MT. APO GEOTHERMAL PROJECT: A LEARNING EXPERIENCE IN SUSTAINABLE DEVELOPMENT

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ABSTRACT

The Mt. Apo Geothermal Project, a critical component of the *Philippine* Energy Program met stiff opposition from 1988-1991. Seemingly unresolvable legal, environmental and cultural issues between the government developer, the Philippine National Oil Company-Energy Development Corporation (PNOC-EDC) and various affected sectors delayed the project for two years. The paper discusses the efforts undertaken by the developer to resolve these conflicts through a series of initiatives that transformed the project into a legally, environmentally and socially acceptable project. Lastly, the PNOC-EDC experience has evolved a new set of procedures for the environmental evaluation of development projects in the Philippines.

INTRODUCTION

The Mt Apo Geothermal Project also known as the Mindanao I Geothermal Project is an undertaking of the Philippine National Oil Company-Energy Development Corporation (PNOC-EDC), a government-owned corporation created in 1976 to accelerate the development of indigenous energy resources of the country.

The project is located in Kidapawan, North Cotabato in the island of Mindanao in Southern Philippines. The energy of Mindanao is hydropower-based up to 90% but existing hydroelectric power plants are continuously being threatened by drought and siltation.

In 1991, the siltation of Mindanao hydropower dam and drought devastated the island, reducing hydropower capacity from 90% down to 50%. The reduction of the hydropower capacity resulted in up *tu* 18 hours of)blackouts and the loss of thousands of jobs. The power outages translated to a loss of P13 (US$.50) per kilowatt-hour of generated power. The daily brownouts were estimated to have caused a loss of 6.8 billion pesos (US$260 million) to the economy.

Meanwhile?the peak load capacity of the island had grown annually by 7-8%. The balance of the power requirement due to the lowered hydropower plant capacity and the additional Mindanao power requirement needed to come from the island's abundant indigenous geothermal and coal resources.

As early as 1988, *geothermal* was determined to be the energy source (hat could supply the electricity for the projected demands from 1992 onwards. The Mt. Apo Geothermal Project was projected to provide cheap, clean and stable power to meet the economic growth of Mindanao. It was to provide 240 megawatts (MWe) of the 925 MWe power demand up to the year 2000.

CONCERNS RAISED AGAINST MT. APO GEOTHERMAL PROJECT

The Mt. Apo Geothermal Project was considered as one of the more controversial development projects in the Philippines with public concerns focused an three issues: a) legal, b) environmental and c) cultural. The project is located within a national park and an ASEAN (Association of South East *Asian* Nations) heritage area. It is the ancestral home of indigenous cultural communities who believe that their God lives in the mountain of Mt. Apo. *Also* by 1989, the environmental awareness had spread all over the *country* due to policy dialogues in preparation for the United Nations Earth summit of 1992.

The PNOC-EDC faced several difficulties prior to project implementation. Groups opposing the project since 1988 lobbied with government executives and legislators, foreign-based environmental organizations and international funding institutions.

These activities were carried out with media support greatly aiding the mobilization of sectors against the project. As a result, the project was delayed for two years.

RESOLUTION OF 1EGAL ISSUES

For the project *to* be considered by national government. the legal question was first resolved. The project was charged with violating Philippine park laws and the country's international commitment to ASEAN as Mt. Apo was declared ASEAN Heritage Park. The question of the national park and ASEAN heritage status of the proposed site was referred to the Department of Environment and National Resources (DENR) and the Department of Foreign Affairs (DFA) for resolution.

The DENR as the implementing agency, affirmed thal the Philippine Forestry Reform Code (Presidential Decree 705) "does not expressly disallow mining and energy development in parks" (DENR 1983). This opinion preceded the Mt. Apo controversy of 1988

On the ASEAN Heritage issue, the Department of Foreign Affairs stated that the "ASEAN commitment is not in the category of an executive agreement. The commitment does not preclude *the* Philippine government from undertaking development activities. A harmonious resolution of all thrusts must be sought without compromising national interest". In addition, according to the Rio Declaration on Environment and Development during the Earth Summit of 1992, "States have in accordance with the charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their environmental and developmental policies" (UNCED 1990).

RESOLUTION OF ENVIRONMENTAL AND CULTURAL ISSUES

The resolution of the legal issue paved the way for the environmental review of the Mt. Apo Geothermal Project. Because of the extent of the concerns raised on h e project and the environmental awareness that swept the country since 1989, the project was subjected to the strictest and most comprehensive environmental review in the history of the country. New rules and procedures were developed by government for the evaluation of the project from 1990-1992:

a. Participation of concerned sectors in developing the scoping guidelines for the environmental assessment studies.

The scoping guidelines for the project's Environmental Impact Assessment (EIA) were developed in July 1990 with various sectors consisting of concerned tribal groups and its NGO support groups under a coalition called Task Force Sandawa. Agreements on the parameters for the environmental study superseded the government's EIA guidelines for geothermal projects which have been in operation since 1988.

b. Third party EIA by the Academe

Governor Rosario P. Diaz of the host province of North Cotabato relayed her preference for the conduct of the EIA by a third party from academe. Although PNOC-EDC has an environmental organization created in 1978 which conducted in-house environmental studies for the company, the company acceded to the Governor's request and sought a waiver from the Office of the President to award the EIA work to a group from academe.

Due to the controversial nature of the project, PNOC-EDC entered into an agreement with the EIA consultants emphasizing their total independence to truly surface the project impacts. This was a prerequisite imposed by the academicians for their involvement as they are environmentalists and NGO members in their own rights. The agreement deleted the standard PNOC-EDC's contract provision on confidentiality on this specific undertaking.

c. Multisectoral information drives

PNOC-EDC assessed that most negative sentiments aired in 1988-1989 were chiefly due to lack of accurate technical information about the project. Hence, multisectoral consultations were accelerated from 1990-1991. PNOC-EDC met a total of 102 groups and 4000 individuals from the local governments, tribal groups, academe, socio-civic organizations, environmental groups, business, media and resident communities. The people only needed information, an element lacking at the height of the opposition in 1989-1990.

d. Tribal dialogues

The company received conflicting petitions on the project from tribal groups but there was commonality in their belief on Apo Sandawa, their mountain God. Hence, in November 1990, PNOC-EDC conducted tribal consultations with legitimate tribal leaders within and outside the project site. With the company officials serving as resource persons, the dialogues were facilitated by a local university (Ateneo de Davao) and were witnessed by DENR, Office of the Peace Commissioner (OPC), Office for Southern Cultural Communities (OSCC), the Municipal Government and the Presidential Management Staff (PMS).

Tribes within the project site approved the project and requested PNOC-EDC for proper indemnification for crop damages, prioritization in employment and installation of environmental measures. The tribes outside the project endorsed the project subject to two conditions, a) PNOC-EDC to endorse an ancestral domain law and b) PNOC-EDC to pay one centavo (US$.00038) per kilowatt-hour as royalty for the recognition of their rights over their ancestral land. The company endorsed the bill of Congressman William F. Claver on ancestral domain while DENR included the royalty payment as a term in the Environmental Compliance Certificate ECC for the project in 1992.

e. Resolution from local government units

Resolution from Local Government Units consisting of the provincial, municipal and barangay levels were secured. These endorsements were given after comprehensive dialogues and site inspections of existing PNOC-EDC projects by the respective fact-finding teams of the LGUs.

f. Special EIA Review Committee and Public Hearing

PNOC-EDC submitted its EIA study in January 1991. To ensure impartiality, a third party technical review committee was commissioned by DENR to assist its Environmental Management Bureau on the evaluation of the project. On PNOC-EDC's initiative, about 78 copies of the 10-volume EIA report were issued to concerned sectors namely DENR, legislators, academe, regional development councils, provincial government, municipal government, baranggay or village government, NGO networks, Church and the media. The study was released 40 days before the public hearing attended by 5,000 residents and interested parties in April 1991.

Noting the technical data presented in the environmental study and the process undertaken by PNOC-EDC, the third party Special EIA Review Committee endorsed the issuance of the Environmental Compliance Certificate by May 15, 1991 and on May 17, 1991 the DENR announced its intention to issue the permit based on a joint decision of DENR, EIA Review Committee and other groups consulted on the project.

Another round of consultations with the PNOC-EDC and NGOs on the permit conditionalities were undertaken, this time by DENR, from May 18-Dec. 24, 1991. On January 14, 1992, the permit which was crafted with concerned groups was issued with 28 conditionalities. With the environmental feasibility of the project confirmed, a geothermal resource area of 701 hectares was declared as a geothermal watershed reserve on January 30, 1992, by President Corazon C. Aquino.

PERMITING AND PNOC POLICIES

The conditions of the environmental permit were intended to convert the Mt. Apo Geothermal Project into a model for sustainable development. There have been several PNOC-EDC policies and directives which have evolved as a result of the Mt. Apo experience and permit conditions. These were later adopted by government as procedures for the review of other development projects. The more important ones include:

(1) Zero Discharge

Development projects including geothermal have always been allowed to discharge to the public waterways as long as the discharges comply with effluent standards and water quality criteria. In the case of Mt. Apo Geothermal Project, DENR imposed a closed wastewater management system. This was addressed through the construction of lined sump systems to contain drilling fluids, recycling of drilling fluids and early reinjection of geothermal brine. DENR adopted the zero discharge strategy as a national policy for all other industries through an order dated July 1993.

(2) Forest Cover, Bio-diversity and Land Use

Mt. Apo Park was promulgated through a Presidential Proclamation in 1936 with an areal coverage of 52,262 hectares Another presidential proclamation by President Corazon C. Aquino *in* January 1992 set aside 701 hectares of the Mt. Apo Park for geothermal development. The 701 hectares consist of 115 5 hectares grasslands and cultivated area an& 585.5 hectares forested areas which PNOC-EDC will use only 112 hectares made up of 84 hectares grasslands and cultivated areas and 28 hectares forested ares.

Mt. Apo Park is among the last forest stands in the country where diverse rare flora and fauna are found. It was feared that the geothmal project would lead to clearcutting of this forest and would encourage encroachment of the park.

Bio-diversity concerns were addressed through total inventory of the sites tu be opened and the pursuit of construction activities only on areas where identical rare species and ecosystems are found in intact habitats. Rare species from areas that cannot be avoided due to the site-specificity of the geothermal resource are to be transplanted or cultured. Construction activities also avoided clearcutting to allow corridors for animal migration and seeds/pollen dispersion.

Forest openings were avoided by siting 84 hectares of the development in already opened areas since the 1970's. About 28 hectares of the project, mostly well pads, were sited in forests due to the specificity of the geothermal resource. Of the 28 hectares of forest stand which were developed, PNOC-EDC committed to undertake replacement reforestation of 50- 100 hectares per year during the 25-year project operation.

Disturbance of the surface was minimized through the use of existing roads, multi-well pads (3-5 wells per site) and directional drilling to avoid critical land uses.

Forest patrols are conducted daily. Communities inside the PNOC watershed reservation were organized in November 1992 and have been provided alternative livelihoods to reduce pressure on the forest.

(3) Risk Assessment

To complement the EIA, an Environmental Risk Assessment (ERA) was undertaken with two objectives: a) to characterize the risks of the geothermal plant from its exposure tn environmental natural hazards and the risks of the environmental natural hazards and the risks of the environment from plant generated hazards and b) to formulate the guidelines to strengthen the risk management and response capability of PNOC-EDC and the concerned government agencies. The Mt. Apo project was the first project to be required *the* risk assessment study.

(4) Relocation

PNOC-EDC's relocation policy was formalized and improved upon as a result of the Mt. Apo Geothermal Project. It provides for the replacement of lost structures and lost amenities, augmentation nf basic services to complement those provided by the government and the development of long-term livelihoods. PNOC-EDC adopted the World Bank resettlement guidelines (World Bank, 1990).

Physical and economic dislocation of residents were avoided in this project. Of the 300,000 reported tribal residents, only 68 families were directly affected by *the* project out of 146 families occupying the area in 1991. Negotiations were conducted and 125 families agreed to transfer to their permanent houses in Sayaban tillage located ai the Mt. Apo foothills after receiving the PNOC-EDC's crop *damage* and disturbance compensation package. However. 21 families opted to accept the company's soffer to give them individual houses and lots at h e relocation site near Lake Agco provided with water and sewage system, recreational facilities and meeting hall in addition to the livelihood program. All of these were done through a series of dialogues and consultations in October 1992 and the houses and lots were turned over in April 1993.

(5) Multisectoral Monitoring and Public Information

In 1989, PNOC-EDC joined the NGOs and other sectors in endorsing the multisectoral monitoring policy for all projects. By 1991, most of the PNOC projects have installed monitoring task forces composed of local government units, non-government m a - nizations, th DENR and PNOC-EDC. 4 similar task force war, created for Mt. Apo Geothermal Project *on* May 26, 1993. A visitors' program was initiated by PNOC-EDC in Nov. 1992. About 6,000 guests have been recorded as of first quarter of 1994. Visitors an a regular basis consist of government personnel, academe, religious groups, local NGOs, international media, business. youth, policy groups, environmentalists and tribes,

RESOLUTION OF CULTURAL ISSUES

Cultural matters *dominated* the concerns of the project. As recommended by the tribes within the project site, a propitiatory rights and ceremonies called "PAMAAS" in the local Manobo dialect was conducted at Lake Agco on March 10, 1992. The ritual was led by a tribal elder with the purpose of seeking approval from the Mountain God for the project. It involved placing chicken blood *on* the ceremonial table amidst prayer chants and tribal music to PNOC-EDC officals, local and national government officials, tribal leaders and community members.

An Environmental and Tribal Welfare Trust Fund was also required from PNOC-EDC to preserve and enhance the forest environment and h e unique bio-diversity of the Mt. Apo park which is the ancestral domain of the tribes. The fund is also envisioned tu uplift *the* socio-economic well-being of the tribes, including their culture, arts and crafts. The fund will come from the collection *of* one centavo (US$.00038) per kilowatt-hour of generated power, Since collections will *only* come after the power plant starts operaring in 1996, PNOC-EDC provided seed money amounting to 4 million pesos (US$154,000) for the program in 1993.

The Mt Apo Foundation Inc. (MAFI), a non-profit corporation was created on Dec. 24 1992 with multisectoral representation from the Office of the President, DENR, Dept. of Energy, local government, Cotabato Tribal Consultative Council, NGOs and PNOC-EDC, This foundation undertakes environmental, cultural and social services projects. In terms of area coverage, the work of the MAFI was extended beyond the geothmal reservation up to 10-km. radius to include 29 barangays in the lowlands.

RESULTS OF MOUNT APO PROJECT INITIATIVES

'Therules and procedures prescribed for the Mt. Apo Geothermal Project were precedent-setting and their operationalization in the Mt. Apo Geothermal Project facilitated their acceptance as feasible policies for adoption by the government for other development projects.

The comprehensive social and environmental strategies of the project were developed to assure the maintenance of environmental quality in the area and to show the possibility nf reconciling of

not only that of a developer but also as a judicious steward of Mt. Apo's resources, and that it will need the continued cooperation of all sectors if it is to accomplish its development objectives.

Lastly, the positive response of PNOC-EDC to environmental advocacy and the genuine concern of various sectors on the Mt. Apo Geothermal Project slowly brought goodwill and openess between PNOC-EDC and a majority of the concerned sectors.

An ultimate resolution of all issues in the project was expected to lead to integrated efforts that would transform the hit. Apo Geothermal Project into a model for sustainable development.

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