Non-CO_2 Greenhouse Gases: High-GWP Gases

Source/Sectors: Electric Power Transmission and Distribution Systems

Technology: Improved SF_6 Recovery for switch gear manufacture (C.2.2)

Description of the Technology:
SF_6 is an expensive gas which is characterized by high degree of stability. Therefore, it is convenient to recover the gas and reuse, adopting the same procedures as in the manufacturing phases. Recycling equipment such as recycling gas cart systems allows SF_6 gas to be captured; it provides a method to remove gas from the electrical equipment, and filter it for reuse (IEA, 2003).

Effectiveness: One of the most promising options

Implementability: Technically available to all manufactures of gas insulated electrical equipment (IEA, 2003)

Reliability: Good

Maturity: Well developed and widely in use

Environmental Benefits: High-GWP gas emission reduction. It is estimated that SF_6 recycling can eliminate at least 10% of total SF_6 emissions from U.S. electric power systems (USEPA, 2001).

Cost Effectiveness:

Technology	Lifetime (yrs)	MP (%)	RE (%)	TA (%)	Capital cost	Annual cost	Benefits
Improved SF_6 recovery for electric gas insulated switch gear manufacture[1]	15	-	100	30-60	$1.84	$0.01 – 0.6	$0.00

Note: MP: market penetration; RE: reduction efficiency; TA: technical applicability; costs are in year 2000 US$/$MT_{CO2\text{-}Eq.}$
1: IEA (2003)

Industry Acceptance Level: Widely in use at all regions (IEA, 2003)

Limitations: It is estimated that SF_6 emissions during manufacturing and testing of gas-insulated equipment are 30-50% of total equipment charge size (IEA, 2001)

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