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Our Ref:

Mr Michael Seery
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Independent Pricing and Regulatory Tribunal
Level 2
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SYDNEY NSW 2000

By email : michael_seery@ipart.nsw.gov.au

7/2/02

Dear Michael,

Re : Undergrounding of Electricity Cables

Please find attached a submission from the Public Interest Advocacy Centre concerning the Tribunal's inquiry into undergrounding. We trust these comments will assist the Tribunal in formulating its advice to the NSW Government

As always we are happy to expand on or clarify any of the comments in our submission and would welcome the opportunity to discuss these issues further with either the Tribunal or the Secretariat.

Yours sincerely
Public Interest Advocacy Centre

Jim Wellsmore
Policy Officer

1. Introduction

The Public Interest Advocacy Centre (PIAC) is an independent, non-profit community legal centre based in Sydney. Established in 1982 it strives to foster a fair and just society by empowering disadvantaged citizens, consumers and communities through strategic legal and policy intervention in public interest issues. PIAC established the Utility Consumers' Advocacy Program (UCAP) with funding from the NSW Government.

The main aims of the UCAP include :

- developing policy;
- advocating on behalf of residential consumers of gas, electricity and water services;
- identifying systemic problems with utility service providers;
- ensuring that consumer protection mechanisms work effectively; and
- facilitating the development of partnerships between stakeholders in utility service provision.

From its position as a community legal centre focussed on the broadest concerns of social justice and equity, the first question for PIAC is the priority which should be given to undergrounding. Spending thousands of millions of dollars on undergrounding would seem necessarily to preclude expenditure on alternatives. Even if undergrounding were to be justified on financial cost-benefit grounds this could not answer the concern that the community ultimately will gain greater utility from allocating these resources to, say, health or education. This does not presume that in the absence of a large scale roll-out of undergrounding these resources would accrue to schools or 'green' sources of energy. Rather, it demonstrates the arbitrary nature of a choice to prioritise undergrounding – the political nature of the final decision rests with the Government.

In the face of this opportunity cost PIAC cannot identify a compelling argument in favour of a generalised undergrounding program throughout the metropolitan area. We remain sceptical that the gains for the community as a whole from undergrounding can be shown to outweigh the costs.

The following comments are offered in response to the terms of reference for the review of the undergrounding proposal agreed between the Tribunal and the Government.

2. Capital expenditure

The potential range of costs for undergrounding has been illustrated by the Ministry of Energy and Utilities which has published data on undergrounding projects either proposed or commenced in other Australian jurisdictions. These reveal initial expenditure per household ranging between \$4360 and \$7880¹. EnergyAustralia's current proposal for an optional program puts these costs at between \$7,000 and \$10,000 per household. Even where such a cost might be defrayed through the involvement of local government, as EnergyAustralia has shown, it should be clear that costs of this level would impose an unacceptable burden on many Sydney households. Furthermore, the wide variation in forecast costs presents a challenge to the credibility of a future decision to proceed with undergrounding, perhaps more so for this project than other capital works undertaken by the distribution businesses.

PIAC understands that the Tribunal has obtained external advice on the capital expenditure requirements for undergrounding throughout the Sydney metropolitan area. No doubt the challenge of obtaining reliable costings for capital works and determining what is 'efficient' expenditure² will exercise the minds of the Tribunal and its consultants.

However, in our view, the making of a judgement as to the level of investment needed to support this massive project provides only some of the answers as to the real costs to the community and residential users of electricity.

The Centre for International Economics has made the point that efficient costs are generally better known to a utility than to a regulator. Community or individual decisions to fund capital works of the size being touted depend on the balance between these costs and the expected benefits. Yet, as the CIE has pointed out, the valuations which consumers place on these benefits are hidden from both regulators and utility providers³. Resolving this issue is fundamental to understanding the assertions that the wider community in the Sydney metropolitan area will both support and benefit from a universal undergrounding program.

A further issue arises as to the ongoing impact of undergrounding on final electricity prices paid by households. It seems certain that future regulated revenue requirements for the respective distribution businesses will, as now, be based on the building block approach and replacement cost valuations. This has important equity impacts for residential consumers. PIAC would want to be convinced that any roll-out of undergrounding will not result in consumers being required to pay twice for the same capital investment – firstly for the initial outlay and again for the inflated future prices of electricity as distributors are permitted to earn higher revenues from a larger asset base. This is particularly the case given the finding in Victoria, for example, that the community may well favour a less expensive option in enhancing distribution assets such as the installation of aerial bundled cable (ABC)⁴.

¹ Ministry of Energy and Utilities (2002) *Research report : Undergrounding electricity cables*, January 2002, pp.20-21

² Allen Consulting Group (2001), *The Incorporation of Service Quality in the Regulation of Utility Prices : A Discussion Paper*, a report to the Independent Pricing and Regulatory Tribunal (IPART) March 2001, p.10

³ Centre for International Economics (2001), *Review of willingness-to-pay methodologies*, prepared for the Independent Pricing and Regulatory Tribunal NSW, May 2001, p.2

⁴ MEU (2002) p.24

3. Feasibility of undergrounding with other services

In the absence of detailed information from relevant agencies and service providers PIAC is not in a position to make lengthy comments on the feasibility of combining an undergrounding program with the capital works efforts of other utility operators. It is assumed that all stakeholders will appreciate there is little point in commencing such a massive undertaking as has been proposed if the distribution assets of such other service providers continue to be installed above-ground. PIAC looks forward to being informed about the engineering and economic implications of a joint project involving the urban electricity distributors, other NSW utilities, telecommunications providers and cable TV operators.

The telecommunications industry is something of a special case, not least because it is regulated on a national basis. More crucially, the question of whether these providers would be prepared to contribute to the capital costs of undergrounding in exchange for access to these new assets has been clouded by the findings of a recent Productivity Commission inquiry.

Some submissions to the inquiry argued for a stronger access regime under the Commonwealth *Trade Practices Act* such that infrastructure of all kinds would become available to telecommunications providers. The Commission's report recommended that a relevant section of the Act be amended by emphasising the promotion of '*economically efficient use of, and investment in, telecommunications services*'.⁵ This has implications for the economic value of the existing above-ground electricity distribution infrastructure, a factor which must be taken into account before any decision to proceed with undergrounding.

4. Comparison of costs

PIAC looks forward to the Tribunal and, we presume, the Ministry and the distribution businesses, bringing to this review their calculations of the comparative costs of future maintenance and capital expenditure for the distribution system. For example, it is claimed that undergrounded systems require maintenance less frequently. Another view is that any level of maintenance of undergrounded distribution systems carries additional costs which may absorb any savings. PIAC is interested as to whether aspects of the design of undergrounded distribution networks or the application of technology might answer such concerns.

We would argue that a cost comparison between undergrounding and the existing network must take account the impact of disruption to other services. Where several providers share an underground conduit the likelihood of disruption to services, aside from electricity, would be increased. It seems inevitable that even where the electricity network remains physically separate but co-located other providers will suffer damage to their assets from the initial undergrounding and future accessing of the buried assets for maintenance or augmentation.

Such disruptions will impose costs on households and businesses in addition to any contribution to the capital funding for an undergrounding project.

⁵ Productivity Commission (2001), *Telecommunications Competition Regulation*, Inquiry Report No. 16 September 2001 pp.256-260

5. Avoided costs

There appear to be three areas in which savings might offset the initial capital outlay and future costs of undergrounding the metropolitan electricity distribution network. These are reduced maintenance costs; lower community and economic costs from any reduction in damage due to motor vehicle accidents; and reduced greenhouse gas emissions, particularly through reduced transmission losses.

Whatever benefits might arise from changes to greenhouse gas emissions or system losses is a matter beyond the expertise of PIAC. As noted above, the credibility of any undergrounding program relies on accurate forecasts of these benefits. The same applies to savings resulting from a lower incidence of cars colliding with electricity poles.

This is not to downplay the issue of road safety and the costs to the wider community of motor vehicle accidents, costs that might be reduced by enhanced design of electricity networks. On the other hand, road safety as a key driver for undergrounding suggests a program of a particular design and scale. For example, the Ministry has reported that South Australia's undergrounding project has a key component directed at major metropolitan roads⁶. While the Metropolitan Main Roads Program is reported to be directed chiefly at heritage and tourist values it provides a good model for a more limited program focussed on those larger metropolitan roads where undergrounding might be effective in reducing the incidence and severity of motor vehicle accidents.

That reduced motor vehicle damage to electricity poles represents an avoided cost for distribution businesses has been raised by Sydney Cables Down Under (SCDU)⁷. By combining these with savings in tree trimming and maintenance the SCDU estimate is for avoided costs of some 14% over a 25 year period. We note, however, that undergrounding projects surveyed by the Ministry generally required contributions from residents to be paid within a much shorter timeframe. Furthermore, the quantum of savings indicated by SCDU are based on broad assumptions about costs and the number of households in the Sydney metropolitan area.

PIAC is concerned as to how avoided costs would be allocated among consumers and between households and the distribution businesses. This is particularly important if contributions from property owners are to operate on a different timeframe from the receipt of savings from avoided costs. For example, avoided savings might form part of calculations as to the appropriate contribution by the distribution businesses towards an undergrounding project. Alternatively, these could be factored into future revenue requirements in order to produce lower energy bills for household and business customers of the distributors. A difficulty will arise, however, where the savings are not obtained uniformly across a network. For example, Energex in Brisbane, who estimate the maximum level of avoided costs at 10% over 25 years, have pointed out the impact on avoided costs of network design factors and the location of assets such as zone substations⁸.

⁶ MEU (2001) p.11

⁷ MEU (2001) pp. 18-19

⁸ MEU (2001) p.21

6. Distribution of benefits

The long term nature of any undergrounding program will mean that any political costs arising from the distribution of benefits can be deferred – perhaps even ignored. On the other hand, the credibility of any decision to proceed will rely not only of the quantum of gains in community welfare but their distribution throughout the community. A Sydney-wide undergrounding program will need to provide similar levels of benefit across the metropolitan area. Anything less than that demands that undergrounding, and hence the costs, be concentrated instead on those suburbs which are likely to receive the greater positive outcomes.

The community already can look to a strong model for a voluntary scheme of undergrounding. EnergyAustralia currently has an initiative to provide undergrounding in residential streets in favour of improved reliability of supply and visual amenity and where property owners and local government have agreed to contribute to the cost. On this basis such schemes clearly exclude low-income households from receiving any of the benefits of undergrounding. The failure to address the complexities of the willingness, not to mention capacity, to pay has undermined attempts to translate such examples of local community support for undergrounding into an argument for a wider scheme. No doubt there is a potential for a larger scheme to achieve economies of scale in costs. Nevertheless, the pursuit of such a Sydney-wide program could be seen as directed to socialising the cost of undergrounding while privatising the benefit.

The advantages from undergrounding with respect to road safety have been addressed elsewhere in this submission. A similar approach of a targetted program could be employed in those areas most in need of improvements in the reliability of supply.

The remaining benefit appears to be visual amenity. Once again, PIAC wishes to assert the need for transparent planning to ensure that such benefits are shared equally between all residents of Sydney. It is patently a folly to believe that households in Western Sydney will receive any significant benefit from undergrounding in, say, beach suburbs.

What is notable about undergrounding projects in other jurisdictions is that they often contain an emphasis not on universal rollouts but the targeting of the projects to those areas where the community can expect a more generalised benefit. As noted above, in South Australia undergrounding is focussed on enhancing tourist and heritage values rather than the price and enjoyment of residential properties⁹. In Auckland the program specifically excludes sites other than main roads¹⁰.

In our view, an undergrounding program in Sydney based on criteria such as these or the alternative of road safety would more easily be funded through a generalised contribution for all users; be more readily supported by other utility providers acting as ‘good corporate citizens’; and more easily be justified by claims of community benefit.

⁹ MEU (2001) p.11

¹⁰ MEU (2001) p.16

The question also arises not only as to how the community might value improvements in visual amenity but how these might be measured. The impact on property values may be seen as the real reason for some sections of the community being so interested in undergrounding. Equally, it is possible that, by its nature as a 'universal' program, a large scale undergrounding program might have the effect of muting the increase available to individual owners.

Nevertheless, PIAC believes it is essential that any decision to commence an undergrounding program be accompanied by a clear indication of the projected timeline and the order in which Sydney suburbs will receive this augmentation. In the absence of such transparency there will remain amongst the community at large a cynicism that undergrounding is being pursued for the benefit of the residents of particular areas of Sydney. This will only be compounded if the funding burden is to fall on households and businesses who have no prospect of seeing undergrounding extended into their areas for many years to come.

7. Options for funding

The Centre for International Economics has observed that there exists a propensity on the part some consumers to be prepared to pay more than their fellows in order to receive a greater benefit. This might extend so far as to include paying even more than the economic or efficient cost of augmentation such as undergrounding. PIAC cautions that concern also must be given to the extent to which some in the community will receive the benefit of these 'consumer surpluses'¹¹ at the expense of others such as private housing tenants.

EnergyAustralia has shown that small scale undergrounding projects can be tailored to meet local demand. Yet, this approach is reliant on those households being prepared and having the capacity to pay a higher cost for electricity in order to receive a greater standard of service – adjudged either by reliability or visual amenity. The New South Wales distributors have found it difficult to argue that a localised desire for such improvements can be generalised into a wider acceptance of the cost of providing a 'vanilla-plus' standard of service. Simply put, it cannot be assumed that all residents and business in Sydney, or even those in a single suburb or street, equally will welcome a higher standard of service achieved through additional costs.

The NSW Treasury is funding a consultancy on behalf of the distribution businesses to examine the issues of willingness to pay as they relate to enhanced standards of service. It is to be hoped that this will take account of earlier work commissioned by the Tribunal. Assuming that the Government is not satisfied with findings of earlier studies on willingness to pay there is a question as to whether the current inquiry should be deferred pending the outcome of this new research.

The funding of undergrounding programs throughout Australia is reported by the Ministry of Energy and Utilities commonly to combine contributions from residents, distributors (often in the stead of the respective state government) and local government. However, the involvement of local government has the potential to complicate considerations of equity given the means by which councils might seek to pass these costs through to local communities. It is certain that costs to councils will be recovered from property owners through either higher rates or a one-off payment.

¹¹ CIE (2001) p.5

The difficulty for this approach is that undergrounding costs are not determined by property values. Some property owners might be required to pay a disproportionate share of the costs of such a program relative to the benefits they might receive from, for example, higher property valuations.

It has been suggested that shopping centres might form the basis of discreet undergrounding initiatives with a requirement for an appropriate funding contribution. Conversely, this raises the question of how a more widely cast program would treat schools and hospitals as well as other service delivery agencies such as child-care centres and nursing homes.

In any event, we would expect owners in turn to pass these costs through to tenants wherever possible. This creates a difficult scenario where some tenants could face higher rents as a result of the direct costs of undergrounding, further increases in rent where property values rise and, as described above, rises in future energy costs.

The alternative to obtaining funding through local government is to impose a capital contribution levy on each household and business. Property owners would be levied either through a single, flat fee or on the basis of the current value of each property.

Since property owners will pass the cost of any levy to their tenants, many of these being low-income households, it might be easier to regulate the level of costs for households and avoid the impact of an up-front levy by attaching some premium to future electricity bills. The most likely option is an additional charge within the distribution component of regular bills. Having already argued the iniquitous nature of the impact of future electricity prices arising from undergrounding, we are anxious to point out that neither of the likely methods for the collection of such a premium are attractive to low-income households.

For example, fixed charges as components of electricity bills are known to be inequitable since they invariably form a larger proportion of final bills received by those on low-incomes and with lower levels of consumption. On the other hand, factoring the costs of undergrounding into bills through a volume-based approach raises its own problems. There is an increasing understanding as to the price inelasticity of demand for household energy, again most particularly amongst the poor. This indicates that low-income and disadvantaged households will have little capacity to alter their consumption in order to avoid the higher costs imposed through undergrounding.

As noted above, the possibility that other service and utility providers might contribute to the funding of an undergrounding program raises more questions than it answers. Irrespective of the feasibility of such a proposal, there are longer term issues related to augmentation of a physical asset and the allocation of that benefit. Where two or more utility providers are to jointly locate their networks underground the Tribunal, or perhaps the Government, would need to determine in advance the sharing of the undergrounding as an asset for the purposes of determining allowable revenues or maximum prices.

Further, there are questions as to the opportunities for the allocation of the benefit of alternative funding sources. If pay TV operators are to be a source of some co-contribution it may be desirable for this funding to be used equally to defray the costs of undergrounding in areas currently without cable networks. This would create a subsidy between households with and without a pay TV subscription.

7.1 Urban environment

We have argued above that improving the urban environment in one area will not necessarily benefit residents throughout the rest of Sydney. An exception arises in the case of a program targetted at tourist or heritage values. In such a case it is reasonable to suggest that the costs might be spread broadly across the community.

Economic measures need not be the only means of determining the benefits of undergrounding for the urban environment. However, property values will reflect some of these gains and are likely to be a key motivation for some supporters of undergrounding. In the case of property owners generally, PIAC has posed the question as to whether the economic benefits of undergrounding to individuals will be significant. However, to the extent that some economic benefit is to be gained from improved visual amenity the existing relativities of property values might have the effect of giving to some individual owners a far greater financial outcome.

The possibility of an uneven distribution of benefits (including non-economic gains) either from improved amenity or property values indicates clearly that consideration should be given to pursuing the funding of undergrounding on the basis of 'beneficiary pays'. The difficulty posed by this approach lies with the ability to forecast future benefits or to retrospectively adjust individual contributions in order to compensate those who do not receive a benefit comparable to their initial contribution.

7.2 Reliability

Research previously commissioned by the Tribunal has highlighted the complex issues associated with determining consumer benefit arising from, for example, greater reliability of electricity supply. This complexity in turn adds to the difficulty of determining which improvements consumers are prepared to pay for and the level of cost they will accept¹².

PIAC acknowledges that householders and businesses in specific areas of the Sydney metropolitan area are subject to supply which is less reliable than in other areas. The question is whether the most appropriate way on addressing this is to proceed with a Sydney-wide rollout of undergrounding. An alternative which might be considered is for these particular reliability issues to be addressed, perhaps by means of undergrounding, through a targetted program. The Ministry report that the undergrounding initiative in metropolitan Perth was a response to the distribution network in particular areas being more liable to suffering storm damage¹³.

A targetted program such as this implemented for key areas of Sydney could be funded either through a generalised levy on all electricity customers or directly by the State Government as a community service obligation. It could be directed at either undergrounding or the installation of aerial bundled cable (ABC).

Across the wider metropolitan area, however, there is a need to assess the extent to which current reliability issues are a product of existing physical aspects of the distribution network. The question really is one of the improvement in reliability which could be expected from undergrounding. As noted at the beginning of this submission,

¹² CIE (2001) pp.7-10

¹³ MEU (2001) p.7

the task then arises of reconciling the level of improvement with the willingness to pay on the part of individual consumers. On the other hand, improved reliability would presumably reduce energy costs for consumers provided that regulated revenue requirements were adjusted to take account of lower OPEX outlays on the part of the distribution businesses.

7.3 Prices

The concerns of PIAC for the impact of undergrounding on future electricity prices have been detailed above. As the Tribunal is aware, our chief concern is for the impact of prices on lower income and disadvantaged households. If consumers are to continue paying for undergrounding through higher future electricity bills this creates greater pressure to ensure either that the scope of any undergrounding program is limited, for example to areas with particular reliability or road safety concerns, or that the benefits from a wider program are spread evenly across the community.

A further issue with a generalised levy arises from considering those customers who already have undergrounding (presumably paid for through developer charges and passed through in the form of higher rents) and those who are yet to receive the benefits of any future program. If the arguments as to the generalised community benefit from undergrounding are successful it would seem that those households who have already paid for undergrounding with respect to their local distribution network will be asked to pay again so as to extend the purported benefits to the remainder of the community. This does not necessarily concern PIAC at a policy level but it surely poses political challenges for any decision by the Government to proceed with undergrounding funded by a generalised levy on household bills.

To exempt some households from such a levy, be it a fixed charge or volume related, raises the question of added complexity and costs in the customer billing systems of the distribution business and the various retailers. We would expect the businesses not to welcome the imposition of such changes.

Likewise, there remains the question of how to treat developer charges in the future if undergrounding is to continue as a requirement for the building of new housing estates in parallel with a broader undergrounding program.

7.4 Who benefits and who pays

PIAC is concerned that those who would benefit from any undergrounding program also bear the responsibility for funding it. However, as we have outlined, in our view the issues of benefit are very complex. The uncertain distinction between public and private benefits¹⁴ makes it very difficult to determine exactly what the benefits of undergrounding might be and to whom these might accrue. Nevertheless, in relation to the proposal for a Sydney-wide undergrounding program, PIAC remains committed to the principle that those who receive the greatest benefit must make the greatest contribution.

¹⁴ CIE (2001) p.8

8. Impact on customers

As outlined above, in our view it seems likely that attempts to balance the costs and benefits from the proposed undergrounding initiative will not achieve equity between all groups of consumers. In particular, if such a program is to be directed at the entire metropolitan area it appears likely that low-income and disadvantaged households will carry a higher proportion of the costs for a lesser share in the benefits.

A targetted program aimed at specific areas of demonstrated road safety, heritage value or reliability issues certainly would reduce the concern for iniquity between consumers living in different areas of Sydney and with differing financial situations.

Alternatively, if costs are to be passed onto consumers in the form of a levy imposed through electricity bills there would be an option for the Government to address the principle of 'beneficiary pays' by using rebates to meet the costs for low-incomes households.