



ORKUSTOFNUN

National Energy Authority

Visit to Nicaragua July 2008

Geothermal Legal Environment in Nicaragua

Guðlín Steinsdóttir
Jónas Ketilsson

Prepared for Iceland GeoSurvey

OS-2008/006



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Abstract:
OS visited Nicaragua in July 2008, as part of the "Iceland–Nicaragua: Geothermal Capacity Building Project" for ICEIDA (see Annex 2, part 4: Regulations and Tendering on pg. 109 in Final Project Document). Meetings were held with representatives from ICEIDA and MEM and Terms of reference was agreed upon. Further meetings were held with representatives of the Nicaraguan Institute of Energy (INE), Ministry of the Environment and Natural Resources (MARENA), Ministry of Development, Industry and Commerce (MIFIC) as to review the jurisdiction of each institution regarding geothermal development. In this report preliminary recommendations are made to change the current legal environment in Nicaragua. Suggestions will be made for the purpose and structure of National Technical Obligatory Standards. This task is to be completed by the end of year 2008.

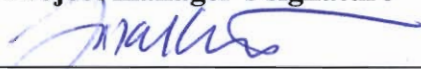

Keywords: Nicaragua, geothermal, legal environment, regulations, standards	
	Project manager's signature 
	Reviewed by: 

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INTRODUCTION

The National Energy Authority (OS) in Iceland has undertaken a task that is a part of the "Iceland–Nicaragua: Geothermal Capacity Building Project" for the Icelandic International Development Agency (ICEIDA). OS will, in cooperation with the Ministry of Energy and Mines (MEM) in Nicaragua and Iceland GeoSurvey (ISOR), make suggestions for the purpose and structure of National Technical Obligatory Standards and recommendations to amend the existing regulatory environment of exploration and exploitation of geothermal resources (*see Annex 2, part 4: Regulations and Tendering on pg. 109 in Final Project Document*). This task is to be completed by the end of year 2008.

Jonas Ketilsson (JK), a geothermal specialist, and Gudlin Steinsdottir (GS), a legal adviser, from OS visited Nicaragua from June 28th to July 2nd (JK) and July 11th 2008 (GS). During the visit the consultants, Magdalena Perez at the Geothermal Department of MEM and Gioconda Guevara at the ICEIDA met with representatives from the Nicaraguan Institute of Energy (INE), Ministry of the Environment and Natural Resources (MARENA), Ministry of Development, Industry and Commerce (MIFIC) and MEM to discuss the scope of work and jurisdiction of each institution.

1 MEETINGS

1.1 ICEIDA – June 30th

Present: Geir Oddson ICEIDA/Country Director, Gioconda Guevara ICEIDA/Project Advisor, Gudlin Steinsdottir OS, Jonas Ketilsson OS and Magdalena Perez MEM/Geothermal.

The project description as outlined in a letter, dated May 16th 2008, from OS to MEM was discussed and the following was agreed upon:

Terms of Reference (TOR):

The project consists of gathering information regarding law, regulations and standards concerning exploration and exploitation of geothermal resources in the countries that exploit geothermal energy for generating electricity (e.g. Costa Rica, El Salvador, Mexico, USA, Japan, Italy, Indonesia, Philippines, New Zealand and Iceland). The legal obligation to submit information and notification will be looked into, including the obligation of delivering samples and data. It will be examined how the exploration and exploitation license holder submits information to the official supervisory body, as stipulated in the relevant licence and what penalties are applied in case of non-compliance. The safety standards and recommended practices will be studied, especially how wells are abandoned and plugged if unsuccessful or after utilization. Particularly, it will be examined what is the goal of supervision in the above mentioned countries and how it is followed-up. Suggestions will be made for the purpose and structure of National Technical Obligatory Standards and recommendations to amend the existing regulatory environment of exploration and exploitation of geothermal resources.

1.2 INE - Environmental Unit - June 30th

Present: Jonas Ketilsson OS, Gudlin Steinsdottir OS, Magdalena Perez MEM/Geothermal, Nelly Harding INE and Maria Asuncion Ortega INE.

INE is in charge of the general direction of electricity and is the national electricity regulator. INE applies the policies defined by the government (e.g. by MEM) and is in charge of regulation and taxation. The National Assembly nominates an executive board which governs INE and therefore INE is not directly under a ministry. An illustration of the energy market in Nicaragua can be seen in Figure 1. In Nicaragua, the transmission is handled by ENATREL, which is also in charge of the system's dispatch. The Spanish company Unión Fenosa controls 95% of the distribution.

INE supervises the price purchase agreement (PPA) between the distributor and the developer. When the developer receives the exploration concession and has ascertained the base load, the developer applies to INE for a tariff. The developer can sell excess generation on the public market. However, INE can fine the developer for not producing according to the PPA. The developer has to maintain their technical matters according to a special operation manual, if the developer fails to do so, the distributor can withhold payments to the developer. This occurred during the start of generation at the San Jacinto Tizate geothermal power plant.



Figure 1. *Nicaragua Energy Market Actors.*

During the meeting JK and GS enquired upon the jurisdiction of INE regarding the exploration and exploitation of geothermal energy. Nelly Harding claimed that the INE's role is mostly to monitor the generation of electricity in the geothermal power plants. Harding also mentioned that in a recent amendment act further supervision role has been granted to INE. Magdalena Perez was unaware of those changes. The amendment act has although not yet been sent to OS.

1.3 MARENA – Direction of Environmental Quality Control - July 1st

Present: Jonas Ketilsson OS, Gudlin Steinsdottir OS, Magdalena Perez MEM/Geothermal, Gioconda Guevara ICEIDA/Project Advisor, Hilda Espinoza MARENA, Engracia Merlo Turcis MARENA and Milton Medina Calero MARENA.

MARENA administrates the use and management of environmental resources by means of actions, economic measures, investments, institutional and legal procedures to maintain or recover and enhance quality of the environment, decrease vulnerability, and ensure productivity of resources and sustainable development. The Minister of MARENA is chosen by the president.

After a presentation on geothermal development in Iceland by JK, Hilda Espinoza addressed geothermal issues that concern MARENA; sustainability, gas emissions and visual impact but stressed that MARENA understands the importance of geothermal development. The legal framework of geothermal development in Nicaragua was discussed and Espinoza mentioned the need to amend the current legal framework and how that should be done with the municipalities involved. Espinoza wants to amend the laws so the whole process of exploiting geothermal energy is more accessible and not so restrictive. It would be preferable to have the same standard for the environment and technical side of geothermal energy, according to Espinoza, MIFIC would probably agree on one mutual standard for all the institutions.

Milton Medina Calero addressed that the gas and steam emission from the geothermal power plants needed to be regulated. JK explained that gas and steam emissions are hard to control and in comparison to existing diesel generators, gas emissions from geothermal power plants are of one order of magnitude less than gas emissions from diesel generators. Calero raised as well problems they had with ORMAT regarding maintenance of the cooling towers and disposal of the runoff water.

After discussion it was the opinion of the meeting that a steering committee should be assembled with one representative from MARENA, MEM, INE and MIFIC to work and comment on the suggestions that OS will make for the purpose and structure of National Technical Obligatory Standards, MIFIC would only be involved in the end.

1.4 MIFIC – Direction of Technology, Normalization and Metrology - July 2nd

Present: Jonas Ketilsson OS, Gudlin Steinsdottir OS, Magdalena Perez MEM/Geothermal, Gioconda Guevara ICEIDA/Project Advisor, Nohemí Solano MIFIC.

The process for making National Technical Obligatory Standards (es. *Norma Técnica Obligatoria Nicaraguense - NTON*) and Technical Standards as Guidelines with a Special Objective (es. *Normas Técnica Nicaraguense - NTN*) starts when a committee is formed by a shared decision of the minister and a commission. In this committee are representatives from the public, consumers and other parties. The committee makes a suggestion of standards. These standards are sent to various relevant parties that get 60 days to comment on the standards, the standards are also published and the public can comment on it. After the 60 days the committee reviews the comments and decides whether revision of the standards is needed. When the document is finalized it has to go through a commission of 7 relevant ministers of the government. The commission reviews the standards and can make comments on it. If no comments are made the standards are published and take effect.

1.5 MEM – Environmental Management Unit - July 7th

Present: Gudlin Steinsdottir OS, Luis Molena MEM/Environmental Management Unit and Magdalena Perez MEM/Geothermal.

The Environmental Management Unit at MEM works close with MARENA on every aspect of the Environmental Impact Assessment for geothermal projects. There used to be an obstruction for exploiting geothermal energy in protected areas in Article 106 in the Environmental Act No. 217, which stated:

"Renewable and non-renewable natural resources found in protected areas are not subject to exploration and exploitation."

Following text was added to article 106 in Reform Act No. 647:

"Exceptions to this provision are geothermal, water and wind resources, as these are considered to be in the national interest as concerns the generation of electrical energy. Thus these resources may be used in a sustainable manner by means of the application of modern and clean technologies that ensure a minimum negative impact upon the environment in general, in accordance with that which is established in the national legislation and the procedures set forth in the enabling regulations to the present Law."

Therefore, if a developer plans to explore within a protected area MARENA can take into account the environmental impact of the development in the general management plan of the protected area.

The restrictions in The Commercialization Act No. 585 is causing difficulty as it specifies that the height of buildings or installations must not exceed 13.75 m in protected areas which is difficult to comply with. It also specifies that aeroplanes may not fly lower than 1500 m over such an area which precludes the use of exploration and monitoring methods such as airborne IR temperature surveys and aeromagnetic surveys.

After discussion Luis Molena plans to inform the legal advisor, Violeta Barberena at MEM of this issue.

1.6 Final meeting at ICEIDA July 10th – Thursday

Present: Geir Oddson ICEIDA/Country Director, Gioconda Guevara ICEIDA/Project Advisor, Gudlin Steinsdottir OS, Magdalena Perez MEM/Geothermal and Thora Bjarnadottir ICEIDA/Intern.

The visit was summarised and recommendations were made to change the current geothermal regulatory environment in Nicaragua.

After the present visit to Nicaragua, the purpose and structure of the National Technical Obligatory Standards for geothermal exploration and exploitation will be worked on. A report will be sent to MEM and ICEIDA in Nicaragua as guidelines for the proposed steering committee as mentioned in 2.2 *INE - Environmental Unit - June 30th* .

2 PRELIMINARY RECOMMENDATIONS

2.1 The Geothermal Resources Act No. 443

Following recommendations are made to amend The Geothermal Resources Act No. 443 in order to develop further knowledge of the Nicaraguan geothermal resources and making the exploration and exploitation process more effective and competent.

2.1.1 General supervision

"Article 3. The Nicaraguan Energy Institute, hereinafter called INE, is the government agency that authorizes and grants geothermal resource exploration and production licenses.

Within their respective scope of work and jurisdiction, INE and the Ministry of the Environment and Natural Resources (MARENA) are jointly responsible for regulating, supervising and controlling geothermal resource exploration and production actions. They shall establish coordination with municipal governments where geothermal resource license areas are located."

In the reform Act No. 290 for the creation of MEM, all of INE's geothermal issues have been transferred to MEM. However, according to INE, see 2.2 *INE - Environmental Unit - June 30th* further supervision role has been granted to INE. The amendment act has although not yet been sent to OS.

In article 3 it is stressed that responsibility, regulating, supervising and controlling geothermal resource exploration and production action should be within the respective scope of work and jurisdiction of relevant institutions. However, during our visit it was notable that the jurisdiction of each institution, according to the opinion of the employees, overlaps and is unclear. A possible result of an ambiguous administration can lead to an ineffective development of the geothermal resources. Therefore it is of great importance to clarify the role and responsibility of each institution and increase collaboration.

A steering committee consisting of representatives from MEM, MARENA and INE should be formed. The role of the committee would be to define and clarify the role and jurisdiction of each involved institution and to work on the National Technical Obligatory

Standards for geothermal exploration and utilization taking into account the suggestions from OS.

2.1.2 Size of the geothermal resource production license area

"Article 26. The geothermal resource production license area shall not exceed twenty square kilometres (20 km²). The production license area shall be defined in the production license agreement thereof, taking into account feasibility study findings, geothermal reservoir capacity and dimensions."

In order to maintain sustainable production of the reservoir and build up more profound knowledge of the geothermal reservoir it would be preferable if the law would not decide upon a size limit for geothermal resource production license areas. The size of the area should be decided in the geothermal resource production agreement between MEM and the developer with the possibility for the developer to enlarge the production license area if the exploration suggests that the size of the geothermal reservoir exceeds those 20 km². If, e.g., another developer would get exploitation rights close to an existing concession it might result in over-exploitation of the geothermal system and lack of trust between the developers and the government. This is addressed in Article 30 of the Geothermal Resources Act No. 443:

"Article 30. In the event of two or more geothermal resource production licenses share the same geothermal reservoir, license holders shall agree themselves common technical production procedures..."

Even so, this might cause problems and therefore it is preferable that a single developer is exploiting any one geothermal reservoir.

2.1.3 Timeframe

"Article 27. The geothermal resource production license granted under this Act shall be valid for twenty-five (25) years following the production license agreement signing."

"Article 28. Two consecutive 5-year extensions may be granted following the geothermal resource production license expiration, provided that the production license holder applies for an extension six months prior to the production license or extension expiry date, as the case may be and such license holder has fulfilled all contract obligations and liabilities. Procedures shall be defined by this Act and its regulations there under."

If the geothermal resource production license holder has fulfilled all contract obligations and liabilities and is interested in continuing his work it is unjust that he has to stop after 35 years, if there is potential of generating more electricity. It is understandable that some timeframe is set in the laws but there also has to be a possibility for licence holders to continue exploiting the geothermal resource if the exploitation is sustainable.

2.2 The Commercialization Act No. 585

Buildings have to be allowed to be higher than 13.75 m and aeroplanes have to be allowed to fly lower than 1500 m over protected areas. This was commented on in Halldor Armannssons report, *Visit to Nicaragua May 2008*, on page 13. Luis Molena brought this to Violeta Barberena attention, who is a lawyer at MEM, she commented on this in an e-mail dated June 25th, Appendix I. Violeta suggested that MEM in coordination with MARENA and the Direction of protected areas should make a proposal to amend the above mentioned act.

2.3 National Technical Obligatory Standards

Suggestions will be made for the purpose and structure of National Technical Obligatory Standards. As soon as an adequate document is ready, it will be sent to MEM and ICEIDA in Nicaragua.

3 APPENDIX I

Translation by Gioconda of an email sent from Luis Molina to Magdalena on 9th July 2008.

Ing. Carranza:

Due to the Mr. Luis instruction I prepared this report in which I am informing that we as legal advisor talk with Ing. Fredy Rivera the general director of protected areas in MARENA and he informed us that the Environmental Management Plan for EL Hoyo Monte Galán is in the process to be approved in the presidency. For this reason MEM could done some lobby in the presidency to include some necessary technical changes

In other hand he also informed us that they agree to change some incoherency or discrepancy in the environmental law for protected areas according to MEM suggestion, he is available to have meeting with MEM to discuss some proposal to help the promotion and the development of the renewable energy project in protected areas.

From a legal point of view the legal advisor offices considered that Ms. Gudlin observations and comments are reasonable, however the rector of the environmental sector is MARENA and MARENA could help to resolve the problems in an close coordination with MEM, the procedure suggested is that MEM send the proposal to MARENA in the following order:

1)- As a Ms. Gudlin said the LAW 462 established a forest conservation but in the case of protected areas the law established that MARENA can decided the regulations in this matter, so MARENA can perfectly have some incidence in the technical recommendations for the EIA.

2)- The same law 462 established the prohibition to cut trees around the borders of lakes and all kind of water reserve, however in the case of protected areas MARENA can regulate this through the Management Plan for each specific case.

3) Additionally and according to Ms. Gudlin question the Law 585 is clear and established that in protected areas the close season to cut trees is permanent and undefined but guarantee the wood extraction for domestic use, however we to take into account that the law 647, the reform of the law 217, established in a very clear way that the geothermal, hydro and wind resources to be considered of national interesting for the generation of electricity and they could be utilised in a sustainable way and with a minimum negative impact to the environment in general (the law when mention general it is including everything even the forest)

According to this the management plan can permit to done some minimum negative impact to the environment as in the case of the geothermal projects they can permit to carry out the necessary activities for the exploration and the exploitation of the resource.

4) – And finally I would like to refer to the Ms Gudlin worried about the Construction norms, these aspects are not include in the Law 585, if not in the Norm for construction of residential projects I suggest that MEM in coordination with MARENA and the Direction of protected areas make a proposal to avoid any affectation in the management plan, because the norm established that the limitations and prohibition for construction will be defined in the management plan and authorized by MARENA, beside a norm can not be above a law so in this case the reforms have to be applied for be of a higher level.

Changing #585 act.

If you need any other comments please let me know.

Violeta Barberena.

A and

Original Email from Luis Molina to Magdalena on 9th July 2008.

Magdalena Perez

De: luis molina [mailto:luis.molina@mem.gob.ni]
Enviado el: miércoles, 09 de julio de 2008 11:09
Para: magdalena.perez@mem.gob.ni
CC: violeta.barberena@mem.gob.ni
Asunto: RV: Utilization of geothermal resources in Nicaragua.
Datos adjuntos: Utilization of geothermal resources in Nicaragua..PDF

Importancia: Alta

Estimada Magdalena,

Le remito análisis legal realizado por la Dra. Barberena en torno a las inquietudes de la Srita. Guolin.

Pienso que dicho análisis será de interés para Guolin.

Saludos,

Luis

De: Violeta Barberena [mailto:violeta.barberena@mem.gob.ni]
Enviado el: Miércoles, 25 de Junio de 2008 04:06 p.m.
Para: geovanni.carranza@mem.gob.ni
CC: luis.molina@mem.gob.ni
Asunto: RV: Utilization of geothermal resources in Nicaragua.
Importancia: Alta

Ing. Carranza:

Atendiendo las instrucciones de don Luis, a manera de informe le informo que esta asesoría legal se ha avocado al MARENA, exactamente con el Ing. Fredy Rivera Director de Áreas Protegidas y me ha informado que el Plan de Manejo del Hoyo Monte Galán se encuentra en proceso de aprobación en la presidencia.

De manera que tal vez el MEM pueda aun cabidear ante la presidencia los cambios técnicos que usted sugiera.

Por otra parte también me informa que estaría de acuerdo de acuerdo que ante aquellas discrepancias, incoherencias e incongruencias de Las leyes ambientales en materia de áreas protegidas que el MEM considere necesario revisar, él se encuentra mas que dispuesto a reunirse con usted o quien el MEM sugiera, para buscar salidas e incentivar el desarrollo de las Energías Renovables en áreas protegidas.

Desde el punto de vista legal le informo que esta asesoría legal considera que la preocupación de la Sra. Guolin Steinsdóttir son razonables, sin embargo es el ente rector MARENA, quien podría realmente resolver la problemática y tal y como ella sugiere, tal vez el MEM pueda interceder ante MARENA para sugerir cambios sustanciales, para lo que esta asesoría legal recomienda el siguiente orden:

1)- Tal y como señala la Sra. Steinsdóttir, la Ley 462, establece la conservación forestal, pero en el caso de áreas protegidas deja en su articulado la potestad a MARENA, de poder establecer las regulaciones en esta materia, por lo tanto MARENA puede perfectamente incidir en las recomendaciones técnicas del EIA.

2)- La misma Ley 462 también establece la prohibición de corte de árboles a la orillas de lagos y cuerpos de aguas, sin embargo al tratarse de áreas protegidas MARENA puede regularlo en el plan de manejo que según el caso autorice.

3) Por otra parte siempre atendiendo la inquietud de la Sra. Steinsdóttir, la Ley 585 es clara y establece que en áreas protegidas la veda de corte de árboles es permanente e indefinida pero garantiza la extracción de leña con fines domésticos, sin embargo debemos tomar en cuenta que la Ley 647 reformas a la Ley 217 establece claramente que los Recursos geotérmicos, hídricos y eólicos por ser considerados de interés nacional para la generación de energía eléctrica podrán ser aprovechados de manera sostenible asegurando los mínimos impactos negativos al ambiente en general (por lo tanto al decir general abarca lo relativo a la parte forestal).

De manera que el plan de manejo puede permitir perfectamente realizar aquellos impactos negativos mínimos tal es el caso de los proyectos Geotérmicos a los que se les debe permitir realizar las acciones necesarias tanto de exploración como de explotación.

4) – Y por último quisiera referirme a la preocupación del Sra. Steinsdóttir, en cuanto a las normas de construcción, realmente esos aspectos no lo contiene la Ley 585, si no la Normativa de Construcción de Desarrollo Habitacional de MARENA y realmente sugiero que el MEM se ponga de acuerdo con áreas protegidas para que esos aspectos no afecten el plan de manejo ya que la misma normativa establece que las limitaciones de construcción estarán condicionadas e impuestas en el plan de manejo autorizado por MARENA, además una normativa no puede estar sobre una Ley y por lo tanto en este caso priman las reformas.

Si requiere de algún otro comentario hágamele saber.

Violeta Barberena.

De: luis molina [mailto:luis.molina@mem.gob.ni]
Enviado el: Lunes, 23 de Junio de 2008 03:16 p.m.
Para: geovanni.carranza@mem.gob.ni; violeta.barberena@mem.gob.ni
Asunto: RV: Utilization of geothermal resources in Nicaragua.
Importancia: Alta

Geovanni,

Analizar esto junto con Violeta, para que esto no vaya a ser un tropiezo para el aprovechamiento geotérmico en ambas áreas protegidas. Necesito un informe de lo mencionado en la carta de la Sra. Guolin y lo que puedan averiguar con MARENA, para el miércoles por la mañana, por favor.

De: Magdalena Perez [mailto:magdalena.perez@mem.gob.ni]
Enviado el: Lunes, 23 de Junio de 2008 03:10 p.m.
Para: luis.molina@mem.gob.ni; ivan.cortez@mem.gob.ni
Asunto: RV: Utilization of geothermal resources in Nicaragua.

Estimados:

Les remito la información recibida hoy por la Sra. Gudlin de Islandia.

De donde ha sabido esto, no lo sé, pero me imagino que ha sido con el contacto que se ha tenido a través de los TdR de los EIA que han sido enviados a ICEIDA.

Atte
Magdalena

De: Guðin Steinsdóttir [mailto:gudin.steinsdottir@ios.is]
Enviado el: Lunes, 23 de Junio de 2008 9:28
Para: magdalena.perez@mem.gob.ni
CC: gioconda@iceida.is
Asunto: Utilization of geothermal resources in Nicaragua.