

# HFC study Meth Panel

Presentation of main results to EB 58

# Basic approach

- EB 55 annex 19 Terms of Reference were key
- Underlying question: Do the baseline emissions calculated under AM0001 in its current version provide for an accurate description of what would have happened in the absence of the CDM?
- Generic picture (+ individual project activities)
- Report is from Meth Panel, with input from:
  - Small group (2 from annex 1 and 2 from non-annex 1)
  - External consultants (2)
  - PPs
  - Literature
  - Secretariat (compiling data)
- Unanimous conclusions Meth Panel

# Impact CDM on $w$ -factor

- After CDM registration a remarkable convergence towards the  $w$  threshold is observed
- Various CDM plants show various  $w$  patterns over time
- It is likely that newer production lines, not eligible for CDM, show lower  $w$  values
- Catalyst is key, but not the only element affecting  $w$
- CER revenues form a strong disincentive for any further reduction of  $w$
- The disincentive to undercut threshold  $w$  may lead to cases where the baseline scenario overestimates actual  $w$  and therefore overestimates emission reductions of HFC-23

# Impact CDM on HCFC-22 production (1)

- 14 out of 19 projects show growing production levels in year before registration:
  - Can be driven by optimization of baseline
  - Can also be explained by growing demand
  - Picture is not conclusive
- Destroying HFC-23 (without tax) under CDM is more attractive than production of HCFC-22. However since eligible (capped) HCFC-22 production is still far below demand it is unlikely that HFC-23 in stead of HCFC-22 has become main driver

# Impact CDM on HCFC-22 production (2)

- CDM plants are likely to have displaced some production of non-CDM plants, but this is not apparent in view of increased demand HCFC-22
- Displacement of production in annex 1 seems less likely
- CDM may have lead to lower price of HCFC-22, which may have lead to increased demand. This would not have existed without the CDM → could lead to inflated baseline. This is however not readily apparent
- Would production levels be lower than cap without CDM? Not likely due to strong increase in demand. However during 2008 a significant overcapacity of HCFC-22 production in China was observed (both CDM and non-CDM run at 60-70%). It cannot be ruled out that without CDM the newer and more efficient non-CDM plants (lower w-factor) would have produced more and the CDM plants less than their cap and hence emitted less HFC-23

# Impact of Montreal Protocol

- Montreal Protocol only regulates emissive use of HCFC-22
- Emissive HCFC-22 production in non-annex 1 may decline after 2015, but non-emissive tends to increase → overall HCFC-22 production may not decrease until 2020 (if at all) and not below eligible cap for CDM production plants
- AM0001 limits overall production per facility but not per line!
- Hence converting existing CDM lines in 2020 to non-emissive, or closing down “old” CDM lines and build new non-emissive lines prolongs CDM eligibility. Since the conversion seems expensive these plants would without CDM have been closed
- In addition, if demand after 2020 would decrease non-CDM plants (often newer and with lower w) can face competition from CDM plants and may be forced to close down
- In summary: the Montreal Protocol - as it is now - will not help to prevent or reduce potential overestimation of HFC-23 baseline emissions under the actual AM0001

# Impact of lifetime of a CDM plant

- AM0001: only existing plants eligible; crediting period not restricted to operational lifetime
- Process very corrosive and frequent maintenance → many components replaced after 5 – 7 years, but basic design remains same; CDM does not provide incentive to close down the plant
- After reaching its economic lifetime the plant without the CDM would have been replaced by a new plant → lower w values and lower HFC-23 emissions would have been the result

# Summarized conclusions

- It is likely that emission reductions could be overestimated, since there is no incentive to reduce w
- It is possible that an excess of CERs are compensated whole or in part by continued destruction of HFC-23 by some plants after reaching their cap (300 vs 219 Mton)
- Various CDM plants show various w patterns
- Displacement of HCFC-22 production by CDM plants is possible, but not apparent
- The Montreal Protocol in combination with the existing version of AM0001 may lead to an overestimation of the baseline emissions
- It is recommended to revise AM0001