Cuba: Producing Energy Efficient Home Refrigerators Without Making Use of Ozone (UNDP)

Operational Program: Short Term,5 (Climate Change,Ozone Depletion)

GEF Secretariat Review: Work Program Inclusion

Financing (millions): $0.75 *Total (millions):* $7.70 1175

Summary

The existing stock of home refrigerators in Cuba consists of old, inefficient units manufactured using ozone depleting substances for foaming agents and refrigerants. Annual replacement and/or first purchase of additional refrigerators is about 30,000 units per year all supplied by Cuba's sole manufacturer INPUD. Though great strides have been made in reducing ozone depleting substances and improving energy efficiency for commercial systems, very little has been achieved in residential units; home refrigerators consume more than 50% domestic electricity. This project focuses on a major opportunity to reduce use of ODS and improve energy efficiency in residential refrigerators .

Expected Project Outputs: Manufacturing line, capable of producing 30,000 refrigerators per year, reduction in production of ODSs and over 15 years – reduction of 1,520,000 tonnes carbon emissions and sales of 430,000 refrigerators.

Project Duration (months): 36

Basic Project Data

Project GEF ID: NO_INF

Staff		*Processing Status*	*Date*
Program Manager	Sanio	Processing Stage	
Implementing Agency	UNDP	Concept Pipeline Discussion	1/11/99
Regional Coordinator	Nick Remple	PDF A - Agency Approval	
Executing Agency	National Government	PDF B - CEO Approval	
		Bilateral Project Review Meeting	
		Work Progrom Submission and Approv	
		CEO Endorsement	
		Agency Approval	
		Project Completion	

Cost Summary

Cost Item	Years	Amount (USD'000)
Preparation		
- PDF A		
- PDF B		
- PDF C		
Project Allocation		
- Executing Agency Fees and Costs		$0.00
- Project Managment Costs		$0.00
- Other Incremental Costs		$0.00

Completeness of Documentation

Focal Point.....	☑	Budget.....	☑	Logical Framework.....	☐
STAP Review.....	☐	Increment Cost.....	☑	Length.....	☑
Disclosure of Administration Cost.....	☐			Complete Cover Sheet....	☑

1. Country Ownership

Country Eligibility

Cuba became a party to the UNFCCC on June 1992, on January 1994 it ratified the agreement as a Non-Party Country on Annex 1 of the Convention.

Evidence of Country Ownership/Country-Drivenness

In Dec 1996 the Cuban government introduced the National Environmental Strategy identifying actions to minimize environmental impacts. Article 119 of the Environmental Act references the introduction of regulations to reduce the emissions of greenhouse gases and ODS. A National Programme for Electric Power Savings is being implemented and a Technical Ozone Office established in 1993 has been involved in several ozone projects through UNDP/MPU.

2. Program and Policy Conformity

Portfolio Balance

n/a

Program Conformity

For projects to meet the CC/STRM criteria, they must be a high national priority, have a very high likelihood of success and be cost effective - less than $10/ton.

Replicability

Potential for replicating the successful experience exists. An explicit plan for sharing lessons learned in the Latin America/Carribean Region and elsewhere could be very beneficial and should be provided.

Potential Global Environmental Benefits of Project

Reduction in 1,520,000 tonnes carbon emissions over 15 years, elimination of ODS for refrigerants and foaming agents.

Sustainability

Detailed plan is provided to ensure the financial viability of the project and to achieve the reductions in carbon emissions and ODS. The viability of the project will be assured by the significant level of co-financing from the government, the development of an appropriate policy context, financing of manufacturing infrastructure, lower electricity costs to consumers, and reduced costs of domestically produced refrigerators.

Baseline Course of Action

Continued production of domestic refrigerators using ODS.

Alternative Action Supported by project

Proposed project will design, build, test and verify three prototype home refrigerators; design and build manufacturing line for 30,000 domestic refrigerators/year; train 42 technicians; acquire licences, patents and other documentation; establish an assay laboratory to ISO 9000 standards.

Conformity with GEF Public Involvement Policy

The project was initiated by the INPUD (National Union for the Manufacturing of Durables) within the Ministry of Steel, Mechanics and Electronics in close colloboration with UNDP Havana INPUD has good linkages to Universities and R&D institutes.

Private Sector Involvement

The INPUD "Primero de Mayo" factory in Santa Clara, established in 1963 will be the partner in the project, it is the sole factory in Cuba producing domestic refrigerators. Competition from domestic manufactures is therefore absent.

3. Appropriateness of GEF Financing

Incremental Cost

The proposal includes a detailed Incremental Cost Matrix, including baseline, alternative and incremental activities; alternative activities are estimated to cost $7,703,000, baseline activities $6,953,000; incremental costs are $750,000.

Appropriateness of Financial Modality Proposed

Alternatives to GEF grants, including concessional or contingent grants or loans were not addressed in the proposal. Prior to CEO endorsement serious consideration for non grant modalities should be explored.

Financial Sustainability of the GEF-Funded Activity

The proposed project is an integrated cooperative venture by the Cuban government and INPUD, a local manufacturer. The Cuban government and INPUD appear committed to ensuring the financial sustainability of the project following GEF support.

Absorptive Capability

The project is well supported by the Cuban Government, local acedemic institutions, trade associations and the local manufacturer - INPUD.

Cost Effectiveness

Carbon emissions reductions are estimate to be 1,520,000 tons, incremental costs $750,000; costs per tonne are $0.49 US/tonne of carbon, substantially less than the $10/tonne threshold.

4. Coordination with Other Institutions

Collaboration

The project is a model for colloboration amongst industry, government, academic institutions and trade associations.

Complementarity with Ongoing Activities

The project builds on the following initiatives GEF/UNDP CC:TRAIN, GEF/UNDP Climate Change Strategy, UNDP Country Case Studies on adaption to climate change; National Communication to UNFCCC, Institutional Strengthening of the Technical Ozone Office, National Program for Recovery and Recycling of Freon, Umbrella Program for the Elimination of R-11 & R12 EMPCO-MINCIN and SEGERE-SIME; and Support to the National Electrical Power Programme.

5. Responsiveness to Comments and Evaluations

Core Commitments

The Cuban government has committed $6,928,000 in cash and $25,000 in-inkind.

Linkages

The project is well linked to national and international climate change and ODS activities.

Consultation and Coordination

The project proponents have consulted and coordinated with key actors.

Consistency w/previous upstream consultations, project preparation work, and processing conditions

The project addresses all relevant GEF issues related to previous upstream consultations, project preparation work and processing conditions.

Monitoring & evaluation: Minumum GEF Standards, ME plan, proposed indicators, lessons from PIRs and Project Lessons Study

Adequate for the proposed project, should consider an independent evaluation and a detailed monitoring and evaluation plan to facilitate broader replication. The project proponents should follow the developments of the China refrigerator project to share and take advantage of lessons learned.

Indicators

Carbon emissions reductions, in addition to project related indicators have been provided in the MSP Brief.

Implementing Agencies' Comments

None provided.

STAP Review

None provided.

Council members' Comments

None provided.

Technical Assurances

Hydrocarbons for Cuban refrigeration is a radical change in manufacturing technology; consistant with GEF STRM CC criteria that projects have a high likelyhood of success, project proponents should provide assurances that the technology is viable and emissions reductions will be achieved.

Convention Secretariat

None provided.

Other Technical Comments

None provided.

Further Processing

The project proposal is well thought through and a model of collaboration involving all key stakeholders nationally and internationally including activities of UNDP. In addition, with the significant financial commitment of the national government the project has a high likelihood of success.

The project advances the policy on ozone by further supporting the use of non-greenhouse gases as a refrigerant substitute.

1. Prior to CEO endorsement, application of non-grant financial modalities should be explored, in addition, consistent with CC/STRM criteria for high likelihood of success, project proponents should provide assurances that the technology is viable.

2. The project proponents should follow the developments of the China refrigerator project to share and take advantage of lessons learned.

3. Proponents should consider an independent and detailed monitoring and evaluation plan to facilitate broader replication.

4. An explicit plan for sharing lessons learned in the Latin America/Caribbean Region and elsewhere could be very beneficial and should be provided.

Recommendation: The project is recommended for CEO Approval, following revisions suggested above.