

## **COMMENTARY from Thomas Grammig**

**on**

### **Official Evaluation of HPMPs for the Montreal Protocol**

UNEP/OzL.Pro/ExCom/77/9

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This evaluation has been elaborated during 2015 and 2016 and contains a carefully negotiated interpretation of the results and the underlying reasons. Among seven countries analysed three patterns have appeared:

China	most large AC manufacturers converted to propane, HC-290
Indonesia and Thailand	all AC manufacturers converted to HFC-32 but claim compressors are not available and they must still produce R-410a
Argentina, Lebanon, Jordan, Serbia	all AC manufacturers converted to R-410a

The evaluator's (very brave) choice of these seven countries underlines the need to explain these astounding patterns. Governments' deliberations with national industries have led to radically different conclusions and the MLF "duly" supports all three patterns.

The detailed evaluations on the seven countries remain confidential and in the public final report text, the central conclusions carefully negotiated are three:

- Enterprises should evaluate in detail the availability and/or limitation of equipment and quality refrigerants before deciding a course of action for conversion (para 10)
- Unfortunately, few enterprises, despite completing their conversion and developing prototypes for HFC-32 are instead manufacturing high-GWP based equipment. The reason being a lack of market demand and the servicing sector's reluctance to deal with flammable refrigerants (para 12)
- In some countries incremental operating costs (IOC) was paid even if the enterprise is not manufacturing the agreed technology. This approach is not acceptable and IOC cannot be used otherwise than initially planned. (para 15)

These three core conclusions are incoherent in as far as they target enterprises' efforts while another evaluation insight is these governments chose to have all respective national enterprises opt for one solution. Supplies of refrigerants and compressors are global and all suppliers of refrigerants and of compressors are globally active corporations. The reasons for some countries opting for R-410a, others for HFC-32 and others for HC-290 are some reasons carefully and genuinely selected by governments making these choices.

Indonesia and Thailand encourage Japanese AC manufacturers to continue using their countries for Japanese AC manufacturing. The official evaluation text forcefully states Daikin and Panasonic ran “massive public advertising campaigns” for HFC-32 (para 55, so the evaluation underlines the actual forces at work). Perhaps it was the Indonesian and Thai governments that opted for a commercial economic strategy that the enterprises obey, or the respective industry associations determined it was the collective export strategy to go for HFC-32 with the governments following their choice. Likewise it might be the commercial economic strategy of the Chinese government to avoid the Japanese technology option, or it might be the Chinese AC association that decided to switch to propane, HC-290. Irrespective of more the government or rather the industry that decided, it is a national choice (the evaluation result that enterprises shall improve their decisions is not really applicable).

In the Thai case, it is revealing that the NAMA funded from UK and Germany (14 mio €) to switch AC manufacturing to propane (HC-290) as refrigerant and that two Thai companies later on decided to withdraw from the HPMP that Thailand submitted to the Montreal Protocol. There are 280 AC manufacturers in Thailand pursuing a variety of commercial strategies. Large Thai companies, Bitwise, UniAire, Eminent Aire and Unico, also claim problems with HFC-32 compressor supplies, as the public evaluation report again **revealingly admits**. So in Thailand more than elsewhere, the industry’s decision for the next refrigerant is rather conflictive. Still the Thai HPMP targets them all, sort of a competition between Ministry of the Environment and Ministry of Industrial Works, one with NAMA funds the other with MLF funds.

The evaluation shows the regulations of HPMPs also serve diverse commercial strategy interests of global producers, despite large differences in environmental impact with GWP for R-410a of 2088, GWP for HFC-32 of 675 and GWP for HC-290 around 11. GHG impacts vary by a factor of 200. Finally, it is important to underline that by NOW spending Montreal funds in HPMPs to introduce more HFC gases as refrigerants, the forthcoming Montreal funds for future Montreal Protocol Kigali Amendment projects is raised and inflated.

This official evaluation is really the MLF’s controllers urgent appeal for more responsible use of the MLF funds – by naming some players but not stating the outcome. New regulations for HPMP stage III will emerge.

There are 143 HPMPs operating in Kyoto Protocol Non-Annex I countries and all comprise AC maintenance support to reduce refrigerant leakage. National choices of refrigerants have bigger impact than loosely related maintenance parts of HPMPs. The massive shift to R-410a can be reduced when the leakage GHG impact is accounted for in AC standardized baselines.