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Submission

AER Issues Paper: Matters relevant to distribution determinations for ACT and NSW DNSPs for 2009-2014 "Demand Management Incentive Scheme"

Dear Secretariat,

Ethnic Communities Council of NSW (ECC) welcomes the opportunity to comment on the various Demand Management Incentive Scheme options proposed in the "Issues Paper: Matters relevant to distribution determinations for ACT and NSW DNSPs for 2009-2014", prepared by Australian Energy Regulator (AER).

Summary

Basically, ECC agrees to AER initial analysis toward current DNSPs demand management (DM) incentives, i.e. NSW D-factor and ACT revenue cap regulation. In relation to the proposed options, in NSW, we support continuing the D-factor in its present form and supplement it with a learning-by-doing Fund. In ACT, we support the introduction of a learning-by-doing Fund. In terms of the size of the Fund; we suggest it is around $50 million a year, for 5 years, for NSW and ACT together. It should target the residential customers, especially the low-income households, to help them overcome the lack of information and the high capital costs associated with the energy efficiency measures / renewable energy initiatives. This will also complement the equity issues raised from the national roll-out of smart meters, as well as the proposed time-of-use (TOU) tariffs / critical pick pricing mechanisms.

We suggest that an independent community-based organisation, whose goal is to reduce peak electricity demand by helping communities implement technologies, and/or change behaviour, can be an effective means of producing a significant demand curtailment resource to respond to price signals in a relatively short lead-time.

Following is our analysis.

I Background of ECC and its Demand Management Program

ECC is a non-government peak body representing many organisations and people from the multicultural community in NSW. The ECC of NSW actively promotes the principles of multiculturalism, and lobbies for the development of culturally inclusive society. The ECC is currently funded by the NSW Climate Change Fund (used to be

the “Energy Savings Fund”, more details are discussed below) to conduct the “Asian Dry Cleaner Electricity Saving Project” (ADCESP). ADCESP facilitates the reduction of electricity use by the dry cleaners in Sydney through providing free boiler/piping system energy audit and financial incentives to fix the identified heat lost problems. It aims to reduce electricity peak demand by 800 kW, save 1,467 MWH of electricity and 1,445 tonnes of greenhouse gases (GHGs) annually, the equivalent of taking 321 cars off the road.

II NSW Climate Change Fund / Energy Savings Fund

On April 2005, NSW Government established the Energy Savings Fund (ESF) under the *Energy Administration Amendment (Water and Energy Savings) Bill 2005.* ESF was paid for by contributions from electricity DNSPs, then been passed through to retail customers of electricity, and used to support energy savings initiatives of residential, commercial/industrial and government sectors. It is about $40 millions a year, up for 5 years; $200 millions in total. It accounts for 0.5% ($4.5 in 2005/06) to 1% ($9.0 in 2009/10) of the electricity bill for a typical residential customer. This represents less than 1% of the NSW DNSPs annual revenue.

The purposes of Energy Savings Fund are to encourage energy savings, to address peak demand issues, to stimulate investment in innovative energy savings measures, to increase public awareness and acceptance, to support cost effective energy savings measures that reduce GHG emissions. These fulfill part of the objectives of the learning-by-doing Fund raised in the Issues Paper.

On July 2007, under the *Energy and Utilities Administration Act 1987*, ESF, together with the Water Savings Fund, Climate Action Grants and Environmental Trust, was rolled into the newly-established Climate Change Fund (CCF), to help households, business, schools and government reduce GHG emissions, save water and energy. The total funding is about $340 millions for five years and can be broken down to the following categories:

- $100 million Residential Rebate Program - providing rebates for hot water systems, insulation and rainwater tanks
- $30 million NSW Green Business Program
- $30 million Public Facilities Program
- $100 million Recycling and Stormwater Harvesting Program
- $40 million Renewable Energy Development Fund
- $20 million School Energy Efficiency Program
- $20 million Rainwater Tanks in Schools Program

Since CCF/ESF has heavily learned experiences from overseas, mainly the United States, next section provides an overview of the energy efficiency policy mechanism in some US states.

III US Demand Management Fund Overview

Historically, regulated electric utility companies in US have provided a number of energy-related public services beyond simply supplying electricity. Such services have included: bill payment assistance and energy conservation measures for low-income households; energy efficiency programs for residential and business customers; pilot programs and other efforts to promote renewable energy resources; and research and development (R&D) efforts to foster the development of new energy supply and delivery technologies.

Up to 2003, there are 25 states in US have adopted "public benefit fund" (also known as "system benefits charge") to encourage energy efficiency initiatives/programs[1]. Approximately 60% of historic public benefit fund (PBF) have been spent on energy efficiency and load management programs, which have[2]:

- Saved 50–60 billion kilowatt-hours (kWh) annually in recent years, resulting in consumer energy bill savings of about US$4 billion annually.
- Reduced peak electric demand by 25,000–30,000 megawatts (MW) in recent years, the equivalent of 80–100 typical (300 MW) power plants. Without these savings, current reliability problems in many regions of the country would be much worse.
- Generally cost less than US$0.03/kWh saved, much less than the cost to produce a kWh.

■ Key decision areas in energy efficiency public benefits policy

➢ Funding mechanism / Funding level

The most common approach used is a "system benefits charge" consisting of a small "non-bypassable" (i.e., they are paid whether the customer purchases electricity from the utility or some other retail supplier) per-kilowatt-hour (kWh) charge on the electric distribution service.

In US, funding levels for energy efficiency across all the states ranged from US 0.003 to 0.3 cents/kWh. The median value has just over US 0.1 cents/kWh. Furthermore, for states with comprehensive statewide programs, the level of actual spending tends to be in the range of approximately 1 to 4% of total utility retail revenues. Following tables summarize the details of SBC funding cross twenty-four states in US[3].

Table 1 Summary of System Benefits Charge Funding Expressed as % of Utility Annual Revenue

States	% Revenue
Delaware	0.5
New Mexico	0.5
Michigan	0.7
Illinois	0.9
Maryland	0.9
District of Columbia	1.0
Pennsylvania	1.0
Arizona	1.1
Ohio	1.3
New York	1.3
Texas	1.7
New Hampshire	1.7
New Jersey	2.0
Maine	2.0
Montana	2.4
Rhode Island	2.5

[1] Martin Kushler, Dan York and Patti Witte, April 2004, *Five Years In: An Examination of the First Half-Decade of Public Benefits Energy Efficiency Policies*, ACEEE.
[2] ACEEE, 2003, *A Federal System Benefits Fund: Assisting States to Establish Energy Efficiency and Other System Benefits Programs*. (Fact Sheet), at www.aceee.org
[3] ACEEE, 2003, Summary Table of Public Benefit Programs and Electric Utility Restructuring, at http://aceee.org/briefs/mktabl.htm

California	3.0
Massachusetts	3.2
Oregon	3.6
Connecticut	4.0
Wisconsin	4.2
Average	**1.9**

Figure 1 SBC Funding Expressed as % of Utility Annual Revenue in some US states

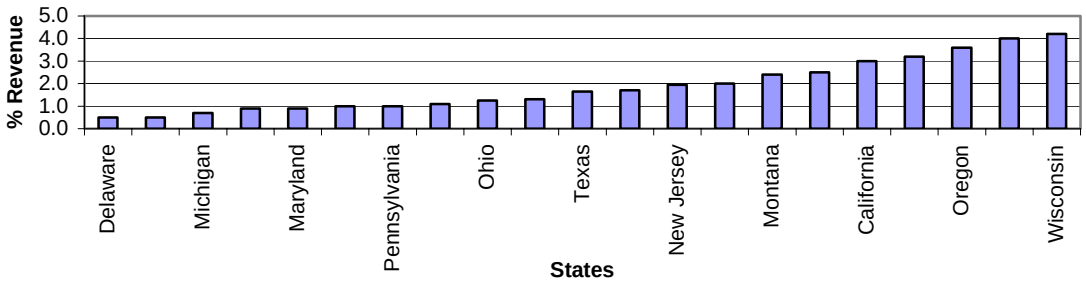


Table 2 Summary of Annual System Benefits Charge Funding (May 2003)

US Million $ / yr	R&D	Energy Efficiency	Low Income	Renewable	Total
Arizona	TBD	4.0	3.9	20.0	28.0
California	62.5	228.0	100.0	135.0	525.0
Connecticut	in RE	87.0	8.7	22.0	117.7
Delaware	0.0	1.5	0.8	0.3	2.6
District of Columbia	0.0	TBD	TBD	TBD	8.0
Illinois	0.0	3.0	75.0	5.0	83.0
Maine	0.0	17.2	5.5	0.0	22.7
Maryland	0.0	TBD	34.0	0.0	34.0
Massachusetts	0.0	117.0	0.0	30.0	147.0
Michigan	0.0	TBD	TBD	0.0	50.0
Minnesota	0.0	44.3	0.0	0.0	44.3
Montana	0.0	8.9	3.3	1.8	14.0
Nevada	TBD	11.2	TBD	TBD	TBD
New Hampshire	0.0	6.9	10.4	0.0	17.3
New Jersey	0.0	89.5	10.1	30.0	129.0
New Mexico	0.0	0.0	0.5	4.0	5.0
New York	26.0	83.0	27.0	in R&D	150.0
Ohio	0.0	15.0	100.0	0.0	115.0
Oregon	0.0	31.5	19.0	9.5	60.0
Pennsylvania	0.0	11.0	85.0	2.0	98.0
Rhode Island	0.0	14.0	in rates	2.5	16.5
Texas	0.0	80.0	157.0		237.0
Vermont	0.0	13.1	TBD	TBD	TBD
Wisconsin	1.1	62.0	45.3	2.8	111.2
Total (million $)	**89.6**	**928.1**	**685.5**	**264.9**	**2,015.3**
Total (%)	**4.4%**	**46.1%**	**34.0%**	**13.1%**	**100.0%**

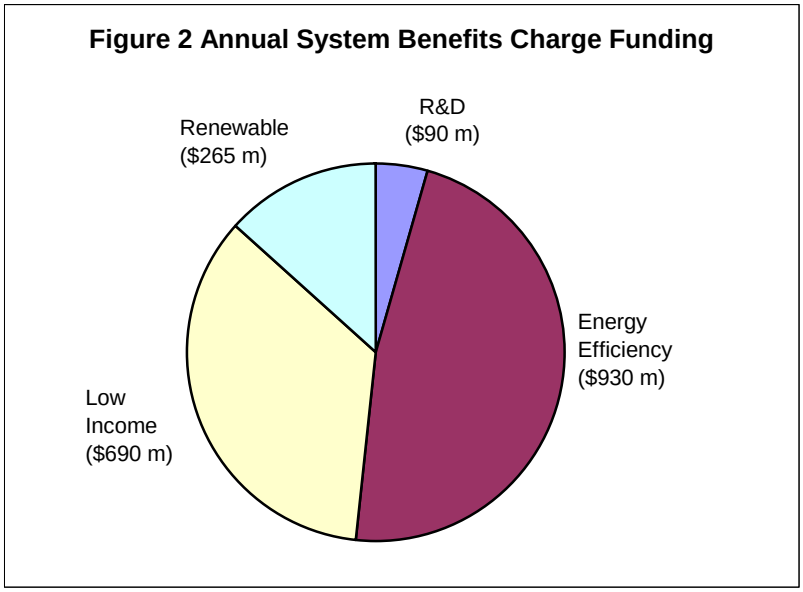
(TBD: To be determined)

Low income programs / initiatives have always represented certain proportion of expenditures for the SBC funding, shown in Table 2 and Fig 2.

- **Duration of funding**

Since transforming markets to be energy efficient is not a simple or quick process, for all states with public benefits funding, the trend for funding toward a longer time period, at least 3 years and up to open-ended period.

Figure 2 Annual System Benefits Charge Funding



- **Quantitative saving results**

Savings results are clearly correlated to the amount of funding and program activity. Annual energy efficiency program savings as a percentage of total electricity sales range from about 0.1 to 0.8%. The mean value is 0.4%.

Overall portfolio benefit-cost ratios reported ranged from 1.0 to 4.3, and lifecycle costs of conserved electricity ranged from US$0.023 to $0.044/kWh.

- **Administrative approach**

The administration of the public benefits energy efficiency programs for states can be sorted into three basic categories:

- Utility administration;
- Independent administration by a government or other non-utility entity;
- Some type of “hybrid” approach

There has been a migration toward independent, non-utility administration of public benefits energy efficiency programs. Table 3 provides the administrators of the various public benefit programs in California (CA), New York (NY), Vermont (VT) and Wisconsin (WI).

The reason of reviewing these states is they have a long history of actively involving in energy conservation programs. Each of these four states has established different roles for the public agencies, utilities, non-governmental organizations, and private sector companies involved in administering and implementing public benefits programs. These experiences are valuable to NSW in initiating its public benefits programs, as well as in restructuring its electricity industry.

Table 3 Four Representative Administrative Approaches for Public Benefits Programs

State	Oversight Body	Energy Efficiency Admin	Low Income Admin	Renewable Energy Admin
CA	CA Public Utilities Commission (CPUC)	Utilities and third parties, with substantial CPUC direction	Utilities with oversight by CPUC	CA Energy Commission
NY	New York State Energy Research and Development Authority (NYSERDA)	NYSERDA (non-utility administration)	NYSERDA (hybrid mixture of utility and other administrative structures)	NYSERDA (non-utility administration)
VT	VT Public Service Board and the Vermont Department of Public Service	Efficiency Vermont ("EVT", Independent contractor)	EVT is required to service LI as part of EE	To Be Determined
WI	Department of Administration (DOA)	DOA (non-utility administration)	DOA (non-utility administration)	DOA (non-utility administration)

- **Policy implications for demand management model**

Based on the experiences of the four states, budget stability appears very important to creating an effective infrastructure for delivering public benefits programs. The more funding for the programs is separated from other possible state-wide income streams, the more secure it is for maintaining funding at established level.

In addition, autonomy of administrators and contractors is another feature linked to program success. Efficiency Vermont and NYSERDA both have a great deal of autonomy with respect to program decisions and implementation issues. The energy efficiency programs need to have efficient and timely decision-making and operational practices; they cannot be "bureaucratic" with burdensome contracting requirements and slow decision-making processes. They also must be flexible to be able adapt to changing conditions and feedback.

Finally, balancing short-term gains from resources acquisition programs, such as peak reduction and price sensitive load response programs, with the long-term benefits from market transformation programs should be considered. From customers' points of view, the state-wide programs are better for communication and promotion compared to programs delivered by individual DNSP.

Furthermore, if we take it into consideration of the size of electricity market, the nation-wide DM programs are probably more suitable to Australia to achieve the "economic of scale". Under this circumstance, System Benefits Charges should eventually come from the National Electricity Market (NEM), then, be distributed to every state. Each state has its own authority dealing with energy related issues. On the other hand, they work cooperatively under the federal umbrella of energy efficiency programs.

IV Discussions of Issues Raised in the Paper

When considering how NSW/ACT DNSPs could efficiently control peak load and energy usage growth by adapting demand management incentive scheme, we should look at following issues:

- What is the ideal level of funding for energy efficiency and demand response?
- Who should choose, implement and oversee the portfolio of DM programs?
- How much % of funding should be allocated to the disadvantaged communities?

- What criteria should guide such a portfolio selection?.....

According to overseas experiences, the ideal size for DM Fund is around 2% of DNSP revenues. It is about $100 millions a year in NSW. It is double the size of the current NSW Energy Savings Fund / Climate Change Fund. Under the current regulations, ESF/CCF totally overlooks the energy efficiency opportunities for low-income households. The fast growing electricity prices heavily hit the low-income people, unproportionlly. Therefore, except for continuing the D-factor in NSW, ECC supports the establishment of a learning-by-doing Fund for both NSW and ACT. The suggested amount is around $50 millions a year, for five years, which adds on to the ESF/CCF. The Fund should target on the disadvantaged communities and provide financial incentives to reduce the electricity consumption, as well as the peak demand.

■ The roll-out of smart meters

The full benefits of the potential national rollout of smart meters can only be realised through efficient TOU tariffs set by DNSPs, a retailer's ability to pass through the price signal and, most importantly, a customer's capacity to respond. However, customers need to have the knowledge and means in order to respond to the price signal, therefore, to reduce peak electrical demand within the particular time period, and/or in the specific network constraint area.

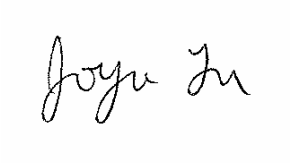
We strongly suggest the idea of customer education regarding how they can manage their demand to affect their bill. However, neither DNSPs's nor retailer's core function is to educate customers to reduce electricity consumption, although both sectors should participate in education measures. Furthermore, industry restructuring, emerging technologies, competitive pressures and environmental concerns require utilities to consider new approaches to meeting their customers' increasing demand for reliable, renewable and affordable energy. Government policy initiatives also need to go into the mix of public education.

A good example of a non-government education measure is the establishment of the Community Energy Cooperative [4](CEC) at Chicago, IL, in the USA. CEC is an innovative private sector initiative to address energy reliability and capacity issues in targeted communities developed by the local utility, the Commonwealth Edison (ComEd), and the Centre for Neighborhood Technology (CNT). CEC works with Illinois residential, commercial and industrial energy customers to help improve reliability by changing behaviour and energy-use patterns in their communities. CEC has a diverse mix of energy experts, engineers, entrepreneurship experts, social capital experts, cooperative experts, ethnographic researchers and product designers to design and implement DSR/DG initiatives. Therefore, the role of DM education/implementation can be supplemented by work by a third party.

[4] T Freyer etc 2002. "Combining Community-Based Efforts and Geographic Targeting to Optimize Delivery of Energy Efficiency Program", 2002 ACEEE Summer Study on Energy Efficiency in Buildings, CA US

If you have any questions about this submission, please do not hesitate to contact me on 02 9319 0288.

Sincerely yours,



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