The emergence of a new Australian oil shale industry

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17 October 2011
Australia’s early shale oil industry: 1849 – 1952

Lithograph of the Pioneer Kerosene Works 1865 - 1874

Glen Davis shale oil works, NSW (closed 1952)
Southern Pacific Petroleum: 1997 - 2004

1.5 million barrels produced

Greenpeace - targeted SPP
QER: 2005 - 2011

Paraho Pilot Plant, Co., USA
Processed 10,000 tonnes
Queensland oil shale

New Fuels Development Centre,
Gladstone
Paraho II™: technology selection

- High availability
- High oil yields
- Energy and thermally efficient
- Safe operation
- Environmentally sound
Changing the industry’s poor image

Explaining Australia’s looming fuel crisis

Stakeholders visit to pilot plant

Engaging the local community

Understanding people’s views
Australia’s looming transport fuels crisis
Australia’s declining oil self-sufficiency

Source: EnergyQuest 2009
Australia’s growing oil demand-supply gap

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**Imports in 2030 = 335 MMbbls**

- Conventional oil supply
- Unconventional fuels

Source: EnergyQuest 2009
A skyrocketing fuel import bill

- Federal Government Projection: $12.6b*
- Low Price Scenario: $30b*
- High Price Scenario: $128b*

*Excludes LNG exports

Source: ACIL Tasman 2009
Engaging influential stakeholders

One energy source that may require a rethink is shale oil production....

Hon. Peter Beattie
(Former Premier of QLD)
The Australian newspaper
14 August 2010
Being part of the local community
Open engagement with local media

New Fuels Development Centre aiming to produce ultra-low sulphur diesel and aviation fuels

QER has good oil on shale

记者：David Sparks

THE first drops of oil have been produced from QER’s shale oil project at Yarwun. QER contacted The Observer with the news, confirming it was only a small amount of oil as the company maintains a softly-softly approach to building up its New Fuels Development Centre.

QER site operations manager Chris Anderson said while the first batch of oil was a tiny one, it was a big achievement for the plant.

“It’s a really important step for the company, producing our first oil from this new technology,” he said.

QER heated oil shale passing down through the Parahe II retort to produce small amounts of oil.

Mindful of community concerns, QER’s main message was that the achievement was part of a careful step-by-step approach the company was taking to commission the new technology’s demonstration plant.

“That’s our whole approach,” Mr Anderson said.

“We want to prove that we can do what we say we are going to do, and then take it from there.”

Once the demonstration plant is fully operational, it will produce ultra-low sulphur diesel and aviation fuels for ongoing testing programs in Australia and at research institutes in the United States, and Great Britain.

Mr Anderson said if members of the community wanted to learn more about the process, and how it differed from previous technologies, they should drop in to the QER visitor centre.

“We’d love people to come out and take a look at it,” he said. “It’s open and it’s here for people to come and have a look at.

“That’s what we built it for,” Mr Anderson said.
Understanding people’s views
Producing is better than importing!

Develop our own resources = 82%

Import from overseas = 7%

Base: All Respondents Jul ’09 (n=400), Oct ’09 (n=390), Jan (n=300), Apr (n=390), Jul (n=390)
Queensland’s large oil shale resource

Australian oil shale resources 22.39 bn bbls

94% of Australia’s oil shale resource is in QLD

QER – 15.8 bn bbls

Source: Australian Energy Resource Assessment 2010 Figure 3.20 p.58
Commercial production – public support

**Australia**
- Support: 71%
- Undecided: 14%
- Oppose: 15%

**Queensland**
- Support: 78%
- Undecided: 13%
- Oppose: 9%

**Gladstone**
- Support: 76%
- Undecided: 4%
- Oppose: 20%
Dawn of a new era for our industry!
Gladstone, Qld: regional industrial centre

3 x LNG mega projects

QER
Cement plant
Alumina refinery
Chemical Plant
Gladstone Port
QER’s New Fuels Development Centre
Greater Stuart oil shale resource: 618Mbbls
The world’s newest oil shale plant
QER’s technology demonstration plant

- Screening/sizing
- Fines Briquetting
- Crushing Plant
- Shale Dryer
- Paraho II™ Retort
- Oil Upgrading
- Plant Utilities
- Oil Storage
- Product Loadout
First new Paraho retort in 40 years
Demonstration plant objectives: external

Demonstrate safe operation of the plant

Develop market acceptability of products

Establish environmental credibility

Strengthen community support

Build government support
Demonstration plant objectives: internal

Maximise technical development – commercial design basis

Enable process improvements to be tested

Evaluate robustness to varying feed properties

Build operational expertise
QER’s shale derived fuels

Suitable “mid barrel” feedstock for refineries

Ultra-low sulphur diesel & aviation fuels

High cetane diesel

Excellent energy density
QER’s conceptual development stages

- 2005-10: Colorado pilot plant trials
- 2011-13: Technology demonstration plant QLD
- 2014-17: Commercial plant 3,000 bbls/d
- ~ 2019-2021: Commercial plant 2 circa 21,500 bbls/d
An important plant for Australia
For more information

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