



EIS 323

AA052353

Proposed power developments on the Central Coast

NSW DEPT PRIMARY INDUSTRIES



AA052353

PROPOSED POWER DEVELOPMENTS ON THE CENTRAL COAST



ELECTRICITY COMMISSION

OCTOBER 1984

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2. Mr. Wulff.



MINISTER FOR
MINERAL RESOURCES
AND ENERGY

NEW SOUTH WALES

12 September, 1984

Professor Don George,
Vice Chancellor,
University of Newcastle

Dear Professor George,

I would appreciate it if you read the enclosed letter to tonight's meeting.

Even though I was not invited to attend tonight's meeting and even though newspapers on the Central Coast have not contacted me, I believe it is necessary to place on the public record the Government's position as to possible further power station development in Wyong Shire.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Peter Cox', written in a cursive style.

PETER COX



NEW SOUTH WALES

12 September, 1984

I am aware of Central Coast residents' concerns regarding Electricity Commission plans for possible future development in Wyong Shire.

Although I have not been invited to address this meeting, I believe I should make the following statement to clarify the situation.

The Government has made no decision to proceed with power station construction at Mardi, Chittaway Point, Dooralong or anywhere else on the Coast.

Since taking office I have directed the Commission to undertake a thorough review of its development plans, giving attention to the possibility of re-development of existing power station sites.

This review has not been completed and the Government will not make any decision regarding any further power station construction until it is.

The Commission has the installed capacity to generate 12,905 megawatts of electricity. The peak and all-time record demand was 8,623 megawatts on July 4, the coldest day Sydney has experienced in more than 80 years.

In April next year the first 660 megawatt generator at the new Bayswater power station is due to commence operations. Three other generators at this station will come into operation at approximately six monthly intervals.

The Commission has also commenced construction of a two, 660 megawatt generator power station at Mount Piper near Lithgow.

While I appreciate residents' concern about possible development in their neighbourhood, I believe it is necessary to emphasise that in order to plan for future power station development, the Electricity Commission must undertake most detailed studies of likely sites.

These studies do not necessarily mean that construction will follow. They only give the Government options to consider.

The Commission's landholdings in the Chittaway Point - Tuggerah area are only part of a site bank the Commission holds in several areas of the State.

Let me assure residents of the Central Coast that when a decision has to be made about future power station construction, the Mardi area would be only one of several options put to me. I would not recommend that Cabinet accepts this proposal or any proposal until I was completely satisfied that every possible environmental safeguard would be applied to the construction of such a station and that residents of any affected area were properly consulted.

POWER DEVELOPMENTS ON THE CENTRAL COAST

This document has been prepared to more fully inform members of the public about existing and possible future developments by the Electricity Commission of New South Wales in the Central Coast region

September 1984

ATTACHMENTS

- Figure 1: Locations of operating power stations, power stations under construction and possible future power stations.
- Figure 2: Suggested arrangement for possible power station at Mardi, including associated cooling water canals and coal mines.
- Figure 3: Layout of transmission lines which would be required to connect a power station at Mardi to the State-wide grid.
- Figure 4: Provisional locations of five mine sites and associated colliery holdings considered for Mardi proposal.
- Figure 5: Example of project works arrangement for possible Olney Power Station.
- Figure 6: Proposed coal supply for possible Olney Power Project.
- Supplementary Attachment: Tuggerah Substation and Associated Works :
Extract from Environmental Impact Statement on
"Augmentation of Electricity Supply to the Gosford-Wyong Area"

HOW WE CHOOSE A POWER STATION SITE

A power station designed to produce electrical power with acceptable **economy** cannot be built "just anywhere".

Indeed, there are three prime prerequisites which must be met in the selection of any new site for such a facility.

These are:

- . Available land in
- . close proximity to large amounts of cooling water near
- . easily accessible coal supplies guaranteed for a period of thirty years or more -- the productive life-span of a thermal power station.

There are very few areas in New South Wales where these three vital elements occur in close proximity.

The Central Coast is one of the few.

It is richly endowed with proven coal reserves, has a coastal lake system almost tailor-made for cooling purposes and, until relatively recently, was not heavily populated.

It was during those earlier days, when population pressures were not a problem, that the Electricity Commission began to acquire land in the Central Coast area to meet the immediate and long-term power needs of New South Wales.

It was a far-sighted and economically responsible decision which has led, so far, to the building of Wangi, Munmorah, Vales Point and Eraring Power Stations on the Central Coast lake system.

It was also one which, today, has put the Commission in a position to choose between a number of available sites for the construction of at least one, but perhaps two, major power stations (4 Units x 660 Megawatt capacity each) in an area eminently suited to the economic generation of large amounts of electrical energy.

And, because we bought much of the land as long as 20 years ago, we were able to do so at reasonable cost and with the least possible disruption to landowners in the area at the time.

That some disruption has occurred subsequently cannot be denied. We believe, however, that by working together we can minimise it - giving each affected individual a "fair go" and New South Wales the electricity it increasingly needs.

EXISTING CONSTRUCTION AND POSSIBLE FUTURE POWER STATION SITES

Figure 1 (attached) shows the locations of operating power stations, the locations of power stations under construction and the possible locations of future station developments.

Operating stations are located at Munmorah and Vales Point in Wyong Shire, at Eraring and Wangi in Lake Macquarie Shire, at Liddell in Muswellbrook Shire and at Wallerawang within the City of Greater Lithgow. The plan does not show Tallawarra Power Station located in Wollongong City.

Stations under construction are located at Bayswater on the boundary between Singleton and Muswellbrook Shires and at Mount Piper within the City of Greater Lithgow.

Sites identified for possible future power stations are located at Mardi and Olney in Wyong Shire and at Foybrook in Singleton Shire. The construction of Mount Piper Power Station involves the building of two units but the station could be expanded to four units at some future time. There is also scope for the installation of a single 660 Megawatt unit at Tallawarra.

The Commission is currently undertaking a programme of coal exploration for future power station developments. It now holds Authorities to Prospect for coal in the area west of Tallawarra, on the Central Coast in the area surrounding Mardi, in areas surrounding the Liddell, Bayswater and Foybrook sites, and in the area to the east of Wallerawang and Mount Piper.

In addition, the Commission has been granted Authority to Prospect in the Scone-Murrurundi area and in the Wollar area. It is also carrying out coal exploration programmes in joint venture with the Department of Mineral Resources in the Rylestone and Narrabri areas.

POSSIBLE PROGRAMME OF FUTURE DEVELOPMENTS

The four 660 MW generating units at Bayswater Power Station are due to be commissioned during 1985 and 1986, followed by the commissioning of the two 660 MW generating units at Mount Piper.

The actual date of commissioning the Mount Piper units will be determined by future growth in electricity demand. Under the present programme, it is expected that they will be commissioned in 1990 and 1991, although flexibility has been built into the programme to allow for some advancement or delay as needs may require.

On the assumption that load growth will continue at the current 3% per annum, it will be necessary to commission a new 660 MW generating unit each year from 1994 until about 2002. Should the load growth vary, the interval between the commissioning of units will be changed accordingly.

For the base case of 3% growth per annum, it would be necessary to commission three new power stations of the size of Eraring during the next 20 years.

Based on existing natural resources, two of these stations could conceivably be built on the Central Coast.

The sites under consideration in this area are:

Mardi Development

The area adjacent to Tuggerah Lake immediately to the north of Chittaway Point has long been recognised as having potential for the development of a power station.

During the 1960's, the Commission identified an area of land suitable for that development and began purchasing the affected properties as and when land owners wished to sell. The area has long been marked as a power station site in commercial publications (e.g. Gregory's).

The original site, however, did not provide for ash disposal, the associated coal mines and transmission lines. Accordingly, in 1975 when the Wyong Structure Plan was being formulated, further areas of land required for an ash disposal and transmission line corridor were purchased on the same basis as the original site. By 1981 exploration had accurately defined the associated coal reserves, making it possible to identify specific coal mine sites. A decision was made to extend the site boundaries accordingly.

During 1981 and 1982 detailed project layouts were prepared for a power station located adjacent to the lake. Soon afterwards, however, it was recognised that development of a power station on the Chittaway Point lake site presented considerable environmental problems and consideration was then given to relocating the station on the so-called Mardi site, in the foothills to the west of the Freeway.

Olney Site

Coal exploration has demonstrated that there are sufficient reserves of coal to support a power station in the district. Only preliminary studies, however, have been undertaken for a possible power station on the site designated "Olney".

Notice of these studies has appeared in both the 1982 and 1983 Annual Reports of the Commission. It appears that the proximity of this site to the Dooralong Valley may have led to recent erroneous speculation that the Valley itself is being considered for a power station.

The work on the Olney project has not yet reached the stage where the components can be located with confidence. Figure 5, however, shows one possible arrangement forming the basis of the current investigations.

It is envisaged that the station would be joined to the transmission system by connection to the existing 330 kV transmission lines which pass through the site (these would be uprated to 500 kV operation) and by the construction of a new 500 kV transmission line connected to the system at Eraring.

PROPERTY PURCHASE AND COMPENSATION

Today, it is generally necessary for technical investigations to be completed and the legal requirements of the Environmental Planning and Assessment Act complied with, before the Commission is able to negotiate the purchase of properties affected by its proposals.

It is the Commission's policy that any land required would be purchased at the then current market value.

HEALTH EFFECTS OF HIGH VOLTAGE TRANSMISSION LINES

The Commission has been carefully monitoring the technical and medical literature on the effects of electric and magnetic fields emanating from transmission lines and has established contact with other researchers in the field.

Claims that these fields may be prejudicial to human health are not only unsubstantiated but have been refuted by two World Health Organisation investigations into the subject - both of which have given transmission lines a clean bill of health. Other public inquiries, around the world, have come to the same conclusion.

Electric and magnetic field intensities associated with Electricity Commission of New South Wales transmission lines are low by world practice and lie well within limits specified by the World Health Organisation (WHO Regional Publication European Serial No. 10 Copenhagen 1982).

For example, a typical single circuit 330 kV transmission line of the type between Tuggerah and Sterland would have electric fields less than half and magnetic fields less than a tenth of those specified by the WHO in the above reference.

A further WHO Working Group which met in Geneva in March 1984 updated the earlier material, and although the new report is not yet available, the Chairman of the working Group has advised that the conclusion of the **previous** study can still be regarded as authoritative.

CONCLUSION

It is known that the coal resources in the Central Coast are adequate to supply the requirements of two new major coal-fired stations similar in size to that recently completed at Eraring.

Because of the limited number of sites available for electricity generation, it is the Electricity Commission's view that these sites should be preserved and retained as viable options for meeting the electricity needs of the State.

The stations would make a major contribution to the economic life and well being of the community, each providing direct employment for thousands of people, both during construction and operation. Each would contribute in excess of \$1 million per week in wages, at today's values, to the community.

However, both stations are only in the investigation stage and no firm decision has been made in respect of their development.

Any decision on development would be made by Government, not by the Electricity Commission.

Moreover, a decision to proceed would only be a first step.

The preparation of detailed Environmental Impact Statements would follow, giving all affected members of the public far-reaching rights of direct participation in final planning.

EXTRACT FROM ENVIRONMENTAL IMPACT STATEMENT ON
"AUGMENTATION OF ELECTRICITY SUPPLY TO THE GOSFORD-WYONG AREA"

(1 - Introduction, pp 1,2,3,4 &5)

TUGGERAH SUBSTATION AND ASSOCIATED WORKS

The Central Coast of New South Wales has been an important growth centre for several decades. To match the increasing population and development on the Central Coast, the local electricity supply has been upgraded on a number of occasions over the last 30 years. The latest augmentation to supply was completed in 1978 with the establishment of a new substation at Gosford and associated transmission line works including an uprating of the 132 kV wood pole transmission line between Wangi, Ourimbah and Mount Colah.

In more recent years, the growing local demand for electricity has necessitated another increase in the capacity of the transmission system supplying the district. In anticipation of this requirement, consideration has been given over the last decade to the various methods available to improve the supply of electricity to the Central Coast. In this regard, account has been taken of the possible establishment of a power station in the area which would superimpose on the local supply network a major development of the transmission system.

Since the early 1960's, studies have been carried out relating to the future development of coal resources available in the Tuggerah-Wyong area to fuel a possible power station located near the shores of Tuggerah Lake. Land purchases were commenced by the Commission in the Tuggerah district during the 1960's with a view to acquiring tracts of land near Chittaway Point and near Mardi linked to each other by a services corridor. These lands were to be held available for possible future use for power station and related purposes. To the present day no firm decisions have been made to construct a power station in the area or to develop the coal resources.

In contrast, by 1978 firm plans had been completed for the development of an electricity sub-system to supply power from the interconnected State 330 kV transmission system to the existing distribution network in the Gosford-Wyong area. These plans did not depend on the development of a power station in the vicinity of Tuggerah Lake. They sought however, to make use of the "special uses corridor" already designated for the

possible power station project in order to avoid a potential proliferation of transmission line routes. Furthermore, the works were planned in such a way that they would not inhibit a power station project should it be undertaken in the future.

The scheme provided for the construction of a 330/132 kV substation at Tuggerah and two associated transmission lines. A 132 kV line would link the new substation with Ourimbah Substation and a 330 kV line would bring power to the new substation from an existing power source some 13 km to the west. Provision was also made for a future augmentation to be carried out when needed to meet further increases in demand for electricity in the area.

ENVIRONMENTAL APPROVAL PROCESSES

The environmental approval processes for works such as these have varied over the years.

In 1978-9 when the preferred routes for the transmission lines and the site location for Tuggerah Substation had been selected in principle, the procedures for environmental impact assessment were set out in a State Pollution Control Commission publication known as "Environmental Standard EI-4" (Reference 1). Under these procedures, it was necessary to determine firstly whether the works fell into the category of "Proposals that have Minor Environmental Impact" or "Proposals that may have Significant Environmental Impact or that may Generate Significant Public Controversy". It was considered that as the proposed works were passive in the sense that they would be normally unattended and neither consume raw materials nor produce effluent they should appropriately be categorised as having minor environmental impact. However, the matter of whether they "have generated or may generate significant public controversy" was further pursued. After consultation with various responsible authorities it was considered by both the Wyong Shire Council and the Electricity Commission that public controversy was unlikely. Following discussions with the State Pollution Control Commission, the body then responsible for administering the environmental assessment procedures, it was agreed that the production and display of an environmental impact statement was not then required and hence was not undertaken at that time. A large proportion of the works has now been completed. One landowner has successfully pursued

legal proceedings against the Commission with respect to the acquisition of an easement which in turn has led to difficulties in finalising property purchase from two other landowners. These property matters have recently attracted some media interest but there has been no adverse community reaction to the works as a whole.

New procedures regarding environmental approval for these works were established with the commencement of the Environmental Planning and Assessment Act on 1st September, 1980. The new Act spelt out a scheme whereby the local council was the consent authority for developments of this nature or if no consent was required, the proposal was to be treated as an "activity" requiring a decision to be made by the public authority responsible for the works, having followed the appropriate environmental assessment procedures.

The proposed transmission works were to be sited over lands where development was regulated, in the main, by Wyong Shire Council's Interim Development Order No. 58. Some time after viewing the proposed 330 kV line route and advising no objection to the proposal, Wyong Council, having undertaken a review of its local planning instrument, arranged for the gazettal of an alteration to Interim Development Order No. 58 which omitted "utility installations" (such as electricity works) from the category of permissible development within many of the zonings under the Order. This alteration was gazetted on 1st February, 1980. After discovering the omission Council reinstated utility installations as permissible development in the bulk of these zones by initiating Local Environment Plan No. 30 which was gazetted on 26th February, 1982.

It has been confirmed by the Court of Appeal that most of the transmission works of the current augmentation, undertaken within the period 1st February, 1980, to 26th February, 1982, could not have been the subject of consent by council because of the wording of the Interim Development Order. Transmission works constructed outside that period however, would usually have been subject to the granting of development consent by the council.

In respect of transmission lines there has been a further change to the approval process effective from 7th October, 1983 when State Environmental Planning Policy No. 4 was amended to define (among other things) transmission lines as being works not requiring development consent. This means that the avenue of gaining approval for the transmission line works involved in the Central Coast augmentation by receiving development consent from Council is no longer available. The Electricity Commission is now designated "determining authority" in respect of its own transmission line proposals and is responsible for approving such proposals, if considered appropriate, after fulfilling the environmental assessment requirements of the Act and other statutory requirements.

THE PRESENT POSITION

Work on various parts of the scheme has reached an advanced stage but largely came to rest pending resolution of the litigation previously mentioned. Some restoration and tidying up activities are continuing. The works substantially completed to date are the Tuggerah 330/132 kV Substation, the 132 kV transmission line between Tuggerah and Ourimbah Substations and the twelve kilometre section of 330 kV transmission line from a point near Sterland geodetic station (in Ourimbah State Forest) to Tower 6 (just west of the Pacific Highway). The outstanding works comprise the section of what is known as the Tuggerah to Sterland 330 kV transmission line from Tower 6 to Tuggerah Substation, a length of some 1.5 km and minor works and activities associated with the finalisation and commissioning of the overall system. The relationship of the incomplete works to the remainder of the project is discussed in more detail and illustrated later in this document.

Because of the history of this matter it is considered appropriate that in moving to comply with the procedures now in force the Environmental Impact Statement set out herein should describe the whole scheme for the new electricity supply arrangements to the Gosford-Wyong district, regardless of the various mechanisms for its approval in force from time to time. For works associated with the development which have already been carried out (whether within the period 1st February, 1980 to 26th February, 1982 or not) this impact statement explains and records the considerations in planning and siting the works, describes measures taken in the design and construction to mitigate any adverse environmental effects and appraises

the environmental impact of the works. The remaining "activity" associated with the Gosford-Wyong augmentation and examined by this environmental impact statement comprises the transmission line works which have yet to be completed. The objective of the activity is to complete the current augmentation of electricity supply to the Gosford-Wyong area in order to satisfy increasing local demand for electricity. This approach embraces both the current environmental procedures and the most recent findings of the courts.

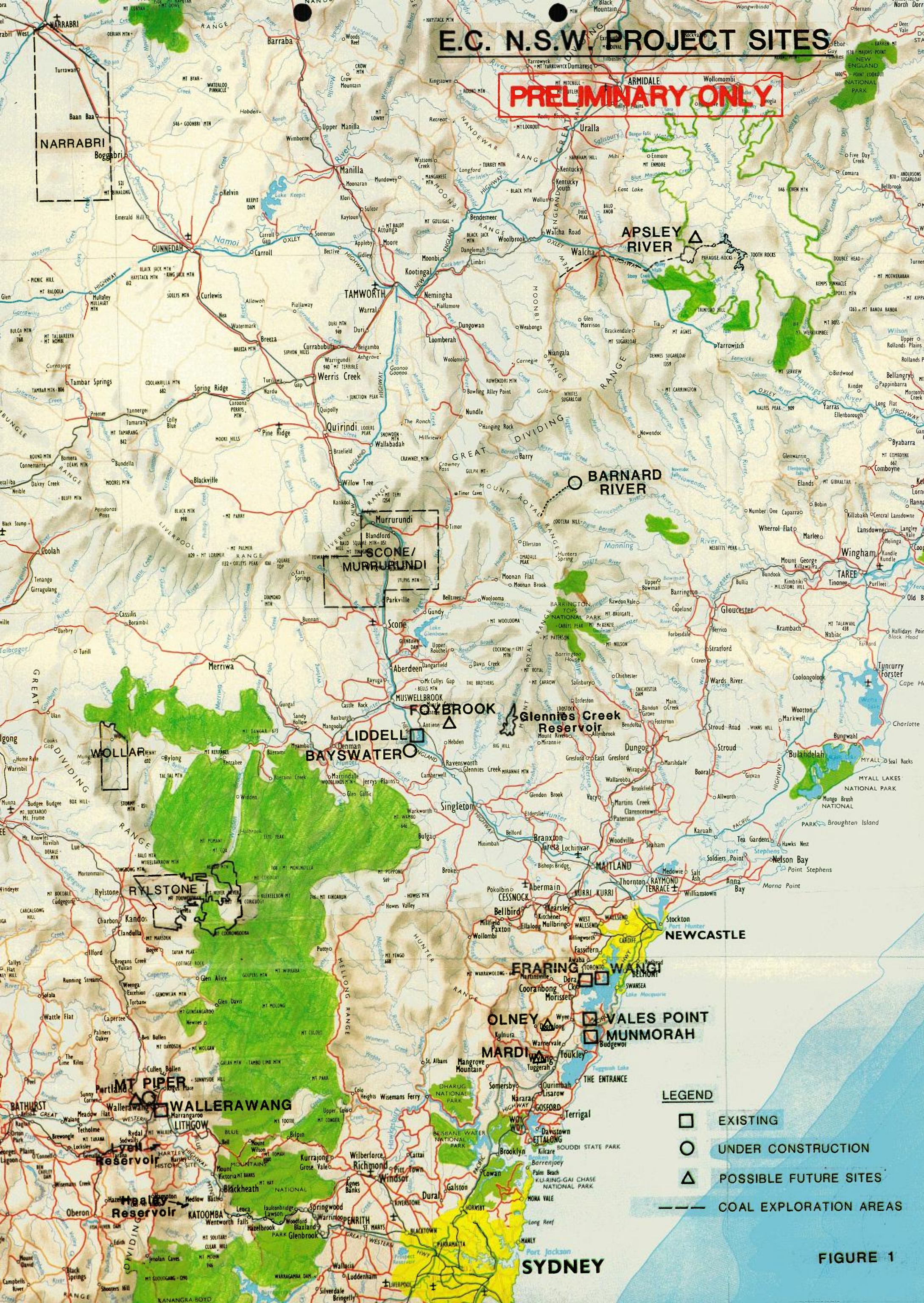
PURPOSE OF THE ENVIRONMENTAL IMPACT STATEMENT

This environmental impact statement has been prepared to comply with statutory procedures now in force, to demonstrate that environmental factors have been taken into account in the augmentation of the electricity supply to the Gosford-Wyong area and to invite public comment on the development.

Representations in writing made in this regard will be fully considered before a final decision is made with respect to the proposed completion of the works. Copies of representations received will be forwarded to the Department of Environment and Planning in accordance with the provisions of the Environmental Planning and Assessment Act. In due course, the Commission, as determining authority, will issue a report of its examination and consideration of the environmental impact statement and any written representations received and its consideration of any report which may be produced by the Department of Environment and Planning with respect to this matter as provided for in the Act. Copies of the Commission's report will be sent to the authors of all such representations.

E.C. N.S.W. PROJECT SITES

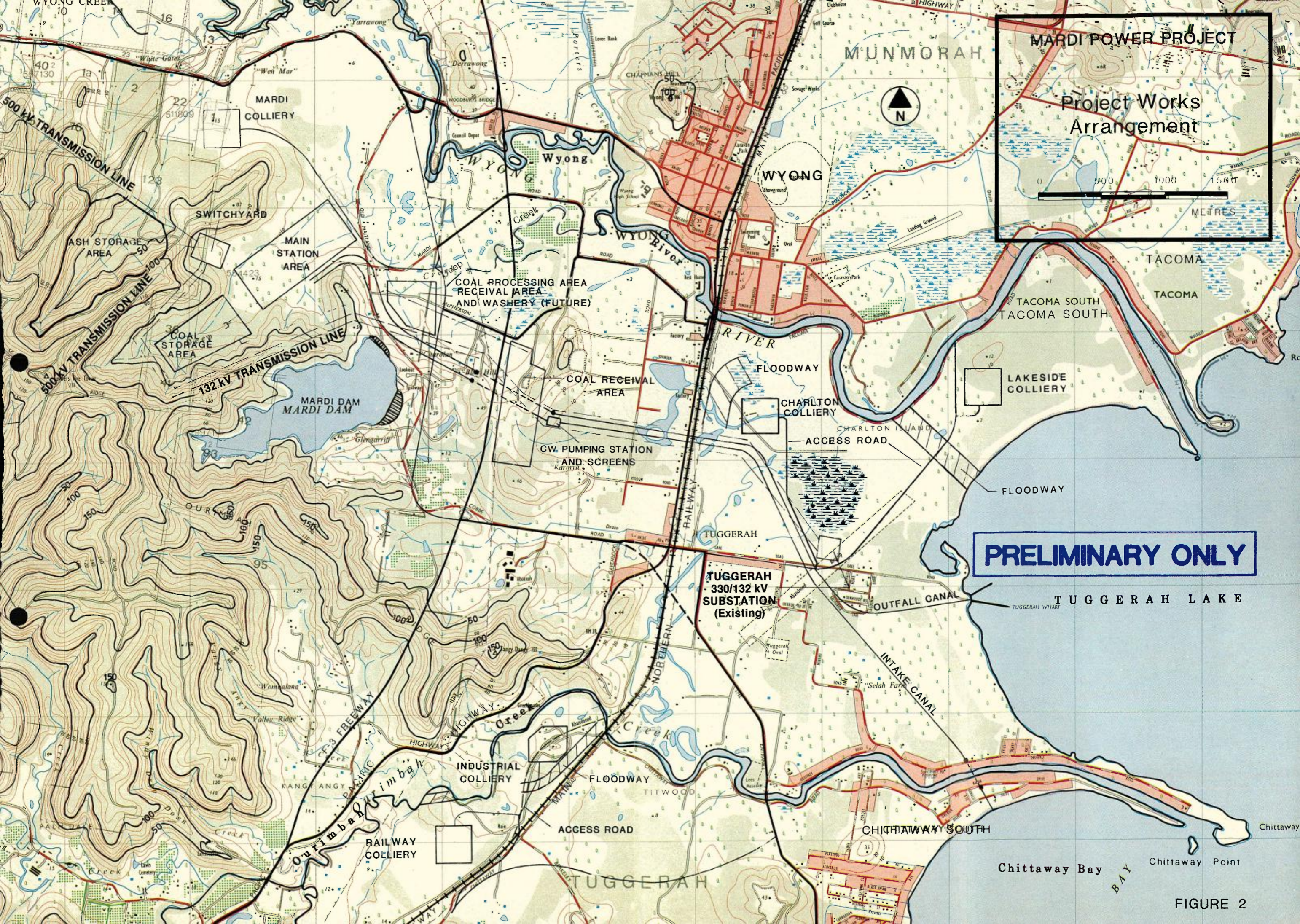
PRELIMINARY ONLY



LEGEND

- EXISTING
- UNDER CONSTRUCTION
- △ POSSIBLE FUTURE SITES
- COAL EXPLORATION AREAS

FIGURE 1



MARDI POWER PROJECT

Project Works Arrangement

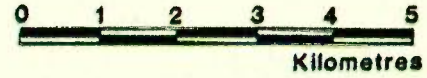
0 500 1000 1500 METRES

PRELIMINARY ONLY

FIGURE 2

MARDI POWER PROJECT

Connections to State Grid




PRELIMINARY ONLY


To Eraring
Power Station


To Sydney North
Substation at Dural

MARDI SITE

LEGEND

 NEW 500 kV TRANSMISSION LINE

 EXISTING 330 kV TRANSMISSION LINE

 TO BE REPLACED BY NEW 500 kV
TRANSMISSION LINE


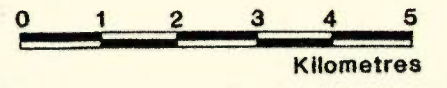
 EXISTING 330 kV TRANSMISSION LINE
TO BE REMOVED

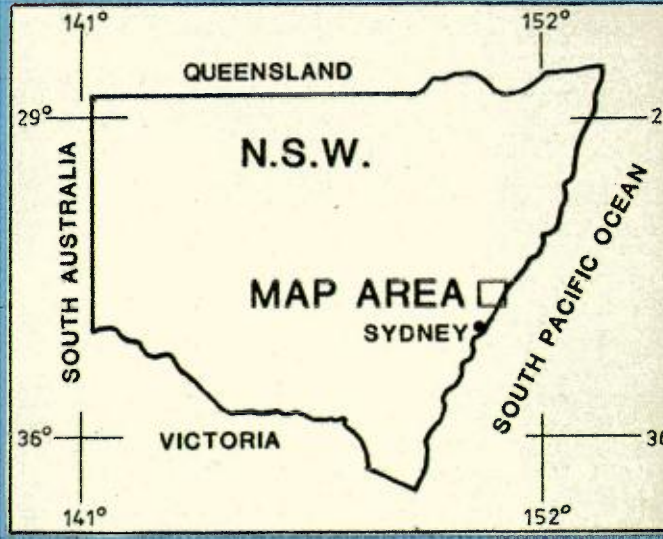
FIGURE 3

MARDI POWER PROJECT

Proposed Coal Supply



PRELIMINARY ONLY



LEGEND

- POWER STATION SITE
- TOTAL COAL SEAM THICKNESS (Metres)
- AUTHORISATION BOUNDARY
- PROPOSED COAL LEASE BOUNDARY
- PROPOSED COLLIERY HOLDING BOUNDARY
- COAL MINE SITE:
 - MEN & MATERIALS ENTRY
 - COAL RECEIVAL AREA

AUTHORISATION No. 255

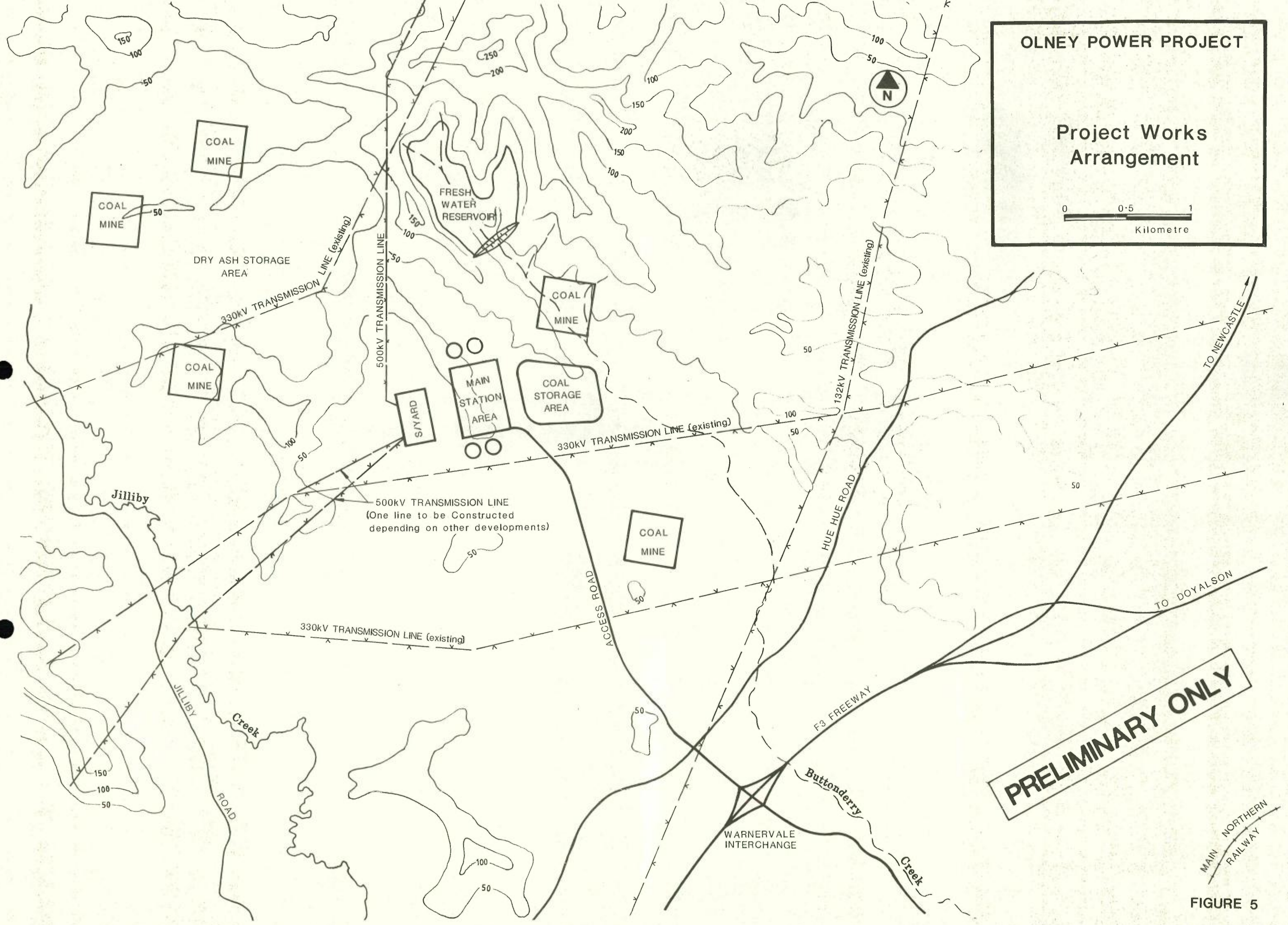


TASMAN SEA

OLNEY POWER PROJECT

Project Works Arrangement

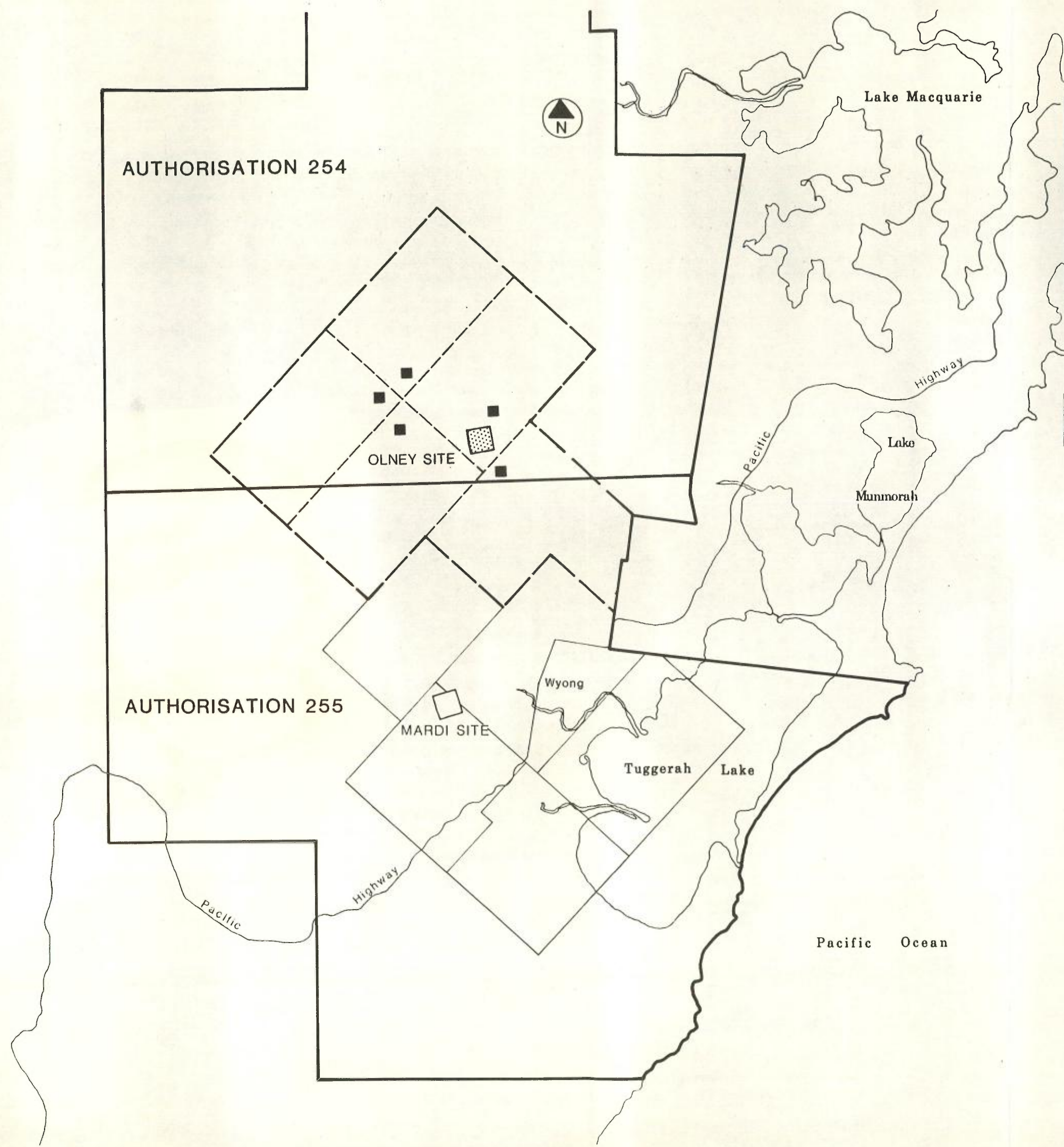
0 0.5 1
Kilometre



PRELIMINARY ONLY

MAIN NORTHERN RAILWAY

FIGURE 5



OLNEY POWER PROJECT

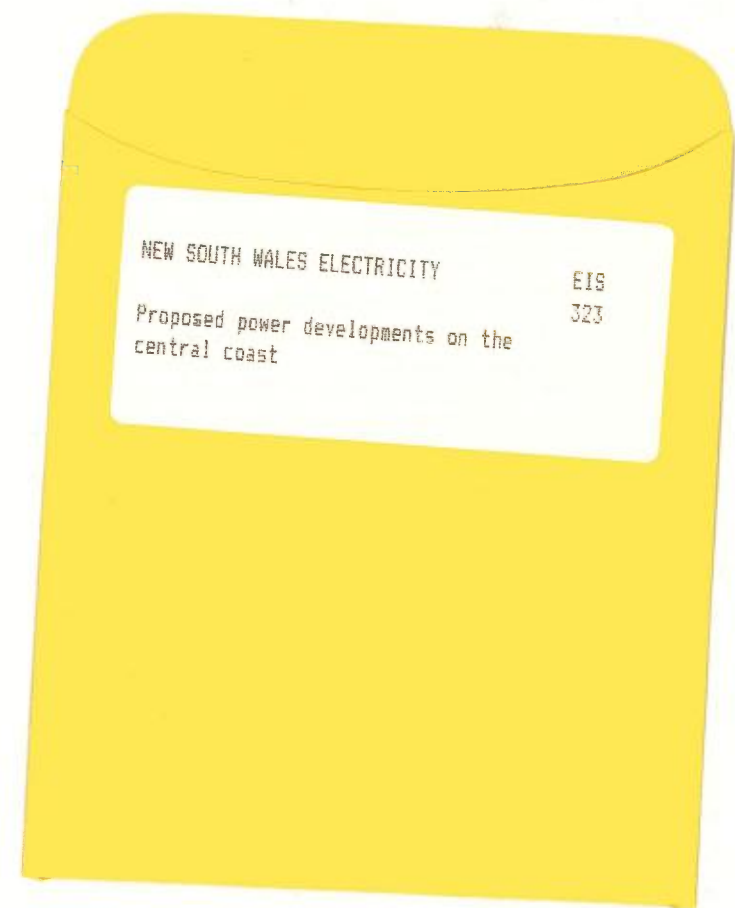
Proposed Coal Supply

0 1 2 3 4 5
Kilometres

PRELIMINARY ONLY

- LEGEND**
- POWER STATION SITE □
 - AUTHORISATION BOUNDARY —
 - PROPOSED COAL LEASE BOUNDARY - - -
 - PROPOSED COLLIERY HOLDING BOUNDARY - · - · -
 - COAL MINE SITE ■

FIGURE 6



NEW SOUTH WALES ELECTRICITY

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Proposed power developments on the
central coast

