

Policy tools for assessing and diminishing emissions of F-gases from equipment

JANUSZ KOZAKIEWICZ

**Ozone Layer and Climate Protection Unit
Industrial Chemistry Research Institute (POLAND)**

**Presentation for the ATMO 2011 Conference
Brussels, 11-12 October 2011**

Why do we need policy measures to curb emissions of F-gases from equipment ?

- **Environmental reason :**
 - **Obvious** → lower emission = diminished greenhouse effect
- **Economic reason:**
 - **Not as obvious** → lower emission = lower demand for F-gases supply and for equipment servicing = diminished cost for equipment operators

How can emission of F-gases be diminished by applying policy tools?

- Direct tools :
 - Bans on most emissive uses → Regulation 842/2006, Directive 2006/40
 - Penalties for intentional venting → [Regulation 842/2006 + Directive 2008/99]

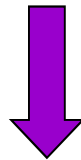


Art. 3 (a): „MS shall ensure that the following conduct constitutes criminal offence, when unlawful:

... the discharge, emission or introduction of a quantity of materialsinto air, soil or waterwhich causes or is likely to causesubstantial damage to the quality of ... air ..soil or water ...”

How can emission of F-gases be diminished by applying policy tools?

- **Direct tools :**
 - **Making leakage checking mandatory for 3+ kg equipment + mandatory leak detectors for certain equipment → Regulation 842/2006 (but only for stationary RAC&HP equipment and FP systems)**
 - **Making recovery from equipment at the end of life mandatory → Regulation 842/2006**
 - **Introducing fees for the assessed emissions → difficulties in assessing**



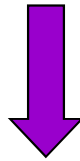
PL → fee for HFCs/PFCs = ca. 6.5 Euro/kg → State Environmental Fund
(HCFCs = ca. 13 Euro/kg, CFCs = ca. 42 Euro/kg)

How can emission of F-gases be diminished by applying policy tools?

- **Indirect tools :**
 - **Training and certification of personnel** → Regulation 842/2006
 - **Establishing mandatory equipment logbooks keeping by 3kg+ equipment operators** → Regulation 842/2006 (but only certain stationary equipment)
 - Raising awareness of equipment operators
 - Promoting POM of equipment not requiring F-gases
 - **POM fee for F-gases, including those contained in equipment** → *PL – ca. 0,75 Euro/GWP ton* → money collected in a special F-gas sub-fund under State Environmental Fund and used to subsidize projects aiming at assessing and diminishing F-gas emissions and promoting non-F-gas technologies
 - Establishing mandatory reporting by 3kg+ equipment operators (combined with obligation to keep equipment logbooks) → *PL*
 - Establishing mandatory F-gas logbooks keeping and reporting by servicing companies (and other users of F-gases) → *PL*

How may reporting by equipment operators lead to assessing and diminishing emission of F-gases?

- **Electronically operated system for equipment logbooks keeping and reporting by equipment operators (3kg+)**
 - **Electronic format of the equipment logbook**



The logbook contains information required by Regulation 842/2006 + any other information needed to assess emission

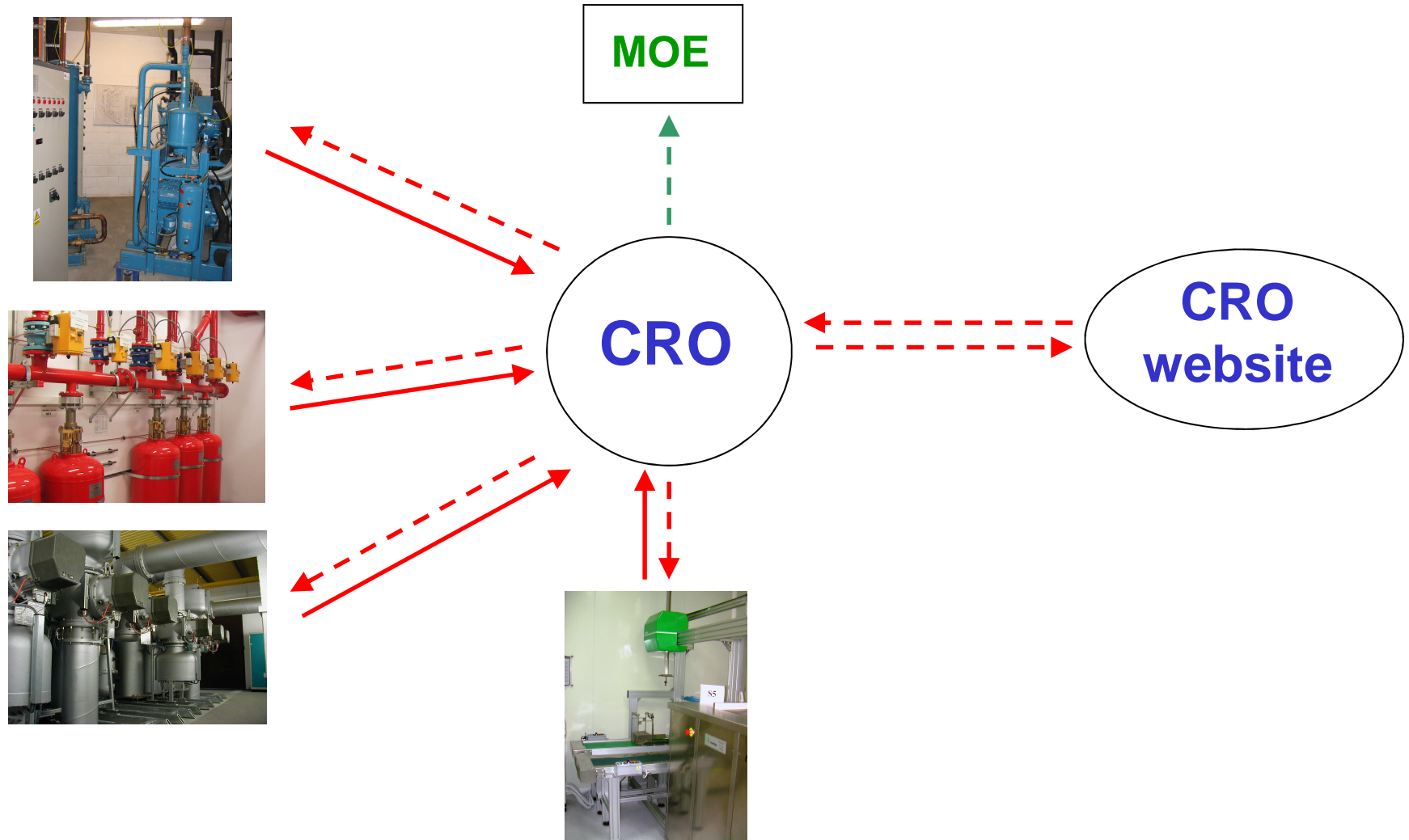
How may reporting by equipment operators lead to assessing and diminishing emission of F-gases?

- **Electronically operated system for equipment logbooks keeping and reporting by equipment operators (3kg+)**
 - **One logbook for one piece of equipment**
 - **Central Database (Central Register of Operators) where data from the logbooks are sent electronically (logging on the CRO website) each time any operation on equipment (e.g. leakage check or repair) is performed or if equipment is installed or decommissioned**

How may reporting by equipment operators lead to assessing and diminishing emission of F-gases?

- **Electronically operated system for equipment logbooks keeping and reporting by equipment operators (3kg+)**
 - **How is that system working?**
 - **Technician who is doing that operation on equipment inserts the relevant data in the logbook indicating, *inter alia*, quantity of F-gas added to equipment and sources of leakage (if any was found)**
 - **Data from the logbook are sent electronically to CRO right after the operation on equipment has been done – both Operator's representative and the technician have to sign for the data inserted in the logbook after the operation**
 - **Data are analyzed periodically to assess the emission levels from different equipment sizes/types and the reasons for emissions and, after aggregation, are made available to operators and servicing companies through the CRO website**

Central Register of Operators



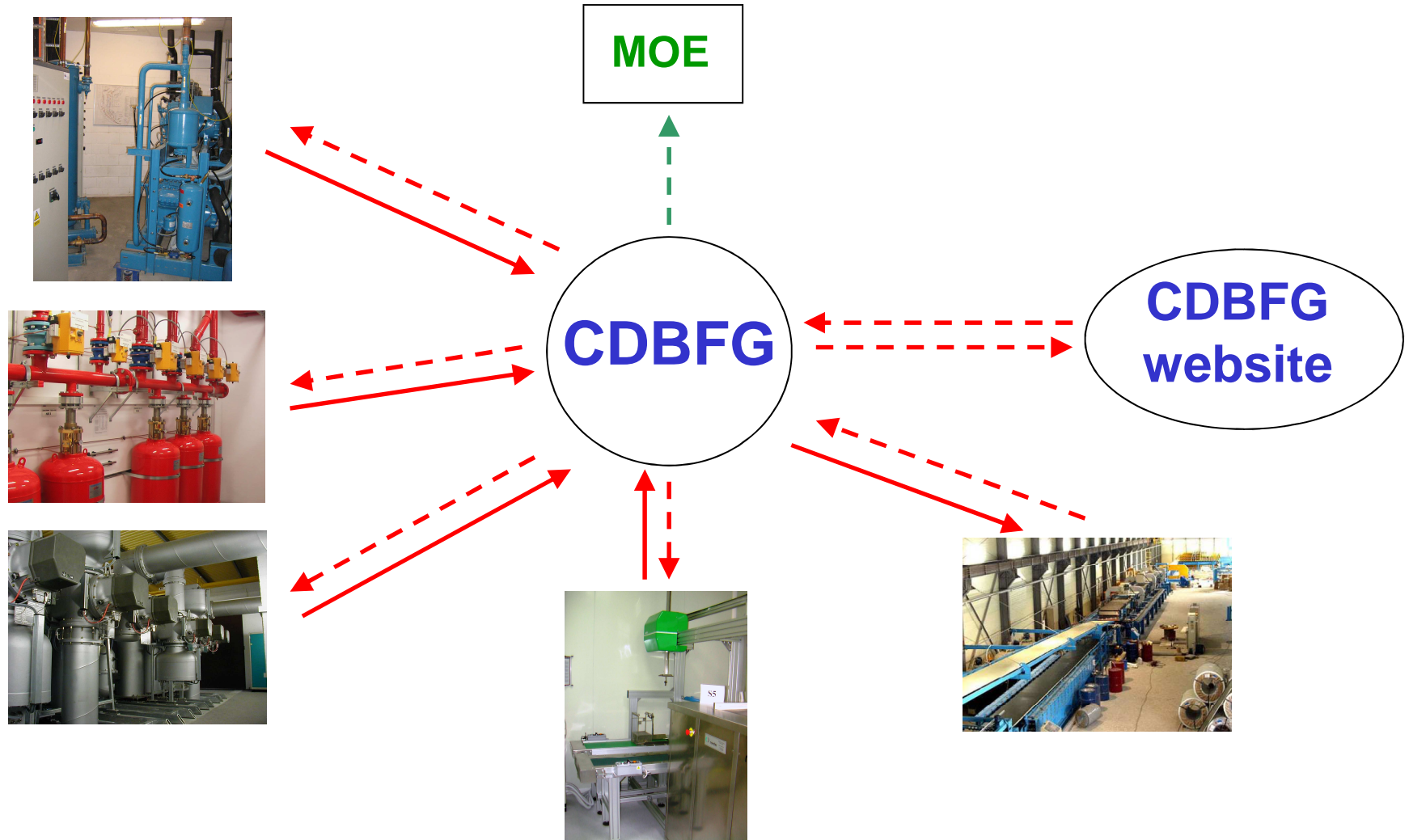
How may reporting by servicing companies (and other users of F-gases) lead to assessing and diminishing emission of F- gases?

- Electronically operated system for logbooks keeping and reporting by equipment servicing companies and other users of F-gases, e.g. RAC&HP equipment, foam, HVS or aerosol producers
 - **Separate logbook for each F-gas/F-gas-containing mixture**
 - **Electronic format of the equipment logbook containing information on a balance of quantities acquired, sold, used, recovered, recycled, destroyed and LOST in a given calendar year**
 - **Differentiating between quantities added during servicing and during installation or production of new equipment**
 - **Differentiating between stationary and mobile equipment**
 - **More detailed differentiation may also be required, if needed**

How may reporting by servicing companies (and other users of F-gases) lead to assessing and diminishing emission of F- gases?

- **Electronically operated system for logbooks keeping and reporting by equipment servicing companies and other users of F-gases, e.g. foam or aerosol producers**
 - **Central Database where data from the logbooks are sent electronically, but only once a year**
 - **Data are analyzed periodically to assess the level of consumption and emission of individual substances**
 - **Aggregated data are made available to servicing companies and other users of F-gases through the Central Data Base website**

Central Database of F-gases



What would those additional measures mean for natural refrigerants?

- **Administrative restrictions on equipment containing F-gases (specific reporting requirements) would help to self-convince the equipment operators to select equipment working with natural refrigerants, if technically possible - even if the investment cost was a bit higher**

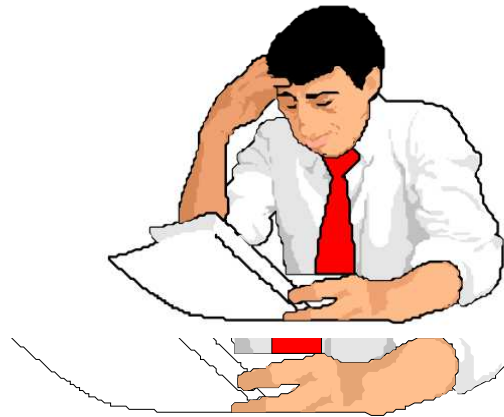


Mandatory reporting by 3 kg+ equipment operators proposed by the European Commission in their recently published Assessment

→ reflects the idea included in the PL draft F-gas legislation

→ we will support inclusion of that measure in the revised Regulation 842/2006

**Is it really worth to carry that all
administrative burden?**



YES !!!

