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Editorial

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Editorial

President Jimmy Carter
White House
Washington, D. C.

Dear Mr. President:

I want to bring to your attention a solar energy project which, although ambitious and costly, should go a long way toward ameliorating the rapidly deteriorating energy situation.

I propose that a pilot project be undertaken to cover one square mile of lunar surface (earthly exposure) with metallized polyester film of 0.4 mil (or less) thickness.

The effect of such coverage on increasing the solar energy available at the earth's surface should be immediate. Engineering calculations should allow quite precise determination of the effect of much larger coverages—perhaps as much as 250,000 square miles of lunar surface—on earthly surface temperatures and the earth's heat bank.

There are important reasons for making a modest beginning in such a study:

1. The slightly increased earth surface temperatures, although bringing advantage to the temperate zones and colder regions, may cause slightly increased discomfort in the tropics. Possibly, these problems can be minimized by optimal positioning of the solar reflector on the lunar surface. Slightly increased night light would have favorable as well as unfavorable consequences.

2. The weight of metallized film for covering one square mile of lunar surface would approximate one ton. The cost of getting this quantity of film to the moon would be substantial. Conveyance of 250,000 tons of film to the moon would be prohibitive in terms of present technology. Nevertheless, the development of more efficient space shuttles may offer long-term promise.

Alternatively, synthesis of polyesters (or polyimides, polybenzimidazoles, etc.) at the lunar surface might be feasible if coal or petroleum should be found on the moon, thereby eliminating the cost of conveying the materials. Of course, plant construction materials would have to be carried to the moon.

3. The cost of one ton of metallized film of 0.4 mil or less would depend on the polymer chosen, film fabrication costs, and coating costs. A minimum cost of \$2,000/ton appears likely. The cost of 250,000 tons of metallized film would range from \$0.5 billion for polyester to more than \$5 billion for polyimide.

Advantages to the recommended approach are:

1. Lack of wind on the lunar surface will greatly reduce problems of film laying and anchoring.

2. Lack of oxygen at the lunar surface will greatly improve weathering characteristics of the film chosen. Polyester should last indefinitely, and polyimide, a long time.

3. Care and servicing of the solar reflecting surface should be minimal.

I shall be glad to elaborate on any points raised.

Sincerely,

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