

Project 5/2005 – Feasibility study on the Use of Bio-ethanol Fuel in Motor Vehicles in Hong Kong and its Environmental Benefits to Hong Kong

Purpose

This paper seeks Members' advice on funding the captioned application for ECF submitted by the University of Hong Kong.

Background

2. The funding requested by this project is \$614,629.00 for the staff cost of employing one Research Assistant and one Technical Assistant (\$291,960.00), other expenses on purchasing vehicle engine test bed, second hand engine, ethanol, fuel, engine oil, calibration gases and other consumables; upgrading of current analyzer; providing incentives of borrowing vehicles for testing (\$242,500.00); and the overhead administrative cost (\$80,169.00). The project is expected to last for 12 months.

3. The aims of this project are:
- (i) to determine the engine characteristics (such as engine power, fuel economy, durability) and tailpipe emissions (such as CO, HC and NO_x) from vehicles using E10 and E85 and compare these with pure gasoline;
 - (ii) to monitor the engine wear characteristics by analysing the amount of metal component in engine oil at regular intervals;
 - (iii) to identify the compatibility of fuel hoses on ethanol blends, including rate of change of physical dimension and tensile strength; and
 - (iv) to investigate the feasibility and economy of using ethanol additive in motor fuel in Hong Kong and to determine the most suitable blending ratio.

4. The proposal has been examined by the EPD and two external expert assessors. EPD considers the project worthy of support as it will provide more information on the feasibility of using ethanol, a renewable energy, in local vehicle operation under Hong Kong's environment and the percentage of blend mix that is most suitable.

5. Two external expert assessors have been invited to comment on the proposal and both of them support the proposal. Assessor 1 remarks that ethanol blended petrol might improve tailpipe emissions and hence benefit the Hong Kong environment. The experiments proposed by the PI would demonstrate the benefits and to arouse public awareness in this aspect. Assessor 2 agrees that benefits of ethanol blends in gasoline to air quality are documented in countries where use of such blends is widespread like the US. The implementation plan is also considered reasonable.

6. Regarding the budget, the “Guide to Application for the Fund” stipulated that funding for general administrative costs incurred by the applicant organization in undertaking the project will not normally be given. Accordingly, the proposed overhead administrative cost of \$80,169.00 should not be supported.

Advice sought

7. Members are invited to advise whether the application for ECF should be supported as detailed in paragraphs 2 to 3 above and if supported, the exact amount of fund to be recommended to the ECF Committee for approval.

Secretariat, ECF Research Projects Vetting Subcommittee
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