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EXECUTIVE COMMITTEE OF
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PHASE-OUT STRATEGY FOR THE TOBACCO SECTOR IN CHINA

Background

1. At its 24th Meeting, the Executive Committee approved a request from the Government of China for the development of a tobacco sector plan for CFC-11 phase out in China (Sector Plan). UNIDO submitted a Sector Plan to the Executive Committee at its 29th Meeting (UNEP/OzL.Pro/ExCom/29/51). The Secretariat informed the Committee at that meeting that it was still discussing the costs presented in the Sector Plan.

2. The Sector Plan provided, *inter alia*, details on the current situation of the tobacco industry in China, the consumption of CFC-11 for tobacco expansion and alternative non-CFC-based expansion technologies; an analysis of the incremental costs as well as funding arrangements, operating mechanism and the roles and responsibilities of the institutions involved in the implementation of the Sector Plan. The total incremental cost was estimated at US \$72.2 million (US \$83.73 million capital cost less US \$9.3 million operating savings over a 15 year period plus US \$1 million in technical assistance). However, the Government of China proposed to limit the request for Multilateral Fund funding to US \$41 million (including US \$1 million in technical assistance).

3. The Committee decided to request UNIDO to continue its discussions with the Secretariat in order to finalize the sector plan and report back to the 30th Meeting of the Committee (Decision 29/65).

Fund Secretariat's comments

4. The Fund Secretariat raised the following issues regarding the Sector Plan:

Eligible enterprises

5. There are 73 CFC-based expansion units in operation in China using about 1,000 tonnes of CFC-11. Of these, 19 units were installed after July 1995 and two were not operating in the period 1996-1998. Thus, only 52 units are eligible for replacement. 56 units are proposed in the Sector Plan.

CFC consumption

6. The average CFC consumption of the 52 units for the period 1996-1998 amounted to 904.7 tonnes (calculated on the basis of the average of the three years immediately preceding project preparation). The Sector Plan proposed a consumption of 980 tonnes of CFC-11.

Output of expanded tobacco

7. The total output of expanded tobacco from the 52 units averaged 16,943 tonnes per year over the period 1996-1998.

Utilization of installed capacity

8. The average level of operations of the 52 units was estimated by the Secretariat at 31.8 per cent of installed capacity, while the Sector Plan reported a figure of 36 per cent. Of the 52 units, six operated an efficiency below 8 per cent utilization, while eight operated over 50 per cent. The low utilization of installed capacity that has been reported over the last 5 years has not been factored into the calculation of the incremental cost analysis proposed in the Sector Plan.

Expansion rate

9. The level of incremental costs/savings in tobacco expansion projects is primarily determined by the expansion rate: under equal operating conditions, a 100 per cent expansion rate would result, in US \$10.5 million operating savings annually while a 110 per cent rate would realize US \$15.0 million annually. Therefore, determination of a justifiable expansion rate is crucial in calculating the incremental costs of the tobacco expansion sector in China. It is proposed in the Sector Plan that incremental operating savings be calculated over a 15 year period.

10. The Sector Plan uses an expansion rate of 80 per cent. However, the Secretariat is of the opinion that expansion rates of over 100 per cent are feasible, taking into account the following observations:

- (a) Expansion rates of over 100 per cent are achieved by the majority of the Airco DIET plants in operation world-wide (representing about 70 per cent of the rated installed capacity), measured according to the Airco DIET test method. To the Secretariat's knowledge, all Airco DIET plants guarantee an expansion rate of 100 per cent according to the method developed by Airco.
- (b) Expansion rates between 102 per cent and 120 per cent (with an average of 110 per cent) have been reported by industry sources in six factories in China using the Airco DIET process.
- (c) The China country programme amendment reported that the China National Tobacco Corporation imported two carbon dioxide-based tobacco expansion units with an expansion rate greater than 90 per cent.
- (d) Although the Sector Plan is based on a CFC expansion rate of only 70 per cent, expansion rates between 78 per cent and to 95 per cent are reported in the Sector Plan for a number of enterprises.

Incremental capital cost

11. The incremental capital cost in the Sector Plan was calculated on the basis of installation of 13 carbon dioxide-based expansion units. However, taking into consideration the amount of

tobacco being currently expanded with CFC (about 17,000 tonnes per year), the number of replacement units needed is much lower (4 units) with a total capital cost of US \$33 million.

Cost effectiveness

12. The Executive Committee has not yet established a cost-effectiveness threshold for the tobacco expansion sector. The three tobacco expansion projects funded by the Multilateral Fund were approved by the Executive Committee at a cost-effectiveness value of US \$13.49/kg. The cost effectiveness value of the Sector Plan is US \$45.32/kg (based on an the requested grant of US \$41 million for the phase out of 904.7 tonnes of CFC-11).

Conclusion

13. The Fund Secretariat and UNIDO are still discussing technical and cost related issues. The results of these discussions will be reported to the Sub-Committee on Project Review.