Introducing Low GWP Refrigerants: Australia’s experience

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Australia similar to a developing country?

Some shared attributes:

- Hot ambient temperatures
- Little domestic manufacturing
- Little influence on technology offerings
- End of a long, and often complicated, supply chain
- Increasing percentage of gas imports in pre-charged equipment
Impact of equipment sales by type

Breakdown of current market in CO$_2$-e

Future Breakdown

- MACs
- Splits
- Refrigeration
- Other AC

A reduction of imports (CO$_2$-e) in equipment by 44%
Analyses on Australian import data

Percentage imports of refrigerant in equipment

Average GWP imported refrigerant

- Bulk Gases Average GWP
- Average GWP - equipment
- Linear (Average GWP - equipment)
Direct emissions (actual) by species from 2016 to 2030 (Mt CO₂e)

Figure 1: RCFC: Direct emissions (actual) by species from 2016 to 2030 in Mt CO₂e.

Refrigerant emissions are about 10% of total emissions
Conclusions on 8 years of data

- Abrupt policy change and uncertainty – a three-year carbon tax for example – can make markets act unpredictably, and poorly.
- Longer trends are apparent – they need to be expedited.
  - Reductions in emissions – better equipment, better handling, and fewer leaks.
  - Gradual transition to lower GWP gases without picking winners.
Introducing low GWP refrigerants in Australia: The example of R32

• R32 has had quick – and early - acceptance into Australia (second after Japan)
• Initial concerns about R32 as an A2L refrigerant – industry worked together to resolve issue
• Strong growth in low GWP refrigerants from leading companies – R32 and HFO chillers introduced
• Education and training on R32 has been strong, but more universal training needed
• Some ill-informed criticism on safety aspects of R32
Why was R32 introduced early into Australia?

- Technician Licencing
- Capacity to roll out training nationally
- Ability to get everyone in a single room
Challenges in introducing R32

- Standards
- Tanks and Valves
- Supply across a big country
- Recovery of a flammable refrigerant
Thanks for your time!!

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