



**The Sustainable Energy Forum Inc.**

P O Box 11 152, Wellington

Email: [info@sef.org.nz](mailto:info@sef.org.nz)

Web: <http://www.sef.org.nz>

Contacts for this Submission – Molly Melhuish (04) 568 4873

Or SEF Convenor – John Blakeley (09) 585 1192

20 August 2004

Gareth Wilson  
Electricity Group  
Resources and Networks Branch  
Ministry of Economic Development  
PO Box 1473  
Wellington

By email to: [gareth.wilson@med.govt.nz](mailto:gareth.wilson@med.govt.nz)

## **Submission: Extensions to the Levy Recovering the Costs of the Electricity Commission**

### **The Forum**

The Sustainable Energy Forum (The Forum) is an informal group of individuals with an interest in a sustainable energy future for NZ. Current membership is about 130, including corporate and individual members ranging from staff in major energy companies to students and retired people. Many members are active in small-scale energy supply and energy efficiency.

The Forum's objective is to "facilitate the use of energy for economic, environmental and social sustainability". All three elements of sustainability are relevant to the issue of design of an electricity levy.

### **General**

The discussion paper to which this submission is addressed is on the MED web site: <http://www.med.govt.nz/ers/electric/establishment/levy-extension/discussion/index.html>

SEF appreciates that our submission covers broader issues than those which your discussion paper requested people to address, but in our view, many of the specific issues need to be considered in a broader context.

Quotes from the discussion paper are italicised in the text below.

## Requirement for a Levy

*The Ministry of Economic Development (the Ministry) seeks comments on proposals for the design of the levy to recover costs incurred by the Electricity Commission. The Commission's work programme and costs are not the subject of this consultation. . . .*

*"[2003]...regulations provide for electricity industry participants to pay a levy that will recover the costs incurred by the Electricity Commission in carrying out its electricity governance functions."*

The discussion paper presents the proposed structure and level of funding for governance and other functions of the Electricity Commission.

Funding by levy is appropriate for regulatory functions, or for the provision of services whose beneficiaries are broadly based. It is not always appropriate for the beneficiary of a regulatory function to fund the levy, because one of the tasks of a regulator is to restore balance, especially in a restructured electricity system where the market suppresses both energy efficiency and security of supply. In decisions on regulatory functions, all parties who are affected have opportunity for input. A levy is generally a small proportion of the revenues of suppliers, or the bills of consumers.

In contrast, funding by taxation is under political control, and decisions are generally made under conventions of Cabinet secrecy. Such funding can range from very small to very large, and will be justified in the political arena. Thus the two funding mechanisms, levy and taxation are quite different, and the decision needs to be made which mechanism is appropriate for which function.

The discussion paper does not ask for comment on the Commission's work programme, but the complete lack of funding of one critical element of the Commission's work, namely modelling and forecasting, does require comment.

## **Supply Security: Initial cost recovery arrangements; Contracting for reserve energy capacity**

*Should Whirinaki costs be recovered by levy or from general taxation?*

*27. The Government announced on 14 September 2003, as part of the draft GPS, that the net cost of the Whirinaki plant and any additional reserve energy should be recovered through a levy on all wholesale purchases of electricity. 28. The Government also signalled, in the draft GPS, that the Commission will be required, within two years of the levy coming into effect, to consider whether an alternative levy structure would produce a fairer and more efficient outcome. In particular, the Commission must investigate whether levy exemptions should be granted to those who have made their own arrangements for reserve energy. The decision to review the levy structure within two years recognises that designing an alternative levy is likely to be complex.*

### **Our Analysis:**

The main stated purpose of the Reserve Generation decision was to cap spot prices, at approximately 20c/kWh. Spot prices occasionally reached several dollars per kWh,

and high spot prices in 2001 led to an average wholesale price of electricity traded through the market for that year of some 7 or 8 c/kWh.

Expected beneficiaries of capped spot prices are:

1. Major electricity users who buy direct from the wholesale market, and whose hedge prices are based on expected future spot prices. The cap influences both direct costs and hedges.
2. Retailers whose customer demand is greater than their generation capability. Increased vertical integration is reducing the impact of volatile spot prices on such retailers.

Losers from capped spot prices are:

1. Providers of energy services, together with their customers, that seek opportunities to capture the value of their entry into the electricity market to reduce generation when spot prices are high. Today New Zealand's market provides no mechanism for that to occur, and mechanisms provided in the UK, such as ex-ante markets, have not worked successfully. Much of the recent international literature on demand-side management focuses on the need for active participation of retail participants in wholesale markets.
2. Generators whose generation exceeds their customer base, who lose market power in forcing high hedge prices onto their customers, and also lose the benefit of very high uncapped spot prices.
3. All consumers who pay for the Reserve Generation plant – designed “almost never to run”, other than those who purchase wholesale electricity directly.

## **Discussion**

Small consumers had no input into the Reserve Generation decision, intended openly to benefit purchasers of wholesale electricity. To charge small electricity consumers for that decision, by charging a flat rate per kWh sold on the electricity market or internally by a retailer-generator, would amount to taxation without representation.

The decision to acquire a Reserve Generator, namely Whirinaki, was made under conventions of Cabinet secrecy. Furthermore, Whirinaki is now a sunk cost; allocation of sunk costs is essentially a political issue rather than one of economic efficiency. Again that suggests Whirinaki should be funded from taxation.

The levy discussion paper says the capital cost of that should be recovered over 11 years, by capital charges of \$25 million per year. This is a very high figure in relation to the Commission's initial funding of \$42.5 million per year. That is a third reason that Whirinaki should be written off by Government, rather than funded on a continuing basis by consumers most (by number) of whom get little benefit from its existence.

## **Review of Reserve Generation Levy**

A two-year period during which to consider the structure of funding for reserve generation is appropriate. During that time, demand-side alternatives to Reserve Generation could be debated, devised and tested, and market rules devised to facilitate them. The aim of demand-side contributions in a market environment is to enable those consumers who so choose to modify their demand at times and locations where constraints are imminent. Energy services suppliers should be able to supply appropriate advice and technology, and be able to capture monetary value which they could then share with their customers – including reducing the Reserve Generation requirement attributable to their consumption. As such, they could be wholly or partially exempted from the Reserve Generation component of the levy.

In support of such market development, a formal Decision Rule could be created, as suggested in a presentation by R. Cowart of the Regulatory Assistance Project, <http://www.raponline.org/Slides/NAESCOExecutiveSessionOnDR%20March2003.pdf>

Cowart writes: “Before “socializing” the costs of a proposed reliability-enhancing investment through uplift or tariff, [the regulator] should first require a “showing”: that the relevant market is fully open to demand-side as well as supply resources; that the proposed investment is the lowest cost, reasonably-available means to correct a remaining market failure; and that benefits from the investment will be widespread, and thus appropriate for broad-based funding.”

This is similar to the Integrated Resource Planning process well developed in many states in the U.S. Its application to market systems has been extensively debated, particularly in a two-year stakeholder exercise in the U.S. <http://www.raponline.org/Pubs/General/FinalNEDRIREPORTJuly2003.pdf>

Any future Reserve Generator should be subject to that test, before being funded by levy.

## **Electricity Efficiency**

In the interests of simplicity the MED's preferred design is to meet those costs from the industry-wide levy. The need to restore balance to a presently supply-side market design reinforces that option for the structure of the levy.

The size of the levy is a more contentious issue. Restructuring has directly reduced the incentives of generators, retailers and network owners alike to encourage demand-side energy efficiency. There is much international literature explaining how and why this occur; two of the best of which are not published on the web, but are attached here. (Kushler E-vision presentation, and Energy Policy article). The size of the levy proposed, \$2.5 million in the coming year rising to \$11 million in 2006-7, is small in relation to the size of the levy now attributable to the Whirinaki Reserve Generator.

We cannot discuss the size of the levy without indirectly referring to the Commission's work programme. The suggestions below would have little more than token status unless they were funded in proportion to their potential to improve

electricity security, reduce environmental including greenhouse gas impacts, and offer various other economic and social benefits.

The discussion paper's term "Electricity efficiency" is too narrow a term; energy services including renewable fuels and demand-side management can substitute for electricity. Today in New Zealand, priority should be given to demand-side efficiency investment, and to overcoming demand-side barriers. This is essential to move towards a more balanced portfolio of demand-side and supply-side investment, which reduces risks as well as costs of the overall system. No financial manager would be permitted to focus solely on high-yielding but risky shares; lower-yielding fixed interest assets are partially analogous to low-risk energy efficiency investments. The analogy fails, however, because the costs of energy efficiency are often lower – the problem with energy is the conflicts of interests of the major players in the industry, as pointed out in the Kushler presentation attached.

The most cost-effective investments designed to reduce the chance of blackouts are likely to be in "Efficient Reliability", which targets energy efficiency investments to times and locations where they can best defer investment in new network, generation and fuel supply capacity. See the original paper – go to <http://www.naruc.org> and search for "efficient reliability".

Energy efficiency, in contrast, targets the longer-term security problems, including the issue of whether sufficient gas will be found (or should be used) to substitute for the declining Maui field in power generation, and whether CO2 emissions will force reduction of the amount of coal now being used to generate electricity. See the Kushler presentation posted on the SEF web site at <http://www.sef.org.nz/papers.html>

## Electricity Transmission

*The Commission's outputs related to electricity transmission will include: . .*

- *developing a grid investment test to assist with the development of grid reliability standards, to ensure the benefits of proposed grid investments exceed the costs, and to help choose between alternative transmission and non-transmission investment options;*

Saha International's paper on Transmission Alternatives has been released onto the Commission's website:

[www.electricitycommission.govt.nz/advisory/transmission/reports/transmission-alternatives.pdf](http://www.electricitycommission.govt.nz/advisory/transmission/reports/transmission-alternatives.pdf)

Unfortunately, submissions have not been called on this paper, but it must be noted that the "alternatives" considered are only local generation, demand-side response, and distribution network augmentation (see p. 22 of that report). Omitted is "efficient reliability" in any form, despite its likely ability to offer the greatest potential contribution at the least per-kW investment, while reducing consumer power bills and even increasing comfort in houses and lighting quality in commercial buildings.

Demand-side investment is a specific alternative to network investment, and now forms a major work stream of the IEA Demand-Side Management Programme (see strategy posted on SEF web site <http://www.sef.org.nz/papers.html>). Therefore the

Commission's grid investment test needs to specifically consider both "efficient reliability" and other mechanisms for demand-side response, as potential recipients of electricity levy funding. The Commission should devote significant resources to establishing the economic potential for such investment in New Zealand.

Another recommended reference is "Retail-Load Participation in Competitive Wholesale Electricity Markets" Eric Hirst and Brendan Kirby, January 2001 Prepared for Edison Electric Institute, and Project for Sustainable FERC Energy Policy. Ref: <http://www.hemplinglaw.com/articles/PRDReport.pdf>

*The Commission's outputs related to electricity transmission will include: . .*

- *preparing statements of opportunities for transmission and non-transmission alternatives;*

Statements of Opportunities are of benefit to all investors and users of electricity and should be funded by levy to all market participants. Other Commission outputs will benefit only some parties. As noted in the discussion paper, the issues are complex; the amount of funding required is relatively small, but these smaller opportunities need to be addressed.

## **Treatment of Embedded Generators**

*122. The market settlement rules provide that electricity may be sold by an embedded generator to a retailer on the same local network. The quantity of any such electricity purchased by retailers from embedded generators is, by definition, not purchased from the Clearing Manager. Therefore, any levy applying only to electricity purchased from the Clearing Manager could encourage retailers to avoid the levy by purchasing some electricity from embedded generators. Such incentives could, in turn, distort the connection location decisions of small generators.*

If purchase of electricity from embedded generators reduces the transmission capacity needed to transport the electricity to the customer, then that part of the levy that funds asset expansion or renewal should be exempted. However common quality issues still are impacted by electricity purchased from embedded generators, and that part of the levy should still apply.

A strong case can be made for designing networks to accommodate increased flows (where appropriate) from embedded generators. This may involve switchgear that allows energy transfer in both directions. As distributed generation improves diversity and therefore security of supply, there should be "socialised" (levy) funding for such investment.

## **Consultation on Future Levy Rates**

*126. The Electricity Commission will be required to consult with stakeholders on its budget each year, including its expected supply security costs. As the Commission's costs have a direct effect on the levy rates, that consultation process will also consider the implications for the various levy rates.*

Annual consultation on the Commission's budget is an appropriate occasion for review of levy rates and structure. Suppliers of energy services who are not Market Participants regard themselves as Stakeholders, and expect to be actively involved not only in formal submissions, but in internal activities of the Electricity commission.

## **Energy Modelling and Forecasting Levy**

Energy modelling and forecasting are particularly important in a system such as New Zealand's in which there is a major imbalance between supply-side and demand-side investment. At the Commission's first public presentation, in March 2004, the Commissioner said that if significant funding was not allocated for the independent development of forecasting models, then "participants will tell us what to do". This appears to have become the case. The lack of a specific levy allocation for modelling and forecasting suggests, regrettably, that the present mechanisms will not be the subject of regulatory examination.

## **Summary of Comments in this Submission**

- Whirinaki is now a sunk cost based on a political decision, which suggests to us that Whirinaki should be funded from taxation.
- The capital charge of \$25 million per year for 11 years to recover the capital cost of Whirinaki is a very high figure in relation to the Commission's initial funding of 42.5 million per year.
- A two-year period during which to consider the structure of funding for reserve generation is appropriate.
- Any future Reserve Generation should be subject to an investment test before being funded by levies.
- The need to restore balance to a presently supply-side market design reinforces the option of an industry-wide levy.
- Priority should be given to demand-side efficiency investment, and to overcoming demand-side barriers.
- The contribution of "efficient reliability" should be considered as part of a grid investment test. Demand-side investment is a specific alternative to network investment.
- Statements of Opportunities are of benefit to all investors and users of electricity and should be funded by levy to all market participants.
- If purchase of electricity from embedded generators reduces the transmission capacity needed to transport the electricity to the customer, then that part of

the levy that funds asset expansion or renewal should be exempted from the levy on generation

- Annual consultation on the Commission's budget is an appropriate occasion for review of the Commission's levy rates and structure.
- SEF is concerned that the discussion paper does not ask for comment in one critical element of the Commission's work, namely modelling and forecasting.

END