lot more bitumen to develop South East Queensland – CAN YOU SUPPLY?

Oh, oh!! not without imports!!

We will if no one else will!!



CHANGE DRIVERS - Positives

- Growing bitumen production capacity at a number of Asian refineries
- Spike in bitumen demand in regional areas
- Available facilities and some experience from regional stripping refinery operations
- Smaller sized "value adding" suppliers with import knowledge
- Acceptance on import route by bitumen users
- Preparedness by larger contractors to motivate for imports on projects (with risk)
- Ability to buy Australian Grade Bitumen from international refineries (>6000 tonnes)

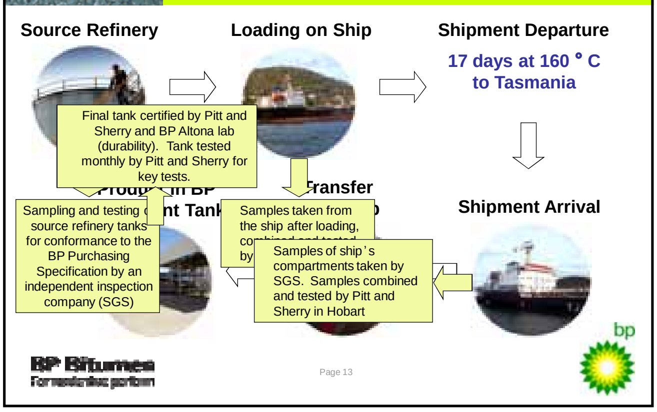
PROCESS (1)

- Smaller sized suppliers established import capability and used the binders in their branded products
- Oil companies commenced import facilities matched to blowing columns & PMB gear
- Wharf access with heating pipelines (elec., steam, oil) to storage important constraints

PROCESS (2)

- Port authorities can impose challenging requirements on hot products.
- Users taken along with the QC and evaluation process
- Secondary value adders kept informed on source / or import their own

Import Quality/Testing Plan



CURRENT POSITION (1)

- Most bitumen suppliers have indicated that they will be importing 100% of their bitumen by 2013 (refinery manufacturing capability will remain but not be used)
- Imported bitumen is accepted and tested for compliance to AS-2008, QC attention required
- Import facilities being established at most state centres and in some regional sites
- Coastal delivery of imported bitumen routine 6 Kt to 13 Kt with potential to 25 Kt

CURRENT POSITION (2)

- Construction companies considering or already direct importers of bitumen.
- Integrated road construction companies include importing & value addition
- Distribution coastal or by road, rail priced out of market

OBSERVATIONS

- Regional major weather events impact on bitumen supply
- Bitumen rise / fall more frequent and more international market related
- Greater flexibility in capex investments linked to capacity matching demand
- General acceptance of changed binder sourcing
- Strategic role of bitumen supply has changed – more exposed to external market and more readily available from multiple sources.