Great Sandy Desert Project

Lower Goldwyer shale oil discovery and Nambeet wet gas prospect
- Theia Energy acreage - **1.1 million acres**
- Oil-in-place >40,000 boe/acre

Prospective Resources (within EP 493)
1.0 to 6.5 Billion BOE (51% oil)
Interest available for carry in 2020/21 Helios operations

*Theia-1 Discovery Well Site, 2015
Onshore Canning Basin, Western Australia*
Finder Exploration restructure 2018

Offshore NWS
9 Permits
2 exploration wells in 2020
1 3D survey in 2019/20
www.finderenergy.com

Onshore Canning Basin
Great Sandy Project
Dual target well with test in 2020
www.theiaenergy.com
Graticular blocks (20,000 acres per block)

EP 493: 1,140,000 acres (57 blocks)
20,000 acres per block

- Theia Energy hold 100% equity over Exploration Permit EP 493
- EP 493 in primary term (six years) expires 29th Feb 2024.
- Secondary term (five years) when granted, will expire no sooner than 28th Feb 2029
- Future production licenses to last life of project
### Total Prospective Resource 1 to 6.5 BBOE (51% oil)

<table>
<thead>
<tr>
<th></th>
<th>Prospective OIP + GIP EP 493, BBOE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Goldwyer</td>
<td>24</td>
</tr>
<tr>
<td>Nambeet</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
</tr>
<tr>
<td>Average BOE/acre</td>
<td></td>
</tr>
<tr>
<td>Lower Goldwyer</td>
<td>25,600</td>
</tr>
<tr>
<td>Nambeet</td>
<td>15,100</td>
</tr>
<tr>
<td>Total</td>
<td>40,700</td>
</tr>
</tbody>
</table>

**Recovery factors achieved with current technology:**
- 5% to 8% light oil & 15% to 30% wet gas
- 1.0 to 6.5 BBOE (51% oil)
Canning Ordovician stratigraphy

<table>
<thead>
<tr>
<th>Ordovician</th>
<th>Silurian</th>
<th>Lower Canning Basin (subsurface only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tremadoc</td>
<td>Llandover</td>
<td>Sahara Formation</td>
</tr>
<tr>
<td>Arenig</td>
<td>Saradogg</td>
<td>Mallowa Salt</td>
</tr>
<tr>
<td>Llanvirn</td>
<td>Ashgill</td>
<td>Nibil Formation</td>
</tr>
<tr>
<td>Pridoli</td>
<td>Wenlock</td>
<td>Minjoo Salt</td>
</tr>
</tbody>
</table>

Relative Sea Level

- Top Salt
- Base Salt

Sequence Boundary

- Transgressive Surface
- Sequence Boundary

Geothermal gradient due to basement high over Broome Platform

Theia-1

Lower Goldwyer ~1,550 m depth

Nambeet ~600 m deeper

Ref.: Haines and Wingate (2011)

Ref.: Ghori, 2011
Lower Goldwyer liquids rich resource play, Onshore Canning Basin, WA

- THEIA-1 2015
- Cyrene-1 2013
- Broome Platform
- Commodore-1 2014
- Willara Sub-Basin
- Kidson Sub-Basin
- Nicolay-1 2012

Lower Goldwyer mapped prospective region

- Lower Goldwyer (465 Ma) Depth Map
  - High organic content
  - Low organic content

- Lower Goldwyer Well Intersections
  - THEIA-1 2015
  - Cyrene-1 2013
  - Broome Platform
  - Commodore-1 2014
  - Willara Sub-Basin
  - Kidson Sub-Basin
  - Nicolay-1 2012
Theia-1 Lower Goldwyer well results:

- 120 m shale thickness
- 70 m gross oil column with 36 m net pay (ave total $\Phi$ 9.5% and TOC 3.8%)
- 25,600 bbls/acre moveable OIP (~45° API light non-waxy oil)
- GOR > 2,000 scf/bbl
- Economic break-even @ USD 30/bbl

Cutoffs: TOC>2%, $\Phi$ >4%, SW<0.45, Oil $\Phi$>2%, $k$>100nD
### Shale Play Elements – Lower Goldwyer (Theia-1 results)

#### RESERVOIR
- Laterally extensive (depositional environment)
- Anoxic shallow marine lagoon
- Gross Thickness > 100ft (sufficient for completion)
  - 75 – 115 m (Average 94 m)
- Porosity >5%
- Permeability >10nD
  - 8 – 11% total porosity
  - 200 nD to 720 nD permeability
- Mineralogy
  - (no/low swelling clay)
  - Little/no smectite present

#### CHARGE
- Organic characteristics
  - TOC > 2%
- 2.3 – 4.4% (avg. 3.8% at Theia-1)
  - Type II and I kerogen, algal/bacterial marine source
- Thermal maturity
  - Vitrinite reflectance ($R_o$)
  - 0.7% < $R_o$ < 1.4%
- Geochemistry, Palynology, PSM
  - Vr 0.7 – 1.1% (avg Vr. 1.08%)
  - Peak oil window

#### PRODUCIBILITY
- Faulting
  - (low density, compressional)
  - None identified in core or FMI
- Shale pore pressure
  - (overpressure)
  - >20% above hydrostatic
- Stress regime
  - $S_{max}$ N70°E = regional trend
- Rock geomechanics
  - Prone to vertical fracturing
- GOR (> 500) for oil
  - Gas-Oil-Ratio = 2+ Mscf/stb
- Oil/Gas flow to surface
  - WELL TEST

---

Testing planned 2020
Nambeet petroleum system modelling (wet gas sweet spot)

Nambeet mapped low energy organic-rich prospective region

Nambeet Interpretation & modelling:
- 200 m to 700 m shale thickness
- 15,100 BOE/acre @ Theia-1 location (93% wet gas)

Nambeet Well Intersections
- High organic content
- Low organic content

Top Nambeet (483 Ma) Depth Map

Barrier Reef Complex
Exposed Atoll Edge during lowstand (Elevated above Sea Level)

OPEN OCEANIC CORRIDOR

Kidson Sub-Basin
Willara Sub-Basin
EP493

1,000 m - 3,000 ft
2,000 m - 6,500 ft
3,000 m - 10,000 ft
Helios-1V & 1H, HFS & production test (2020/2021 Operations)

Appraisal & Development Program (6,000 ramp-up to 100,000 bbl/d)

- **2020 Helios-1V** Vertical well hydraulic fracture stimulation (HFS) and commingled test of lower Goldwyer and Nambeet
- **2021 Helios-1H** horizontal extended test to confirm commercial flow rates
- **2023** appraisal and trucking operations 6,000 bbl/d export to nearby south-east Asia markets
- **2025** commercial scale oil and gas production domestic and international markets

Notes:
1. Plus associated gas production 5 PJ to 80 PJ per annum
## Lower Goldwyer economic model comparisons

<table>
<thead>
<tr>
<th>Stage</th>
<th>Appraisal</th>
<th>Export Pipeline</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Trucked oil</td>
<td>Oil and Gas</td>
</tr>
<tr>
<td>Oil (bbl/d)</td>
<td>6,000</td>
<td>100,000</td>
</tr>
<tr>
<td>Gas (TJ/d)</td>
<td>0</td>
<td>240</td>
</tr>
</tbody>
</table>

### Modelled daily production rates

### Prospective Resources

| Recoverable oil (MMbbl) | 30 | 920 |
| Recoverable gas (Tcf)   | NA | 2 |

### Return on investment

<table>
<thead>
<tr>
<th>IRR</th>
<th>11%</th>
<th>27%</th>
</tr>
</thead>
</table>

| NPV10 Mil US$ | $84 | $5,000 |

### Key Assumptions

**Price (flat)**
- US$69/bbl oil
- US$5.5/Mcf domgas

**Production (EUR) per 3km lateral well**
- 1.17MM bbl oil; plus 1 BCF gas

**D&C cost/well**
- US$30MM (2021) reducing to
- US$14MM (2026)

Note: Light crude trades with premium to Brent (Tapis)
Theia Energy contact:

Ryan Taylor-Walshe
General Manager
M +61 474 979 474
E ryan@theiaenergy.com

Jop van Hattum
Chief Operating Officer
M +61 430 739 507
E j.vanhattum@theiaenergy.com

Concurrent session 5
Tuesday, 3:45pm first presentation
Disclaimer

The information, statements, opinions, data or other material ("Information") contained within this document has been prepared by Theia Energy Pty Ltd ("Theia Energy") with reasonable care and no representation, warranty, or undertaking, express or implied, is made by Theia Energy in relation to the adequacy, accuracy, completeness, correctness, fairness or usefulness of the Information disclosed herein. Use of the Information shall be at a third parties own risk and third parties should undertake their own independent assessment of the Information and verify all information upon which it intends to rely, to its own satisfaction. Theia Energy accepts no responsibility or liability for any errors or omissions from the Information, however caused.