Industry Perspectives on HCFC Phase-out in India

AIR CONDITIONING & COMMERCIAL REFRIGERATION SECTOR

6th October 2009

Airconditioning & Commercial Refrigeratio Industry (1)

Market Size (FY 2008 ~ 09) Rs/cr

AC&R industry market size : **14,200** (US$ 3.0 B)

1 Airconditioning systems : 11,000
2 Commercial refrigeration : 2,000
3 AC&R servicing : 1,200

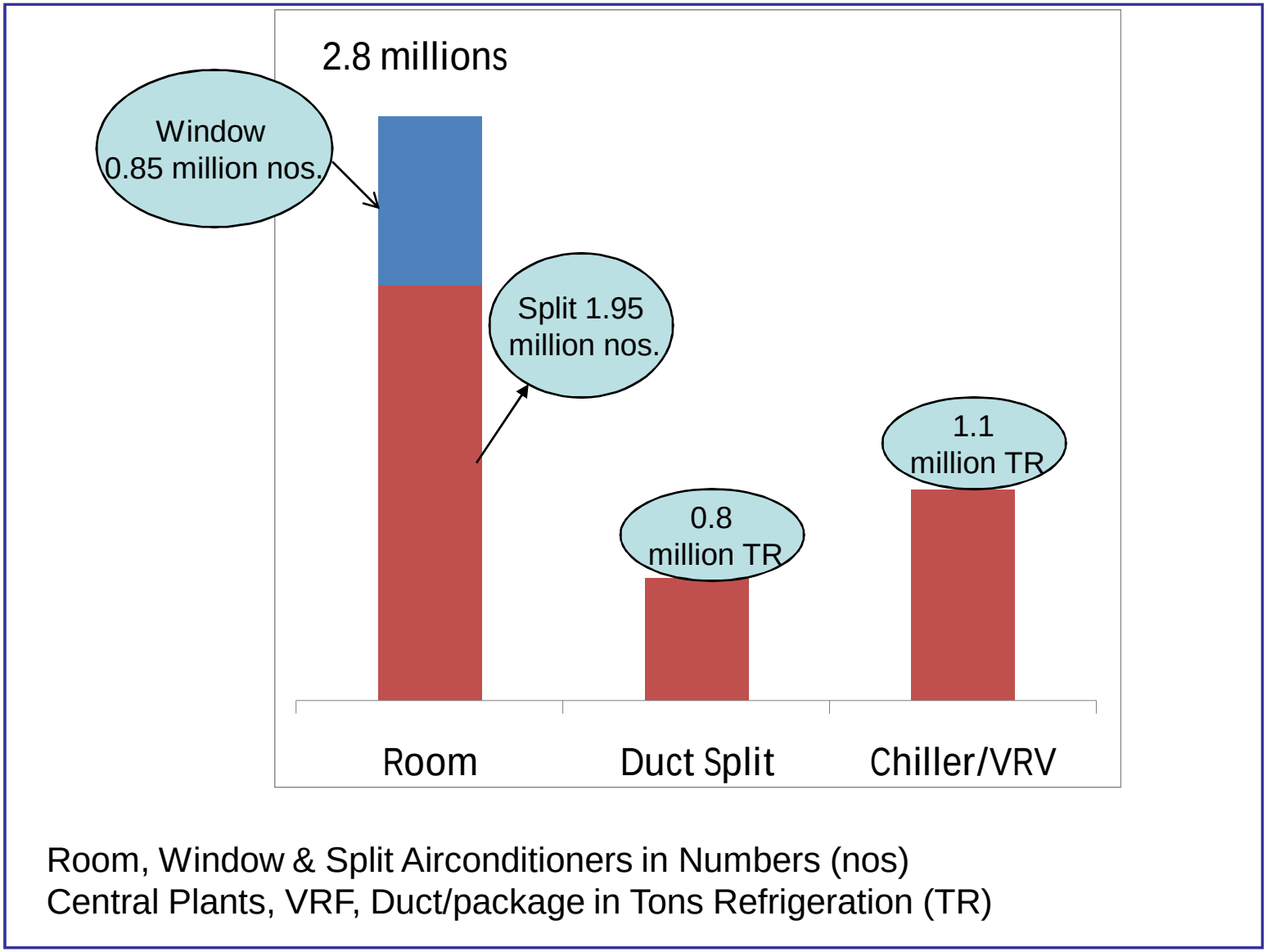
Air conditioning Systems:

A Room Air-conditioners : 5,100
B Central Plants, VRF : 3,600
C Duct/package : 2,300

*Source: RAMA

RAMA

Airconditioning & Commercial Refrigeration Industry (2)



Room, Window & Split Airconditioners in Numbers (nos)
Central Plants, VRF, Duct/package in Tons Refrigeration (TR)

Airconditioning & Commercial Refrigeration Industry (3)

Air conditioning Systems

- Growth during last 5 years : **over 20%**

Present penetration level is barely 3%

- Expected growth during medium term (3~5 years) :**15~20%**

Airconditioning & Commercial Refrigeration Industry (4)

Commercial Refrigeration Sector:

- Growth during last 5 years : **10% (approx)**

- Expected growth during medium term (3~5 years) :**10~12%**

MISSING LINK: UNBROKEN REFRIGERATION CHAIN FROM FARM TO THE HOUSEHOLD

Industry Concerns

1. **Feasible alternate technologies for HCFCs have limited maturity and availability**

2. **Technology transition costs are extremely high; consequently industry growth may be hampered.**

3. **HFC alternatives that are feasible have high GWPs and there are concerns about adverse affect on the climate.**

4. **Eventually, there shall be another transition to low WP alternatives. Industry shall be required to make new investments without having recovered transition costs for HFC alternatives.**

Technology Options (HPMP 24~25 Sep 09)

Application	Present	options	issues
1.RAC	100% HCFC22	1.R410a 2.R407c 3.HC's* (R290)	1.High critical pressure need to select appropriate components to meet Energy efficiency 2.Local availability 3.Cost of components 4.Development cost
2.Ducted	HCFC22	R407c/R410a	
3.Commercial Refrigeration	HCFC22	R404a/134a	
4.Chillers	HCFC22/ HCFC123	R134a R404a/407c/410a	
5.Telecom/Precision	HCFC22	R404c/R407c/410a	
6.Transport refrigeration Air conditioning	HCFC22	R134a R404a/407c/410a	

* HC's: are in research stage not yet commercialized.

RAC- Sectorial Session (HPMP 24~25 Sep 09)

Conclusions:

1. Need to evaluate the options available on technology. Multiple change over of refrigerants.
   HCFC → HFC → Low GWP refrigerants solutions?

2. Need to study the change over cost & Optimum solutions.

3. Necessity to calculate the direct & indirect emissions.

4. Alternate Refrigerants to be made available at equivalent cost to HCFC22

Action Plan:

1. Working committee has been formed.

2. Detailed work plan /scope of work shall be prepared on 6th oct'09.

3. Data gathering through RAMA/ Third party (consultant) survey.
   Ozone cell shall be supporting the survey.

4. Regular meetings /workshops to be held to finalize (before HPMP final road map in June'10)

Phase out approaches and Cost (HPMP 24~25 Sep 09)

Phase out approaches:

Priority for the sectors shall be decided based on the available options and Consumption. Major sectors are

1. RAC
2. Duct/Package
3. Commercial Refrigeration
4. Small capacity chillers
5. Telecom /precision
6. Transport
7. Industrial / applications

Conclusions:

- After gathering the sector wise data , the sectorwise priority may change.
- Important factors for setting the priority shall be
  - product life cycle.
  - Ease of switch over & availability of alternate refrigerants
  - Energy consumption of the equipments

Cost estimations:

- Need to gather the cost data at each stage (Technology transfer/ Technology development/ Testing facility / Production facility /Incremental cost on components/Training / Equipment for servicing)
- Separate Cost estimate for SME organizations for above

Policy, Enforcement & Awareness Needs (HPMP 24~25 Sep 09)

Policy Recommendations

- Import & Excise duty exemptions are available on capital goods for setting up of non ODS production capacity.

-These benefits should be extended to Testing facilities, calibration & other technology evaluation equipments for testing of products /components.

- Similar benefits should also be extended to import & local purchase of components, raw materials, consumables for non ODS products. This will encourage conversion from ODS to non ODS.

- Income tax exemption similar to the production units sets up in backward areas should be permitted to units manufacturing products with non ODS

- Government may promote investments in non ODS component industry.

- Subsidies on purchase of non ODS products to make these competitive and to accelerate switchover.
- Protection on import of non ODS Products/raw materials / components against anti dumping/ safe guard duty.

Enforcement

- will be suggested later

Awareness Needs

- Awareness program's organized by the organizations need to be identified & extend support.

- Govt. should take initiatives to educate & create awareness among users on the safe usage of non ODS substances.