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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 project 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 mandated to accelerate the development of indigenous energy resources.

Located in Kidapawan, North Cotabato, the geothermal power project started commercial operations in March this year, serving the Southern part of the island with an initial output of 47 MW. Development works are ongoing for an additional 48 MW which will be ready by 1999. PNOC-EDC operates the power plant with an American- Japanese consortium under the BOT scheme as it still has to hone its in-house capability for power generation. However, after a ten year cooperation period, PNOC shall be taking over the power plant operations fully.

The geothermal project has actually contributed in addressing Mindanao's concern on supply security. Up until a few years back, Mindanao was about 90% dependent on hydro- energy. This heavy dependence on hydropower left the island vulnerable to continuous threats of drought and siltation.

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In 1991, severe siltation of Lanao and Agus rivers and the prolonged drought drastically reduced hydropower capacity from 90% down to 50%. This reduction resulted in up to 18 hours of blackouts a day which were estimated to have caused a loss of 6.8 billion pesos to the economy.

Meanwhile, the peak load capacity of the island had grown annually by 7-8%. Thus, the need for additional generating capacity was clearly established. Since there was preference for non-hydro resources, the balance needed to come from the island's abundant indigenous geothermal and coal resources.

As early as 1988, geothermal was determined to be the best energy source that could supply the electricity requirements 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.

CONCERNS RAISED AGAINST MT. APO GEOTHERMAL PROJECT

The Mt. Apo geothermal project is considered as one of the more controversial development projects in the Philippines with public concerns focused on three issues: a) legal, b) environmental and c) cultural.

The project is located within a national park and an ASEAN heritage area. Mt. Apo is also considered the ancestral home by indigenous cultural communities who believe that their God lives in the mountain. The sensitivity of the area plus the heightened environmental awareness that began to sweep the country, became the root of many concerns.

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.

It took the government, through the Department of Environment and Natural Resources, 18 months to resolve all issues and to finally give a go signal to project. As a result, the project was delayed for two years.

RESOLUTION OF LEGAL ISSUES

For the project to be considered by the National government, the legal question first had to be resolved. The project was charged with violating Philippine park laws and the country's international commitment to ASEAN as Mt. Apo was declared a 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 Natural Resources (DENR) and the Department of Foreign Affairs (DFA) for resolution.

The DENR as the implementing agency, affirmed that 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 Environmental 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 the Mt. Apo Geothermal Project. Because of the extent of the concerns raised on the 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 the history of the country. New rules and procedures were developed by government for the evaluation of the project form 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 its own environmental organization created in 1978 which conducted in-house environmental studies for the company, the company acceded to the Governor's request and had to seek 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 were 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 and information drives were accelerated from 1990-1991. PNOC-EDC met a total of 102 groups and 4,000 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 inspection 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 were issued to concerned sectors namely DENR, legislators, academe, regional development councils, the provincial government, municipal government, the barangays , 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 .

Still another round of consultations with the PNOC-EDC and NGOs on the permit conditionalities were undertaken, this time by DENR, from May 18-December 24, 1991. Finally, on January 14, 1992, the permit, crafted with concerned groups was issued with 28 very stringent 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.

PERMITTING AND PNOC POLICIES

The conditions of the environmental permit were intended to convert the Mt. Apo Geothermal Project into a model for sustainable development. 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 line 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 area 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. Of the 701 hectares PNOC-EDC used only 112 hectares made up of 84 hectares grasslands and cultivated areas and 28 hectares forested areas.

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 geothermal project would lead to clearcutting of this forest and would encourage encroachment of the park.

Forest openings were avoided by siting 84 hectares of the development in already opened areas since the 1970s. Only 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.

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

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 to 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 of 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 Village located at 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 offer to give them individual houses and lots at the 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

A multisectoral monitoring task force composed of local government units, non-government organizations, the DENR and PNOC-EDC was created for Mt. Apo Geothermal Project on May 26, 1993 for the regular monitoring of the project and the resolution of concerns. A visitors' program was also initiated by PNOC-EDC in November 1992. Almost 12,000 guests have so far been recorded as of 2nd quarter this year. Visitors on 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 of God for the project. It involved placing chicken blood on the ceremonial table amidst prayer chants and tribal music to PNOC-EDC officials, 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 the unique biodiversity of the Mt. Apo park which is the ancestral domain of the tribes. The fund is also envisioned to 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 per kilowatt-hour of generated power. But because the power plant was not to be ready for another 3 years, PNOC-EDC advanced seed money of 4 million pesos for this trust fund in 1993.

Consequently, the Mt. Apo Foundation, Inc. (MAFI), a non-profit corporation was created with multisectoral representation from the Office of the President, DENR, Dept. of Energy, local government, the Cotabato Tribal Consultative Council, NGOs and PNOC-EDC to undertake environmental, cultural and social services projects using the ETW trust fund. In terms of area coverage, the work of the MAFI extends beyond the geothermal reservation up to 10-km radius to include 29 barangays in the lowlands.

MT. APO: AFTER THE ODDS

The accelerated socio-economic development in the Mindanao island is evident. But more notable is the boom in Kidapawan which has become a bustling beehive of economic activity. A direct connection from the geothermal power plant for the town of Kidapawan was a special arrangement the local government officials fought for earlier and now, with a stable and reliable supply of power, the town has attracted many investors.

The people of North Cotabato, likewise, now enjoy a basket of benefits from the Mt. Apo project. Under the Local Government Code, the host province, municipality and barangay will have a direct share of geothermal royalty which PNOC and Napocor will have to pay every year. This amount, which runs to over P2M a year, is on top of the P3.9 M guarantee fund paid to the MAFI foundation every year as specified in the ECC.

Under the DOE law, other benefits will accrue to host communities such as the reduction in electricity cost from the application of 80 % of the royalty share. There will be missionary electrification for remote barangays and communities. The host province will have priority dispatch for power when there are shortages in the Mindanao grid.

Other benefits include skills development programs for local residents; giving them priority employment, and preference in the procurement of local supplies and services.

RESULTS OF MOUNT APO PROJECT INITIATIVES

The Mt. Apo geothermal field is easily the most modern of its kind today. In fact, it is a source of deep pride for us in PNOC to point at the Mt. Apo geothermal project as a monument of Filipino expertise, artistry and ingenuity because unlike the earlier geothermal fields in the Philippines which were constructed with some foreign technical guidance, the Mindanao geothermal field was planned, designed and constructed purely by PNOC-EDC.

But more importantly, it is through the Mt. Apo project that PNOC begun to put into practice many systems and facilities demanded by an environmentally-conscious government and society.

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

Very clearly, the objective was to transform the Mt. Apo project from a mere infrastructure project to one which is socially- responsible and environmentally-sustainable. While it will provide power for business and industries in the lowlands, it will also provide resources for the upliftment of the upland dwellers to help relieve the forest from social pressure. While it will provide millions of pesos for the protection of the national park, it will also support the aspirations of the indigenous cultural communities in and around Mt. Apo.

PNOC-EDC realizes that it must not only be a beneficiary of nature but must be a steward which must judiciously utilize and manage nature's resources for the benefit of all. The obligation of protecting the Mt. Apo park is not the proponent 's alone but is the collective task of all sectors.

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 openness between PNOC-EDC and majority of the concerned sectors.

And the ultimate resolution of all issues in the project led to integrated efforts that would transform the Mt. Apo Geothermal Project into a model for sustainable development.