PRIME Projects – Action plan

Contents

Introduction

This short report introduces the 9 projects that the PRIME Implementation workshop has identified as a high priority.

Developing priorities

One of the outcomes of the 2013 industry summit was a list of 60 priority actions and 60 secondary actions that industry agreed would help assist the transition to low-emission HVAC&R.

The PRIME Executive Group reviewed all of the suggestions and proposals prioritised at the 2013 Summit and created a short-list of 30 projects and activities that had the potential to significantly reduce direct or indirect emissions associated with HVAC&R.

At the PRIME implementation Workshop held in Sydney on 10th September 2014 this list was reviewed and 9 specific projects were selected for further development.

PRIME project areas cover industry or sector specific projects and actions which have been identified as high value activities under the PRIME process.

Project list

The following nine (9) projects have been endorsed by industry as potential impactful projects that could be delivered relatively quickly. The approach to these sector specific or application specific issues will be for PRIME to endorse individual associations, or partnerships of associations (or companies, entities or individuals), to lead the activity in the following 9 project areas:

Project 1 - Building commissioning

Develop an industry agreed Proposal for Change (PFC) to introduce mandatory commissioning into the National Construction Code.

Project 2 - Building Log Book

Develop and introduce a 'Building Log Book program' for commercial buildings to record and maintain building information, and introduce a 'Chain of Custody of Documentation' system.

Project 3 - Access to plant

Develop new code for minimum WHS access requirements for plant, to inform industry of minimum access for maintenance requirements.

Project 4 - Residential air conditioning standard

Engage with Standards Australia to facilitate the work of Committee EE-01 to finalise the draft residential air conditioning standard.

Project 5 - Refrigerant handling Code of Practice

Engage with DoE on revising/updating/strengthening refrigerant handling CoPs:

- Revise existing HFC Codes to cover the safety and legal requirements and review construction standards/specifications.
- Develop new code for Carbon Dioxide (CO2) based systems.

- Nationalise Victorian Ammonia (NH3) CoP.

Project 6 - Managing HCFC phase-out

Develop a guide for owners outlining how to complete a financial and risk assessment for existing HCFC/HFC based systems to help them prioritise replacements and upgrades outlining the basic concepts and long term benefits of LCC/TEWI approach.

Project 7 - Refrigerant Leakage and enforcement

Implement a leakage monitoring program for refrigeration and air conditioning equipment with a refrigerant charge greater than 10 kg.

Project 8 - Leakage and energy efficiency

The energy efficiency cost of leaks – Research project to quantify cost benefits (kWh/bill) from proper levels of refrigerant charge in equipment and systems. Use the results of the project to improve operator awareness of the ROI for improved leakage practices.

Project 9 - Innovation

Facilitate a government innovation policy that recognizes the importance of HVACR innovation including funding for R&D.

Projects development planning

At the implementation workshop these nine projects were further scoped and developed by workshop participants.

The following action plans detail some of the issues that need to be included and developed further into a project delivery plan.

Next steps

These project areas and draft plans need to be reviewed, endorsed and empowered by the PRIME Steering Council/HVAC&R industry.

Project 1 - Building Commissioning PFC

Action: Develop Proposal For Change (PFC) for mandatory commissioning in NCC

Measurable Change: PFC is adopted for NCC 2016

LEAD AND ASSIST	
KEY RESOURCES	➢ Try and engage all services providers/disciplines ➢ AMCA; AIRAH; CIBSE; NEBB ▪ Plus: Fire, Lifts, Lights, Electrical, Hydraulics, Security
SCOPE AND DELIVERABLES	➢ Whole Building Commissioning: (1) PFC. – Detail. Why? Energy, Resources, Safety → Better Buildings. Costs and benefit. (2) Proposed Specification/Clauses for adoption
INFORMATION REQUIREMENTS	➢ Previous proposal and reasons for non-acceptance ➢ Public Comment draft (2010)? ➢ Investigate other commissioning requirements; GBCA, LEED, BREEAM; ➢ Who do we need to influence? Getting Endorsements?
FUNDING OPTIONS	➢ Low Funding Requirements to deliver this project ▪ Time
COMMUNICATION	➢ To be investigated; Best route for maximum influence ➢ After adoption, the ABCB to publicise
TRAINING	➢ Required for industry at large after adoption ➢ Business as usual for Tier 1/2

Project 2 - Building Log Book

Action: Develop a standardised log book for recording and maintaining building information.

Measurable Change: Persistence of Saving. Reduced Maintenance.

LEAD AND ASSIST	
KEY RESOURCES	➢ FMA ➢ Property Council ➢ AIRAH ➢ CIBSE
SCOPE AND DELIVERABLES	➢ Identify list of essential information ➢ Roll of information in bldg. efficiency ➢ Document management procedures ➢ Log building 'drift'
INFORMATION REQUIREMENTS	➢ CIBSE Building Log Book ➢ IGPE CFS Part II
FUNDING OPTIONS	
COMMUNICATION	➢ AIRAH DA # ➢ FMA
TRAINING	➢ PCA

Project 3 - Access to plant

Action: Develop a code or guide to document minimum access provisions for plant.

Measurable Change: Code developed to address minimum standards of safety and functionality.

LEAD AND ASSIST	
KEY RESOURCES	➢ Working Group with Relevant Experience ▪ FM's ▪ Designers/Contractors
SCOPE AND DELIVERABLES	➢ Code of Practice/ Standard ▪ Precise in Replacement of Plant ➢ HVAC&R ➢ All Plant
INFORMATION REQUIREMENTS	➢ Needs to be accessible ▪ To develops, builders, and suppliers ➢ Powers etc. (in terms of language and content) ▪ Address → Safety Issues, Energy
FUNDING OPTIONS	➢ Small outlay, not many pages ➢ Users would pay for it ➢ Government Funding
COMMUNICATION	➢ Selling the concept ▪ Design consultant responsible
TRAINING	➢ Specific training requirements ▪ E.g. confined spaces, working at heights.

Project 4 - Residential Air Conditioning

Action: Develop a standard for minimum energy efficiency provisions for residential air conditioning, design and installation.

Measurable Change: National Standard developed to address minimum standards of safety, environmental performance and functionality.

LEAD AND ASSIST	**Standards Australia, assisted by industry**
KEY RESOURCES	➢ Existing practices and documents ➢ Human Resources ▪ Drafting of documents
SCOPE AND DELIVERABLES	➢ Finalise installation standard for residential air conditioners ▪ Which falls within the scope of AS/NZS 3823.2. (Draft AS/NZS 5347)
INFORMATION REQUIREMENTS	➢ Existing documents and best practices ▪ Draft of AS/NZS 5347
FUNDING OPTIONS	➢ State Governments ➢ Federal Governments ➢ Industry Associations ▪ AREMA, CESA, AIG ➢ ARBS ➢ AIRAH ▪ Possible Funding in kind
COMMUNICATION	➢ Step 1: ▪ Communicate with possible funding stake holders ➢ Step 2: ▪ Broader communication to industry when completed
TRAINING	➢ Reference material for training ▪ TAFE – Cert. III

Project 5 - Refrigerant handling Codes of Practice

Action: Revise or develop Codes of Practice for handling the following refrigerants:

- HFCs/HFOs – Synthetic refrigerants (revise existing CoP)
- CO_2 –Carbon dioxide (create new)
- NH_3 –Ammonia (revise existing)

Measurable Change: National Codes developed to address minimum standards of safety and functionality.

LEAD AND ASSIST	
KEY RESOURCES	**HFC/HFO** ➢ AIRAH, existing experts W/G ➢ ARC, DOE, AMCA, OHS (State), SWM, RRA **CO2** ➢ Supermarkets ➢ Bitzer/Plant Manufacturers ➢ Heat Pumps **NH3** ➢ Fire Departments/WHS ➢ ESV (ERAC), EPA's? ➢ Cold Stores
SCOPE AND DELIVERABLES	**HFC/HFO** VBA, NSW Department of Fair Trading, QLD, TAFE, Refrigerant and equipment Suppliers/Wholesalers ➢ EOL Recyclers **CO2** ➢ Identify need or will OHS do? **NH3** ➢ Review, update Review and update cop every 12 months
INFORMATION REQUIREMENTS	**HFC/HFO** ➢ AS/NZS 1677/ ISO 5149 ➢ 2007 COP – Stating documents ➢ New Refrigerants **CO2** ➢ OH&S/WHS code? As a starting point **NH3** ➢ As above, Victorian Code as a starting point

FUNDING OPTIONS	**HFC/HFO** ➢ D of E ➢ Refrigeration. Supplies/manufacturers ➢ Wholesalers ➢ Make Free **CO2** ➢ As Above **NH3** ➢ As Above
COMMUNICATION	**HFC/HFO** ➢ TAFE's, ARENA, Commercial industry ➢ Whole supply chain, FMs **CO2** ➢ Supermarkets **NH3** ➢ FMs ➢ Refrigeration industry.
TRAINING	**HFC/HFO** ➢ Industry Road Show ➢ Trades (post trade) ➢ Online ➢ TAFE information courses ➢ Tie in with reviews/ gas transitions **CO2** ➢ Via Equipment Manufacturers **NH3** ➢ As Above

Project 6 – Managing HCFC phase-out and HFC phase-down

Action: Research and develop a guideline or information base to help owners manage transition away from R22 (HCFCs) and high GWP HFC refrigerants.

Measurable Change: Information published and available.

LEAD AND ASSIST	
KEY RESOURCES	➢ Industry Specialists ➢ Case Examples/Tech Papers ➢ Overseas Experience ➢ Legislation
SCOPE AND DELIVERABLES	➢ Define Phase-out (Time), in meaningful terms ➢ Identify alternative references and system design (risk, opportunity, cost)
INFORMATION REQUIREMENTS	➢ Montreal HCFC ➢ Kyoto HCFC ➢ Case Studies ➢ Refrigerant Bank
FUNDING OPTIONS	➢ Refrigerant Manufacturers ➢ Local Govt. – City of Sydney (Example) ➢ PCA ➢ Federal Government – Grants
COMMUNICATION	➢ DOE Website ➢ AIRAH Website ➢ Property Managers/FMA ➢ Architect/Designer ➢ Contractors

NOTES OF INTEREST

- Broad scope of applicants
- Cool Rooms – Small, Medium and Large
- Commercial Properties – Office, Retail, Hotel
- Tenancy Equipment in leased premises
- A/C – Packaged, Central Plant, Chillers
- Refrigeration – Commercial and Industrial
- Current Information Contradictory

Project 7 – Refrigerant Leakage Enforcement

Action: Implement a leakage monitoring program for refrigeration and air conditioning equipment with a refrigerant charge greater than 10kg.

Measurable Change: Lower Direct and Indirect Emissions.

LEAD AND ASSIST	
KEY RESOURCES	➢ Utilise the Ozone Act Review to determine/undertake RIS (or Cost Benefit Analysis) ➢ For larger equipment – and test regulatory merchandise ▪ Owners/Contractors
SCOPE AND DELIVERABLES	➢ ODS and SGG's ➢ Regulation requiring the regular maintenance of systems and leak detection
INFORMATION REQUIREMENTS	➢ Study of current emissions ➢ Study of other Regulatory Systems ▪ Example: Denmark, Sweden, USA etc.
FUNDING OPTIONS	➢ Use Current Ozone Act Review Arrangements
COMMUNICATION	➢ Advise equipment owners and contractors – if instituted
TRAINING	➢ Guidelines for system monitoring and logging

Project 8 – Refrigerant Leakage and Energy Efficiency

Action: Implement research project to quantify cost benefits (kWh/bill) from proper levels of refrigerant charge in equipment and systems. Use the results of the project to improve operator awareness of the ROI for improved leakage practices.

Measurable Change: Trusted information made available to industry.

LEAD AND ASSIST	
KEY RESOURCES	➢ AREMA ➢ DOE – Ozone (Victoria) and/or OEH (NSW)
SCOPE AND DELIVERABLES	➢ Industry accepted data ➢ Training materials ➢ Equipment owner guides
INFORMATION REQUIREMENTS	➢ The relationship between charge (quality and quantity),efficiency and capacity ➢ How to identify loss of charge easily
FUNDING OPTIONS	➢ Equipment manufacturers and associations ➢ State environmental and energy agencies
COMMUNICATION	➢ Industry Groups and Stakeholders
TRAINING	➢ Trade level (TAFES) ➢ Industry Associations – Service Professionals

Project 9 – Innovation and sustainable Emission Reduction

Action: Document a HVAC&R innovations Roadmap by Sector, and Identify Role Models.

Measurable Change: HVAC&R innovation information is readily available to industry and government.

LEAD AND ASSIST	
KEY RESOURCES	➢ Cross Functional ➢ Role Models
SCOPE AND DELIVERABLES	➢ Demonstrate benefits that innovation makes - $8 billion ➢ Raise awareness with key stakeholders ➢ Cost/Benefit ▪ Real life case studies ➢ Define what is innovation in HVAC&R
INFORMATION REQUIREMENTS	➢ LCC
FUNDING OPTIONS	➢ Government procurement to drive ▪ Value Engineering ➢ National Centre of Excellence ▪ Training and Research
COMMUNICATION	➢ Government/Industry/Research ▪ Marketing ➢ Financing Systems

End of Action Plan