



Clean Energy Council

NSW Energy Efficiency Trading Scheme Submissions
Department of Water and Energy
Via: neetforum@dwe.nsw.gov.au

Dear Dr Hemming,

Thank you for the opportunity to provide a submission on the NSW Energy Efficiency Trading Scheme Discussion Paper. The Clean Energy Council (CEC) is the peak body representing the clean energy industry. It is an amalgamation of the Australian Business Council for Sustainable Energy (BCSE) and the Australian Wind Energy Association (Auswind). The CEC is a member-based industry association that represents businesses ready to innovate, invest and act to safely and reliably meet Australia's energy needs while lowering greenhouse emissions. Our member organisations cover a quarter of Australia's total electricity production and are involved in renewable energy, gas, energy efficiency, distributed energy and greenhouse abatement markets.

The CEC acknowledges and supports the New South Wales Government leadership in this complex policy area and on its undertakings to address the failure of the energy market to deliver cost-effective energy efficiency activities. It is essential that the potential of energy efficiency is realised not only as a frontline greenhouse gas abatement action through cost-effective greenhouse gas abatement, but also to enhance the productivity benefits to the economy through the improved utilisation of energy infrastructure.

The NSW Government should be congratulated in recognising that an Emissions Trading Scheme alone will not drive major investment in end-use energy efficiency and the importance of capturing energy efficiency opportunities in the retrofit market. The elegance of energy efficiency is that, not only will householders and businesses retain an ongoing private benefit of lower energy costs due to reducing energy waste, but that there is a significant public benefit in improved productivity and avoided infrastructure investment.

The CEC advocates an aggressive push on energy efficiency, a permanent shift to renewable energy, an investment environment for innovative / clean technologies and to engage the community to promote behavioural change. If you have any points of clarification in the submission, I can be contacted via phone (03) 9929 4100 or email Vikki.McLeod@cleanenergycouncil.org.au

Yours sincerely

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Overview

The CEC would have an expectation of the following broad design features of an Energy Efficiency Trading Scheme:

- Apply to both the electricity and gas and all sectors – Commercial, Industrial and Domestic.
- Utilising a tradeable instrument of an Energy Efficiency Certificate (EEC). A certificate would have a value of 1 MWh in eligible electricity energy efficiency activities or 3,600 MJ in eligible gas energy efficiency activities.
- Liable parties are wholesale purchasers of electricity (that is Retailers and other large energy users) and gas.
- Obligation is calculated by multiplying the annual target by the amount of liable transactions (that is wholesale purchases) in the previous year and is represented by the number of certificates which must be sourced and acquitted against the obligation.
- The liable party is required to source and acquit to the Regulatory Body the number of certificates to the extent of their liability, or pay a penalty to the extent of any shortfall in their annual obligation.
- Eligible parties are voluntary participants in the NSW EET scheme and are self selecting.
- Certificates can only be awarded to eligible participants who have invested in eligible energy efficiency activities and who have been accredited by the Regulatory Body.
- Eligible energy efficiency activities from all sectors – residential, commercial and industrial – to be included.
- The cost of assessing the energy saving benefit and the cost of administration needs to be balanced. Methodologies to assess the energy efficiency benefit should build on existing methodologies such as the International Performance Measurement and Verification Protocol (IPMVP) and stream between three (3) methodologies: deeming, accredited performance and project verification.
- Intermediary parties such as Energy Service Companies (ESCO's) are recognised in the NSW EET Scheme as providing expertise to end-users, implementation, auditing and compliance expertise. The ESCO must be trained and accredited in auditing and compliance procedures as defined by the Regulatory Body.
- The Regulatory Body (and assisted by State agencies where applicable) is responsible for administration of the accreditation and auditing of eligible and liable parties.
- The Regulatory Body is responsible for ensuring the application of targets, penalties and compliance.
- The NSW EET Scheme has an emphasis on quality energy efficiency activities to ensure the integrity of the market and will commence with a narrow scope of well defined energy efficiency activities, only broadening the scope of activities as the scheme progresses. Eligible energy efficiency activities will be defined through supporting regulation.

To ensure an efficient and effective market and administration of the scheme, the measurement and verification of the energy efficiency activities would need to be easily and cost-effectively administered and result in a high level of market confidence.

To maintain the integrity of the market and maximise participation in the scheme, a number of guiding principles for the administration of eligible energy efficiency activities are required:

- Rules should be clear, well defined and easily implemented to promote investor confidence;
- Rules should be reasonable in their administration and application;
- Rules for measurement and verification promote and maintain the integrity of the market.
- The volume of data to be collected and the regularity of this data collection and analysis is to be defined;
- The function of complexity and accuracy of variables and the duration and accuracy of the measurement is to be defined eg. metering.
- Reasonable auditing, search and transaction costs are associated with compliance with the scheme.

Relationship of NSW EET to National Policies

Integration with other State based Energy Efficiency Trading schemes

Victoria and South Australia have already made commitments to Energy Efficiency trading schemes. The CEC is concerned with the number of state-based initiatives and significant design variations for these schemes.

It is a less than ideal outcome for national-based organisations to be required to conform to three different schemes with three significant design and coverage variations. The benefits of a trading scheme will only be realised if a single functioning market exists. Inconsistent State based schemes will result in three small and non-fungible state based markets with no liquidity between them.

It is recognised that State variation would be inevitable due to historical policy decisions around building regulations, diversification of industry, weather effects etc. and therefore result in a variation between the States in the energy efficiency opportunities and level of investment.

The CEC would prefer to have a national scheme or framework for energy efficiency activities rather than having separate state based schemes. The CEC calls the Australian government to introduce a national and consistent scheme with the inclusion of all States and Territories.

In the absence of a national scheme, we request the NSW Govt to align their scheme with the Victorian Energy Efficiency Target model from the commencement of the scheme on the 01 January 2009. This will allow for a single, fungible EE commodity market to develop between the two states.

Integration with Mandatory Renewable Energy Target

For administration purposes, alignment with the Mandatory Renewable Energy Target (MRET) is recommended in order to capitalise on the aspects of the MRET Scheme which have been demonstrated to work, but also to build on the acceptance and understanding Industry has through experience with MRET.

Integration with an Emissions Trading Scheme

The treatment of energy efficiency is yet to be determined in the context of a national ETS. If included as an eligible action for abatement or offset, it is anticipated the cost effectiveness and the potential of EE opportunities would increase. By ranking energy

efficiency by cost and against other abatement alternatives, the next more expensive alternative will define cost effective energy efficiency action.

At such time, when a national emissions trading scheme is introduced, it would be necessary to separate the benefit of end-use energy efficiency accruing to the upstream emitter and resulting in double counting or free riding. A test of who invests in the EE activity and who accrues the benefit may be a guide. In any case adjustment of the ETS cap to reflect the energy efficiency benefit due to the NSW EET or other State based energy efficiency initiatives needs to be made.

Integration with Energy Market Reform

With the deregulation of the Australian energy market, there is no incentive for Demand Side Management or energy efficiency initiatives, and perverse incentives exist to reward increased energy consumption by the current CPI-x economic regulatory model of transmission or distribution companies.

White Certificate Schemes are being introduced in Europe and are generally considered as completing the energy market with the inclusion of Demand Side Management activities and energy efficiency measures. NSW EET would be a mechanism to create an incentive for energy efficiency and demand side management.

Integration with Minimum Energy Performance Labelling

UNEP Division of Technology, Industry and Economics report on effectiveness of EE policies concludes "among the most cost-effective instruments were appliance standards, energy efficiency obligations, DSM programs, public benefit charges and labelling."

A NSW EET Scheme needs to be designed to provide incentives and reward the implementation and uptake of quality energy efficiency activities above the regulated required Minimum Energy Performance Standard (MEPS) where it exists. The baseline would be defined by the regulated MEPS for houses, appliances and equipment. Where a MEPS does not exist, the Sales Weighted Average or similar substitute which reflects the existing practice or standard is recommended.

The CEC argues complementary policy measures are required to support and enhance the administration and effectiveness of the NSW EET.

Integration with Infrastructure Investment

It is important to recognise that a key part of the value of energy savings derives from the reduced need to invest in new generation and network infrastructure. However, investment in this infrastructure is primarily driven by peak demand rather than overall energy use. Energy efficiency activities that contribute to reducing peak demand will therefore deliver greater benefits to consumers and to the NSW economy than energy savings at other times.

The two key policy instruments for promoting distribution networks to reducing growth in peak demand in NSW are:

1. The economic regulation of the distribution and transmission network businesses by the Australian Energy Regulator in accordance with the National Electricity Rules. This regulation is intended to ensure that network investment to meet peak demand is prudent compared to other options to reduce demand; and
2. NSW Demand Management Code of Practice for Electricity Distributors, which is intended to provide guidance to NSW distribution network businesses in identifying and procuring demand management (including energy efficiency) options wherever these are more cost-effective than network augmentation.

Despite the existence of these instruments, electricity networks in NSW very seldom invest in energy efficiency and demand management as an alternative to network capacity augmentation. There is an urgent need to improve the operation of these instruments in this regard. To maximise the benefits of the NSW EET, it is essential that it be administered in harmony with the above mechanisms to manage peak demand.

It is therefore recommended that the Government actively encourage network businesses to engage in energy efficiency measures. This should involve:

1. Including reference to the above instruments in explanatory and promotional material relating to the NSW EET.
2. Publication by the NSW Government and/or the Australian Energy Regulator of a comprehensive annual report on demand management activity undertaken by the network businesses in NSW, including energy efficiency measures and specific level of savings achieved.
3. Committing to review the performance of network businesses in relation to energy efficiency within two years. This should be done with a view to extending energy savings obligations to the distributors if adequate progress on supporting energy efficiency is not evident.

Relationship of NSW EET to GGAS

The CEC supports the 1 January 2009 start date for NSW EET and the proposed approach regarding the relationship of NSW EET to GGAS.

Rolling DSA NGACs into NSW EET, will have contractual and administration implications and due consideration must be given to the potential impacts and interaction between the NSW EET market and the NGAC forward contract market. CEC are aware of participants in the NGAS who have entered into NGAC forward contracts on the basis of DSA NGACs remaining in place to 2010.

Scheme Coverage and Liable Parties

The participation and the extent of coverage of an energy efficiency trading scheme will determine the effectiveness in facilitating low-cost energy efficiency activities across the economy. It is foreseen there are three (3) categories of participants:

- Liable Parties who must source and acquit Energy Efficiency Certificates to the extent of their liability or pay a penalty;
- Eligible Participants who through investing in Eligible Energy Efficient Activities can create Energy Efficiency Certificates; and
- Intermediaries such as Energy Service Companies, Agents or Aggregators who facilitate the uptake of Energy Efficiency Activities in the broader community or at the point of sale.

Energy efficiency opportunities and therefore eligible participation should be allowed from all end-use energy consumers, such as the commercial, industrial, residential, government and utility sectors.

A liable party has a number of options available to them to source EE Certificates:

- Direct investment in eligible energy efficiency activities which generate certificates;
- Bilateral trades with investors in eligible energy efficiency activities;
- Source through EEC trading companies or derivative markets.

If a liable party has an existing contractual arrangement with a party such as a retail customer, it is reasonable to expect that they would seek to invest directly in their client's enterprises for the dual outcome of a cost effective compliance and provision of differentiated energy services to their customer which promote customer loyalty and customer retention. The liable party will assess the most cost-effective strategy for compliance.

It follows that the opportunity for high volume generation of EE Certificates, low search and transaction costs would lie with large energy consumers such as commercial and industrial customers. The logic being large C&I customers use more energy and are more easily identifiable and should therefore be an attractive source of credits. However the experience with NGAS would suggest that liable parties will be most likely to go for the lowest-cost and administratively simple activities such as CFL and showerhead giveaways.

Aside from cost, there are other barriers and difficulties progressing larger industrial projects. C&I customers tend to have very differentiated circumstances, business processes, resulting in increased "search" costs. It is also the experience of NGAS larger industrial customers are generally not prepared to invest in anything other actions with significantly low paybacks.

Given the NGAS experience investment in the Residential sector should be anticipated before investment in the commercial and industrial sector. This will result in an opportunity for the NSW EET administrators to commence with a well defined set of deemed actions in the initial phase and then broaden the scope of participation and eligible energy efficiency activities.

Cost-effective investment is estimated as a 4 year payback or less and 60% of these less than 4 year payback energy efficiency activities can be implemented at no cost, or at low cost. Most quoted studies put forward cost effective EE potential at between 12-25% IRR, i.e. roughly 4-8 years payback.

It is an incentive to the end-user to participate and allow the liable party access and direct investment in their facilities. The level of the incentive to the end user will be dependent on the business case and the energy efficiency activity. A liable party may be in the position to provide an incentive in the form of:

- The intrinsic benefits of energy efficiency and cost savings.
- An additional incentive above and beyond the energy savings.

Other parties not directly liable through the scheme would also have an indirect incentive to participate and invest in energy efficiency activities. Such parties would include:

- Intermediaries or aggregators such as Energy Service Companies, manufacturers and appliance retailers;
- Local government or municipal utilities.

Determining the Total Energy Savings Requirement

The total energy saving requirement and therefore the issue of the annual energy efficiency target is closely tied to the cost-effectiveness of the energy efficiency opportunity.

The total energy savings requirement and therefore the annual NSW EET target must be set at a level to balance economic benefit and technical viability. The proposed NSW EET annual aggregate target is set relative to the growth in end-use energy demand and therefore expressed as a percentage.

Similar to a Renewable Energy Certificate (RECs), the market will determine the EEC price as a result of either:

- Cost of production of the EEC i.e. costs associated with generating the EEC (search costs, feasibility studies, capital cost of equipment, implementation, monitoring, verification and ongoing compliance costs);
- Costs associated with the alternative which is payment of the penalty i.e. cost of the penalty less transaction and holding costs.

The size of the target, the scope of eligible energy efficiency activities and the penalty rate is all relative to the energy savings requirement. The CEC would be promoting a reduction target and a reversal in the trend in growth in energy demand which is currently in the order of 2.5% per annum, i.e. a reduction target in energy use based on the previous year's consumption in the order of 2.0%.

The CEC calls for the NSW Government to undertake the estimation of the NSW energy efficiency opportunity by sector and cost-effectiveness in order to inform the target.

Similarly the target should also be informed by international experience for example:

- The UN Foundation's report on global EE potential estimated 34 percent of the global projected primary energy consumption could be saved through the use of energy efficient technologies and practices in new and existing buildings by 2020 (Urge-Vorsatz et al., 2006)...The potential global energy savings in buildings by 2030 are equal to the total European energy consumption.
- This conclusion about global potential is mirrored in the ASBEC Report 2007 which outlines similar orders of magnitude at low or no cost.
- The McKinsey report identifies almost 100Mt of GHG abatement nationally through cost effective (zero or negative cost) energy efficiency measures by 2030. If only a third of this energy efficiency opportunity were achievable in NSW, this would be the equivalent of 30Mt or almost 20% of NSW's total emissions. The equivalent of greenhouse abatement reduction of 1% per annum for 20 years – at no net cost.
- ACEEE study on the US State of Maryland estimates a total cost effective energy savings of 29% and peak demand reduction of 47% by 2025. This estimation is based on the State's policy settings, and then analyses the contribution that various policy measures that a high level EE goal is realistic and achievable.

Determining Energy Savings Obligation for each liable party

Similar to the application of the Australian Government's Renewable Energy Target, it is anticipated the annual energy efficiency target would be applied to the total number of liable transactions the liable party has undertaken in the previous year.

It is acknowledged that energy sales increase in times of economic growth and decline at times of economic contraction.

The annual target needs to be set as a percentage of the previous year's wholesale energy sales. The actual level of consumption in the current year is irrelevant with respect to current obligations of the liable parties. The current year energy consumption is relevant only for setting the target for the following year. This is designed so as not to penalise cycles in economic activity.

The benefit and elegance of setting the target as a percentage of liable transactions as opposed to a set MWh of energy savings target (either in MWh or PJ), is that the target is in line with economic growth (or contraction) and therefore does not create an economic penalty or burden.

The annual interim target should be informed by economic modeling, the capacity of industry to respond and the corresponding market clearing price of an EEC. The target should be published 18 months prior to coming into effect. The autonomous energy efficiency improvement is estimated as 0.5% per cent per annum and technological innovation and improvement above this level is possible and reasonable.

The MRET was based on projections and therefore did not track the unexpected high growth in electricity demand, consequently the stated objective of an additional 2 % from renewable energy was not achieved. The proposed solution included in NSW EET is to set the target in relation to the previous year's energy consumption.

The annual liability is calculated by multiplying the Energy Efficiency Target by the liable party's liable transactions in the previous years. This is similar to the application to the *Renewable Power Percentage* (RPP), which is used to determine liability for the Mandatory Renewable Energy Target. This will result in the number of Energy Efficiency Certificates required to be sourced and surrendered to the Regulatory body against their obligation any shortfall of certificates acquitted against the obligation will result in a financial penalty being accrued to the liable party.

The UK Energy Efficiency Obligation Scheme includes targets for low income housing with the objective of addressing fuel poverty.

While equity issues such as compensating or protecting disadvantaged groups from an increase in energy costs is a principle consideration in the design and implementation of NSW EET, the portfolio target is not. To address equity or disadvantage, it is recommended that this be addressed through another relief mechanism such as a direct payment in the form of an energy rebate.

Penalty

A penalty payable for a shortfall in the number of certificates surrendered against an obligation as an option for providing incentives for compliance should be included in the design.

The penalty has to be sufficiently high so that it is cheaper to invest in energy efficiency activities than paying the penalty.

Actual investment in energy efficiency activities will be an indicator of success of the NSW EET Scheme but also an indicator the penalty and the target have been set at an appropriate level. Until the level of energy savings required is defined, it is difficult to set the penalty level.

Given NSW GGAS has been operational for some years, it would be easy to assume the bulk of the lowest cost energy efficiency activities will have been implemented. However this would assume non-price barriers have also been successfully overcome, the CEC would argue they have not and there is a need to specifically address these non-price barriers.

As the penalty is the means to be able to drive investment in higher cost activities than those already undertaken, the penalty level must be subject to the economic modelling of the NSW EEO. It would be an expectation that the penalty would be at least \$25 per MWh as set by the Victorian Government EE scheme penalty.

In order to reduce risk for all market participants, the penalty rate should be defined as an integral scheme design feature and only be changed and such time a scheme review is undertaken. Changes in the penalty rate may be required if compliance costs were expected to vary greatly throughout the life of the scheme.

In addition to financial penalties, other incentives for compliance may be considered in a NSW EET scheme design. These might include "naming and shaming" or "naming and praising". Incentives for overshooting the target may also be a consideration entertained. The UK equivalent of the MRET Scheme requires a non-compliant liable party's penalty to be paid directly to complying liable parties who are also their competitors. However CEC understand and experience has shown, in general, liable parties do not consider paying the penalty as a viable course of action.

Energy Efficiency Activities and Certificate Creation

Sectors and Activities

Energy efficiency opportunities and therefore eligible participation should be allowed from all end-use energy consumers, such as the commercial, industrial, residential, government and utility sectors.

Eligible Energy Efficiency Activities are those activities that can be measured and verified in physical units of MWh and MJ saved.

It is proposed the principles and procedures for measurement and verification would:

- Have an emphasis on quality control;
- Be applied only to activities which are related to a physical energy saving;
- Define the point of eligibility or measurement at the site or facility level;
- Outline the documentary evidence and reporting requirements;
- Build on the International Performance Measurement and Verification Protocol (IPMVP)¹.

The IPMVP Protocol outlines the two dimensions of Energy Efficiency Activity (EEA) performance verification:

- Energy savings determination technique using available data of suitable quality;
- Disclosure of data and analysis enabling one party to perform saving determinations while verified by another party.

Accreditation

A key lesson for successful trading schemes is the inclusion of only quality activities where the energy efficiency benefits are bankable and the integrity of the market is maintained. Measurement and verification of the energy efficiency savings is potentially the most difficult aspect of the NSW EET Scheme but is also critical to the success of the scheme. The Measurement and Verification methodology needs to be defined at the point and time of accreditation of the Energy Efficiency Activity.

It is recommended that the NSW EET includes three types of accreditation and validation methodologies to balance the costs of administration while delivering only high quality energy efficiency activities.

NSW EET accreditation, requirements in terms of documentation and stringency is scaled and streamed according to the type of activity and the risk reflected by the volume of certificates accrued.

Three methods of accreditation are recommended – deemed, certified and verified. In general terms:

- Replacement of appliances and equipment is deemed;
- Industrial and Commercial Users require performance to be certified;
- Major Capital upgrades and investment require projects to be verified.

¹ Refer to appendix C for more information and www.ipmvp.org for a copy of the Protocol.

The basic methodology used for the determination of the energy efficiency benefit or quantification of the number of EE Certificates, is to subtract the post retrofit energy use from the baseline and adjust for variations in both the baseline and post installation energy use.

Baseline Methodology - General Equation²:

$$\text{Energy Efficiency Benefit} = \text{Baseline Energy Use} - \text{Post Retrofit Energy Use} + \text{Adjustments}$$

Adjustments bring the energy use on both time periods to the same set of conditions. Adjustments or common conditions commonly affecting energy use are:

- Weather;
- Occupancy;
- Plant throughput; and
- Equipment operations or operation relating to behaviour.

Adjustments can be of two different types:

- Routine Adjustments for changes in parameters that can be expected to happen throughout the post retrofit period and for which a relationship with energy use / demand can be identified. These changes are often seasonal or cyclical, such as weather or occupancy variations.
- Non Routine Adjustments for changes in parameters, which cannot be predicted, and for which a significant impact on energy use / demand is expected. Non routine adjustments should be based on known and agreed changes to the facility (commonly known as baseline adjustments or baseline variation).

Accreditation Options

It is recognised that no single methodology for the calculation of the baseline or energy efficiency impact will apply in all cases. Therefore, the eligible EEA should be distinguished, based on the expected degree of variability in both the baseline, the post retrofit energy use and other key parameters. It is proposed that three techniques are used, to determine the benefit of the eligible EEA and energy savings achieved.

Deemed performance	Used only for a select group of well documented, non-weather sensitive measures and technologies. Energy impact over the life of the activity is sufficiently small and therefore low risk. Suited to appliances, equipment, or where a Minimum Energy Performance (MEP) exists. The baseline is set as the MEP or sales-weighted average, and only activities which exceed this minimum performance, are eligible. The lifetime benefit of the activity is calculated through statistical methods or other simulation. Used with a derating / discounting / confidence factor to allow for varying operational behaviour. The EEC benefit over the estimated lifetime is attributed up-front and is discounted from the purchase price at the point of sale.
Verified Performance	Used for more complex applications. One or a small number of varying input parameters. Requires use of end-use metering or engineering simulation of one or more variables such as occupancy or seasons. Little

² International Performance Measurement and Verification Protocol, Concepts and Options for Determining Energy and Water Savings. Volume I. International Performance Measurement and Verification Protocol Committee, Revised March 2002. <http://www.ipmvp.org/>

	or no variation in energy consumption with economic activity. Methodology could be developed for a class such as commercial buildings.
Certified Performance	Used for more complex systems with a number of interacting and variable parameters and conditions, or where energy use is dependent on an economic activity such as production. Requires the baseline to be normalised against various levels of the economic activity or production effect. Requires a tailored methodology to be developed for the facility and either direct measurement of each variable of use of simulation models or other. Performance can be certified in terms of energy intensity or other performance indicator and verified by a third party.

The methodology of establishing the baseline will vary depending on the energy savings determination methodology. The baseline scenario of the deemed activities would be related to the physical installation status of an activity rather than relating to benchmarking the energy demand. For example, a house which previously had no ceiling insulation is retrofitted with insulation, resulting in a deemed benefit over the lifetime of the insulation. To reduce administration costs, the deeming would be scheduled for typical house construction, orientation, climate and combined with a derating factor.

The baseline for accredited performance and verified projects would be calculated using energy consumption trends and other performance criteria and adjusted for non energy efficiency variations in demand such as occupancy levels, installed equipment, weather or metering errors. The principles for establishing the baseline for existing and new facilities are outlined in the International Performance Measurement and Verification Protocol (IPMVP). Other useful tools for verification would be ABGR (NABERS Energy) rating tool, given its utility and existing market penetration for commercial buildings.

These different accreditation options have different characteristics, which make them more or less appropriate for different situations, eg. type of customer and level of energy consumption:

- The margin of error is likely to be highest for deeming and lowest for verified projects;
- It is likely that the level of energy savings will be lower for Deemed Performance, and greater for Verified and Certified Performance;
- Deemed Performance is expected to be the least expensive option in terms of administration/verification costs, and certified projects the most expensive option.
- Certified and Verified Performance is likely to be more complex than Deemed Performance.

Taking these factors into consideration, and applying a risk management approach, that is when the risk of measurement error is high and the consequences of that error is high, the more detailed savings determination technique is appropriate. The matrix shown in Table 2 has been developed as a guide and indicates the most appropriate accreditation method for different classes of customers.

Large Industrial Energy Users	Small to Medium Energy Users	Domestic Energy Users
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Deemed Performance	X	X	X
Verified Performance	X	X	X ³
Certified Performance	X		

Related to this issue of verification is the facilitation and capacity building role ESCOs can provide and therefore be formally recognised as providers/intermediaries.

The CEC advocates for accreditation of ESCOs through AEPICA, the Australasian Energy Performance Contracting Association. Its members are formed from ESCO's, State Government Departments and private companies interested in the Performance Contracting process. Its mission is to act as the Peak Body to support the commercial growth of members and their market through education, industry promotion, self-regulation and industry standards.,

Certificates

The creation and use of tradeable certificates is recommended. Designing the NSW EET Scheme to be a market-based mechanism where energy efficiency savings are commoditised through an Energy Efficiency Certificate (EEC) and are tradeable to deliver least cost attainment of the target, is preferred. Making EECs tradeable will enhance the delivery and flexibility of the NSW EET Scheme and energy efficiency savings, by equalising the marginal costs of compliance among the liable parties.

As the certificate represents a tradeable commodity and the market in which it is traded is regulated, the energy efficiency activity therefore, must have the ability to be measured, verified and monitored to the satisfaction of all parties. Given the high cost of monitoring and data collection, it is important that the value of the data and its intended use is appropriate to the level of risk of the activity or the level of uncertainty associated with the estimation method.

These costs need to be balanced against the benefit they accrue in terms of ongoing efficiency, ease in participation and also the duration of the benefit.

Cost Impact of a NSW EET Scheme

The cost impact of the NSW EET Scheme will be a combination of the cost of administration of the scheme, the upfront cost of energy efficiency action, transaction costs and the cost savings due to ongoing energy savings.

The certificate price would ultimately be established by the market but would need to be sufficient to stimulate the investments in energy efficiency else the targets will not be met.

Guiding principles in **transaction cost considerations** involved in participation that is cost-effective for accreditation and ongoing audit requirements are as follows:

- Transaction cost should be minimised so as to encourage broad participation and increase the number of participating projects;

³ EECs generated by improvements to the efficiency of residential dwellings – refurbishments to existing dwellings and new housing – is probably best dealt with using a House Energy Rating tool, and also taking into account heating and cooling systems. This is likely to be too complex for a deeming approach.

- As a rule of thumb, the total cost of the program evaluation should account for less than ten percent of the typical cost of the energy efficiency activity, so not as to impose transaction costs which destroy the cost-effectiveness of the scheme and result in low scheme participation.

Guiding principles in **accuracy** for estimation of net program impacts and ongoing audit requirements:

- Accuracy and reliability should not jeopardise the credibility of the scheme;
- Uncertainties should be identified and a cost effective standard or level of confidence be applied.
- Evaluation, assessment and implication of uncertainties to be identified and appropriate derating⁴ factor applied to counteract uncertainty.
- Suited to local conditions.

Additional Points

Upfront allocation of certificates

Allocation of EECs for deemed activities are only to be provided upfront and based on similar criteria as applies to small generator criteria under the Mandatory Renewable Energy Target. This would facilitate point of sale price discount for energy efficient appliances and equipment similar to solar water heaters under the MRET rules as well as reducing administration costs. Allocation of certificates for certified and verified performance should be on an annual basis and be provided only after the energy saving activity has been undertaken.

Cogeneration

Cogeneration represents an important energy savings technology which should be supported through the NSW EET. The development of smaller scale cogeneration is likely to face very similar barriers to other energy efficiency measures in the context of an Emissions Trading Scheme. The CEC strongly supports carrying over the DSA provisions relating to cogeneration into the NSW EET.

Solar Water Heaters

It is understood the intention is to exclude Solar Water Heaters (SWH) from participation in the NSW EET on the basis SWH are included in the Australian Government's Renewable Energy Target. Since the 2004 amendments to RET, SWH can create RECS for new installations as well as replacement of gas and electric hot water systems.

For administration purposes, alignment with the Mandatory Renewable Energy Target (RET) is recommended. However energy efficiency benefits accrued through the replacement of inefficient systems with more efficient systems should be eligible under NSW EET as an additional, distinct and currently not rewarded by the RET scheme.

⁴ Derating factors or discount factor provides a positive assurance that the activity installed is at least the energy efficiency that is claimed. Derating factors are applied with reference to and against the industry standard of AUS 804 Auditing Standards.