

# GIVING CREDIT WHERE CREDIT IS DUE



Daniel Gagnier

*The federal government's plan to implement the Kyoto Protocol fails to recognize massive GHG (greenhouse gas) reductions already achieved by companies like Alcan. By proposing 2000, or even a later period, as the baseline for trading emission credits, Ottawa will put any company that successfully reduced emissions before that time at a disadvantage, receiving little if any recognition for investments resulting in reduced GHG emissions. Bottom line for any Canadian framework under the Kyoto Protocol—don't penalize success.*

*Le plan de mise en œuvre du protocole de Kyoto élaboré par le gouvernement fédéral ne tient aucun compte des réductions massives de gaz à effet de serre déjà effectuées par des entreprises comme Alcan. En fixant à 2000, voire à plus tard, l'année à partir de laquelle seraient accordés des crédits à la dépollution, Ottawa pénalisera les entreprises ayant réduit leurs émissions avant cette date en ne reconnaissant pas à leur juste valeur les investissements engagés. À tout le moins, les politiques issues du protocole de Kyoto devraient se dispenser de punir le succès.*

Canadian industry must do its share to address climate change. Many companies, including Alcan, have reduced greenhouse gas (GHG) emissions since the early 1990s. But now it appears as if these significant and voluntary GHG reductions will not be taken into account in the federal government's recent plan for implementing the Kyoto Protocol.

Ottawa's current proposal would take as a baseline an average of historic performance over five years. The final year is not stated and, with this imprecision, could be as late as 2008. In this case, all companies that successfully reduced emissions before 2004 would be disadvantaged. They would have exhausted most, if not all, of their relatively inexpensive reduction potential and would have to purchase credits from companies that had done little or nothing to reduce emissions prior to the imposition of measures. Not only is this unfair, given those companies' investments in time, technology and people that have resulted in substantial GHG reductions, it would be a serious disincentive for industry voluntarily to conduct its operations in a sustainable manner.

The federal government is looking to voluntary reductions from the Canadian consumer as one way to fight climate change, but the biggest reductions are being asked of industry. For our Canadian economy to continue to prosper, our governments need to work with industry on reducing

emissions, but in a framework that provides for growth and investment.

By not recognizing, in essence by penalizing, companies and industries that have clearly supported, and indeed demonstrated through their actions, the notion of long-term sustainability, the government's plan is inequitable.

It is imperative that we create a level playing field which recognizes the efforts companies have made over the past decade, and continue to make, today, to address climate change.

Like many other responsible corporations, Alcan has not stood idly by waiting for regulatory bodies to set objectives. And the results are impressive.

Even before the landmark 1988 conference "The Changing Atmosphere" that initially flagged the climate change issue, Alcan had initiated voluntary action to reduce GHG emissions. In the 1990s, Alcan then undertook an intensive effort to reduce perfluorocarbons (PFCs) in its Quebec system that represents some 80 percent of Alcan's Canadian smelter capacity. PFCs are CO<sub>2</sub> equivalent (CO<sub>2</sub>e) gases that are among the six greenhouse gases covered by the Kyoto Protocol. At the end of the decade, Alcan had reduced PFC emissions by some 70 percent in its Quebec operations.

In British Columbia, Alcan was the first large industrial operation to inaugurate a Pollution Prevention Plan (P2)

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endorsed by a local public advisory committee and the provincial government. The goal of this plan is to move beyond regulatory compliance by reducing or eliminating pollutants at source. Current P2 targets for Alcan's British Columbia operations include a target of a ten-percent reduction in GHG emissions by 2004.

A key component in Alcan's approach is to manage its greenhouse gas emissions through process modifications and energy and materials conservation. Prior to the implementation of a company-wide GHG reduction program in 2001 (known as TARGET), the company had reduced absolute annual emissions by over two million tonnes of CO<sub>2</sub>e (or approximately 10 percent) over the levels of ten years ago.

As well, in line with the federal government's position on the role of cleaner energy contributions, Alcan's Canadian operations, which produce roughly two-thirds of the company's primary metal, are powered by its own hydroelectric facilities in British Columbia and Quebec, supplying most of the present power needs.

Aside from its internal voluntary reduction efforts, Alcan has actively collaborated with other companies, governments, NGOs and other stakeholders to ensure that pragmatic and cost-effective solutions are found to address climate change. Examples include:

- Active participation on various industry association climate change committees in North America and Europe and in a variety of association-sponsored initiatives to develop and promote practices and methodologies for managing and reducing GHG emissions.
- As a participant in "Partnership for Climate Action," Alcan works with a select group

of global companies and a leading US-based non-profit environmental organization to create strategies to limit and reduce GHG emissions.

- The US Environmental Protection Agency (EPA) recently awarded Alcan's Sebree smelter in Kentucky with an award for environmental excellence as a result of exceeding its targeted PFC reductions.

- Under the Voluntary Challenge and Registry (VCR) program's Champions in Action initiative, Alcan is one of a select group of companies helping to develop systems to accelerate the reduction of GHG emissions.

- In the Canadian Industry Program for Energy Conservation (CIPEC), Alcan is part of an industry-government partnership that promotes effective voluntary action in Canadian industry to reduce energy use per unit of production.

- And, in a recent landmark voluntary GHG emission reduction covenant with the province of Quebec, Alcan joins other concerned aluminum companies in a framework agreement and has committed to reduce GHG emissions from its Quebec operations by 285,000 tonnes by the end of 2003. This agreement is the first of its kind in North America, and clearly demonstrates how voluntary efforts can, and do, lead to real reductions.

Voluntary efforts such as these are a critical component, and in fact an essential building block, in changing our habits to address the looming, long-term threat of climate change. Such initiative warrants the recognition and support of our governments to allow us to work together for a common and mutually beneficial solution.

**I**n 2000, Alcan laid the groundwork for an ambitious and aggressive internal emissions reduction program that would see the company reduce GHG emissions on an ongoing, renewable four-year basis.

TARGET is a comprehensive business approach that recognizes business realities. It drives continual improvement and lowering emissions, while accounting for changes in the company's manufacturing and production capacities. The goal of the program is to institutionalize the concept of long-term reduction and reporting of GHG emissions in an effective and business-relevant fashion.

With the annually revised four-year outlook, the company's business groups are focusing attention and effort on following through with their emission reduction plans and contin-

ually identifying new areas for improvement. Climate change is a long-term issue, requiring effective effort and rigour both now and in the future. As well, this approach clearly demonstrates that addressing climate change is part of Alcan's overall business approach at all levels of the company.

TARGET examines more than the direct emissions generated from the smelting process. It also accounts for both indirect and direct sources of GHG emissions associated with electricity generation, fossil fuel production and consumption, process related emissions, transportation and the delivery of its products.

**A**lcan's performance in 2001—the first year under the TARGET program—is an impressive 1.1 million tonne reduction of CO<sub>2</sub>e on a worldwide basis. This adds to the already significant reductions described earlier. But this type of achievement is not something that can be realized every year, and in this case is due largely to a confluence of investments in technology, process and system changes, and employee development.

These outstanding results were achieved through numerous GHG reduction initiatives, including improvements in smelter process technology and management of the smelting process as well as energy efficiency improvements in all business groups.

As an incentive to maximize reductions in any given year, the surplus reductions achieved are “banked” (held in reserve) and support meeting future targets, which will become increasingly challenging to achieve.

This highlights a key feature of Alcan's approach, in which the baseline is adjusted each year to account for actual performance. In turn, future objectives are established from baselines that are adjusted both for the reductions being made as well as for changes in capacity resulting from divestitures, acquisitions, shutdowns, expansions, and the like.

**R**esponsible corporations recognize the need to become less dependent on the use of carbon and, therefore, reduce GHG emissions. At the same time, growing demand in any market is a competitive issue to which every company needs to be capable of responding. In the case of aluminum, there is a further twist in that the product itself offers potential to reduce GHG emissions.

With aluminum as part of the overall climate change solution, however, an increase in demand

may further increase emissions of the producers. TARGET has the flexibility to recognize that organic growth is a normal and necessary part of business and also carries the environmental integrity to ensure that, despite increased production, the overall trend is to reduce emissions on an ongoing basis.

For example, in 2002 Alcan inaugurated its 400,000-tonne capacity smelter in Alma Quebec. This \$2.6 billion investment included approximately \$180 million tagged strictly for state-of-the-art environmental technologies and processes. With the closure of Isle-Maligne, an adjacent 57-year-old, 75,000-tonne capacity smelter, the Alma smelter has resulted in a three to four-fold improvement in the tonnes of CO<sub>2</sub>e emitted per tonne of aluminum produced as compared to the older technology.

**I**n addition to the emissions-side of GHG reductions, it is critical that effective and credible means be developed for recognizing the significant potential for emissions reduction associated with the use and recycling of products and materials.

Increasing the amount of aluminum that is recycled has a strong positive impact on global GHG emissions by offsetting emissions related to corresponding primary aluminum production. This, of course, requires a broader global perspective, as production, sale and use, and recovery of aluminum occurs in a worldwide market. Prices are established in an international marketplace via the London Metals Exchange and demand and supply are met by the global networks of the competing companies.

In addition to internal recycling efforts, aluminum's unique physical properties are also a source of significant GHG reductions through their application in end-use products.

Since the 1980s, Alcan has endorsed an approach that helps to quantify the use of raw materials and energy as well as the environmental interactions of its products. By working closely with customers and suppliers from the outset, the methodology ensures that a company's products not only respond to the needs of its customers but also reflect the needs of society to minimize the potential environmental footprint through each product lifecycle.

This form of product stewardship requires manufacturers and producers to take a “conception to reincarnation” approach that starts with product design. Aluminum is an exceptional material to illustrate these concepts. Producing new metal from used

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aluminum beverage cans, for example, saves up to 95 percent of the primary energy requirement.

Alcan is a world leader in aluminum beverage can recycling. For example, the recycling of aluminum beverage cans reduces GHG emissions by over 150 kilograms for every 1,000 cans recycled. In 2001, Alcan recycled 771,552 tonnes of aluminum from used aluminum beverage cans, representing approximately 40 billion cans, and a variety of customer process and post-consumer scrap. This translates into a reduction of 9.3 million tonnes of CO<sub>2</sub>e emissions over an equivalent amount of primary aluminum.

In the transportation sector, peer group reviewed life cycle analysis studies have established the fact that one tonne of aluminum used in place of steel in automobiles can reduce CO<sub>2</sub>e emissions by as much as 20 tonnes over the life span of the vehicles. The same benefits hold true for trucks, buses and freight containers except that the longer distances travelled translate into even greater emission savings of some 40 tonnes of GHG emissions for every tonne of aluminum used in place of heavier materials. In the case of railcars, when aluminum is used as a replacement for steel, more than 200 tonnes of CO<sub>2</sub>e emissions are eliminated per tonne of aluminum.

Aluminum is 100 percent recyclable and economical, saving tremendous amounts of energy and raw materials. In the automotive sector, even with the widely varied aluminum alloys used, the recycling infrastructure is well established and recovers approximately 75 percent of all aluminum used. Furthermore, every 10 percent reduction in automobile vehicle mass provides a 6 to 8 percent improvement in fuel economy. Further weight savings in the mass transportation sector could be achieved with the use of aluminum-plastic composites and fibre-reinforced plastics.

As governments, individuals, environmental groups and corporations became increasingly concerned about the threat of GHG emissions and climate change, Alcan assumed a leadership role over the past 20 years in promoting the value of aluminum as a material solution to these concerns. The result is a significant contribution to the global reduction of GHG emissions.

In partnering with suppliers and customers to fully capitalize on aluminum's properties, Alcan has broadened its scope to promote additional GHG reductions in the marketplace

through innovations in products and processes as well as in the focused marketing of its products into end-use applications.

In the automotive sector, Alcan's partnerships with GM and Ford, for example, have contributed to a rapid growth of aluminum applications in conventional automobiles. In Europe, Alcan provides extensive support to auto industry leaders Audi, DaimlerChrysler, BMW and the European operations of Ford and General Motors. The partnership with Audi resulted in the development of the Audi A2, an automobile incorporating a high-tech aluminum space frame and aluminum body panels, shock absorbing bumpers and side-impact beams, weighing in at a full 250 kg (550 lbs.) lighter than if the car were built with traditional materials.

More recently, Alcan worked alongside Jaguar in the development of the new XJ sedan, the first volume-production automobile with a unibody structure manufactured predominantly in aluminum sheet. The doors, fenders, trunk lid and hood are in aluminium too, contributing to a curb weight that is up to 200 kg (441 lbs.) less than its predecessor, even though the car is packed with luxury features. As aluminum-intensive automobiles become more mainstream, related GHG emission reductions will be staggering to say the least.

Alcan is just one example of a Canadian company that has voluntarily implemented programs aimed at process emission reductions and improved energy efficiencies. Companies like this are leading-edge examples for others to follow in promoting the application of best practices as it relates to GHG reductions.

The bottom line for any Canadian framework under the Kyoto Protocol—don't penalize those who are already making a difference. If the federal government fails to recognize the efforts and performance of leading Canadian companies, what kind of signal does this send to both business and consumers? All the government will do is encourage minimum effort and compliance. The worst of all in doing so is that little will be done to help Canadian industry develop competitive advantages in a carbon-constrained future.

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