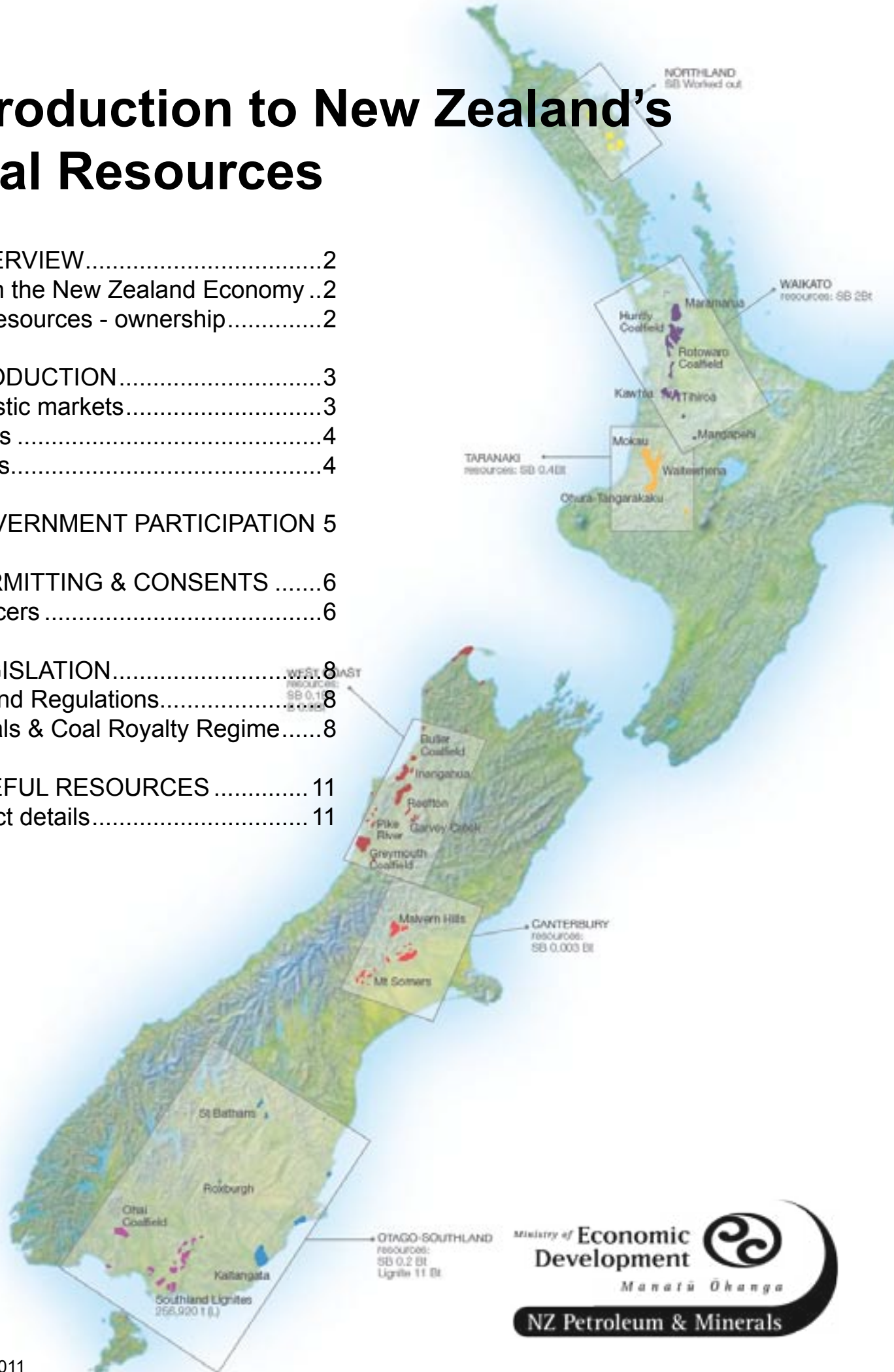


# Introduction to New Zealand's Coal Resources

- ▶ OVERVIEW.....2
  - Coal in the New Zealand Economy ..2
  - Coal resources - ownership.....2
- ▶ PRODUCTION.....3
  - Domestic markets.....3
  - Exports .....4
  - Imports.....4
- ▶ GOVERNMENT PARTICIPATION 5
- ▶ PERMITTING & CONSENTS .....6
  - Producers .....6
- ▶ LEGISLATION.....8
  - Acts and Regulations.....8
  - Minerals & Coal Royalty Regime.....8
- ▶ USEFUL RESOURCES ..... 11
  - Contact details..... 11



## OVERVIEW

---

### New Zealand's coal resources

New Zealand has extensive coal resources, mainly located in the Waikato and Taranaki regions of the North Island, and the West Coast, Otago and Southland regions of the South Island. National in-ground resources of all coals are estimated at over 15 billion tonnes.

New Zealand's coal resources are generally well explored. A major government-funded coal exploration programme, known as the New Zealand Coal Resources Survey, explored between 1975 and 1989 almost all of New Zealand's realistic coal prospects. More than 1,800 holes were drilled, and extensive resource evaluation, geotechnical, geophysical, utilisation, environmental and mining feasibility studies were carried out. The discovery of very large resources of lignite in Otago and Southland also led to a series of investigations in the 1980s by the Liquid Fuels Trust Board to evaluate the potential of the lignites for conversion to transport fuels.

The South Island lignite deposits account for 80% of New Zealand's coal resources. The main deposits are well known and recoverable lignite figures are well established at over 6.2 billion tonnes, equivalent to 72,000 PJ. The South Island lignites are being evaluated for their potential as a feedstock for large-scale petrochemical processing into a range of possible energy products including transport fuels, briquettes and fertilizers.

Sub-bituminous and bituminous in-ground resources are approximately 3.5 billion tonnes, but recoverable quantities of these coals have not been fully established. Exploration activity throughout New Zealand's coalfields is mainly directed at the conversion of known resources to reserves. Coking coal resources are all on the West Coast of the South Island. New Zealand coking coals cover prime hard coking, semi-hard and semi-soft coking coals. A major proportion of remaining resources can only be accessed by underground mining in difficult conditions.

More detailed information can be found on the [New Zealand Petroleum & Minerals website](#).

### Coal in the New Zealand Economy

Coal produces about 9% of New Zealand's primary energy supply. This is more than either hydro or geothermal, and approximately half of the contribution from gas. Steel manufacture and New Zealand's largest power station are dependent on coal, as are a substantial proportion of the meat, dairy and forestry industries. A large number of smaller industries rely on coal for their energy needs, as do many schools, hotels, hospitals and even some horticulture.

Coal production produces sales revenues of about NZ\$1.2B, of which about \$500M is export revenue.

### Coal resources - ownership

The New Zealand Government owns approximately half of all New Zealand's coal resources. The proportion of Crown ownership varies between deposits. Most coking coal is Crown-owned. Some lignite fields are fully Crown-owned while some have only minor Crown ownership. Sub-bituminous coals are partly Crown and partly privately-owned.

## PRODUCTION

---

Coal is New Zealand's most abundant fossil fuel and has been an important energy source since the late nineteenth century.

New Zealand coal production in 2010 was 5.3 million tonnes, 17% up from 2009 production of 4.6 million tonnes. This is mostly due to the restoration of production levels at Solid Energy's two bituminous mines, Stockton and Spring Creek, which had been reduced for 2009 by industrial action and reduced export orders resulting from the global financial crisis.

Most production is of bituminous and sub-bituminous coals. Although lignite makes up 80% of national coal resources, lignite production of 295,000 tonnes in 2010 represented only 6% of total production, partly as a consequence of distance from the main centres of energy demand. All lignite is produced in the lower South Island.

Solid Energy, owner of the two largest West Coast mines, was responsible for around 85% of the national production. Production is centred on the Waikato (2 million tonnes), and the West Coast (2.7 million tonnes). The remaining production is from Otago and Canterbury.

Five underground and 16 opencast mines were operating in 2010. Over 59% of national production was from two large opencast operations, at Rotowaro and Stockton. State-owned Solid Energy was responsible for over 82% of national production. A number of smaller private coal mining companies produced the remainder.

### Domestic markets

Coal accounts for approximately 4% of New Zealand's total consumer energy supply. The biggest domestic users in 2010 were the Huntly power station (around 0.6 million tonnes) and the Glenbrook steel mill (around 0.8 million tonnes).

In 2010, electricity generation (including cogeneration) accounted for 37% of domestic coal use, other transformation (mainly steel making) 19%, the industrial sector 37% and the commercial sector 2%. Industrial coal use was primarily for cement, lime and plaster, meat, dairy and other food processing, wool, timber, and pulp and paper products. Commercial coal use was mainly for heating accommodation and service buildings in central and local government, hospitals, rest homes and educational institutions. The remaining 4% was used by the agricultural (mainly horticulture), transport and residential sectors.

Over 70% of New Zealand's coal production for domestic use is from the Waikato, for power generation, steel making and industry. About 1 million tonnes of thermal coal is imported to the North Island each year for the Huntly power station, the demand from which varies with rainfall dependent hydro inflows.

## Exports

Most of New Zealand's premium bituminous coal production is exported. These coals are valued internationally for their low ash and sulphur contents, and other characteristics such as high swelling, fluidity and reactivity, which allow them to be blended with other coals for use in the steel industry.

Exports of bituminous coal, produced entirely from the West Coast, were 2.3 million tonnes in 2010. New Zealand coal is exported mainly to India and Japan, with smaller quantities going to Chile, South Africa, Brazil, China, USA and Australia. Most exports are of coking coal, with smaller amounts of thermal and specialist coals.

## Imports

The shortfall of North Island production over demand was met by imports of 5.85 PJ or 0.26 million tonnes in 2010, virtually all for the Huntly power station. This was 62% lower than 2009 due to reductions in coal use for electricity generation.



*Solid Energy's Stockton opencast mine, Westport.*

More information can be found on the Solid Energy website: [www.coal.nz.com](http://www.coal.nz.com)

## GOVERNMENT PARTICIPATION

---

The New Zealand Government participates directly in the coal industry in two ways:

### **1. Allocation of rights to Crown-owned coal by New Zealand Petroleum & Minerals, Ministry of Economic Development.**

New Zealand Petroleum & Minerals (NZP&M) manages the New Zealand Government's oil, gas, mineral and coal resources. Its objective is to maximise the returns these resources make to the economy, in line with the Government's objectives for energy and economic growth.

New Zealand Petroleum & Minerals' role includes:

- Administration of the Crown Minerals Act 1991
- Allocating prospecting, exploration and mining permits
- Managing technical data and reports from minerals development activity
- Development of operational policy for minerals and providing advice to government
- Monitoring permit holders' work programme obligations
- Promotion of investment in the Crown minerals estate
- Collecting royalties, fees and levies.

More detailed information can be found on the [New Zealand Petroleum & Minerals website](http://www.nzpm.govt.nz).

### **2. Ownership of Solid Energy New Zealand Limited which produces 80 percent of New Zealand's output.**

Solid Energy is a State Owned Enterprise owned by shareholding Ministers and run as a company by an independent Board of Directors.

New Zealand's coal resources are either fully permitted by the Crown to coal companies or are privately owned. There is therefore limited opportunity for direct investment in unallocated resources. However, there are potential opportunities to "farm in" to existing rights or to joint venture with existing players. These opportunities are accessed through direct commercial arrangement by interested parties and whilst the Government can facilitate introductions, it does not directly participate in commercial arrangements.

[newzealand.govt.nz](http://newzealand.govt.nz)

## PERMITTING & CONSENTS

The New Zealand Government owns approximately half of all New Zealand's coal resources. Anyone wanting to prospect, explore or mine the Government's coal resources must obtain a permit from New Zealand Petroleum & Minerals under the Crown Minerals Act 1991.

An exception is that NZP&M can grant a prospecting permit over privately owned coal, although it is policy to ordinarily not grant prospecting permits over coal because New Zealand's coal resources are generally well explored.

Crown-owned coal resources are generally fully permitted, and any access to permitted resources must be done by commercial arrangement with the permit holder. Permits can be viewed using the [GIS viewer](#).

Permit application processes are explained, and application forms can be found on the [New Zealand Petroleum & Mineral's website](#).

There are 54 current permits and 31 licences issued by New Zealand Petroleum & Minerals to mine coal, many of which cover small mines that are not producing, and 50 coal exploration permits. The Crown owns only about half of New Zealand's coal resources, and mining of privately owned coal is not subject to the Crown Minerals Act 1991, although preceding legislation covers mining of some privately owned coal.

Permits issued by New Zealand Petroleum & Minerals under the Crown Minerals Act (1991) to explore for or mine Crown-owned coal do not grant land access which is by arrangement with the land owner. For more information see our [website](#).

All coal mining activities need consents under the Resource Management Act (1991) which focuses on managing the effects of activities rather than regulating the activities themselves. This enabling approach seeks only to intervene where activities are likely to result in unacceptable environmental impacts. This approach has the advantage of focusing on the reduction of environmental impacts, and successfully governs modern coal mining operations, including on Department of Conservation land.

### Producers

#### **Solid Energy New Zealand Limited**

[www.coalnz.com](http://www.coalnz.com)

Solid Energy New Zealand Ltd is a state-owned enterprise, which operates as a commercial company but with only one shareholder, the New Zealand Government.

Solid Energy extracts, processes, markets and distributes more than 4 million tonnes of coal a year from its seven underground and opencast mines around Huntly in the Waikato, Greymouth, Westport and Reefton on the West Coast and Ohai in Southland. More than half of annual output is exported, particularly for steel production as well as the manufacture of carbon fibre, activated carbon and silicon metal.

In New Zealand, Solid Energy supplies coal for New Zealand Steel Ltd's Glenbrook Mill near Auckland and is a major supplier to Huntly Power Station. Solid Energy also supplies the dairying, cement making, timber and meat processing industries.

Solid Energy has announced plans for a lignite briquetting plant, a lignite to synthetic crude oil plant, and a lignite to urea plant.

Apart from Solid Energy, the main coal resource developers and producing companies are:

- **Francis Mining Ltd**

[www.nzcoal.co.nz](http://www.nzcoal.co.nz)

Francis Mining is a privately owned producer of bituminous coal mainly for export.

- **Bathurst Resources Ltd**

[www.bathurstresources.com](http://www.bathurstresources.com)

Bathurst Resources is an ASX and NZX listed company which has acquired working mines in Southland and on the West Coast and is developing a coking/thermal export operation on the Buller coalfield.

- **L&M Coal Ltd**

[www.lmgrou.net.nz](http://www.lmgrou.net.nz)

L&M Coal is a privately-owned company with several coal tenements throughout New Zealand.

- **Birchfield Coal Mines Ltd**

[www.birchfieldcoal.co.nz](http://www.birchfieldcoal.co.nz)

Birchfield Coal Mines is a small privately owned company producing coal on the West Coast for domestic markets.

- **Glencoal Energy**

Glencoal Energy is owned by Fonterra Limited and mines coal for its dairy factories.

For more information on permits, see the [New Zealand Petroleum & Minerals website](#).



Capture from the Minerals permit maps (GIS viewer), NZP&M website

# LEGISLATION

---

## Acts and Regulations

The Crown owns all gold and silver in New Zealand. The Crown also owns a number of other minerals as an incident of the ownership of land, and through reservation of Crown ownership of minerals in the alienation of land from the Crown. Any company wanting to prospect, explore or mine in New Zealand must obtain a permit from New Zealand Petroleum & Minerals under the Crown Minerals Act 1991.

- The [Crown Minerals Act 1991](#) sets the broad legislative policy for prospecting, exploration and mining of Crown-owned minerals in New Zealand. These include all naturally occurring gold and silver and substantial amounts of coal and other metallic and non-metallic minerals and aggregates.
- The [Minerals Programme for Minerals \(Excluding Petroleum\) \(2008\)](#) policies for the allocation of permits and Crown royalties.
- The [Crown Minerals \(Minerals and Coal\) Regulations 2007](#) set out the requirements and procedures for explorers and miners.
- The [Mineral and Coal Digital Data Submission Standards](#) define acceptable formats for the lodgement of statutory digital information acquired by operators whilst undertaking prospecting, exploration and mining activities.
- The [Crown Minerals \(Minerals fees\) Regulations 2006](#) outline fees payable for the matters specified under the Crown Minerals Act for Minerals and Coal.

Previous Minerals Programmes include:

- The [Minerals Programme for Minerals other than petroleum and coal \(1996\)](#)
- The [Minerals Programme for Coal \(1996\)](#)

## Minerals & Coal Royalty Regime

New Zealand's current royalty regime stipulates the payment of either a specific rate royalty (SRR) or an ad valorem royalty (AVR) on the use of Crown-owned minerals and coal.

A SRR is applied to low value to weight/volume minerals, which includes industrial rocks and building stones, limestone and coal. The applicable rates per tonne/cubic metre sold are set out in the Minerals Programme for Minerals and Coal (excluding petroleum) 2008. The SRR component of the regime ensures that the Crown will receive a fair fixed return from such minerals without imposing unnecessary administration costs.

The tiered AVR component guarantees that the Crown will receive a fair basic royalty return from the extraction and use of its precious metals (gold and silver) and PGE while providing an opportunity for the Crown to share in the higher returns generated by larger projects without prejudicing investment decisions on new projects.

Royalty rates for AVR are:

- 1% AVR from a permit for net sales revenue \$1.5 million or less: and
- 2% AVR from a permit for net sales revenue that exceed \$1.5 million.

Royalty collection is administered by the New Zealand Petroleum & Minerals business unit of the Ministry of Economic Development. Companies provide annual SRR/AVR returns and payments and in some cases half yearly returns where the royalty payable under a permit exceeds certain levels.

The fiscal regime is administered by New Zealand's Inland Revenue Department (IRD). (Mining permits granted prior to the Minerals Programme for Minerals and Coal (excluding petroleum) 2008 may be subject to a different royalty regime.

For more information, please contact [New Zealand Petroleum & Minerals](#).



# USEFUL RESOURCES

---

See the New Zealand Petroleum & Minerals website for these fact files:

## Coal resources by region:

- [Northland](#)
- [Waikato](#)
- [Taranaki](#)
- [West Coast](#)
- [Canterbury](#)
- [Otago](#)
- [Southland](#)
- [South Island lignite resources](#)

## More useful resources:

- [Coal properties](#)
- [New Zealand Coal Resources Survey](#)
- [Operating coal mines](#)
- [Coal facts and figures](#)

## Contact details

For more information on coal resources in New Zealand, please contact New Zealand Petroleum & Minerals.

Email: [nzpam@med.govt.nz](mailto:nzpam@med.govt.nz)

Freephone (within NZ): 0508 263 782

International Calls: +64 3 962 6179

Fax: +64 4 471 0187

Address:

New Zealand Petroleum & Minerals

PO Box 1473, 33 Bowen Street,

Wellington 6140

New Zealand