

MAC and Its Servicing in the region of Asia and Pacific

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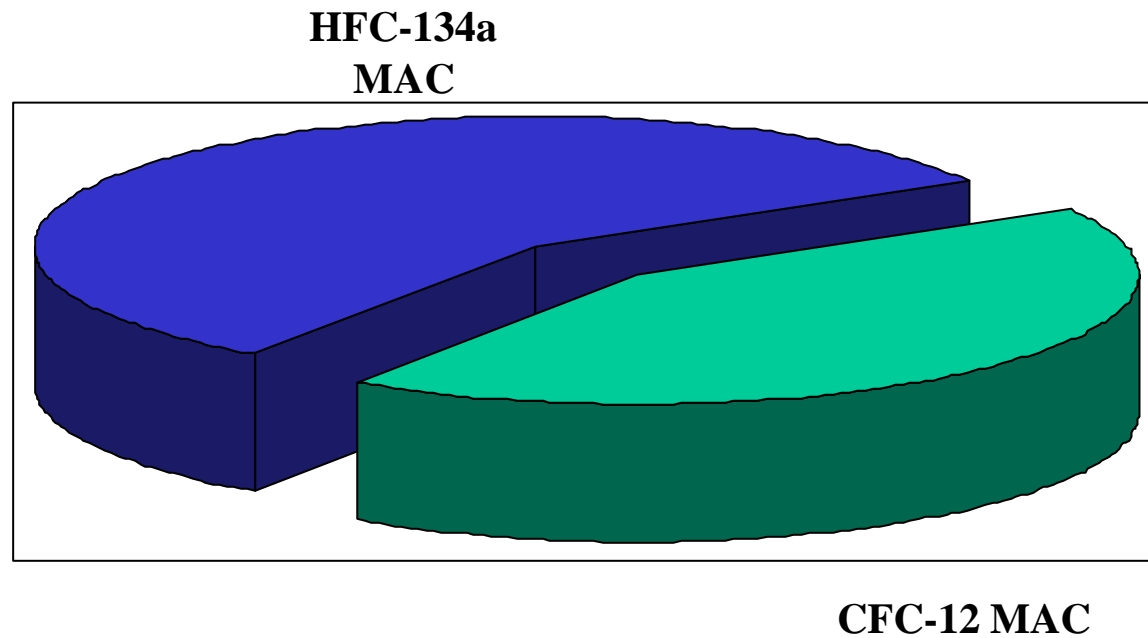
Manufacturer of MAC

- The developing country producers of MAC in this region such like China, Malaysia, Indonesia, have stopped the production of the CFC based MAC, while India is converting its production process.
- The challenge to this region is how to phaseout CFC-12 used in the MAC servicing sector.
- HFC emission is not yet on the regional/national agenda.

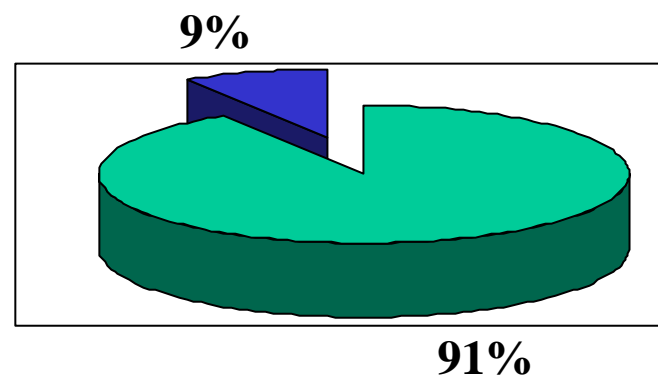
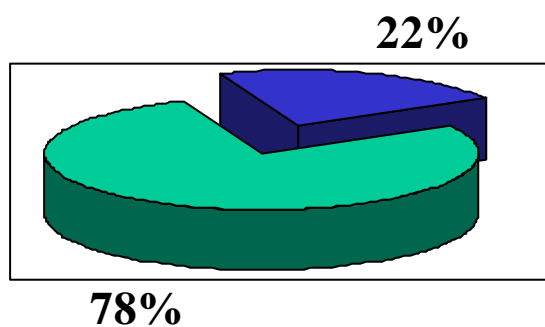
MAC and CFC consumption in the region

- There are approximately 15 million CFC based MAC being used (excluding Japan and R. Korea)
- In average, 40-50% MACs are CFC-12 system, the rest are HFC-134a system.
- CFC MAC needs to be recharged once every 1.5-2.5 years.
- The annual CFC-12 consumption of MAC is around 7,000 to 8,000 tons.
- Most CFC-12 MACs were manufactured before 1996.

The Population of the MAC in this region (except Japan and Korea, R)



CFC Consumption and Funding Received from MLF as of 31 December 2002



Situation of MAC Servicing Workshop

- Informal sector: not easy to access by authorities
- On-the-job training
- No recycling/recovery: venting refrigerant is the normal practice
- Little knowledge about the difference of HFC-134a and CFC-12: revert retrofit HFC-134a system with CFC-12
- Inadequately equipped: vacuum machine, recycling machine, leak detector, etc.

The Challenge to Reduce the Consumption of CFC

- Adopt the good practice by all technicians
- Do recycling/recovery during servicing, decommission
- Stop import/export of second hand car with CFC MAC
- Prevent revert retrofit from HFC134a to CFC-12 system
- Meet servicing requirement after 2010

Difficulties for Promotion Good Practices

- No financial benefit to the technicians /servicing workshops
- No compulsory provision under the MP for the recycling/recovery
- MLF can't provide all servicing workshops with recycling/recovery and other tools/equipment for proper servicing
- No strong public/consumer support for good practice

Government Strategy/Policy to Reduce the CFC Consumption

- Training and certificating the technicians to promote the good practices
- Development of economic incentives for the recycling/recovery of CFC
- Conducting public awareness raising campaign
- Banning the importation of cars with CFC MAC
- Compulsory MAC inspection as part of the annual car inspection
- Control CFC supply
- Formulation of industry association

UNEP Approach

- Development and implementation of Refrigerant Management Plan (RMP): policy measures, economic incentives, training, and public awareness and recycling /recovery
- Integrated training module to cover good practice training for handling both CFC and HFC refrigerant.
- Promote the responsible use of HFC with USEPA, and other partners.
- Seek more cooperation to address the HFC emission issue by using the established institutional/policy framework, and the recycling/recovery network in the countries.

UNEP OzonAction Programme

Portfolios in the Region

- RMP under implementation
Bangladesh, Fiji, Lao, Maldives,
Mongolia, Sri Lanka, Nepal, Vietnam
- RMP under development
Brunei Darussalam, Cambodia, China*,
India*, Korea DPR, Myanmar