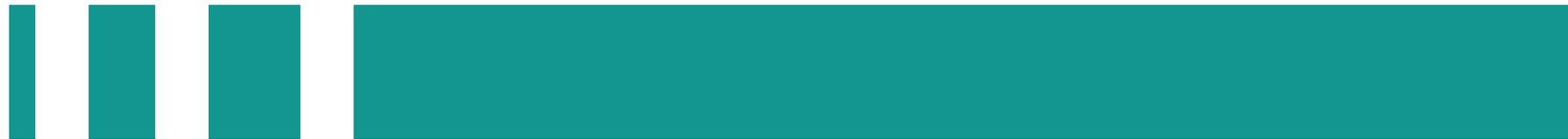
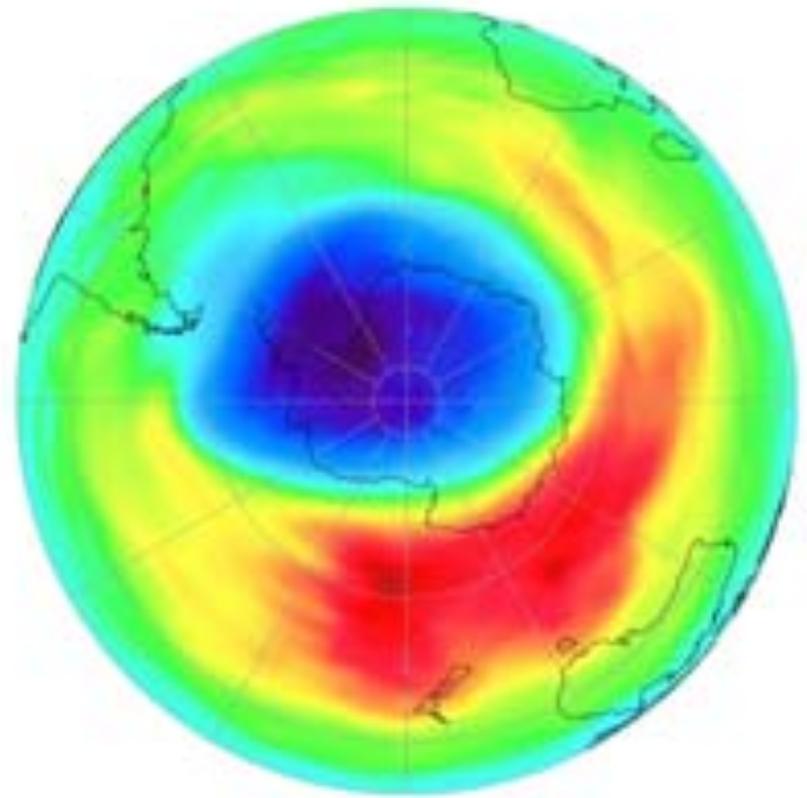
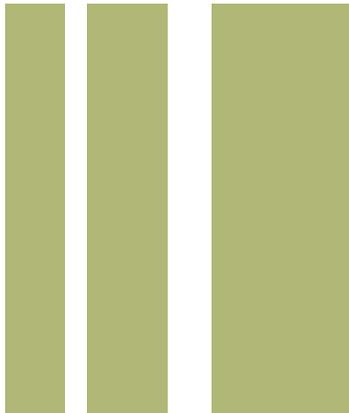


**Fridge recycling is the
best solution to avoid CFC emissions**



Importance of CFC

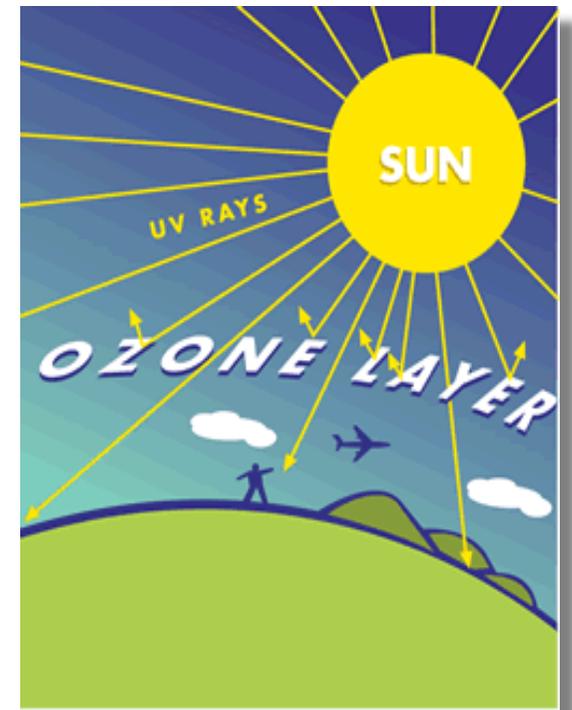
Why is every gram of CFC recovered so important?



Importance of CFC

No. 1 ozone killer is CFC

Climate protection will fail without the systematic reduction of CFC levels in the atmosphere

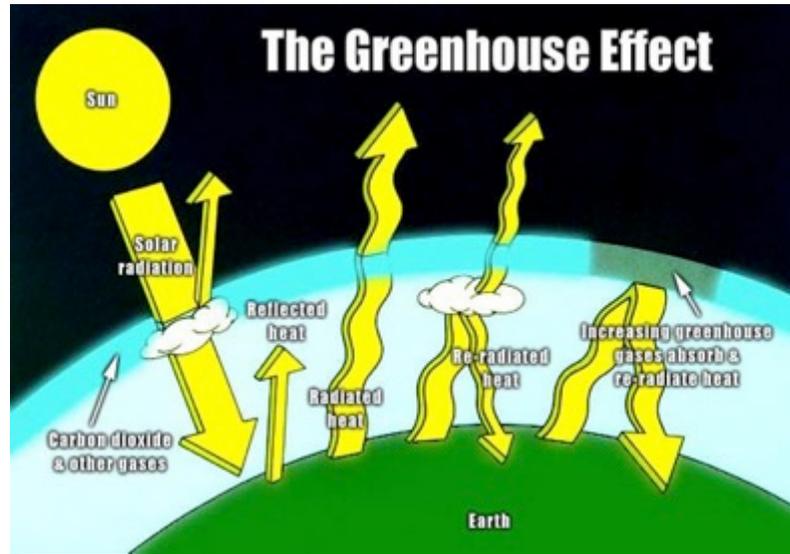


Importance of CFC

Huge influence on the greenhouse effect

CFC R12: 10,720 kg
CO₂-equivalents

CFC R11: 4,680 kg
CO₂-equivalents



1 fridge = approx. 2800 kg CO₂ eq.!

Importance of CFC

1 fridge



2800 kg CO₂ eq.!

1 house / a



6886 kg CO₂

1 car / a



2832 kg CO₂*

* 15000km/a und 8l/100km fuel (Benzin) 2.36kgCO₂/l

Fridges recycling in the EU

Current situation in the EU

In the EU around 18 million waste fridges and freezers are returned every year.

80 % of these waste appliances, 14.4 million units contain CFCs



**14.4 million fridges / a ⇒
40.3 million tons of CO₂eq / a**

Fridges recycling in the EU

We estimate that there are still about 200 million fridges containing CFCs currently in use in the EU

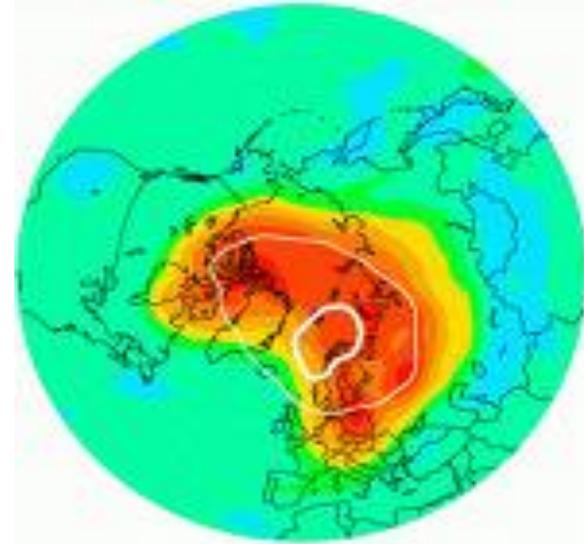
200 million fridges ⇒



560 million tonnes of CO₂eq

CFC s Conclusion

CFC a massive contributor to the greenhouse effect



The numbers demonstrate just how important it is to recover every gram of CFC when recycling waste refrigeration equipment.

CFC Conclusions

Quality is the answer !

ecological solution



Bild: RUAG

economical solution



CFC Conclusions

Quality is the answer !



Fridge demanufacturing Step 1

CFC Conclusions

Quality is the answer !



Fridge demanufacturing Step 2

CFC Conclusions

Pricepressure works against the quality issue and create the „negative Lopez effect“ !

Pricepressure is one of the main reasons for a not ecological recycling process. The economical focus has for the most of the recycling companies priority! The ecological aspects have only second priority.



Negative Lopez Effect

Automobile industry

- Global purchasing and price pressure
- Economy of Scale
- Well defined output / product
- 100% quality control
- Comparable and checkable quality, part per part

Negative Lopez Effect

Recycling industry

- Well defined output (WEEE)
- Global purchasing and price pressure
- Economy of Scale
- The better the environmental quality you produce the higher your cost
- Misssorting will reduce your cost significantly
- 100% quality control not demanded and not monitored
- Comparable and checkable quality is very difficult

Negative Lopez Effect → What happens?

- Prices are very low, sometime below the recycler cost
- The pressure goes to price and not to quality leadership
- The quality is not uninterrupted controlled and monitored
- The way to survive is to try to go for economy of scale with, highest throughput and how about CFC recovery?

Who controls the quality ?

Negative Lopez Effect, What happens?

- The higher the CFC recovery rate the higher cost for CFC treatment
- Only a few recycler are annually S.EN.S or RAL certified, controlled and monitored Why?
- See also Deutsche Umwelthilfe



Deutsche Umwelthilfe

FOR IMMEDIATE RELEASE

**Forgotten climate killers:
End-of-life fridges are huge burden
on Germany's climate change footprint**

- What happens? Is this statement correct? Is the database correct? Is there any control and correct documentation? What happens in other EU countries?

What can we do ?

We have to secure a continuously quality control

We have to define tools to monitor the figures

We have to search for more efficient technologies and methods

We have to produce quality

We have to see also the ecological requirements

We try to find the balance between the economical and the ecological aspects

What can we do ?

**Let's take the
responsibility**



For a better climate and a better environment

It is obviously and evident:



**Do it
together!**

**Smart Resources
Dr. Viktor Haefeli
vh@smartresources**