

## Department of Climate Change and Energy Efficiency

### Submission Cover Sheet: Clean Energy Legislative Package

<b>Overview</b> This submission cover sheet should be used to provide comments on the Clean Energy Legislative Package.	
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<b>Submission Instructions</b> Submissions should be made by <b>5pm on Monday, 22 August 2011</b> . The Department reserves the right not to consider late submissions. Where possible, submissions should be sent electronically, preferably in Microsoft Word or other text based formats, to the email address <a href="mailto:cleanenergybills@climatechange.gov.au">cleanenergybills@climatechange.gov.au</a> Submissions may alternatively be sent to the postal address below to arrive by the due date. Carbon Price Legislation Branch Carbon Strategy and Markets Division Department of Climate Change and Energy Efficiency      GPO Box 854 CANBERRA ACT 2601	



## Submission to the Department of Climate Change and Energy Efficiency

Carbon Price Legislation Branch  
Carbon Strategy and Markets Division  
Department of Climate Change and Energy Efficiency  
GPO Box 854  
CANBERRA ACT 2601

By email to [cleanenergybills@climatechange.gov.au](mailto:cleanenergybills@climatechange.gov.au)

MAGNETITE NETWORK - MagNet

### SUBMISSION ON THE PROPOSED CLEAN ENERGY LEGISLATIVE PACKAGE

This consultation seeks views on whether:

- the drafting of the bills accurately reflect the policy set out in [Securing a clean energy future: The Australian Government's Climate Change Plan](#);
- the bills, as drafted, create any risk of unintended consequences; and
- the commentaries clearly explain the content of the bills.

#### Preamble

Thanks for this opportunity to submit MagNet's perspective.

MagNet would like to acknowledge the professionalism of the Department of Climate Change and Energy Efficiency (DCCEE) executives that we have been dealing with on a regular basis since 2009.

We remain keen to work with the Federal Government, its Multi Party Climate Change Committee (MPCCC) - if it is to continue and all legislators to find a constructive solution to the matters arising out of the proposed legislation that is both equitable and protects the integrity of any carbon pricing model and prospective emissions trading scheme.

We consider that there are some clear unintended consequences of this legislation that penalise emerging industries in general due to the rigid setting of activity definitions and baselines that do not enable any certainty around the ability to vary these in future as new industries and/or major projects that deviate from existing allocative baselines come on line. Emerging magnetite projects are vastly

different to the two existing producers that will provide the emissions data that will form the basis of set allocative baselines that will be used to benchmark all new producers.

Given that the legislation is to provide an interim pricing solution ahead of a full Emissions Trading Scheme in 2015 and the limited ability to predict the likelihood of mandated emissions reduction schemes in other relevant jurisdictions it is important to consider a way to ensure adequate industry assistance as soon as possible that will support this important new sector of the iron ore industry.

The trade exposed nature of magnetite and its overall lower emissions in steelmaking when compared to Direct Shipping Ore are being overlooked by this legislation and there has been a negative reaction to the proposed legislation by investors hence causing difficulties with investment attraction.

We recognise that some other countries do have carbon reduction legislation but note that many other countries that have magnetite resources and existing mines do not.

For this reason a mechanism to protect this emerging industry is critical to the establishment of many new projects that are still seeking major investment partners to develop very capital intensive projects.

Our emerging sector will create jobs in all States, including those hardest hit by any negative impact from this legislation.

It is worth recalling the MPCCC Principle regarding Competitiveness of Australian industries:  
**The overall package of carbon price design and associated assistance measures should take appropriate account of impacts on the competitiveness of all Australian industries, having regard to carbon price in other countries, while maintaining incentives to reduce pollution.**

It is also important to note that in its own key messages Government states:

- The Government is committed to supporting jobs and competitiveness as Australia moves to a clean energy future.
- A Jobs and Competitiveness Program will provide \$9.2 billion over the period to 2014-15 to assist the most emissions intensive activities in the economy that are exposed to international competition. This will support local jobs, encourage industry to invest in cleaner technologies and avoid 'carbon leakage' offshore.

### Key Submissions

- Effectively the failure to adequately assist the emerging magnetite producers can be attributed to the fact these mines are under construction and not yet in production and it is an unintended consequence that no provision is made for industry assistance. Industry assistance should be considered for emerging industries or at worst a clear legislative provision made to consider this when production starts.
- The production of magnetite concentrate and pellets in Australia is energy and emissions intensive as well as trade exposed.
- The use of magnetite in global steel making results in lower overall carbon emissions when compared to the use of traditional Direct Shipping Ore (DSO). Modelling commissioned by

MagNet and supplied to the DCCEE illustrates a net saving of 108kg of Co<sub>2</sub> per tonne of steel where that steel is produced from magnetite concentrate rather than Pilbara Fines DSO or hematite iron ore.

- To discourage magnetite production in Australia is to cause effective carbon leakage to other countries that are without effective emissions reduction schemes and clean energy sources that will have higher emissions than comparable generators in Australia.
- Magnetite and DSO have different chemical compositions – magnetite is exothermic and requires less energy in the steelmaking process but is emissions intensive when processed to make magnetite concentrate in Australia for export due to its energy intensive processing onshore.
- There are currently two major magnetite projects well into construction (in the Pilbara and MidWest) with estimated capital expenditure in excess of \$8 billion and many more either planned or seeking capital investment or in advanced pre-construction stages across regional Western Australia. Our 6 members have projects with a Capex well in excess of \$16 billion.
- Magnetite is a value adding long term jobs intensive industry with massive regional development benefits.
- The Magnetite Network cannot support any carbon pricing model that does not recognise our members' projects direct contribution to global carbon emission reduction and therefore puts this new industry at a competitive disadvantage with producers in other countries that do not have legislated carbon pollution reduction regimes.
- Magnetite has lower global carbon emissions than DSO in the steelmaking process and therefore would enjoy competitive advantage if there were an established global carbon trading scheme. Conversely a new carbon price regime in Australia will penalise a value adding industry with lower global emissions.
- Magnetite is emissions intensive and trade exposed, but currently is not formally recognised as an Energy Intensive Trade Exposed (EITE) Industry and hence is not yet in receipt of any industry assistance as negotiated in 2009 by other industries or provided for in the previous Emissions Trading Scheme or current Bills.
- The magnetite concentrate definition was only formalised in October, 2010. The two existing producers are yet to lodge data for a baseline to be set but even when this is done the baseline will not reflect the emissions of new projects and these are expected to have higher emissions than the existing producers.
- The activity definition and allocative baseline are based exclusively on the two existing producers that have small tonnages (4mtpa) when compared with the new West Australian projects. The new wave of magnetite producers will build projects that are on a much larger scale and have vastly different technical specifications so when benchmarking is complete it will not reflect the situation of these new projects. CITIC Pacific Mining Sino Iron project will export up to 24 mtpa after start up.

- It would be against the national interest to penalise an emerging industry that cuts global emissions while delivering new long term jobs in regional Australia and on shore value adding.
- **Solutions:** provide industry assistance until a global mandated emissions reduction regime exists.
- It is also vital to provide a mechanism to protect and consider emerging industries.
- A preferable way of dealing with the unintended consequences detailed above is to allow a new activity definition or clear non-discretionary re-visiting of baselines where there is a definite difference in emissions established. MagNet has proposed a new "Ultrafine " activity definition plus a mechanism to allow for baselines to be re-visited where new projects start production and have actual emissions data that varies from an established baseline.
- The current legislation does not provide enough clarity and certainty as to the mechanisms proposed for review of assistance pursuant to Productivity Commission Guidelines.
- A magnetite expert should be appointed to the Review Panel – see Table 13 – "at least two Associate Commissioners with experience in the markets and production of EITE products will take part in these Reviews" p112
- It is preferable to establish an "Emerging Industries Advisory Group" to fast track these Guidelines.

## Background

Until recently magnetite was not viewed favourably in Western Australia due to its low ore grade, but now at least 24 projects based on mining and processing magnetite iron ore are proposed, approved or under construction in Western Australia. I am in discussion with several other projects based in New South Wales and South Australia – projects also exist in Tasmania and Queensland.

The first of the new West Australian projects to come in to production will be CITIC Pacific Mining's Sino Iron project, worth around US\$5.2 billion, which plans to produce magnetite concentrate for export in first half 2012.

The Magnetite Network (MagNet) formed in 2009 and now represents six of the emerging magnetite producers plus the existing leading producer Grange Resources with its Tasmanian Savage River project that has been in production for more than 45 years.

- Atlas Iron
- CITIC Pacific Mining
- Extension Hill
- Gindalbie Metals
- Grange Resources
- Iron Ore Holdings

Member companies' projects alone will create about 12,000 jobs during construction and 4,280 direct operational jobs. Unlike traditional DSO, magnetite requires significant downstream processing in Australia before it can be exported. As well as creating significant flow-on economic and employment benefits, this will also result in investment in major new infrastructure. For example, the Sino Iron project includes a new port (the first in the Pilbara in 40 years), a 450 MW combined cycle gas-fired power station, and a 51 GL water desalination plant. The MidWest region projects underpin the development of the new Oakajee Port and will transform the region through massive job creation.

When compared to DSO this downstream processing results in increased greenhouse emissions in Australia, however magnetite has a further benefit in that when it is used in steel making it more than offsets these emissions on a whole life cycle basis due to its improved efficiency and different chemical composition, meaning it has an overall emissions reduction benefit. This is the value adding industry successive governments have sought to encourage onshore.

### Policy Concerns

A summary of policy concerns previously articulated relating to the setting of the activity definition process and relative to EITE assessment as provided under the previous proposed CPRS legislation remains relevant. These include, but are not restricted to the following issues:

- No recognition for global savings in greenhouse gases when looking at whole life cycle of steelmaking;
- WA emerging magnetite producers are not currently producing so no output data yet available but will be governed by allocative baselines;
- DCCEE assessing **existing producers** only  
Savage River in Tasmania and OneSteel in SA – neither is a very large producer either in tonnage or exporter when compared with WA emerging producers;
- WA magnetite is much lower grade than the average reached when looking at these two producers so the allocative baseline to be set will penalise all new projects;
- More effort is required to grind a substantially harder material;
- The ore needs to be ground finer to extract smaller grain size magnetite, resulting in a substantially finer concentrate product (~28 micron particle size for CITIC Pacific Mining compared to ~45 for Savage River);

- It is estimated that emerging producers from our membership will therefore be significantly more emissions intensive per tonne of concentrate than the existing projects. Other future producers will face similar challenges both in Western Australia and several other states;
- The end result is that the under the Bill the baseline established by existing producers will not provide adequate levels of assistance for the emerging magnetite industry, and more significantly has the potential to prevent investment in an industry with substantial economic benefits and lower global emissions., new entities conducting an existing EITE activity will receive the same assistance as existing entities conducting the same activity;
- Inadequate mechanism to vary 'allocative baseline' for permits for new market entrants;
- No mechanism under CPRS to assess new or emerging industries as EITE; and
- Some processes are not used by current producers and therefore preclude consideration e.g. the large desalination plant that CITIC Pacific Mining is installing or long slurry lines.

MagNet acknowledges that there is a very limited legislative mechanism to re-visit allocative baselines for new projects where there is some marked difference to existing producer's projects in terms of Productivity Commission reviews. It seeks a way to be involved in defining the Guidelines. It is preferable to establish an "Emerging Industries Advisory Group" to fast track these Guidelines.

### **Review Provisions**

The 5.2.3 provision where a "firm" may request to have the impact of the carbon price on their sector assessed is not very helpful as:

It will not allow projects that are unable to attract funding to get to review the impact of the scheme on investment attraction;

The guidelines are yet to be written and will require the exercise of discretion;

There is a need to get more certainty around how these will operate;

There is a need to ensure that the Productivity Commission has adequate representatives with direct experience of the magnetite and/or mining sector;

The Table 13: Productivity Commission Reviews detail (p111 Securing a Clean Energy Future) is supported but does not go far enough and should guarantee review for large new entrants to the magnetite sector.

### **Further Background - Technical Issues Relating to Current Activity Definition for Magnetite Concentrate**

For context setting, the magnetite concentrate production process involves the mixing of water and ore in the grinding process, the separation of magnetite mineral grains in the ore from other mineral grains in the ore using magnets, then the removal of the added water from the magnetite mineral grains to produce saleable magnetite concentrate. This final step is an essential and integral part of the magnetite concentrate production process, whether for export or for use as feedstock for a domestic pellet plant (as is the case for Grange Resources and OneSteel).

Therefore it is essential that desalination of water, transport of slurry and filtration are deemed to be part of the magnetite concentrate activity, and/or part of the magnetite pelletisation activity.

Given that all of our member companies propose to export at least a portion of product as concentrate it is critical for this portion of the production process to be recognised.

The grinding of magnetite ore requires a large amount of energy. For example the Sino Iron project is constructing six mill lines to process its ore. Each of these mill lines will require 44 MW of electricity. The Sino Iron project also has energy requirements associated with desalinating water and pumping concentrate slurry to its port.

However existing projects do not use desalination so it is not considered to be a part of the activity definition.

### **Lower Global Emissions – More Detail**

Importantly these early emissions are more than offset by savings in steel production. The current legislation does not allow credit for this which is perverse given the stated policy objective to reduce the global environmental harm caused by climate change.

Magnetite ( $\text{Fe}_3\text{O}_4$ ) requires substantially less coal and energy to transform into steel than hematite ( $\text{Fe}_2\text{O}_3$ ), resulting in lower CO<sub>2</sub> emissions per tonne of steel output and global emission reductions.

These carbon savings are inherent to the chemical differences between the two products and result from the fact that magnetite is exothermic (adds heat to the reaction in the blast furnace), has a higher iron content, lower impurities, and reduces fluxing.

CPM contracted Crucible Consulting to perform a comprehensive lifecycle analysis of the Sino Iron project. This report which was included as part of a submission to the 2008 CPRS green paper showed the Sino Iron project producing savings of more than 800,000 tonnes of CO<sub>2</sub> equivalents across the global steel production value chain when compared with a comparable DSO project

Further work by conducted Crucible Consulting for Extension Hill showed calculated savings of at least 250kg of CO<sub>2</sub> per tonne of iron generated by substituting Pilbara DSO with magnetite concentrate in the steel making process. This commercial in confidence report has been submitted under separate cover by Extension Hill.

Further information and detail on the life cycle emission benefits of magnetite can be found in the reports cited above and the recent Crucible Carbon research commissioned by MagNet and supplied to the DCCEE that illustrates a net saving of 108kg of CO<sub>2</sub> per tonne of steel where that steel is produced from magnetite concentrate rather than Pilbara Fines DSO.

## **Reference to International Benchmarking in EITE baseline setting process**

This work done as a matter of course by DCCEE should be available to interested parties for review but is not currently.

## **Industry assistance**

Under a global carbon trading scheme magnetite producers would be rewarded for the reduced life cycle emissions resulting from the use of their product. This would provide a competitive advantage to magnetite producers over DSO producers.

However under the carbon pricing model under consideration the reverse is true. A simple tax on emissions in Australia will impose significantly higher costs on Australian magnetite operations than comparable DSO operations. This results in a competitive disadvantage for magnetite producers over hematite producers.

To date magnetite production has not been recognised as an Energy Intensive Trade Exposed Industry. The magnetite concentrate activity definition was only finalised in October 2010 and it is understood that the two existing projects in Tasmania and South Australia will form the basis for the unfinished industry benchmarking.

It is a potential concern that these two existing projects are not representative of the two projects under construction in Western Australia – and the many others that are in the process of making investment decisions. However in the absence of an established benchmark it is impossible to assess whether this represents a problem.

The goal of a price on carbon in Australia is to encourage a reduction in greenhouse gas emissions as part of addressing the challenge of global climate change. Magnetite can be part of this solution by providing a lower carbon pathway to steel production.

It would be a perverse outcome to impose a competitive disadvantage and potentially stifle the development of an emerging industry with more Australian jobs, more Australian value adding processing and lower global emissions.

It is therefore in the public interest to ensure that the EITE industry assistance provided as part of the carbon pricing mechanism results in an effective carbon price liability per tonne of product broadly equivalent to that of existing DSO producers. To maintain competitive neutrality this assistance would need to remain in place at least until magnetite's global lifecycle benefits can be rewarded in a global carbon trading scheme.

## **Existing Producers**

MagNet supports the need to set a baseline for existing producers and submits that Grange Resources and OneSteel should receive industry assistance at the highest appropriate rate for their existing projects.

## **Process going forward**

The Magnetite Network and its members look forward to continuing productive discussions.

Thanks again for this opportunity.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Megan Anwyl', with a stylized flourish at the end.

Megan Anwyl

Executive Director

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