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**ALSTOM**

25 March 2009

The Secretary  
Senate Standing Committee on Economics  
PO Box 6100  
Parliament House  
**CANBERRA ACT 2600**

Dear Sir,

**RE: SUBMISSION TO THE SENATE SELECT COMMITTEE ON ECONOMICS  
CARBON POLLUTION REDUCTION SCHEME**

Alstom welcomes the referral of the bills to implement the Carbon Pollution Reduction Scheme to the Senate Select Committee on Economics and wishes to take the opportunity to comment on the CPRS generally.

**About Alstom**

Alstom is a global leader in power generation and rail infrastructure, focused on innovative and environmentally friendly technologies. Alstom builds the fastest train and the highest capacity automated metro in the world, and provides turnkey integrated power plant solutions and associated services for a wide variety of energy sources, including hydro, nuclear, gas, coal and wind. Headquartered in Paris, the company employs some 76,000 people in 70 countries, and had orders of 23.5 billion euro in 2007/08. Alstom equipment is to be found in 25% of the installed power generation capacity in the world today. In Australia, Alstom has been responsible for the installation of a number of advanced power generation facilities, including Swanbank, Kwinana and Tallawarra (the most efficient gas-powered power plant in the country).

**Alstom's position on climate change**

Alstom accepts the consensus of scientists that global warming is occurring, and that anthropogenic contribution to greenhouse gases in the atmosphere contribute to and accelerate the warming. It is clear that the evidence about global warming is strengthening all the time, and the science is telling us that action cannot be delayed without serious consequences. We support the position of the IPCC that coordinated steps need to be taken to restrict the expected temperature rise to less than 2 degrees Celsius, in order to avoid excessive and harmful climate change. Alstom has adopted a position of "*Clean Power Today*" to drive our offering of equipment and services towards the most carbon efficient levels possible.

## **Technologies**

We believe that the deployment of all emissions reducing technologies will be necessary in order to achieve the reductions in greenhouse emissions dictated by the 2 degree Celsius goal. In the field of power generation, both existing and new technologies can contribute to a reduction in overall emissions, while delivering the significant increases in generating capacity that will be required by both developed and developing economies. These technologies range from the relatively economic to those that are, at this point, very expensive to develop.

For example, one often overlooked opportunity to reduce emissions is improvement in the efficiency of existing power plants. It has been estimated that by 2030, over 60% of the world's power generation will still come from plants existing today. Every 1% improvement in efficiency, achieved through effective retrofit and servicing of boilers, turbines and other elements of plants, result in a 2% to 3% reduction in carbon emissions. Up to 10% of the aggregate emissions output of the existing global power fleet might be avoided if realistic efficiency upgrades were achieved.

Suppliers of power generation equipment are also working hard on developing more efficient new plant, with the main driver of efficiency being the temperature of the steam cycle. Future steam plant with temperatures of 700 degrees Celsius will allow efficiency factors of 50% or more in coal fired power plants. Compared to the current world average of 32% efficiency, up to 40% of the emissions from such a plant will be saved. Efficiencies of gas fired power generation plant can be improved in the same way.

Renewable energy technologies provide the clearest opportunity to reduce greenhouse emissions. Some of these, such as wind, are already commercially viable in many applications, while others such as advanced solar and solar thermal technologies still require considerable investment and development. Carbon capture and storage is also a promising – and necessary – technology to allow the worlds widely distributed coal reserves to be used without causing irreparable harm to the global environment.


Alstom is investing in all of these technologies, with a view to being able to provide effective choices for clean energy production today and in the future.

## **Alstom's position on carbon pricing**

All of the above technologies share one characteristic – whether relatively inexpensive or clearly expensive to develop and deploy, their viability is enhanced, and often relies upon, the pricing of the emissions externality into the cost of power generation. We support the decision of the government to establish an emissions trading system that will make this price element transparent, and will help to ensure that suppliers of power take into account the cost of emitting carbon when they make decisions about generation assets. Without a robust and realistic carbon price, many of the technologies on which the world will rely to bring the problem of climate change under control will remain underutilized and under deployed.

Alstom therefore wishes to urge the committee, while examining the legislation in detail, to keep in mind the very critical objective that it addresses and to strive to make it as effective as possible. Australia should have a Carbon Pollution Reduction Scheme, in order to ensure that its energy system is resilient to, and can take advantage of, the global pricing of carbon which will likely develop in coming decades. The consequences of not having an emissions trading scheme include falling behind in clean energy production and in competitive energy positioning, risking relationships with a number of key countries that have, or are projected to have, similar schemes, and missing out on the opportunity to develop skills and competencies in the clean energy revolution that must occur.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Chris Raine', written in a cursive style.

Chris Raine  
President & Managing Director  
Alstom Australia & New Zealand