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Refrigerator exchange programme in Brazil: f-gas out, natural refrigerant in

[added 13 January, 2011]

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Old fridges cannibalise energy and contain climate damaging f-gases. In Brazil, local power companies exchange new energy efficient refrigerators, using hydrocarbons instead of f-gases, for old ones. International climate initiatives supported by the Swiss and German governments build recycling facilities for the old fridges to recover the climate damaging gases before they escape into the atmosphere.

In 2000, the Brazilian government passed a law requiring that electricity providers invest 0.5% of their turnover into projects that promote energy-efficiency, especially among the disadvantaged. Half of these projects are therefore designed to benefit the country's poor, who tend to spend over 25 percent of their income on electricity. One very popular project is the refrigerator exchange programme in the favelas: people can come with their old fridges and exchange them for brand new ones that are energy efficient and climate friendly because they use hydrocarbons instead of f-gases.



From manual to professional recycling

Until recently, the old refrigerators were recycled manually. The catadores (which is Portuguese for 'human scavenger' or 'rubbish collector') who spent their days collecting garbage, used to collect old refrigerators in the favelas and dismantle them in order to recover and sell any valuable materials such as metals and plastics. In the process however, a better part of the greenhouse gases contained in the cooling circuit and the isolating foam escaped into the atmosphere.

Also, replacing old refrigerators with new, energy-efficient and climate-friendly ones loses much of the value when the old appliances are not properly disposed of. Switzerland has therefore provided funding for a pilot project to recycle used refrigerators in Brazil. Working within the framework of the Swiss Climate Protection Initiative, the Swiss foundation SENS International carries out a project to recycle old refrigerators and other cooling appliances in a manner compliant with the 'Swiss Charter - Climate Protection by Recycling' standard. The one-of-a-kind feature of the plant is, in particular, the on-site destruction of the CFCs in a high-temperature incinerator.

Thanks to this project, a modern fridge disassembling facility was inaugurated in Cabreúva, in the state of Sao Paulo, in early September 2010. The new facility enables the environmentally safe disposal of 300,000 to 400,000 old refrigerators each year. And the refrigerator exchange programme now prescribes that the refrigerator is delivered with the refrigeration circuit intact, including the compressor. If it is damaged or any part is missing, the refrigerator will not be exchanged for a new one.

2 done, at least 13 more to go

One such facility however can certainly not deal with the estimated 20 million appliances in Brazil that would be fit for recycling. An industry source talks of 200.000.000 kg of disposed obsolete appliances added every year to the Brazilian waste stream only by refrigerators and freezers. Considering these numbers, at least 15 recycling facilities would be required for the proper disposal of old refrigerators and freezers and the destruction of the ozone- and climate damaging CFCs still contained in most of them.

Brazil is yet far from having the required 15 recycling facilities, but a second state-of-the-art recycling plant has opened its doors before Christmas. This second plant is run by the German GTZ and co-funded by the German government and consumed €3.5 million out of a project budget of €5 million for climate-friendly disposal of old refrigerators.

Have a look at SENS International's video about their refrigerator recycling plant in Brazil.

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