

DSM Spotlight

The Newsletter of the International Energy Agency Demand-Side Management Programme January 2009



WHITE CERTIFICATES

A workshop on White Certificates was held in Milan on October 22, 2008 at CESI RICERCA. Hosted by the IEA DSM Italian Executive Committee members, the participants learned about the implementation schemes in Australia, Italy and the U.K. since the completion of IEA DSM Task XIV on White Certificates in June 2006. This two-year Task was lead by Italy and experts from France, Italy, the Netherlands, Norway, Sweden and the UK participated. Presentations from this workshop can be downloaded from the IEA DSM web site, <http://www.ieadsm.org/Content.aspx?ID=7#ancmilan2>. The following two articles provide updates on white certificates schemes in Italy and Australia

italy

What's New after Four Years of Operation?

The Italian scheme involves quite a number of operators:

- A Regulatory Authority, who is in charge of the management of the mechanisms (developing guidelines, issuing certificates, checking compliance, etc).
- A Technical Body charged with the task to develop and update the energy saving evaluation procedures.
- A Market Operator, who supervises the trading of White Certificates.

- An Energy Agency that is entrusted with the Monitoring and Verification (M&V) of the performed energy saving projects carried out.
- The Operators, who are entrusted or allowed to gain White Certificates through energy saving projects.

Representatives of almost all these actors, who play quite intricate parts in the Italian scheme, attended the Milan workshop. This unique opportunity provided a chance to receive complete and updated information on the results to date, the inconveniences being faced, and the envisioned "therapy" for the future.

Regulation

Owing to its regulatory role, the challenges for the Italian Authority for Electricity and Gas (AEEG) have been to:

- Find instruments for assessing the level of compliance with energy savings targets.
- Win over the policy resistance of the obligation bound agents in accepting the scheme.

PARTICIPATING COUNTRIES

Australia
Austria
Belgium
Canada
Denmark
Finland
France
Greece
India
Italy
Japan
South Korea
Netherlands
New Zealand
Norway
Spain
Sweden
United Kingdom
United States

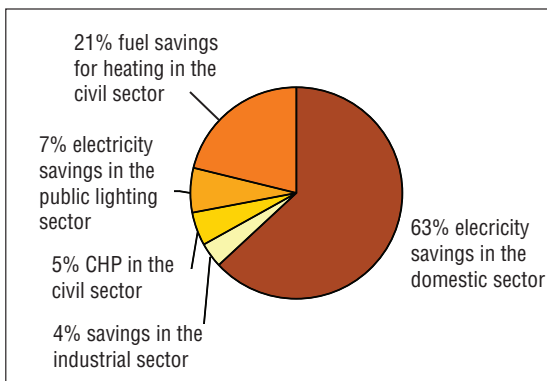


Figure 1. Breakdown of the certified measures

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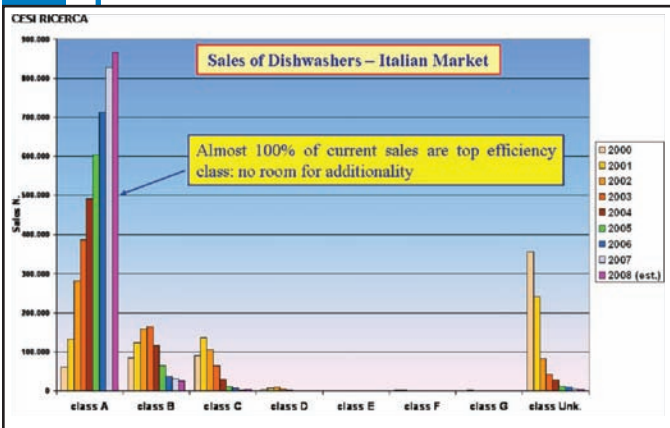


Figure 2. Evolution of the sales of dishwashers in Italy

2007 unexpectedly high compliance levels were reached that resulted in certified savings of 2 Mtoe against the target of 1.1 Mtoe. Of these savings, 78% involved electricity end-use (18% natural gas and 4% other fuels). In addition, 90% of the savings were delivered for projects that had simplified M&V procedures. Of the projects, 75% were performed by energy services providers,

including ESCOs. Figure 1 shows a breakdown of the certified measures according to type and sector.

Based on the experiences to date, several issues needing to be addressed

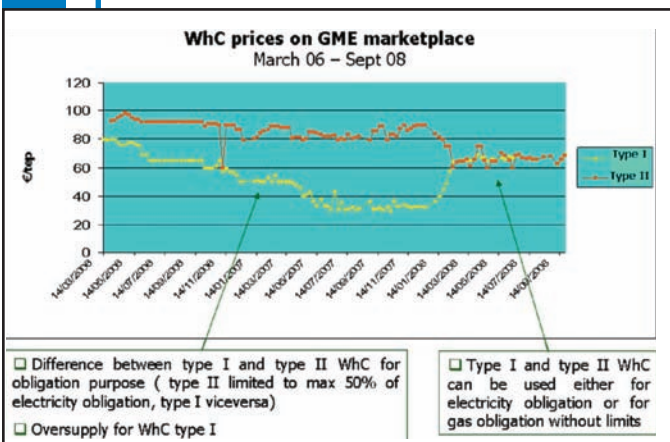


Figure 3. Evolution of the prices of the white certificates

were clarified. First is the excess supply of White Certificates, which among other things was due to the acknowledgement paid to early actions in the first year of application. Other shortfalls were connected to a drop in the market price of the certificates and a preference for bilateral markets as opposed to public market trading. To address these, several modifications to the scheme have been proposed to the present legislation, such as broadening the targets of energy efficiency to include smaller distributors, revising the apportionment rules, setting higher targets for the immediate future, and simplifying and reinforcing the penalty system.

- Rank the energy efficiency projects implemented.
- Handle problems connected to the overall operation of the scheme.

Evaluation

The process of evaluating the energy efficiency of the eligible projects is governed, at present, by the extensive use of simplified standardized procedures, which while allowing for conservative values of the energy savings associated with an EE measure, are very simple and unambiguous in their use. Currently, about 20 standardized procedures exist; many of which were developed or improved by CESI RICERCA.

A very remarkable feature of the Italian procedures is the ability to update the procedures and account for market transformations. The importance of this feature is that it leads to the modification of the reference conditions under which the savings are evaluated. In the sector of white appliances, this is happening now, over time the previously adopted target in the evaluation procedure, the energy efficiency class “A” equipment, has become the baseline. In the case of dishwashers, this is illustrated in Figure 2. This feature has involved the suspension of the current white appliances evaluation procedures until a new range of more efficient appliances are marketed, whose consumption will be referenced as target line.

Trading

As for trading aspects, some remarkable experiences gained by the Italian Electricity Market Operator (GME) are shown in Figure 3. First of all, there was an oversupply of certificates connected to savings in the electricity sector (Type I certificates) with respect to those relevant to savings in the gas sector (Type II certificates). This outcome, together with the supplementary obligation for each electricity or gas Distributor to fulfill at least a half of its targets with savings projects in its sector (the so-called 50% constraint), led to a divergence between the related prices. Removal of this constraint, beginning at the start of 2008, has successfully re-established market equilibrium.

In other cases, the captured market signals played a significant role in amending and improving the trading rules in force. The opportunity was presented to have a cap and floor corridor for market prices to create a stabilizing mechanism

continued on page 3

that would be capable of limiting the overall cost of incentives and of securing a minimum return on investments. However, instead, consensus was reached to create an institutionally operated marketplace rather than a bilateral market. In fact, this structured organization of trading has helped liquidity and information disclosure, fostered better understanding of the mechanisms of price formation and acted as a promotion vehicle for new investments.

Monitoring & Verification

Projects not associated with a standardized evaluation procedure are submitted to the Authority and analyzed on a case-by-case basis by ENEA, the National Energy Agency, to receive technical approval through the Energy Monitoring Plans. In this role, ENEA has defined a baseline for devices/energy efficiency equipment as the most energy-efficient option chosen among the actual “ex-ante” situation, the average market performance, and the most usual technical practice. For example, in the substitution of an air cooled chiller with a water cooled chiller, the air cooled technology was assumed as the baseline due to its wide use nationally. Another example is for CHP. A schematic guideline adopted by ENEA for the evaluation of CHPs is summarized in Figure 4.

Implementation of EE Projects

Problems and experiences in the field of CHP inspired ESCOs, (e.g., Heat & Power), to find a solution. In its role as operator, this ESCO is able to perform energy savings projects that are eligible for White Certificates.

A case study on a small 100 kWe cogeneration plant

illustrates the issues. A financial profitability evaluation showed that a payback period of 7.5 year was expected due to the lack of a policy on White Certificates incentives

(a result of not having standardized evaluation procedures). If standardized procedure were activated, a cost recovery of about 0.5 c /kWh be available and the payback period would decrease to 6.2 year, which unfortunately still is too long to attract investments in efficient micro-cogeneration. Only a substantial increase of the cost recovery (e.g., 3 c /kWh) could lead to an industry accepted “reasonable” payback period of about 4 years. Based on this case study, it was recommended to temporarily boost White Certificates for emerging technologies, such as small-scale CHP. The higher White Certificate values over a few years would result in increasing the number of installations and consequently lead to cost reductions and a faster take-off for the market.

The proceedings of the workshop are available in the section “Workshops” on the IEA DSM web site. An exhaustive review of the results of Task XIV is available in the section “Key Publications” on the Task XIV web page, www.ieadsm.org.

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IS CHP CURRENT PRACTISE IN THE SECTOR ?	NOT	COMPARE CHP VERSUS <i>SEPARATE PRODUCTION</i> of THERMAL and ELECTRIC ENERGY
	YES (PULP, PNEUS, etc...)	FIRST INSTALL. OF A CHP PLANT
MODIF. or REPLACE MENT OF EXISTING CHP PLANT		COMPARE THE NEW CHP PLANT VERSUS A <i>VIRTUAL</i> CHP PLANT, WITH THE <i>SAME ENERGY INDEXES</i>

Figure 4. CHP: Example of an energy monitoring plan

australia

States Take the Lead

Introduction

In Australia, there are currently two white certificate schemes in operation or planned:

- The Greenhouse Gas Reduction Scheme (GGAS) in operation in the State of New South Wales (NSW) and the Australian Capital Territory (ACT)
- The Victorian Energy Efficiency Target scheme (VEET) being planned in the State of Victoria to commence on 1 January 2009

Other related schemes are also in the initial stages. In the State of South Australia, an energy efficiency target scheme without certificates, the Residential Energy Efficiency Scheme (REES), is being planned to also commence on 1 January 2009. At the national level, the Commonwealth (federal) government is planning to introduce a nationwide emissions trading scheme (ETS) in 2010.

NSW Greenhouse Gas Reduction Scheme (GGAS)

White certificates in New South Wales (NSW) and the Australian Capital Territory (ACT) are part of a larger scheme,

continued on page 4

the Greenhouse Gas Reduction Scheme (GGAS). Obligations to reduce GHG emissions under GGAS were imposed from 1 January 2003, and the Scheme started operating in mid-2003 in NSW and two years later in the ACT. The NSW Scheme became the first operational white certificates scheme in the world.

GGAS aims to reduce GHG emissions associated with the generation and use of electricity through project-based activities to offset the production of emissions. The GGAS legislation imposes a benchmark target for GHG emissions on the electricity sector as a whole in NSW and the ACT. The benchmark target was set at 7.27 tCO₂-e of greenhouse gas emissions per capita in NSW by 2007. The benchmark has progressively dropped to this per capita level since GGAS commenced in 2003 and will remain at that level until 2021 or until GGAS terminates (see Figure 1).

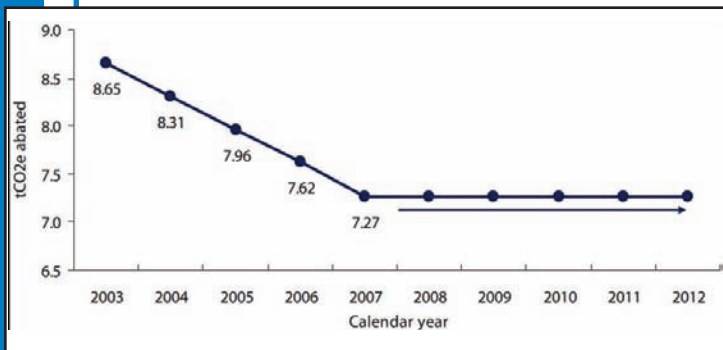


Figure 1. NSW benchmark targets, 2003 to 2021

The overall benchmark target is implemented by setting individual benchmark emissions levels for certain obligated parties, principally electricity retailers. Obligated parties are known as 'benchmark participants.' Each year, the Scheme Administrator sets individual benchmark reductions of greenhouse gas emissions for each benchmark participant based on their contribution to the supply of electricity in NSW. Each benchmark participant then has to reduce the average GHG emissions from the electricity they supply or consume to the pre-set individual benchmark level.

When the emissions attributed to a benchmark participant exceed its pre-set benchmark level, the participant has to reduce its average GHG emissions. Alternatively, the benchmark participant may purchase certificates, called New South Wales Greenhouse Abatement Certificates (NGACs), to offset its excess emissions and surrender these certificates. NGACs are transferable and may be freely traded between any parties. One NGAC represents one abated ton of carbon dioxide equivalent.

A penalty is payable when a benchmark participant does not reduce their attributed GHG emissions to their pre-set individual benchmark level or purchase sufficient NGACs to make up the shortfall. Benchmark participants are allowed to carry forward a shortfall of up to 10% of their greenhouse benchmark from one year to the next. The penalty is increased in line with inflation. For the 2007 compliance year, the penalty was AUD12.00 (EUR6.20) per ton of carbon dioxide equivalent above the participant's benchmark. The penalty is not tax-deductible; therefore, at the Australian company marginal tax rate of 30%, the financial impact of the penalty is about AUD15.60 (EUR8.10) per ton of carbon dioxide equivalent. This figure sets an upper limit for the price of NGACs.

To create NGACs, parties must be accredited by the Scheme Administrator; they are then called 'Accredited Abatement Certificate Providers'. NGACs can be created in four ways:

- through low-emission generation of electricity;
- through activities that result in reduced consumption of electricity ('demand side abatement');
- through the capture of carbon from the atmosphere in forests ('carbon sequestration'); and
- through industrial activities that reduce on-site GHG emissions not directly related to electricity consumption.

Figure 2 shows the total number of NGACs created in GGAS to the end of 2007 by the type of abatement. Over the period 2003 to 2007, nearly 70 megatons of carbon dioxide equivalent had been abated under GGAS.

Demand side abatement comprises five types of activities:

- Energy efficiency: modifying existing installations;
- Energy efficiency: replacing existing installations;
- Energy efficiency: implementing a new installation that uses less electricity than an installation of the same type;
- Fuel switching: substituting one source of energy for another; and
- On-site electricity generation: replacing supply from the National Electricity Market.

NGACs created through energy efficiency projects are white certificates. Figure 3 shows the total number of demand side abatement NGACs created to the end of 2007 by the type of project. Over the four years to the end of 2007, over 20 megatons of carbon dioxide equivalent had been abated by demand side abatement projects under GGAS.

From 2004 onwards, an increasing proportion of NGACs were created from energy efficiency projects in the

continued on page 5

residential sector. In 2006, there was an eightfold increase in the number of energy efficiency certificates created, up from 1.04 million in 2005 to 8.46 million in 2006. This high level of creation of energy efficiency NGACs was maintained in 2007. Most of these certificates were created using the default emissions abatement factors method in which installations of specified appliances were deemed to create a set number of NGACs (see Table 1).

Most energy efficiency NGACs were created by projects in which compact fluorescent lamps (CFLs) and water-efficient showerheads were sold at a discount or given away free of charge to households. Private sector firms were established to take advantage of this new business opportunity. These firms purchased CFLs and showerheads in bulk and generated a profit by selling the resulting NGACs that were assigned to them by the householders. In 2006, four firms each created more than one million NGACs from residential energy efficiency, including one firm that created more than three million NGACs.

In early 2006, the Scheme Administrator for GGAS became concerned that the CFLs and showerheads obtained by households through giveaway schemes may not actually be installed. An independent market survey showed that more than half of CFLs and showerheads given away had not been installed. Estimates made by the Scheme Administrator showed that, by December 2006, almost as many showerheads would have been distributed as there are eligible showers in NSW, and about two-thirds of the CFL market would have been exhausted.

The Scheme Administrator responded in late 2006, by changing the value of the discount factor applied to giveaway schemes; a CFL was then worth 0.2 tCO₂-e rather than 0.5 tCO₂-e. Most of the firms involved changed their business model from giveaways to direct installation, in which they employed installers to directly install CFLs and showerheads in residential and small commercial premises. For direct installations, a maximum default abatement factor of 0.9 tCO₂-e per CFL was still available.

A more recent rule change, which will come into effect from 1 January 2009, will further reduce the default abatement factor for CFLs from a maximum of 0.9 to 0.15 tCO₂-e. This reduction recognizes that, because of the introduction of minimum energy performance standards for light bulbs in Australia, most incandescent light bulbs will be replaced with CFLs by mid-2010. The reduced default abatement factor has been calculated to limit energy savings claims to a 2.5 year

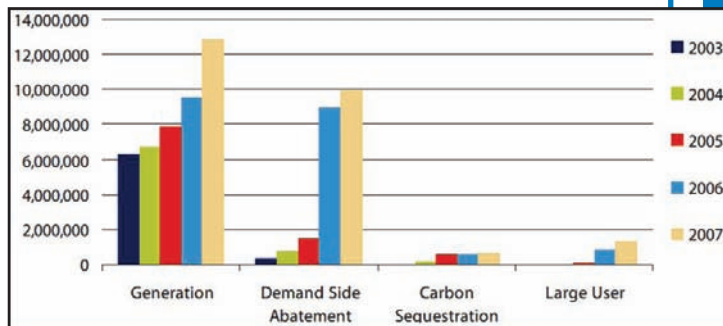


Figure 2. NGACs created to end 2007 by type of abatement

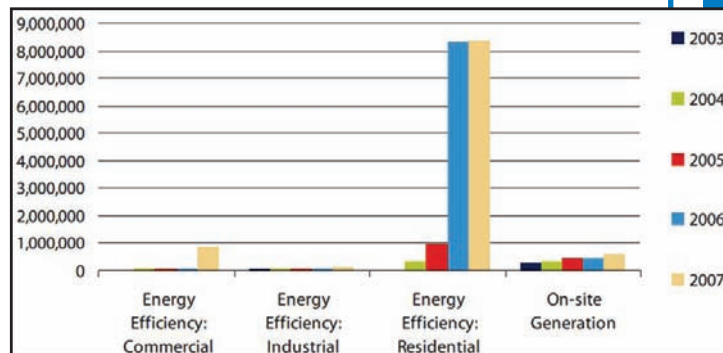


Figure 3. Demand side abatement NGACs created to end 2007 by type of project

period. Although a CFL installed now will continue to save energy beyond this period, these energy savings would have occurred anyway because of the phasing out of standard incandescent light bulbs.

Residential energy efficiency projects were also strongly affected in mid-2007 when the spot price for NGACs fell sharply from about AUD12 (EUR6.20) to about AUD6 (EUR3.10) – see Figure 4. The spot price collapse was caused by uncertainty about the future of GGAS when

Table 1. GGAS default abatement factors

Gas hot water system replacing and electric one	20
Compact fluorescent lamp rated at 8000+ hours	0.5
Compact fluorescent lamp rated at 5000+ hours	0.3
AAA showerhead connected to an electric hot water system	4.0
AAA showerhead connected to a hot water system with an unknown energy source	3.1
Refrigerator 3.5 to 6 star rating	0.1 to 2.5
Clothes washer 2.5 to 6 star rating	1.3 to 3.5
Clothes dryer 3 to 6 star rating	0.3 to 1.2
Dishwasher 4 to 6 star rating	0.1 to 0.5

continued on page 6



Figure 4. Trends in the NGAC spot price

the national ETS was implemented, plus an oversupply of NGACs in the market. This significantly reduced the commercial viability of mass distributions of CFLs and showerheads. One firm closed but other firms are continuing, with further modifications to their business models.

GGAS will terminate when the national ETS is implemented in 2010. However, the NSW Government has decided to continue the energy efficient component of GGAS as a 'pure' white certificate scheme called the NSW Energy Efficiency Target (NEET), to commence on 1 January 2009 (see Figure

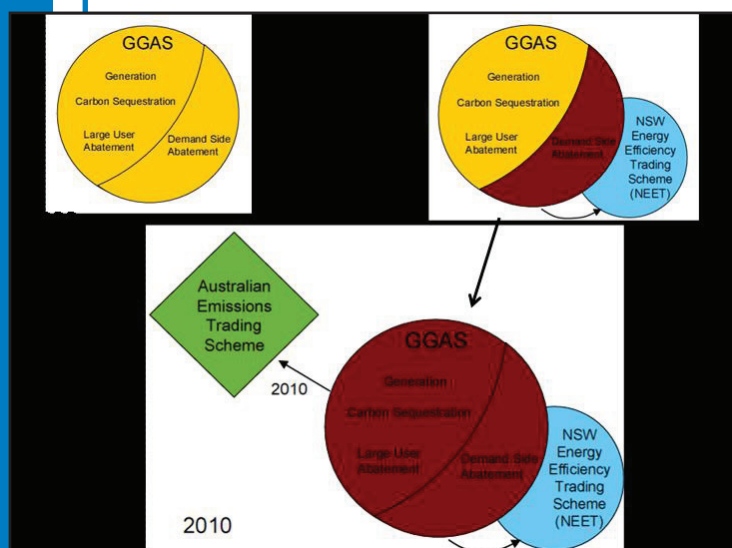


Figure 5. Future changes to GGAS

5). From 1 July 2009, a new target will be set to increase energy efficiency activity under the NEET scheme. The total energy savings requirement each year will be set as a given percentage of the liable electricity sales for that year; the percentage will be fixed for each year but need not be the same in all years.

Victorian Energy Efficiency Target Scheme (VEET)

The Victorian Energy Efficiency Target scheme is currently being designed. The scheme will commence on 1 January 2009 and is scheduled to end on 31 December 2029. During

this period, VEET will operate in three-year phases.

Obligated parties will be major energy retail businesses in the State of Victoria, including both electricity and gas retailers. While VEET is a 'pure' white certificates scheme, the unit of measurement is emissions abatement (tCO₂-e) rather than reduction in energy use (MWh).

The VEET scheme has three objectives:

- to reduce greenhouse gas emissions;
- to encourage more efficient use of electricity and gas; and
- to encourage the development of an industry specializing in improving household energy efficiency.

The VEET legislation establishes an annual target of avoided GHG emissions to be achieved by major energy retail businesses in Victoria through improvements to household energy efficiency. The target for Phase 1 of VEET has been set through regulations as 2.7 megatons of GHG avoided in each of the first three years of operation of the scheme (a total of 8.1 megatons over three years). Energy and gas retailers will be allocated individual annual targets based on their share of the combined electricity and gas market in Victoria in the previous year.

The VEET scheme is based on the creation of tradable certificates known as Victorian Energy Efficiency Certificates (VEECs). One VEEC represents lifetime abatement of one ton of carbon dioxide equivalent.

VEECs may be created by implementing any of a list of eligible energy efficiency activities prescribed by regulations; the regulations also deem the number of VEECs that can be created for each activity. Eligible activities are prescribed on the basis that they are most likely to generate maximum GHG abatement at least cost in the VEET scheme. An initial list of about 25 eligible activities has been prescribed in draft regulations for Phase 1 of VEET (see Table 2). These activities are all in the household sector, though the scope may be extended to the small business and commercial sectors in later phases of VEET. The list of eligible activities will be reviewed every six months and this will provide an opportunity to add measures to the list, such as products for which there is currently no accepted energy performance test or standard.

Certificate creators will offer householders energy efficiency products selected from the list of eligible activities. If they choose to accept the offer, householders will sign a form assigning to the certificate creator the right to create VEECs

continued on page 7

Table 2. Proposed eligible energy efficiency activities in VEET

Gas/LPG storage water heater replaces an electric resistance water heater	Installation of gas/LPG space heater
Gas/LPG instantaneous water heater replaces an electric resistance water heater	Install high efficiency space air-to-air heat pump (non gas reticulated areas only)
Electric boosted solar or heat pump hot water heater replaces an electric resistance water heater	Installation of ceiling insulation in existing home with uninsulated ceilings
Solar retrofit kit fitted to an existing electric resistance water heater	Installation of under floor insulation in existing home with uninsulated floors
Gas/LPG boosted solar hot water heater replaces electric resistance water heater	Installation of a thermally efficient window
Gas/LPG boosted solar hot water replaces gas/LPG water heater	Retrofit of existing single glazed window with a fixed attachment which raises thermal efficiency of existing window
Solar pre-heater for an existing gas/LPG water heater	Air sealing
Installation of high efficiency ducted gas heater to replace existing gas ducted heater	Installation of low energy GLS lamp
Installation of high efficiency ducted gas heater to replace existing central electric resistance heater	Installation of low energy small decorative lamp
Installation of ducted air-to-air heat pump to replace existing ducted air-to-air heat pump (non gas reticulated areas only)	Installation of low energy reflector lamp
Installation of ducted air-to-air heat pump to replace existing central electric resistance heater	Installation of low energy downlight
	Installation of low flow shower rose replacing conventional shower rose
	Destruction of refrigerator purchased before 1996
	Purchase of high efficiency refrigerator
	Purchase of high efficiency freezer

based on an eligible activity having taken place in the householders' premises. Once the VEECs have been created and registered, the creator will be free to sell them to the obligated parties (energy retailers).

The VEET scheme will have a higher penalty than GGAS, proposed as AUD40 (EUR20.70) per tCO₂-e. Initial modeling suggests that the certificate prices to achieve the target will also be higher than GGAS, for example around AUD25 (EUR12.90) per tCO₂-e. This higher certificate price should help the market develop beyond just CFLs and water-efficient showerheads.

Residential Energy Efficiency Scheme (REES)

The South Australian Residential Energy Efficiency Scheme (REES) is currently being designed. The REES will commence on 1 January 2009 and while it is intended to be ongoing, it will initially apply until 31 December 2014.

The REES will operate in three-year phases. Obligated parties will be all licensed retailers of electricity and gas in the State of South Australia who supply more than 5,000 residential customers. While the REES is an energy efficiency target scheme, the unit of measurement is emissions abatement (tCO₂-e) rather than reduction in energy use (MWh).

The primary objectives of the REES are:

- to improve energy efficiency and reduce greenhouse gas emissions within the residential sector;
- to assist households prepare for likely energy price

increases from emissions trading; and

- to reduce total energy costs for households, particularly low income households.

For each year of the REES, obliged retailers will be required to achieve three targets (see Figure 6):

- Greenhouse Gas Reduction Target (GGRT) – to achieve a set amount of greenhouse gas savings (tCO₂-e) by implementing approved energy efficiency activities in households
- Priority Group Greenhouse Gas Reduction Target (PGGGRT) – to achieve a set proportion of the GGRT in priority group households
- Energy Audit Target – to undertake a set number of energy audits in priority group households.

The Minister for Energy has set the total targets to be achieved by the REES each year during the first three year phase of the scheme (see Table 3).

The Scheme Administrator will allocate individual targets to obliged retailers based on formulae established in regulations. The formulae will take into account greenhouse gas emissions associated with residential energy sales, accredited GreenPower sales to residential customers, and residential customer numbers. To meet targets for priority group households, retailers must be able to substantiate that householders hold one or more specified benefit cards or are recognized to be in hardship on criteria to be determined by the Scheme Administrator.

continued on page 8

Table 3. Targets for the residential energy efficiency scheme

Target	2009	2010	2011
Annual greenhouse gas reduction target (tCO ₂ -e)	155,000	235,000	255,000
Percentage of annual greenhouse gas reduction target to be achieved in low income households	35%	35%	35%
Number of energy audits to be delivered to low income households	3,000	5,000	5,000

The REES is not based on tradable energy efficiency certificates ('white certificates'); instead retailers will accumulate credits towards their three targets. The scheme permits unlimited 'banking' of credits by retailers; where retailers undertake energy audits or achieve greenhouse gas savings in excess of their targets in any one year, they may choose to carry those credits over to help meet targets in subsequent years. Retailers may also choose to transfer any excess credits to another obliged retailer, this will enable a limited amount of 'trading.'

The scheme does not permit retailers to 'borrow' credits from future years to meet targets; if they do not meet their target in any given year, they will be liable for a shortfall penalty. A shortfall penalty will not be imposed if the retailer has achieved 90% or more of its target; however, any such shortfall must be carried over to the subsequent year.

audits must usually be undertaken in the home but the REES also provides flexibility to conduct the audit by phone or office-based interview where the interview is conducted in accordance with the minimum specification and the priority group household resides in a regional or remote area of South Australia.

A retailer may not meet more than 10% of its energy audit target with interviews conducted by phone or interview. A phone/interview audit will be valued at 50% of one credit towards the retailer's energy audit target.

Issues

In Australia there has been a continuing, if not always rational, debate about energy efficiency schemes vs. the forthcoming national emissions trading scheme (ETS). Classical economists maintain that the ETS is all that's required and that implementing energy efficiency schemes as well will distort the emissions trading market. Advocates of energy efficiency schemes maintain that the ETS will not address barriers preventing the uptake of cost-effective energy efficiency measures and that energy efficiency schemes are required to achieve this. At present, three State Governments are proceeding with energy efficiency schemes but the debate may not be over yet.

Another argument has been about whether energy efficiency schemes will be 'double counting' emissions when the ETS is introduced. The energy efficiency schemes in Australia are based on different variations of baseline-and-credit designs in which each obligated party is assigned a baseline of allowable emissions or a target to be achieved. Tradable certificates or non-tradable credits are created from emissions abatement or reductions in energy consumption and obligated parties surrender these certificates or use these credits to defray any emissions in excess of their baselines or to achieve their targets.

In contrast, the Australian national ETS will be a cap-and-trade scheme, similar to the EU scheme, which sets an absolute limit on emissions, allocates permits to emit and allows trading of permits between the obligated parties. Obligated parties will surrender permits for all their

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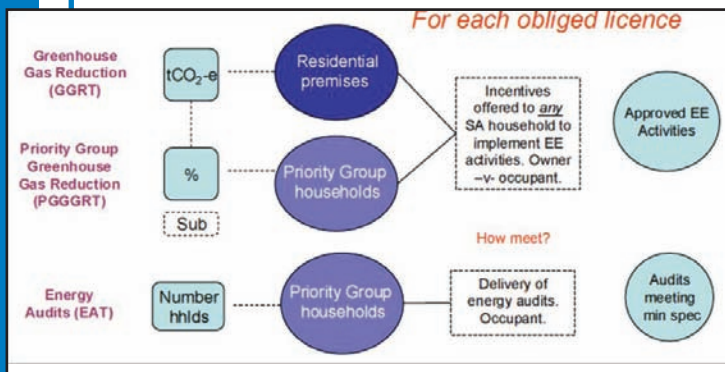


Figure 6. Targets under the residential energy efficiency scheme

To claim credits towards their greenhouse gas reduction targets, retailers must implement 'approved energy efficiency activities'. A list of approved activities and their deemed credit values will initially be set by the Minister for Energy. Retailers may also apply to the Scheme Administrator to implement an energy efficiency activity that is not currently on the approved list. The Scheme Administrator will assess the application, and if approved, establish the description, specification and deemed credit value for that activity.

To claim credits for energy audits, retailers must ensure that any audits undertaken comply with the minimum specification, as set by the Minister for Energy. Energy

emissions and emissions abatement will reduce the number of permits they have to surrender.

As a consequence of the cap-and-trade design, providing offsets for energy efficiency undertaken in the same sector as the obligated parties involves double counting of abatement. For example, in a cap-and-trade scheme where direct emissions from the electricity sector are capped, any emissions reductions from energy efficiency projects that reduce electricity consumption are automatically included in the measurements of the actual emissions attributed to obligated parties. Consequently, calculations of the number of permits required to be surrendered by obligated parties already take account of the emissions reductions from energy efficiency projects. Therefore, providing offset credits for these emissions reductions and allowing the credits to be surrendered in lieu of permits would actually count the emissions reductions twice.

In the Australian national ETS, because of the double counting issue, no mechanism is being planned to enable trading of emissions reductions from energy efficiency projects. This has strengthened the resolve of advocates of energy efficiency schemes to ensure that such schemes continue to be implemented at the State level in Australia.

Conclusion

At present, it seems as though some state-based energy

Information Resources

- IEA DSM Programme research project on white certificates: <http://www.ieadsm.org/ViewTask.aspx?ID=17&Task=14>
- David Crossley: crossley@efa.com.au
- Energy Futures Australia website: <http://www.efa.com.au>
- Paper on GGAS by David Crossley in the international journal Energy Efficiency: <http://www.springerlink.com/content/px01053860418332/fulltext.pdf>
- GGAS Website: <http://www.greenhousegas.nsw.gov.au>
- VEET website: <http://www.dpi.vic.gov.au/DPI/dpinenergy.nsf/LinkView/25F3A72717ED1F21CA2572B2001BF39D866B51F390263BA1CA2572B2001634F9>
- REES website: http://www.dtei.sa.gov.au/energy/government_programs/rees

efficiency schemes in Australia will co-exist alongside the national emissions trading scheme¹. The rationale for this co-existence is that:

- the national ETS will not ensure that all (or even some) cost-effective energy efficiency measures are actually implemented; and
- the energy efficiency schemes are intended to achieve other objectives in addition to reducing GHG emissions

This article is an edited version of a presentation made at a public workshop on white certificate schemes held in Milan, Italy on 22 October 2008, in conjunction with a meeting of the Executive Committee of the IEA DSM Programme.

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¹ This also applies to some state-based renewable energy schemes.

taskXV Reports Are Bestsellers

The IEA DSM Programme research project on Network-driven DSM (DSM Task XV) was recently completed and several of the project reports are already bestsellers. See below the number of Task XV reports downloaded between January and mid-November 2008.

Report No 1: Worldwide Survey of Network-Driven DSM Projects. **8,965 downloads.**

Report No 2: Assessment and Development of Network-driven Demand-side Management Measures. **596 downloads.**

Report No 3: Incorporation of DSM Measures into Network Planning. **3,013 downloads.**

Report No 4: Evaluation and Acquisition of Network-driven DSM Resources. **482 downloads.**

Report No 5: Role of Load Control and Smart Metering in Achieving Network-related Objectives. **152 downloads** (since Oct. 14th).

If you want to join the rush for copies of the reports, you can access them from the Publications section of the Task XV website at <http://www.ieadsm.org/ViewTask.aspx?ID=16&Task=15>

proposed work

Preparing for the Carbon Future

Tick-Tock, Tick-Tock... The clock is ticking on our global community's ability to reverse the impact green house gases (GHG) have on global climate change.

For example, on November 26, 2008, the European Space Agency identified new rifts in the Antarctic ice shelf that may cause it to break away from the peninsula. Scientists believe this is the result of a 0.9 degree Fahrenheit rise in temperature in each of the last five decades. Increases in temperature have been linked to GHG emissions.

The global community has yet to settle on a unified strategy to address GHG emission levels. But, political will, business risk analysis and consumer awareness are rising rapidly. Carbon footprint calculators can be found on dozens of websites. The management of GHG emissions was included in U.S.A. President-Elect Obama's campaign

platform. Some new power plant applications are being rejected, or made cost prohibitive, due to GHG emission levels and technology / insurance requirements. Many U.S. businesses are voluntarily participating in carbon offset exchanges in anticipation of coming regulations, and many European industries do so because their regulations already exist.

Given this backdrop, it is easy to expect that carbon offset products will become a reality, especially for the electric energy industry. Ironically, the carbon offset marketplace is at a similar place in its evolution as demand response was when the IEA DSM Programme initiated Task XIII, Demand Response Resources. DSM Task XIII identified and developed a DR Toolkit, which includes the Demand Response Valuation Methodology, the DR Market Potential Calculator and the DR Guidebook (a methodical process

"This Task intends to focus its efforts on developing tools that utilities can use to manage their position in carbon markets. We expect that utilities can create retail carbon products to manage or sell into the wholesale market just as they have done with demand response. The demand response industry has been this model to spawn new businesses and products and we expect the carbon industry to do the same."

TASK ORGANIZER, PETE SCARPELLI

that can help assess and launch DR products), that helps educate those interested in demand response products. The IEA DSM Programme is considering plans to do similar work, but this time for carbon offset markets. This suggested DSM Task will focus on creating a Utility Carbon Offset Toolkit for utilities to use as they develop carbon offset strategies.

Proposed Objectives and Structure

The Utility Carbon Offset Toolkit work will focus on identifying and developing business models, retail-level product offerings, and infrastructure requirements needed to manage the portfolios.

The proposed Task objectives are:

- Identify and classify business models used to sell carbon offset products. Identify and classify ways the electric industry uses carbon offset products as part of their overall DSM strategy.
- Identify consumer motivations for purchasing retail carbon offset products.
- Develop a list of retail carbon offset product best practices.

The proposed Task structure is:

- Subtask A: General review of current carbon rules in each country
- Subtask B: Identify & classify retail carbon offset products
- Subtask C: Interview utilities to identify

continued on page 11

Why Join This Task

The fastest way to generate knowledge transfer is to identify what companies are doing well, and then to share their stories by way of reports, case studies and seminars.

As a Task participant you will work with an international team of experts to:

- Interview carbon offset product managers worldwide to identify what works.
- Identify consumer motives for purchasing carbon offsets.
- Collect and catalog carbon offset marketing techniques and collateral for others to review.
- Coordinate in-country educational seminars in conjunction with Expert Meetings to share information with interested parties.
- Review market mechanisms developed specifically for carbon trading.
- Develop a training guide to educate new carbon offset product managers on proven strategies.

In this Task, retail carbon offset products are defined as products offered by traditional energy suppliers to end use consumers (e.g. utilities, energy services companies, and energy delivery companies).

taskXVI

Comprehensive Refurbishment of Buildings with Energy Services

Energy Performance Contracting Projects (EPC), when implemented properly, have successfully delivered guaranteed energy and cost savings since they were first established in Europe in about 1995. Consequently, the EU directive on energy end use efficiency and energy services and numerous National Energy Efficiency Action Plans (NEEAPs) support this concept, and view it as an important instrument to implement energy efficiency measures based on market instruments.

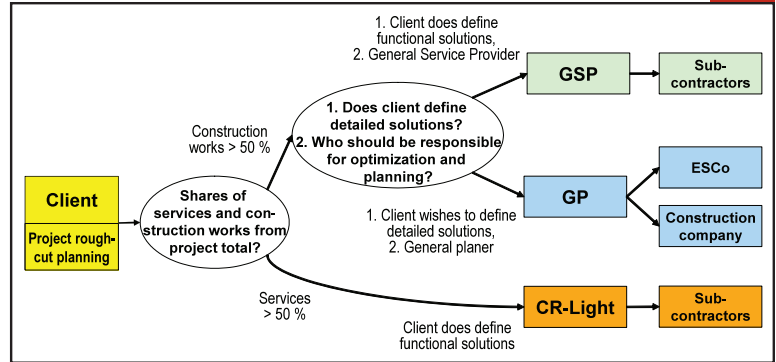
EPC projects realize demand reduction measures which typically encompass building technologies like HVAC, electrical applications and control systems. In most cases, building envelope refurbishment measures are excluded. Obstacles can be as simple as a lack of an integrated planning approach, long pay back periods, procurement problems or a lack of knowledge on implementation models.

The IEA DSM Task XVI, Competitive Energy Services, has investigated models for integrating building refurbishment measures into EPC-models to achieve a comprehensive refurbishment (CR) of buildings. Based on the Task's analyses, existing EPC-models can be adapted to serve this purpose.

Three different models are proposed for the implementation of Comprehensive Refurbishment projects:

- General Contractor model,
- General Planner model, and
- CR-Light model

These models as well as guidelines



Model selection flow chart

and components for implementing CR-projects are described in the paper, Comprehensive Refurbishment of Buildings with Energy Services. Download this and other related information at <http://www.ieadsm.org/ViewTask.aspx?ID=16&Task=16&Sort=0#ancPublications3>

For additional information contact the DSM Task XVI Operating Agent, Jan W. Bleyl, bleyl@grazer-ea.at.

continued from page 10

- how they are using carbon offset products to support their business and regulatory requirements
- Subtask D: Methods for pricing retail carbon offset products
- Subtask E: Interview consumers to understand motivations for purchasing carbon offset products
- Subtask F: Develop a list of best practices, with case studies, related to the marketing and selling of retail carbon offset products

This article was contributed by Pete Scarpelli of Schneider Electric, pete.scarpelli@us.schneider-electric.com

Task Definition Meeting

February 26 - 27, 2009

Paris, France

The Country Experts attending will help to shape the final structure of the Task.

The IEA DSM Programme is a great forum to help evaluate, assess, and educate the energy industry by creating tools that utilities can use.

We hope to see you in Paris in February. If interested in participating contact Pete Scarpelli, pete.scarpelli@us.schneider-electric.com.

new task

Standardization of Energy Savings Calculations

Energy saving are common components of energy efficiency and emission reduction policies and measures, but there is no broad agreement on the standards. Agreement, if only by IEA member countries, would stimulate the development of standards and help ensure global comparability. Recognizing this need, the IEA DSM Programme has initiated a new Task. This new work is among others in line with work identified by the International Partnership for Energy Efficiency Cooperation (IPEEC).

The experts in DSM Task XXI, Standardization of Energy Savings Calculations, will identify basic concepts, calculation rules and systems for Energy Savings Calculations (ESC) standards. They will also explore how and by what organizations these standards could be used and how they could be improved to increase international comparable evaluation of policies and measures.

The Work

This new 2-year Task will begin February 2009. The objectives of the Task are:

- To identify national and regional existing energy saving calculation (ESC) standards and standards under development and most important reports for use in developing ESC standards;
- To identify what basic concepts, calculation rules and systems are in use in these ESC standards and to develop within the framework of basic concepts a methodology to nominate and describe the several Demand Response products;
- To identify how and why these standards are or will be used in

reporting on energy efficiency improvements, energy savings and impact evaluations for policies and measures including estimating and reporting greenhouse gas emissions;

- To identify what organizations could be responsible for the maintenance and future development of these standards and conditions to do such a work;
- To explore to what extent the basic concepts, calculation rules and systems could be organized in such a way that (inter)national organization can use these to improve international comparison (ahead of implementation of new standards);
- To explore how these standards can be used in national saving calculation and how they can improve international comparable evaluation of policies and measures

To meet these objectives, the Task is divided into four subtasks.

Existing energy savings calculation (ESC) standards and standards under development, and use of most relevant reports for ESC. This subtask will identify national and regional existing energy saving calculation (ESC) standards and standards under development. To do this, country experts will identify national standards and indicate regional standards and also what barriers exist for transforming energy savings calculations into agreed standards. As far as possible these barriers will be researched for different parties (governmental organizations, producers, consumers, scientific groups). In this process, the country experts and the Operating Agent will also include definitions for Demand

Response products. Both will also identify the most relevant evaluation and monitoring reports for ESC and will assess these reports for use to define basic concepts, calculation rules and systems.

A report will be produced summarizing the most relevant guidelines and standards (national and international) on ESC, with a focus on identifying common approaches for determining savings and terminology as well as key elements to nominate Demand Response products.

Basic concepts, rules and systems for ESC standards. This subtask will identify what basic concepts, calculation rules and systems are in use in ESC and how these are transformable to (draft) standards. For existing standards or standards under preparation, experts will identify how and why these standards are or will be used to impact the evaluation of policies and measures. Task will also provide comments to organizations that have draft ESC standards or standards under development.

Two outcomes will be 1) a report summarizing the basic concepts, calculation rules and systems that could be used by national and international standard organization(s) and comparable institutions and 2) a compilation of comments and experiences on draft ESC standards and barriers, including reactions from standardization organizations.

Potential for continue development and maintenance of ESC standards. This subtask will identify which organizations

continued on page 13

will be the main actors to continue the development, the maintenance, and the future development of these standards. Experts also will explore to what extent the basic concepts, calculation rules and systems could be organized to improve international comparison of the evaluation of policies and measures. For this also related greenhouse gas emissions and Demand Response products will be taken into account.

The key results will be a final report on the basic concepts, calculation rules and system, a roadmap, and the identification of ESC standards that could be further developed.

Communication and information. This subtask will work to inform experts and to engage stakeholders in the ESC standards work. Experts will disseminate information through newsletters, conferences, and regional ESC standards workshops.

For more information contact the Operating Agent, Harry Vreuls of SenterNovem, email: h.vreuls@senternovem.nl.

IEA/ISO/IEC to host high-level workshop, International Standards to Promote Energy Efficiency and Reduce Carbon Emissions

March 16-17 in Paris, France

The IEA, ISO (International Organization for Standardization, and IEC (International Electro technical Commission) recognize that much work is needed to measure energy efficiency progressions from the micro to macro level, and so they are combining resources to promote the issue.

This workshop will bring together key actors in standardization, the private sector and public policy to map out the most important standardization areas required to support energy efficiency and carbon reduction objectives and to draw attention to the urgent need to strengthen standardization efforts if the potential of energy efficiency gains are to be realized. An estimated 250 leading experts in standardization, public policy actors, the private sector and government have been invited to attend.

Mr. Vreuls, the Operating Agent of DSM Task XXI will present the ongoing work for EU (CEN) standardization on bottom up energy savings calculations. Included in his presentation will be information on this new DSM Task, which complements the organizations' initiatives.



www.ieadsm.org

Visit the DSM Programme's web site for easy access to reports, news and contact information.

The DSM Spotlight is published four times a year to keep readers abreast of recent results of the IEA Demand-Side Management Programme and of related DSM issues. IEA-DSM, also known as the IEA Implementing Agreement on Demand Side Management, functions within a framework created by the International Energy Agency (IEA). Views, findings and publications produced by IEA-DSM do not necessarily represent the views or policies of the IEA Secretariat or of the IEA's individual member countries.

For more information on the Programme, its work and contact addresses, please visit our website at www.ieadsm.org

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