



# **CHAUCER ENERGY LTD**

## **IN-SITU GASIFICATION FOR CHILE**

**January 2023**



## A FAST TO REVENUE GAS-SUPPLY PROJECT

---

- **Australian company with world-leading ISG expertise operating on coal assets in Chile**
- **Utilising InSitu-Gasification (ISG) to produce gas & electricity for regions in urgent need of energy supply**
- **Exploration Concessions have been granted for first project in Magallan Basin**
  - Chosen on the basis of past drilling data, existing coal geology and local energy needs
  - Minimal additional drilling required to establish JORC Resource
  - Additional Concession Applications being processed
  - Further Applications being considered
- **A fast-to-market project strategy**
  - Chilean Government supports ISG development
  - Early production of electricity and gas planned for regional use
  - Potential for large scale future expansion into chemical fertilizer production



## CHILE IS A MODERN ECONOMY AND HAS *IMMEDIATE* ENERGY NEEDS

---

- **With 19m people Chile has the highest per-capita GDP in South America**
  - Electricity demand has doubled since 2000 & is set to more than double again by 2050
  - Chile is a modern, Pacific-Nation economy
- **Chilean Govt. has established a 2050 National Energy Policy**
  - The #1 pillar is the quality and security of supply
  - Our projects support the National Energy Policy in multiple ways
- **2/3<sup>rd</sup> of Chile's energy supply is imported**
  - 100% of oil, 80% of natural gas & 80% of coal are imported
  - Over 90% of coal is used in power generation
  - Australia is the 2<sup>nd</sup> largest provider of coal to Chile
- **Chile has 8<sup>th</sup> highest electricity price for industry amongst International Energy Agency nations**
- **Firewood accounts for ~60% of domestic energy production. This is an urgent bio-health issue**
- **Chilean Govt is supportive of projects that add domestic power generation & gas supply**



# COAL GASIFICATION IS A PART OF CHILE NATIONAL ENERGY AGENDA

## ENERGY AGENDA

A CHALLENGE FOR THE COUNTRY, PROGRESS FOR EVERYONE



As one of the 50 measures for the first 100 days of Government, the Ministry of Energy was entrusted with the preparation of an agenda to be used as a road map to devise and implement a long-term Energy Policy with social, political and technical validation.

## 03

DEVELOPMENT OF  
OUR OWN ENERGY  
RESOURCES

### Reference to Coal Gasification *(page 53)*

#### 5.7 Coal Gasification Project in Magallanes.

We will continue with the work already started by this Ministry with the University of Magallanes so that the Region of Magallanes and Antártica Chilena may have, among their energy options, a coal gasification project for the supply of gas to its inhabitants and for electricity generation.

<https://www.energia.gob.cl/sites/default/files/documentos/energyagendaweb.pdf>



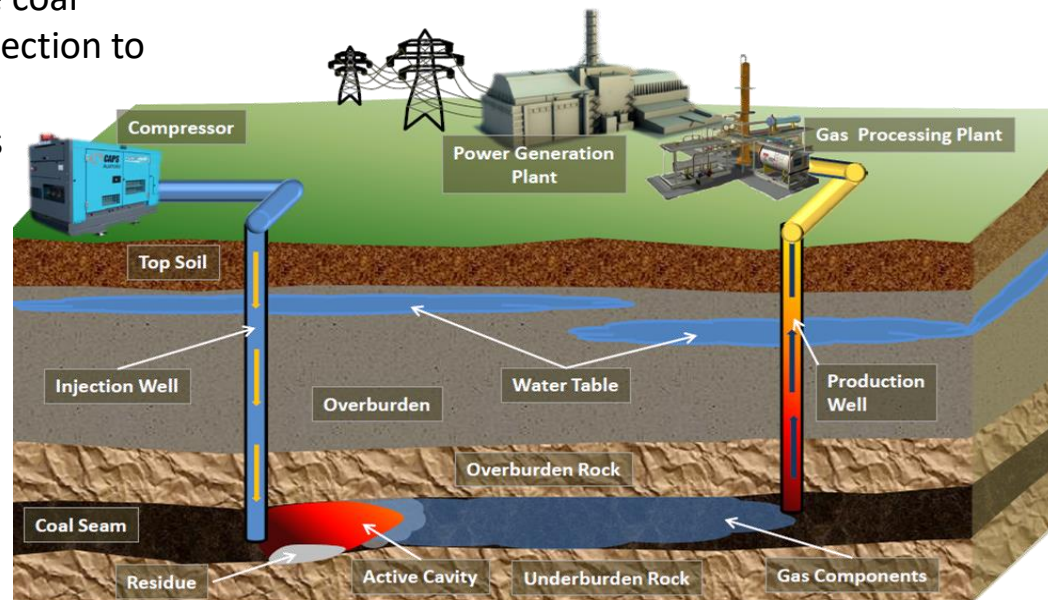


## GAS PRODUCTION FROM ISG

- ✓ One of the earliest forms of gas production
- ✓ Internationally recognised
- ✓ Technically understood process
  - ✓ Inexpensive vertical wells used for coal at depths of 150m to 300m
  - ✓ Inject air under pressure and ignite coal
  - ✓ Combustion products flow from injection to production well
  - ✓ Chemical reactions produce syngas
  - ✓ Syngas is recovered and piped for end use
- ✓ Can be readily expanded

### *Proposed staged project development*

- Initial power gen. of 3MW then to 30MW
- Expansion of gas supply for power/heating
- Thereafter expand to chemical projects





## BENEFITS OF PRODUCING GAS ONSITE

### 1. No open cut mines



### 2. No coal burning power stations



### 3. Small surface footprint



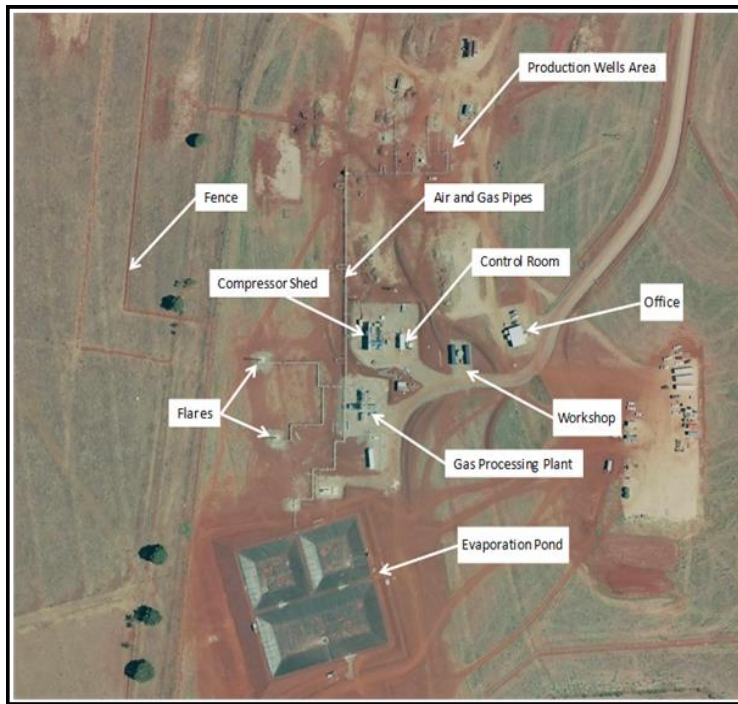
- ✓ Reduces:
  - Surface footprint
  - Land occupancy timeframe
  - Land compensation
  - Land disturbance
  - Pollution (noise, dust, fumes etc)
  - Land use for power generation
  - Emissions compared to conventional methods
- ✓ Minimal land use disruption
- ✓ Minimal use of local natural resources
- ✓ Quick release & restoration of operating areas
- ✓ Relatively low CapEx and fast to production
- ✓ Supports Chile's 2050 National Energy Project





## CHAUCER TEAM GAS PRODUCTION – QUEENSLAND ISG PROJECT

Site layout – initial gas production



Gas production flare





## PROJECT LOCATION



The Magellan Basin of Southern Chile contains most of the Country's energy resources.

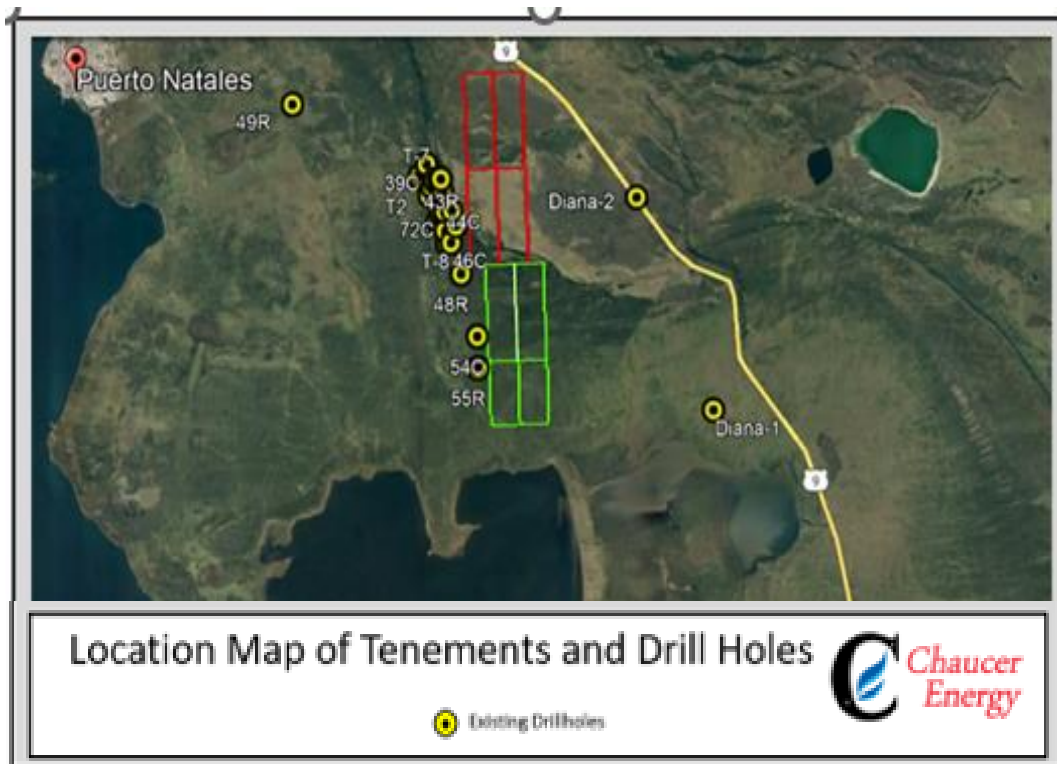
A huge coal basin has been defined by drilling on the western outcrop line and by oil and gas wells and seismic data to depths of 1000m to the east.

Markets for electricity and gas exist in Puerto Natales (north) and Punta Arenas (south), due to large Govt. subsidies for current supply, and gas supply from Argentina known to be unreliable





## PUERTO NATALES PROJECT CONCESSIONS

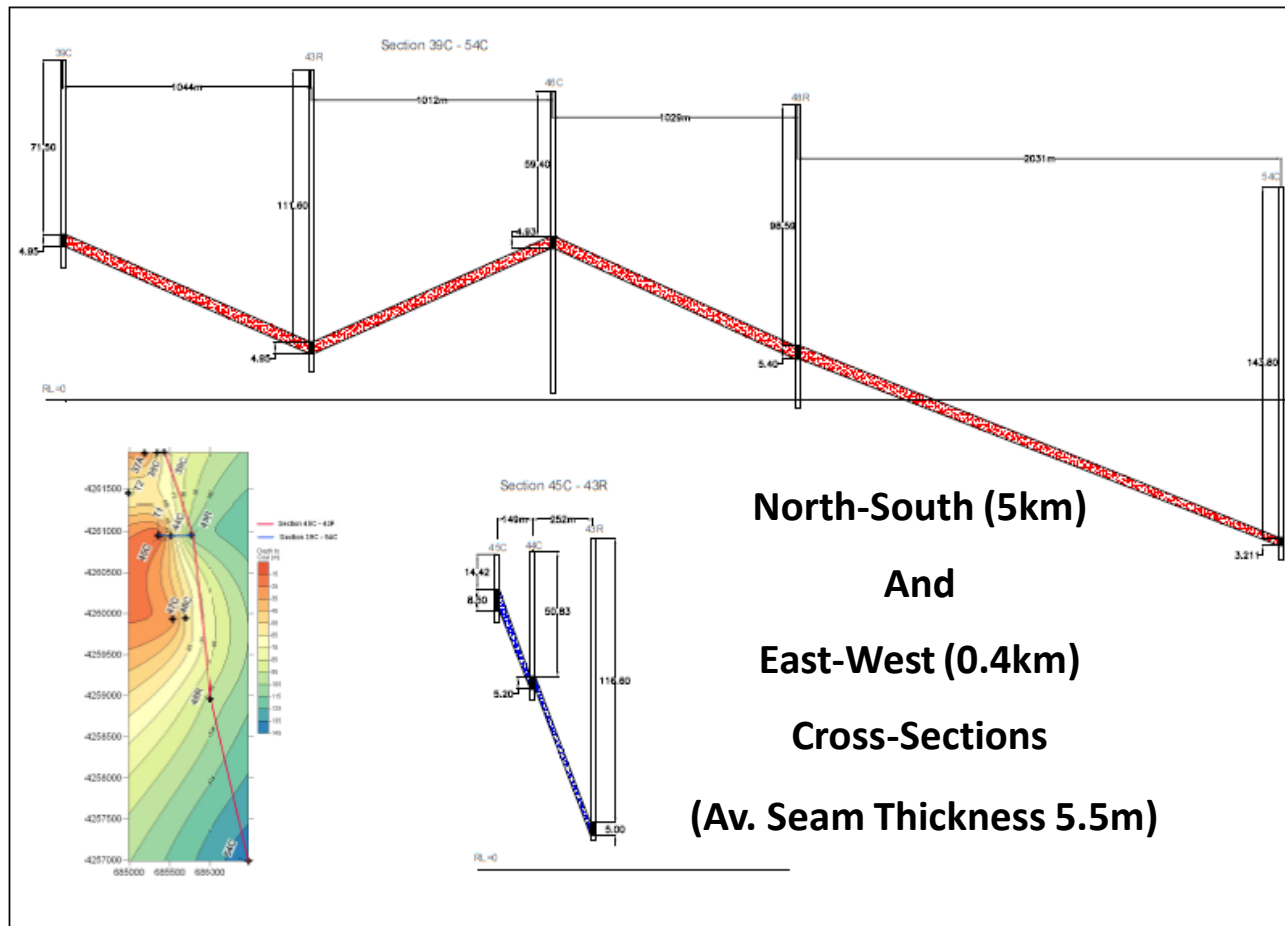


### Areas selected based on:

- Existing drill data shows continuous coal seam approx. 5m thick to 100m depth over 5km on strike N-S – resource of 10mt
- Gas well 5 km to the east shows coal continuity to 1000m depth
- Concession Area 12 sq.km. (red) granted and Application Area 11sq.km. (green) progressing
- Concessions down-dip from existing drilling
- Further deposits to the south under review
- Energy demand in Puerto Natales 12 km N-W

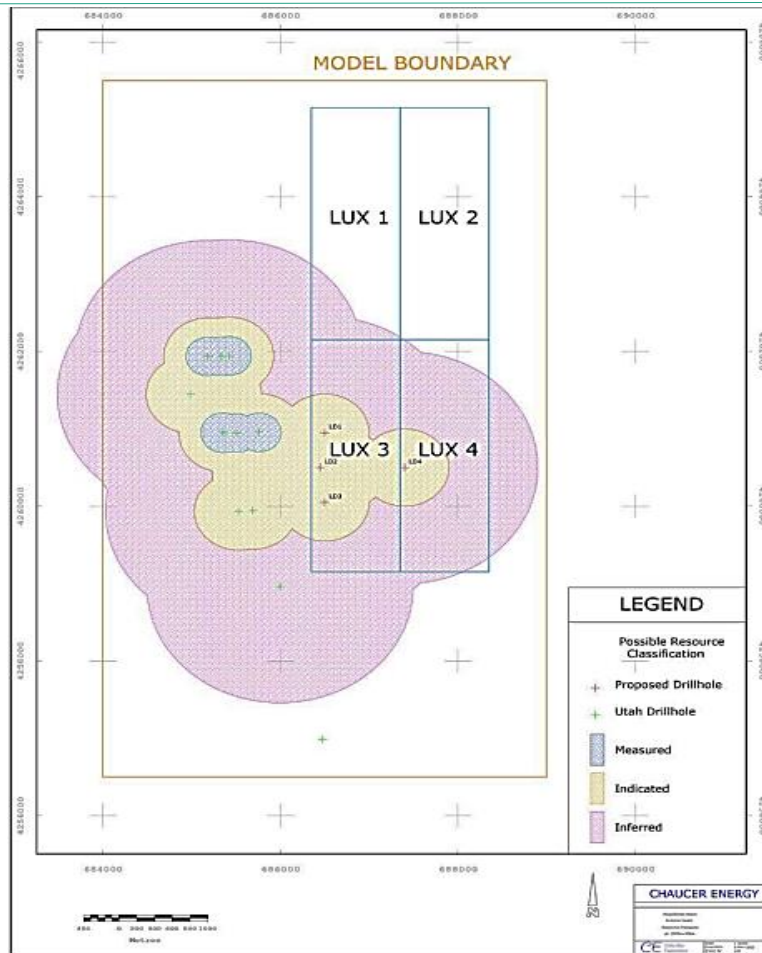


## COAL SEAM CONTINUITY FROM EXISTING DATA





## PROPOSED JORC DRILLING PROGRAMME



- Drilling program planned to establish JORC Resource
- Focus on southern Concessions (Lux 3/4) due to proximity to existing drill data
- 3 or 4 holes proposed to max. 250m
- Independent assessment gives potential indicated/inferred coal resource of 50mt
- Resource can support a large scale ISG project
- Significant expansion possible on Lux 1/2 , and on new Applications to the South





## LED BY AN EXPERIENCED BOARD AND MANAGEMENT

---

### **Malcolm McAully – Chairman**

- Malcolm has a strong business background with experience in a wide range of industries including financial services, energy generation and agribusiness. Past Chairman of three ASX Listed companies, including ISG company Cougar Energy Ltd, and is currently Chairman of ASX Listed Pure Foods Tasmania Ltd (ASX:PFT)

### **Dr Len Walker - Managing Director**

- Len has qualifications and experience in geotechnical engineering, and for 10 years developed emerging ASX Listed companies in the resources area. He has since spent over 20 years in advancing ISG projects, both in Australia and internationally. He founded Chaucer Energy in 2016 to develop ISG operations in Chile

### **Valeri Melik – Executive Director and COO**

- Valeri has qualifications in Electrical engineering and a wide background as a project manager. He led the planning and on-site execution of the Kingaroy ISG project, including its successful rehabilitation after policy changes in the Qld Govt. He has worked on ISG projects with Dr Walker since 2008

### **Dr Michael Blinderman – ISG Specialist**

- Chemical engineer, Founder and CEO of Ergo Exergy Technologies Inc., internationally leading ISG technology provider to ISG gas producing projects in Australia, South Africa, New Zealand and the FSU, and an associate of Dr Walker since 1996. Lead author of recently published ISG text book



## WITH A QUALITY ON-GROUND TEAM IN CHILE



Thomas Eggers | Head of Economic Geology



Álvaro Florez | Head of Legal



Bastián Gómez | SIG & Exploration Geologist

- Chaucer has been working with Kura Minerals for over four years
- The Kura team provides experienced geological and legal advice
- Providing close contact with key Chilean Govt Depts responsible for overseeing ISG operations



**Dr. Len Walker**

**Managing Director**

E: [len.walker@chaucerenergy.com.au](mailto:len.walker@chaucerenergy.com.au)

M: +61 (0) 419 587 396

[www.chaucerenergy.com.au](http://www.chaucerenergy.com.au)

*Providing energy security for a fast growing economy*