HCFC Phase out

Profile of Servicing Sector

Sectoral Working Groups Meeting

for Preparation of HPMP

R S Iyer, 24-25 September 2009

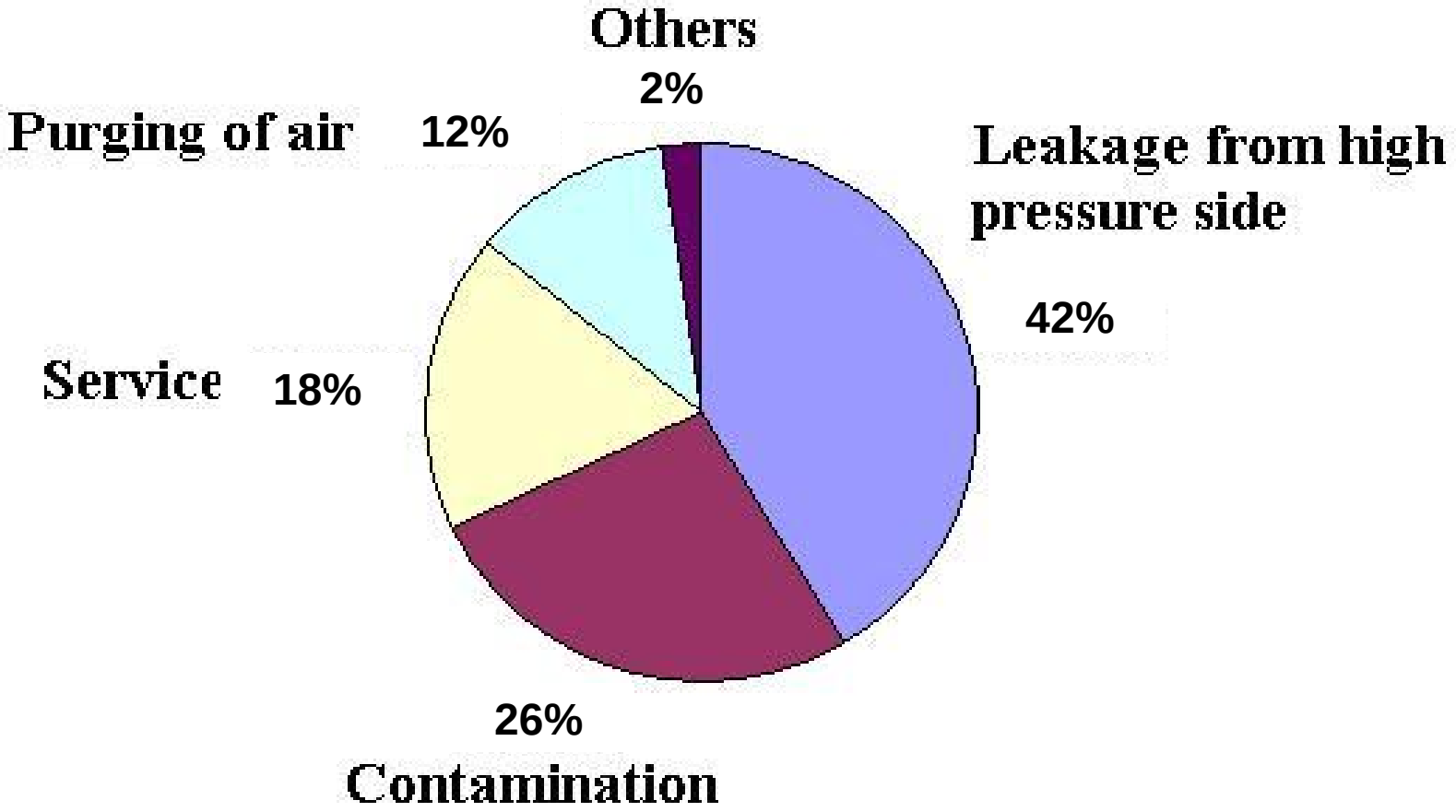
Relevance of Servicing Sector

- Significant share of total HCFC consumption (>20%)
- Probably more than 20,000 enterprises involved
- Huge variety of applications
- Most appliances serviced by technicians from informal sector after warranty period
- Informal sector not covered by OEM training infrastructure
- Sustainable phase-out needs to include service sector due to risk of reverse conversions

Overview of sub-sectors/applications

- Domestic and commercial AC applications like Small ACs < 3TR, Packaged ACs ≥ 5TR, Chillers-reciprocating/scroll/screw.
- Refrigeration applications like Supermarkets, Cold Storages, Ice Cream & Ice Candy, Liquid/Water Coolers, Process Chillers etc.
- Transport AC and refrigeration
- Variable Refrigerant Volume Systems (VRV)
- Telecommunication & Data Centers
- Centrifugal chillers

Refrigerant Emissions through Poor Servicing Practices



Figures indicative, mainly for small appliances

Understanding HCFC Substitutes

- Zero ODP & Low GWP e.g. Natural Refrigerants
- HFCs may also have to be phased out soon
- Drop-ins/Retrofits
- Evaluation of all options required:
  - Technical analysis
  - Availability of Refrigerant & Components
  - Economic Feasibility
  - Environmental, Health and Safety aspects
  - Skills and Training requirements
  - Trials and Demonstrations, Field Experience

Building Experience

- Experience/Expertise to be developed in India on substitutes like R290, R417A, 427A, 407C, 422D etc.
- OEMs to be involved, e.g. for retrofits
- Establish support centers for trials and demonstrations etc.
- Training curricula and materials to be developed
- Hands on training for service technicians

Capacity Building for Servicing

- Awareness strategy to be developed
- Training and equipment needs of technicians to be identified
- Building on NCCoPP experience and infrastructure but target group different
- Support structure for training to be sustained & upgraded
- Close co-operation with OEMs crucial for implementation

Role of OEMs in Servicing Sector

- In CFC phase-out OEMs played an active role in preparing training material for service, conducting training for trainers and technicians.
- Role of OEMs in servicing sector training to be strengthened under HCFC phase-out.
- OEM policies on substitutes in servicing required (e.g. for retrofitting).
- Co-operation with informal service sector will also benefit OEMs and their products.

Comparison with CFC Phase-out

CFC phase-out:

- Dominated by domestic refrigerators, freezers and other small appliances.
- Training emphasis on Good Servicing Practices, HC retrofits and R134a substitution. No HFC retrofits.

HCFCs phase-out:

- May need training on a larger variety of substitutes depending on application.
- Will also need retrofit training for HFCs which has to be disciplined with removal of mineral oil lubricants.

Challenges in Servicing Sector

- Post warranty appliances and equipment usually serviced by technicians from informal sector with only limited support from OEMs.
- Technicians from informal sector may not follow Good Servicing Practices due to various reasons resulting in poor performance of equipment.
- Appliances manufactured by SMEs are also serviced by technicians from informal sector.
- Need to train and upgrade such technicians in HCFC substitution
- Difficult to reach out to the informal sector
- Difficult to specify and verify concrete phase-out targets

Steps for Developing the Sector Strategy

- Develop a comprehensive service sector profile (e.g. # of service enterprises & concentration, HCFC consumption per subsector, skill levels, servicing practices)
- Prioritisation of subsectors (low hanging fruits & high impact)
- Identifying all requirements for phase-out of HCFC in the servicing sector (awareness, training, equipment support)
- Assess scope for regulation and policy measures
- Layout of support structure (building on NCCoPP)
- Estimation of funding requirements for implementation
- Impact of the planned phase-out activities in ODP tonnes
- Develop monitoring and verification methodology