Origin Energy
Green Paper Executive Summary

September 2008

Executive Summary

Origin is a leading fuel-integrated energy company. We are a significant producer of gas and other upstream products in Australia and New Zealand, a rapidly growing electricity generator and a major retailer of gas, electricity and green energy products. At the time of writing we have $2.3 billion of gas fired generation projects under construction in Australia. Origin also has investments in wind and geothermal projects and is a leader in solar rooftop installations.

Origin has a keen interest in the development of the Carbon Pollution Reduction Scheme (CPRS) and appreciates the opportunity to respond to the Green Paper.

Our submission is informed by the following views:

- The costs of climate change to Australia and the world will be lower if addressed sooner rather than later;
- Australia should show leadership in the transition to a lower emission future, and the degree of ambition has to be informed by the actions of the world's major greenhouse gas emitters; and
- A well designed market mechanism must be the core instrument in reducing emissions – this challenge can only be overcome by harnessing the capacity of business to innovate.

We focus in this submission on the impact of the CPRS on the sectors in which we operate. Our submission highlights three key requirements for the scheme:

- A combination of target and trajectory sufficient to change investment decisions from high emission to lower emission options;
- Adequate certainty for large-scale long-term investments.
- A smooth transition that avoids unnecessary disruption to households or business.

1. A combination of target and trajectory sufficient to change investment decisions from high emission to lower emission options

A substantial restructuring of the stationary energy sector is required if Australia is to have any chance of meaningfully reducing its overall emissions. Based heavily on coal-fired electricity generation, the sector is responsible today for around 50% of Australia's carbon emissions. This is predicted to grow to nearly 60% by 2020, without a CPRS, even allowing for the impact of measures such as the expanded Renewable Energy Target (RET)[1].

The good news is that because we are starting from such an emissions-intensive base, there is a range of large-scale, relatively low-cost abatement options available in the electricity generation sector - in particular, the option of switching from brown and black coal to gas fired generation.

Of the electricity generated in Australia today, around 80% is from coal and 10-15% from gas[2]. A large proportion of the gas-fired plant is Open Cycle Gas Turbine (OCGT) that can be turned on and off quickly, responding to peaks in demand. The remainder is mainly Combined Cycle plant (CCGT) better suited to baseload generation because it is lower cost than OCGT but also less flexible. CCGT emits significantly less carbon per unit of electricity than OCGT.

At current fuel prices in Australia, and with no carbon price in the market:

- The least-cost way to meet *future growth* in demand for baseload electricity is to build new coal plant. For the CPRS to avoid this 'locking in' of new-build coal plant, it must create a reliable long term price signal sufficient to make CCGT the cheapest option for new baseload plant

[1] Department of Climate Change, *Tracking to the Kyoto Target, Australia's Greenhouse Emissions Trends*, 2008
[2] ABARE, *Australian Energy Statistical Tables FY 2007*.

- The least-cost way to produce electricity from *existing* plant is to run brown and black coal fired stations at high capacity factors (ie for a high number of hours per day) followed in the 'merit order' by CCGT baseload plant, and to use OCGT when there are peaks in demand. For the CPRS to reduce emissions in the short term it must create a short-term price signal sufficient to change the merit order between brown coal, black coal and CCGT.

The average long term carbon price required to ensure that new CCGT is built in the future to meet growing demand, rather than coal-fired plant, is difficult to predict because it depends on fuel prices, construction costs and other factors, however it is lower than the short-term carbon price required to shift gas up the merit order using existing plant.

Depending on key assumptions, our modelling suggests that Professor Garnaut's starting price of \$20/t CO_{2-e} (indexed at 4% real) may not even be sufficient to ensure that future demand growth is met by new CCGT rather than by a combination of new coal fired and new OCGT plant. It is in our view well below the price required to shift gas above black or brown coal in the merit order using existing plant.

Origin sees Professor Ross Garnaut's "first best" target - a reduction of 10% on 2000 levels by 2020 - as the minimum level of ambition to which Australia should be willing to commit[3]. We support a 10%-20% reduction on 2000 levels by 2020 *even if* there is no international agreement reached at the UN climate change meeting in Copenhagen in 2009. Modelling done for the Energy Supply Association of Australia suggests that a 10-20% reduction on 2000 levels by 2020 is deliverable in the electricity sector[4]. We support a straight line trajectory as the best way of providing gradually increasing prices and a smooth transition from today's investment environment to 2020.

2. Adequate certainty for large-scale long-term investments

We have grouped into five categories the design features of the CPRS that we believe affect large-scale long-term investment decisions in our sectors, and/or the timing of such investment:

2.1 Consideration of the potential impact of retail energy price regulation

Generally, Origin considers the Green Paper discussion to be comprehensive and sophisticated, and is very supportive of the broad direction and most of the specific design features contained in the Green Paper.

Origin does however have one fundamental concern with the Green Paper - its failure to address the basic issue of retail price regulation for energy. Origin is seriously concerned that if carbon costs cannot be passed through efficiently to end users, the stability of the scheme and the viability of electricity retailers could be seriously called into question.

Rather than leave this to the Ministerial Council on Energy, the Australian Government is urged to ensure that regulation is either a) removed or b) made the responsibility of the Australian Energy Regulator before the commencement of the scheme, with a clear mandate to ensure mechanisms are put in place for cost recovery.

We provide extensive comments on this important issue in our response to Chapter 12.

2.2 Clear targets and trajectories

For investors like Origin, there are a number of interrelated issues in the Green Paper proposals that create uncertainty:

- The first scheme cap will not be established until 2010 and the proposed length of the scheme caps is only five years;

[3] Garnaut Climate Change Review, *Targets and trajectories – Supplementary Draft Report,* September 2008
[4] esaa, The impact of an ETS on the energy supply sector, July 2008

- The anticipated medium term (2020) target will be a “range” rather than a set level, causing an uncertainty about the 2020 target which, due to banking, will flow through into uncertainty about prices in 2010-12;[5] and
- Many important decisions are left to parliament rather than an independent authority.

The Green Paper suggests that as long as uncertainty persists around post-Kyoto international agreements, the CPRS will only ever have a 5-year firm scheme cap. Origin hopes very much for a post-Kyoto agreement, as the government does, but we are conscious that there is no way of knowing how long or what form this might take. We are not convinced that the decision about the length of the CPRS cap needs to be so constrained by international negotiations. Whatever international agreement may be struck is likely to leave decisions about domestic policy settings to national governments and to allow national targets to be met “net” of international trade in allowances.

Origin’s preference, detailed in Chapter 4 and in the box below, would be for a model very similar to the one proposed by Professor Garnaut. Origin does not support the use of fixed price permits in Garnaut’s model. Instead of setting a fixed price for permits, we support access to eligible Kyoto units, primarily Certified Emissions Reductions (CERs) as a way of capping prices during the transitionary period. This provides flexibility for Government compared with the Garnaut model, and avoids the unknown consequences of market distorting mechanisms such as a fixed or capped price. This encourages the secondary carbon market to develop more quickly. The flexibility provided by the market is one of the main benefits of an emissions trading scheme and would be lost through a fixed price.

5 Banking will tend to bring future prices forward, since there is an arbitrage opportunity unless the price of permits in the early years reflects expected future prices, discounted for the cost of carry.

"The market-based transition"

At the end of 2008, Government announces:

- A "firm" scheme cap for 2010-12.
- A "minimum effort" target for 2020 that Australia would be willing to commit to in the absence of a global agreement.
- A "maximum effort" target for 2020 that Australia would be willing to commit to if a comprehensive global agreement is reached.
- That project-based Kyoto units can make up to 30% of compliance needs in 2010-12.

This approach helps to narrow the uncertainty range for permit prices in 2010-12, while still encouraging the development of the carbon market. Eligible Kyoto units will provide an effective price cap. There is no need for Government to fix or cap the price.

If this model is not accepted, Origin prefers the model proposed by Garnaut (despite its use of fixed price permits) to the system of targets and gateways proposed in the Green Paper. We feel that Garnaut's 0%, 5% and 10% reduction targets are unnecessarily conservative and should each be set at higher levels. However we support the certainty of having only three potential 2020 targets which are known in advance and dependent only on the outcome of one specified event, namely the result of post-Kyoto negotiations.

2.3 Auctioning of long dated permits to signal scheme longevity for new build

Origin recommends that the Government auction a small proportion of much longer dated permits, of between say 10-15 years vintage, to provide a very strong signal to the market as to the longevity and credibility of the scheme. The volume of permits need not be significant – we suggest in the order of 5-10 % of total permits under the lower bound of the gateway.

2.4 Independent and transparent governance arrangements

Scheme governance structure will be a key driver of long term investor confidence in the CPRS. We acknowledge that it is not appropriate for Government to fully devolve decision making powers to an independent body in the short term, for reasons laid out in the Green Paper. We believe however that the Green Paper proposals vest in elected officials a higher than optimal degree of discretion relating to core features of the CPRS.

A potential compromise would be the creation of an Independent Authority established under an Act of Parliament. While it would not have binding decision making powers, the Authority would have a remit to provide recommendations to the Minister on decisions in relation to the annual scheme cap, gateways, international linkages, coverage and scheme review. Details are laid out in Chapter 13.

The model we suggest is similar to the new governance arrangements for the Murray-Darling Basin. These establish a single independent basin-wide Murray-Darling Basin Authority responsible for the preparation of a Basin wide Plan. The relevant Minister may adopt the plan or direct the Authority to make modifications. If the Minister declines to accept the Authority's revised Basin Plan (analogous to revisions of core CPRS design features) then the Minister must provide Parliament with reasoning.

2.5 Interaction with overlapping regulatory measures

While Origin strongly supports the CPRS as the core policy to drive emissions reductions in Australia, we are very aware that it is only one of many inter-related and in some cases overlapping measures at state and federal level. Of particular importance to Origin is the inter-relationship between the CPRS, retail price regulation (discussed above), a national Renewable Energy Target (RET), energy efficiency measures and the regulatory framework for investment in transmission infrastructure.

Origin supports the Australian Government's commitment to expand the RET to 20% by 2020 as an interim measure to support growth in renewables. However the purpose of the CPRS is not to bring on renewables but rather to reduce carbon emissions. Compared to a well design emissions trading scheme, the RET is a high cost way of reducing emissions. We would be strongly opposed if the government were to see a low target under a CPRS as some form of 'trade off' for a national RET. It is our view that the CPRS should be implemented as soon as possible, providing a price signal for investment. As the RET brings on new renewables, and reduces their cost relative to alternative forms of generation, the carbon price will become the most economically efficient way to incentivise investment in renewable energy, allowing the RET to be phased out from 2020 onwards[6].

Origin agrees that there will be a range of non-price barriers to energy efficiency and that these will need to be addressed through complementary measures. What is concerning, however, is that a number of state governments are proceeding with the implementation of separate and different energy efficiency target schemes, which will result in double-counting of emissions and higher than necessary costs for consumers once the CPRS commences. Origin strongly urges the Australian Government to take a leadership role in the development of a national energy efficiency strategy to harmonise existing measures and ensure a co-ordinated national approach.

Ensuring timely investment in transmission infrastructure to access remote energy sources will be key to delivering on the objectives of both the CPRS and the RET. We are very conscious of the experience in the UK where investment signals provided by the UK Renewables Obligation and the European Union Emissions Trading Scheme have not driven the expected levels of investment in renewable electricity because in part of the inability of new generators to connect to the grid. Origin is concerned that the current regulatory framework in Australia will not provide sufficient incentives for private investors to be the first to invest in new fuel centres. This is a market failure which may delay or prevent investment in critical infrastructure assets.

Origin would be very encouraged to see the government develop a governance structure at national level that allows for co-ordination in the design, implementation and review of the schemes listed above. In particular, given that we would see the RET as being phased out over time in favour of the CPRS, we strongly recommend that the government consider co-ordinating the timing and the processes for reviewing these two schemes.

3. A smooth transition that avoids unnecessary disruption to households or business

A key focus throughout the Green Paper is the need to manage implementation risks. Origin strongly believes that the CPRS can be introduced without significant shocks to the economy, provided that the following criteria are met:

a) *State-based retail price regulation should be either removed or centralised prior to 2010*

Origin is seriously concerned that if carbon costs cannot be passed through efficiently to end users, the stability of the scheme and the viability of electricity retailers could be seriously called into question. Rather than leaving this to the Ministerial Council on Energy, the Australian Government is urged to ensure that regulation is either a) removed or b) made the responsibility of the Australian Energy Regulator before the commencement of the scheme, with a clear mandate to ensure mechanisms are put in place for cost recovery.

b) *Assistance should be provided for low income and vulnerable households*

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6 Origin's submission on the COAG Renewable Energy Target discussion paper is available on request.

Auctioning revenue should be used to prepare low income and vulnerable households that do not have the financial capacity to invest in energy efficiency improvements to reduce the impact of these cost increases. Assistance for energy efficiency improvements should start before commencement of the scheme.

c) *Transitional assistance should be provided to emissions-intensive trade-exposed industries*

Origin strongly endorses the conceptual framework put forward by Garnaut for EITEs:

> "*The assistance program should be designed with a view to the long term comparative advantage of the Australian economy in a world of comprehensive carbon constraints while at the same time not transferring a disproportionate share of the emissions reduction task to other businesses or households.*"[7]

Garnaut recommends that EITEs be assisted only to the level at which their production will be equivalent to what it would be under a system of comprehensive global carbon constraints – what Garnaut calls the 'overshooting principle'. Under this principle, Australia would preserve any comparative advantage that it would enjoy in a globally carbon constrained environment, avoiding the potential for penalising in the short term Australian companies that would in the long term help the world to address the global carbon challenge.

In this context, Origin suggests that the Australian LNG industry will have a clear comparative advantage in a carbon constrained global environment. The potential for greater use of natural gas as an energy source in place of coal in Asia and elsewhere makes LNG an essential part of the world's response to the carbon emissions challenge.

d) *Liability should be placed on the operational entity, not the corporate entity*

The Green Paper proposes to make the controlling corporation in a conglomerate structure the liable entity. It is likely that this will prevent costs and price signals from being passed through if the controlling corporation does not have a direct contractual relationship with end customers. To correct this unintended outcome, liability should be placed on the operational entity.

e) *There could be limited transitional assistance for some coal-fired generators*

As one of the few major generators who would *not* stand to benefit from transitional assistance, and as the second largest retailer of electricity in Australia, Origin is often asked to make public comment on this contentious issue.

The principle on which assistance for households and EITE industries is justified does not apply to the electricity generation industry. Assuming that retail energy price caps are removed, the ability of coal-fired generators to pass on costs to retailers will diminish only over time and only as new, lower-emission plant enters the market. Given lengthy planning approval processes and 2-3 year build times, there will be substantial lead times for any new plant. Further, new entrants will only progressively impact on the competitiveness of the existing coal fired generators, allowing for a gradual and predictable transition from a higher to a lower emission generating mix. Owners of coal fired plant will be able to adjust the emissions intensity of their generation portfolios over time and in response to the carbon price signal by investing in more efficient plant or in plant that runs on lower emission fuel.

Origin acknowledges that the introduction of a CPRS will present some transitional challenges for high carbon generators. For example, the funding of carbon permits will drive up working capital costs. In some specific cases, it is possible that this might have the impact of triggering re-financing clauses in generators' arrangements with lenders. This is a cashflow issue that could be addressed through flexible payment terms for permits and/or other cash-based transitional arrangements.

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[7] Draft Report, Garnaut Review, 2008, p384

Origin is comfortable with the Green Paper proposal to provide a limited level of transitional assistance to the worst-hit generators, within the following parameters:

- We do not support compensation for estimated asset value losses. There is no way of accurately predicting what losses will be suffered, nor is there any way of proving that compensation will ensure that the hypothetical regulatory risk premium is not applied;
- Assistance to generators will not ensure security of supply. Security of supply will be driven primarily by the ability of retailers to recover costs, which provides the confidence to enter into contracts with new customers on the one hand and generators on the other, causing new capacity to be built. It is the retailers contracting with generators that provides the financial backing for the generators;
- Compensation should be one-off rather than ongoing, and in cash. Cash is a more transparent means of assistance, it avoids the hoarding of permits, and it would allow for more efficient operation of the auction and secondary markets. Recipients could use the cash to buy permits should they so choose.

Origin appreciates the opportunity to respond to the Green Paper. Our submission provides detailed comments on the individual chapters – a summary of which is provided below.

Chapter Summary

Chapter 1

- Support an ETS as the primary mechanism for providing a long term carbon price signal for least cost emissions reductions.
- Support the Government's other policy objectives in introducing the CPRS, but note that these should not be allowed to interfere with scheme efficiency or effectiveness.

Chapter 2 - Scheme coverage

- Support maximum practical coverage from the start of the scheme.
- Definitions of several key terms need to be clarified – including "facility" and "threshold".
- Support the concept of a "carbon license number" analogous to the ABN, designed to avoid double counting and improve administrative efficiency – particularly relevant for large users of gas and LPG who are likely to manage their own liability.

Chapter 3 - The carbon market

- Support the permit characteristics proposed in the Green Paper.
- Support unlimited banking of permits from the start of the scheme.
- Support increasing the flexibility of borrowing beyond 5%, provided this is confined to the Kyoto commitment period or similar budget period in a successor agreement.
- Rather than a "price cap" we would prefer the use of administrative penalty set higher than the marginal cost of abatement and accompanied by a make good provision.
- Opposed to mechanisms that distort the market, such as a "fixed" permit price, "price cap" or the Government selling unlimited permits at a fixed price.

Chapter 4 - Emissions targets and scheme caps

- Opposed to the emission targets and scheme caps proposal. Suggest a design that balances certainty for business whilst retaining some flexibility for Government and avoiding distortions that would arise from a fixed permit price.
- *"The market-based transition"*
    - o A firm scheme cap for 2010-12 announced at the end of 2008.
    - o A "minimum effort" target for 2020 announced at the end of 2008.
    - o A "maximum effort" target for 2020 announced at the end of 2008.
    - o Decisions on the scheme cap extension from 2012 to 2020 will be made at the end of 2009/early 2010.
    - o Access to CERs, ERUs, RMUs for up to 30% of compliance needs in 2010-12.

Chapter 5 - Reporting and compliance

- Support NGERS as the reporting basis for the CPRS.
- Care must be taken in the development of details so as to avoid unintended consequences for either NGERS or CPRS compliance obligations.
- Need to avoid unintended constraint on contract pass through arising from the definition of the "liable entity" – to manage this, liability should be placed on the

operational entity, which then has the ability to transfer the liability to the controlling corporation.

Chapter 6 - Linking the scheme to international markets

- Support Australia pursuing linkages with the international market as a way of encouraging global efforts to address climate change and minimise costs.
- Project-based credits created under the Kyoto Protocol to be allowed to meet up to 30% of compliance needs in 2010-12.
- Import or export of AAUs should not be allowed in the early years of the scheme (2010-12).
- Restrictions and linkages for Kyoto units to be reviewed before the end of the Kyoto Protocol's first commitment period, with decisions on % limits for the period beyond 2012 to consider the status of international negotiations and the decarbonisation of the Australian economy.
- Beyond 2012, support pursuing deeper integration of the CPRS and NZ ETS and exploring potential for a regional emissions trading arrangement.

Chapter 7 - Auctioning of Australian carbon pollution permits

- Auction process should be designed to distribute permits in a fair, transparent and simple way and should not take the place of the secondary market.
- Origin prefers a sealed bid uniform price auction over the ascending clock format. We believe participants will find this design easier to understand and that this format will be less susceptible to gaming.
- Support the auctioning of future vintages once a year.
- Support auctioning a small parcel of permits 10-15 years in advance of when they will be needed – say up to 5-10% of the lower bound of the gateway.
- The first auction should be held in the second half of 2009 and should be for a relatively small proportion of permits – to assist in early price discovery.
- The secondary market obviates the need for double sided auctions and holding one auction after the end of the compliance period.

Chapter 8 - Household assistance measures

- Support the commitment to provide assistance to those households most effected in particular low income households.
- If retail price deregulation is not achieved there may be no impact on households from gas and electricity prices, which would make assistance unnecessary.
- Harmonise the existing state based energy efficiency schemes.
- Energy efficiency measures should start earlier than scheme commencement so as to assist households in preparing for price increases.
- Support the Future Tax System Review.

Chapter 9 - Assistance to emissions-intensive trade-exposed industries

- Support the provision of transitional assistance for EITEs while competing nations do not impose a similar level of carbon constraint.

- The key policy objective should be to ensure ongoing investment takes place in those EITEs that would have a comparative advantage under a global carbon constraint.
- This investment should be up to a “sustainable” level – that is, avoid “overshooting” the comparative long term level of productive capacity.
- Australia should have a comparative advantage in LNG under a global carbon constraint.
- The sensitivity of investment decision to the carbon cost is not adequately measured by the tonnes per dollars of revenue metric.

Chapter 10 - Strongly affected industries

- Accept the concept of a limited level of assistance to existing coal-fired generators for the purpose of lowering political barriers to scheme implementation.
- Do not support compensation for estimated asset value losses.
- This assistance should be a cash payment, determined before the scheme begins.
- We do not support assistance as a way of ensuring security. We view security of supply as primarily a retailer issue.

Chapter 11 - Tax and accounting

- Support the position of the Tax Institute of Australia.
    - Trading of permits and the associated derivative products should be GST free.
    - Permits held at year end and used to acquit an entity’s liability on 15 December should be deemed to be surrendered for tax law purposes at year end.
    - Recommends that stamp duty should not apply to trading in permits or associated derivative products.

Chapter 12 - Transitional issues

- To support scheme efficiency and the viability of energy retailers, it is critical that retail price regulation is either a) removed or b) centralised and made the responsibility of the Australian Energy Regulator before the scheme commences, with a clear mandate to ensure mechanisms are put in place for cost recovery.
- NSW GGAS should be discontinued once the CPRS commences. We do not support allowing unused NGACs to be swapped for permits at the start of the CPRS.
- Voluntary market purchases should be backed with the cancellation of an AAU by the Government in the lead up to the CPRS as well as once the scheme commences.

Chapter 13 - Governance

- Do not support the roles and responsibilities outlined for the determination of the ongoing - scheme cap, gateways, international linkages and coverage and review.
- Support setting up an Independent Authority with powers to make recommendations to the Minister but initially without binding decision making power.
- Origin proposes that prior to the introduction of the CPRS the Federal Government should set out a broad climate change policy agenda.
- The Federal government should also work with COAG prior to the introduction of the CPRS to harmonise the existing climate change schemes across state and federal jurisdictions including not limited to energy efficiency and renewable energy.

- Origin proposes that the Federal Government as part of the COAG process requires State Government agencies to harmonise their planning and assessment processes to support the development of low emission technology.