



SheffieldResources
LIMITED

MEMO

To: Participants - Joint Select Committee Northern Australia Event, 21 August 2017

From: Bruce McFadzean

Date: 31 August 2017

Re: Developing an energy and natural gas value chain

Thank you for attending our event to raise awareness of the potential to develop a pipeline connecting remote Kimberley communities.

We were pleased to host you and our special guests from the Joint Select Committee Northern Australia, at the Mangrove in Broome on 21 August.

1. Hon Warren Entsch MP, Chairman, Joint Standing Committee Northern Australia
2. Hon Warren Snowden MP, Deputy Chairman, Joint Standing Committee Northern Australia.
3. Melissa Price MP, Member Joint Standing Committee Northern Australia

Sheffield Resources is developing the Thunderbird mineral sands project, mid-way between Derby and Broome. Requiring a safe and reliable energy supply, Thunderbird could potentially enable the construction and operation of a pipeline, rather than supporting the virtual trucking pipeline, resulting in an additional 3 to 4 triple road trains on the road each day.

Safe and reliable, pipeline gas would lower energy costs and enable regional development in the Kimberley, unlocking opportunities in sectors such as agriculture, aquaculture, tourism, pastoral, Aboriginal community development etc.

Today, five LNG triple road trains (15 trailers) will make return trips ranging from 2000 - 3000 km between Karratha and the Kimberley region ... that's a lot of trucks on the road, a lot of distance, that's the virtual pipeline. The supply of energy into the Kimberley region comes at a premium.

As a regional development opportunity, we are strongly encouraging bodies to collaborate and champion this regional development prospect. Broome, Derby, Sheffield, communities, Kimberley Meat Abattoir, and others, are significant players, and are encouraged to play their part.

Mr Graeme Campbell, Chair, Regional Development Australia Kimberley, has indicated that with willing participants, he can look to kick-start the discussion. Please be in touch with him to offer your support.

Find attached materials distributed at the event, and following is a list of participants, for your reference.

Please contact Kim Pervan or myself if we can further assist or you require further information.

Realizing Regional Development in the Kimberley Through Development of an Energy and Natural Gas Value Chain

Current

Power demand in the Kimberley region current: ~100 MW

- Virtual Pipeline, currently in the form of on-road LNG tankers
 - 5 x LNG triple Road trains (15 trailers) ~7.5TJ/day of gas being delivered
 - Distances ranging from 2000km to 3000km return to Karratha LNG plant
 - 1 billion litres of LNG delivered into the region since 2008
 - ~7000 deliveries of LNG since 2008
 - 21PJs of gas delivered into the region from Karratha LNG plant since 2008
- West Kimberley Power Project (WKPP) - EDL contracted to supply power to Horizon Power for 20 years at remote locations of Broome, Derby, Fitzroy Crossing, Halls Creek and Looma (diesel fuelled)
- Services population of ~27,000

Potential

- Kimberley power stations potential combined capacity: 130-150 MW, includes Thunderbird stage 2 @ 32MW
- Enabler: Thunderbird Mineral Sands Project together with WKPP enable the construction of a pipeline
- Mitsubishi Corp Resources Australia (MCRA) Valhalla 2 Gas Reserve; new ownership
- DDG (Dampier to Bunbury Pipeline Development Group) propose to build and own a pipeline from MCRA reserve to Broome
- Small power stations, near demand sites; transition from diesel to LNG to pipeline gas

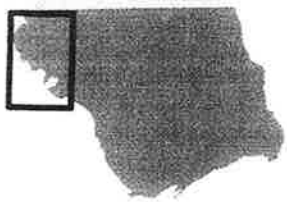
Regional Development

- Pipeline power supply - reliable, safe, efficient, economical; security of supply
- Pipeline power enables the opportunity for development across the Kimberley.
- Development potential: tourism, pastoral enterprise, Aboriginal community development
- Other benefits: Natural gas, Mitsubishi, DBGPL

END

Kimberley Regional Economic Development Potential

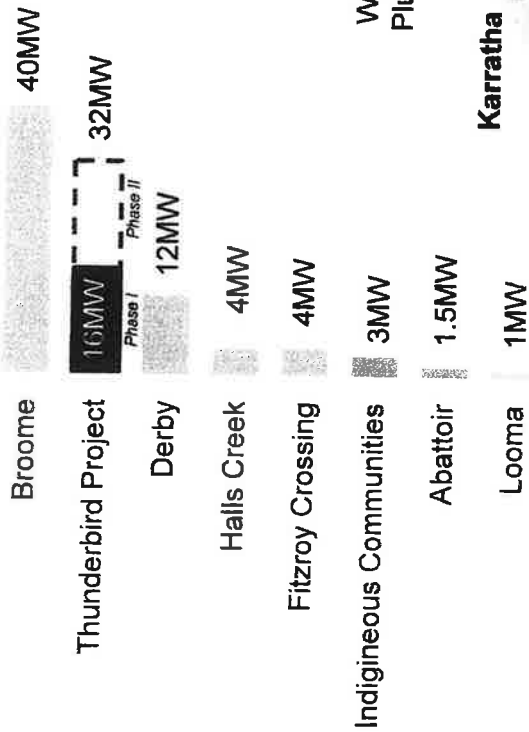
Energy and natural gas value chains



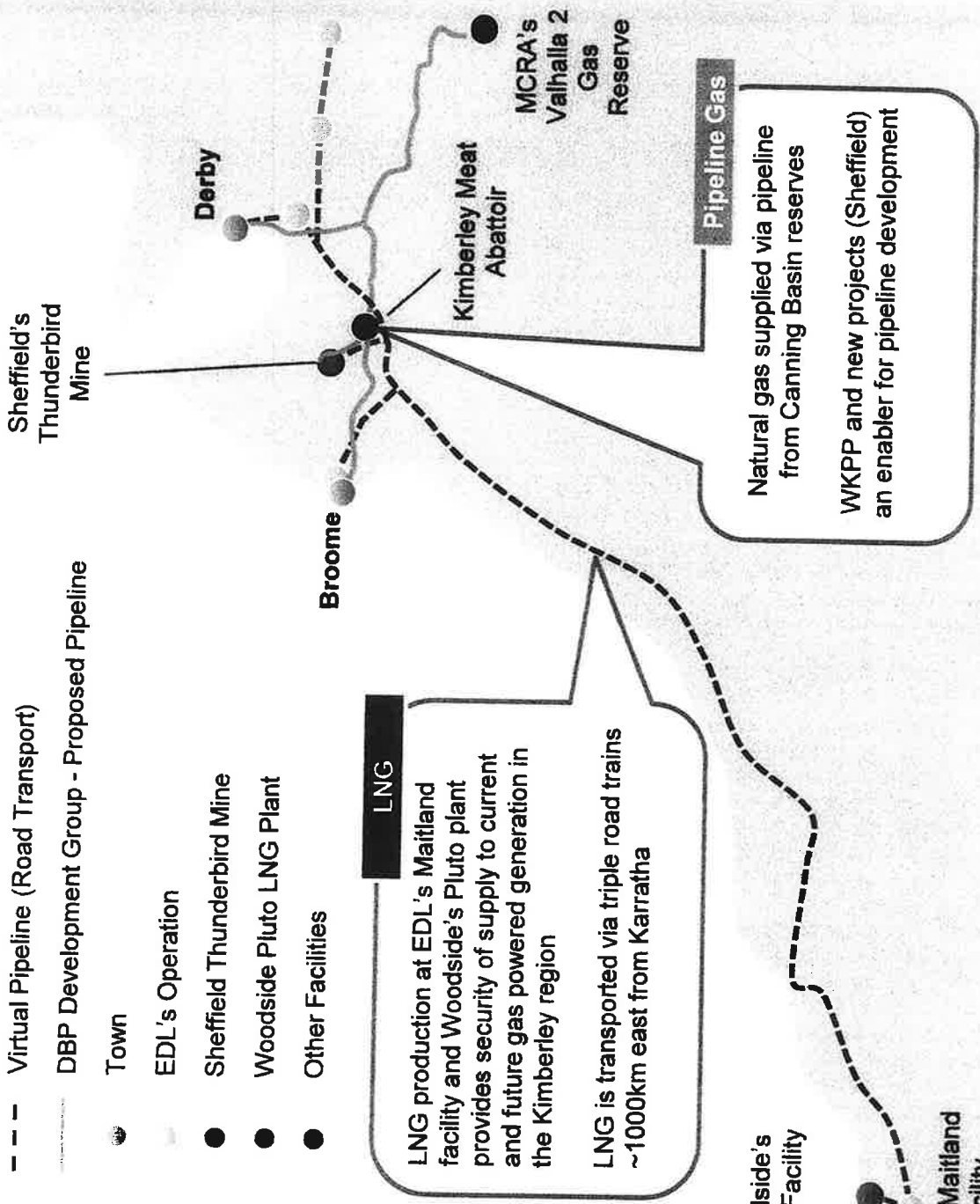
Legend

- - - Virtual Pipeline (Road Transport)
- DBP Development Group - Proposed Pipeline
- Town
- EDL's Operation
- Sheffield Thunderbird Mine
- Woodside Pluto LNG Plant
- Other Facilities

Kimberley Power Station Capacity Operating and Future (MW)



- WKPP
- Sheffield
- Kimberley Meat Abattoir
- Remote Communities



Note: West Kimberley Power Project (WKPP) includes power stations at Broome, Derby, Fitzroy Crossing and Halls Creek and Looma

Map not to scale