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## SENATE

SENATE SELECT COMMITTEE ON THE SCRUTINY OF NEW  
TAXES

**Carbon tax pricing mechanisms**

FRIDAY, 29 APRIL 2011

PERTH

BY AUTHORITY OF THE SENATE

**CORRIGAN, Mr Simon, Member, Magnetite Network****MACKENZIE, Mr Bill, Chairman, Magnetite Network**

[15:03 pm]

**CHAIR:** I welcome representatives of the Magnetite Network to today's hearing. Would either of you like to make an opening statement?

**Mr Corrigan:** Yes, thank you, Chair. Megan Anwyl, the Executive Director of the Magnetite Network, is currently overseas and we are represented today by Bill Mackenzie, our Chairman. Bill is also the Managing Director of Extension Hill. I work for CITIC Pacific Mining. CPM is developing the \$5.2 billion Sino Iron project in the Pilbara which is expected to ship first product by the end of this year and will eventually ship about 24 million tonnes per annum of magnetite product. The Magnetite Network is made up of five members in total. The other three members are Atlas Iron, Grange Resources and, I am also pleased to say, Gindalbie Metals, who have joined as of this week. Together our membership represents the overwhelming majority of Australia's existing and impending magnetite iron ore production. I know, in the committee's last hearings in Perth in relation to the MRRT, Megan Anwyl spent some time explaining the difference between magnetite iron ore and haematite iron ore, which form the bulk of Australia's current iron ore industry, so I will not go into a whole lot of detail about those differences today. I will point out the primary similarity between our two products, which is that they are both used to produce steel. Magnetite's lower impurities mean that it is often used in the production of special steel, but fundamentally the end product is the same. However, in the mining and processing phases, magnetite and haematite could not be more different minerals.

Australian iron ore mining to date has largely been about haematite direct shipping ore, which is characterised as a dig-and-ship method. In broad terms, a high-iron-content resource is mined, primary crushed, blended and shipped, and what is shipped is pretty much the same thing that was dug up. Conversely, magnetite deposits generally have a much lower iron content and the ore must be processed before it can be shipped. For the Sino Iron project, this means mining ore with 20 to 30 per cent iron content and extensively processing it to bring it up to a very high quality, 68 per cent iron content concentrate which can be economically shipped. The processing of magnetite requires that the material be crushed to a very fine material and magnetically separated. At the Sino Iron project, we will have six processing lines which include the largest autogenous grinding mills in the world. Senators can refer to page 5 of the handout I have provided, which gives you a diagram of the magnetite production process, and compare it to the haematite production process on page 4.

All this processing requires a lot of energy. For example, in our project, each of those processing lines will consume approximately 44 megawatts of electricity. We also have the added energy needs of pumping slurry along our 30-kilometre pipeline and the requirements of our 51-gigalitre desalination plant. To provide the electricity for our project, CPM has constructed a 450-megawatt combined-cycle gas-fired power station. This represents world's best practice in efficient energy production and will produce 40 per cent lower emissions than a comparable open-cycle plant. Energy is our most significant input cost, and we have taken every effort to maximise efficiency. Despite this, we expect our energy usage to be approximately 30 petajoules per annum, resulting in approximately 1.9 million tonnes of CO<sub>2</sub> equivalent emissions.

It is important to note that these figures are based on modelling of our production process, and actual emissions may vary as we bed down our production processing. To put that into context, we expect that our emissions in Australia will be approximately 10 times the emissions of a similar sized haematite operation. However, it is important that these Australian emissions be put in the context of the global steel production value chain, which I mentioned earlier. Across that global value chain, magnetite has substantially lower emissions than haematite. The higher emissions in Australia are more than offset by savings from using magnetite in steel production overseas. These savings result from a number of factors. Firstly, magnetite, which is Fe<sub>3</sub>O<sub>4</sub>, is exothermic: the extra oxygen atom compared to haematite, Fe<sub>2</sub>O<sub>3</sub>, means that it actually adds heat to the reaction during steelmaking, and therefore less coke and coal is needed. Secondly, we are doing our processing to a high purity product in the absence of heat, which means in essence that you are burning less dirt when you put it in a blast furnace in the steelmaking process. Magnetite concentrate also tends to have lower amounts of impurities, such as silica, phosphorus and alumina. There are also a number of other, smaller contributors to the efficiency of magnetite—for example, transport savings from shipping a product with higher iron content. Page 7 of the handout provides a graph that illustrates those savings. Those figures were based on a life cycle analysis

performed for CPM in 2008. Extension Hill has recently commissioned some updated analysis, and I am sure Bill would be happy to talk about those results.

Of course, all this processing requires more capital investment and more jobs in construction and operation. This is a major benefit to Australia from magnetite projects. The table on page 6 of the handout details some of the capital investment and employment figures from a selection of members' projects. You can see that magnetite projects will see significant investment and employment in construction, as well as ongoing employment, royalties and export revenue. We know that we are investing more in our project than a similar sized hematite project, and anecdotally we will employ approximately twice as many people on an ongoing basis than a similar sized hematite project. CPM has commissioned Deloitte Access Economics to model and report on the economic benefits of our project compared to a benchmark hematite project, and we would be happy to share that when it is available.

I am sure you can see the public policy problem that confronts our industry. A carbon pricing scheme which taxes emissions in Australia without any capacity for recognising overseas savings would see our industry—which will produce lower global emissions and more Australian jobs—taxed more than our competitors. This would be a perverse outcome from both an economic and environmental perspective. The Magnetite Network looks forward to continuing our productive discussions with the Commonwealth government to ensure that the economic and climate benefits of magnetite are recognised within the proposed carbon pricing scheme.

**CHAIR:** Thank you very much. The purpose of this committee is to assess whether putting a price on carbon in Australia, in the absence of an appropriate comprehensive global agreement on pricing carbon, is an effective way for Australia to contribute to global greenhouse gas emissions reductions. I guess your industry, as you have said in your concluding comments, is in a particular circumstance that illustrates this particular public policy challenge. What you are telling us is that you are more emissions intensive in Australia than alternative iron ore production. However, over the whole life cycle, which includes manufacturing overseas, you are more emissions efficient, with lower emissions. But of course that overseas component is not recognised in the context of an Australian emissions trading scheme that focuses exclusively on reducing emissions in Australia, irrespective of what the impact is overseas. Is that a fair summary?

**Mr Corrigan:** My understanding of the carbon pricing scheme as it is proposed is that the tax will be based entirely on emissions in Australia without the capacity to recognise overseas offsets.

**CHAIR:** But presumably that is your concern.

**Mr Corrigan:** Yes.

**CHAIR:** Are either of you involved in the context of the discussions on the Carbon Pollution Reduction Scheme?

**Mr Corrigan:** I was not but I think Bill was involved in some of those.

**CHAIR:** I am sure you would have had these policy discussions in the context of the development of the Carbon Pollution Reduction Scheme green paper/white paper draft legislation going twice through the parliament with some amendments. When you raised these issues with the government at the time, what was the response to that particular issue, which I think is a very legitimate issue that points to the potential flaws in what is proposed? What is the response from the government when you point out that you can actually have a more environmentally friendly production process overall but that, because most of the emissions are loaded, in a domestic circumstance in Australia you are going to be penalised by a price on carbon in Australia in the absence of a global agreement? What does the government tell you when you put that proposition to them?

**Mr Mackenzie:** I was not chairman of the Magnetite Network at the time of the green paper/white paper and the discussions. I know that Citic Pacific, which at the time was the largest magnetite project on the drawing board, made a submission to the green paper. Indeed, this graph here in the same guise or similar guise was part of the submission that was put to the committee, and it is available in summary form in there. But what the government response was, frankly, I am not sure. At that time though it was believed that you could get overseas credits because there would have been an international global trading mechanism if not in place, certainly moving towards that post Copenhagen. As we know, Copenhagen did not lead to that. The situation has not been resolved. In fact, the clear global benefits of this and the perverse outcome of stopping clean production or impeding clean production of steel by penalising this new industry in Australia is still very real, and you summarised it well before.

**CHAIR:** Essentially at the time that the parliament dealt with the Carbon Pollution Reduction Scheme in its final, final iteration, the issue that you have raised as a policy challenge was not resolved?

**Mr Corrigan:** It is perhaps worth pointing out that we have gone through the process and CPM obviously made submissions to the green paper at the time. There is the energy intensive, trade exposed industry assistance program that magnetite was being assessed for; there is an activity definition for magnetite concentrate. But that did not finish its course before the CPRS was abandoned, so we never quite reached the point of having clarity around industry assistance.

**CHAIR:** The thing is that the legislation went through the parliament twice, so it is fair to say that we were at the pointy end of the cycle in terms of what was or what was not going to happen. The reason I am asking this, in all sincerity, is because everybody talks about how this is about reducing global greenhouse gas emissions. But if it is about reducing global greenhouse gas emissions then the global impact of any activity has to be somehow recognised in any such scheme.

**Mr Corrigan:** We would argue that we have greenhouse benefits and that a carbon-pricing scheme needs to recognise those benefits and ensure that the liability for magnetite does not act as a disincentive to its development.

**CHAIR:** Of course. I understand that. But when the Carbon Pollution Reduction Scheme was discontinued the issue was not resolved. But, for our purposes, the only information we have on the carbon tax is that the Carbon Pollution Reduction Scheme is going to be the basis for moving forward. What you are saying is that if the government is going to go down the carbon tax way or the emissions trading scheme way without a global agreement then there needs to be recognition of the fact that you are very emissions intensive in Australia but you lower emissions globally.

**Mr Corrigan:** Yes. I believe that there is no capacity in the carbon-pricing scheme as it is proposed to recognise offsets. In the absence of that, we would seek to receive the appropriate industry assistance.

**CHAIR:** Industry assistance? But—

**Mr Mackenzie:** The industry assistance that was being progressed through CPRS was to have the emissions-intensive trade-exposed process provide some relief to the magnetite industry. Indeed, as Simon said, it went through the quite lengthy processes of getting to activity definitions for the production of magnetite concentrate and for then processing magnetite concentrate here in Australia to produce magnetite pellets, which is an intermediate step between taking the fine magnetite product and making it into a granular gravel product that you can put into the blast furnace. That could be done here in Australia as well. Indeed, there was an activity definition, I believe, created for that additional value-adding step here in Australia. Once again, that was under the cap-and-trade principles in there, and the amount of assistance that was available was the assistance available at the time to the existing magnetite industry, which was two really very small operations—one in Tasmania and one in South Australia. Even under that circumstance, that process did not recognise the fact that here was a large, emerging energy-intensive industry which was new and therefore the benchmarks that were out there and the amount of industry assistance available was going to be problematic.

**CHAIR:** Then there is of course a large emerging magnetite industry potentially here in Western Australia but because you cannot collect data that does not exist yet the government could not possibly have had the information to properly assess what sort of policy arrangements would have to be made to cater for the needs of your industry. But if we put a price on carbon without fully compensating your industry or without providing that sort of industry assistance we actually might end up with a worse outcome in terms of the objective of reducing global greenhouse gas emissions than we otherwise would. Is that right?

**Mr Mackenzie:** Indeed. The objective of global greenhouse gas reduction as a result of steel production would have been jeopardised because the clean feedstock to the steel industry was being penalised and the creation and the production of the clean feedstock here in Australia, which meant jobs and capital and was energy intensive, would be impacted.

**CHAIR:** It sounds very counterintuitive. People have a go at me when I say it, but it might well be that in relation to your industry, perhaps LNG and there might be a few others, the best way that Australia can contribute to minimising emissions in the world is by increasing emissions in Australia. That is certainly the case in relation to your industry, LNG and others, if it helps to reduce emissions by more in other parts of the world. But that is made harder by imposing a price on carbon that is not faced by your competitors. Is that right?

**Mr Mackenzie:** Yes. Simon's project is installing a 450 megawatt gas fired power station. The emissions are significant, as he has acknowledged in here. But that is a combined cycle, the most efficient form of baseload electricity production for this process. As Simon said, it is new, cutting-edge clean technology and energy being used, but there is still this quite blunt instrument saying, 'I'm going to tax you anyway.'

**CHAIR:** I think this is really the crux of the debate on all of this. Australia is having the wrong debate. We should just all agree that we need to reduce global greenhouse gas emissions and we should be having a debate about how Australia can best contribute to maximising our contribution in terms of reducing global greenhouse gas emissions. By focusing on domestic emissions irrespective of flow-on consequences overseas, we are actually going down the wrong path. But take that as a comment. You said that energy is the most significant input cost for your industry. That says to me that you already have an inherent incentive to minimise energy use. If it is your most significant cost, you have an inherent incentive to minimise your energy output, because it helps you to minimise your costs. Is that right?

**Mr Mackenzie:** Absolutely.

**Mr Corrigan:** We have a very strong driver to maximise the efficiency of our processes, yes. It is a basic cost.

**CHAIR:** And that is irrespective of whether there is a tax on carbon, an emissions trading scheme or any other price on carbon. Is that right?

**Mr Corrigan:** Yes.

**Mr Mackenzie:** Yes, an incentive exists regardless.

**CHAIR:** Given that you have this inherent incentive to minimise your most significant input cost by being as efficient as possible with energy and emissions, what additional efficiencies could you possibly achieve by having a price on carbon imposed on you? Or is that just going to be a cost that would go straight to your bottom line?

**Mr Corrigan:** We would seek to maximise the efficiency of our process in any case.

**CHAIR:** That is what I thought. You would maximise the efficiencies of your processes in any event. I guess I am trying to think about the policy objective that is supposedly being pursued by putting a price on carbon. If you want to maximise efficiency anyway, maximised is maximised. So you are telling me that putting a price on carbon is not actually going to take the efficiencies any further.

**Mr Corrigan:** We do not believe so. We believe that we have designed our process to be as efficient as it can be with current technology.

**CHAIR:** So essentially it is a dead weight loss to your business. If there is no additional efficiency to be gained as a result of a price on carbon, it then goes as a cost on your bottom line, doesn't it?

**Mr Corrigan:** Throughout the life of our project we will be working to make sure it is as efficient as it can be at all stages to minimise costs.

**CHAIR:** If there is a price on carbon on top of the mining tax and all the other costs, how would that impact on the prospects of what is an emerging industry in Western Australia?

**Mr Corrigan:** It will not impact on the development of our project. We are committed to the Sino Iron project.

**CHAIR:** Does it impact on other members of the magnetite network?

**Mr Mackenzie:** Undoubtedly. Projects that are already operating or projects that are already under construction will continue to operate and presumably will continue to be constructed to completion. But new investment decisions will certainly need to be taken on the basis of the financial impacts and whether they can be justified. So the expansion of existing projects or the creation of new projects are certainly a matter that any board would have to consider in its investment decisions and its utilisation of capital.

**CHAIR:** Thank you very much, Mr Mackenzie.

**Senator CAMERON:** I am not sure who wants to answer these questions. It seems to me you are arguing two points. The first is that you should get some recognition of the production process that takes place to get magnetite to a usable level. Is that right?

**Mr Mackenzie:** That is what we do. We take this low-grade ore and we process it here with energy to create a saleable product. What we have in the ground is not usable or saleable without that processing, so that is what we do. In doing that we have a carbon cost because of the energy consumption.

**Senator CAMERON:** What if the energy suppliers are getting free permits or some assistance to move to new technology?

**Mr Mackenzie:** If I can speak as part of the group, our members have a range of different sources of energy. Ultimately it needs to be turned into electricity. In the case of the CITIC project, that is via a highly efficient combined cycle gas turbine facility, dedicated and built on site, that supplies solely the CITIC Pacific site.

**Mr Corrigan:** We are not on a grid.

**Mr Mackenzie:** Our project in the mid-west of Western Australia will be connected to the south-west interconnected system here, the south-west grid, as will Gindalbie's Karara project, as will Grange's Southdown project down near Albany. Those projects, one of which has already procured its power supply from Verve Energy, the state generator, will procure their energy from the grid. So, yes, whether the energy producers have credits or permits is certainly a big issue.

**Senator CAMERON:** So you really cannot make a call on the cost to the magnetite industry until you know whether that is going to be in place, can you?

**Mr Mackenzie:** Indeed, at the moment we are not sure of any of the detail of the proposed carbon tax. We have been told that it is \$20 per tonne, but who it applies to, what level of industry assistance there will be and what that will mean for the price of electricity we do not know. What it will mean for the purchase of gas for some of us who may have a combination of gas or solely gas we just do not know.

**Senator CAMERON:** Assume a \$20 price. What is the sell price of a tonne of magnetite at the moment?

**Mr Mackenzie:** A tonne of magnetite at the moment, externally traded, is somewhere between \$150 and \$200 a tonne.

**Senator CAMERON:** What is the effect of a \$20 carbon price on that sale price? What does it become? In that range of \$150 to \$200, what would happen to it?

**Mr Mackenzie:** I have to ask: what is the effect on the input cost of electricity? I cannot answer that because we do not know. There is no detail in the proposal at the moment. I certainly think that it is fair to say that the price of electricity will go up.

**Senator CAMERON:** Have you made any assessment?

**Mr Mackenzie:** There have been a number of papers published. I have not seen one published on what the effect will be—

**Senator CAMERON:** I am not asking about published academic papers. Is that what you are talking about? I am talking about what analysis has been made by the magnetite industry.

**Mr Mackenzie:** Certainly my company has looked at trying to determine what will be the range of price outcomes for electricity. We cannot find an analysis done on what it will mean in the South West Interconnected System here in Western Australia. We have looked at papers that say that, in the eastern states, which are all interconnected, in New South Wales, for example, it is about, I believe, 3c to 4c per kilowatt hour of electricity. So that, for us, could relate to \$60 million a year of additional operating costs.

**Senator CAMERON:** And what are your projected profits over the next few years?

**Mr Mackenzie:** Are you talking profits or margins?

**Senator CAMERON:** Profits.

**Mr Mackenzie:** After the payment of our capital and our financing charges and so on, our profits, in terms of return on capital, are really quite modest.

**Senator CAMERON:** But they will grow over a longer period of time, won't they, as you pay off your capital costs?

**Mr Mackenzie:** The return on capital on the investment process is something that we look at before we make the investment and, yes, there are risks to long-term pricing, as there are risks to long-term costs, and the rate of return we get on our capital needs to reflect that.

**Senator CAMERON:** But surely the magnetite companies which have invested recently would have understood that there would be a real possibility of a carbon price? It was an agreed position between Labor and the coalition. Even under the Howard government they were talking about putting a carbon price in place. So was that factored into the investment decisions?

**Mr Corrigan:** I would point out that, firstly, when we made our final investment decision, back in 2006, I believe, there was less clarity at that time. But also we are operating on the basis that, over the life cycle, we are lower. So at different stages it has been difficult to determine what the financial impact would be.

**Senator CAMERON:** Did you have those discussions with the Howard government?

**Mr Corrigan:** I do not believe so, no.

**Senator CAMERON:** Why not?

**CHAIR:** The question here being—just going back to what you said earlier—that it makes a difference, does it not, in relation to Senator Cameron's question, as to whether there is a comprehensive global agreement on

emissions trading or whether there is not, and of course even the Rudd government assumed that the US would have an emissions trading scheme by 2010, China by 2015 and so on. Is your answer to Senator Cameron's question not influenced by whether or not the assumption at the time was that there would be?

**Mr Corrigan:** I am not fully aware of all the decisions at the time, but, under a system where there is a global carbon price, we would see ourselves as having a competitive advantage. Under a system where we are only paying for our emissions in Australia, then we have a competitive disadvantage.

**Senator CAMERON:** I suppose it all depends on what the impact of that cost is on your bottom line.

**Mr Corrigan:** Yes.

**Senator CAMERON:** And the Treasury estimates that I have seen say that investment will continue strongly and that employment will continue to increase in Western Australia. Do you see a different analysis from that?

**Mr Corrigan:** I would not like to comment more broadly—and obviously I have made the point that our project will go ahead; we have made the investment. I think, though, issues about carbon price will be a factor in investment decisions in the future. I think that is as far as we could go, particularly in the absence of knowing what the financial impact will be at this stage, and I guess we are still in those discussions with government and the department of climate change about EITE assistance would work for our industry.

**Senator CAMERON:** You say you should also have some consideration that you are a lower polluting product.

**Mr Mackenzie:** But that is in the life-cycle context.

**Senator CAMERON:** Yes. I want to talk about the life cycle. If your product is used in an old-fashioned furnace—a stove that is just not efficient—then that is not going to be of any benefit, is it?

**Mr Mackenzie:** Indeed, it is the basic and fundamental thermodynamics and chemistry of this that is its clean nature. If I may, I think you are referring to older, maybe smaller, less-efficient technology blast furnaces compared to new, state-of-the-art versions with modern heat capture and recovery and so on. Regardless of whether it is an old furnace or a new furnace, the laws of thermodynamics will not change. Magnetite concentrate is exothermic in its reactions so it needs less energy and less carbon to reduce the iron oxide, Fe<sub>3</sub>O<sub>4</sub>, to iron plus carbon dioxide than do the competing products, the hematites which require more energy and more carbon. On top of that, the feedstock going in is not pure iron oxide. It is iron oxide plus other mineral contaminants.

In the case of our product, the feed going into that furnace is extremely low in minerals other than magnetite. In the case of the direct shipping ores, you have not only the inefficiency of it being hematite rather than magnetite but also significant amounts of other minerals which is the slag and the material that is not valuable that has to come out of the furnace. Again, whether it is an old furnace or a new furnace, if you have slag from those contaminant minerals you then have to add more materials and more chemicals to the furnace so that those slags separate effectively from the iron and so on. The reality for any end user is that the magnetite concentrate will be a much cleaner way to produce steel.

**Senator CAMERON:** I am not a chemist so I do not know about this, but I understand there is a process being looked at overseas which is oxy-fuel. Are you aware of these oxy-fuel processes that are being discussed overseas?

**Mr Mackenzie:** I am not aware of oxy-fuel in particular. I know that there is a lot of technology in the ways to make iron with the direct reduction of iron—whether those are the hismelt process, other blast furnace processes or electric arc furnaces.

**Senator CAMERON:** What is happening, as I understand it, is they are using what is called oxygen enriched combustion. They use this with hematite. They do not use air; they use oxygen. It gives a higher stove efficiency. They put a heat exchanger in. They preheat the combustion air, they recirculate the gas and they concentrate the CO<sub>2</sub>. They are now looking at ways of capturing the CO<sub>2</sub>. If that process was in place for the hematite raw product then that could mean less CO<sub>2</sub> than you are producing if you have magnetite going into your furnace that does not deliver that.

**Mr Mackenzie:** I would postulate further, given the basic laws of thermodynamics that I explained, that if you put magnetite concentrate into the same process that you are describing you would get the same relative reduction in emissions. Like-for-like—whether it is an old furnace, a new furnace or your oxyfurnace, if you put magnetite concentrate in as opposed to the hematites you will get less emissions.

**Senator CAMERON:** Yes, but magnetite cannot provide all the requirements that the steel industry needs now, can it? There is just not enough production of magnetite on its own so hematite is going to be there.

**Mr Mackenzie:** Hematite and magnetite will be there. In fact, over half the world's steel comes from magnetite anyway.

**Senator CAMERON:** If the other half is hematite, that is still a big element.

**Mr Mackenzie:** It is indeed and they are both very important. I guess the issue to be noted is seaborne trade. From Australia's perspective the seaborne trade in ferrous materials is probably more important because we have far more iron ore and iron- and steelmaking products in Australia than we have steel demand so we are a major participant in that seaborne trade. Magnetite as a seaborne trade is increasing and increasing dramatically. We have an opportunity as a country to take advantage of that.

**Senator CAMERON:** As a country—and let us not look at it just from that perspective; your investors are taking advantage of it as well—who is your biggest investor? Still China?

**Mr Mackenzie:** In my company, yes.

**Senator CAMERON:** One of the articles that I have seen in one of the trade papers says that China is trying to use magnetite as another source to drive down the costs and create more competition.

**Mr Mackenzie:** I think it is fair to say that most investors are trying to get into the supply of iron materials to the steel industry because currently there is an excess of demand over supply. So there is great incentive for a new supplier to come on stream at the moment.

**Senator CAMERON:** I am not with Barnaby Joyce; I have no problems with Chinese investment coming in. But I think, to have an argument that I have seen—

**CHAIR:** I think you are verballing Senator Joyce. I do not think he has a problem with Chinese investment.

**Senator CAMERON:** Well, let me retract that. I think people know Barnaby's position. I take the view that, if we get investment in, that is good. However, we should not be in a position where the magnetite industry is projected as some nascent Australian industry that is not getting a fair go—and I have seen that argument put out there—because it really is. There is lots of money coming into the magnetite industry, and a lot of it is Chinese money. Isn't that correct?

**Mr Mackenzie:** Yes, that is correct. There is a lot of Chinese money coming into magnetite, and there is a lot of public money as well. Two of our members are publicly listed Australian companies, so it is not just Chinese money. But can I just again pick up on the point about magnetite and haematite both being important. The quality of Australia's haematite is in decline. Because we as a magnetite industry process ore and produce consistent product—

**Senator CAMERON:** Mr Mackenzie, this is all on the record. You have made submissions on this before—

**Mr Mackenzie:** Sure.

**Senator CAMERON:** and, unless you have something new, I would like to ask you other questions. I have heard this before and, unless the rest of the senators desperately need it, I can send in the *Hansard* where you have put this on the record—

**CHAIR:** I think we should let the witness answer the question, and then you can ask another question, Senator Cameron. Please finish your answer, Mr Mackenzie.

**Mr Mackenzie:** It was an answer with some context around the money that is being invested in Australia to get the magnetite industry up. That money and that product are in fact complementary to the direct shipping ore industry. I think it is perhaps a bit short-sighted to think that it is a competitor to the direct shipping ore business. Direct shipping ores, over time, are going to decline in quality, and that will drive the demand for magnetite ores. So it is, I believe, in the country's best interests to maximise the value of its direct shipping ores and its magnetite industry by having a thriving magnetite industry here.

**Senator CAMERON:** And China have made a strategic decision that they will invest in it to give them a longer term source of product, haven't they?

**Mr Mackenzie:** And if that means that we have both a thriving haematite industry and a thriving magnetite industry in Australia then that is a very good outcome for Australia.

**Senator CAMERON:** I am not arguing that. I am just saying that people need to understand where some of the money is coming from. I am still trying to get to the bottom of this issue of the global lower carbon approach. Say, for instance, Rio Tinto and BHP put more money into carbon capture and storage research—and it would be good if they did—and, along with steel mills anywhere in the world, managed to get carbon capture and storage operating. It is costly. Why should they not get some recognition for doing that? Why would the magnetite industry still be seen as something that should get an advantage?

**Mr Corrigan:** If I could perhaps—

**Senator CAMERON:** Or—

**CHAIR:** Senator Cameron, let him answer the question. I am interested in the answer and I would like the witness to have the opportunity to answer your question.

**Senator CAMERON:** Sure.

**Mr Corrigan:** I think carbon capture and—

**Senator CAMERON:** I just saw the look of horror on Mr Mackenzie; that is all.

**CHAIR:** Senator Cameron!

**Mr Corrigan:** I think carbon capture and storage is a very interesting area for development and research. I would argue that, if you can possibly do it, it is probably better not to produce the carbon in the first place—that is the first thing I would say. Secondly, I would say we are not looking for a competitive advantage; we are looking for a level playing field.

**Senator CAMERON:** But if, say, BHP and Rio invest in this process and it reduces the carbon even more than you, if your feedstock is into a mill that does not have carbon capture and storage, where do you go then, because that makes you a higher polluter than a hematite mine?

**Mr Corrigan:** I think that if you recognise the global emissions then the market can sort it out.

**CHAIR:** And that is the point, isn't it? Supposedly this is about addressing a global challenge, about reducing global greenhouse gas emissions. If it were part of a global agreement then it would sort itself out, wouldn't it? If you are more environmentally friendly, you are going to be more competitive than somebody that is less environmentally friendly, as long as there is recognition of all aspects of it globally. That is the key point here, isn't it?

**Mr Corrigan:** Yes.

**Mr Mackenzie:** And that is the nub of the argument that is being made by the Magnetite Network. I repeat: the overall emission of carbon dioxide equivalent per tonne of steel is less with our product than it is with direct shipping ore. We have a massive saving embedded, if you like, in our product when it is used in a steel mill. And if there were a world market that put a price on carbon then that value-in-use would be captured to us and would be reflected in an increased price for our product. But, in the absence of that global thing, what we are getting is a tax here in Australia but no recognition and no way for the market to pass that saving back to us, because they do not value it.

**CHAIR:** You are not looking for an unfair competitive advantage. What you are saying is that if the objective is to minimise global emissions then there has got to be a way to recognise the performance of magnetite as part of the whole process vis-a-vis the performance of other processes globally. But putting a price on carbon in Australia in the absence of an appropriately comprehensive global framework, unless the government does other things, does not cater for that.

**Mr Mackenzie:** That is correct.

**CHAIR:** Your example really illustrates one of the key policy problems with putting a price on carbon in Australia outside of having an appropriately comprehensive global framework, because you get those sorts of distortions which are quite counterproductive if, indeed, the objective is to reduce global greenhouse gases.

**Senator CAMERON:** John Howard did not think that was a problem.

**CHAIR:** John Howard thought exactly that, which is why John Howard said it should be part of a global agreement.

**Senator CAMERON:** No, he did not.

**CHAIR:** That is exactly what he said. Thank you so much, Mr Mackenzie and Mr Corrigan; it was very good of you to give evidence to our committee. It was very useful to be able to explore those sorts of policy issues with you and it will help greatly with the deliberations of this committee.

**Committee adjourned at 15:48**