# Bridging the Gulf

Synergy and collaboration between former rivals bring cost savings and efficiencies to Rio Tinto Alcan's operations in northern Australia.

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**Photographs:** Christian Sprogoe


Rio Tinto

**Previous page**
Panorama of the Rio Tinto Alcan Gove alumina refinery on the coast of northern Australia.

**Left**
A dozer at work on a bauxite stockpile with the refinery in the background.

**Below far left**
Operators Tony Stanfield and Lawrie Rolley examining the quality of bauxite at the East Weipa mine.

**Below left**
Environment officer Jacinta Wells inspects sampling filters used to monitor air quality at the Weipa mine.

**Once upon a time, more than one gulf separated northern Australia's two bauxite mines, Weipa, on Queensland's western Cape York and, 560km away across the water, Gove, in north east Arnhem Land, in the Northern Territory.**

Weipa, a huge bauxite mine, has been a jewel in Rio Tinto's crown and the mainstay of its aluminium group for 40 years, but until two years ago, the Gove bauxite mine and alumina refinery were part of Alcan.

The two operations were isolated outposts astride the Gulf of Carpentaria, facing similar challenges of supply and communications and an equatorial climate that pushed people and equipment to their limits.

Now, both being under Rio Tinto's ownership, opportunities to collaborate and exploit synergies have been eagerly seized.

"Both sites immediately saw the possibilities," explains Jo-Anne Scarini, Weipa's general manager Operations. "Just as Gove was isolated from Alcan's global operations, so the Weipa bauxite operation was the only mine within Rio Tinto's aluminium processing business."

Gaining a sister mine engaged in the same business and operating under similar conditions created the prospect of sharing knowledge and leveraging scale.

Jo-Anne's counterpart at Gove, Julio Costa, also sees the logic of synergy, not only with Weipa but through a Cross Refinery programme that links Gove and the two alumina refineries at Gladstone, in Queensland, Yarwun and Queensland Alumina Limited (QAL).

"It is very significant for us. We have cost saving initiatives at Gove which we expect will bring around US$90 million this year. Some of these are synergy related and these alone will save tens of millions of dollars."

General manager Cross Refinery Projects Alex Bates points out that the relationships have evolved rapidly. "Immediately following the completion of the acquisition, information started flowing. We are now cranking up the engine of collaboration on many safety and maintenance issues."

Communication between sites, particularly Weipa and Gove, is now routine at the team level and collaboration is a two way street. For example, while Weipa has supplied expertise and business systems in areas such as cultural heritage surveys, knowledge and skills involved in rehabilitating mining areas flow the other way.

One of the big gains to date has been in mine planning. For several years, mine planning for Weipa has been carried out in Brisbane using a computer based system designed by Rio Tinto Technology & Innovation. Planning is managed strategically and matches available resources to forecasts of customer needs.

Gove, a smaller mine, took a less strategic approach, nominating a grade of ore and exploiting orebodies which allowed them to fulfil it.

Now Gove has been brought into the bigger system and general manager Resource Development Bauxite & Alumina Laurie Hicks says the approach has leveraged gains for both mines.

"The global financial crisis changed the behaviour of some of our customers," Laurie explains. "When the market turned down, Chinese customers delayed plans to expand alumina production from monohydrate bauxite, concentrating instead on existing infrastructure that utilised trihydrate bauxite."

While Weipa principally produces monohydrate bauxite, Gove, which has not exported since 2005, produces trihydrate.

"Our planners saw a synergy that would help us and our customers," says Laurie. "Now, using our shipping efficiencies, we are exporting trihydrate from Gove and winning customers from competitor bauxite mines in Indonesia. It has been a multimillion dollar result for us."

There are further synergies from this arrangement. Yarwun and QAL refineries continue to receive high quality (low silica content) bauxite ore, and trihydrate produced at Weipa is used at QAL as a sweetener, lowering production costs there.

Improved mine planning also plays a role in another important synergy project, cultural heritage and community relations.

Unlike Weipa, Gove did not have an in house archaeologist to handle cultural heritage surveys. This is a critical function for both mines, as surveys underpin agreements with the local indigenous communities who permit Rio Tinto to mine their land.

"The work is fundamental," observes Alan Tietzel, general manager of Government and Community Relations. "Our business needs to understand and fit in with the local community: the local people must benefit from our being there and should share the benefits of the operation." For Rio Tinto, says Alan, opportunity and profit flow from this.

To assist negotiations with two clans of the Yolngu people for renewal of mining and other leases, specialist archaeologist Justin Shiner, who conducted Weipa's cultural heritage surveys, went to Gove to apply proven techniques there.

Just as people from the Western Cape York communities were involved in surveys around Weipa, the Gove Community Relations team, led by Tim O'Neill, invited Northern Land Council representatives at Gove to participate in a survey there.

"Six local people spaced five metres apart walk transects which are typically a kilometre long and two kilometres wide, looking for

archaeological and anthropological features," explains Justin.

When discoveries are made their location and nature are recorded in a database, building up a detailed picture of previous occupation.

"We download this into the Geographic Information System (GIS) that we developed for Weipa, which then gives us detailed mapping of the areas we propose to mine."

Mine planners use the resulting aerial images to develop long and short term mining plans, avoiding areas of significance. The plans are then reviewed by the traditional owners.

Both Gove and Weipa draw on expertise in indigenous employment and training pioneered by Argyle Diamonds, in Western Australia.

"This work is very important," Alan Tietzel notes. "Doing these things well gives us a reputational advantage. It helps to ensure that we get our leases renewed."

Gove has an excellent reputation for the quality of its regeneration, repopulating rehabilitated mine areas with native plants. Weipa believed they could learn from this and sent members of the Environment Team to find out more. Planning and Environment manager Matt Lengerich explains: "We were having trouble getting some types of native seeds to take," says Matt. "The main difference in practice was that at Gove, they did not allow seed to mix with fertiliser for more than four hours before being sowed.

"We formed a working hypothesis that maybe we were inadvertently poisoning our seed with the fertiliser, so we set up trials to test this." It will take five years to build conclusive evidence but early signs are promising.

At the Gove alumina refinery, Martin Goodchild, the Maintenance and Engineering manager, is another beneficiary of the synergy programmes.

He, along with maintenance managers from QAL and Yarwun, met to establish and share best practices for calciners – the refractory lined kilns in which hydrated alumina is cooked at 1,100°C to produce pure alumina.

"We found that they have the same problems we do," Martin says. "We have been able to share our experiences. There is much to be gained once you get those networks going." Alex Bates says cost savings are expected to reach tens of millions of dollars per year across the refineries through reducing downtime and heating the calciners more efficiently.

A safety dividend is also expected from establishing a single standard for people working in refractory lined vessels.

A similar collaborative approach is about to be taken with washers at the three refineries, the vessels in which the caustic liquor stream, central to the Bayer refining process, is cleaned for recycling.

Bauxite and Alumina's chief operating officer, Chris Salisbury, is delighted with progress: the synergies being achieved are well ahead of plan.

"The current state of the business, where we require cost reductions and value improvement, has increased the momentum of collaboration," Chris observes.

"It is helping us achieve the value of our scale. It is clear that sharing equipment, systems and our collective knowledge is the way to make these businesses improve in difficult trading circumstances."

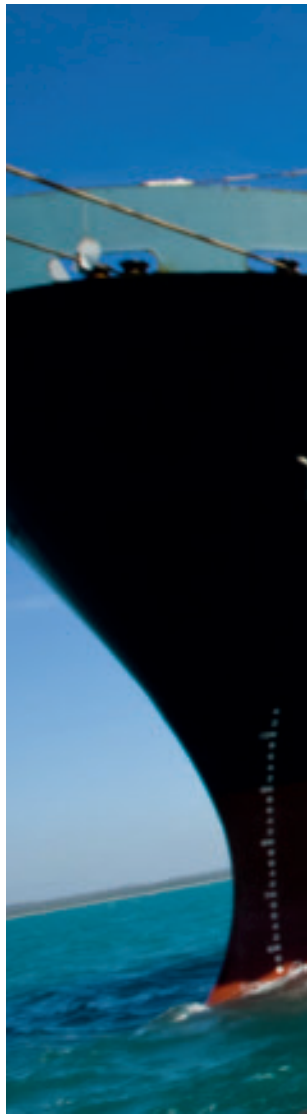
**Find out more about Rio Tinto Alcan at www.riotintoalcan.com/**

John Arlidge is a freelance journalist and business consultant based in Queensland, Australia.

**Right**
Roger McLaughlin, mine operator, at the wheel of a light vehicle at East Weipa.

**Far right**
Ed Crawford carrying out maintenance work at the Gove alumina refinery.

**Below right**
Local community leader Banambi Wunungmurra (left) with tug skipper Grant Barnett at Gove.

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