

Response to submissions on Proposed Assessment Framework for Electricity, Energy and the Environment

Introduction

This document is a response to some of the key points raised in the submissions on the Proposed Electricity, Energy and the Environment (EEE) Assessment Framework. Many constructive comments were offered and the Parliamentary Commissioner for the Environment (PCE) thanks submitters for their time and effort. The next stage of the process is to review the Assessment Framework, and produce a revised version early in 2004. It is assumed that all readers of the response are familiar with the PCE's Proposed Assessment Framework, which can be viewed on the PCE's website.

Comments on the Terms of reference and scope of study

A number of submissions commented that the focus of the assessment framework should be on promoting economic growth or economic efficiency. Alternatively some submissions suggested the focus should be on sustainable development rather than environmental sustainability. Another suggestion was that it should focus on supporting the government's development strategy.

Some submissions also suggested that the PCE should only assess the Electricity Commission (EC) and not the wider electricity sector. The following section responds to these suggestions.

Powers and functions of the PCE

The PCE's statutory functions with respect to assessing the electricity sector are set out in the Environment Act 1986 and the Electricity Amendment Act 2001. This information was outlined on pages 7-10 of Part A of the Proposed Assessment Framework and is clarified below.

The Commissioner is an independent Officer of Parliament, and as such is accountable to Parliament. Independent in this context means independent of the government of the day. The Commissioner's overarching mandate under the Environment Act 1986 is clearly as an advocate for the environment.

The PCE's functions under the Electricity Amendment Act 2001 are also clearly focused on assessment of the environmental outcomes resulting from the Electricity Commission's performance in the context of the Government Policy Statement (GPS), as specified under Section 172ZP of the Act.

The relationship between the PCE's functions under the Environment Act and the Electricity Act is plainly set out in section 172ZQ(3) of the Electricity Act. The section states that the new functions under the Electricity Act do not in any way limit the PCE's functions, duties and powers conferred by the Environment Act...*"The functions conferred on...the Parliamentary Commissioner for the Environment by this [Act] are additional to, and do not limit, the...Commissioner's functions, duties and powers under the...Environment Act 1986."*

The proposed scope and focus of the EEE framework therefore reflects the scope and focus of the PCE's statutory functions. The PCE has the right to assess the EC under both the Electricity Act and if he chooses, under one of his functions in the Environment Act of contributing to "maintaining and improving the quality of the environment" in New Zealand. There may well be significant overlap between these objectives and the GPS (indeed, it is to be hoped that this is the case). The GPS is consistent with this function as it quite clearly states that electricity should be delivered in an environmentally sustainable manner.

An assessment of the environmental performance of the wider electricity sector

The PCE considers that in order to effectively assess the environmental performance of the EC, it will also be necessary to establish and delimit the scope of the assessments – that is, what is and is not able to be achieved. The PCE intends to work constructively with the EC in this regard and to be explicit about the basis on which the EC will be assessed. This process will be undertaken during the expectation phase of each assessment round.

The PCE also recognises that if the GPS changes, this will impact on the EC and the way in which the PCE will assess its performance. Any such changes will also be addressed during the expectation phase.

If, however, it becomes apparent that there are factors that are negatively impacting on the environmental sustainability of the electricity sector, which lie outside the EC's control, it would be imprudent to ignore them. Many submissions drew attention to some significant hurdles, which presently impede the development of an environmentally sustainable electricity sector. Not all of these are necessarily within the EC's control, which needs to be acknowledged, but the issues should not be ignored.

The PCE is aware that there are potentially many environmental variables to consider and that it is prudent to attempt to conduct the assessment cost-effectively. Every effort will be made to ensure that data collection and analysis is tailored to areas where the most environmentally sustainable benefits can be realised. In many cases this information will need to be collected by the EC and other organisations for other reasons. The PCE intends to establish efficient methods for collecting this information after close consultation with relevant organisations.

Timeframes

It is noted that the EC is unlikely to produce a full year report until June 2005, and it is not yet clear if it will produce a part year report by June 2004. In light of this, the PCE is considering possible interim focused investigations. The submissions offered many suggestions for focused investigations and the PCE is in the process of identifying appropriate selection criteria, which are consistent with the environmental priorities outlined in the proposed assessment framework.

As the EC is not yet fully up and running, the PCE expects that an assessment will only be carried out once the EC produces a report. However, he reserves the right to review any procedures, or statement of priorities, which the EC may establish in the interim. In this respect, the PCE will work with the EC, to enable it to give best effect to the environmental priorities contained in the GPS.

Several submissions suggested that the PCE should provide prompt feedback on the EC's annual performance. The PCE concurs and will endeavour to complete his annual audit in a timely manner, as is required by Section 172ZP(2)(a) of the Electricity Act.

Environmental Priorities

The list of environmental priorities elicited comment on several aspects, including the justification for the ranking, overlap between the priorities, relationships with government policy, and the specific wording used.

The PCE recognises the importance of managing the environmental impacts associated with electricity production and use. This objective is ranked below the others on the grounds that achieving

the goal of reducing environmental impacts from the electricity sector requires addressing the underlying pressures that cause those impacts. In other words, if electricity is used wisely, efficiently and conservatively, utilising environmentally sustainable renewable resources, then there will be fewer impacts to minimise. The priorities are ordered according to the relationship with underlying pressures and the unrealised potential that they present for positive flow on effects to the environment.

Some submissions claimed that the assessment framework should acknowledge that increasing supplies of electricity will be needed in the future, in order to facilitate strong economic growth. While the need for continuing economic development in New Zealand is appreciated, the PCE notes that this need not necessarily be based on the current structure of the economy and the assumption that electricity use needs to continue to grow at present rates to sustain such growth. This is recognised in the Government's Sustainable Development Programme of Action...*"We must find ways of growing as a nation that manage the demand for energy and limit the damage to the environment"* (MfE, 2003,p17). The PCE considers that to achieve this goal, it is equally, if not more, important to consider demand-side objectives, as well as supply-side measures, of electricity management.

The Brundtland Commission (WCED, 1987) stressed that a low energy path is the best way to a sustainable future, where energy is used more wisely, which will require...*"profound structural changes in socio-economic and institutional arrangements"* (7-31). Their Report also affords a high priority to improving energy efficiency and...*"to shift the energy mix more towards renewables"* (7-9). They further state...*"The [Brundtland] Commission believes that every effort should be made to develop the potential for renewable energy, which should form the foundation of the global energy structure during the 21st century"* (7-26). They also highlighted the likelihood of increasingly severe environmental problems if levels of fossil fuel use are maintained or increased. The PCE's environmental priorities for the electricity sector are consistent with this rationale.

In respect of the objective of minimising greenhouse gases, the PCE draws attention to present government policy, which seeks...*"significant greenhouse gas reductions on 'business as usual' and set on a permanent downward path for total gross emissions by 2012"* (NZ Climate Change Office, Presentation to SEF Conference, 15 November 2003). It would therefore be inconsistent with both the wider objectives of environmental sustainability and present government policy to accept that emissions should be allowed to increase further.

The associated objective of minimising avoidable hydro spill, in addition to being specifically required by the GPS, is also linked to the objective above, on the grounds that the two are potentially connected. If hydro spillage occurs purely for the reason of improving a firm's profitability (such as driving up the spot price), then the PCE considers that this impacts negatively on the objective of minimising greenhouse emissions (and maximising resource efficiency). Such behaviour will lead directly to more fossil fuel-based power being generated to compensate for any subsequent shortage. The PCE notes that the drivers underlying hydro spillage are complex and will, when examining this issue, utilise the appropriate expertise in the sector.

In developing the assessment framework, it became apparent that new renewable technologies might be disadvantaged in several ways under present market arrangements. While these new technologies may be relatively more expensive than incumbent technologies, the current price of electricity generated specifically from fossil-fuel sources does not yet include most of the environmental costs. If these costs were included, new renewables would be more competitive on a comparative basis. Furthermore, it is also possible that present institutional arrangements for transmission and distribution of electricity may not be conducive to the uptake of some types of new renewable technologies.

The PCE notes that the GPS stresses that the full costs of producing and transporting electricity should be signalled and that barriers to new generation technologies, renewables and distributed generation should be removed. It is also noted that some renewable energy projects may have significant environmental impacts. So the PCE considers it important that renewable sources of

electricity are considered in the context of environmental sustainability. The PCE's assessment is underpinned by the OECD's criteria for environmental sustainability, which include avoiding irreversible impacts on ecosystems and the loss of biodiversity, as well as areas with wild and scenic attributes.

Demand side management was generally perceived as an objective worthy of assessment in the framework. The PCE notes that the demand side should be an active component in all electricity markets, and not just the wholesale component. Support was also expressed for monitoring the uptake of distributed generation. It is noted that the MED is presently developing a policy to give effect to this objective, which is a key component of the GPS, and as part of the assessment process the PCE will monitor developments in this area.

Overall, the environmental priorities stated in the proposed framework are seen as a workable basis upon which to base the assessment. In light of the comments offered on the draft document, the PCE intends to further refine the priorities and clarify the linkages between them and the proposed indicators.

Conceptual Framework

The discussion document briefly introduced a proposed hybrid assessment framework. The PCE acknowledges that more work is needed to further consider the implications of using this methodology to define environmental indicators, measures and targets. The following points are noted:

- At this stage, the hybrid is more of a guide than a rigid framework. The linkages between the environmental priorities, the hybrid framework and the proposed set of indicators will be explored and tested further, before the assessment framework is finalised and as future assessment rounds are undertaken.
- It is recognised that many of the potential cause-effect relationships are unclear and unknown, and not necessarily linear, so careful consideration will be given to identifying possible trade-offs between different objectives.
- It is intended that the assessment will call on a mix of quantitative and qualitative analytical methods to inform the assessment.
- While it is acknowledged that setting incentives and penalties lies outside the PCE's ambit, it is nevertheless seen as a useful exercise to point out positive or negative trends and what might be required to move the sector in more sustainable directions. The results of the assessments will be made available to Parliament, the relevant regulators and policy makers.
- The PCE is aware that social indicators are of fundamental importance in any sustainability framework. While no specific social indicators have yet been identified, it is intended to add these as the framework evolves. However, social impacts will not be ignored in the short term, as any actual or potential social effects arising out of the assessment will be duly noted, especially as they relate to a focused investigation. The same approach applies to assessment of economic impacts. So, while the focus of the assessment is on environmental priorities and will remain so, issues surrounding social and economic sustainability must also be included in the assessments.

Indicators

Concern was expressed at the wide scope of the proposed indicators and the practicalities of assembling and analysing a large and probably incomplete data set. The PCE recognises the wide scope of the assessment, and wishes to make the following points:

- No set of indicators will ever have a complete data set. The main aim is to progressively reduce, rather than eliminate any uncertainty or gaps.

- It is agreed that it may be useful to prioritise the collection and analysis of data. This task will be a significant part of the expectation setting phase. Data availability and cost is being carefully considered and there will be ongoing consultation (both during and outside the expectation setting phase) with actual and potential data providers throughout the assessment process.
- As stated in the proposed framework, it is fully intended to regularly review the set of indicators, adding or removing indicators in recognition that changing contexts will impact on their development.
- Suggestions for additional indicators are currently under consideration.

Specific comments were made on the particular indicators listed in the tables. The key themes on each of these are now addressed in turn:

Environmental Sustainability

It is noted that the sub-dimension of environmental sustainability is presently general in nature. The overarching aim is to ensure that the EC achieves appropriate balances between the required environmental outcomes in the GPS and its other functions. The intention is to allow the EC to develop a suitable programme in this respect, before a more detailed appraisal is developed. To some extent, the other indicators will usefully inform this sub-dimension.

Climate change

The potential usefulness of collating the various climate change indicators to produce an overall measure of CO₂ equivalent emissions attributable to electricity production and use is noted and is being assessed in terms of practicality. The overall aim of this dimension is to see a downward trend in gross emissions, which is consistent with government policy.

Air, water, land and biodiversity

It is acknowledged that consent violations are not a perfect proxy for measuring environmental improvements. In the absence of another more comprehensive measure it will be used in the interim. It is intended that new power plants will be monitored in terms of their processes and outcomes for the environment and existing stations for their consent compliance.

Resource efficiency

The GPS states that the unnecessary spillage of valuable water should be minimised and the PCE concurs with this objective. It is also noted that the reasons surrounding hydro spill are complex and sometimes subjective, hence the inclusion of an indicator assessing the robustness of the regulations, which the EC might employ. As mentioned earlier in this document, the PCE will seek input from the appropriate expertise.

It was commented that the indicator measuring the average efficiency of thermal generation should also account for any variation within this part of the sector. The PCE recognises that some forms of thermal generation are more efficient than others, and that their environmental effects vary.

Energy efficiency

Some submissions suggested that it is unrealistic to seek either per capita or absolute reductions in energy use, based on the argument that increasing economic growth will inevitably involve higher energy use. As discussed above, the PCE must question this assumption, both in terms of it being inconsistent with the concept of environmental sustainability, as defined, and in that it makes limiting assumptions about the future structure/structures of New Zealand's economy.

In a more immediate context, it should be pointed out that overall reductions are only sought in the residential sector, where consumption is presently forecast to remain relatively static (MED, 2003, Energy Outlook to 2025). The objective of achieving per capita efficiency improvements is consistent with the National Energy Efficiency and Conservation Strategy (EECA, 2001), which is aiming for a

20% economy-wide improvement in energy efficiency by 2012. While it is accepted that there will be more energy consumed in the foreseeable future, it is seen as important to minimise the need for new supplies, especially when the best and most cost effective way of doing this is to use energy more efficiently. The PCE considers that there is considerable potential to reduce energy consumption per capita and per GDP in New Zealand and that these reductions will provide benefits to the environment and the economy. As discussed previously it would be totally incompatible with any interpretation of sustainable development to focus exclusively on securing future energy supplies to match demand. The PCE intends to liaise closely with EECA in the design and measurement of the energy efficiency indicator.

Another indicator, which was questioned, is the measurement of the proportion of operating reserve supplied by the demand side. The PCE views this as an important indicator in two ways:

- It provides a measure of how effectively peak demand is managed when the available supply is constrained.
- It indicates how well the wholesale market is operating in ensuring least cost energy through the management of both supply and demand sides.

In the context of the environmental objectives, it is considered desirable that every effort is made to ensure that the price of electricity reflects its scarcity and that consumers have options and appropriate incentives to conserve power, especially if shortages are looming. By pricing electricity at its true cost, this could impact on demand and delay or even avoid the need to bring expensive and environmentally harmful reserve fossil-fuel power on-stream. Facilitating active demand side participation in electricity markets is also an objective contained in the GPS. Again the PCE intends to take an integrated approach to the sector, to ensure that supply side management does not dominate.

A related point is the issue of promoting the demand side in the retail sector. It is, therefore, seen as important that information on the provision of generic types of retail tariffs is included in the assessment. This issue is closely linked to the issue of achieving appropriate pricing signals in the retail sector that promote the uptake of cost effective energy efficiency initiatives. This is particularly the case for demand side participation and the uptake of distributed generation. The PCE also notes that it is relevant to consider pricing methodologies (including tariffs) across the sector, (encompassing wholesale, retail, transmission and distribution), which may reveal exactly where any barriers are evident. This focus also applies to the promotion of energy efficiency and conservation across the wider electricity sector. It is, therefore, considered that to be consistent with the government's intentions, all sector participants should be cognisant of the objectives contained in the GPS and attempt to conduct their business in an environmentally sustainable manner.

New Renewables

Some submissions drew attention to the barriers, which are presently inhibiting the uptake of new renewable sources of electricity. Again it is noted that this is also an objective contained in the GPS. The PCE notes that many new renewable technologies are considered to be marginally economic under the present institutional arrangements and intends to monitor progress in changing these arrangements closely.

There was concern that the framework favoured new renewable technologies over more traditional approaches. This distinction is seen as important for two reasons:

- the traditional technologies are not as constrained to the same degree, under the present set of institutional and economic arrangements, as the newer and less familiar technologies.
- there are declining opportunities for traditional renewable technologies in New Zealand and therefore the transition to the emerging technologies needs to be facilitated.

Open and accountable rule making

An important component of the assessment is to measure the effectiveness of the EC in developing and disseminating its objectives. To this effect, the PCE's expectation is that all affected parties have effective access to these processes and are adequately consulted on an ongoing basis.

Targets

In most cases the framework does not identify targets, but rather identifies desired trends. However, a number of responses were elicited on those targets that have been identified. Some of these identified targets are not yet precisely defined, although it is the intention to clarify them once the EC has become fully established and discussions have been undertaken. It is also noted that the targets will be subject to ongoing review to ensure that they are viable, realistic and achievable and that the appropriate benchmarks are established to enable meaningful comparisons to be made between actual and desired states. Overall, the set of indicators and their targets remain as work in progress and the PCE appreciates that several aspects can be clarified in the revised assessment framework.

Triple Bottom Line reporting

The general tone of the responses indicates that triple bottom line reporting is an important component of an environmentally sustainable electricity sector, but that an investigation of TBL reporting may not be the most cost-effective route for the PCE at this stage. Concerns were raised about the diversity of sector participants, in terms of both their activities and their size, which does not easily lend itself to a standard framework where participants' reporting can be compared. It is noted, however, that the expectation is that all sector participants operate in an environmentally sustainable manner, so the PCE does intend to consider ongoing corporate behaviour and accountability in this context.

Focused Investigations

The PCE is presently considering criteria for selecting any topics for focused investigations. There were many useful suggestions put forward, some of which may well be taken up by other organisations, with an interest in the sector.