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Pambansang Pangasiwaan ng Patubig
(National Irrigation Administration)
Lungsod ng Quezon

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MEMORANDUM CIRCULAR

**TO : THE SENIOR DEPUTY ADMINISTRATOR, DEPUTY ADMINISTRATORS,
DEPARTMENT / REGIONAL / OPERATIONS / PROJECT / DIVISION
MANAGERS, AND ALL OTHERS CONCERNED**

**SUBJECT : GUIDELINE ON SITE IDENTIFICATION AND INVESTIGATION, AND PLANT
ESTABLISHMENT AND OPERATIONS FOR MINI-HYDROELECTRIC POWER
PROJECTS IN NIA-ADMINISTERED IRRIGATION SYSTEM**

Introduction

NIA promulgates this guideline for the selection and accreditation of registered/licensed developers on identification and investigation of potential sites for, and establishment (construction/installation/rehabilitation) and operations of mini-hydroelectric power plants in NIA-administered irrigation systems. Accreditation of interested registered/licensed developers involves executing a memorandum of understanding (MOU) for the identification and investigation stage, and executing a memorandum of agreement (MOA) for the establishment and operations stage.

This accreditation by NIA means the giving of consent/authorization to an interested registered/licensed developer to undertake identification and investigation of potential sites (stage-1) through MOU, and establishment and operations of power plants (stage-2) through MOA. NIA will give preferential right to the accredited developer for stage-1, by incorporating a pertinent clause on that matter in the MOU, in the subsequent execution of stage-2 thereof.

Rationale

As revealed by a cursory survey done by NIA field offices a few years ago, a number of sites in irrigation systems (dams and canals) have water heads and flow rates that are suitable to run mini-hydroelectric power plants (capacity = 101 to 10,000 kilowatts). Developing these potential sites in irrigation systems, given that hydroelectric power generation is non-consumptive, is an efficiency-adding resource utilization scheme, since this gives NIA opportunity to use the irrigation water for energy generation besides crop production.

Some firms, responding to the call of Government to participate in renewable energy development/generation, already had submitted letters of intent (LOIs) for the aforesaid

stages of mini-hydroelectric power plants development and operations, which prompted NIA to come-up with this guideline. NIA is ready to give consent/authorization to interested registered/licensed parties for the development of the potential sites in the irrigation systems within its domain, as this means added revenue for use to augment irrigation operations and maintenance (O&M) funds.

1. Background Information

- (a) Republic Act (R.A.) 9513 or the Renewable Energy Act of 2008 and its implementing rules and regulations (IRR), calls for the exploration and development of renewable energy resources to achieve high energy self-reliance and less fossil fuel dependence of the nation
- (b) R.A. 7156 or the Mini-Hydroelectric Power Incentives Act and its IRR granted the Office of Energy Affairs (OEA) the power to issue a certificate of authority/license to construct and operate a mini-hydroelectric power plant
- (c) The National Irrigation Administration (NIA) is the owner and steward of irrigation systems—potential water resources for the operations of mini-hydroelectric power plants (also referred to as mini-hydropower systems)
- (d) NIA, in a rapid survey done 3-4 years ago, discovered at least 30 sites in irrigation systems that bear desired minimum water flow and water head that can support sustainable operations of mini-hydropower systems
- (e) Utilizing water for crop production (consumptive use), while that water is in the irrigation reservoir or system en route to the canal system or paddy fields, for power generation (non-consumptive use) doubles the benefit from that water
- (f) By allowing registered/licensed developers to establish and operate mini-hydroelectric power plants in irrigation systems, NIA creates an additional source of revenue for its irrigation O&M funds
- (g) Among the documentary requirements as per the IRR of R.A. 7156 for the application for authority to establish and operate a mini-hydroelectric power plant include a MOA and a feasibility study report (FSR)

2. Definitions of Terms

- (a) Licensed Developer – Refers to any natural or juridical person, as defined in Section 2-(p) of the IRR of R.A. 7156, already granted by OEA authority to establish and operate a mini-hydroelectric power plant
- (b) Registered Developer – Refers to any natural or juridical person already registered with the Department of Energy (DOE), through the Renewable Energy Management Bureau (REMB), as per Section 15 of the IRR of R.A. 9513, in order to qualify for the availing of incentives pursuant to Sec. 25 of said Act
- (c) Accredited Developer – Refers to the OEA-licensed developer or DOE-REMB-registered developer assigned or mobilized by NIA to undertake the tasks of site identification and investigation through execution of an MOU, and the tasks of facility establishment and operations with the execution of MOA
- (d) Mini-Hydroelectric Power Developer – Refers to any individual, cooperative, corporation or association engaged in or intending to engage in the site identification and investigation for and/or the establishment and operations of a

hydroelectric power generating plant with an installed capacity of 101-10,000 kilowatts

- (e) Mini-Hydroelectric Power Development – Refers to the establishment (construction/installation/rehabilitation) and operations of a hydroelectric power generating plant and its auxiliary facilities such as transmission, substation and machine shop with an installed capacity of 101-10,000 kilowatts with modification, as may be necessary, of but non-disruptive to on-site irrigation facilities
- (f) Mini-Hydroelectric Power Plant – Refers to an electric power generating plant which
 - (i) utilizes kinetic energy of falling or running water to turn a turbine generator producing electricity; and
 - (ii) has an installed capacity of 101-10,000 kilowatts

3. Stages of Development

There exist some specific stretches of irrigation canals, either within run-of-river (diversion-type) or reservoir-served irrigation systems, which have flow rates and water heads that can support sustainable operations of mini-hydroelectric power plants under normal irrigation season. To tap these identified renewable energy resources, a registered/licensed developer may establish and operate a mini-hydroelectric power plant right within or beside that canal stretch. Said actions provide the context for an agreement between NIA and the developer for that land patch or irrigation facility stretch encompassed by the plant.

Development of mini-hydropower systems has two main stages: site identification and investigation as stage-1, and plant establishment and operations as stage-2, with NIA assuming that the party that does stage-1 will also be the same party that will do stage-2. Stage-1 (site identification and investigation) comprises field surveys for the preparation of a feasibility study report (FSR) for a target site—a DOE requirement for the issuance of license/authority to establish and operate a mini-hydroelectric power plant.

Every point in or stretch of irrigation canal has a design discharge determined by the design waterduty of the irrigation system and the design serviceable area of that canal point or stretch, which represents a data input in determining preliminary plant capacity. Irrigation operations, however, is most often pestered by fluctuating incoming streamflows in particular for the run-of-river or diversion-type irrigation systems, so available canal discharge may fall below design discharge most times during dry season—that pull down plant output.

4. Policies for Observance

On Site Investigation

- (a) Developer Selection – In case two or more registered/licensed developers had submitted LOIs for any particular specific site for stage-1 (site identification and investigation), NIA assumes that the same developers would also tackle stage-2. NIA would ask said developers to submit new LOIs focusing on what they could offer for the stage-2, as part of the bases by a technical working group (TWG) that NIA will create on the selection of developer on per project/site basis. This TWG will consider the responsiveness of the scope of the LOI to NIA thrusts and, as may be necessary, technical (workforce expertise and corporate experience) and financial capability, and clearances and endorsements already secured. NIA will assign to a

registered/licensed developer, with LOI on site identification/investigation, the task of site identification and investigation of the LOI-named preferred locations (region/regions, province/provinces or system/systems), with NIA not reassigning the locations already earlier taken or assigned.

- (b) Released Sites – NIA shall reassign to interested registered/licensed developers, prioritized according to item-(a) above, locations already assigned for site identification and sites already assigned for technical investigation, if released in writing by the original assignee-developer. NIA reserves the right to demand an accredited developer to expedite tasks execution up to completion of FSR or to terminate the governing MOU if NIA finds the developer on default or too slow in execution. NIA gives an accredited developer utmost 12 months from signing of MOU to complete the investigations/studies that culminate in the completion of an FSR for any particular site.
- (c) Developer's Intent – A registered/licensed developer must submit an LOI to NIA specifying in the LOI its interest whether to undertake (i) site identification and investigation, and/or (ii) facility establishment and operations for mini-hydro power plants in irrigation systems.
- (d) LOIs' Content – Fundamental content of LOIs specific for item (c)-(ii) above should focus on lease of a particular stretch of irrigation canal or facility with the component road and canal embankment sections from a certain station to a particular station envisaged as site for a power plant, which shall form part of the MOA thereon.
- (e) Developer's Response – A registered/licensed developer, when assigned by NIA particular location/locations for site identification, and/or site/sites for technical investigation, should execute the stage-1 tasks right away, providing NIA regular bi-monthly status reports thereon.
- (f) NIA's Participation – Participation of NIA in the tasks of site identification and investigation (stage-1) by accredited developers shall be limited to provision, if any, of a copy of working drawings of the structures and discharge records of the selected irrigation systems/canals, requested by the developer from the concerned irrigation system office/offices, and to grant of access to the subject irrigation systems/canals, provided that such will not hamper irrigation operations.
- (g) Developer Responsibilities – An accredited developer shall shoulder the full cost of site identification and investigation, i.e., at no cost to NIA, and the full responsibility over its personnel that shall undertake the same, and secure access pass from the irrigation system office (ISO) to the facilities during the site identification and investigation.

On Plant Establishment

- (a) Developer Selection – In case two or more registered/licensed developers had submitted LOIs for stage-2 (plant establishment and operations), NIA, through a technical working group (TWG), shall select the developer to accredit considering technical and financial capabilities, completeness of clearances and permits already secured, contents of the LOI and other aspects NIA deems important, that would give the most advantage to Government.

- (b) Irrigation Operations – Establishment works in the project should not, in any way, hamper or jeopardize irrigation operations, which signify that water diversions should not be suspended or reduced. Any work that may, in temporary manner, hamper or jeopardize irrigation operations or suspend or reduce water diversions should be settled/tackled by the developer and the ISO together.
- (c) Construction Cost – An accredited developer shall shoulder all costs entailed in the establishment and installation of a power plant, including any needed modification and retrofitting of irrigation facilities and structures in connection therewith, i.e., at no cost to NIA, provided that such is approved in writing by NIA.
- (d) Rights-of-Way – An accredited developer shall have exclusive responsibility on the negotiation and acquisition of rights-of-ways (ROWs) needed in the establishment and operations of the power plant and its appurtenant structures. Arrangements for any existing ROW owned by NIA that the accredited developer may find useful to the execution of the power plant project shall be part of a special item in the MOA for negotiations between NIA and the developer.
- (e) Construction Workforce – An accredited developer shall give preference for hiring the members of IAs in the location irrigation system of a proposed power plant project as laborers including, if available, skilled laborers.
- (f) Construction Drawings – An accredited developer shall submit good-for-construction drawings of the proposed power plant project to NIA central and concerned regional offices for review and approval before the start of construction. Approval by DOE of the project, basing on the soundness of the facility design, shall of course be the primary factor for the start of civil works implementation.
- (g) Water Right – An accredited developer should secure, if so required by law, a water permit or right from the concerned regulatory agency on the use of irrigation water storage and diversions in irrigation systems for energy generation as an ancillary use before crop production.
- (h) Establishment Start – An accredited developer shall start establishment works for a power plant project only after its receipt of the authority/license to construct and authority/license to operate from the OEA or DOE-REMB (whichever is applicable), and the notice by NIA that establishment may now start. In connection therewith, the accredited developer shall inform NIA of its intended date of start of establishment works.

On Plant Operations

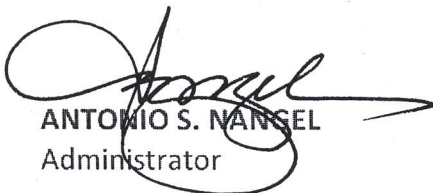
- (a) Irrigation Operations – A power plant developer/operator should not, in any way, alter, obstruct or jeopardize irrigation operations in the subject location irrigation system but may participate in coordination meetings of an ISO with IAs for the firming-up of irrigation operations plans and cropping patterns.
- (b) Service Fee – A power plant developer/operator shall remit to NIA every 2nd week of every month from the effectivity of the MOA an equivalent of four percent (4%) of the gross income in the preceding month of the operator in operating the subject power plant, to credit as service/rental fee for NIA for the use by the power plant operator of NIA irrigation facilities. This service/rental fee is non-negotiable regardless of possible differences in site characteristics and plant capacities. (Gross income refers to energy generated multiplied by buying price).

- (c) Operations Period – Determining the daily power plant operating period shall be a built-in component of the power plant facility and should log down the start and end times and dates of every operations period in a verifiable manner.
- (d) Appurtenant Facilities – A power plant developer/operator shall, on its own initiative and expense, put-up interconnection and distribution lines and appurtenant facilities like switchyard, meters, transformers and substations.
- (e) Irrigation Cutoff – During irrigation cutoff, if any, in run-of-river irrigation systems, a power plant developer/operator may continue plant operations, for as long as the ISO deems that such operations will not hamper repair, maintenance and rehabilitation works for the location irrigation system. During irrigation cutoff, if any, in reservoir served irrigation systems, a power plant developer/operator should stop power plant operations to conserve reservoir active storage, considering that irrigation is the intended primary use of that water.

NIA shall prepare the MOU for the stage-1 tasks and MOA for the stage-2 tasks concerning mini-hydroelectric power plant projects consistent with the above policies and those provided by R.A. 9513 and its IRR, and R.A. 7156 and its IRR on a project-to-project basis. NIA shall create a TWG for Mini-Hydropower Systems (MHS), which shall draft and finalize an MOU/MOA for each developer or site, and prioritize and accredit developers based on the criteria herein specified. On-process MOUs and MOAs shall be subject to approval and/or confirmation by the NIA Board of Directors (NIA-BOD).

All policies and issuances that are contradictory to these policies are hereby repealed.

This Office exhorts strict compliance and dissemination of this Guideline.


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Administrator

Date: Nov. 21, 2011

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