

## DJIBOUTI ENERGY INITIATIVES PROJECT

Monthly Report 1986

February - March 1986

1. The Energy Seminar was held from February 15 - 22 at the Maison du Peuple. This seminar formally presented the recommendations set out in the 1984 National Energy Assessment. The session was opened by the Minister of Industry and was well attended by senior GROD personnel and policy-makers. Media coverage was also good.

The seminar presented the recommendations grouped according to major themes: electricity, petroleum, pricing and import policy, conservation, renewables, institutional development etc. According to the subject under discussion, senior personnel from the GROD services and agencies with responsibility for these areas of policy and service were invited to attend and to respond to the recommended actions set out in the Assessment. This format worked well, and both the level of attendance and the degree of audience participation was excellent.

The results of the seminar were presented at a public forum held on March 22. This forum was open to private sector interests, architects, and other persons and enterprises engaged in business that directly or indirectly has an impact on energy demand.

The public forum marked the last day of the seminar. The Minister of Industry formally closed the proceedings after brief presentations from ~~the~~ Anis Abdallah, Oblik Carton, John Lundgren, and John Limbert (Chargé d'Affaire at the US Embassy)

The proceedings of the seminar have been made available, and a formal report on the revised set of recommendations arising from the seminar has been written in draft form. This draft will be circulated for review, comment and revision before being more widely distributed.

2. The organization of the Energy Seminar was the first step in a sequence of planning and policy development initiatives that are intended to lead to the formulation of a National Energy Plan and the design of a set of bankable energy sector development projects. To supervise this program, the Minister of Industry has petitioned the Office of the President, on behalf of ISERST and the Service de l'Energie, and requested that a National Commission on Energy be created.

The role of this Commission will be to advise the GROD on matters related to energy planning and policy, and to direct the studies to be undertaken by a working group which will include representatives from ISERST, Service de l'Energie, and other services and organizations involved with energy supply and demand management at the national level.

3. The six Djibouti technicians sent to France for training in energy conservation principles and practice are continuing their course of study. Reports from the training institute--GRETA of Reims--indicate that the course is going well and the technicians are, for the most part, working hard. The one exception is ISERST technician Ibrahim Mohamed whose efforts, we have heard, have so far been less than satisfactory. Counterpart project head, Abdourahman Farah, was in Reims around March 12 and planned to speak with Ibrahim and to impress upon him the importance of fully participating in this program.

The training program at GRETA runs through until mid-April. On their way home, the technicians will stop off in Paris for a few days where they will spend a day with MAZDA, manufacturers of energy efficient lighting systems, and a day at AFME with Bernard Cornut.

4. The energy conservation media campaign started up on March 6. This is actually a pre-campaign--which is to say that the ten daily television and radio presentations are intended to capture the attention of the public rather than directly to address the question of energy conservation. The video and radio spots present a series of seemingly unrelated images and concepts and challenge the viewer and listener to identify the underlying theme. The daily presentations conclude by exhorting the public to watch and listen on March 16 when a longer broadcast will link thematically the images which have been shown over the previous 10 days, introduce the notion of energy conservation, and explain the aims of the media campaign which is to follow.

The media campaign is supported by other complementary forms of advertising. For example, one hundred more T-shirts with the campaign logo have been produced, and two postage stamps have been designed which depict energy supply, use, and conservation. These stamps will be issued before the end of March.

The television and radio spots are being presented in French, Arabic, Somali, and Affar in the hope of reaching as wide an audience as possible.

5. Collaboration with the Urban Development Project (PDUD) continues. The working group, which includes representatives from the project together with representatives from several GROD agencies working in fields related to housing and urban development, is about to be officially recognized as the Commission on Habitat. The aim of the commission's work is to critically evaluate current building practice and to recommend to the GROD revisions in building technique, and in the regulations, intended to improve the quality of building construction and of the urban environment in Djibouti.

The group has completed the design of a 2-storey house for the Chef du Quartier 3--a large house by quartier standards but one which, nevertheless, represents the kind of house which Travaux Publics feels is appropriate for, and which can be replicated in, these areas. Plans are also well underway for the design of a very low-cost house, costing less than \$15,000, which will be erected in Balbala. This house will be a prototype of energy efficient dwellings accessible to even the poorest sector of the population.

In a related development, Travaux Publics has just announced that it is revising the Djibouti building codes with a view to incorporating regulations intended to improve the thermal efficiency of buildings in Djibouti. The revision of the Djibouti building codes so as to improve the energy efficiency of construction in Djibouti is a major project objective, and it is gratifying to see that Travaux Public has now decided to pursue this course of action.

6. As a result of the publicity arising from the Energy Seminar, the project has been approached by a private dairy farmer who owns several hectares of land in the area of Hanlé, in the western region of Djibouti between Dikhil and Yobocki. This farmer, who owns about 40 head of dairy cows in Ambouli, wishes to grow feed for the cattle on the land at Hanlé.

The renewable energy team went out to Hanlé to examine the wells and to take water samples. The recharge rates of the shallow wells in this region of the country seem to be very high indeed, and the quality of the water appears also to be very good.

The farmer has asked ISERST to advise him which method of water pumping would be more economic: a motor pump, a photovoltaic pump, or a wind pump. A photovoltaic pump is not likely to be competitive since the farmer needs about 250 cubic meters of water per day--much more than the typical 300-400 peak Watt PV systems currently in use in Djibouti can provide.

On the other hand, the possibility of using a wind pump looks good. Wind data taken by a Climatronics unit previously operating in Yobocki indicated an annual mean windspeed of more than 3.5 m/s, which is generally considered enough for wind pumps to be competitive with motor pumps. A windrun anemometer installed at the site for a week indicated a mean wind speed of just over 3.5 m/s which appears to corroborate the data from Yobocki.

It is planned to contact several wind pump manufacturers, including one in Tunis and one in Nairobi, and to request performance data and costs. An economic study of the pumping options will then be conducted, and the farmer will be advised which option appears to be the most favorable.

7. The 12-foot Aermotor windmill at Aramadoule (Ali Sabieh) has been moved from an abandoned site to the Administrative Garden nearby. The new well has been used for irrigating the vegetable garden for several years, and tests on the water quality indicate that the water is of reasonable quality and good enough for agriculture. With the help of a mobile crane rented from the Chinese construction company, the renewable energy team moved the tower, with gearbox attached, and installed the tower at the new site. The rotor and pump were installed the next day.

This windmill pump is now working well. Data from the Climatronics unit which was operating at Ali Sabieh in 1983 and 1984 showed average mean windspeeds of between 3.8 and 4.3 m/s at a location not too far from the present site, so the wind regime appears to be good. A water meter has been installed, and the performance of the machine will be closely followed.

8. The small Oasis windmill at Douda has been replaced on the original site. Although all parties apparently were agreed that the machine should be moved--including the Service de l'Agriculture who in principle owns the machine, and the farmer on whose land the machine stands--when the renewable energy team began to dismantle the machine last January the farmer promptly complained to the Minister of Agriculture who, in turn, insisted that the machine be returned. Since nobody seems able to resolve this affair, it was decided to simply put the machine back where it was. This is a pity since the site is not a good one: the well is located on the edge of a dry stream gully and at a low elevation surrounded by trees; the output from the windpump is consequently very low.

9. There have recently been a series of problems with the SEI solar pumps operating at As Eyla. Two pumps have now failed in rapid succession. The problem appears to be caused by the design of the 50M floating pump which does not seem to be well-suited to the conditions found in Djibouti.

The first 50M pump failed in February. Inspection by project technicians revealed mud in the motor and burned out control circuits, leading to the diagnosis that the pump had probably had been run in a well that had run dry. Although these pumps have cutout switches designed to stop the motor from overspeeding in a dry well, in a well with mud at the bottom--normal for Djibouti--the motor will be slowed by the viscous mud and is very unlikely to overspeed.

These observations were conveyed to SEI in Malta, who asked for the return of the pump and promised to replace it. In the meantime, the project's second 50M SEI pump was placed in the same well. Now however, the pump was attached by a rope to a horizontal bar across the top of the well in such a way that, in the event that the well was pumped dry, the pump would hang from the cross-piece and never descend in to the mud at the bottom of the well. The pump should then cut out in the proper manner since under these circumstances it will overspeed as anticipated.

Ten days later this pump was returned to ISERST no longer working. Project technicians took apart the pump and found a small stone wedged in the pump impeller housing. After removing the stone the pump ran normally and there appears to be no permanent damage to either the pump or the motor. However, this event again points to a design flaw with the SEI pumps. The stone entered the pump through the plastic grid filter which, in this case, was cracked and torn thereby permitting the entry of the stone. This is not the first time that the plastic filter has been found to be cracked on the SEI pumps. The filter is part of the body of the pump unit and in fact supports the full weight of the pump when the pump is being transported in an upright position.

However, the filter structure does appear to be strong enough to support the weight of the pump when the unit is being transported over long distances on dirt roads. The filter sometimes cracks; pieces break off, and stones and other small objects can then enter the impeller housing. These comments and observations will be passed on to SEI in the hope that future models might be more robustly constructed.

10. Counterpart project head Abdourahman Farah has spent several days in France and Germany on behalf of the project during the course of a 5-week European vacation. In Paris, Abdourahman discussed the progress of the project with Bernard Cornut and Bernard Haguenaer at AFME. He then went over to Reims to confer with Jean-Paul Richard of GRETA, to give the Djibouti technicians their second per diem installment, and to check on the progress of the technicians.

After returning to Paris again, Abdourahman went down to Lyons to talk with Total Energy Development (TED), and to determine when ISERST might expect the 4 TED photovoltaic pumps, already six months late. From Lyons he travelled to Munich to interview Ioan Stancescu, an energy expert recommended by the UNDP as team leader of the international team of experts who will assist the GROD with the formulation of the National Energy Plan and the design and evaluation of future energy sector development projects.

11. Nader Abdulkarim, ISERST's head librarian, who will be trained in the US later this year, has been spending an hour a day with the project learning how to use the small Apple computer. He will be taught how to program in BASIC, and how to use Appleworks. This experience should help him with the intensive computer courses he will take while in the US.

Martin Bush

Djibouti  
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