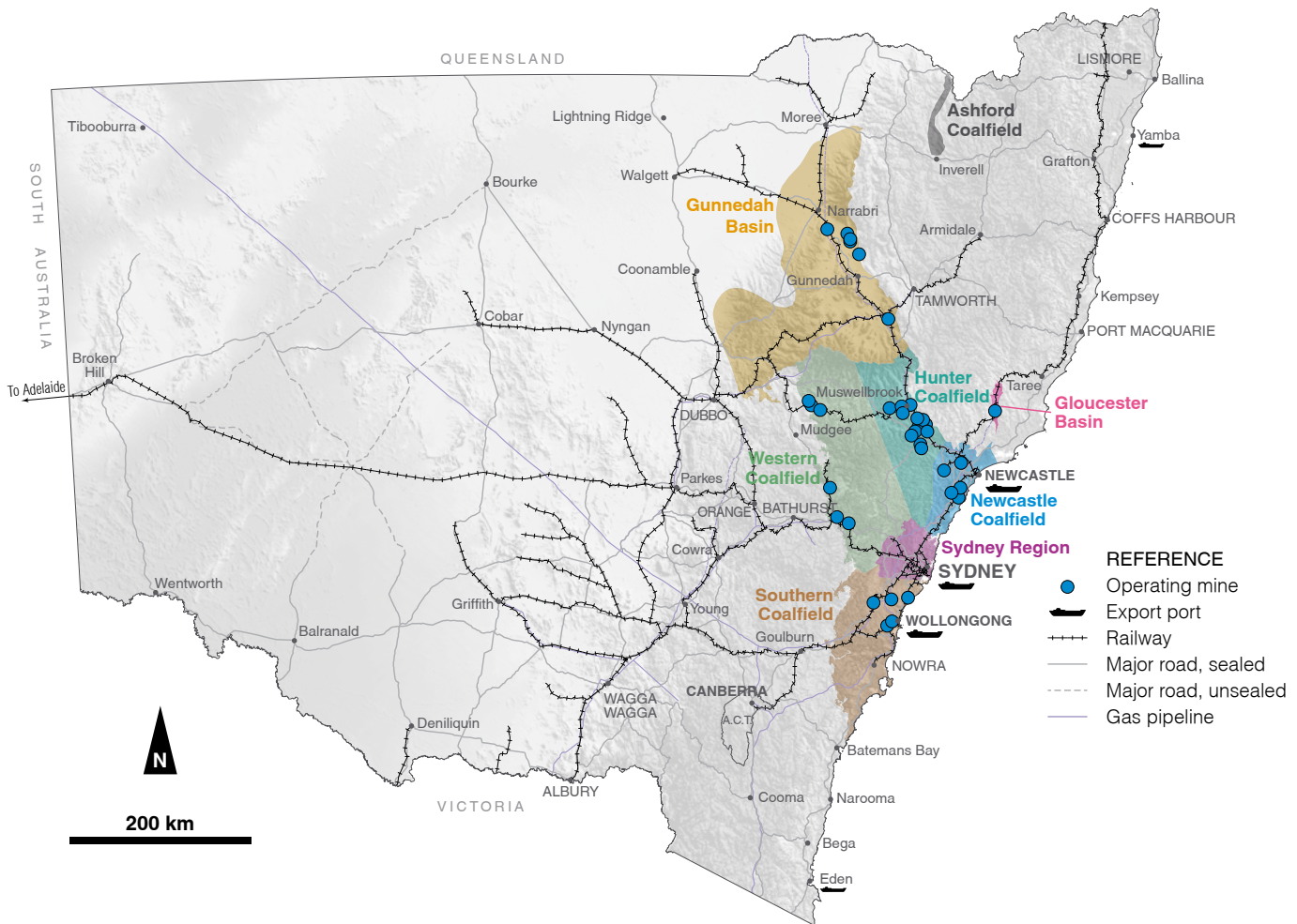


# Coking coal

## Opportunities in New South Wales, Australia



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### Overview

- The coking coal produced in New South Wales (NSW) includes premium hard, semi-soft and soft coking coal.
- Premium hard coking coals are produced from the Southern Coalfield of the Sydney Basin.
- The main coal mining areas are linked by rail to the Newcastle and Port Kembla ports.
- In 2019–20, the NSW coal industry produced 256 Mt run-of-mine (ROM), yielding 200 Mt of saleable coal, worth around \$18 billion or approximately 68% of the total value of the state's mineral production.
- NSW has more than 7 billion tonnes of recoverable coal reserves contained within 39 operating mines, and over 20 new major development proposals.

### Geological setting

Over 60% of NSW is covered by sedimentary basins. The major coal resources of NSW are located in the 500 km long, 150 km wide Permian–Triassic Sydney–Gunnedah Basin in the east of the state. It extends from south of Wollongong to north of Newcastle and north-westerly through Narrabri into Queensland. Relatively minor coal resources are mined in the Werrie and Gloucester basins. Exploration is active in the Oaklands and Ashford basins. The Permian, bituminous coal resources in the Sydney–Gunnedah Basin consist of a variety of coal types from low-volatile, hard coking coals to high quality thermal coals.

## Coal regions

The **Sydney Basin** is subdivided into five major coalfields, namely the Hunter, Newcastle, Southern, Western and Central coalfields.

The **Hunter Coalfield** is the largest coal producing area of NSW, containing significant reserves of export quality low-ash soft coking coals. Coal is mined from over sixty seams within the Greta Coal Measures, the Wittingham Coal Measures and the Newcastle Coal Measures and many mines are large-scale, multi-seam, open-cut mining operations, with lesser numbers of underground operations.

The **Newcastle Coalfield** contains low-ash, medium-fluidity, soft coking coal in the central area of the coalfield and is produced from ten seams within the Greta Coal Measures, the Tomago Coal Measures and the Newcastle Coal Measures.

The **Southern Coalfield** is renowned for its premium quality hard coking coals. These coals are medium-ash, low-volatile, and mined mainly from the Bulli, and Wongawilli seams by underground mining methods at depths in excess of 400 m.

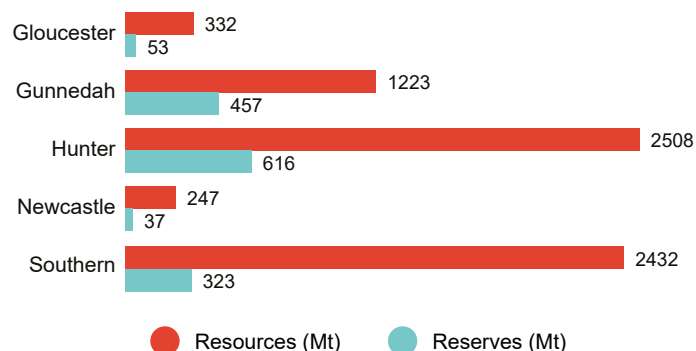
The **Western Coalfield** produces mainly thermal coal, with a relatively smaller amount of coking coal.

The **Gunnedah Basin** is divided into two sub-basins of unequal portions by the north-south-trending Boggabri Ridge. The eastern (smaller) portion, the Maules Creek sub-basin, contains some high-volatile, high-fluidity soft coking coal in the Hoskissons Seam in the Black Jack Group. The western (larger) portion, the Mullaley sub-basin, contains predominantly thermal coals in the north with semi-soft coking coal in the southern parts.

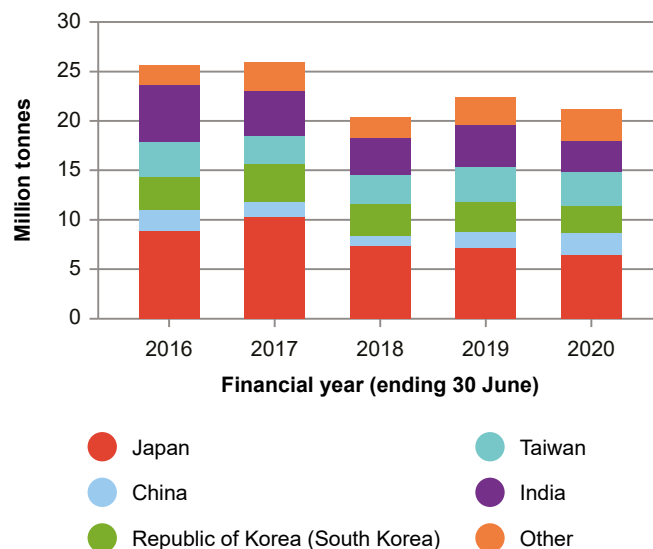
The **Gloucester Basin**, approximately 80 km north-east of Newcastle, also contains Permian bituminous coal. The basin is approximately 38 km long and 20 km wide and contains medium-ash, medium-volatile thermal and coking coals mined in five seams within the Gloucester Coal Measures.

The **Ashford area** in the state's north contains relatively small amounts of coking coal in a narrow discontinuous strip that extends from near Inverell northwards towards the Queensland border. Mining is hampered by the distance to markets and ports, however exploration continues in this area, with encouraging results.

## Coking coal resources and reserves by region



## NSW export coking coal by destination



## Typical specifications for NSW export coking coal

	Region			
	Southern	Hunter	Newcastle	Gunnedah
Coal type	Hard coking	Soft coking	Soft coking	Soft coking
Moisture % (ad)	1.0	2.7	2.3	4.0
Moisture % (ar)	7.9	8.9	8.1	-
Ash % (ad)	9.3	8.9	8.1	6.5
Vm % (ad)	22.9	34.7	35.3	37.9
Ts % (ad)	0.40	0.55	0.9	0.45
Se % (kcal/kg)	7570	7250	7480	7400
CSN	6.5	5.0	6.0	5.0
AFT (°C) deform	1560	1380	1290	-
AFT (°C) flow	1590	1540	1550	-
HGI	68	51	49	45
Gray-King	G3	G2	G6	-
Max. fluid (ddpm)	1800	130	7420	200
Phosphorus % (ad)	0.061	0.025	0.045	0.005

## Release of areas for coal exploration

Through its Strategic Release Framework for Coal and Petroleum Exploration, the NSW Government has introduced the independently chaired Advisory Body for Strategic Release, to review and define which areas of the state are released for coal exploration. Inputs into the framework include a geological resource assessment, conducted by the Geological Survey of NSW; and a preliminary regional issues assessment of economic, social and environmental factors, which incorporates community and stakeholder consultation, conducted by the NSW Department of Planning, Industry and Environment.

The Strategic Release Framework ensures that the NSW Government's approach to issuing coal exploration titles is transparent, informed and consistent with their broader land use strategies and community expectations.