The Territory’s mining industry

Value of mineral production 2018/19

- Total mineral production of A$4.92 billion (23.2 billion RMB) in 2018/19

2019t $U_3O_8$

- Gold 16.4t
- Bauxite 12 Mt
- Zinc-lead 633 kt
- Manganese 6.4 Mt
The Territory’s commodities

- Key commodities are copper, zinc, gold, uranium and lithium
- Large areas very underexplored
- Other main commodities for exploration and developing projects:
  - cobalt, potash, phosphate, vanadium, rare earths, tungsten, magnesium
- Major emerging onshore gas sector
- Many projects seeking partners for joint ventures, equity investment, project finance, construction and/or offtake

Exploration expenditure by commodity 2017-18

- Base metals 44%
- Gold 29%
- Uranium 4%
- Lithium 11%
- Other 8%
- Phosphate 1%
- Rare earths 1%
- Iron 1%
Projects seeking investment

The NT Government has compiled information on minerals and energy projects seeking investment from Chinese companies

- uranium
- rare earths
- copper
- gold
- phosphate
- zinc-lead
- magnesium
- gas, helium
- vanadium
- titanium
- tungsten
- molybdenum

Visit: www.core.nt.gov.au
Many Chinese companies have invested into the Territory’s minerals and energy sectors.

Since 2006, 64 deals valued at more than $1 billion (RMB 4.8 billion) in Chinese investment have been announced for Northern Territory minerals and onshore gas projects.
Highlights include:

**Sichuan Yahua** – Equity pre-payment and offtake for lithium project

**Shandong Ruifu** - Pre-payment and lithium offtake agreement

**AUS China International Mining** – manganese exploration

**China Hanking** – large gold resource near Darwin

**Meijin Energy** – ilmenite mine

**MMG (Minmetals)** – zinc exploration

**Lithium Plus** – purchased NT lithium tenements

**CGNPC** – large uranium projects in central Australia

**East China Exploration** – equity in rare earths company
2019 Chief Minister’s NT Export Industry Award

Australian Ilmenite Resources (AIR) is a subsidiary of Shanxi-based Meijin Energy. AIR specialises in exploration, mining and supply of ilmenite sand in the NT.

In 2016 Meijin acquired AIR and restarted production in 2017. They plan to increase output to 100,000t in 2019-2020.

In September 2019, Australian Ilmenite Resources won the prestigious ‘Northern Territory Exporter of the Year’ award and the Territory’s Minerals, Energy and Related Services award.
Lithium and other battery commodities in the NT

- Australia’s only known lithium resources outside Western Australia
- Located close to Darwin port
- Production scheduled to commence by late-2020
- Other lithium-bearing pegmatite fields remain undrilled
- Also potential for cobalt and vanadium in the NT

Core Lithium and TNG Ltd will present today on lithium and vanadium opportunities in the NT
Gold - Pine Creek region

Long history of gold mining since Chinese gold rush in 1880s

Hanking Australia – *Toms Gully*
Planning to recommence underground mining

Potential opportunities to invest in gold exploration and development
- *Bacchus Resources Pty Ltd* – Woolwonga
- *PNX Metals Ltd* – Fountain Head
- *Vista Gold Corp* – Mount Todd
Gold-zinc-silver

**PNX Metals Ltd – Hayes Creek**

- High grade zinc-gold-silver massive sulfide deposits located immediately adjacent to railway
- **4.1 Mt @ 4.35% Zn, 1.81% g/t Au, 124g/t Ag, 0.91% Pb and 0.25% Cu**
- Definitive feasibility study underway
- PNX Metals also has gold and lithium projects
Gold - Tanami and Tennant Creek regions

TANAMI REGION
Newmont Goldcorp - mining world class deposit at Callie

TENNANT CREEK
Emmerson Resources – Mauretania
20m @ 38.5 g/t Au incl. 4m @ 158 g/t Au
Planning to develop multiple small, high-grade gold mines

Castile Resources – Rover 1
6.91 Mt @ 1.7 g/t Au, 1.2% Cu, 0.1% Bi, 0.1% Co
New company with undeveloped Cu-Au and base metals deposits
Copper-zinc-lead-silver

Todd River Resources – *Mount Hardy*
New high-grade zinc-lead-copper discovery
Maiden resource:
2.6 Mt @ 6.7% Zn, 0.9% Cu, 1.5% Pb, 35 g/t Ag (10.5% ZnEq)
Further drilling underway on extensional and regional targets

KGL Resources – *Jervois Cu-Ag*
25.8 Mt @ 1.49% Cu, 27.1 g/t Ag
- Aiming to be the Northern Territory’s next copper mine
- Final investment decision in next 6-12 months
- Orebodies remain open at depth
Rare earth elements and phosphate

Arafura Resources Ltd - Nolans

• Apatite vein-hosted deposit
• 56 Mt @ 2.6% REO, 11% P₂O₅,
• Rich in high-value Nd and Pr
• Definitive feasibility study Feb 2019
• Environmental assessment process complete
• Existing Chinese investor
• Planned annual production:
  ➢ 4357t NdPr oxide
  ➢ 73,336 tpa phosphoric acid
  ➢ HRE carbonate and Ce hydroxide products
Tungsten-molybdenum-copper

Thor Mining PLC - Molyhil

- Scheelite and molybdenite
- Resource upgrade – October 2019
  4.71 Mt @ 0.28% WO₃, 0.14% Mo, 0.05% Cu, 18% Fe
- Most approvals in place
- Updated feasibility study in 2018
- Potential resource growth from tungsten and copper deposits in Bonya area
Other commodities

**Uranium** – Scoping study completed on potential development of high-grade uranium mine in western Arnhem Land (Vimy Resources Ltd)

**Manganese** – new exploration licence granted on Winchelsea Island

**Iron ore** – potential to restart iron ore mining in Roper field (Nathan River Resources and NT Iron Ore)

**Cobalt** – small cobalt-copper resources defined in northeastern NT (Northern Cobalt Ltd)

**Magnesium** – undeveloped magnesite deposits near Darwin (Thessaly Resources)

**Phosphate** – Australia’s largest undeveloped phosphate deposits. Verdant Mineral and Avenira Ltd investigating development options
Darwin is Australia’s closest LNG hub to China

- US$37 billion Ichthys LNG Project: initial capacity of 8.4 Mtpa LNG – exports commenced late 2018
- Gas sourced from offshore Browse Basin
- Total LNG export capacity from Darwin is 12 Mtpa
Onshore gas and oil – Beetaloo Sub-basin

- Vast, geologically continuous shale gas basin
- Similar in scale and geology to US shale plays
- >500 Tcf of gas in place within B-shale of Velkerri Formation
- First horizontal hydraulically fractured well in 2016 successfully flowed gas
- Multiple dry gas and liquids-rich plays
- Drilling currently underway to test liquids-rich gas play

Companies: Origin Energy/Falcon Oil and Gas; Santos, Sweetpea Petroleum, Imperial Oil and Gas
Onshore gas and oil – Amadeus Basin

- Continuous gas and oil production since 1980
- Gas production increasing with new markets – pipelines to Darwin and Australia’s east coast
- Large sub-salt gas-helium plays remain undeveloped

Companies: Central Petroleum, Mosman Oil and Gas, Santos
Information for investors

The Northern Territory Government supports Chinese investment in our resources sector

Investment Territory and the Northern Territory Geological Survey work together to assist Chinese investors find projects in the NT

We can host inbound delegations from China, and prepare customised visit programs

Facilitation assistance with regulatory processes

High quality, free of charge geoscience information and data
Australia’s Northern Territory

- Pro-development, pro-investment Government
- Underexplored with high potential for non-ferrous metals and rare metals
- Pipeline of emerging mining projects and associated infrastructure
- World-class, free-of-charge, publicly available geoscience data
- Commitment from NT Government to support Chinese investors in identifying suitable opportunities