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National Emissions Trading Taskforce Secretariat
The Cabinet Office
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Sydney NSW 2001

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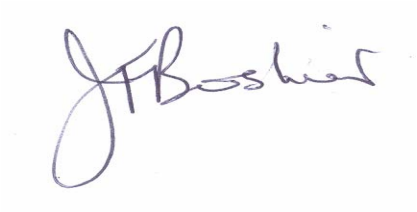
Dear Sir/Madam

**Submission from the National Generators' Forum (NGF) Limited on the Discussion Paper – Possible Design for a National Greenhouse Gas Emissions Trading Scheme**

Please find attached the submission from the National Generators' Forum on the Discussion Paper.

The NGF looks forward to further engagement with the National Emissions Trading Taskforce as the debate on this matter develops further.

Yours faithfully



John Boshier
Executive Director

## Possible Design for a National Greenhouse Gas Emissions Trading Scheme

## Submission from the National Generators' Forum (NGF) on the Discussion Paper

### Introduction

The National Generator' Forum (NGF) appreciates the opportunity to offer comment on the Discussion Paper prepared by the National Emissions Trading Taskforce (NETT).

The NGF is an industry body which directly represents the 21 major power generators in the National Electricity Market (NEM). Verve Energy in Western Australia is an Associate Member and others are in the process of joining in a similar capacity.

The installed capacity of the members is 44,129 MW in 2006, with an asset value of over $40 billion. Annual sales are over 186,000 GWh, having a value of about $6,800 million. This is over 95% of the total Australian market.

All NGF members would be affected significantly by the potential proposal by the States to introduce a states-based national emissions trading scheme (NETS).

As key stakeholders, almost every issue dealt with in the Discussion Paper on the design for the NETS is of direct interest and possible concern to NGF members. However, this response has been limited to some of the key issues, some of which are subject to ongoing discussion with the NETT.

The NGF and its members have identified the following list of key issues:

- Prime objectives
- Coverage
- Targets and emission caps
- Offsets
- Permit allocation
- Compliance penalties
- Economic impacts and economic modelling
- Transitional arrangements
- Institutional arrangements.

As part of the NGF submission; two documents are attached:

1. NGF Greenhouse Policy
2. An independent report prepared for the NGF by CRA International titled '*Analysis of greenhouse gas policies for the Australian electricity sector*'.

These documents provide significant guidance to the NGF in responding to the Discussion Paper. In particular, the NGF wishes to draw attention to the following policy statement points:

- Climate change is an international issue requiring action by all nations.

- Australia should make an equitable contribution to global action to reduce greenhouse gas emissions.

- Electricity generators support the need for abatement action, consistent with national requirements.

- In order to facilitate efficient investment in electricity supply in the future, the NGF supports the need for long-term greenhouse policy certainty and a broad national policy framework. Given the long-lived economic value of assets, a bipartisan political approach to greenhouse abatement action is highly desirable.

- Government policy that places a price on greenhouse gas emissions, through a tax, an emission cap or an emissions trading regime should provide adequate compensation to existing asset holders who suffer loss of revenue or asset value.

- Consistent and efficient national greenhouse response programs are preferred over the existing mix of multiple federal and state based programs.

- Greenhouse response measures should be implemented in a manner that does not impact on the efficient operation of the National Electricity Market.

- Greenhouse policy actions should be consistent with zero and low emission technology developments; that is, policy should be based on available technology in order to minimise costs.

In approving the NGF Greenhouse Policy, the NGF Board deliberated on some key aspects of policy design and implementation. NGF members are already seeing the impacts of mandatory measures, including impacts on pool prices, and hence consumers. The NGF understands the value of a carbon signal to change investment behaviour, but it must be one that covers the whole of the economy in order to avoid economic distortions and associated carbon leakage. An emissions trading scheme offers the best approach to cost-effective abatement action, providing it has broad sectoral coverage.

The key conclusions from the CRA International study can be summarised as follows:

- A portfolio of power generation plant, including advanced fossil fuel technologies which incorporates carbon capture storage, conventional coal and natural gas, nuclear power (if permitted), and renewables must be commercially available to achieve the modelled objective of a 50% reduction in emissions by 2050 at least cost. There is no one technology that can satisfy Australia's projected electricity demand and deliver a 50 per cent reduction in emissions by 2050.

- A low emission future for generators in Australia would involve a substantial increase in the wholesale electricity costs – projected to be more than 120 percent by 2050 compared with business as usual. This would only rise to 60 percent if nuclear power is pursued as an energy supply option in the future. Clearly this has a consumer impact as retail prices would also be affected significantly. However, despite this, consumer spending on electricity is likely to continue to fall in disposable income terms.

- The degree and timing of greenhouse gas reduction is a critical public policy choice. Stabilising emissions at present levels and meeting base-load requirements could be achieved with nuclear power at comparatively modest cost. There is potential for advanced coal with carbon capture and storage to deliver similar outcomes in the future.

- However, additional greenhouse gas reductions from electricity generation are possible, but with significantly rising costs.

- A significant carbon price signal – of around $40 per tonne applied over 30 years or more – coupled with the availability of low emission technology, would be required to achieve the 50 per cent emission reductions by 2050.

- Substantial uptake of additional renewable energy sources and natural gas fired plant will only occur if large emission reductions are required and nuclear power is not permitted or coal-based generation with carbon capture and storage are not available as alternative options.

**Ten Key Design Propositions**

The NGF Greenhouse Policy and NGF Board deliberations do not sit well with some of the 10 key design propositions endorsed by First Ministers, but not the Prime Minister, making it challenging for NGF members to respond more positively to the Discussion Paper.

For instance, the proposed NETS:

- Is very unlikely to cover sectors other than electricity supply despite some encouraging wording; apart from a possibility of covering other selected parts of the stationary energy sector at some later date,

- Is unlikely to be workable without Federal Government involvement,

- Has little prospect of international linkage, although this may or may not be of direct benefit to Australia.

## Discussion Paper

Keeping in mind the noted shortcomings of the process, the NGF would agree that the overall Discussion Paper is a sound document that canvasses all of the key issues and that has taken on board most of the pitfalls and limitations of previous emissions trading scheme designs. It discusses objectively the key issues as identified above.

As acknowledged in the Discussion Paper, indicative permit prices, cost impacts and economic impacts are based on some modest modelling work with all its inherent assumptions and qualifications. If the NETS is to succeed, additional modelling work, involving a range of consultants suited to both government and industry, will need to take place with a particular focus on emission caps, permit prices, allocation to affected businesses and allocation to the still to be accurately defined energy-intensive, trade-exposed sector.

## Key NGF Issues

### 1. Prime Objectives

The prime objectives are listed as environmental integrity (reduce greenhouse gas emissions) and investor certainty (long-lived capital plant in energy markets). Secondary objectives deal with minimising economic impact, flexibility and equity.

The NGF agrees that reducing national emissions is morally desirable but somewhat irrelevant and marginal in global terms if no similar action is taken by key trading partners or competitors, such as China and India.

Although such countries would rightly argue the size of historical emissions from developed countries, they tend to ignore the enormous technology transfer benefits that enable them to pursue more quickly a lower emission pathway.

Focussing exclusively on Australia's electricity supply makes the proposition more marginal because it excludes two-thirds of Australia's net emissions. Competitively priced electricity provides Australia with one of a few competitive advantages both in terms of growing the domestic economy and in terms of earning much needed export dollars. The continuous erosion of this competitive advantage must be a key concern of governments, investors and working people. Care is needed in not wiping out all the benefits gained through electricity market reform by relentless government imposts on electricity supply, whilst leaving alone less productive sectors of the economy that are potentially capable of providing significant and lower cost abatement opportunities.

Arguments about electricity affordability in terms of growing disposable income are unconvincing in the absence of similar action by our competitors and the proposal for permit allocation to the energy-intensive, trade-exposed sector will do little to Australia's other value-adding industries, such as manufacturing, which will simply be driven off-shore in growing numbers.

NGF members question the ability of the States to create investor certainty, particularly in the absence of Federal Government involvement and coordinated international action involving all key economies. By attempting to do it alone, the States may well undermine investor confidence, particularly when the States themselves compete on a very non-level playing field with the resource rich states

increasingly dependent on electricity and the manufacturing and commercially centred states demanding low cost electricity as part of containing input costs.

Once the NETS becomes reality, large sums of transfer payments to governments are likely to be involved and the use of such funds (for compensation or other activities) will need to be clearly understood and pre-determined.

Apart from initial compensation to some affected businesses, the Discussion Paper is essentially silent on potential windfall gains to the States. It canvases the notion of assistance to low income households. The NGF believes this is not appropriate. Rather, is should be clearly stated that the prime principle to be followed will be to use the proceeds of any scheme, which could amount to billions of dollars, to pursue lower emission pathways through investment in research and development. Even more important is investment in commercialisation and first-of-a-kind deployment. Other potential spending opportunities hinted at in the Discussion Paper may well have undesirable side-effects, such as actually stimulating energy use if funds were used as welfare payments.

Economic impact, even small, implies the misuse of resources if the desired outcomes are not realised or are ineffective. There is a real danger of this occurring because of the limited focus on electricity supply, or at best on electricity supply and some other aspects of stationary energy.

It is well documented that emissions trading schemes work to deliver least-cost outcomes if:

- There is cohesive agreement on globally meaningful caps and processes that advance the delivery of cost-effective outcomes – there is no such international agreement on greenhouse gas emissions,

- All substantial emitters are subject to the same controls – this will not even be the case nationally, let alone internationally,

- Benefits are readily identified and cost-effective,

- Technologies are available to deliver cost-effective outcomes – at best, technologies are just evolving, while others may not be accepted politically.

Emissions trading schemes can provide flexibility in pursuing least-cost opportunities, but this will be curtailed if other requirements continue to be mandated. The Discussion Paper is guarded on the issue of costs and impacts of growing and multiple schemes, which must either be grandfathered to protect in investment made in good faith or abolished if the NETS is to truly deliver successful least-cost outcomes.

Equity is very much in the eye of the beholder and will require thoughtful understanding and careful assessment. Welfare compensation to selected households is not an emissions trading issue and should be addressed, if necessary, by other means.

*In summary, the NGF maintains that in terms of the prime objectives:*

- *The NETS should be truly national and implemented at the Federal Government level to be fully effective,*

- *Cover all sectors and sources, either directly, by proxy, or using effective policy instruments for sectors not covered.*

## 2. Coverage

From a NGF perspective, coverage is dealt with most incompletely in the discussion paper, purporting to focus on stationary energy but in reality only on electricity supply in any detail. There are vague references to the need to bring in other sectors at some future point but issues related to this are not discussed (apart from parts of the remainder of the stationary energy sector, possibly in 2015 or five years after the scheme's commencement).

Focussing on electricity supply alone will lead to serious economic distortions and potentially perverse outcomes, including inter-fuel substitution that may have negative outcomes in abatement terms.

Emission permit prices would be higher than necessary if the rest of stationary energy and other sectors are excluded.

Permit price disruption would occur when other sectors are (eventually) included. The first disruption to permit prices is likely when the 'rest' of stationary energy is potentially added, indicatively in 2015.

As a minimum, the NGF recommends that all energy – stationary and transport – and related fugitive emissions should be included from the beginning in an emissions trading scheme in order to minimise costs and have greater impact.

Sectors ultimately not covered by the NETS should be subject to appropriate greenhouse reduction policy which allow for equitable abatement across all sectors.

*The NGF maintains that in terms of coverage:*

- *All sectors should be included as early as possible either directly or by proxy, but certainly all energy, including rapidly growing transport and other stationary energy such as gas use, and related fugitive emissions, should be included from the beginning of the potential NETS,*

- *The consequential impact of added future sectors into the NETS market requires further assessment,*

- *A more confident pricing structure for all participants would be obtained if the entry of other sectors is clearly stated.*

## 3. Targets and emission caps

The Discussion Paper examines three indicative scenarios out to 2030 only – **scenario 1** capping 2030 emissions at 176 Mt, a reduction of 33% or 88 Mt on forecast emissions; **sensitivity scenario 1a** is the same as scenario 1 but with significantly higher levels of energy efficiency, offsets and induced (demand) technology change; **scenario 2** capping 2030 emissions at 150 Mt, a reduction of 43% or 114 Mt of forecast emissions.

Firm caps would be set for the first 10 years of the scheme and each year the firm cap would be extended by another year. Upper and lower bound gateways are proposed for the second 10 years and extended on a five-yearly basis.

Permits would be date stamped for a particular year (with banking of excess permits from past years but not borrowing from future years being allowed).

NGF members are aware of general discussions about caps between stakeholders and the NETT, including at the Industry Stakeholders Roundtable discussions. NGF notes that advocates of deep cuts are generally not affected by such proposals whilst industry generally favours limiting abatement action until international deliberations firm up with meaningful involvement of all key economies.

If the NETS is to be implemented, the NGF would favour a modest initial target and other safeguards, such as the one suggested by McKibbin and Wilcoxen, in order to better understand the benefits and impacts through learning by doing. Such a proposal would provide a more adequate basis for assessing the impacts and benefits of the proposed scheme, particularly in the absence of other sectors being involved.

The NGF believes that it is premature to implement more stringent targets in the first instance without other sectors' engagement, international compatibility, and greater certainty that cost-effective zero and low emission technologies are indeed viable and available.

The NGF is also of a firm view that more modelling work is needed to assess the impacts and potential benefits of the indicative levels of targets and emission caps. The need for further work is also acknowledged in the Discussion Paper. In particular, better appreciation and understanding is needed about the impacts of the shape of the emission reduction profile, including assessment of more modest reductions initially and greater reductions in later years.

The NGF, and NGF members individually, consider scenarios involving artificially large amounts of energy efficiency as being grossly unrealistic and they should not be pursued as a 'feel good' assessment that in reality will never be delivered. The assumptions made for the indicative energy efficiency scenario are particularly unconvincing and lack factual backing. Consumers do respond to price, but in the case of electricity demand, only slowly. Well-developed elasticity factors used by NEMMCO should be used to assess demand impact without artificial inflation.

Ten-year firm caps, annual cap extensions and five-year gateways provide high degrees of certainty for comparatively short-lived assets but maybe insufficient for long-lived assets, such as power stations. However, the suggested approach to cap setting and gateways is most encouraging as it provides opportunities for accommodating the strategically well thought-out ideas and economic safeguards suggested by McKibbin and Wilcoxen and others.

*In summary, the NGF recommends that in terms of targets and emission caps:*

- *A more modest initial target and more skewed emission cap profile should be pursued in early years in order to gain confidence that the NETS can deliver cost-effective outcomes, particularly in the absence of other sectors being included,*

- *The proposal for ten-year firm caps, annual cap extensions and five-year gateways are encouraging but they should be examined in more detail particularly for long-lived assets, such as power stations.*

## 4. Offsets

The Discussion Paper is somewhat ambivalent about offsets, and in particular, international offsets, although these are discussed in some detail. The Discussion Paper seeks comments on whether there should be any restrictions on offsets, either in terms of amounts or sources.

The NGF and its members support the use of offsets in order to minimise domestic compliance costs. With respect to national offsets, sectors supplying offsets should also be equally subject to an emissions trading scheme in order to demonstrate commitment and assist in genuinely reducing national greenhouse gas emissions. Strict verification and monitoring regimes will need to be in place in order to provide confidence in the value of domestic offsets.

The NGF accepts the benefits of international offsets, based on robust international protocols. In some instances, it is somewhat unclear if Australia can have access to certain international offsets, but some others are better defined. Clarity would be enhanced if an international emissions trading scheme is in place covering all major emitting and offset providing countries. Reliance of fictitious offsets, such as Russian 'hot air', due to the artificialities of the 1990 Kyoto Protocol base year, should be avoided as they provide little genuine sustained abatement.

Further, a cautious approach to international offsets should be pursued in order to avoid leakage of potentially lower cost Australian permits needed to meet domestic compliance.

*In summary, the NGF recommends that with respect to offsets:*

- *Verifiable domestic offsets should be allowed as long as providers of offsets are equally subject to an emissions trading regime,*

- *International offsets should be permitted and certainty with respect to access would be greatly advanced with an emissions trading scheme covering all major emitting and offset providing countries,*

- *A cautious approach at the Federal Government level should be pursued to international trading in order to reduce much needed local permits shifting offshore.*

## 5. Permit allocation

The Discussion Paper proposes that permit allocation be a mix of free allocation and auction allocation to generators and free allocation to trade-exposed, energy-intensive industries. Allocation to generators is seen as a wealth-transfer issue rather than an efficiency issue. *Ex ante* allocation to existing generators would be on the basis of reflecting reductions in operating profits (and hence asset value) and would be calculated in NPV terms over a 20 year period. There would be no allocation to new generators or further allocation to existing generators.

Energy-intensive, trade-exposed industries would need to be defined and annual *ex post* allocation would reflect benchmark energy intensity for the particular industry and quantity sales. It is assumed that permits allocated in this manner would be 'sold' to generators, at least in the first instance as generators are the only liable party, or banked.

Permit allocation to existing generators is the critical issue for many NGF members. Generators accept that over-compensation can arise if generators receive a full allocation of permits and then are the beneficiaries of a higher pool price as a result of pass-through due to market dynamics. This was the situation, in part, in the European Union during the first phase of emissions trading.

Conversely, generators do not expect to suffer a direct loss as the result of emissions trading in Australia. Essentially the public is resolving, through their government, to produce future electricity at a lower level of emissions than is presently the case. The rules are being changed.

Investment yet to be made will be in the context of these new rules, and investors will factor them into their analysis. But much existing investment, made in good faith, would be harmed. In the limit, investors in emission intensive businesses would find their investment worthless or 'stranded' and be unable to recoup the loss. This type of sovereign risk is abhorred by the market because it lowers confidence and restricts investment.

This situation is especially important in the case of the electricity market. When the electricity market was deregulated in the United States, considerable effort was taken to protect investors from stranded investment. A lack of confidence in investment, particularly in base load plant, will have several undesirable consequences:

- Power system reliability will be impaired. Lack of investment, when required by the market, increases the likelihood of having insufficient capacity to meet demand;
- In the short run, generators designed to operate only at peak times (such as gas turbines) would be scheduled for longer periods, thus raising wholesale prices from optimum.

It is also clear that there will need a substantial need for funds sourced from the generator companies themselves as they adjust to adjust to a lower-carbon future. Some generators will embark on cooperative research and development, which they could expense. Others would invest in demonstration projects which they might capitalise. Strong financial health of the generation sector will be essential if these funds are to flow, otherwise profitability and therefore confidence would suffer negative impact.

The discussion paper clearly shows that NETT is aware of this policy imperative. It proposes that generators receive an allocation of permits such that their expected expenditure on the remainder of their requirements (by auction) is equal to the expected additional income as a result of higher pool price.

There is substantial risk in forecasting these income and expenditure streams. The prices of both additional permits through auctions and sales of electricity are the result of market forces which are volatile. Generators can therefore reasonably expect to receive an increased amount of permits representing an adjustment for this risk.

The NGF fully supports the upfront allocation of permits to generators incurring loss of revenue or asset value. NGF members consider that a once-off upfront 20 year allocation needs to be assessed very carefully and recognise the significant impact on long-lived assets involved.

Each *ex post* permit allocated to the energy-intensive trade-exposed sector is a permit not allocated to generators and would rely on market dynamics to sort out the ultimate value and transfer of the permits so allocated.

The NGF has noted that some non-affected stakeholders have argued against free permit allocation to existing affected generators but they are not necessarily opposed to free allocation to the energy-intensive trade-exposed sectors. The NGF contends that such views are divisive and would lead to great uncertainty in the Australian economy in terms of sovereign investment risk. Compensation to affected generators is required in order to advance the restructuring of the generation sector in an orderly manner without putting at risk investor confidence or system reliability. Without compensation, confidence in Australian investment and the effective operation of the electricity market would be eroded significantly.

Therefore, the NGF fully supports permit allocation to existing affected generation businesses on a generation unit by unit basis, based on detailed and agreed modelling protocols. The challenge of getting this more or less right should not be underestimated. However, the difficult challenge should not be used as an excuse to abandon permit allocation in favour of auction allocation as auction allocation tends to provide a much less efficient and effective process for compensation.

Generators do not support a portfolio approach to permit allocation as businesses do not account on a portfolio basis and future portfolio changes would make such an allocation process impractical and even self-defeating if subject to activities such as divestments. Affected NGF members would favour a station by station allocation process, or given changing unit upgrades and unit economics, a unit by unit allocation would provide a more robust process for allocation.

The NGF supports the need for further modelling work on permit allocation to generators and other sectors requiring compensation due to loss of revenue or asset value. NGF members would welcome further opportunities to advance allocation modelling with the NETT; modelling work that would explore an agreed set of allocation factors.

Of concern to NGF members is the challenge of a permit allocation process that compensates affected generators once-off for 20 years, based in effect on a 20 year projection of electricity market price pass-through and emission permit prices. There are significant risks in getting such an allocation process badly wrong as demonstrated by the EU emissions trading scheme.

Rather than allocating twenty-year permits once and for all, alternative processes should be explored that can accommodate greater future uncertainty but with equal upfront certainty. One process being considered by NGF members involves making 'the' allocation formula the trading instrument, with annual conversions (for 20 years) into real emissions permits, based on an agreed pool price trajectory starting from the present, and actual emissions (averaged over the past few years or current year).

With the formula in place, annual permit allocation would be calculated using the actual pool price and permit price, with the CPI indexed initial (pre NETS) pool price and generator carbon intensity being the other parameters. The permit market will quickly establish the forward price curve based on the allocation formula and growing experience over time.

The allocation process will also need to recognise current voluntary and verifiable abatement action by generators.

Other allocation options will also need to be explored, including options of direct compensation rather than ex post allocation to energy-intensive, trade-exposed participants.

*In summary, with respect to permit allocation, the NGF recommends:*

- *Permit allocation to affected generation businesses should be based on loss of revue, reflecting loss of asset value,*
- *Allocation be made on a power station unit by unit basis,*
- *The need to work closely with NGF and its members in modelling a range of permit allocation processes, but with the prime objective of succeeding in developing a viable scheme and not creating excessive challenges leading to an auction allocation default scheme,*
- *Clear recognition, in terms of allocation, for current voluntary abatement actions by generators,*
- *Other mechanisms for compensation to energy-intensive, trade-exposed businesses should be examined.*

## 6. Compliance penalties

The Discussion Paper sees civil penalties as a tool to both cap the cost impact of the measure and ensure widespread compliance. It recognises that compliance at any cost in not acceptable or economically sustainable. Following on from this point, the use of make-good provisions is not proposed.

The NGF endorses the mature approach in the Discussion Paper to the issue of compliance penalties. Achieving the balance between capping the cost of the measure and widespread compliance is likely to require some further modelling work but this should not be onerous.

The NGF and its members support the need for some 'make good' provisions in cases where genuinely meeting compliance was marred by administrative difficulties and uncertainties during the acquittal stage. This has been the experience with the

MRET scheme compliance and its 'make good' provisions have assisted in achieving both a high level of compliance awareness and a cooperative approach to ensuring compliance. A similar approach is recommended for the proposed NETS. By keeping it simple, there is no need to implement a system of 'borrowing' (an option not preferred by the NETT) into the process.

The NGF recommends a modest compliance penalty regime in the earlier years of the NETS, with penalties perhaps just shadowing the marginal permit price. Over time and with experience an assessment could be made about the need to increase the compliance penalty. Again, experience with the MRET scheme suggests that excellent compliance is most likely to be the case and the need to use the penalty provisions are likely to be by exception.

*In summary, with respect to compliance penalties, the NGF supports:*

- *A balanced approach to compliance penalties and capping the cost of the measure,*

- *A modest compliance penalty regime in the first instance based on tracking the actual marginal permit price, with more stringent provisions over time if this proves necessary,*

- *Some minor 'make good' provisions for administrative reasons that will ensure complete compliance but without triggering the penalty provisions.*

## 7. Economic impacts and economic modelling

The NETT commissioned economic modelling to examine the potential implications of the indicative scheme caps on generators and the broader Australian economy. The detailed modelling reports are available and comments are sought on all aspects of the modelling.

Electricity market modelling and associated aspects such as the supply mix was conducted by MMA and the broader economic impact was modelled by CoPS.

The NGF is impressed with the modelling work conducted to date, but members do have some concern about the underlying assumptions and modelling approach. This is not to imply that the modelling is not robust, but rather that some of the key assumptions used on which all modelling of this kind depends are more conducing of emissions trading and its comparatively low economic impact.

Assuming a 2010 start date, MMA modelling indicates a very low starting permit price of around $6/t for scenario 1a and around $12/t for scenarios 1 and 2. By 2030 prices would be around $28/t for scenario 1 and 1a and $33/t for scenario 2. The cumulative price would be significantly lower for scenario 1a and significantly higher for scenario 2.

Pool prices would commence at $30/MWh - $32/MWh in 2010 and increase to around $36/MWh in 2030 for business-as-usual, $43/MWh for scenario 1a, $45/MWh for scenario 1 and around $48/MWh for scenario 2.

Average retail price impact is listed as $52/year (Victoria) to $166/year (NT) for scenario 1; $36/year (SA and Victoria) to $114/year (NT) for scenario 1a; and $62/year (Victoria) to $187/year (NT) for scenario 2.

Impact on 2030 GDP is stated by CoPS to be minimal, down 0.6%, which is recovered within 3 months.

As alluded to previously, the NGF finds scenario 1a implausible given its high dependence on energy efficiency, offsets and induced demand technological change. The other scenarios are considered to be more plausible because the in-built demand response is based on more accepted elasticity factors.

The NGF has undertaken a detailed technology cost-based study using CRA International as consultants to assess the cost impact on electricity supply from various levels of greenhouse gas reductions from electricity supply. As noted previously, a copy of the CRA report is provided and a summary of the key conclusions is included in this submission.

The CRA International study allowed for a complete suite of technologies, including nuclear power which was not modelled by the NETT consultants. It also carried out projections to 2050, thus providing a significantly greater forward look than the MMA work, potentially with fewer boundary problems around 2030.

In cost terms, the CRA International study finds than an average emission price of between $30 and $35 per tonne is needed to match indicative scenario 1 by 2030 and close to $40 per tonne to match indicative scenario 2 – but both with nuclear in the supply mix. Without nuclear power in the equation, the emission price would be significantly greater as the marginal cost of reduction rises very steeply, particularly beyond 2030.

Even without nuclear, the MMA modelling signifies a different supply mix to that of CRA International modelling work, further highlighting difference in assumptions, particularly about technology costs and fuel prices over time.

The NGF would be pleased to continue to work with the NETT and its consultants in further modelling work on the projected emission price and its impact on costs, electricity pool prices and consumer prices. Such work is essential in not only addressing the issue of consumer impact but also in determining loss of revenue and business value for the affected businesses and hence an assessment of compensation.

*In summary, with respect to economic impacts and economic modelling, the NGF recommends that:*

- *Further modelling should be conducted to improve understanding of technology resource costs, including fuel and operations costs,*

- *Further industry and economy-wide modelling should be undertaken by the NETT in conjunction with the NGF and other industry in order to improve understanding of the costs and benefits of a potential NETT,*

- *A further range of scenarios should be explored in order to determine cost effective response options in both the shorter and longer term, including the shape of targets and the size of caps over time.*

## 8. Transitional arrangements

Assuming a 2010 start date, there is a three year period to deal with a number of key activities:

- Developing and enacting legislation acceptable to all state and territory jurisdictions,
- Establishing and developing the required institutions,
- Monitoring, reporting and verification of emissions,
- Designing and implementing permit allocation processes,
- Designing rules and procedures for offsets projects (forestry, etc.),
- Capacity building and education of participants and stakeholders,
- Transitioning of certain existing mandatory schemes, such as NSW GGAS.

The NGF and its members consider it to be a major challenge to put in place the needed arrangements and get agreement amongst some eight or maybe nine, if the Federal Government is included, jurisdictions.

Also, given Australia's commitment to meeting its agreed Kyoto Protocol target that does not appear to require reliance on emissions trading, it might be more sensible and pragmatic to introduce the NETS beyond the 2012 Kyoto Protocol period but with firm indications about its imminence.

The post 2012 NETS could be designed in such as way as to have little further impact on targets or cumulative emissions compared to the earlier start date.

*In summary, with respect to transitional arrangements, the NGF recommends that:*

- *The NETS should be introduced after the current Kyoto Protocol period, allowing more time to put in place the required institutional arrangements and obtain Federal Government leadership.*

## 9. Institutional arrangements

Complex new governance arrangements would be required to implement an emissions trading scheme and support its ongoing operation and administration. States and territories would seek Federal Government involvement in the scheme but this is currently uncertain.

A new ministerial council, supported by a scheme developer and scheme regulator are likely to be necessary. A key role of a ministerial council would be to review the scheme every 5 years and determine future gateways, commencing in 2015.

Complete agreement amongst the states and territories would be needed to implement the scheme more or less effectively. The scheme can never be fully effective without Federal Government involvement, particularly when linkages to other international schemes are contemplated. There is also a high risk of the scheme's failure if not all states participate, or participate on equal terms.

The NGF continues to question a states-based NETS without Federal Government involvement. A national scheme, implemented at the Federal Government level, would be the only truly viable scheme for a comparatively small economy like Australia. This would be even more the case if international linkages are considered.

If the NETS proposed is implemented, the States must accept the risk of failure for such a limited scheme and generation businesses may well be entitled to seek compensation in such a case.

*In summary, with respect to institutional arrangements, the NGF recommends that:*

- *If a national emissions trading scheme is to be implemented, it should be done exclusively at the Federal Government level,*

- *Complex governance arrangements amongst the States should be avoided as they would lead to increased costs,*

- *Institutional arrangements should be developed and implemented at the Federal Government level, supported by robust processes involving the State jurisdictions,*

- *There will need to be a better recognition of potential failure of the proposed NETS and the possibility of legal redress by affected generation businesses.*

**Concluding comments**

The Discussion Paper deals with many of the issues which have plagued other greenhouse gas emissions trading schemes and suggested actions for avoiding such problems. The NETT has done a good job in elucidating the real issues and challenges. It has closely assessed and learnt from the EU emissions trading scheme, and in particular the NETT has clear views on issues such as compensation to existing asset holders.

The NGF believes that the states are unlikely to succeed in establishing a meaningful national emissions trading scheme. The NGF believes that such a scheme would only be viable at the national level if initiated and managed by the Federal Government.

The need for and benefits of a global scheme should be assessed more fully and this assessment should include coverage of at least AP6 economies, and Canada, in addition to European economies.

The NGF considers, as also alluded to in the Discussion Paper, that further modelling work will need to be undertaken in conjunction with NGF members and other industry in order to further advance understanding of the key issues related to coverage, targets and caps, permit allocation and compliance penalties.

## National Generators Forum

### Climate Change Policy Statement

1. In order to facilitate efficient investment in electricity supply in the future, the NGF supports the need for long-term greenhouse policy certainty and a broad national policy framework. Given the long-lived economic value of assets, a bipartisan political approach to greenhouse abatement action is highly desirable.

2. Government policy that places a price on greenhouse gas emissions, through a tax, an emission cap or an emissions trading regime should provide adequate compensation to existing asset holders who suffer loss of revenue or asset value.

3. Consistent and efficient national greenhouse response programs are preferred over the existing mix of multiple federal and state based programs.

4. Responding to future climate change impacts as a result of greenhouse gas emissions is a complex issue that will need to be accepted by the general public. The NGF supports activities to facilitate informed debate on the subject.

5. Greenhouse response measures should be implemented in a manner that does not impact on the efficient operation of the National Electricity Market.

6. NGF members are expert in developing and operating electricity generation plant in a least-cost manner and seek to use this expertise to contribute to the greenhouse policy debate with all stakeholders.

7. NGF members support voluntary greenhouse gas abatement action and NGF members are engaged in a range of related activities delivering significant abatement outcomes. Recognition for early action will need to be incorporated in greenhouse policy.

8. Governments should not pick technology winners but should ensure that policy and regulatory frameworks support all zero and low emission technologies in order to achieve least-cost outcomes.

9. Governments must place a priority on research, development and demonstration in order to accelerate the commercialisation and deployment of zero and low emission technologies in order to minimise future mitigation costs.

10. Greenhouse policy actions should be consistent with zero and low emission technology developments; that is, policy should be based on available technology in order to minimise costs.