Aluminium Metal
Primary Production Kurri Kurri

8 April 2009

The Secretary
Senate Select Committee on Climate Policy
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CANBERRA ACT 2600 By Email: climate.sen@aph.gov.au

TREATMENT OF ELECTRICITY-INTENSIVE, TRADE-EXPOSED INDUSTRIES UNDER THE CARBON POLLUTION REDUCTION SCHEME AND EXPANDED NATIONAL RENEWABLE ENERGY TARGET SCHEME

Introduction

Hydro Aluminium Kurri Kurri Pty Ltd **("Hydro")** is pleased to have this opportunity to provide a submission to the Senate Select Committee on Climate Policy in respect of the proposed treatment of Energy-Intensive, Trade-exposed industries (**"EITE Industries"** or **"EITEs"**) under the proposed Carbon Pollution Reduction Scheme (**"CPRS"**) and expanded national Renewable Energy Target scheme (the **"RET Scheme"**).

Hydro has previously provided a submission to the Senate Select Committee on Fuel and Energy in relation to the RET Scheme. In that submission, we also addressed the impact of the CPRS because we believe that the two issues are inseparable from a policy, economic and company point of view. In this submission, we restate many of the points raised in that earlier submission and, in doing so, address both the RET Scheme and CPRS.

For the Committee's information, we have also attached a copy of the submission made by Hydro in respect of the RET Scheme as Attachment A to this submission.

1 Hydro and the Kurri Smelter

1.1 Background

Hydro is a wholly owned subsidiary of Norsk Hydro ASA **("Norsk Hydro")** one of the world's largest integrated aluminium producers. Hydro owns and operates the primary aluminium smelter located near Kurri Kurri in the Hunter Valley region of New South Wales. Norsk Hydro also has an ownership share in the Tomago smelter in Newcastle.

The Kurri smelter is the largest employer in the local area, generating jobs for approximately 2,500 workers in the area, including 500 direct employees. However, with current production capacity at approximately 175,000 tonnes per annum, the Kurri smelter is small by world standards and lacks economies of scale. Norsk Hydro is in the process of evaluating a AU$4 billion investment in the Kurri smelter to secure its long tem viability. That investment would implement world's best practice technology, including the capability to implement carbon capture and storage of direct emissions, and would expand production capacity by up to 600,000 tonnes per annum.

Expansion of the Kurri smelter would generate approximately an additional 3,000 new long-term jobs in the area, as well as approximately 15,000 jobs during an anticipated three year construction period.

The project would create substantial and ongoing economic stimulus for the region and throughout the aluminium value chain in Australia. However, among other things, the investment will be contingent upon the regulatory regime in Australia (including CPRS and RET) not materially eroding the country's natural competitive advantages in this global industry relative to competing nations.

1.2 Responding to Climate Change: Norsk Hydro's strong track record

Norsk Hydro agrees with the Government's position that the risk of severe climate change requires action now to reduce global greenhouse gas emissions. Technology and long-term sustainable systems must be developed to achieve significant and lasting reductions in global emissions.

At Norsk Hydro, the reduction of energy consumption and emissions are essential elements in our programs to make aluminium an even more attractive metal for the future. We have redirected and sharpened our R&D focus to reduce CO_2 emissions in our operations.

As a result, greenhouse gas emissions from Norsk Hydro's global activities have decreased by roughly 45 percent since 1990. At the same time, we have increased our comparable primary aluminium production from 0.91 to 1.67 million tonnes per year.

At a local level, Hydro has invested in the Kurri smelter to achieve significant improvements in its environmental performance, resulting in the following outcomes:

- emissions intensity of greenhouse gases directly produced by the Kurri smelter have been reduced by 75% compared to 1990 levels;
- electricity intensity (the number of MWh required to produce a tonne of aluminium) has also been reduced, to 92% of 1990 levels.

The investments and operating improvements made to achieve these outcomes at the Kurri smelter have taken the existing technologies to their limit, with further potential improvements requiring substantial capital expenditures.

1.3 Aluminium is part of the solution

Primary aluminium production is an electricity-intensive and, consequently, an emissions-intensive process. However, as a lightweight material, over its lifecycle aluminium yields significant emissions reduction benefits through its application in downstream products.

Norsk Hydro is deeply involved in utilising the advantages of aluminium in the transportation sector and in systems that can reduce energy consumption in buildings. Norsk Hydro is also pursuing further initiatives to increase the recycling of aluminium as an important part of resource preservation.

1.4 The Kurri smelter: electricity-intensive and trade-exposed

The Kurri smelter is electricity and emissions intensive and trade exposed.

The production of 1 tonne of aluminium at Kurri requires approximately 16 MWh of electricity, equivalent to approximately 4,500 MWh per million dollars of revenue in 2008.

All of the aluminium produced at the Kurri smelter is exposed to international market-based pricing, primarily through the London Metals Exchange (LME). Hydro sells primary aluminium through both spot sales on the LME and through long term contracts where pricing is set with reference to LME prices. In either case, product pricing is established on an international trade basis and Hydro has no ability to recover local-specific costs through increased product pricing. Increased costs in Australia directly impact on the competitiveness of the smelter and reduce its economic viability.

The introduction of the proposed CRPS and RET Scheme will have particularly severe impacts on the aluminium smelting industry. As the most electricity intensive, large-scale industrial process in Australia, the cost burden of the CPRS and RET Scheme on aluminium smelting would be especially large. The aluminium smelting industry has consistently had a powerful incentive to reduce its electricity intensity, given the very high proportion of cash operating costs that electricity costs represent. The ability to further reduce electricity consumption or direct emissions or increase energy efficiency is, however, very limited.

Accordingly, the policy settings that will apply to aluminium smelting as an EITE Industry under the proposed CPRS and RET Scheme are of particular concern to Hydro.

2 Maintaining Australia's competitive advantage

Norsk Hydro believes that Australia has a natural competitive advantage in the aluminium smelting industry. Australia's strong resource base, transport and energy infrastructure and proximity to major international markets enable the full aluminium value chain – from bauxite mining through to alumina production and aluminium smelting – to occur in one country. This offers considerable economic and environmental benefits when compared to a more fragmented, multi-country value chain where increased transport of bulk raw materials results in higher cost, increased energy consumption and, consequently, increased greenhouse gas emissions.

With the introduction of an Australian emissions trading scheme as well as an increased mandatory renewable energy target, carefully-designed measures are required to ensure that these policies do not artificially inflate the cost of aluminium smelting in Australia to the detriment of Australia's economy and global environmental outcomes.

In the Carbon Pollution Reduction Scheme Green Paper and White Paper, this issue is expressed as 'carbon leakage' – the risk that legislation will cause carbon-intensive industries to become financially unviable in Australia and instead locate overseas, with no net improvement in environmental outcomes.

A similar concept applies in the context of the proposed RET Scheme. Electricity-intensive industries stand to be strongly affected under the proposed scheme, therefore there is the potential

for investment and employment in these industries to move offshore, with no net improvement in environmental outcomes.

Both schemes are said to be designed to protect EITE industries and avoid unnecessary impacts on the Australian economy, however Hydro's analysis suggests that will not be the case.

In an global economy where competing nations have similar constraints and costs on greenhouse gas emissions, Australia's economy should see a net benefit because such constraints would drive increased investment in the local processing of its natural resources, including primary processing and downstream manufacture. This would occur because the environmental cost of transporting raw materials to other countries for processing would be reflected in the financial cost and would drive greater inward investment.

However, under the schemes currently proposed, Australian EITE Industries stand to be substantially disadvantaged relative to those located in other countries. The policies as currently proposed will drive investment and jobs overseas to countries that do not impose similar costs on EITE Industries. The economic impact of Australia implementing schemes such as the CPRS and RET ahead of competing nations is likely to be substantial, and the effect is likely to be particularly pronounced in the current economic climate.

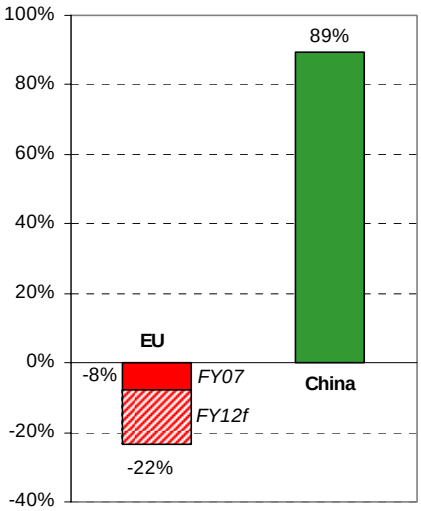
Hydro believes that far better environmental and economic outcomes can be achieved by providing appropriate protection to EITE Industries so that they continue to be managed under Australia's well-developed environmental legislation, rather than creating incentives for such industries to relocate to jurisdictions with relatively relaxed environmental standards.

2.1 Carbon Leakage – EU example

Norsk Hydro has first hand experience in Europe as to the consequences of introducing a emissions trading scheme (**"ETS"**) that fails to adequately address the issue of carbon leakage. In its CPRS Green Paper submission, Hydro illustrated this effect by depicting the impact that the introduction of the European emissions trading scheme had on the production of primary aluminium in Europe. It is worth reproducing that information here.

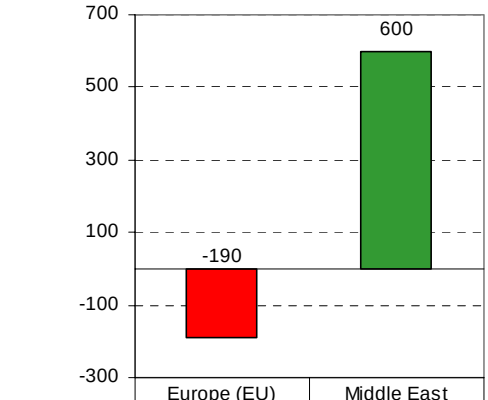
To date, the full impact of ETS on EU aluminium smelters has been masked by the fact that the majority of smelters currently are protected from the impact of ETS through old long-term power contracts that do not allow the pass-through of ETS costs. Several smelter closures have occurred to date and further closures are forecast to occur across the EU as these old contracts terminate. The hatched area in figure 1, below, shows the forecast impact on smelters at 2012.

Figure 1: *Change in EU and Chinese primary aluminium production pre- and post- EU emissions trading (2004 vs 2007)*



Source: CRU

Figure 2: *Movements in Norsk Hydro primary aluminium production capacity pre- and post-EU emissions trading (2004 vs 2007)*



	Europe (EU)	Middle East
Production Capacity ('000 tonnes pa.)	-190	600

Since the introduction of emissions trading in Europe in 2005, 8% of European (EU) primary aluminium production has been lost. However, this lost production has been more than supplemented by increased investment in new facilities elsewhere in the world, primarily China. With smelters in both regions being supplied with electricity from predominantly coal-fired power generators, Hydro firmly believes that the economies of European countries have suffered as a result of the loss of these aluminium businesses without any associated improvement in global greenhouse gas emissions being achieved.

Figure 2 demonstrates that over the same time period, similar changes have occurred in Norsk Hydro's portfolio. Approximately 190,000 tonnes of Norsk Hydro's EU production capacity has been closed down and replaced by Norsk Hydro investing in the development of 600,000 tonnes of new production capacity in Qatar.

It is widely acknowledged that climate change is a global problem that requires action by all nations. To some extent, progress towards global GHG reductions can be achieved by individual States pursuing local solutions. However the above example illustrates that, to achieve a reduction in global emissions from traded-exposed industries, a global solution is required.

The proposed CPRS and RET Schemes would impose significant new costs on aluminium smelters that would not be borne by smelters in competing regions, consequently these schemes are likely to drive behaviour that may result in a similar leakage of jobs and economic activity from Australia to competing nations.

2.2 Impact of CPRS and RET Scheme on the viability of EITE Industries

The impact of the CPRS cannot be viewed in isolation of the proposed RET Scheme. The two schemes are intended to be complementary policy measures and the combined financial impact of both schemes on EITE Industries should be a major consideration in finalising the design of both schemes.

Table 2.1 quantifies the combined impact of the CPRS and RET Scheme relative to the historical average profit before tax earned by the Kurri smelter in the period from financial year 2001 to 2007, inclusive. In assessing the impact of CPRS, we have already allowed for the treatment of the Kurri smelter as an EITE under the scheme.

Table 2.1: Projected total cost of complying with RET and CPRS

	Units	*2010*	*2011*	*2015*	*2020*	*2025*	*2030*
Direct emissions	*AU$M*	N/A	$3.1M	$3.7M	$4.5M	$5.2M	$5.9M
Indirect emissions	*AU$M*	N/A	$16.7M	$21.1M	$26.2M	$31.0M	$35.5M
Total CPRS compliance cost	*AU$M*	N/A	$19.8M	$24.8M	$30.7M	$36.2M	$41.3M
RET Compliance Costs		$8.7M	$9.8M	$13.4M	$23.9M	$15.1M	$9.3M
Total environmental costs (RET + CPRS)	*AU$M*	**$8.7M**	**$29.6M**	**$38.2M**	**$54.6M**	**$51.3M**	**$9.3M**
Historical average profit before tax per annum	*AU$*	$62M					
Environmental costs as a percentage of historical profit before tax	*% of profit before tax*	**14.0%**	**47.7%**	**61.6%**	**88.0%**	**82.7%**	**81.7%**

It is worthwhile highlighting that the average profit figure applied above *overstates* the long term profitability of aluminium smelting operations at Kurri. The period used for averaging (2001 to 2007) represents an unprecedented period of demand growth and price inflation in commodities markets. Over this period, LME aluminium averaged approximately US$2000 per tonne, well above long term averages. In contrast, LME aluminium is currently trading at US$1450 per tonne, a level that is putting aluminium smelters in Australia and overseas under severe financial pressure and sees the Kurri smelter operating at a substantial loss.

Table 2.1 demonstrates very clearly that the combined impact of CPRS and RET costs will effectively destroy the economic viability of the smelter.

At a practical level, **within the first 2 years of operation of the RET Scheme and CPRS**, these impacts are likely to be manifested by:

- **Cancellation of the planned AU$4 billion Kurri expansion** – stripping substantial economic stimulus from Australia, including the loss of 3,000 direct and indirect long term jobs and 15,000 direct and indirect jobs during the three year construction period;

- **Maintenance capital expenditure at the existing smelter cancelled** – losing a further AU$500 million of investment over 5 years related to planned upgrades at the existing smelter and normal maintenance capex; and
- **Reduced production levels** – with significant flow-on impacts to the local community and economy.

The levels of assistance included in the proposed scheme designs, while appearing to be comprehensive to the casual observer, are inadequate to protect jobs and economic activity in many of Australia's largest globally-competitive industries, in particular aluminium smelting which stands alone as the industry most affected by the proposed schemes.

Comprehensive assistance should be provided to aluminium smelters under the proposed CPRS and RET Scheme to avoid jeopardising the future of the Australian aluminium smelting industry and the livelihood of more than 5,000 people employed directly by the industry.

3 Proposed form and level of Assistance

Hydro believes that a package of measures is required to ensure the Government's broad policy objectives are met while avoiding significant distortions of the Australian investment environment relative to natural economics and global efficiencies in resource usage.

Hydro proposes the following package of measures:

CPRS

1. **Direct emissions** – treated as proposed in the CPRS White Paper (90% protection, plus carbon productivity contribution).
2. **Indirect emissions** – 100% protection from indirect emissions until a global scheme is introduced, reflecting smelters' trade exposure, physical constraints on energy efficiency in the smelting process and smelters' inability to control the actions of the electricity generators that supply the national electricity market.

RET Scheme

1. Full exemption from any expanded target in excess of that under the current legislation.
2. A complementary policy for RATE Industries in respect of the target level under the current legislation (described in more detail at section 6 of Hydro's submission to the Senate Committee on Fuel and Energy, included as Attachment A to this submission).

Hydro believes this package of measures is in the best interests of the country's economy and the environment, achieving an appropriate balance between competing objectives:

- Protecting Australia's international competitiveness in globally traded, energy-intensive industries; and
- Ensuring an appropriate contribution from the aluminium smelting industry to the nation's greenhouse gas reduction effort.

4 Economic Modelling

We note the concerns that have been raised by some members of the Committee and of the Senate Select Committee on Fuel and Energy on the modelling performed by Treasury in respect of the CPRS. Hydro shares those concerns and believes that the Treasury modelling should be updated to take account of the valid critique of its approach, assumptions and treatment of the current economic situation, including the concerns raised by Dr Fischer in the report prepared for the Senate Select Committee on Fuel and Energy.

Hydro urges the Committee to seek further economic modelling by Treasury on the impact of these policies, in particular the economic and net global environmental impact of Australia adopting an emissions reduction target in the absence of substantially similar measures being adopted by competing nations.

The CPRS and RET policies represent a tremendous structural change to Australia's economy, therefore the assessment of the policies' impact on the economy should be subject to a commensurate degree of scrutiny, rigour and consultation. It is difficult to accept that further modelling based on the community's response to the Treasury report is not warranted.

5 Conclusion

Aluminium is a light-weight material that has a significant role to play in a low carbon economy and demand for this material will continue to grow as the pressure to reduce emissions and move to renewable energy sources increases. To impose costs on the local aluminium industry will not reduce the global demand for aluminium, but it will drive production overseas leading to lost jobs, lost investment and lost opportunities for Australia.

Norsk Hydro believes that Australia's strong resource base will see it continue to be an important producer of aluminium in a carbon-constrained world with globally consistent policy measures governing greenhouse gas emissions and the widespread adoption of base-load renewable energy generation. However, in the period until such measures are in place, carefully designed transitional arrangements are required to prevent the unnecessary loss of this important industry and to make it possible for the Australian industry to continue developing in a sustainable manner.

Yours faithfully,
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Attachment A – Hydro submission to the Senate Select Committee on Fuel and Energy

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TREATMENT OF ELECTRICITY-INTENSIVE, TRADE-EXPOSED INDUSTRIES UNDER THE EXPANDED NATIONAL RENEWABLE ENERGY TARGET SCHEME AND CARBON POLLUTION REDUCTION SCHEME

Introduction

Hydro Aluminium Kurri Kurri Pty Ltd **("Hydro")** is pleased to have this opportunity to provide a submission to the Senate Select Committee on Fuel and Energy in respect of the discussion paper (the **"Discussion Paper"**) recently released by the COAG Working Group on Climate Change and Water on the treatment of RET-affected, trade-exposed industries (**"RATE Industries"** or **"RATEs"**) under the expanded national Renewable Energy Target scheme (the **"RET Scheme"**).

In this submission, we provide a background to Hydro and the Kurri smelter and address each of the four major questions raised in the Discussion Paper:

1. Should assistance be provided;
2. Form of assistance;
3. Level of materiality threshold; and
4. Level of support to aluminium smelters.

The Discussion Paper also raises 'Design Approach' as a separate topic. Matters relevant to design approach are not addressed as a separate section of this submission. However, in general, Hydro supports the concept of administrative consistency between the Carbon Pollution Reduction Scheme (**"CPRS"**) and RET Scheme. More detailed issues relevant to design approach are incorporated in the discussion at relevant sections of this submission.

In addition, as an annexure to this submission we have provided the information requested at Attachment B to the Discussion Paper.

1 Hydro and the Kurri Smelter

1.1 Background

Hydro is a wholly owned subsidiary of Norsk Hydro ASA **("Norsk Hydro")** one of the world's largest integrated aluminium producers. Hydro owns and operates the primary aluminium smelter located near Kurri Kurri in the Hunter Valley region of New South Wales. Norsk Hydro also has an ownership share in the Tomago smelter in Newcastle.

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1.2 Responding to Climate Change: Norsk Hydro's strong track record

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At a local level, Hydro has invested in the Kurri smelter to achieve significant improvements in its environmental performance, resulting in the following outcomes:

- emissions intensity of greenhouse gases directly produced by the Kurri smelter have been reduced by 75% compared to 1990 levels;
- electricity intensity (the number of MWh required to produce a tonne of aluminium) has also been reduced, to 92% of 1990 levels.

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1.3 Aluminium is part of the solution

Primary aluminium production is an electricity-intensive and, consequently, an emissions-intensive process. However, as a lightweight material, over its lifecycle aluminium yields significant emissions reduction benefits through its application in downstream products.

Norsk Hydro is deeply involved in utilising the advantages of aluminium in the transportation sector and in systems that can reduce energy consumption in buildings. Norsk Hydro is also pursuing further initiatives to increase the recycling of aluminium as an important part of resource preservation.

1.4 The Kurri smelter: electricity-intensive and trade-exposed

The Kurri smelter is both electricity intensive and trade exposed.

The production of 1 tonne of aluminium at Kurri requires approximately 16 MWh of electricity, equivalent to approximately 4,500 MWh per million dollars of revenue in 2008.

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The introduction of the proposed RET Scheme will have particularly severe impacts on the aluminium smelting industry. As the most electricity intensive, large-scale industrial process in Australia, the cost burden of the RET Scheme on aluminium smelting would be especially large. The aluminium smelting industry has consistently had a powerful incentive to reduce its electricity intensity, given the very high proportion of cash operating costs that electricity costs represent. The ability to further reduce electricity consumption or increase energy efficiency is, however, very limited.

Accordingly, the policy settings that will apply to aluminium smelting as a RATE Industry under the proposed amendments to the RET Scheme are of particular concern to Hydro.

2 Should assistance be provided

Norsk Hydro believes that Australia has a natural competitive advantage in the aluminium smelting industry. Australia's strong resource base, transport and energy infrastructure and proximity to major international markets enable the full aluminium value chain – from bauxite mining through to alumina production and aluminium smelting – to occur in one country. This offers considerable

economic and environmental benefits when compared to a more fragmented, multi-country value chain where increased transport of bulk raw materials results in higher cost, increased energy consumption and increased indirect greenhouse gas emissions.

However, with the introduction of an Australian emissions trading scheme as well as an increased mandatory renewable energy target, carefully-designed measures are required to ensure that these policies do not artificially inflate the cost of aluminium smelting in Australia to the detriment of global environmental outcomes.

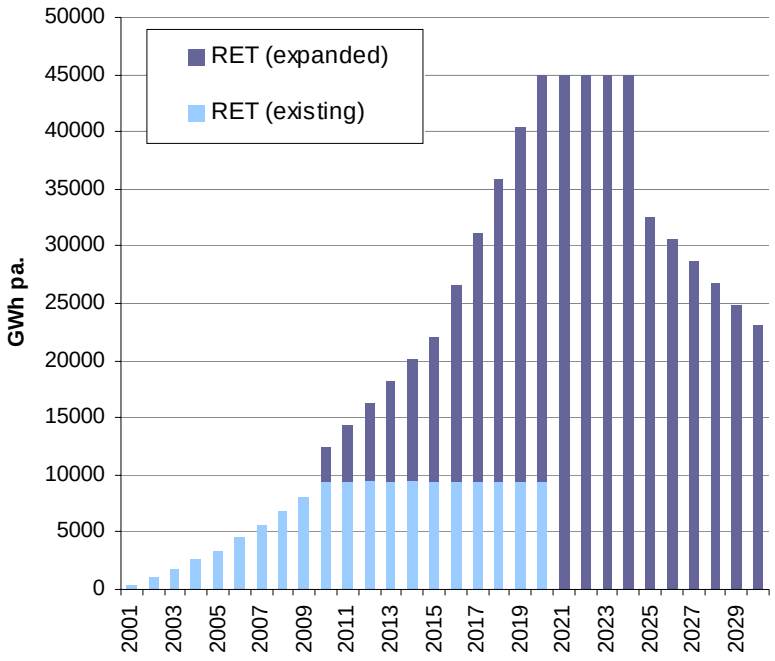
In the Carbon Pollution Reduction Scheme Green Paper and White Paper, this issue is expressed as 'carbon leakage' – the risk that legislation will cause carbon-intensive industries to become financially unviable in Australia and instead locate overseas, with no net improvement in environmental outcomes.

A similar concept applies in the context of the proposed RET Scheme. Electricity-intensive industries stand to be strongly affected under the proposed scheme, therefore there is the potential for investment and employment in these industries to move offshore, with no net improvement in environmental outcomes.

Hydro believes that far better economic and environmental outcomes can be achieved by providing appropriate protection to RATE Industries so that they continue to be managed under Australia's well-developed environmental legislation, rather than creating incentives for such industries to relocate to jurisdictions with relatively relaxed environmental standards.

The proposed RET Scheme sees a substantial increase in the renewable energy target in the period to 2020. Figure 2.1 illustrates the proposed trajectory compared to that under the existing renewable energy legislation.

Figure 2.1: Renewable energy target under the proposed RET Scheme



The proposed expanded target would impose substantially increased costs on the aluminium smelting industry.

2.1 REC Price Trajectory Assumptions

In modelling the impact of the RET Scheme, Hydro has applied a consistent Renewable Energy Certificate (**"REC"**) price of $57 in real (2009) terms, reflecting the value of the current REC shortfall charge and being approximately equal to current market prices. This compares favourably with the findings of the Government-commissioned MMA report titled 'Benefits and Costs of the Expanded Renewable Energy Target' (the **"MMA Report"**).

The MMA Report expresses its REC price findings as the long term contract price for RECs required by a renewable energy project entering the market in each year of the RET Scheme's operation. The report finds that a project entering the market in 2010 requires a long term contracted REC price of $70 per REC, whereas a project entering the market in 2030 requires a contracted REC price of $20 per REC.

Applying MMA's findings as to when new renewable generation projects are projected to enter the market, the proposed price trajectory results in a weighted average REC price of approximately $58.50 per REC.

In Hydro's analysis, a long term REC price of $57 per REC has been applied, resulting in a slightly more favourable cost outcome than under the MMA analysis.

In addition, it is worthwhile highlighting that economic modelling over such long time frames is fraught with uncertainty on each of the major factors that drive modelled outcomes, therefore any modelling results carry a substantial risk that actual costs to the economy will be materially more severe than modelling would suggest[1].

2.2 Impact of the RET Scheme

Table 2.1 below, shows the projected cost of meeting the expanded target based on current REC prices and three different scenarios for the future market price of aluminium (labelled 'LME Price' in the table). The table shows the cost of complying with the RET Scheme at various points in the RET trajectory, expressed in Australian dollars per tonne of aluminium and as a percentage of both revenue and profit before tax. In calculating revenue and profit percentages, the average revenue and profit before tax earned by the Kurri smelter in the period from financial year 2001 to 2007, inclusive, have been applied.

[1] There is also the risk that different modelling approaches will result in substantially different findings, as was the case in the modelling commissioned for the CPRS White Paper. For example, the CPRS White Paper includes (at Chapter 13) the results of three reports that were commissioned to assess the impact of the CPRS on the asset values of coal-fired power generators. Those three reports proposed results ranging from value destruction in the range of AU$5 billion to AU$6 billion for black coal-fired generators (ACIL Tasman and ROAM Consulting), through to value creation in the amount of AU$2 billion for the same generators (MMA). (Source: Carbon Pollution Reduction Scheme White Paper, Volume 2, page 13-19)

Table 2.1: Projected cost of complying with the proposed RET Scheme

	Units	*2010*	*2011*	*2015*	*2020*	*2025*	*2030*
REC Target	*GWh*	12500	14400	22000	45000	32500	23000
Approx. Renewable Power Percentage	*%*	5.5%	6.1%	8.4%	15.0%	9.5%	5.8%
REC Price	AU$	$57	$57	$57	$57	$57	$57
Electrcity intensity	*MWh/tonne al*	16.15	16.15	16.15	16.15	16.15	16.15
Production volume	*tonnes per annum*	173,000					
RET compliance cost	*AU$*	**$8.7M**	**$9.8M**	**$13.4M**	**$23.9M**	**$15.1M**	**$9.3M**
Historical average profit before tax per annum	*AU$*	$62M					
RET costs as a percentage of historical profit before tax	*%*	**14.0%**	**15.7%**	**21.6%**	**38.5%**	**24.3%**	**15.0%**

With RET costs in 2020 set to represent almost 40% of pre-tax profits, the financial impact on aluminium smelting as a result of the introduction of the proposed RET Scheme would be severe - few businesses in any industry could survive the scale of costs proposed.

It is worthwhile highlighting that the average revenue and profit figures applied above *overstate* the long term profitability of aluminium smelting operations. The period used for averaging (2001 to 2007) represents an unprecedented period of demand growth and price inflation in commodities markets. Over this period, LME aluminium averaged approximately US$2000 per tonne, well above long term averages. In contrast, LME aluminium is currently trading at US$1300 per tonne, a level that is putting aluminium smelters in Australia and overseas under severe financial pressure and sees the Kurri smelter operating at a substantial loss.

2.3 Impact on transmission costs

It should be noted that the RET Scheme will have the effect of increasing electricity transmission costs borne by all users, with aluminium smelters being highly affected due to their large demand for electricity.

This will occur because a significant increase in intermittent generators (such as wind farms) will require increased investment in transmission infrastructure. Transmission system investment requirements will be further increased by the requirement to install more gas-fired peaking plant to support intermittent generators and ensure reliable energy supply during periods when intermittent generators are not producing power (e.g. in the case of wind farms, when wind is absent or wind speeds are too low or too high for the turbines to generate power).

The cost of investing in transmission infrastructure is ultimately recovered from electricity consumers in the form of network usage charges. Therefore the cost impact of the RET Scheme to aluminium smelters is greater than simply the cost of purchasing RECs in compliance with the

scheme. Aluminium smelters will face increased electricity transmission costs on a scale much larger than any other industry.

2.4 Combined impact of RET Scheme and CPRS

The RET Scheme cannot be viewed in isolation of the proposed CPRS. The two schemes are intended to be complementary policy measures and the combined financial impact of both schemes on the aluminium industry should be a major consideration in finalising the design of both schemes. Table 2.2 quantifies the combined impact of the RET Scheme and CPRS using the same historical financial information applied in Table 2.1. In assessing the impact of CPRS, we have already allowed for the treatment of the Kurri smelter as an Emissions-Intensive, Trade-Exposed entity (**"EITE"**) under this scheme.

Table 2.2: Projected total cost of complying with RET and CPRS

	Units	*2010*	*2011*	*2015*	*2020*	*2025*	*2030*
Direct emissions	*AU$M*	N/A	$3.1M	$3.7M	$4.5M	$5.2M	$5.9M
Indirect emissions	*AU$M*	N/A	$16.7M	$21.1M	$26.2M	$31.0M	$35.5M
Total CPRS compliance cost	*AU$M*	N/A	$19.8M	$24.8M	$30.7M	$36.2M	$41.3M
RET Compliance Costs		$8.7M	$9.8M	$13.4M	$23.9M	$15.1M	$9.3M
Total environmental costs (RET + CPRS)	*AU$M*	**$8.7M**	**$29.6M**	**$38.2M**	**$54.6M**	**$51.3M**	**$9.3M**
Historical average profit before tax per annum	*AU$*	$62M					
Environmental costs as a percentage of historical profit before tax	*% of profit before tax*	**14.0%**	**47.7%**	**61.6%**	**88.0%**	**82.7%**	**81.7%**

Table 2.2 demonstrates very clearly that the combined impact of RET and CPRS costs will effectively destroy the economic viability of the smelter.

At a practical level, **within the first 2 years of operation of the RET Scheme and CPRS**, these impacts are likely to be manifested by:

- **Cancellation of the planned AU$4 billion Kurri expansion** – stripping substantial economic stimulus from Australia, including the loss of 3,000 direct and indirect long term jobs and 15,000 direct and indirect jobs during the three year construction period;
- **Maintenance capital expenditure at the existing smelter cancelled** – losing a further AU$500 million of investment over 5 years related to planned upgrades at the existing smelter and normal maintenance capex;
- **Reduced production levels** – with significant flow-on impacts to the local community and economy.

Comprehensive assistance should be provided to aluminium smelters under the proposed RET Scheme to avoid jeopardising the future of the Australian aluminium smelting industry and the livelihood of more than 5,000 people employed directly by the industry.

3 Form of assistance

The Discussion Paper canvasses three options in respect of the form that any assistance may take:

- Exemption
- Free issue of RECs
- Cash payments

Hydro believes that exemption is the most appropriate form of assistance. Exemption provides a transparent, reliable and low cost mechanism by which to meet the Government's policy objectives in respect of RATE Industries and imposes the least regulatory burden on these industries.

Hydro does not believe that the free issue of RECs is an appropriate mechanism for delivering assistance. Since Government does not produce RECs, it would be necessary for it to establish a structure within Government for the purpose of procuring RECs from the market and subsequently distributing these to RATE Industries. This would add to the administrative costs of operating the RET Scheme and, with the introduction of a new, very large buyer in the REC market, has the potential to disrupt the smooth functioning of the market.

Assistance by cash payments is equally problematic because it introduces the risk that cash payments may not refect the market value of RECs at any point in time, thereby introducing the risk of over- or under-allocations relative to actual liabilities. Similarly, there is often a negative stigma held by the community in circumstances of cash handouts to industry, notwithstanding that there may be compelling logic behind the industry support.

In addition, providing assistance in the form of RECs or cash would require the Government to investigate contractual matters between RATE Industries and their electricity retailers to confirm that the each RATE activity is in fact exposed to the cost of the RET Scheme (lest assistance be provided where it is not required).

Adopting an exemption approach can avoid this complication and administrative burden because it provides assistance in a form that is only valuable if the RATE entity would otherwise be exposed to RET Scheme costs – i.e. no party stands to be unjustly enriched under an exemption scenario because no cash or cash-equivalent is being supplied by the Government.

With an exemption for aluminium smelters provided in the RET Scheme legislation, the existence of the exemption and the parties that benefit from it would be entirely transparent to the community.

To the extent that Government wishes to publish further information on the value to the Australian economy of providing the exemption, simple reporting mechanisms could be established that would provide Government with information on key production metrics for this purpose.

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For instance, data on electricity consumption, production volumes and the trade value of production are currently collected either by the smelters themselves or by the Australian Bureau of Statistics. These data could be collated and published by the Government if required to meet policy objectives.

The incremental cost of implementing such a reporting mechanism would be small in comparison to the regulatory burden and cost associated with administering assistance provided by way of cash or the free allocations of RECs.

4 Level of materiality threshold

The Discussion Paper proposes a materiality threshold of 5,000MWh per million dollars revenue. Hydro supports this model for establishing a threshold level for receiving RATE assistance, but believes that the appropriate level would be between 3,500 and 4,000MWh per million dollars revenue, depending on how the threshold is to be applied.

Table 4.1 shows the electricity intensity of the aluminium industry using publicly available data.

Table 4.1: Electricity intensity of aluminium smelting in Australia

	Units	***2002***	***2003***	***2004***	***2005***	***2006***	***2007***
Electricity Consumption [2]	*GWh*	27,446	27,955	28,429	28,590	28,994	29,453
Volume produced [2]	*kilotonnes*	1,838	1,861	1,898	1,909	1,935	1,964
Export Unit Value $/t [3]	*AU$/tonne*	2,518	2,242	2,364	2,540	3,377	3,247
Production Value [4]	*AU$M*	4,629	4,173	4,488	4,848	6,536	6,376
Materiality	*MWh/AU$M*	**5,930**	**6,699**	**6,335**	**5,898**	**4,436**	**4,619**

Based on the last 5 years of results, with the threshold set at 5,000MWh per million dollars revenue, the industry's ability to qualify for assistance would depend on the period over which the eligibility test is to be applied.

Hydro believes that the threshold should be set at a level that provides a clear delineation between those industries that qualify for RATE assistance and those that do not. Given that aluminium smelting is the most electricity intensive industry in Australia, Hydro believes that the threshold should be set at a lower level such that the aluminium smelting industry is clearly eligible for RATE assistance. However, the level that would be appropriate depends on how the eligibility test is to be applied.

The Discussion Paper does not identify whether the threshold test would be a once-off test, or a test that is applied and reapplied periodically to test ongoing eligibility for RATE assistance.

[2] Australian Aluminium Council, Sustainability Report 2007
[3] ABARE Australian Commodity Statistics 2008, pg 237.
[4] Production Value = Export Unit Value x Production.

Hydro believes that the test should be applied once, based on historical results, reflecting industry metrics and financial performance at the time the policy decision is made (i.e. a decision made in 2009 based on information available in 2009). In this case, and assuming that a five-year average would be used when applying the test, a level of 4,000MWh per million dollars revenue would be adequate to ensure the eligibility of aluminium smelting.

However, if the test is to be applied periodically to check ongoing eligibility for assistance, a level of 3,500MWh would better reflect a long-term measure of electricity intensity for the industry, encompassing both ends of the commodity price cycle. Any ongoing test should also average over a period of at least 5 years to smooth out anomalous results and reduce the potential for a 'pendulum' effect in the delivery of assistance.

In addition, the criteria identified in the Discussion Paper includes qualification as an EITE. Generally, this appears to be a sensible approach to determining 'trade-exposed' status, however the EITE test specified in the CPRS White Paper includes a test on emissions intensity that appears to be unnecessary in the context of a RATE test. Hydro proposes that the RATE test be amended to:

- Meeting the 'trade-exposed' element of the CPRS EITE criteria; and
- Electricity intensity exceeding 4,000MWh per million dollars of revenue (for a one-off test) or 3,500MWh per million dollars of revenue in the case of an ongoing test.

5 Level of support

In section 2 of this submission, Hydro identified the severe financial impacts that aluminium smelters face under the proposed RET Scheme and the complementary policy, the CPRS. The level of cost that would be imposed under each of the proposed RET Scheme and the CPRS would be very large and would seriously jeopardise the aluminium industry and the direct employment of over 5,000 people.

Accordingly, Hydro believes that a package of measures is required to ensure the Government's broad policy objectives are met while avoiding significant distortions of the Australian investment environment relative to natural economics and global efficiencies in resource usage.

Hydro proposes the following package of measures:

RET Scheme

1. Full exemption from any expanded target in excess of that under the current legislation.
2. A complementary policy for RATE Industries in respect of the target level under the current legislation (described in Section 6, below).

CPRS

1. **Direct emissions** – treated as proposed in the CPRS White Paper (90% protection, plus carbon productivity contribution).
2. **Indirect emissions** – 100% protection from indirect emissions, reflecting smelters' trade exposure, physical constraints on energy efficiency in the smelting process and smelters' inability to control the actions of the electricity generators that supply the national electricity market.

Hydro believes this package of measures is in the best interests of the country's economy and the environment, achieving an appropriate balance between competing objectives:

- Protecting Australia's international competitiveness in globally traded, energy-intensive industries; and
- Ensuring an appropriate contribution from the aluminium smelting industry to the nation's greenhouse gas reduction effort.

6 Complementary Policy Measure – incentives for RATEs to provide direct support to renewable power projects

Meeting the Government's renewable energy target poses a substantial challenge. While several renewable energy technologies are deployed in Australia and overseas, none has the demonstrated capability to provide base load electricity at a commercial scale and economically viable price. Overcoming these two primary challenges is imperative to ensuring the success of the scheme.

Substantial public and private investment will be required to overcome these challenges. However, in many cases, the risks associated with investing in the development and/or deployment of renewable energy technologies are prohibitive for private sector investors.

RATE Industries provide a unique opportunity in this regard because their demand for electricity is such that, with the right policy settings, individual RATE entities can be encouraged to invest *directly* in renewable energy projects, rather than purchasing RECs to provide general demand for renewable energy.

With full exemption from the expanded RET Scheme, aluminium smelters would still face substantial costs in meeting the target level under the existing legislation. The annual cost of meeting the existing target would amount to many millions of dollars per year for each aluminium smelter in Australia. With the right policy settings, this cost as well as with aluminium smelters' demand for electricity generally could provide direct support to individual renewable energy projects.

One mechanism by which this could be achieved would be to allow the deferral of REC liabilities (in respect of the target level under the existing legislation) for those RATE entities that invest directly in, or provide another form of tangible support to, a renewable energy project. The deferral would reflect the time lag between the commitment by a RATE entity to a project and the date by which that project could be expected to produce RECs (perhaps five years for the more promising but commercially less developed technologies).

Once a project becomes operational, the RECs produced by that project could then be acquired by the RATE entity (whether in lieu of a direct financial return on its investment, through a long term purchase arrangement, or some other mechanism) and used by the RATE entity to pay down its accumulated REC liability. Hydro proposes that a 150% multiplier should be applied to RECs surrendered in this manner, reflecting the risk incurred by the RATE entity in supporting the development of the project. A multiplier rate of 150% would be in line with previous similar

Government measures, such as R&D tax concession schemes. It is also consistent with (but much less than) the proposed multiplier effect for micro-generation in the draft legislation.

Hydro believes that a scheme of this type would be beneficial both to RATE Industries and to the Government – allowing RATE entities to reduce the cash impact of the existing MRET target level while providing direct and tangible support for the Government's renewable energy policy objectives.

7 Conclusion

Aluminium is a light-weight material that has a significant role to play in a low carbon economy and demand for this material will continue to grow as the pressure to reduce emissions and move to renewable energy sources increases. To impose costs on the local aluminium industry will not reduce the global demand for aluminium, but it will drive production overseas leading to lost jobs, lost investment and lost opportunities for Australia.

Norsk Hydro believes that Australia's strong resource base will see it continue to be an important producer of aluminium in a carbon-constrained world with globally consistent policy measures governing greenhouse gas emissions and the widespread adoption of base-load renewable energy generation. However, in the period until such measures are in place, carefully designed transitional arrangements are required to prevent the unnecessary loss of this important industry and to make it possible for the Australian industry to continue developing in a sustainable manner.

Yours faithfully,
Hydro Aluminium Kurri Kurri Pty Ltd

Trevor Coombe
Global Alumina and Smelter Growth, Oceania Region

Annexure 1 – Independent Audit Reports on Hydro's participation in the NSW Greenhouse Gas Abatement Scheme

The following two independent audit reports were prepared by Ernst & Young in relation to Hydro's participation as a provider of Large User Abatement Certificates (LUACs) and NSW Greenhouse Gas Abatement Certificates (NGACS) under the NSW Greenhouse Gas Abatement Scheme.

These reports are significant because they include independently audited information for calendar years 2006 and 2007 on:

- Electricity consumed at the Kurri smelter; and
- Aluminium production at the Kurri smelter.

A similar report for calendar year 2008 is currently being prepared and is due to be delivered to Hydro at the end of February. Hydro would be pleased to provide a copy after this date if requested to do so by the Committee.

GGAS 2007 Independent Audit Report

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INDEPENDENT AUDIT REPORT

To the Chairman
Independent Pricing and Regulatory Tribunal ("IPART")

Name of Abatement Certificate Provider:	Hydro Aluminium Kurri Kurri Pty Ltd
Name of project:	LUAC & NGAC Audit
Accreditation number:	GHGR00044 A1/B1
Period covered by audit:	January 2007 to December 2007
No. of NGACs proposed to be registered	40,439
No of LUACS proposed to be registered	644,404

Scope of Services
Hydro Aluminium Kurri Kurri Pty Ltd ("Hydro") has engaged us to conduct audit services in relation to aspects of Hydro's accreditation as a Large User Abatement Certificate ('LUAC') provider and a NSW Greenhouse Gas Abatement Certificate ('NGAC') provider under the NSW Greenhouse Gas Abatement Scheme ("the Scheme").

The procedures have been undertaken to form an opinion whether, in all material respects:

(A) In respect of LUACs, the number of LUACs proposed to be registered by Hydro for the calendar year 2007 has been calculated:

- In accordance with the Rule and based on accurate and reliable records and other relevant supporting documentation;
- In a manner consistent with the methodology and approach specified in the Hydro's Application for Accreditation as approved by the Scheme Administrator, including Base Emissions Intensity of 6.08t CO2-e per unit of primary Aluminium; and
- In a manner consistent with the Notice of Accreditation including any Conditions of Accreditation as specified by the Scheme Administrator.

(B) In respect of NGACs, the number of NGACs that have been proposed to be registered by Hydro for the calendar year 2007 is fairly presented and has been calculated:

- In accordance with the Rule and based on accurate and reliable records and other relevant supporting documentation;
- In a manner consistent with the methodology and approach specified in the Notice of Accreditation as approved by the Scheme Administrator; and

- In a manner consistent with the Notice of Accreditation including any Conditions of Accreditation as specified by the Scheme Administrator.

Hydro's management is responsible for preparing the calculation of NGACs & LUACs and maintaining an effective internal control structure including control procedures supporting Hydro's proposed creation of LUACs & NGACs. We have not conducted any audit procedures with respect to the internal control environment of Hydro taken as a whole. As such, no assurance is given on any internal controls not associated with the proposed creation of LUACs & NGACs.

Our audit has been conducted in accordance with Australian Auditing Standards to provide IPART reasonable assurance that the above requirements contained in the application form have been prepared in a manner consistent with the Rule. Accordingly, we have conducted such tests and procedures as we considered appropriate including:

- Confirmation of project application details to supporting documentation;
- Sample testing of source data;
- Confirmation that arithmetical calculations are fairly presented;
- Discussions with the relevant applicant personnel in relation to systems, procedures, and controls; and
- Observation and review of relevant documentation.

The audit opinion expressed in this report has been formed on the above basis and has been prepared for the distribution to IPART. We disclaim any assumption of responsibility for any reliance on this report to any person other than IPART, or for any purpose other than that for which it was prepared.

Inherent Limitations

Because of the inherent limitations in any internal control structure it is possible that fraud, error, or non-compliance with laws and regulations may occur and not be detected. Further, the audit was not designed to detect all weakness or errors in internal controls so far as they relate to the requirements set out above as the audit has not been performed continuously throughout the period and the procedures performed on the relevant internal controls were on a test basis. Any projection of the evaluation of control procedures to future periods is subject to the risk that the procedures may become inadequate because of changes in conditions, or that the degree of compliance with them may deteriorate.

Audit Opinion

In our opinion:

(A). In respect of LUACs, the number of LUACs proposed to be registered by Hydro for the calendar year 2007 has been calculated:

- In accordance with the Rule and based on accurate and reliable records and other relevant supporting documentation;
- In a manner consistent with the methodology and approach specified in the Hydro's Application for Accreditation as approved by the Scheme

Administrator, including Base Emissions Intensity of 6.08t CO2-e per unit of primary Aluminium; and

- In a manner consistent with the Notice of Accreditation including any Conditions of Accreditation as specified by the Scheme Administrator.

(B) In respect of NGACs, the number of NGACs that have been proposed to be registered by Hydro for the calendar year 2007 is fairly presented and has been calculated:

- In accordance with the Rule and based on accurate and reliable records and other relevant supporting documentation;
- In a manner consistent with the methodology and approach specified in the Notice of Accreditation as approved by the Scheme Administrator; and
- In a manner consistent with the Notice of Accreditation including any Conditions of Accreditation as specified by the Scheme Administrator.

Paul Flynn
Ernst & Young
Date: 29 February 2008

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29 February 2008

Mr Phillip Eyre
Independent Pricing and Regulatory Tribunal
Greenhouse Gas Scheme Administrator
PO Box Q290
QVB POST OFFICE NSW 1230

Dear Phillip

Hydro Aluminium Kurri Kurri Pty Ltd ("Hydro")

Please find attached to this letter, our audit opinion, schedule of findings, calculations and PFC file note in respect of Hydro's accreditation as a Large User Abatement Certificate ('LUAC') provider and a NSW Greenhouse Gas Abatement Certificate ('NGAC') provider. If you have any queries, please do not hesitate to contact me on 8295 6260.

Kind regards

Peter Graham
Executive Director

ERNST & YOUNG

Hydro Aluminium Kurri Kurri Pty Ltd
Accreditation as an abatement certificate provider – LUACs & NGACs
Schedule of Audit Procedures and Findings

Scope Item	(A) The number of LUACs proposed to be registered by Hydro has been calculated, and: • Are derived from an accredited abatement activity or project; • Are supported by sufficient record keeping and other documentary evidence; • Have been created in accordance with the Scheme Rules and any Conditions of Accreditation (B) The number of NGACs proposed to be registered by Hydro has been calculated, and: • Are derived from an accredited abatement activity or project; • Are supported by sufficient record keeping and other documentary evidence; • Have been created in accordance with the Scheme Rules and any Conditions of Accreditation
Description of Requirement	(A) In respect of LUACs, conduct audit procedures to enable us to express an opinion that in all material respects, the number of LUACs proposed to be registered by Hydro has been calculated: • In accordance with the Rule and based on accurate and reliable records and other relevant supporting documentation; • In a manner consistent with the methodology and approach specified in the Hydro's Application for Accreditation as approved by the Scheme Administrator, including Base Emissions Intensity of 6.08t CO2-e per unit of primary Aluminium; and • In a manner consistent with the Notice of Accreditation including any Conditions of Accreditation as specified by the Scheme Administrator. (B) In respect of NGACs, conduct audit procedures to enable us to express an opinion that in all material respects, the number of NGACs that have been proposed to be registered by Hydro for the calendar year 2007 is fairly presented and has been calculated:

	• In accordance with the Rule and based on accurate and reliable records and other relevant supporting documentation; • In a manner consistent with the methodology and approach specified in the Notice of Accreditation as approved by the Scheme Administrator; and • In a manner consistent with the Notice of Accreditation including any Conditions of Accreditation as specified by the Scheme Administrator.
Audit Procedures	(A) We conducted such tests and procedures as we considered appropriate including: • Hold discussions with relevant personnel responsible for record keeping of inputs into the relevant equations. • Determine if the methodology used to calculate number of LUACs is consistent with methodology in the application for accreditation and conditions of accreditation. • Evaluate reliability of the information • Review the Calculation of the Actual Emissions Intensity and ensure inputs into the equation are supported by appropriate documentation • Check for transcription errors. • Evaluate the risk of a misstatement in the transcription process (internal controls). • Re-perform calculations and evaluate any possible discrepancy with the defined level of materiality. (B) We conducted such tests and procedures as we considered appropriate including: • Hold discussions with relevant personnel responsible for record keeping of inputs into the relevant equations. • Determine if the methodology used to calculate number of NGACs is consistent with methodology in the application for accreditation and conditions of accreditation. • Evaluate reliability of the information • Review the Calculation of the Metered Baseline per Unit of Output and ensure inputs into the equation are supported by appropriate documentation • Check for transcription errors.

<table>
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Evaluate the risk of a misstatement in the transcription process (internal controls).
Re-perform calculations and evaluate any possible discrepancy with the defined level of materiality.

</td></tr>
<tr><td>Findings (LUACs)</td><td>
Our findings for the LUAC audit were as follows:

We held discussions with Paul Wenta (Environmental Officer) who is responsible for the preparation of the LUAC calculation. Paul obtains inputs from various sources within Hydro. From our walkthrough procedures, we are comfortable that these sources within Hydro (for example, see table below) produce reliable documentation in order to base our audit opinion on.
Further, we note that record keeping procedures had not changed since our previous audit.
We reviewed the LUAC calculation, and determined that the methodology used is consistent with the methodology in the application for accreditation. A key source of supporting documentation was the Connell Wagner Report "Assessment of Hydro Aluminium Kurri Kurri Application for LUA accreditation" dated 11 July 2003. This report outlines the factors agreed in the first audit that underpin the calculations of PFC's, Coke, Pitch, Natural Gas and Diesel (the five sources of Greenhouse Gas emissions used at Hydro).
Reliability of information – Coke, Pitch, Natural Gas and Diesel are sourced from third party invoices for the 12 month period being:

<table>
<tr><td>Coke</td><td>Toll North P/L invoices of coke supplied</td></tr>
<tr><td>Pitch</td><td>Koppers Carbon Materials & Chemicals Tax invoices</td></tr>
<tr><td>Natural Gas</td><td>AGL invoices</td></tr>
<tr><td>Diesel</td><td>Shell invoices</td></tr>
</table>
We have agreed the inputs in the LUAC calculation to the source documentation outlined in the table above. This source documentation has been collated from third parties which is considered independent and reliable as its externally generated. This is in accordance with the Australian Auditing Standards AUS 502 Audit Evidence.
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	PFCs were sourced internal reporting documents such as: • Monthly management reports (Metal Production), • Quality and Efficiency Reports (Pot days) • Anode Effect Data report – derives from Aluminium Production Information Control System (APICS). • The methodology behind the calculation of Anodes is consistent with Hydros accreditation and previous audits. • We have reviewed the Calculation of the Actual Emissions Intensity by ensuring inputs are supported by appropriate documentation mentioned above and all formulas converting to CO_2 tonnes have been agreed to the benchmarks agreed in Hydro's original application. • We re-performed Hydro's LUAC calculation and found no transcription errors. • The risk of a misstatement in the transcription process is low. This is due to: a) LUAC calculation is derived from the same worksheet each year b) Majority of the supporting documentation is derived from third party invoices c) Inputs of production and anode effect data are extracted from a read-only database (APICS) by the Environmental Officer d) Metal Production is taken the "Potroom Schedule" in the monthly management reports signed off by Operations Superintendent (PotRooms) and the Potrooms Financial Controller. The Potroom Schedules are prepared by Potrooms division and reconciliations of Metal Production are performed by Richard Brown (Operations Superintendent) on a daily basis. This highlights a segregation of duties within the Process. • The number of LUACs Hydro is proposing to register is 644,404.
Findings (NGACs)	Our findings for the NGACs audit were as follows: • We held discussions with Paul Wenta (Environmental Officer) who is responsible for the preparation of the NGAC calculation. Paul obtains inputs from various sources within Hydro. From our walkthrough procedures, we are comfortable that these sources within Hydro

	produce reliable documentation in order to base our audit opinion on. • Further, we note that record keeping procedures had not changed since our previous audit. • The methodology used by Hydro to calculate number of NGACs was consistent with the DSA methodology and the default abatement factors as set out in Hydro conditions of accreditation. That is we have agreed: a) Variable Energy Baseline, Fixed energy Consumption and the confidence factor to the Hydros Notice Of Accreditation 19 July 2005 b) Pool coefficient for greenhouse emissions has been agreed to the Greenhouse Gas Key Factors spreadsheet via the internet. c) the Metered Baseline per unit of Output against the *Method #1 - Clause 10.5 - Using a baseline per unit of output* of DSA Benchmark Rule. • Reliability of information – the inputs into the NGAC calculation include electricity consumption. Electricity consumption for the 12 month period have all been agreed to EnergyAustralia Monthly Electricity Usage Reports. The calendar year electricity consumption has also been supported by a letter from Energy Australia dated 23 Jan 2008. • The Calculation of the Metered Baseline per unit of Output has been agreed to methodology mentioned above and the inputs into the calculation have electricity invoices mentioned above. • We re-performed Hydro's NGAC calculation and found no transcription errors. • The risk of a misstatement in the transcription process is low. This is due to: a) NGAC calculation is derived from the same worksheet each year b) Input into the NGAC calculation is double checked. • We have re-performed NGAC calculations and found no discrepancies.

	• The number of NGACs Hydro is proposing to register is 40,439.
Conclusion	(A) In respect of LUACs, in all material respects, the number of LUACs proposed to be registered by Hydro has been calculated: • In accordance with the Rule and based on accurate and reliable records and other relevant supporting documentation; • In a manner consistent with the methodology and approach specified in the Hydro's Application for Accreditation as approved by the Scheme Administrator, including Base Emissions Intensity of 6.08t CO2-e per unit of primary Aluminium; and • In a manner consistent with the Notice of Accreditation including any Conditions of Accreditation as specified by the Scheme Administrator. (B) In respect of NGACs, in all material respects, the number of NGACs that have been proposed to be registered by Hydro for the calendar year 2007 is fairly presented and has been calculated: • In accordance with the Rule and based on accurate and reliable records and other relevant supporting documentation; • In a manner consistent with the methodology and approach specified in the Notice of Accreditation as approved by the Scheme Administrator; and • In a manner consistent with the Notice of Accreditation including any Conditions of Accreditation as specified by the Scheme Administrator.

Hydro Aluminium LUAC Calculation 2007

29/02/2008

	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	annual 2007
metal prod	14,507	13,267	14,522	14,415	15,060	14,100	14,565	14,757	14,377	14,632	14,294	14,731	173,227
PFC tCO2e	8,604	8,632	8,752	7,079	7,314	7,421	8,394	7,702	5,426	6,182	5,665	7,001	88,172
coke (tonnes)	4,872	6,145	7,668	5,967	2,393	4,195	6,783	6,567	4,313	5,977	6,871	4,162	65,913
pitch (tonnes)	1,229	1,294	1,411	1,429	626	858	1,626	1,353	1,040	1,443	1,453	1,092	14,854
natural gas (GJ)	51,373	48,126	52,263	51,112	53,217	53,741	57,308	56,734	54,500	54,618	53,201	54,717	640,910
diesel (litres)	48,591	45,658	33,666	41,153	56,256	44,012	40,326	49,240	43,018	35,223	53,416	36,834	527,393
tCO2e coke	17,328	21,856	27,273	21,223	8,511	14,920	24,125	23,357	15,340	21,258	24,438	14,803	234,431
tCO2e pitch	4,146	4,365	4,760	4,820	2,112	2,894	5,485	4,564	3,508	4,868	4,901	3,684	50,107
tCO2e PFC	8,604	8,632	8,752	7,079	7,314	7,421	8,394	7,702	5,426	6,182	5,665	7,001	88,172
tCO2e gas	2,829	2,650	2,878	2,815	2,931	2,960	3,156	3,124	3,001	3,008	2,930	3,013	35,296
tCO2e diesel	130	122	90	110	150	118	108	132	115	94	143	98	1,409
total tCO2e	33,037	37,625	43,752	36,047	21,018	28,313	41,268	38,879	27,390	35,410	38,077	28,599	409,414
tCO2e/tAl													2.36
LUACs													644,404

Hydro Aluminium NGAC Calculation 2007

month	days	total consumption (MWh)	tonnes	fixed consumption (MWh) **	variable consumption (total - fixed)	**variable energy baseline (MWh/t)**	reduced energy consumption (MWh)	NGACs
Jan-07	31	236,392	14,507	13,595	222,797	**15.480**	1,771	1,635
Feb-07	28	214,719	13,267	12,279	202,440		2,933	2,708
Mar-07	31	237,292	14,522	13,595	223,697		1,104	1,019
Apr-07	30	228,978	14,415	13,157	215,821	**confidence factor**	7,323	6,760
May-07	31	236,160	15,060	13,595	222,565	**0.981**	10,564	9,752
Jun-07	30	229,594	14,100	13,157	216,437		1,831	1,690
Jul-07	31	236,268	14,565	13,595	222,673		2,793	2,578
Aug-07	31	239,761	14,757	13,595	226,166	**pool coefficient**	2,272	2,097
Sep-07	30	231,428	14,377	13,157	218,271	**0.941**	4,285	3,956
Oct-07	31	236,934	14,632	13,595	223,339		3,164	2,921
Nov-07	30	231,434	14,294	13,157	218,277		2,994	2,764
Dec-07	31	238,859	14,731	13,595	225,264		2,772	2,559
total		2,797,819	173,227			total	43,806	40,439

** fixed consumption = number of days per month * average daily fixed consumption

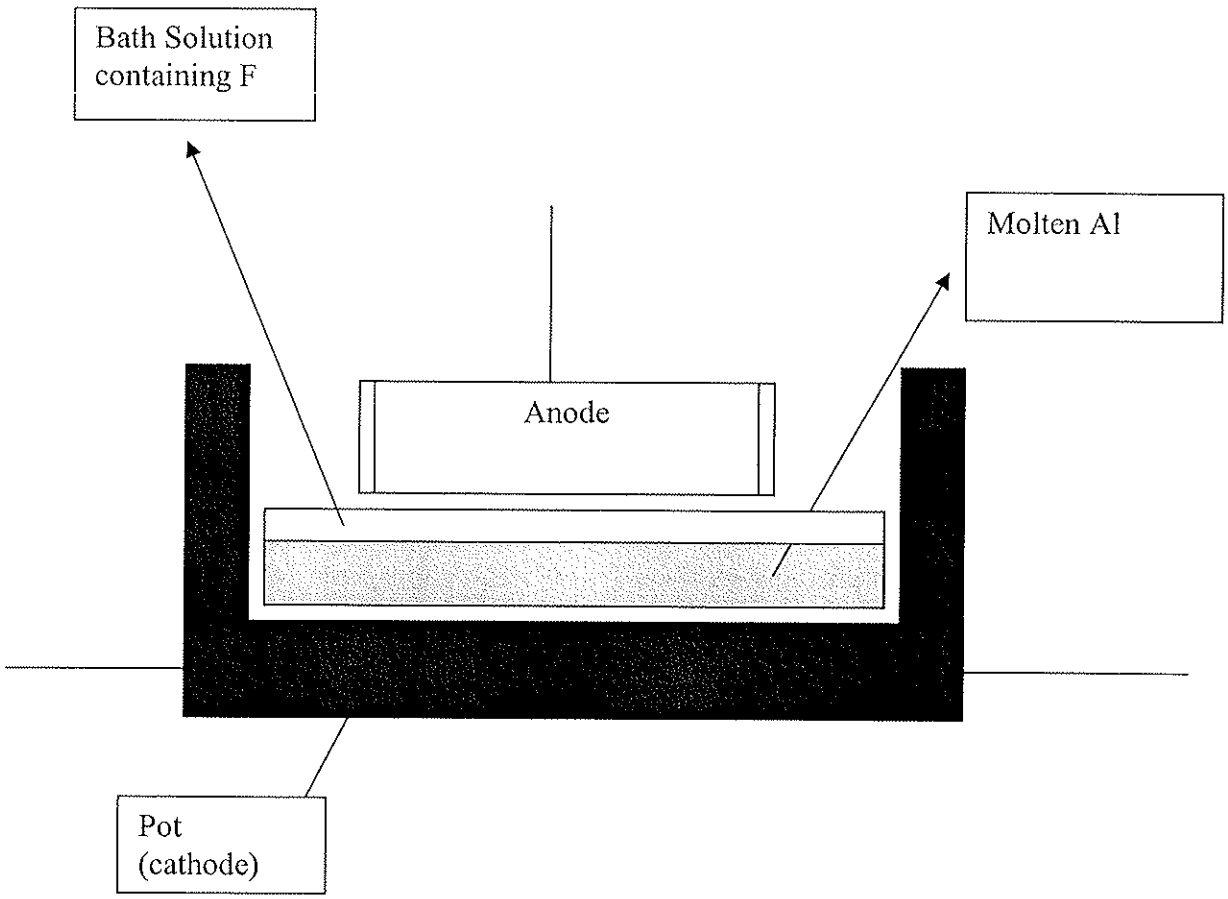
Date: 12 February 2008

To: File

From: Claire Lewis

PFCs and their generation

Per Discussion with Pot room manager.



Background

- There are 120 (cells) pots in a line. Hydro has 3 pot lines.
- Reports such as the Quality and Efficiency report (Q&E) are generated by the Aluminium Production Information Control System (APICS). APICS collates the data recorded in the production plant and generates reports that are read-only.

PCFs are greenhouse gases that are generated in the form of C_2F_6 and C_4. At Hydro, PCFs are generated when, for some external reason, not enough Al_2O_3 is introduced into the pot. In this situation, some of the bath liquid reacts with the carbon anode, instead of the Al_2O_3.The bath solution contains, among other substances, fluoride, hence the formation of the PCFs which contain Carbon and Fluoride.

When created, PCFs exist as a viscous gas, and are formed directly below the Anode. This bubble of gas increases the resistance difference between the anode and cathode. As a result, the voltage in the circuit (between anode and cathode) is also increased. The voltage between the anode and cathode is usually 4.5v. Once this voltage increases to 9v, an 'anode effect' (AE) is deemed to have occurred because it is at this point that PCFs have been generated to a substantial level.

The gas can be removed by the following methods, to restore the pot to normal voltage.

1. The anode is moved up and down, allowing the bubble to move free.
2. By increasing the Al_2O_3 in the system, reducing the production of PCFs which then gradually dissipate.
3. Inserting a wooden pole under the anode. The chemical reaction that occurs as the pole burns removes the PCFs.

Production inputs process

Once per shift the operators measure the Al levels in their pots. The operators then enter this into the HAL 3000 system. In addition, once per shift the Central Process Controller or his equivalent checks the input amounts from the HAL system and then generates a tapping schedule (docket) for each pot. Each pot has a target level and based on this, the amount of Al to be 'tapped' or removed is calculated. This is included on the tapping schedule which is then given to the crane driver. The crane has a crucible with a set of scales attached. The scales are zeroed, and a vacuum generated in the crucible. The driver then 'sucks' up the required amount of Al from that pot, re-zeros the scales and moves to another pot until the crucible is full.

The driver then proceeds to the weighbridge with the full crucible. The entire weight of the crane and full crucible is recorded, the crucible emptied and the difference recorded as the weight of the Al produced.

The driver then records the weight of the Al produced on his tapping card which is returned to Central Process Controller at the end of the crane driver's shift. Central Process Controller then analyses any differences between the weighbridge recorded weight and that of the tapping card. Sometimes the weighbridge doesn't record weights (registering as a 'zero') and Training and Quality Assurance Manger then calls the IT department to have the tapping card weight entered.

When this error occurs it is around the change of shift or the 7pm end of the day when the computer registers weights on a 12am/pm basis.

At the end of each day, Central Process Controller reconciles the requested 'tapping' amount to the actual tapped weight. Generally variances are small. The actual weights are already in the system via the 'weighbridge report'.

Total final production is then compared to the final Q&E report which is system generated and located on the intranet.

The casting department can place 'orders' with the production department for a certain amount of Al to be delivered if a special order is needed. Central Process Controller takes this into account when allocating the tapping amounts for the shift.

The voltage is measured by the system at intervals of 500 milliseconds. The system records the duration of an Anode Effect (AE) and Anode Duration (AD).

9 volts is used by Hydro to calculate AEs. Per discussion with client, generally 8-10 volts are used throughout the industry. However, once a pot reaches a voltage of 7 volts, the potential difference rises rapidly and hence an AE will almost definitely occur regardless of weather it is measured at 8 or 10 volts.

No manual entries can be made on the system – APICS generates read only information regarding the production process other system reports such as the weighbridge data can only be altered when a variance is encountered by the IT department. On a monthly basis, the production department reconciles its produced Al to what the Casting departments has recorded as being delivered. All differences are investigated immediately.

Calculations:

PFCs are calculated by the following (Connell Wagner report):

PFC = slope x AEF x AED

Slope = ratio of kg PFC per tonne to anode effect minutes per day = 0.14 CF4, 0.018 C2F6

AEF = Anode Effect frequency per pot per day
AED = Anode Effect duration (Minutes)

EY obtained the AEF and AED through the APICS system data. This data is recorded directly by the system and cannot be altered. The calculation for PFCs produced is based on the Connell Wagner report and are then reflected in the client calculations.

GGAS 2006 Independent Audit Report

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28 February 2007

Phillip Eyre
Independent Pricing and Regulatory Tribunal
Greenhouse Gas Scheme Administrator
Level 2
44 Market St
Sydney NSW 2000

Dear Phillip

Hydro Aluminium Kurri Kurri Pty Ltd ("Hydro")

Please find attached to this letter, our audit opinion and the schedule of findings in respect of Hydro's accreditation as a Large User Abatement Certificate ('LUAC') provider and a NSW Greenhouse Gas Abatement Certificate ('NGAC') provider. If you have any queries, please do not hesitate to contact me on 8295 6260.

Kind regards

Peter Graham
Principal

Hydro Aluminium Kurri Kurri Pty Ltd
Accreditation as an abatement certificate provider – LUACs & NGACs
Schedule of Audit Procedures and Findings

Scope Item	(A) To ensure the record keeping arrangements in respect to the LUACs accreditation and the number of LUACs proposed to be registered by Hydro has been calculated in accordance with the Rule. (B) To ensure that the number of NGACs proposed to be registered has been calculated in accordance with the Rule and is based on accurate and reliable records and other relevant supporting documentation.
Description of Requirement	(A) In respect of LUACs, conduct audit procedures to enable us to express an opinion that in all material respects, the number of LUACs proposed to be registered by Hydro has been calculated: o In accordance with the Rule and based on accurate and reliable records and other relevant supporting documentation; o In a manner consistent with the methodology and approach specified in the Hydro's Application for Accreditation as approved by the Scheme Administrator, including Base Emissions Intensity of 6.08t CO2-e per unit of primary Aluminium; and o In a manner consistent with the Notice of Accreditation including any Conditions of Accreditation as specified by the Scheme Administrator. (B) In respect of NGACs, conduct audit procedures to enable us to express an opinion that in all material respects, the number of NGACs that have been proposed to be registered by Hydro for the calendar year 2006 is fairly presented and has been calculated: o In accordance with the Rule and based on accurate and reliable records and other relevant supporting documentation; o In a manner consistent with the methodology and approach specified in the Notice of Accreditation as approved by the Scheme Administrator; and o In a manner consistent with the Notice of Accreditation including any Conditions of Accreditation as specified by the Scheme Administrator.

Audit Procedures	We conducted such tests and procedures as we considered appropriate including: • Determining if the methodology used to calculate the number of LUACs is consistent with methodology in the notice of accreditation. • Checking the relevant methodology to be used with Hydro management in order to calculate the number of LUACs including: o Check of the formula; and o Check of Hydro's calculation against the LUAC Rule to independently verify that Hydro has calculated the number of LUACs according to the Rule. • Re-performance of Hydro's calculations: o Generating a parallel calculation utilising external supporting data (invoices, etc) following the requirements of the LUAC Rule; o Comparing the result with Hydro's result. If there were any differences, investigating the reason for such discrepancy; and o Evaluating any possible discrepancy with the defined level of materiality. • Determining if the methodology used to calculate the number of NGACs is consistent with methodology in the notice of accreditation. • Meeting with Hydro personnel and investigating whether record keeping arrangements for LUACs and NGACs have changed since our last audit performed. • Checking the relevant methodology to be used with Hydro management in order to calculate the number of NGACs including: o Check of the formula; and o Check of Hydro's calculation against the Demand Side Abatement ("DSA") Rule to independently verify that Hydro has calculated the number of NGAC according to the Rule. • Re-performance of Hydro's calculations: o Generating a parallel calculation utilising external supporting data (invoices, etc) following the requirements of the DSA Rule; o Comparing the result with Hydro's result. If there

	were any differences, investigating the reason for such discrepancy; and Evaluating any possible discrepancy with the defined level of materiality.
Findings	Our findings were as follows: • We held discussions with Hydro personnel to discuss the basis of the preparation of the NGAC and LUAC calculation. We are comfortable that Hydro Management are aware of their obligations under the Scheme. • Record keeping was found to be consistent in respect of LUACs and NGACs. Further, record keeping procedures had not changed since our previous audits. • It was consistent with the Guide to Record Keeping for Abatement Certificate Providers, clause 73IF. In order to determine this, we undertook a walkthrough of the record keeping process. We ensured there was appropriate segregation of duties and that the formal procedures for record keeping were being followed effectively. Again, there have been no changes since our previous audits. • We held discussions with Paul Wenta (Environmental Officer) who is responsible for the preparation of the calculation. Paul obtains inputs from various sources within Hydro. From our walkthrough procedures, we are comfortable that these sources within Hydro produce reliable documentation in order to basis our audit opinion on. • Where possible, we verified that inputs have come from appropriate third party documentation, such as invoices, energy usage. Hence, we are of the view that these documents are reliable. For example, we ensured the all inputs in the LUAC calculation agreed to coke, pitch, Gas and Diesel invoices and found no discrepancies. Metal production was agreed to internal management reports. All formulas converting Coke, Pitch, PFC, Gas and Diesel into Co2 tonnes have been agreed to the benchmarks agreed in Hydro's original application. • Inputs such as production and anode effects are taken from Hydro's internal systems. We obtained evidence to ensure that production and anode effects data are appropriately sourced from these systems and are input directly into the

	equations by the Environmental Officer. • Segregation of duties was checked. We identified that the Environmental Officer does not have access to change information from Hydro's internal systems. Consequently, we confirmed that the staff preparing the inputs and the Environmental Officer is appropriately segregated. • An important input into the NGAC equation is electricity consumption. We ensured that we obtained copies of third party electricity invoices to confirm site wide consumption. • We re-performed Hydro's calculation in LUACs and NGACS and found no discrepancies. • The methodology used by Hydro to calculate number of NGACs was consistent with the DSA methodology and the default abatement factors as set out in Hydro conditions of accreditation. • The number of NGACs Hydro is proposing to register is 22,623. • The number of LUACs Hydro is proposing to register is 516,146.
Conclusion	(A) In respect of LUACs, in all material respects, the number of LUACs proposed to be registered by Hydro has been calculated: o In accordance with the Rule and based on accurate and reliable records and other relevant supporting documentation; o In a manner consistent with the methodology and approach specified in the Hydro's Application for Accreditation as approved by the Scheme Administrator, including Base Emissions Intensity of 6.08t CO2-e per unit of primary Aluminium; and o In a manner consistent with the Notice of Accreditation including any Conditions of Accreditation as specified by the Scheme Administrator. (B) In respect of NGACs, in all material respects, the number of NGACs that have been proposed to be registered by Hydro for the calendar year 2006 is fairly presented and has been calculated: o In accordance with the Rule and based on accurate and reliable records and other relevant supporting

	documentation; ○ In a manner consistent with the methodology and approach specified in the Notice of Accreditation as approved by the Scheme Administrator; and ○ In a manner consistent with the Notice of Accreditation including any Conditions of Accreditation as specified by the Scheme Administrator.

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INDEPENDENT AUDIT REPORT

To the Chairman
Independent Pricing and Regulatory Tribunal ("IPART")

Name of Abatement Certificate Provider:	Hydro Aluminium Kurri Kurri Pty Ltd
Name of project:	LUAC & NGAC Audit
Accreditation number:	GHGR00044 A1/B1
Period covered by audit:	January 2006 to December 2006
No. of NGACs proposed to be registered	22,623
No of LUACS proposed to be registered	516,146

Scope of Services
Hydro Aluminium Kurri Kurri Pty Ltd ("Hydro") has engaged us to conduct audit services in relation to aspects of Hydro's accreditation as a Large User Abatement Certificate ('LUAC') provider and a NSW Greenhouse Gas Abatement Certificate ('NGAC') provider under the NSW Greenhouse Gas Abatement Scheme ("the Scheme").

The procedures have been undertaken to form an opinion whether, in all material respects:

(A) In respect of LUACs, the number of LUACs proposed to be registered by Hydro has been calculated:

- In accordance with the Rule and based on accurate and reliable records and other relevant supporting documentation;
- In a manner consistent with the methodology and approach specified in the Hydro's Application for Accreditation as approved by the Scheme Administrator, including Base Emissions Intensity of 6.08t CO2-e per unit of primary Aluminium; and
- In a manner consistent with the Notice of Accreditation including any Conditions of Accreditation as specified by the Scheme Administrator.

(B) In respect of NGACs, the number of NGACs that have been proposed to be registered by Hydro for the calendar year 2006 is fairly presented and has been calculated:

- In accordance with the Rule and based on accurate and reliable records and other relevant supporting documentation;
- In a manner consistent with the methodology and approach specified in the Notice of Accreditation as approved by the Scheme Administrator; and

- In a manner consistent with the Notice of Accreditation including any Conditions of Accreditation as specified by the Scheme Administrator.

Hydro's management is responsible for preparing the calculation of NGACs & LUACs and maintaining an effective internal control structure including control procedures supporting Hydro's proposed creation of LUACs & NGACs. We have not conducted any audit procedures with respect to the internal control environment of Hydro taken as a whole. As such, no assurance is given on any internal controls not associated with the proposed creation of LUACs & NGACs.

Our audit has been conducted in accordance with Australian Auditing Standards to provide IPART reasonable assurance that the above requirements contained in the application form have been prepared in a manner consistent with the Rule. Accordingly, we have conducted such tests and procedures as we considered appropriate including:

- Confirmation of project application details to supporting documentation;
- Sample testing of source data;
- Confirmation that arithmetical calculations are fairly presented;
- Discussions with the relevant applicant personnel in relation to systems, procedures, and controls; and
- Observation and review of relevant documentation.

The audit opinion expressed in this report has been formed on the above basis and has been prepared for the distribution to IPART. We disclaim any assumption of responsibility for any reliance on this report to any person other than IPART, or for any purpose other than that for which it was prepared.

Inherent Limitations

Because of the inherent limitations in any internal control structure it is possible that fraud, error, or non-compliance with laws and regulations may occur and not be detected. Further, the audit was not designed to detect all weakness or errors in internal controls so far as they relate to the requirements set out above as the audit has not been performed continuously throughout the period and the procedures performed on the relevant internal controls were on a test basis. Any projection of the evaluation of control procedures to future periods is subject to the risk that the procedures may become inadequate because of changes in conditions, or that the degree of compliance with them may deteriorate.

Audit Opinion

In our opinion:

(A). In respect of LUACs, the number of LUACs proposed to be registered by Hydro has been calculated:

- In accordance with the Rule and based on accurate and reliable records and other relevant supporting documentation;
- In a manner consistent with the methodology and approach specified in the Hydro's Application for Accreditation as approved by the Scheme

Administrator, including Base Emissions Intensity of 6.08t CO2-e per unit of primary Aluminium; and
- In a manner consistent with the Notice of Accreditation including any Conditions of Accreditation as specified by the Scheme Administrator.

(B) In respect of NGACs, the number of NGACs that have been proposed to be registered by Hydro for the calendar year 2006 is fairly presented and has been calculated:
- In accordance with the Rule and based on accurate and reliable records and other relevant supporting documentation;
- In a manner consistent with the methodology and approach specified in the Notice of Accreditation as approved by the Scheme Administrator; and
- In a manner consistent with the Notice of Accreditation including any Conditions of Accreditation as specified by the Scheme Administrator.

Paul Flynn
Ernst & Young
Date: 29 February 2007

	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06	Oct-06	Nov-06	Dec-06	annual 2006
metal prod	12,607	11,644	13,195	12,923	13,623	13,449	14,203	14,324	13,918	14,817	14,442	14,711	163,856
PFC tCO2e	39,120	24,630	16,621	16,927	18,297	16,813	10,342	9,247	10,418	8,101	9,011	8,161	187,688
coke (tonnes)	5,424	4,435	4,928	4,711	5,120	4,333	5,002	6,231	4,336	4,562	6,139	4,719	59,940
pitch (tonnes)	1,145	1,145	1,149	1,134	1,202	1,183	1,073	1,404	846	1,088	1,434	1,028	13,831
natural gas (GJ)	42,726	40,258	48,712	47,548	48,793	49,973	50,313	51,827	48,537	49,137	48,158	48,050	574,032
diesel (litres)	55,765	41,237	42,904	34,454	54,170	39,974	43,491	38,988	43,789	44,286	36,953	33,501	509,512
tCO2e coke	19,291	15,773	17,528	16,757	18,209	15,411	17,789	22,162	15,420	16,227	21,836	16,784	213,188
tCO2e pitch	3,863	3,864	3,877	3,824	4,055	3,990	3,620	4,736	2,852	3,669	4,838	3,469	46,657
tCO2e PFC	39,120	24,630	16,621	16,927	18,297	16,813	10,342	9,247	10,418	8,101	9,011	8,161	187,688
tCO2e gas	2,353	2,217	2,683	2,619	2,687	2,752	2,771	2,854	2,673	2,706	2,652	2,646	31,613
tCO2e diesel	149	110	115	92	145	107	116	104	117	118	99	89	1,361
total tCO2e	64,776	46,594	40,823	40,219	43,392	39,073	34,637	39,103	31,481	30,821	38,435	31,150	480,506
tCO2e/tAl													2.93
LUACs													516,146

						average	baseline variability	confidence factor
						15.480	0.296	0.981
month	days	total consumption (MWh)	tonnes	fixed consumption (MWh) **	variable consumption (total - fixed)	variable energy baseline (MWh/t)	reduced energy consumption (MWh)	NGACs
Jul-06	31	233,161	14,203	13,595	219,566		297	271
Aug-06	31	234,006	14,324	13,595	220,411		1,325	1,208
Sep-06	30	227,119	13,918	13,157	213,962		1,489	1,357
Oct-06	31	234,583	14,817	13,595	220,987		8,380	7,637
Nov-06	30	227,708	14,442	13,157	214,552		9,011	8,212
Dec-06	31	237,001	14,711	13,595	223,406		4,321	3,938
							total	22,623

** fixed consumption = number of days per month * average daily fixed consumption

Annexure 2 – Detailed calculation of projected RET and CPRS cost impacts

The following table provides a more detailed version of the summary results included as tables 3.1 and 3.2 to this submission. The tables draw on audited financial information for the Kurri smelter, included at Annexure 3 to this submission.

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Registration No.
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Factor	*Unit*	Value
Production volume	*tAl/year*	173,000
REC Price	*$ real (2009)*	57
Carbon price	*$ real (2009)*	40.00
EITE Protection level	*%*	90%
Carbon production contribution	*% pa*	1.3%
Kurri direct emissions intensity	*tCO2-e/tAl*	2.25
Industry direct emissions intensity	*tCO2-e/tAl*	2.00
Kurri electricity intensity	*MWh/tAl*	16.15
Industry electricity intensity	*MWh/tAl*	15.00
Kurri electricity emissions intensity	*tCO2-e/MWh*	0.91
Electricity Factor		0.91

		2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*	*2019*	*2020*	*2021*	*2022*	*2023*	*2024*	*2025*	*2026*	*2027*	*2028*	*2029*	*2030*
CPRS Costs																						
Indirect																						
EITE Allocation	*Permits/tAl*		12.31	12.15	11.99	11.84	11.68	11.53	11.38	11.23	11.09	10.94	10.80	10.66	10.52	10.39	10.25	10.12	9.99	9.86	9.73	9.60
Actual liability	*Permits/tAl*		14.73	14.73	14.73	14.73	14.73	14.73	14.73	14.73	14.73	14.73	14.73	14.73	14.73	14.73	14.73	14.73	14.73	14.73	14.73	14.73
Variance	*Permits/tAl*		2.42	2.58	2.73	2.89	3.04	3.20	3.35	3.49	3.64	3.78	3.93	4.07	4.21	4.34	4.48	4.61	4.74	4.87	5.00	5.13
Net Cost	*$/tAl*		96.67	103.07	109.39	115.63	121.79	127.86	133.86	139.78	145.62	151.39	157.08	162.69	168.24	173.71	179.11	184.44	189.70	194.89	200.02	205.08
Indirect CPRS Costs	*AU$ millions*		**16.7**	**17.8**	**18.9**	**20.0**	**21.1**	**22.1**	**23.2**	**24.2**	**25.2**	**26.2**	**27.2**	**28.1**	**29.1**	**30.1**	**31.0**	**31.9**	**32.8**	**33.7**	**34.6**	**35.5**
Direct																						
EITE Allocation	*Permits/tAl*		1.80	1.78	1.75	1.73	1.71	1.69	1.66	1.64	1.62	1.60	1.58	1.56	1.54	1.52	1.50	1.48	1.46	1.44	1.42	1.40
Actual Liability	*Permits/tAl*		2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
Variance	*Permits/tAl*		0.45	0.47	0.50	0.52	0.54	0.56	0.59	0.61	0.63	0.65	0.67	0.69	0.71	0.73	0.75	0.77	0.79	0.81	0.83	0.85
Net Cost	*$/tAl*		18.00	18.94	19.86	20.77	21.67	22.56	23.44	24.30	25.16	26.00	26.83	27.65	28.46	29.26	30.05	30.83	31.60	32.36	33.11	33.85
Direct CPRS Costs	*AU$ millions*		**3.1**	**3.3**	**3.4**	**3.6**	**3.7**	**3.9**	**4.1**	**4.2**	**4.4**	**4.5**	**4.6**	**4.8**	**4.9**	**5.1**	**5.2**	**5.3**	**5.5**	**5.6**	**5.7**	**5.9**
Total CPRS Costs	*AU$ millions*		**19.8**	**21.1**	**22.4**	**23.6**	**24.8**	**26.0**	**27.2**	**28.4**	**29.5**	**30.7**	**31.8**	**32.9**	**34.0**	**35.1**	**36.2**	**37.2**	**38.3**	**39.3**	**40.3**	**41.3**
RET Costs																						
REC Target	*GWh pa*	12,500	14,400	16,300	18,200	20,100	22,000	26,600	31,200	35,800	40,400	45,000	45,000	45,000	45,000	45,000	32,500	30,600	28,700	26,800	24,900	23,000
Renewable Power Percentage	*%*	5.5%	6.1%	6.8%	7.3%	7.9%	8.4%	9.9%	11.3%	12.6%	13.8%	15.0%	14.6%	14.2%	13.8%	13.5%	9.5%	8.7%	7.9%	7.2%	6.5%	5.8%
REC Cost/MWh consumed	*$*	3.12	3.49	3.85	4.18	4.50	4.79	5.64	6.43	7.18	7.89	8.55	8.32	8.10	7.88	7.67	5.39	4.94	4.51	4.10	3.71	3.33
REC Cost/tAl	*$*	50.33	56.42	62.16	67.55	72.60	77.34	91.01	103.89	116.01	127.42	138.13	134.43	130.83	127.33	123.92	87.10	79.82	72.86	66.21	59.87	53.82
Total RET Cost	*AU$ millions*	**8.7**	**9.8**	**10.8**	**11.7**	**12.6**	**13.4**	**15.7**	**18.0**	**20.1**	**22.0**	**23.9**	**23.3**	**22.6**	**22.0**	**21.4**	**15.1**	**13.8**	**12.6**	**11.5**	**10.4**	**9.3**
Total Environmental costs	*AU$ millions*	**8.7**	**29.6**	**31.9**	**34.0**	**36.2**	**38.2**	**41.8**	**45.2**	**48.5**	**51.6**	**54.6**	**55.1**	**55.6**	**56.1**	**56.6**	**51.3**	**51.1**	**50.9**	**50.8**	**50.7**	**50.6**

Historical profit before tax	*AU$ millions*	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
RET Cost as a percentage of historical profit before tax		14.0%	15.7%	17.3%	18.8%	20.3%	21.6%	25.4%	29.0%	32.4%	35.6%	38.5%	37.5%	36.5%	35.5%	34.6%	24.3%	22.3%	20.3%	18.5%	16.7%	15.0%
CPRS Cost as a percentage of historical profit before tax		0.0%	32.0%	34.0%	36.1%	38.1%	40.0%	42.0%	43.9%	45.8%	47.7%	49.5%	51.3%	53.1%	54.9%	56.6%	58.4%	60.1%	61.8%	63.4%	65.1%	66.7%
percentage of historical profit		**14.0%**	**47.7%**	**51.4%**	**54.9%**	**58.3%**	**61.6%**	**67.4%**	**72.9%**	**78.2%**	**83.2%**	**88.0%**	**88.8%**	**89.6%**	**90.4%**	**91.2%**	**82.7%**	**82.3%**	**82.1%**	**81.9%**	**81.8%**	**81.7%**

Registration No.
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Annexure 3 – Audited Financial Statements

The following pages provide a summary table and relevant extracts from the audited financial statements for Hydro Aluminium Kurri Kurri Pty Limited, 100% owner of the Kurri aluminium smelter. Full versions of the financial statements are publicly available from the Australian Securities and Investment Commission.

Hydro Aluminium Kurri Kurri Pty Limited

Smelter results 2001-2007

	AUD millions								
Year*	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007****	**2008**	**Average*****
Revenue from sale of goods	**474**	**406**	**383**	**409**	**447**	**664**	**713**	Not yet publicly available information	**514**
Cost of sales									
Raw Materials	(263)	(256)	(268)	(280)	(274)	(415)	(356)		
Change in own inventories	(12)	(6)	(2)	11	5	37	(37)		
Wages and Salaries	(42)	(46)	(62)	(76)	(91)	(88)	(90)		
Depreciation	(31)	(29)	(27)	(27)	(45)	(47)	(60)		
Total	**(348)**	**(338)**	**(358)**	**(372)**	**(405)**	**(513)**	**(543)**		
Net foreign exchange gain/loss	(43)	35	28	(6)	4	(1)	-		
Other expenses from ordinary activities	(31)	(20)	(11)	(23)	(34)	(49)	(38)		
Profit from ordinary activities before Income Tax Expense	**52**	**83**	**42**	**9**	**12**	**102**	**132**		**62.0**
Production (tonnes)	151,268	154,517	156,109	154,830	151,462	163,861	173,226	173,357	
Average LME USD/tonne	1,454	1,364	1,429	1,722	1,900	2,596	2,662	2,681	2,002 (volume weighted ave)
Average USD exchange rate:	0.5178	0.5441	0.6532	0.7362	0.7623	0.7536	0.8395	0.848	

* Hydro operates on a 31 Dec financial year end, therefore the years labelled above denote calendar and Hydro financial years.

** From 1 Januray 2007, Hydro's audited accounts have been presented in US dollars. In this table, 2007 results have been converted to Australian dollars for comparison purposes with prior years only.

*** Hydro has included 2008 financial results when calculating average profits over the period. However, 2008 financial results are not yet publicly available therefore they have not been shown in this table.

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Registration No.
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Extract from 2007 Financial Statements

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Registration No.
ABN 55 093 266 221

Hydro Aluminium Kurri Kurri Pty Limited ACN 093 266 221
Annual Report – 31 December 2007

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FORM 388 COPY OF FINANCIAL STATEMENTS AND REPORTS

Robert Grandidge
Company Secretary

Hydro Aluminium Kurri Kurri Pty Limited ACN 093 266 221
Directors' report

The directors present their report on the company for the year ended 31 December 2007.

Directors
The following persons were directors of the company during the whole of the financial year and up to the date of this report:

T Mellerud
H Aasheim
K Austreid was appointed a director on 29 January 2007 and continues in office at the date of this report.
TP Johansen was appointed a director on 29 January 2007 and continues in office at the date of this report.

Principal activities
The company's principal activity during the year consisted of aluminium smelting and producing a range of value added ingot products.

Dividends
The directors do not recommend the payment of a dividend for the current year (2006: nil).

Review of operations	**2007 $'000 USD**	**2006 $'000 USD**
Profit from ordinary activities after income tax expense	**112,050**	**73,551**

The 2007 result was impacted by the following;

- Profit from ordinary activities after income tax expense increased by 52% from $73,551k in 2006 to $112,050k in 2007. This increase was the result of strong metal prices, record production and reduction of the 2006 finished inventory build which resulted in a 26% increase in revenue from the sale of goods.
- Increased raw material costs, especially alumina.
- An 11.4% increase in the average foreign exchange rate between the Australian dollar (AUD) and United states of America dollar (USD) to 0.839 from 0.753 in 2006.
- Income tax expense as a percentage of profit from ordinary activities before tax increased to 28% in 2007 compared to 4% in 2006. This is primarily the result of currency fluctuation in the calculation of deferred tax balances (due to the USD functional currency) in 2006. The adoption of a USD functional currency for tax from 1 January 2007 has significantly reduced the impact of exchange rate fluctuations on income tax expense. It will also mean that income tax expense and accounting profit are more closely aligned.

Matters subsequent to the end of the financial year
With the exception of the items listed below there has not been any matter or circumstance occurring subsequent to the end of financial year that has significantly affected, or may significantly affect, the operations of the company, the results of the those operations, or state of affairs of the company in future financial years.

Approval by Hydro's Corporate Management Board of AUD 77.2 million switchyard upgrade investment which will ensure Kurri Kurri's current production levels can be met more reliably and efficiently. The project is scheduled for February 2011 completion and will improve efficiency and reduce energy losses in feeding power to the smelter.

The Australian Federal Governments issued its Carbon Pollution Reduction Scheme Green Paper on 16th July 2008. This Green Paper sets out the options and identifies the Governments preferred position on emissions trading. The Company is considering the impact of the proposal.

Likely developments and expected results of operations
The smelter's main focus in the near term is to consolidate operations and maximise production in the foreseeable future. The focus will be to improve OH&S performance, control costs and maximise production from existing smelter assets. Aluminium prices are expected to remain buoyant in 2008 however costs are also expected to rise as a result of a strengthening Australian dollar.

Further information on likely developments in the company's operations and the expected results of operations have not been included in this report because the directors believe it would be likely to result in unreasonable prejudice to the company.

Hydro Aluminium Kurri Kurri Pty Limited ACN 093 266 221
Directors' report

Significant changes in the state of affairs
There were no significant changes in the state of affairs of the entity during the financial year.

Environmental regulation

The company holds Environment Protection (EPL) and Environmentally Hazardous Chemicals (EHCL) Licenses with the New South Wales Department of Environment and Climate Change (DECC) for the smelter's operations. These licenses specify discharge limits and management, monitoring and reporting requirements for air, water and waste. To the best of the directors' knowledge, except for one exceedance of emission limits detailed below, all activities have been undertaken in compliance with the requirements of these licenses.

All information and reporting requirements under these licenses have been fully complied with within specified time frames, and additional copies supplied directly to the local community.

For 2007 smelter emissions were 154.6 tonnes of fluoride (licence limit 165.0 tonnes); 78.5 tonnes of coarse particles (licence limit 236.5 tonnes); 163.3 tonnes of fine particles (licence limit 311.1 tonnes); 38.46 tonnes nitrogen oxides (licence limit 35.66 tonnes); and 3,753 tonnes sulphur dioxide (licence limit 3,800 tonnes).

The recent conversion of a Casthouse homogenising furnace from electricity to natural gas resulted in the exceedance of the nitrogen oxides emission limit. DECC were notified of the likely exceedance in October 2007 with a subsequent EPL update request submitted in December 2007. An updated EPL containing the requested change was received in April 2008. Also included in the updated EPL were reduced particle limits reflecting the reductions in emissions following the conversion of Potline 1 to point break feed. The new limits are: nitrogen oxides 40.00 (previously 35.66) tonnes; coarse particles 100.0 (previously 236.5) tonnes; and fine particles 200.0 (previously 311.1) tonnes.

To meet 2007 compliance with the NSW Greenhouse Gas Abatement Scheme the company created and surrendered a total of 644,404 NSW Large User Abatement Certificates (LUACs) from reduced site greenhouse emissions and 6,682 NSW Greenhouse Gas Abatement Certificates (NGACs) from improved electrical efficiency.

To meet legislative compliance of the Federal Mandatory Renewable Energy Target (MRET) a total of 75,541 Renewable Energy Certificates (RECs) were purchased and transferred to Energy Australia for surrender.

Indemnification of officers and auditors
During the financial year, the company paid a premium in respect of a contract insuring the directors of the company (as named above), the company secretary, Mr R.D.Grandidge, and all executive officers of the company and of any related body corporate against a liability incurred as such a director, secretary or executive officer to the extent permitted by the Corporations Act 2001. The company has not otherwise, during or since the financial year, except to the extent permitted by law, indemnified or agreed to indemnify an officer or auditor of the company or of any related body corporate against a liability incurred as such an officer or auditor.

Rounding of amounts
The company is of a kind referred to in Class Order 98/0100 issued by the Australian Securities & Investments Commission, relating to the "rounding off" of amounts in the directors' report and financial report. Amounts in the directors' report and financial report have been rounded off in accordance with that Class Order to the nearest thousand dollars, or in certain cases, to the nearest dollar.

Auditor
Deloitte Touche Tohmatsu is in office in accordance with section 327 of the Corporations Act 2001.

Auditors Independence Declaration
The Auditor's Independence Declaration is included on page 28 of the Annual Report.

This report is made in accordance with a resolution of the directors.

K Austreid Director
25 August 2008

Hydro Aluminium Kurri Kurri Pty Limited ACN 093 266 221
Special Purpose Financial Report – 31 December 2007

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This financial report covers Hydro Aluminium Kurri Kurri Pty Limited as an individual entity.

Hydro Aluminium Kurri Kurri Pty Limited is a company limited by shares, incorporated and domiciled in Australia. Its registered office and principal place of business is:

Hydro Aluminium Kurri Kurri Pty Limited
Hart Road
Loxford NSW 2327.

A description of the nature of the company's operations and its principal activities is included in the directors' report on pages 2 – 3.

Hydro Auminium Kurri Kurri Pty Limited ACN 093 266 221
Income Statement
For the year ended 31 December 2007

	Notes	2007 $'000 USD	2006 $'000 USD
Revenue from ordinary activities	2	**630,744**	**500,591**
Changes in inventories of finished goods and work in progress		(25,606)	28,021
Raw materials & electricity		(311,829)	(312,167)
Salaries, wages & hired services		(41,380)	(37,669)
Depreciation & amortisation	3	(39,430)	(35,201)
Share of loss of associates and jointly controlled entities accounted for using the equity method	3	(486)	(486)
Finance costs	3	(595)	(21,907)
Net foreign exchange gains / (losses)		10,024	(758)
Other expenses from ordinary activities		(66,649)	(43,809)
Profit from ordinary activities before income tax expense		**154,793**	**76,615**
Income tax credit / (expense)	4	(42,743)	(3,064)
Profit from ordinary activities after income tax		**112,050**	**73,551**
Net profit attributable to members of Hydro Aluminium Kurri Kurri Pty Limited	21	**112,050**	**73,551**

The above income statement should be read in conjunction with the accompanying notes included on pages 6 to 24

Extract from 2006 Financial Statements
(also showing 2005 results)

Hydro Aluminium Kurri Kurri Pty Ltd
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Hydro Aluminium Kurri Kurri Pty Limited ACN 093 266 221
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FORM 388 COPY OF FINANCIAL STATEMENTS AND REPORTS

Robert Grandidge
Company Secretary

Hydro Aluminium Kurri Kurri Pty Limited
Directors' report

The directors present their report on the company for the year ended 31 December 2006.

Directors
The following persons were directors of the company during the whole of the financial year and up to the date of this report:

T Mellerud
H Aasheim

T K Coombe was a director from the beginning of the financial year until his resignation on 31 October 2006.
H Lehman was a director from the beginning of the financial year until his resignation on 31 October 2006.
K Austreid was appointed a director on 29 January 2007 and continues in office at the date of this report.
TP Johansen was appointed a director on 29 January 2007 and continues in office at the date of this report.

Principal activities
The company's principal activity during the year consisted of aluminium smelting and producing a range of value added ingot products.

Dividends
The directors do not recommend the payment of a dividend for the current year (2005: nil).

Review of operations

	2006 $'000	2005 $'000
Profit from ordinary activities after income tax expense	97,615	5,673

The 2006 result was impacted by the following;

- Profit from ordinary activities after income tax expense increased by 1,621% from $5,673k in 2005 to $97,615k in 2006. This increase was the result of strong metal prices and record production which resulted in a 48% increase in revenue from the sale of goods.
- Increased raw material costs, especially alumina
- Income tax expense as a percentage of profit from ordinary activities before tax decreased to 4% in 2006 compared to 51% in 2005. This is primarily the result of currency fluctuation in the calculation of deferred tax balances (due to the USD functional currency). The calculation of tax values, which are used to calculate deferred tax balances, involves spot converting AUD denominated tax values to USD. The 8% appreciation of the Australian dollar over the course of the year resulted in a significant appreciation in deferred tax assets and a corresponding income tax credit that lead to the low income tax expense. The adoption of a USD functional currency for tax from 1 January 2007 will significantly reduce the impact of exchange rate fluctuations on income tax expense. It will also mean that income tax expense and accounting profit are more closely aligned.

Matters subsequent to the end of the financial year
No matters or circumstances have arisen since 31 December 2006 that have significantly affected, or may significantly affect:
(a) the company's operations in future financial years, or
(b) the results of those operations in future financial years, or
(c) the company's state of affairs in future financial years.

Likely developments and expected results of operations
The smelter's main focus in the near term is to consolidate operations and maximise production in the foreseeable future. The focus will be to improve OH&S performance, control costs and maximise production from existing smelter assets. Aluminium price are expected to remain buoyant in 2007 however costs are also expected to rise as a result of a strengthening Australian dollar.

Further information on likely developments in the company's operations and the expected results of operations have not been included in this report because the directors believe it would be likely to result in unreasonable prejudice to the company.

Hydro Aluminium Kurri Kurri Pty Limited
Directors' report

Significant changes in the state of affairs
There were no significant changes in the state of affairs of the entity during the financial year.

Environmental regulation
The company holds Environment Protection and Environmentally Hazardous Chemicals Licenses from the New South Wales Department of Environment and Climate Change (DECC) for the smelter's operations. These licenses specify discharge limits and management, monitoring and reporting requirements for air, water and waste. To the best of the directors' knowledge all activities have been undertaken in compliance with the requirements of these licenses.

All information and reporting requirements under these licenses have been fully complied with within specified time frames, and additional copies supplied directly to the local community.

For 2006 smelter emissions were 157.8 tonnes of fluoride (licence limit 165.0 tonnes); 100.9 tonnes of coarse particles (licence limit 236.5 tonnes); 203.4 tonnes of fine particles (licence limit 311.1 tonnes); 34.44 tonnes nitrogen oxides (licence limit 35.66 tonnes); and 3,381 tonnes sulphur dioxide (licence limit 3,800 tonnes).

To meet 2006 compliance with the NSW Greenhouse Gas Abatement Scheme the company was able to create and surrender a total of 516,146 NSW Large User Abatement Certificates (LUACs) from reduced site greenhouse emissions. The company also supplied an Energy Savings Action Plan (ESAP) to the NSW Department of Energy, Utilities and Sustainability (DEUS) as mandated by newly introduced legislation.

From July 2006 the company has assumed management of the purchase of Renewable Energy Certificates (RECs) required for surrender to Energy Australia to meet legislative requirements of the Federal Mandatory Renewable Energy Target (MRET).

Indemnification of officers and auditors
During the financial year, the company paid a premium in respect of a contract insuring the directors of the company (as named above), the company secretary, Mr R.D.Grandidge, and all executive officers of the company and of any related body corporate against a liability incurred as such a director, secretary or executive officer to the extent permitted by the Corporations Act 2001. The company has not otherwise, during or since the financial year, except to the extent permitted by law, indemnified or agreed to indemnify an officer or auditor of the company or of any related body corporate against a liability incurred as such an officer or auditor.

Rounding of amounts
The company is of a kind referred to in Class Order 98/0100 issued by the Australian Securities & Investments Commission, relating to the "rounding off" of amounts in the directors' report and financial report. Amounts in the directors' report and financial report have been rounded off in accordance with that Class Order to the nearest thousand dollars, or in certain cases, to the nearest dollar.

Auditor
Deloitte Touche Tohmatsu is in office in accordance with section 327 of the Corporations Act 2001.
Ernst & Young resigned from office during the year.

Auditors Independence Declaration
The Auditor's Independence Declaration is included on page 34 of the Annual Report.

This report is made in accordance with a resolution of the directors.

K Austreid
Director

10 September 2007

Hydro Aluminium Kurri Kurri Pty Limited ACN 093 266 221
Financial Report – 31 December 2006

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Hydro Aluminium Kurri Kurri Pty Limited is a company limited by shares, incorporated and domiciled in Australia. Its registered office and principal place of business is:

Hydro Aluminium Kurri Kurri Pty Limited
Hart Road
Loxford NSW 2327.

A description of the nature of the company's operations and its principal activities is included in the directors' report on pages 2 – 3.

Hydro Auminium Kurri Kurri Pty Limited
Income Statement
For the year ended 31 December 2006

	Notes	2006 $'000	2005 $'000
Revenue from ordinary activities	2	**664,366**	**446,583**
Changes in inventories		37,188	4,519
Raw materials & electricity		(414,942)	(273,540)
Salaries, wages & hired services		(88,405)	(90,564)
Depreciation & amortisation	3	(46,718)	(44,971)
Finance costs	3	(29,074)	(179)
Net foreign exchange gains / (losses)		(1,005)	4,020
Other expenses from ordinary activities		(19,728)	(34,185)
Profit from ordinary activities before income tax expense		**101,682**	**11,683**
Income tax credit / (expense)	4	(4,067)	(6,010)
Profit from ordinary activities after income tax		**97,615**	**5,673**
Net profit attributable to members of Hydro Aluminium Kurri Kurri Pty Limited	21	**97,615**	**5,673**

The above Income Statement should be read in conjunction with the accompanying notes on pages 9 to 30.

Extract from 2004 Financial Statements
(also showing 2003 results)

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Hydro Aluminium Kurri Kurri Pty Limited ACN 093 266 221
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Robert Grandidge
Company Secretary

Hydro Aluminium Kurri Kurri Pty Limited
Directors' report

The directors present their report on the company for the year ended 31 December 2004.

Directors
The following persons were directors of the company during the whole of the financial year and up to the date of this report:

T K Coombe

B O Hammerstein was a director from the beginning of the financial year until his resignation on 22 April 2004.
J Kallmeyer was a director from the beginning of the financial year until his resignation on 21 March 2005.
H Lehman was appointed a director on 13 December 2004 and continues in office at the date of this report.
H Aasheim was appointed a director on 13 December 2004 and continues in office at the date of this report.
T Mellerud was appointed a director on 21 March 2005 and continues in office at the date of this report.
J Schick was appointed a director on 22 April 2004 until his resignation on 13 December 2004.

Principal activities
The company's principal activity during the year consisted of aluminium smelting producing a range of value added ingot products.

Dividends
The directors do not recommend the payment of a dividend for the current year.

Review of operations

	2004 $'000	2003 $'000
Profit from ordinary activities after income tax expense	**10,706**	**27,114**

The 2004 result was impacted by the following;

- The smelter achieved metal production in 2004 of 154,776 tonnes, a decrease of 1,333 tonnes.
- Profit from ordinary activities before income tax expense declined by 78.9% compared to 2003. This decline was primarily the result of net foreign exchange losses in 2004 of $5,582k compared to net gains of $27,734k in 2003. Once the impact of net foreign exchange gains and losses is eliminated, there was an improvement in operating profit before tax of 18.7% which was primarily the result of stronger sales revenue.
- Revenues from operating activities increased 6.8% in 2004 compared to the prior year. While the average aluminium base price increased by 20.2% from US$1,432 to US$1,721. The stronger aluminium price was offset by a strong Australian Dollar (against the US Dollar) during the year.
- The 2004 income tax credit of $1,841k was recognised compared to an expense in the prior year of $14,840k. The income tax credit in 2004 is a result of the tax benefit of tax losses transferred from a group company of $13,984k (tax effect of $4,195k).

Matters subsequent to the end of the financial year
No matters or circumstances have arisen since 31 December 2004 that have significantly affected, or may significantly affect:
(a) the company's operations in future financial years, or
(b) the results of those operations in future financial years, or
(c) the company's state of affairs in future financial years.

Likely developments and expected results of operations
The ongoing implementation of major projects to both upgrade the smelter's technology and modernise existing facilities are expected to increase annual production capacity by around 17,000 tonnes per annum 2005/06. Despite a strong aluminium price in early 2005, it has not been enough to off-set the continued strength of the Australian dollar against the US dollar. The strength of the Australian dollar is therefore expected to have a negative impact on the performance of the smelter in 2005.

Further information on likely developments in the company's operations and the expected results of operations have not been included in this report because the directors believe it would be likely to result in unreasonable prejudice to the company.

Hydro Aluminium Kurri Kurri Pty Limited
Directors' report

Significant changes in the state of affairs
There were no significant changes in the state of affairs of the consolidated entity during the financial year.

Environmental regulation
The company holds Environment Protection and Environmentally Hazardous Chemicals Licenses from the New South Wales Environment Protection Authority (EPA) for the smelter's operations. These licenses specify discharge limits and management, monitoring and reporting requirements for air, water and waste. To the best of the directors' knowledge all activities have been undertaken in compliance with the requirements of these licenses.

All information and reporting requirements under these licenses have been fully complied with within specified time frames, and additional copies supplied directly to the local community.

In 2003 the EPA reviewed the principal environmental performance indicators for the smelter, extending these to annual atmospheric emissions of fluoride, coarse and fine particles, nitrogen oxides and sulphur dioxide.

During 2004 a change in the alumina quality supplied to the smelter resulted in elevated particulate emissions from the potline 1 building roof ventilators. This issue was discussed with the EPA through the year resulting in the smelter requesting an increase in the licence limits for coarse and fine particulates. The EPA approved the requested higher limits in November 2004.

For 2004 smelter emissions were 149.8 tonnes of fluoride (licence limit 165.0 tonnes); 233.3 tonnes of coarse particles (increased licence limit 236.5 tonnes); 309.8 tonnes of fine particles (increased licence limit 311.1 tonnes); 32.64 tonnes nitrogen oxides (licence limit 35.66 tonnes); and 3,645 tonnes sulphur dioxide (licence limit 3,800 tonnes).

In August 2004 the EPA conducted a Load Based Licence (LBL) audit of the smelter's 2003 EPA Annual Return. Three (3) minor non-compliances were identified during the audit; two (2) of these [a calculation procedure and submission for approval of mass balance calculation] were corrected in 2004, the third [analytical laboratory accreditation] will be corrected in 2005.

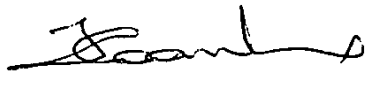
Insurance of officers
During the financial year, the company was covered by group policies to insure the directors, secretary and senior management of the company. It is not possible to disclose the premium paid for the insurance of officers as this information is not separately disclosed in the policy.

The liabilities insured are legal costs that may be incurred in defending civil or criminal proceedings that may be brought against the officers in their capacity as officers of the company.

Rounding of amounts
The company is of a kind referred to in Class Order 98/0100 issued by the Australian Securities & Investments Commission, relating to the "rounding off" of amounts in the directors' report and financial report. Amounts in the directors' report and financial report have been rounded off in accordance with that Class Order to the nearest thousand dollars, or in certain cases, to the nearest dollar.

Auditor
Ernst & Young continues in office in accordance with section 327 of the Corporations Act 2001.

This report is made in accordance with a resolution of the directors.



T K Coombe
Director

11 October 2005

Hydro Aluminium Kurri Kurri Pty Limited ACN 093 266 221
Financial report – 31 December 2004

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This financial report covers Hydro Aluminium Kurri Kurri Pty Limited as an individual entity.

Hydro Aluminium Kurri Kurri Pty Limited is a company limited by shares, incorporated and domiciled in Australia. Its registered office and principal place of business is:

Hydro Aluminium Kurri Kurri Pty Limited
Hart Road
Loxford NSW 2327.

A description of the nature of the company's operations and its principal activities is included in the directors' report on pages 2 – 3.

Hydro Auminium Kurri Kurri Pty Limited
Statement of financial performance
For the year ended 31 December 2004

	Notes	2004 $'000	2003 $'000
Revenue from ordinary activities	2	**409,497**	**383,465**
Changes in inventories		10,805	(1,890)
Raw materials & electricity		(279,763)	(267,919)
Salaries, wages & hired services		(76,342)	(61,843)
Depreciation & amortisation	3	(26,604)	(26,619)
Borrowing costs	3	(181)	(28)
Net foreign exchange gains / (losses)	3	(5,582)	27,734
Other expenses from ordinary activities		(22,965)	(10,946)
Profit from ordinary activities before income tax expense		**8,865**	**41,954**
Income tax credit / (expense)	4	1,841	(14,840)
Profit from ordinary activities after income tax		**10,706**	**27,114**
Net profit attributable to members of Hydro Aluminium Kurri Kurri Pty Limited	22	**10,706**	**27,114**
Total changes in equity other than those resulting from transactions with owners as owners attributable to members of Hydro Aluminium Kurri Kurri Pty Limited		**10,706**	**27,114**

The above statement of financial performance should be read in conjunction with the accompanying notes

Extract from 2002 Financial Statements
(also showing 2001 results)

Hydro Aluminium Kurri Kurri Pty Ltd
Hart Road,
Loxford, via Kurri Kurri NSW 2327
Australia

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Registration No.
ABN 55 093 266 221

Hydro Aluminium Kurri Kurri Pty Limited ACN 093 266 221
(Formerly VAW Kurri Kurri Pty Limited)
Annual report – 31 December 2002

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FORM 388 COPY OF FINANCIAL STATEMENTS AND REPORTS

Robert Grandidge
Company Secretary

Hydro Aluminium Kurri Kurri Pty Limited
(Formerly VAW Kurri Kurri Pty Limited)
Directors' report

Your directors present their report on the company for the year ended 31 December 2002.

Directors
The following persons were directors of the company during the whole of the financial year and up to the date of this report:

T K Coombe
B O Hammerstein.

J H Kallmeyer was appointed director effective 1 February 2002.

Principal activities
The company's principal activity during the year consisted of aluminium smelting producing a range of value added ingot products.

Dividends
The directors do not recommend the payment of a dividend for the current year.

Review of operations

	2002 $'000	2001 $'000
Profit from ordinary activities after income tax expense	**58,872**	**40,806**

The 2002 result was impacted by the following;

- Gross profit percentage declined 14% in 2002 from 24% to 10% as a result of lower selling prices and slightly higher production costs. The average base price for aluminium fell 7.1% from US$1,443 to US$1,340. The decline in aluminium prices was further compounded by the appreciation of the Australian dollar against the US dollar in 2002.
- The smelter achieved record metal production in 2002 of 154,650 tonnes, an increase of 3,359 tonnes.
- While the cost of goods sold increased by 1.5% from $358.3 million to $363.8 million, the increase was less than the increase in production for the year.
- Net exchange gains on foreign exchange hedge contracts of $47.8 million (2001: losses of $45.9 million) resulted from the appreciation of the Australian dollar against the US dollar. These had a significant impact on the current year's profit from ordinary activities before income tax.
- The 2002 income tax expense equated to 29.3% of profit from ordinary activities before tax. This compared to a 21.9% in 2001. The 2001 tax expense benefited from the transfer of a $6.7 million tax loss from the parent entity for nil consideration.

Matters subsequent to the end of the financial year
No matters or circumstance that have arisen since 31 December 2002 that has significantly affected, or may significantly affect:
(a) the company's operations in future financial years, or
(b) the results of those operations in future financial years, or
(c) the company's state of affairs in future financial years.

Likely developments and expected results of operations
The implementation of major projects to both upgrade the smelter's technology and modernise existing facilities will continue throughout 2003. These projects are expected to increase annual production capacity by around 17,000 tonnes per annum by 2005. While the company has hedged the majority of its foreign currency exposure, there is still a significant position that is unhedged. The continued appreciation of the Australian dollar against the US dollar in 2003 is therefore expected to have a significant adverse impact on the performance of the smelter in 2003.

Further information on likely developments in the company's operations and the expected results of operations have not been included in this report because the directors believe it would be likely to result in unreasonable prejudice to the company.

Hydro Aluminium Kurri Kurri Pty Limited
(Formerly VAW Kurri Kurri Pty Limited)
Directors' report

Significant changes in the state of affairs
Significant changes in the state of affairs of the consolidated entity during the financial year were as follows;

On 15 March 2002, Norsk Hydro ASA acquired VAW group of companies comprising VAW Aluminium AG and its subsidiaries from Eon AG. As a result of the acquisition, the Norsk Hydro ASA became the new ultimate parent entity of the Company.

On 9 September 2002 the company changed its name from VAW Kurri Kurri Pty Limited to Hydro Aluminium Kurri Kurri Pty Limited.

Environmental regulation
The company holds Environment Protection and Environmentally Hazardous Chemicals Licenses from the New South Wales Environment Protection Authority (EPA) for the smelter's operations. These licenses specify discharge limits and management, monitoring and reporting requirements for air, water and waste. To the best of the directors' knowledge all activities have been undertaken in compliance with the requirements of these licenses.

All information and reporting requirements under these licenses have been fully complied with within specified time frames, and additional copies supplied directly to the local community.

The principal environmental performance indicator for the smelter is the annual atmospheric emission of fluoride. In 2001 the smelter emitted 118 tonnes of fluoride, well below the licence limit of 175 tonnes.
In April 2002 the EPA issued a notice to develop an action plan by 1 July 2002 to reduce the frequency of anode baking furnace ductwork fires. The plan was finalised and forwarded to the EPA on 21 June 2002 and the actions identified put into place from July 2002.

Insurance of officers
During the financial year, the company was covered by group policies to insure the directors, secretary and senior management of the company. It is not possible to disclose the premium paid for the insurance of officers as this information is not separately disclosed in the policy.

The liabilities insured are legal costs that may be incurred in defending civil or criminal proceedings that may be brought against the officers in their capacity as officers of the company.

Rounding of amounts
The company is of a kind referred to in Class Order 98/0100 issued by the Australian Securities & Investments Commission, relating to the "rounding off" of amounts in the directors' report and financial report. Amounts in the directors' report and financial report have been rounded off in accordance with that Class Order to the nearest thousand dollars, or in certain cases, to the nearest dollar.

Auditor
Ernst & Young were appointed as auditors of the Company effective from 27 August 2002 after the resignation of PricewaterhouseCoopers from office. The appointment and resignation were in accordance with section 327 of the Corporations Act 2001.

This report is made in accordance with a resolution of the directors.

T K Coombe
Director

B O Hammerstein
Director

14 May 2003

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Hydro Aluminium Kurri Kurri Pty Limited
Formerly VAW Kurri Kurri Pty Limited
Statement of Financial Position

31 December 2002

	Notes	2002 $'000	2001 $'000
Revenue from ordinary activities	2	**406,327**	**474,001**
Changes in inventories		(6,498)	(11,802)
Raw materials		(255,975)	(262,866)
Salaries & wages		(46,117)	(42,281)
Depreciation & amortisation	3	(29,110)	(30,856)
Borrowing costs	3	(35)	(28)
Net foreign exchange gains/ (losses)	3	34,949	(43,078)
Other expenses from ordinary activities		(20,199)	(30,834)
Profit from ordinary activities before income tax expense		**83,342**	**52,256**
Income tax expense	4	24,470	11,450
Profit from ordinary activities after income tax		**58,872**	**40,806**
Net profit attributable to members of Hydro Aluminium Kurri Kurri Pty Limited	23	**58,872**	**40,806**
Total changes in equity other than those resulting from transactions with owners as owners attributable to members of Hydro Aluminium Kurri Kurri Pty Limited		**58,872**	**40,806**

The above statement of financial performance should be read in conjunction with the accompanying notes