NSW GOVERNMENT | Planning, Industry & Environment

IRF21/1627

Mr Mark Darras
Chairman
Advisory Body for Strategic Release

Via email: mark.darras@gmail.com

Dear Mr Darras

I refer to your correspondence requesting advice from the Department of Planning, Industry and Environment (the Department) about the Ganguddy and Kelgoola potential coal exploration areas east of Rylstone.

The Department has conducted a high-level desktop analysis of the likely environmental, economic and social opportunities and constraints. The Department's analysis is informed by publicly available information and the Ganguddy-Kelgoola Coal Resource Assessment provided by the Geological Survey of NSW.

The analysis also draws from the relevant findings and conclusions of the Hawkins-Rumker PRIA given the relative proximity of the areas and extensive community feedback received of relevance to the Ganguddy-Kelgoola areas.

Please note this advice does not constitute a PRIA as more detailed work, including community consultation, would be required to fully identify potential opportunities and constraints should the Advisory Body for Strategic Release (ABSR) decide to consider the area under the *Strategic Release Framework for Coal and Petroleum Exploration.*

***Ganguddy-Kelgoola Potential Release Areas***

The potential release areas adjoin the Hawkins-Rumker area and are located almost entirely within the Mid-Western Regional local government area (LGA). They are located approximately 6 km east of Rylstone and 12 km east of Kandos (see **Attachment A**).

The potential release areas cover an area of approximately 27,000 hectares. Land uses in and around the potential release areas include conservation, forestry, agriculture and tourism uses. There are approximately 60 private landowners in the potential release areas.

The land uses reflect the topography and landscape features of the area, with the majority of land within the potential release area densely vegetated and characterised by steep ridges and valleys (particularly in the western and southern areas).

The eastern part of the potential release areas are dominated by a large sandstone plateau incised by the westerly flowing Cudgegong River. The edge of the plateau is commonly characterised by cliffs up to 30 metres in relief. The plateau gives way to undulating hills and broad valleys in the southern and western extents of the area which support some grazing and horticultural uses.

The areas are largely comprised of State forest (including the Nullo Mountain State Forest and Coricudgy State Forest) and Crown land. The Wollemi National Park, which forms part of the Greater Blue Mountains World Heritage Area, bounds the area to the north-east, east and southeast (see **Attachment A**).

A resource assessment prepared by the Geological Survey of NSW estimates a coal resource of approximately 150 million tonnes of run-of-mine coal which could support a mine for more than 20 years. The accessible coal reserves are located at least 600 metres underground which means that any future mining would be by underground mining methods.

Most of the land within the potential release area is zoned RU1 Primary Production, E1 National Parks and Nature Reserves and E3 Environmental Management under the Mid-Western local environmental plan (LEP). However, there are small portions of land to the east which are zoned RU2 Rural Landscape under the Singleton LEP and RU3 Forestry in the Singleton, Muswellbrook and Lithgow LEPs respectively.

Although exploration and underground mining are not permissible in any of these zones under the respective local environmental plans (LEPs), the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007* prevails and consequently coal exploration and underground mining are permissible within the entire potential release area under the *Environmental Planning and Assessment Act 1979*.

***Economic Considerations***

Although a detailed commercial viability assessment has not been undertaken for the potential release areas, the Geological Survey of NSW notes that the economic viability of any future project in the Ganguddy-Kelgoola potential release areas is likely to be similar to the Hawkins and Rumker areas. This means that the Ganduddy-Kelgoola areas would likely require relatively high coal prices over several decades and extensive longwall mining to offset capital costs and to be viable.

In its PRIA for the Hawkins-Rumker areas, the Department noted the uncertainties around the long-term demand for thermal coal and coal prices in light of rapid changes to the coal market and the global outlook on greenhouse gas emissions.

Consequently, the Department considers that there is a high degree of uncertainty about whether a mine would be viable in the 10-20 years that would be required to complete feasibility studies and mine development for the Ganguddy-Kelgoola areas. Given the significant amount of capital and operating costs that would be required to develop a greenfield mine, these uncertainties are likely to represent a constraint to any future exploration and development.

The Geological Survey of NSW has also advised that longwall mining could be an inappropriate mining method due to a high risk of geological constraints (igneous intrusions) that may present safety risks. If that were the case, the option of bord and pillar mining would be the preferred mining method. However, this method generally results in less effective and efficient extraction and this could mean that any large-scale mining operation is not viable in the potential release areas.

Extraction of the resource would undoubtably result in significant economic benefits to NSW including undiscounted royalties upwards of $900 million. The Department also notes that the development of the coal resource would also support regional economic activity and stability, and construction and supply contracts would benefit regional businesses and the regional economy.

***Transport and Access***

Access within the site is generally limited to unsealed roads, the majority of which are within state forests are would not be suitable for heavy vehicle movements. When combined with the steep terrain and dense vegetation, this is likely to make access difficult for the purpose of undertaking exploration and further defining the economic viability of the resource.

Any coal mine is likely to require access to rail infrastructure to transport coal to market. As there are unlikely to be any opportunities to share infrastructure with operating mines in the broader region (given that the closest mine is located approximately 30 to 40 km from the potential release areas), this would require the development of rail spur connecting to the nearby Wallerwang-Gwabegar Railway. Any rail spur would need to be approximately 20 km long and would be a significant capital cost. There may be other issues associated with the development of such a substantial rail spur line including surface disturbance, restricted landowner access and other impacts associated with rail transport including noise.

As noted in the Hawkins-Rumker PRIA, the Wallerawang-Gwabegar railway is not currently operational and significant capital expenditure would be required to reinstate the railway line to transport coal between Kandos and Gulgong (approximately 93 km in length). A Transport for NSW study has concluded that the cost benefit of such upgrades would be marginal.

An alternate option is to transport coal to the south, however this could have amenity impacts (specifically noise and air quality) on approximately 250 landholders in Kandos. Given that the railway is not currently operational, these impacts could be significant and when combined with any amenity impacts form the rail spur, could potentially form a material constraint to any future development.

**Social and Economic Considerations**

In its assessment of the Hawkins and Rumker release areas, the Department noted that exploration could have the potential for significant social impacts for the region, including the town of Rylstone. These impacts could occur as a result of large-scale land acquisitions that can accompany the exploration phase of mining projects and might include a reduction in local populations and services.

Similar impacts could be expected in the Ganguddy-Kelgoola areas, however, the scale of these impacts is not expected to be as significant as there are much fewer landholders in the potential release areas (60 compared to 170 in the Hawkins and Rumker areas).

Notwithstanding, the communities are remote from major settlements such as Rylstone and small changes in local populations could have significant impacts on social fabric, community values, community cohesion and sense of place.

Any mining in the area would result in benefits to the broader region, including employment opportunities for the existing mining workforce in Mudgee and Lithgow. The mining industry is an important element of the Mid-Western Regional local government area's employment base with approximately 1700 people employed at mining operations located north of Mudgee. Similarly, the mining industry employs approximately 700 people in the Lithgow region. If developed, the potential release areas would offer sustained employment opportunities for these workforces.

***Aboriginal Heritage***

At least 17 Aboriginal heritage sites are recorded on the NSW Aboriginal Heritage Information Management System (AHIMS) within the potential release areas including rock art sites and artefact scatters.

In community consultation on the Hawkins Rumker PRIA, many members of the community raised concerns about Aboriginal heritage features and values that are located outside the Hawkins and Rumker areas and in much closer proximity to the Ganguddy-Kelgoola areas. These included the Ganguddy-Dunns Swamp, which is located within the Wollemi National Park approximately 10 km from the potential release areas, which is significant for its significant for its pagoda features and rock art.

Subsidence from underground mining would have the potential to impact on aboriginal heritage, particular any caves and rock art sites, and the Aboriginal community has expressed concerns about the cumulative impacts of mining in the region including on environmental features (e.g. swamps, watercourses and rock features), connection with Country and song lines.

Given the known cultural heritage and landscape features of the area (including unique topography/rock formations and water features), it is expected that further Aboriginal cultural heritage sites would be identified. When this is combined with concerns about the impacts of mining and the presence of existing sites of significance, the Department considers that Aboriginal cultural heritage could form a material constraint to underground mining and development of surface infrastructure.

***Landforms***

The potential release areas are characterised by undulating hills, steep terrain and rocky escarpments. The Department notes that pagoda landforms located in the nearby World Heritage area have been recognised as an internationally significant landscape and there is potential for significant pagoda features in the release areas, given their presence at the nearby Ganguddy-Dunns Swamp (see **Attachment B**).

The Department notes that pagodas and cliff lines can be sensitive to subsidence impacts from longwall mining and that given the significance of some of these features, they could form a constraint to any future mining.

***Water Resources***

The potential release areas are located within the catchment of the Cudgegong River. The Cudgegong River flows northwest through the potential release areas towards its confluence with the Macquarie River. Its headwaters are located in the Coricudgy State Forest, including 14 higher order streams.

Subsidence induced surface cracks would have the potential to drain the river and several of its upland tributaries. As noted above, Ganguddy-Dunns Swamp is a key site of environmental and social significance. Although it is situated outside of the potential release areas, any future underground mining would have the potential to reduce the amount of water reporting to Ganguddy-Dunns Swamp and negatively impact the environmental, social and tourism related values of the area.

Subsidence effects also have the potential to impact overlying swamps and groundwater dependent ecosystems (GDEs). There are approximately 870 hectares of GDEs mapped in the proposed coal release areas, the majority of which occur along the northern and western areas, with some occurrence towards the east within the Coricudgy State Forest.
Specifically, the Department notes there is the potential for high priority GDEs near the Cudgegong River (see **Attachment B**).

The Department considers that the locations of the GDEs, swamps, the Cudgegong River and its connecting streams could form a material constraint to any potential future mine design.

***Biodiversity***

The potential release areas contain large portions of state forest and are densely vegetated. They are also located adjacent to and surround part of the Wollemi National Park that forms part of the Greater Blue Mountains World Heritage Area.

The Greater Blue Mountains World Heritage Area Advisory Committee has previously recommended the inclusion of parts of the potential release areas, including the Coricudgy State Forest and Nullo Mountain State Forest and Flora Reserve, in the world heritage area for its biodiversity values.

To this end, the Department notes that the potential release areas contain likely habitat for the Regent Honeyeater which is a critically endangered species under the *Biodiversity Conservation Act 2016* and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Threatened flora species have also been recorded in the eastern portion of the potential release area, including one endangered and three vulnerable species endemic to the Rylstone/western Wollomi area, and it is likely that additional threatened flora and fauna species would be identified.

The proximity to the Greater Blue Mountains World Heritage Area could limit the nature and location of surface infrastructure in some parts of the potential release areas, and trigger approval requirements under the EPBC Act if any subsidence impacts are predicted to occur.

However, given that mining is likely to be undertaken using underground methods, and would involve little surface disturbance outside of exploration drilling, ventilation shafts and minor surface infrastructure, the Department does not consider that the biodiversity values of the site and its surrounds would represent a significant constraint.

**Conclusion**

There appears to be a high level of uncertainty as to whether mining in the Ganguddy-Kelgoola areas would be economically viable noting that the economics are marginal, the capital costs of establishing a new greenfield mine in the areas would be high, a significant rail spur line would need to be developed, local rail infrastructure would need to be upgraded and there are no opportunities to share infrastructure with any other mines in the region. This uncertainty would have the potential to prolong any negative social impacts on the community.

There are several constraints that could also limit any development and production of the coal resource in the potential release areas. In particular, mine subsidence impacts could reduce water availability for Ganguddy-Dunns Swamp and GDEs and impact on pagoda features and Aboriginal cultural heritage including rock art. The need to avoid these impacts could constrain any future mining development. Rail infrastructure would have the potential for noise impacts on residents along any rail spur line route and the town of Kandos which could form a material constraint.

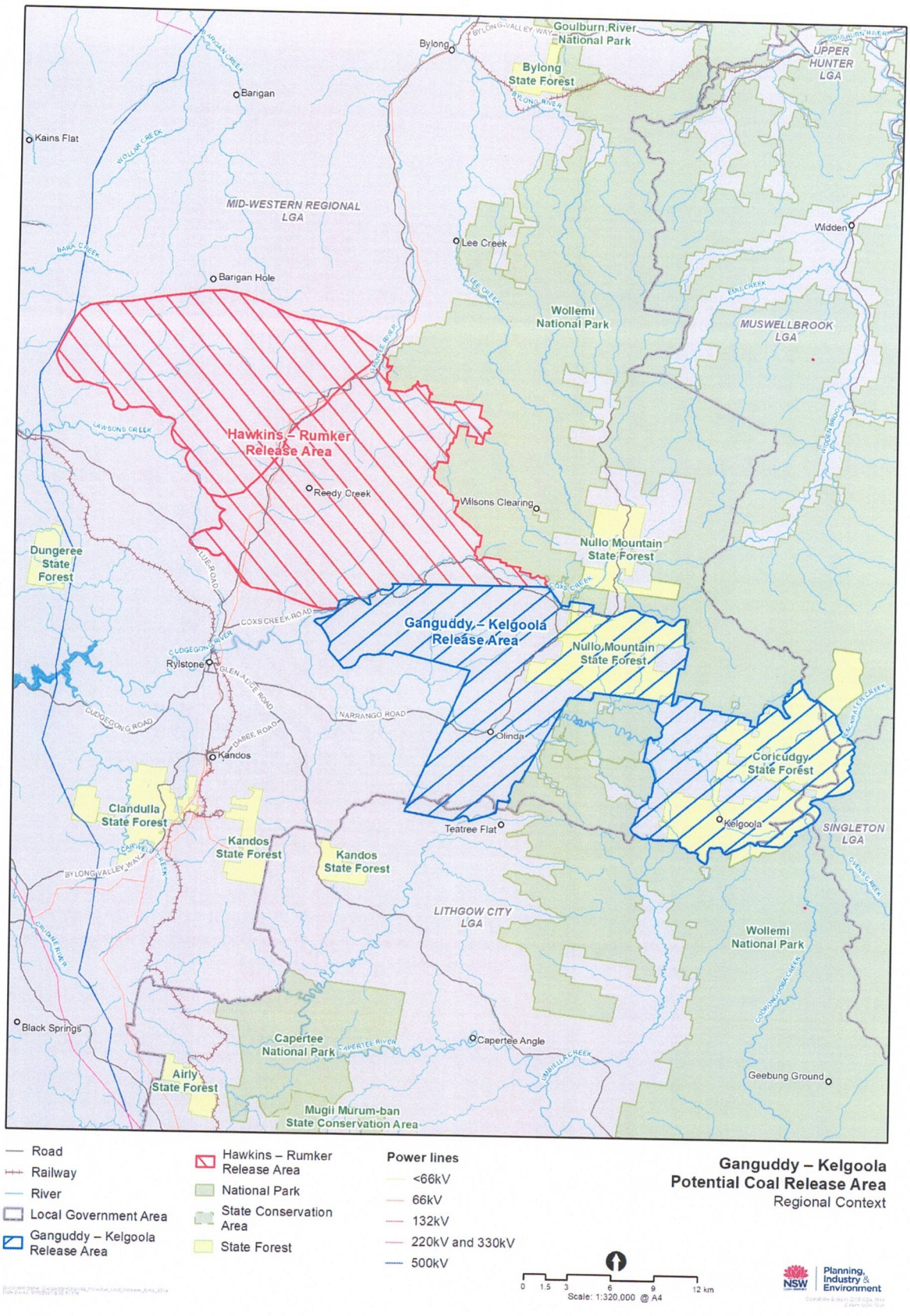
I trust this advice is of assistance to the ABSR. Should you require any further information, please contact Matthew Riley, Director Energy and Resources Policy, on (02) 9274 6339.

Yours sincerely,

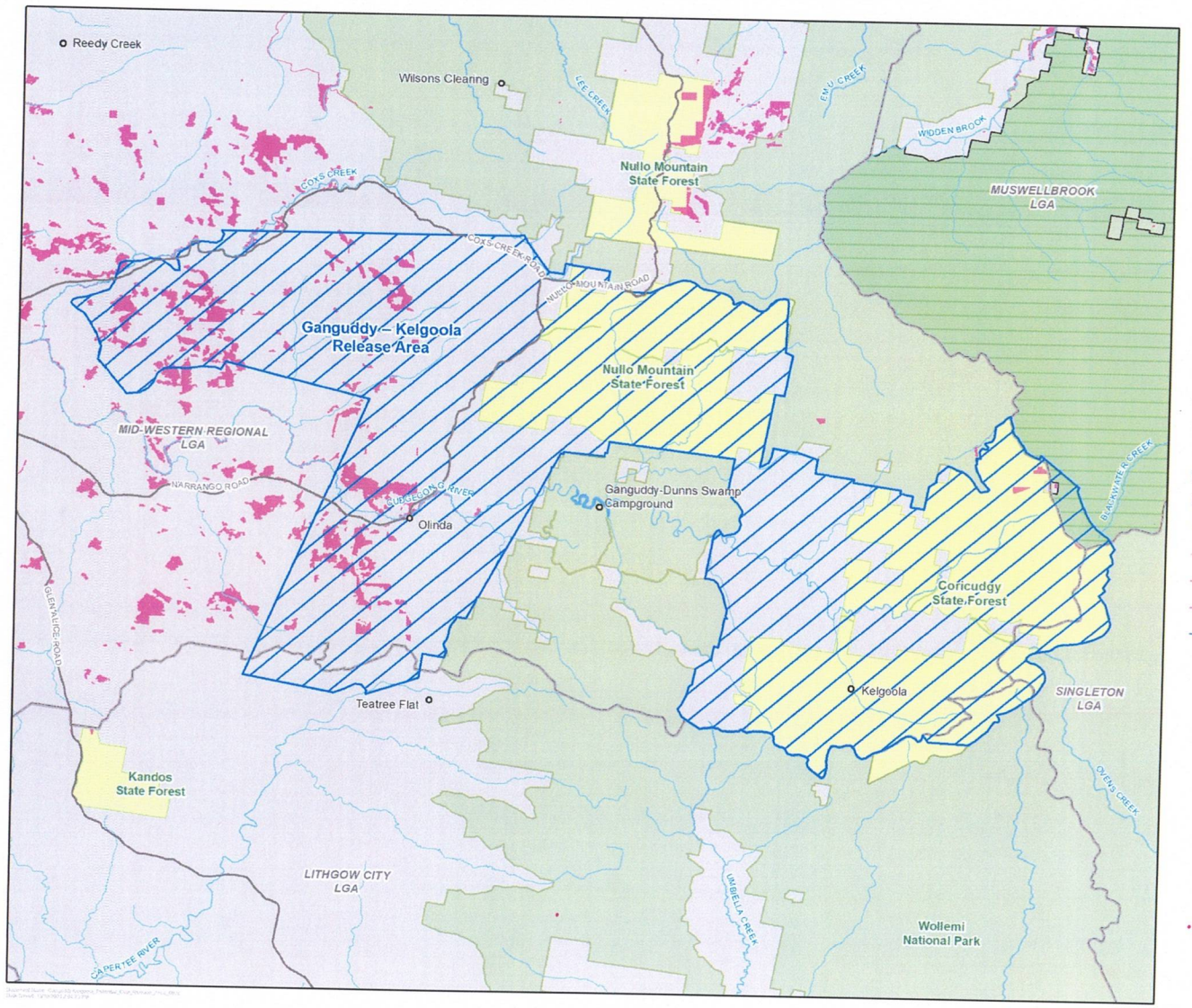
Felicity Greenway 18/10/21

**Felicity Greenway**
**Executive Director**
**State Policy and Strategic Advice**

# Attachment A – Regional Context



# Attachment B – Site Constraints




**Ganguddy - Kelgoola Potential Coal Release Area**

Constraints

**Legend**

- Road
- Railway
- River
- Local Government Area
- Ganguddy – Kelgoola Release Area
- Groundwater Dependent Ecosystems
- National Park
- State Conservation Area
- State Forest

**Heritage**

- Item - Landscape

**Power lines**

- <66kV
- 66kV
- 132kV
- 220kV and 330kV
- 500kV

0 0.5 1 2 3 4 km

Scale: 1:175,000 @ A4

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