

11 February 2002

Mr Thomas Parry
Chairman
Independent Pricing and Regulatory Tribunal
PO Box Q290
QVB Post Office, NSW 1230

Dear Mr Parry

Costs Benefits and Funding for Undergrounding Electricity Cables

I write as Independent Member for Bligh on behalf of my constituents to support the proposed undergrounding of electricity cables throughout NSW.

The strong environmental priorities for undergrounding aerial cables have sound economic and technical support. This review should identify the most feasible strategy to remove overhead cables in response to the NSW residents who reject the commercially driven rationales for retaining unreliable and archaic above ground infrastructure.

Overhead cables are visually unattractive and susceptible to weather (particularly storm damage), accidents (including electrocutions), and motor vehicle collisions with poles, which can disrupt services. As time passes our essential services replace and renew capital equipment on an ongoing basis, to keep up with demand and satisfy customer' requirements. However, Sydney continues to rely on an antiquated electricity system that constantly breaks down when the wind rises or there is a storm. Energy Australia states that 80 per cent of its supply interruptions are caused by environmental factors.

Overhead cabling is unreliable and leads to blackouts, causing inconvenient and costly computer shut downs, including ATM's, EFTPOS terminals, word processors, telephone systems, inventory control systems, not to mention cash registers. Industry cannot tolerate even momentary interruption to supply. A brown out, where interruption is in excess of 3 cycles or 3/50 of a second, may hardly create a flicker in the lights but can affect the reliability of computer systems.

Whether it is power lines or cable TV, overhead cabling is archaic, third world technology that is not acceptable in the contemporary urban environment.

RESPONSE TO TERMS OF REFERENCE

1. The level of capital expenditure required for putting electricity distribution cables underground in NSW urban areas (including Sydney and regional centres).

Based on data provided in the 1998 Federal Government report "Putting Cables Underground" and the experience of other States in Australia, Energy Australia has misrepresented the cost of undergrounding cables in NSW.

The estimated cost of \$7,000 to \$10,000 per customer (reported in the Energy Australia's Draft Street Tree Management Plan) is misleading. The figures do not include the considerable savings that would be gained from a statewide undergrounding program nor does it adequately incorporate

the safety, reliability and environmental benefits.

Energy Australia has quoted alternative figures of \$5,500 per household (derived from the Federal Government report), however, this is at best an estimate of how much it would cost to underground the whole of Australia. The national program considered by the Federal Government report appears to be a substantial overestimate, with a real cost closer to \$3,000-3,500 per property based on the actual costs of undergrounding projects in Perth, Brisbane and Adelaide ("Putting Cables Underground, page 161).

I recommend that IPART directly review the actual costs associated with undergrounding projects in other states to identify reliable cost estimates.

2. The feasibility of undergrounding electricity cables with other utility services including telecommunication, and any economy of scale that can be achieved.

The environment and safety benefits of undergrounding electricity cables would be undermined if other infrastructure remained above ground, preventing the removal of all poles and wires. The ultimate cost would also be dramatically increased and not equitably shared across utility services of the work is not done at the same time.

Given the reluctance of Energy Australia to underground cables, it is likely that competitive tendering is needed to assess the true cost of undergrounding. The Western Australian cabling project was put to open tender, with the construction division of Western Power required to compete against the private sector. However, consideration must be given to whether competition will provide the level of cooperation needed for minimum-cost undergrounding.

Telephone and PAY-TV cables come under the Federal Communications legislation and are regulated by the Federal Government. The National Telecommunications Code requires communications cables to be buried within six months of the burial of power wires and cables. Economies of scale could be generated from a large undergrounding scheme and the benefits that will flow from it, if the telecommunications companies were given an undergrounding option, the costs could be significantly dispersed.

I recommend that IPART directly review the undergrounding projects in other states to identify the best practice required to achieve minimum costs.

- 3. A comparison of the costs associated with maintaining the current network compared to undergrounding.**
- 4. The types of costs which are avoided as a result of undergrounding.**
- 5. The distribution and timing of benefits to those who benefit including an appraisal of the overall public benefit to the wider community.**

According to the Federal Government report, the benefits of putting cable underground far outweigh the costs.

The direct cost benefit to the distributor accounts for around 20 per cent of the total cost of cable burial. This does not take into account benefits to the consumer. Underground distribution systems cost half as much to maintain and are four times more reliable than their archaic aerial counterparts.

Considering only the direct financial costs excludes significant issues. Other benefits include reduced motor vehicle collisions with poles, reduced losses caused by electricity outages, reduced maintenance costs, reduced tree pruning costs, positive impacts on property values, reduced electricity transmission losses, reduced greenhouse gasses, reduced bush fire risks, and beneficial indirect economic effects, such as increased employment.

There is significant community concern about the impact of electro-magnetic fields in the light of scientific research pointing to fields from power systems as possible carcinogens. Consideration must be given to whether undergrounding cables increase electro-magnetic field levels and what undergrounding methods may be used to reduce health risks at nearby residences.

The destruction and disfigurement of trees adjacent powerlines is a major concern for inner-city residents who have limited open space and rely on street trees for environmental and amenity improvements. There is a significant financial and social cost associated with the removal of mature street trees.

I recommend that full consideration be given to indirect, environmental and social costs associated with overhead cabling, particular the impact of the continued destruction of the urban environment by Energy Australia's tree management practices.

6. Options for funding undergrounding projects

The preferred funding option requires Energy Australia to incorporate undergrounding in the costs of maintaining modern electricity supply, rather than claim profits derived from operating an unreliable and antiquated service. Sydney Cables Down Under has analysed data in the Federal Government report to conservatively estimate that it would cost around \$100 million per year over 40 years to underground cables in the Sydney metropolitan area.

Energy Australia's annual reports show that this corporatised authority has profits of over \$300 million. The 1999-2000 profit after tax increased \$174 million over the previous year, allowing for an after tax dividend to the Government of \$184 million, \$26 million above the forecast. The NSW State budget figures for 2000-01 show that the Government derived a \$364 million dividend from the energy industry as a whole and an additional \$205 million in income tax equivalents. That was a windfall of \$120 million over projections.

Those profits, which were derived from the community should be returned to the community through an infrastructure upgrade that places electricity cables underground for good. A proportion of the costs could also be allocated to other industries that benefit from the use of archaic above ground cabling.

Alternatively, Sydney's powerlines could be buried without cost to government and with a small levy on consumers over a set period. There is strong support for the undergrounding of aerial cables and the community may support a levy if the cost cannot be incorporated into ongoing infrastructure maintenance and renewal costs. However, as energy is a basic essential service, any levy must not place an unacceptable burden on low-income residents.

Sydney Cables Down Under estimate that in a project of 30 years duration, a cost or levy of less than \$1.60 per consumer per week, which may be applied directly to the consumers electricity account, is viable, and would be cost neutral.

The Federal Government report found that a project of 20 years duration with a construction period of 25 years would cost consumers less than \$20 per quarter. Possibly a BOOT scheme (build-own-operate-transfer), currently used for bridges and tunnels, could be explored. Where a private owner would build the ducts, lease them back to the systems owner, and then transfer back to the system owners after a number of years. Levies and tolls have been used for specific purposes before, such as the fuel levy to improve roads, and the environmental levy on the quarterly water account to clean up the beaches and waterways.

I recommend that responsibility for undergrounding cables be placed on energy and telecommunications providers as part of maintenance and renewal programs, rather than continuing the practice of transferring costs artificially to residents or local councils.

CONCLUSION

New York buried all of its overhead infrastructure four years before Sydney erected its first overhead wires, and turned on its first electric lights in 1904.

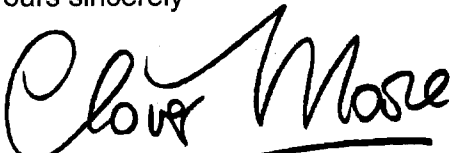
Electricity and telecommunications cables are already placed underground in central business districts and "greenfield" sites, particularly new residential developments. The Western Australian State Government has successfully buried electrical cables over the past five years in metropolitan Perth. South Australia has buried substantial sections of Adelaide's cables over a similar period. Queensland is running a pilot program, with a Committee investigating the burial of all power lines in Brisbane. Auckland, New Zealand, is also in the process of burying its powerlines.

In Perth, progressive planning has resulted in the inclusion of an extra duct for a "fibre optic cable" to provide fast efficient internet and communications facilities to every home. That NSW is not also implementing a similar program undermines the argument that NSW is the "Smart State".

There are savings to be gained from the burial of the existing unsightly, unreliable, uneconomic and unnecessary overhead infrastructure. Undergrounding programs in all parts of Australia demonstrate the positive impact in environmental, amenity and urban design terms. They provide benefits related to the continuity of supply, development of industry skills and industry best practice. Cable undergrounding has broader implications including bushfire prevention, road accident prevention, general safety improvement, economic benefits, and power distribution reliability implications.

Its time to implement a plan to bring New South Wales into step with other developed cities by undergrounding cables and bury this urban blight for good.

Yours sincerely

A handwritten signature in black ink that reads "Clover Moore". The signature is fluid and cursive, with a long horizontal stroke extending from the end of the name.

Clover Moore
Member for Bligh



Legislative Assembly

Underground Power Cables Hansard

Extract

28/11/2001

UNDERGROUND POWER CABLES

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Matter of Public Importance

Ms MOORE (Bligh) [4.32 p.m.]: I ask the House to note as a matter of public importance the need to bury all overhead electricity cables in New South Wales, beginning with the Sydney Basin, and to use the cost savings generated to carry out cable burial in other population centres in the State. On 31 October, council delegates at the Local Government Association's annual conference in Wollongong unanimously passed a motion in favour of burying all overhead electricity cables in the Sydney Basin. Country councils were so impressed that they made a minor change to the original motion to include their council areas as well. The motion cuts across factional, regional and party boundaries. It was moved by a member of the Liberal Party and seconded by a member of the Labor Party.

The motion is a telling sign that it is now time for the Government to get into step with other developed cities around the world, other capital cities within Australia, and public opinion in New South Wales and update our antiquated electricity system. Aerial cabling is Third World dinosaur technology. It is visually unattractive, unreliable, dangerous, and costly. Over the past several years the Sydney Basin has been hit by an increasing number of storms which have caused blackouts by bringing down overhead power lines, created dangerous situations for the public and unnecessary inconvenience to consumers and disrupted industry and commerce. I am informed that 80 per cent of electrical supply interruptions are caused by environmental factors. Aerial cabling is unacceptably unreliable. Industry cannot tolerate even a momentary interruption to supply, yet Sydney, the largest city in Australia, continues to rely on a system that can break down every time there is a high wind or storm.

The mutilation of trees around powerlines must also be stopped. The brutal hacking of street trees by EnergyAustralia shows corporate contempt for our environment. Throughout New South Wales the devastation in many areas has resulted in irreversible damage. There are many reports of despicable acts perpetrated by other energy suppliers, such as the reported removal of 300-plus mature ash trees from Glen Innes by NorthPower in savage cost-saving exercises. In my electorate there are many examples of EnergyAustralia's environmental vandalism. In Redfern, street trees planted 25 years ago and nurtured to maturity by the local community have been brutally hacked. To arrest this destruction, I arranged for representatives of the Minister for Energy, South Sydney City Council and EnergyAustralia to meet. An agreement was reached to stop the disfiguring, and for additional bundling of cables to reduce heavy pruning.

It was agreed also that a 12-month program of aerial bundling would commence, with EnergyAustralia undertaking only minimal pruning appropriate for aerial bundling, in advance of the bundling work being done. However, I am concerned that EnergyAustralia does not have adequate staff to do this work. South Sydney City Council has already carried over funds from the previous financial year for bundling work not carried out. I have asked the Minister for Energy to ensure that EnergyAustralia makes similar agreements with Woollahra Municipal Council and the Sydney city council, indiscriminate massacring having also occurred in the areas for which those councils are responsible, as well as with councils across the Sydney metropolitan area. EnergyAustralia's massacres show corporate contempt for our living environment, and compounding the insensitivity is the carrying out of this work during spring when the jacarandas

are in full bloom.

Given the significant environmental, physical, aesthetic, psychological and cultural value of street trees for local communities the misuse of section 48 of the Electricity Supply Act that has lead to this destruction must stop. Residents are passionate about their local environment and furious that whole streets have been devastated. That is especially so in relation to residents in densely populated areas, who rely on street trees for their health, wellbeing and amenity. Street trees have important benefits: they provide shade, filter dust and pollution, limit strong winds and cool surrounding air. They have enormous aesthetic benefits: they improve streetscapes, add natural colour and attract bird life. Trees create local character and seasonal changes. The inner city was a concrete dust bowl before the community tree planting projects of the late 1970s. Councils now support street beautification, in response to the expectations of their residents and ratepayers, and planting programs; they have prepared street tree master plans and tree preservation orders.

To improve our environment, advance public safety and provide a more reliable electricity supply the only long-term solution to the problems I have outlined is to place the cables underground in population centres. EnergyAustralia should be made to pay the full costs of its current policy. Even without the significant benefits street trees provide, mature trees cost thousands, even tens of thousands, of dollars. As a basic tenet of responsible environmental development, EnergyAustralia should incorporate those costs into its accounting equations, and pay the true cost of supplying electricity, rather than having it subsidised at the expense of the community. Some councils are considering forcing EnergyAustralia to accept the full cost of tree destruction. I understand that Waverley Council is pursuing legal action against EnergyAustralia for compensation for the destruction of trees. I hope that South Sydney City Council will also pursue legal action.

If EnergyAustralia is made to realise the true costs of its devastation, the placing of cables underground will perhaps be recognised as the better option, not only for the long-term, but as a short-term solution to potentially escalating legal costs. The benefits of putting cables underground far outweigh the costs. According to the 1998 Federal Government report "Putting Cables Underground", underground electricity distribution systems cost half as much to maintain and are four times more reliable than their archaic aerial counterparts. Other benefits include reduced motor vehicle collisions with poles, reduced losses caused by electricity outages, reduced maintenance costs, reduced tree pruning costs, positive impacts on property values, reduced electricity transmission losses, reduced greenhouse gasses, reduced bushfire risks, and beneficial indirect economic effects, such as increased employment.

However, EnergyAustralia and the Government have used this same Federal report to oppose bringing our outdated energy infrastructure into the high-tech present. I maintain that the excuses do not hold up given that the Western Australian State Government has successfully run a program of burying electrical cables over the past five years in metropolitan Perth, South Australia has been burying substantial sections of Adelaide's cables over a similar period, Queensland is currently running a pilot program with a committee investigating the burial of all powerlines in Brisbane and now Auckland, New Zealand, is also in the process of burying powerlines. Perth is so forward thinking that it is even including an extra duct for a fibre-optic cable for fast, efficient Internet and communications facilities in each and every home. That makes a joke of the argument that New South Wales is the smart State as our Internet connections become increasingly slower under the weight of increasing patronage.

I have seen comprehensive figures from Sydney Cables Down Under—figures which have been derived from the Federal Government report—that conservatively prove underground power is more viable than aerial power in the medium to long term. Those figures show that Sydney's powerlines can be buried without cost to government and with a small and acceptable levy of \$1.56 per week on each consumer over 30 years. That levy would make our roads safer, improve reliability fourfold, halve maintenance costs, eventually lead to cheaper electricity and make our city significantly more environmental friendly and aesthetically pleasing. EnergyAustralia's annual reports show that this corporatised energy authority has profits of more than \$300 million. The

1999-2000 profit after tax increased \$147 million during the previous year, allowing for an after-tax dividend to the Government of \$184 million, \$26 million above the forecast.

The New South Wales State budget figures for 2000-01 show that the Government derived a \$364 million dividend from the energy industry as a whole and an additional \$205 million in income tax equivalents. That was a windfall of \$120 million over projections. Those profits, which were derived from the community, should be returned to the community through the placing of cables underground, which would permanently protect street trees, improve our environment, advance public safety, and provide a more reliable electricity supply. The estimated annual cost of placing all cables underground in Sydney is \$100 million. I urge the Government to immediately develop plans to bring this State into step with other developed cities, to act on the vision of New South Wales as a smart State, and to bury this urban blight for good by placing all cables in New South Wales underground.