

Japan:Steps taken to reduce HFC emissions

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Voluntary Action Plans by Industry Associations

- Established by five associations including JAMA , following METI Guidelines in 1998
- Industrial Structural Council reviews the progress every year.
- Achievements to date

1) Reduced Charge (Original Target: 10% reduction in 2010 from 1995 level)

Charge for newly launched vehicles (136 models)

Passenger vehicle: 650g in 1995 ? 430 g in 2001

Light vehicle: 450g in 1995 ? 380g in 2001

Bus 6,000g in 1995 ? 5,000g in 2001

Average charge for vehicles in operation: 700g in 1995 ? 603g in 2001

cf. 900g in US, 700g in Europe (IPCC TAR 2001)

2) Reduced emissions during production

3.5g per vehicle

3) Reduced emissions during operation (Improved containment and better services)

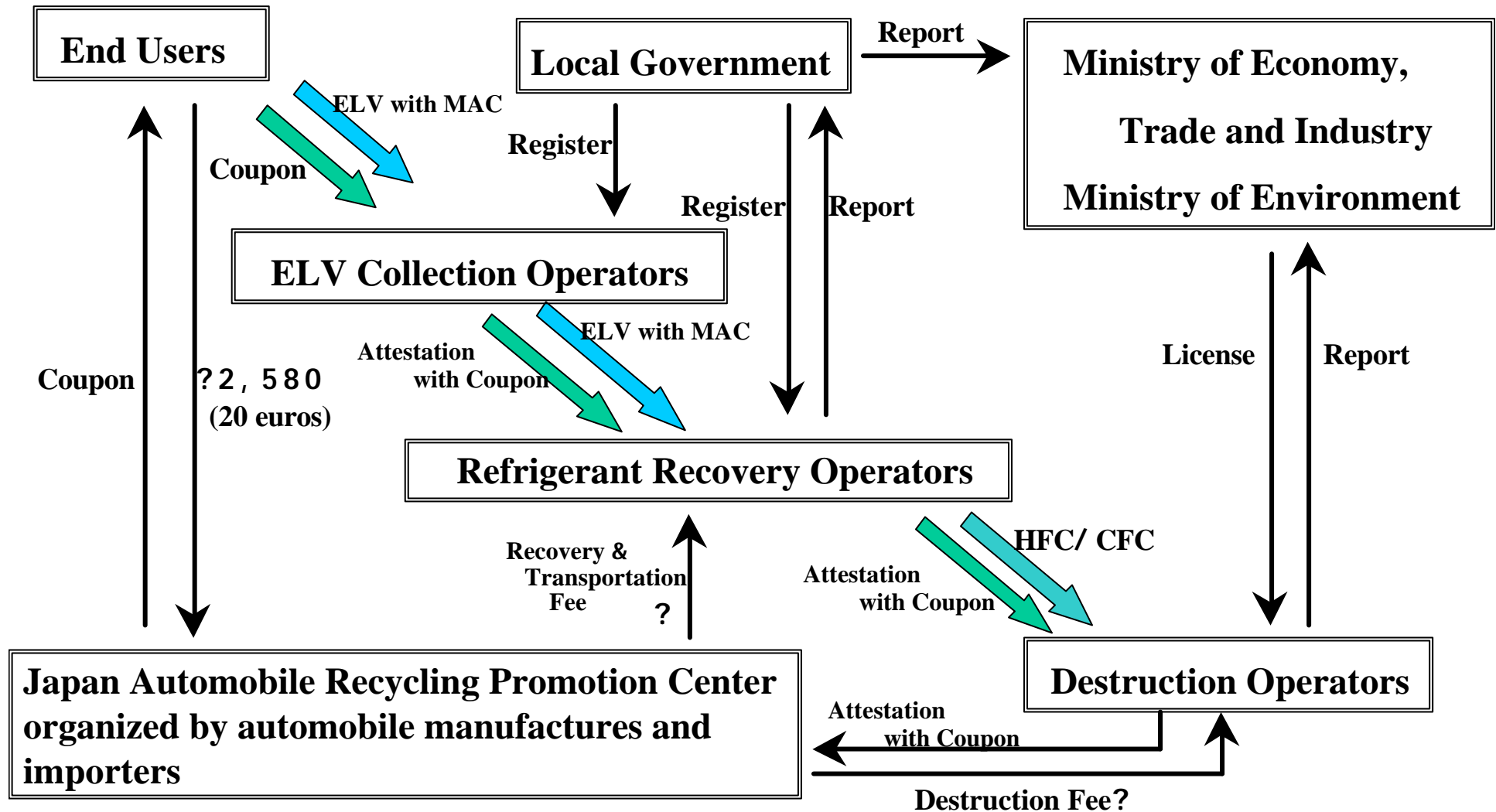
Average leakage rates (regular leak) : 15g per year cf. 70g in US (IPCC TAR 2001)

4) R&D for alternative refrigerants

First CO₂ MAC installed in a fuel cell vehicle was launched in 2001. CO₂ MAC with a ordinary engine vehicle is still under development.

Fluorocarbon Recovery and Destruction Law

- Recovery and destruction of refrigerants have been mandatory since 1 October 2002.
- Recovery of refrigerants during service and repair has also become mandatory.



? This schedule is scheduled to be integrated into vehicle recycling system by January 2005.

HFC emissions from MACs in Japan

HFC emissions from MACs are still relatively small though they have increased and will increase further as the HFC-MAC vehicles replace existing CFC-MAC vehicles.

	1995	1996	1997	1998	1999	2000	2001
Emissions (million t -CO ₂)	0.67	0.97	1.26	1.51	1.77	2.04	2.26
Emissions (t)	517	749	971	1,163	1,359	1,571	1,737

Conclusion

- Voluntary action plans with an annual review by the government have been quite effective in areas where manufacturers have responsibility, for example, R&D to minimize HFC leakage during production and operation and R&D for alternative refrigerants.
- A mandatory system regulated by law is suitable in areas where individual vehicle owners have responsibility, for example, recovery of refrigerants at service and vehicle disposal.