Carbon trading and HVAC&R — for better or worse?

The Federal Government’s Green Paper on the Carbon Pollution Reduction Scheme, which set out its preferred position on an emissions trading scheme, has received wide coverage and commentary in the broader media. Sean McGowan reports on how some see its impact on the HVAC&R industry — for better or worse.

By introducing a Carbon Pollution Reduction Scheme, Australia will join other developed nations in the fight to reduce carbon pollution.

Emissions trading is already operating in 27 European countries, while twenty-eight states and provinces in the US and Canada are also introducing emissions trading, as is New Zealand. Japan is currently considering a scheme. In the US, both Presidential candidates are committed to introducing schemes to reduce carbon pollution.

The Federal Government’s Green Paper, released in mid-July, indicated that the Australian scheme would place obligations on 1000 liable firms from 2010 – the country’s biggest emitters.

These companies, which are responsible for upwards of 70% of Australia’s total greenhouse emissions, will be required to buy and sell permits through quarterly auctions, with the price of each permit (which will equate to one tonne of greenhouse gas emissions) determined by the market. The remaining 99% of businesses in Australia will not be directly involved in the regulation of emissions or be required to purchase permits.

This does not mean, however, that there will be no impact on these businesses, and while there appears to be widespread agreement that action needs to be taken on climate change, just how such a scheme will impact the majority has not quite yet been determined.

One sure-bet however is that energy prices, and in turn the price of many goods and services, will increase under such a scheme. Another is that energy efficiency measures will be more important than ever before.

While the HVAC&R industry will be widely affected by price increases on energy and refrigerants, it is also well-placed to play a leading role in driving down Australia’s greenhouse gas emissions in the built environment.
HVAC&R — HAS THE TIME COME?

There are many in the HVAC&R industry who see the introduction of a carbon trading scheme as an indicator for strong industry growth ahead. Such is the role of the industry in the built environment that an increase in the cost of energy, such as electricity and gas, as well as proposed price increases for water, can only mean that achieving increased efficiency will become more valuable than ever before.

According to Stephen Hennessy, director with mechanical engineering firm Steensen Varming, it is a very exciting time to be working in the industry. “The short term impact of the Carbon Pollution Reduction Scheme will be that energy prices will increase, and therefore energy saving initiatives will become even more desirable to building owners, managers and tenants,” he says.

“Many initiatives that may have once been considered but ultimately discarded due to their initial cost or payback period will undoubtedly be considered again.” Similarly Grant Hall, managing director of Muller Industries and current AIRAH Board member, believes the focus on HVAC&R plant will move from being all about first cost to ‘whole of life analyses’.

“Energy efficient equipment or design will receive a substantial boost from the introduction of a carbon trading scheme, so from that point of view, it will open up many opportunities for our industry,” Hall says.

“I think the biggest impact will be in the commercial sector, as the larger industrial sector has been energy focused for quite a time simply because of the scale of energy and cost. Eventually this mindset will filter down to the residential sector.”

“For example, very few large industrial systems are air-cooled due to the energy penalty incurred, yet a large percentage of commercial applications are – many of whom made the switch following the Melbourne Aquarium Legionella outbreak. It is this sector that I believe we will see the biggest change, and in time I believe we will see ammonia systems considered for commercial buildings.” However, until there is certainty as to what the cost of energy will be as a result of the scheme’s introduction (current estimates put increases of 16 per cent on electricity and 7 per cent on natural gas), building owners and managers will more than likely sit on their hands before making decisions on the future of their building HVAC systems.

“Currently, the need to have a building with a good NABERS rating is deemed to be more important than what might happen in a few years time. Of course they are related, and it would be foolish of any building owner to ignore the energy efficiency imperative,” notes Hennessy.

However, Hall would not be surprised to see a move away from indirect or theoretical assessments such as star ratings as a consequence of the scheme’s introduction.

“The other big change that I think we will see is a situation where the end user will
drive change, based on his actual cost or energy consumption. In other words, a shift from stars to cash.”

“As a result I see growth in education; and engineering working more closely with end users to help them reduce their emissions.”

**HFC PRICES TO INCREASE**

Steve Anderson from Refrigerants Australia predicts the proposed Carbon Pollution Reduction Scheme will drive HFC price increases of between 500 per cent and 1000 per cent.

“No doubt there will be lots written about the now certain demise of HFC refrigerants, and a whole scale and urgent migration to Naturals, but it might be worthwhile looking a little deeper.”

“The truth is that the demand for refrigerants, including HFCs, is relatively price inelastic. If the price of refrigerants drop, you don’t rush out and buy more – you buy what you need. Similarly, if the price goes up, you don’t cut back on your purchases, you still buy what you need,” he explains.

Anderson said that while this scale of price increase might sorely test his proposition, he does not believe the scheme’s impact on refrigerants will work out as planned.

While the Government cited the introduction of carbon trading schemes throughout the rest of the world as a driver for its introduction in Australia, it is worth pointing out, that other countries, such as Norway, have excluded HFCs from emissions trading programs, to instead regulate by end use controls.

Anderson believes the Federal Government’s motivation to include HFCs in the Australian scheme is to ensure maximum possible coverage.

“This view of course is focused on the process – if you start making exceptions, where do you draw the line? Rather than the objective of how we reduce emissions.”

“When asked for examples, Government officials point to Norway as a place that has reduced HFC consumption by introducing high taxes. While it is tempting to say that you can probably do without your room air conditioner more easily in Trondheim than Townsville, you would still have to question the relevance of using a country with a population a little bigger than Sydney, located on the Arctic Circle, as a possible model for Australia.”

“Unfortunately I can see refrigerant users spending a phenomenal amount of money on the carbon pollution reduction scheme for very little additional environmental benefit. A fraction of this money, spent using the existing regulatory framework, has the potential to achieve much more in terms of real emission reductions, as we continue the transition to low GWP refrigerants,” Anderson says.

**WHERE TO FOR BUILDING OWNERS?**

Not only will the focus on greenhouse emissions manifest itself through energy and refrigerant pricing – it may also have an impact on the way buildings are valued in the future.

According to Anita Mitchell and Chris Wallbank of Jones Lang LaSalle’s Energy and Sustainability Services Group, commercial tenants want to occupy efficient buildings both from a cost and corporate responsibility perspective.

“Inefficient buildings will increasingly be less attractive to tenants and therefore we may well transition from a cost premium for high performance assets to a valuation discount for underperforming assets,” Wallbank explains.

While there is growing awareness of the challenges facing existing property owners, Jones Lang LaSalle believes that the indirect benefits gained in more effective management of property required in high performance assets, such as improved maintenance, longer life cycles of plant, less breakdowns and so forth, are yet to be fully recognised.

“Due diligence work in the valuing of these properties will start to unlock ‘latent’ value in assets that previously was not recognised in hard line dollars.”

“Valuation techniques will need to be altered to reflect the actual performance of the asset and not just historical market value trends and desk top analysis, as this process may lead to the omission of key life cycle and performance considerations thus impacting the value of the asset or portfolio.”

While Mitchell acknowledges that the Carbon Pollution Reduction Scheme will make alternative energies more cost competitive, and make demand side abatement through energy efficiency that much more attractive, she says emerging technologies may still need appropriate incentives in terms of pricing.

“We will watch with interest in terms of what happens to the complimentary state-based and federal-based schemes in this area.”

“In a pure business sense our clients are seeking to be good corporate citizens while being able to justify investment in this area using sound commercial practice. Any changes that enable these two elements to achieve greater alignment will be advantageous,” Mitchell says.

Although the property sector has not been included specifically in the carbon trading scheme, it may be part of a range of complimentary measures the Government has alluded to, such as a white certificate scheme similar to that which operates in Europe where energy producers buy demand side credits from those that save energy.

“There is also the potential for various grants and research and development credits that could help to offset the upfront capital cost outlay for more efficient plant and equipment,” says Mitchell.

With energy to cost more, building owners and operators will be reviewing their asset plans and developing smarter, more efficient ways of operating their buildings. Life cycle costs, too, are sure to play a bigger role in building design.

Wallbank says that over time, existing building owners may well have the embodied energy of their assets considered as part of the overall footprint of their portfolio, making existing buildings more attractive in terms of performance improvement compared to new buildings.

“The bottom line for property professionals is that energy and carbon must be a key focus. Prices were rising sharply even without carbon being factored in, so this means that energy efficiency is going to be a driving factor in the buildings of the future, especially upgrading existing buildings.”