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## **The Challenge of Standing on the Shoulders of Giants**

By COLLIN MYERS

A few months ago, Kett Kennedy rang me to ask if I would deliver closing remarks at the end of this conference. I took it as a privilege and said I would be honoured to do so. This would be easy, I thought. Closing remarks - complimenting you all on a fine conference - should be within my capability and my level of competence.

In talking to Kett, I suggested that perhaps I might make brief reference to the decline of value adding through downstream processing on mine products in Australia, thinking privately that this would add a veneer of gravitas to my simple duty. However, within a few weeks, I found that Kett had listed me as a guest speaker on the subject. My comfortable conference sinecure had burgeoned into a significant task. Delivering a paper of the quality required at a national and international conference of mining historians is way out of my league.

No sooner had I confronted that little problem than the unthinkable happened. My dear friend Kett was no longer with us. When Mel Davies rang me to ask whether I still wished to speak at the conference, of course I agreed. I was hoping that someone would ask me to come because I wanted very much to do so, in a sense to complete the journey with Kett, the journey of life over the 30 or 35 years we had known each other. And that's how I come to be among you today.

### **A word about the late Professor Kett Kennedy.**

Kett Kennedy lives on today. He lives on in this Australasian conference, in this international congress. Kett's initiative and energy brought us here this week to Charters Towers, his home, and I for one thank those who have completed the arrangements for this important event that he was determined would happen.

Kett will live on beyond today and this week. He will live in the memories of those of us who had the privilege of knowing him. Kett Kennedy the young Labor Party staffer, adviser on mining in the days of controversial Minerals and Energy Minister Rex Connor. The academic and historian who chronicled much of the history of north Queensland - of mining and the characters who populated this part of the world. However, Kett Kennedy will outlive our individual memories. Good writers, like composers of great music, write their way into the future and are recognised and appreciated long after personal memories have disappeared.

One of Kett's legacies is a corpus of fine histories. I commissioned Kett, on behalf of MIM, to write *Mining Tsar*, the biography of Leslie Urquhart, the

entrepreneur instrumental in the development of Mount Isa Mines. I was assured that Kett would do a good job by Geoffrey Blainey whom I had got to know as the writer of *Mines in the Spinifex* and, who, I might say, had a very high regard for Kett. MIM deserves everlasting credit for engaging Blainey and Kennedy, as does the AusIMM for commissioning Kennedy and American historian Don Chaput, to write *The Man from Asarco*, the story of Julius Kruttschnitt, who brought Mount Isa into production.

These three literary canvasses have the advantage of placing the Mount Isa and north-west Queensland mining story in a broad context that stretches historically over a century and a half, and extends geographically from the liquorice root fields of Armenia where Urquhart the Scotsman was born into the liquorice trade, to Mexican silver-lead mines where Julius Kruttschnitt learned his management skills that he applied to such effect and advantage to Australia in the prime of his life.

Kett was a champion of mining and a contributor to society, and I am proud to have known him. We were both attracted to giants. Kett wrote about the charismatic giants Urquhart and Kruttschnitt, but he came to national prominence with his landmark biography of Red Ted Theodore, the Queensland Premier and Australian Treasurer whose involvement with mining leases brought about his spectacular downfall.

In his early days, Kett knew Gough Whitlam and Rex Connor. As for mining industry giants, Kett knew Sir George Fisher and Sir James Foots. At Kett's suggestion, I arranged for him to interview Fisher and Foots for five hours and to have the interviews recorded on videotape, as valuable oral – in this case, audiovisual - history. Australia in the 20<sup>th</sup> century was certainly the land of the mining giants, and some of us were privileged to know some of them. Australia today is standing on the shoulders of generations of many thousands of industrious men and women in the mining industry, not only those who gave it leadership. It was those leaders who sought not only to find mineral deposits and to mine them, but also to add great value. They were driven to add value for commercial purposes, for the benefit of their shareholders both in Australia and internationally. They were also driven to add value because they saw that as being in Australia's best interests, in wartime and in peace. They were also driven by the sheer excitement of the technological challenges of mining, processing, smelting and refining.

### **Adding value**

BHP chief Essington Lewis was perhaps the greatest of the giants in the first half of the twentieth century. I like the fact that he was born in Burra [South Australia], one of the birthplaces of the Australian mining industry. Some of his early experience was gained in the lead and zinc smelters at Port Pirie when they were still owned by BHP.

Adding value to Australia's minerals by downstream processing and manufacturing was the natural thing to do from the early years of large scale mining in Australia, just as the harnessing of both overseas and Australian capital to develop Australian resources was the natural thing to do. Australians certainly benefited. Those truly were the days, the days when Essington Lewis was a young man, the days when Australia had the highest standard of living in the world, a distinction it shared with Argentina.

When BHP exited its Broken Hill interests and origins, Essington Lewis decided not to go with the Collins House group but stay with BHP, and he was sent to Newcastle. Forgive me if I'm starting to sound like Facebook with my "likes", but I also like the fact that Lewis in Newcastle was confronted with a collapsing steel business. He successfully saved the BHP operation from the threat that foreign imports posed to its products – a familiar story in 21<sup>st</sup> century Australia. Of course, he went on to take BHP, and Australia, downstream, from special steels to machine tools to munitions and aircraft manufacture, perhaps the ultimate in value adding.

Another giant, W.S. Robinson, was a key figure in the formation of the Collins House group and the value adding of minerals through downstream processing that spread from Broken Hill like the waters of the Channel Country in flood. Robinson had already made the interesting journey from journalist to industrialist by the outbreak of World War 1, a century ago next month. He and others were alarmed that most of the output of the base metals mining industry in Australia was effectively controlled by German interests. To them, adding value in Australia was a given.

What drove them at that time of war was the issue of national security - to ensure that lead and zinc smelting in Australia as it existed and as it developed was free of German control and influence - to establish copper fabrication facilities in Australia - to destroy German control of the international metals trade. The main mining companies in Broken Hill formed Broken Hill Associated Smelters to buy the Port Pirie works which they expanded into the world's largest lead smelter. Robinson and the Collins House group led the way, through the mining companies North BH, BH South and Zinc Corp and the smelters BHAS and Electrolytic Zinc, which was established at Risdon in Tasmania in 1916.

Meanwhile, Australian, British - *and German* - interests set up the Electrolytic Refining & Smelting company at Port Kembla in 1909 to smelt and refine copper from Mount Morgan, and Metal Manufactures took copper further downstream from 1917.

I am in danger of cataloguing the corporate history of the Australian mining industry, not a particularly productive exercise in the context of this modest address. It is probably necessary to say that in the middle years of the twentieth century, the Zinc Corporation merged with the Imperial Smelting Corporation to form Consolidated Zinc which then merged with the Rio Tinto interests in Australia to form CRA. As Chairman of Zinc Corporation, W.S. Robinson was the key to the formation and growth of the Collins House group. Forty years later, Sir Maurice Mawby became the first Chairman of CRA and was the key to a vast roll-out of mining diversification, expansion and downstream processing.

Consolidated Zinc and CRA developed the bauxite-alumina-aluminium chain, from the bauxite mine in Weipa, to the refinery in Gladstone, and the smelters in Gladstone and in Bluff in New Zealand, and incorporating Bell Bay in Tasmania. In WA, Mount Tom Price was discovered and the Hamersley iron ore business created. In Papua New Guinea, the Bougainville Copper operation was created. Gladstone is now one of the world's largest industrial ports and processing centres. There are two major alumina refineries at Gladstone, together with the Boyne Island aluminium smelter.

When Gladstone was being developed as a major coal export port some 50 years ago, a canny Queensland Government required the coking coal producers to make available thermal coal for the generation of cheap power at Gladstone, and so the downstream alumina/aluminium industry was secured for Queensland.

Maurie Mawby was born in Broken Hill and he worked there alongside his friendly rival, George Fisher, who was born across the border in South Australia. They grew in experience and stature together. Mawby went on to head Consolidated Zinc and CRA, while, in the early 1950's, Mount Isa Mines engaged Fisher to succeed the retiring Julius Kruttschnitt as Executive Chairman. In 1955, Fisher brought his younger colleague Jim Foots, to join him in Mount Isa as General Manager.

From the beginning, in 1931, Mount Isa Mines had a lead smelter in Mount Isa and a silver-lead refinery in the UK where the market was – Australia had more than enough refined lead from Broken Hill to meet the nation's needs. During the Second World War, to meet Australia's wartime need for copper, Mount Isa hurriedly switched to copper production and a copper smelter was cobbled together from abandoned smelters in the district.

After the war, the mine returned to lead production. Then in the 1950's it moved to parallel copper and lead production. Fisher drove the expansion at Mount Isa – the drilling that revealed massive copper deposits, the expanded processing at Mount Isa and the establishment of the copper refinery at Townsville. Not for Fisher and Foots the export of copper concentrate to feed the smelters and refineries of the emerging Japanese economy, as others elsewhere in the world chose to do.

In 1970, Mount Isa Mines morphed into MIM Holdings with Jim Foots as its first Chairman. I don't need to tell this gathering that the mining industry has a history of building major corporations on single mines – BHP, Rio Tinto, Cominco on Sullivan. MIM went on to diversify, but its core business until acquired by Xstrata in 2003 remained Mount Isa and the associated operations.

For Fisher and Foots, the natural way was to add value in Australia through downstream processing. The capacity of the Townsville copper refinery matched that of the Mount Isa smelter. The refinery pressed the limits of value adding, manufacturing copper rod and wire, and even tube for a period. In the early 1970's, MIM undertook preliminary site work for a zinc refinery at Townsville, and a zinc refinery was indeed built in time, but not by MIM.

More downstream processing added value to Australian minerals as new mines were developed in the second half of the twentieth century. Outstanding instances are the alumina refineries and aluminium smelters in Western Australia, Victoria, New South Wales and the Northern Territory, the Kalgoorlie nickel smelter and Kwinana nickel refinery in WA and the Yabulu nickel refinery in north Queensland. I will offer a brief review of the situation for these and other processing pipelines shortly.

Personally, I have had some sort of connection to Mount Isa Mines and MIM for 50 years. Recently I came across a newspaper report I had written as a young journalist on the legendary Mount Isa strike – or lockout – at its height in late 1964. But my substantial association began when Sir James Foots hired me in early 1974. I remained with the company for most of the next 30 years.

The great expansions at Mount Isa and Townsville were being completed when I came aboard, and in the ensuing years production continued to increase and new Mount Isa-related operations were commenced – at the Hilton and George Fisher mines and at the Ernest Henry mine. I joined the then quite new holding company, and it continued to diversify away from the Mount Isa production chain.

In my post-MIM years, I have been privileged to serve on the board of the Wesley Research Institute, now the Wesley St Andrew's Research Institute. This is Queensland's second oldest medical research organisation and distinguished by its exclusive focus on clinical research. In this respect, it reminds me of MIM.

MIM was distinguished by the technologies it developed, for the in-house operating and research staff acted like clinicians who are in the best position to identify potential improvements. More often than not they worked collaboratively with university staff. In the early 1970's, staff from the University of Queensland literally lived on the job in Mount Isa; the development of the No. 4 copper concentrator became a case study in best practice. There is a parallel to the translational research that delivers medical research outcomes to patients who can benefit from them as quickly as possible.

In the development and application of new technologies, MIM under Fisher and Foots continued the tradition of Broken Hill and its diaspora to Port Pirie and beyond. The advances ranged across the spectrum of mining and processing. The often challenging orebodies at Mount Isa and McArthur River required the company to be at the forefront of mining and milling technology. The IsaMill fine grinding became applied widely in the global mining industry, and led to the Albion atmospheric leaching process. The company also commercialised the Jameson Cell column flotation technology.

By taking production further downstream, to smelting and refining, MIM also became a leader in the development of smelting and refining technologies. Isasmelt, based on a CSIRO concept, is now used in copper and lead smelting in China, India and around the world.

The Isa Process copper refining technology, developed at MIM's Townsville refinery, revolutionised copper refining. Forty years ago, I can remember watching men laboriously attaching copper straps to starting sheets of refined copper on to which copper would grow in a once-off process in the tankhouse. One starting sheet, one cathode. The Isa Process was based around a re-useable stainless steel starting sheet on to which the copper would grow and be stripped. This significant advance would not have occurred in Queensland had the inquiring minds at MIM not been considering whether to build a zinc refinery in Townsville to process Mount Isa's zinc locally and found that best practice in refining in the zinc industry was – re-useable stainless steel starting sheets. And so progress is made in research – built upon the work of predecessors and at an erratic pace. The relevance at this point is that the progress was made in Townsville because 20 years earlier the decision was taken to add value to Australian-mined copper in Australia and a body of world-leading expertise had grown up around that downstream activity.

## **Recent times**

If I could over-dramatise and over-simplify the situation in the 21<sup>st</sup> century, we are facing the prospect of sending more unprocessed or lightly processed mine product to China to have it value added there through processing, using Australian technology.

While on the subject of technology, let me say that we don't celebrate our technical achievements sufficiently. It's become fashionable in Australia to laud the system of education in Finland where apparently teachers are more greatly valued, and remunerated, than in Australia. I believe the Queensland Government has set up an inquiry into the education system in Finland.

In the 1980's, I became aware of a series of postage stamps issued in Finland celebrating that country's technological achievements, the flash smelter being one I particularly recall. Through the mining industry's peak body in Australia, I initiated a call to the Australian Government to issue a postage stamp to mark the centenary of Broken Hill, perhaps the greatest silver-lead-zinc mining source that the world has ever seen, and a crucible for massive step jumps in technology that transformed mining and mineral processing and made available mineral resources previously locked away through grade and complexity. The Government declined. The most recent Australian stamps that I have seen feature Kylie Minogue. How can Broken Hill, flotation and Isasmelt compete with that?

Forty to fifty years ago, Australia was widely branded by many Australians as a quarry in which insufficient value was added at home to the output of our mines. Yet that was a time of high levels of value adding. The heritage of downstream processing from earlier times continued while at the same time new value was being added with metals such as nickel and aluminium.

Today, downstream processing in Australia is declining and while the muted sounds of hand wringing can be heard here and there as jobs disappear, there are no full-blown cries of anguish that Australia is reverting to a quarry. May I say that I don't have the temerity to raise such anguished cries. I observe their absence and draw your attention to the inconsistency.

The railway line from Mount Isa to Townsville passes through Charters Towers. Along that line, copper smelted at Glencore's Mount Isa mine is transported to Townsville where it is refined at the Glencore refinery. This value adding copper activity will come to an end in 2016, 60 years after construction at the Townsville copper refinery commenced, if Glencore implements current plans to cease copper smelting at Mount Isa and copper refining at Townsville, a plan that I understand is driven by declining reserves and therefore mine production. Speculation in 2015 that copper smelting at Mt Isa and copper refining at Townsville could be extended by up to four years to 20120 has been sparked by a review by Glencore of a proposal to develop a small open cut copper pit at Mt Isa.

The E R & S copper refinery at Port Kembla closed in 2003 after 94 years of operation. It was opened in 1909 initially to process ore from Mt Morgan. The stack of the old refinery was demolished only last February.

Plans by BHP to expand copper refining at Olympic Dam have been put on hold as part of a suspension of overall production at the copper-gold-uranium mine. The

company cited several factors for the decision, particularly the high capital cost of construction, and also listed the high Australian dollar, a lower copper price and subdued outlook for uranium.

The Cockle Creek lead and zinc smelter near Newcastle closed in 2003 after 107 years of operation. The original plant was built in 1896. While the production and export of iron ore continues to increase, production of steel in Australia has halved in the past five years to an estimated 4.5 million tonnes in 2013/14. BHP closed the steelworks at Newcastle in 1999. Blue Scope closed one of two blast furnaces in Port Kembla in 2011, halving steel production capacity there.

BHP operates the downstream nickel facilities in Western Australia, which comprise a smelter at Kambalda and a refinery at Kwinana. Earlier this year, BHP announced that it was reviewing its Nickel West business, which includes the Kambalda and Kwinana plants. The review is considering all options for Nickel West. Australia's only other downstream nickel facility is the Queensland Nickel refinery in Townsville, originally built to process local ore which has long since been exhausted. Now owned by Clive Palmer, the refinery currently processes ore imported from New Caledonia, Indonesia and the Philippines.

Australia's alumina refineries and aluminium smelters provide downstream processing from bauxite mines in Queensland, Western Australia and the Northern Territory. Highly integrated pipelines have been developed in the last 50 years, with the processing – or transformation into “solid electricity”, as alumina and aluminium are sometimes known – being located where power costs from coal and hydro are most favourable. One alumina refinery is currently being closed - at Nhulunbuy on the Gove Peninsula in the Northern Territory. The aluminium smelter at Kurri Kurri in New South Wales closed in 2012, and the smelter at Point Henry in Victoria is about to close in the next few weeks. There have been no closures of any of the four alumina refineries in Western Australia – at Kwinana, Pinjarra and Wagerup and Worsley – although some operational reviews have recently been announced. Nor have there been any closures in the Queensland pipeline. In Queensland, there are two alumina refineries in Gladstone taking bauxite from Weipa, one having been expanded only two years ago. Two aluminium smelters taking Gladstone alumina, at Bell Bay in Tasmania, and at Bluff in New Zealand, are under financial stress.

There is no decline in the downstream processing of uranium in Australia since Australia has never had such an industry. In a recent article in *The Australian*, Professor Ove Hoegh-Guldberg, Director of the Global Change Institute at the University of Queensland, and Professor Eric McFarland, Director of the Dow Centre for Sustainable Engineering Innovation at the University of Queensland, wrote that despite having the world's largest reserves of the nuclear reactor fuel, uranium, and being the third largest exporter of uranium, Australians receive almost no benefit from exporting it because it is exported in the form of crude uranium oxide and the high value processing into finished nuclear reactor fuel is done elsewhere. Invoking the environmental credentials of the modern nuclear power industry, they advocated that Australia should capture maximum value from our uranium resources by establishing safe and modern

manufacturing facilities to produce finished reactor fuel assemblies, thus becoming the world's premier producer and re-processor of nuclear fuel.

Perhaps at this point I should rail against a nation that appears to be undoing the good work of the giants and the corporations they led, and lambasting Australia's State and Federal Governments and employers and unions and environmental pressure groups and the apathetic Australian public generally for allowing uncompetitive costs to ruin such a magnificent legacy and failing to defend Australia against future impoverishment.

But then I would need to balance that with a report on the fall in world prices for metals and coal. I can tell you that the copper, silver, lead and zinc smelting and refining industry in Australia is expected to report total revenue of \$3.5 billion in 2013/14, down from \$5.5 billion in 2008/09, an annualised decline of 8.4 per cent over the last five years. But then I should take you back another six or eight years beyond that, when prices for some of our minerals and metals were really in the pits.

I should also counter-balance the story of the decline in downstream processing and manufacturing with the story of the rise of the extraction, processing and exporting of coal seam gas which will begin leaving Gladstone in vast quantities next year. A massive \$60 billion is being spent establishing this new industry in Queensland. It is coming on top of the many billions being spent on LNG projects from more conventional, non-CSG sources in Western Australia and the Northern Territory.

Governments have a huge capacity to affect the course of domestic value adding. The Government of Indonesia is seeking to force more smelting and refining at home by banning the export of unprocessed direct shipping ores (DSO) from Indonesia which is a major global supplier of copper concentrate, nickel ores and bauxite. The ban came into effect in January, although the Indonesian Government has since relaxed the immediate ban on copper cons but imposed penalties on exporters.

A few weeks ago, lobbyist and business consultant Greg Rudd, a former Senate candidate and brother of Kevin, wrote:

By contrast (with Australia), Indonesia has enacted legislation to value-add natural resources to build smelters and refineries, rather than ship raw products to China, while Australia allows smelters and refineries to close down. Australia is going backwards in terms of its cherished, long-term, value-adding dream.

Ironically, the ban on the export of unprocessed ores from Indonesia is being credited with encouraging an increase in the export of unprocessed bauxite from Australia – from the Northern Territory where the alumina refinery is closing and from Queensland where a new bauxite mine, South of Embley, is under consideration.

One other effect of the Indonesian ban has been an increase of more than 30 per cent in the world nickel price and concerns over a shortage of unprocessed nickel ores.

This address is an observation, not an advocacy. I say that in case you infer that I advocate such government intervention in Australia as is occurring in Indonesia to compel or even coerce miners to smelt and refine at home. Having said that, I do believe that it is in Australia's best interests for Australia's Federal and State Governments to encourage broadly the minerals and energy industry on which the nation relies more

than any other sector. The best way to do that is to provide Australia with a competitive economy in which to do business and specifically to encourage investment in the resources industry, particularly in exploration, project development and infrastructure, so that the resources of tomorrow are discovered and developed.

Regarding costs in Australia, the Managing Director of Chevron Australia, Roy Krzywosinski, was reported in April as saying that wages for trades people had doubled in Australia over the past six years. Barge welders were now being paid up to \$400,000 a year and other trades people, cooks and laundry hands up to \$350,000. A recent report by the Business Council of Australia reported that resource projects in Australia were 40 percent dearer than along the US Gulf Coast. Recently, Incitec Pivot, which supplies much of the explosives to the Australian mining industry, decided to build a new ammonia plant in the US rather than in Australia due to costs. The Chief Executive James Fazzino was reported as saying that it is costing A\$920 million to build in New Orleans and would have cost A\$1.4 billion to build in Australia.

The reason for the difference in cost? Labour. In the US about 35 per cent of the cost is in labour. In Australia, 60 per cent of the cost would have been in labour. To quote the Incitec Pivot chief, 'It is stunning to compare the efficiency and skills you get on site in the US with what you get in Australia'.

The rise of downstream processing in Australia 50 and more years ago had much to do with cheap energy, both hydro and coal. Let me re-state that when the Utah Development Company sought initially to develop Queensland's Bowen Basin coking coal, the State Government made it a condition that it literally donate the associated thermal coal to generate cheap local power, mainly to facilitate alumina and aluminium production at Gladstone.

Early this year, Stanwell, Queensland's largest power generator, was reported as declaring that Australia is now one of the world's most expensive countries for energy. Stanwell announced it would mothball a gas-fired power station and resurrect a 30-year old coal-fired plant. Chief Executive of Stanwell Richard Van Breda called for a scaling back of Australia's renewable energy target. The company told the Federal Government that a raft of energy policies was eroding Australia's competitiveness in manufacturing.

About the same time, one of Australia's leading economists, Saul Eslake, blamed, in part, the poorer quality of Australian economic management than in the past for the deterioration in Australia's productivity performance.

So Australian downstream processing and manufacturing is under huge pressure from high energy and labour costs – and the poor quality of economic management. Dow Chemical chief Andrew Liveris was reported recently as saying that Australia is always going to have high labour costs, and so should focus on internationally competitive energy, reserving gas for domestic use to protect local manufacturing.

## **Overview**

Let me bring a few points together:

Standing on the shoulders of giants provides a spectacular view. It is certainly a spectacular view historically, looking back for a century and a half. It is a view from the

shoulders of giants who were mainly Australian, and often born and raised in Australian mining towns or near mining towns. I have been privileged to have known some of the later giants personally. These giants sought to take Australian mining well downstream through advanced processing and often to manufacturing. While they did it for economic and for national strategic reasons, I have no doubt that they did it instinctively.

Over that 150 years, Australia's economic reliance on mining has risen and fallen in great waves, ranging in scale from important to dominant. Today, Australia continues to be massively dependent on mineral and energy resources for its prosperity. However, value adding in Australia to the traditional metalliferous minerals appears to have declined and appears likely to decline further in the immediate future. Meanwhile, Australian technologies are in use in processing plants in other countries, some of them being applied to process Australian minerals, as value adding of Australian minerals is transferred to the customer countries.

I have neither the resources nor the ability to research thoroughly this situation. I don't really know whether Australia as a mining nation is more of a quarry now than it has ever been, more dependent on mineral and energy products than ever before, and yet increasingly less inclined or less able to add value to those products at home, but it certainly seems like that. Nor do I have the capability to quantify the net loss of value accompanying the decline of downstream processing. I understand that there is evidence to indicate that investment in smelting and refining adds less value than investment in exploration, the development of mining projects and primary processing. Nor do I know what the giants would think or say now, if they had to deal with current costs in Australia, with the increasing demand for smelter and refinery feed in China and other rapidly growing economies, and with competition from Latin America and other suppliers. They may well be pleased that Australia continues to be the lucky country, that Australians continue to benefit enormously from mining, that we can take pleasure from contributing materially as a minerals and energy supplier to the amazingly successful efforts of the Chinese leadership to lift hundreds of millions of their people out of poverty, and that we can be satisfied that Australia is best served in a twenty-first century world by a mining industry that concentrates on mining – Australia the large scale, highly productive quarry.

However, speaking as the observer, from my self-appointed perch on the shoulders of giants, with the benefit of hindsight looking forward, I do think that they would instinctively seek to retain and grow the downstream end of an industry that has underpinned Australian living standards and our veritable way of life and continues to do so.