REQUEST FOR PROPOSALS

FEASIBILITY STUDY FOR THE

99 MW TABLARUCA WIND FARM ON CHILOÉ ISLAND

Submission Deadline: **5:00 PM**

LOCAL TIME (SANTIAGO, CHILE)

JUNE 20, 2013

Submission Place:
Mauricio Zeman
Gerente General
Eolica Tablaruca S.A.
Av. Las Condes 9792, Oficina 802
Comuna de Las Condes, Santiago
Chile

SEALED PROPOSALS SHALL BE CLEARLY MARKED AND RECEIVED PRIOR TO THE TIME AND DATE SPECIFIED ABOVE. PROPOSALS RECEIVED AFTER SAID TIME AND DATE WILL NOT BE ACCEPTED OR CONSIDERED.

REQUEST FOR PROPOSALS

SECTION 1: INTRODUCTION

The U.S. Trade and Development Agency ("USTDA") has provided a grant in the amount of US$610,000 to Empresa Eólica Tablaruca S.A. (Tablaruca Wind Company or "Tablaruca") of Chile (the "Host Country"), in accordance with a grant agreement dated April 16, 2013 (the "Grant Agreement"), to fund a Feasibility Study ("Feasibility Study") for the 99 MW Tablaruca Wind Farm on Chiloé Island (the "Project"). This Feasibility Study will determine the technical, economic, financial and environmental viability of a wind farm of approximately 99 megawatts (MW) on the Chilean island of Chiloé. The Grant Agreement is attached at Annex 4 for reference. The Grantee is soliciting technical proposals from qualified U.S. firms to provide expert consulting services to perform the Feasibility Study.

1.1 BACKGROUND SUMMARY

Empresa Eólica Tablaruca S.A., a Chilean company, is pursuing the development, construction and operation of a 99 MW wind farm on a 20,000 hectare (nearly 50,000 acre) plot of uninhabited land on Chiloé Island in the Los Lagos Region of Chile. The owner of the land has signed a contract with Tablaruca permitting wind farm development on the property.

In 2011, a wind resource assessment by Meteosim Truewind concluded that a wind resource appropriate for energy generation was likely present. On the basis of this study, Empresa Eolica Tablaruca, S.A. was formed in January 2011, pursuant to Chile's corporate requirements. Since its founding, the Grantee has taken further steps to move the Project toward implementation, including commissioning a study on interconnection completed in May 2011, and a further wind resource assessment and data certification completed in August 2012 by GL Garrad Hassan, the world's largest independent renewable energy consultancy. Garrad Hassan determined that the wind resource available at the site has an average wind speed of eight meters per second. It based its findings on wind data captured by measurement equipment mounted on an 80 meter mast over a one-year period. Based on this wind speed, Garrad Hassan projects wind energy capture of the proposed 99 MW wind farm at 339.7 gigawatt hours (GWh) per year. The result is a 39.1 percent capacity factor.

Electricity sold by this Project would be transmitted over an evacuation (feeder) line to the Central Interconnected System (known as SIC for its initials in Spanish), part of the national grid. This feeder line would also be constructed as part of the Project.

Portions of a background Desk Study report are provided for reference in Annex 2.

1.2 OBJECTIVE

The objective of this Feasibility Study is to determine the technical, economic, financial and environmental viability of a wind farm of approximately 99 megawatts (MW) on the Chilean island of Chiloé.

The Study would also include the completion of a full environmental and social impact assessment that corresponds to the requirements of pertinent lenders and authorities, as well as ancillary studies such as an interconnection study and an engineering study on site access and

logistics, and a review of relevant regulatory matters. The Grantee would be responsible for the lease or purchase of the mast for wind measurement and other associated equipment as well as for operating and maintaining the wind data collection system over the course of the feasibility study.

The Terms of Reference ("TOR") for this Feasibility Study are attached as Annex 5.

1.3 PROPOSALS TO BE SUBMITTED

Technical proposals are solicited from interested and qualified U.S. firms. The administrative and technical requirements as detailed throughout the Request for Proposals ("RFP") will apply. Specific proposal format and content requirements are detailed in Section 3.

The amount for the contract has been established at a **total fixed amount of $610,000**. **Accordingly, COST will not be a factor in the evaluation and therefore, cost proposals should not be submitted**. Upon detailed evaluation of technical proposals, the Grantee shall select one firm for contract negotiations.

1.4 CONTRACT FUNDED BY USTDA AND GRANTEE

In accordance with the terms and conditions of the Grant Agreement, USTDA has provided a grant in the amount of US$610,000 to the Grantee. The funding provided under the Grant Agreement shall be used to fund the costs of the contract between the Grantee and the U.S. firm selected by the Grantee to perform the TOR. The contract must include certain USTDA Mandatory Contract Clauses relating to nationality, taxes, payment, reporting, and other matters. The USTDA nationality requirements and the USTDA Mandatory Contract Clauses are attached at Annexes 3 and 4, respectively, for reference.

SECTION 2: INSTRUCTIONS TO OFFERORS

2.1 PROJECT TITLE

The Project is called the "99 MW Tablaruca Wind Farm on Chiloé Island."

2.2 DEFINITIONS

Please note the following definitions of terms as used in this RFP:

The term "Request for Proposals" means this solicitation of a formal technical proposal, including qualifications statement.

The term "Offeror" means the U.S. firm, including any and all subcontractors, which responds to the RFP and submits a formal proposal and which may or may not be successful in being awarded this procurement.

2.3 DESK STUDY REPORT

USTDA sponsored a Desk Study to address technical, financial, sociopolitical, environmental, and other aspects of the proposed Project. Portions of the report are attached at Annex 2 for background information only. Please note that the TOR referenced in the report are included in this RFP as Annex 5.

2.4 EXAMINATION OF DOCUMENTS

Offerors should carefully examine this RFP. It will be assumed that Offerors have done such inspection and that through examinations, inquiries, and investigation they have become familiarized with local conditions and the nature of problems to be solved during the execution of the Feasibility Study.

Offerors shall address all items as specified in this RFP. Failure to adhere to this format may disqualify an Offeror from further consideration.

Submission of a proposal shall constitute evidence that the Offeror has made all the above mentioned examinations and investigations, and is free of any uncertainty with respect to conditions which would affect the execution and completion of the Feasibility Study.

2.5 PROJECT FUNDING SOURCE

The Feasibility Study will be funded under a grant from USTDA. The total amount of the grant is not to exceed US$610,000.

2.6 RESPONSIBILITY FOR COSTS

Offeror shall be fully responsible for all costs incurred in the development and submission of the proposal. Neither USTDA nor the Grantee assumes any obligation as a result of the issuance of this RFP, the preparation or submission of a proposal by an Offeror, the evaluation of proposals, final selection, or negotiation of a contract.

2.7 TAXES

Offerors should submit proposals that note that in accordance with the USTDA Mandatory Contract Clauses, USTDA grant funds shall not be used to pay any taxes, tariffs, duties, fees or other levies imposed under laws in effect in the Host Country.

2.8 CONFIDENTIALITY

The Grantee will preserve the confidentiality of any business proprietary or confidential information submitted by the Offeror, which is clearly designated as such by the Offeror, to the extent permitted by the laws of the Host Country.

2.9 ECONOMY OF PROPOSALS

Proposal documents should be prepared simply and economically, providing a comprehensive yet concise description of the Offeror's capabilities to satisfy the requirements of the RFP. Emphasis should be placed on completeness and clarity of content.

2.10 OFFEROR CERTIFICATIONS

The Offeror shall certify (a) that its proposal is genuine and is not made in the interest of, or on behalf of, any undisclosed person, firm, or corporation, and is not submitted in conformity with, and agreement of, any undisclosed group, association, organization, or corporation; (b) that it has not directly or indirectly induced or solicited any other Offeror to put in a false proposal; (c) that it has not solicited or induced any other person, firm, or corporation to refrain from submitting a proposal; and (d) that it has not sought by collusion to obtain for itself any advantage over any other Offeror or over the Grantee or USTDA or any employee thereof.

2.11 CONDITIONS REQUIRED FOR PARTICIPATION

Only U.S. firms are eligible to participate in this tender. However, U.S. firms may utilize subcontractors from the Host Country for up to 20 percent of the amount of the USTDA grant for specific services from the TOR identified in the subcontract. USTDA's nationality requirements, including definitions, are detailed in Annex 3. Refer to Section 1.4 of this RFP for additional information on the applicability of USTDA's Nationality Requirements.

2.12 LANGUAGE OF PROPOSAL

All proposal documents shall be prepared and submitted in English.

2.13 PROPOSAL SUBMISSION REQUIREMENTS

The Cover Letter in the proposal must be addressed to:

Mauricio Zeman
Gerente General
Eolica Tablaruca S.A.
Av. Las Condes 9792, Oficina 802
Comuna de Las Condes, Santiago
Chile

An original in English and four (4) copies in English of your proposal must be received at the above address no later than 5:00 PM, on June 20, 2013.

Proposals may be either sent by mail, overnight courier, or hand-delivered. Whether the proposal is sent by mail, courier, or hand-delivered, the Offeror shall be responsible for actual delivery of the proposal to the above address before the deadline. Any proposal received after the deadline will be returned unopened. The Grantee will promptly notify any Offeror if its proposal was received late.

Upon timely receipt, all proposals become the property of the Grantee.

2.14 PACKAGING

The original and each copy of the proposal must be sealed to ensure confidentiality of the information. The proposals should be individually wrapped and sealed, and labeled for content, including the name of the project and designation of "original" or "copy number x." The original in English and four (4) copies in English should be collectively wrapped and sealed, and clearly labeled, including the contact name and the name of the project.

Neither USTDA nor the Grantee will be responsible for premature opening of proposals not properly wrapped, sealed, and labeled.

2.15 OFFEROR'S AUTHORIZED NEGOTIATOR

The Offeror must provide the name, title, address, telephone number, e-mail address, and fax number of the Offeror's authorized negotiator. The person cited shall be empowered to make binding commitments for the Offeror and its subcontractors, if any.

2.16 AUTHORIZED SIGNATURE

The proposal must contain the signature of a duly authorized officer or agent of the Offeror empowered with the right to bind the Offeror.

2.17 EFFECTIVE PERIOD OF PROPOSAL

The proposal shall be binding upon the Offeror for ninety (90) days after the proposal due date, and the Offeror may withdraw or modify this proposal at any time prior to the due date upon written request, signed in the same manner and by the same person who signed the original proposal.

2.18 EXCEPTIONS

All Offerors agree by their response to this RFP announcement to abide by the procedures set forth herein. No exceptions shall be permitted.

2.19 OFFEROR QUALIFICATIONS

As provided in Section 3, Offerors shall submit evidence that they have relevant past experience and have previously delivered advisory, feasibility study, and/or other services similar to those required in the TOR, as applicable.

2.20 RIGHT TO REJECT PROPOSALS

The Grantee reserves the right to reject any and all proposals.

2.21 PRIME CONTRACTOR RESPONSIBILITY

Offerors have the option of subcontracting parts of the services they propose. The Offeror's proposal must include a description of any anticipated subcontracting arrangements, including the name, address, and qualifications of any subcontractors. USTDA nationality provisions apply to the use of subcontractors and are set forth in detail in Annex 3. The successful Offeror shall cause appropriate provisions of its contract, including all of the applicable USTDA Mandatory Contract Clauses, to be inserted in any subcontract funded or partially funded by USTDA grant funds.

2.22 AWARD

The Grantee shall make an award resulting from this RFP to the best qualified Offeror, on the basis of the evaluation factors set forth herein. The Grantee reserves the right to reject any and all proposals received.

2.23 COMPLETE SERVICES

The successful Offeror shall be required to (a) provide local transportation, office space, and secretarial support required to perform the TOR if such support is not provided by the Grantee; (b) provide and perform all necessary labor, supervision, and services; and (c) in accordance with best technical and business practice, and in accordance with the requirements, stipulations, provisions, and conditions of this RFP and the resultant contract, execute and complete the TOR to the satisfaction of the Grantee and USTDA.

2.24 INVOICING AND PAYMENT

Deliverables under the contract shall be delivered on a schedule to be agreed upon in a contract with the Grantee. The Contractor may submit invoices to the designated Grantee Project Director in accordance with a schedule to be negotiated and included in the contract. After the Grantee's approval of each invoice, the Grantee will forward the invoice to USTDA. If all of the requirements of USTDA's Mandatory Contract Clauses are met, USTDA shall make its respective disbursement of the grant funds directly to the U.S. firm in the United States. All payments by USTDA under the Grant Agreement will be made in U.S. currency. Detailed

provisions with respect to invoicing and disbursement of grant funds are set forth in the USTDA Mandatory Contract Clauses attached in Annex 4.

SECTION 3: PROPOSAL FORMAT AND CONTENT

To expedite proposal review and evaluation, and to assure that each proposal receives the same orderly review, all proposals must follow the format described in this section.

Proposal sections and pages shall be appropriately numbered and the proposal shall include a Table of Contents. Offerors are encouraged to submit concise and clear responses to the RFP. Proposals shall contain all elements of information requested without exception. Instructions regarding the required scope and content are given in this section. The Grantee reserves the right to include any part of the selected proposal in the final contract.

The proposal shall consist of a technical proposal only. A cost proposal is NOT required because the amount for the contract has been established by a USTDA grant of US$610,000, which is a fixed amount.

Offerors shall submit one (1) original in English and four (4) copies in English of the proposal. Proposals received by fax cannot be accepted.

Each proposal must include the following:

Transmittal Letter,
Cover/Title Page,
Table of Contents,
Executive Summary,
Firm Background Information,
Completed U.S. Firm Information Form,
Organizational Structure, Management Plan, and Key Personnel,
Technical Approach and Work Plan, and
Experience and Qualifications.

Detailed requirements and directions for the preparation of the proposal are presented below.

3.1 EXECUTIVE SUMMARY

An Executive Summary should be prepared describing the major elements of the proposal, including any conclusions, assumptions, and general recommendations the Offeror desires to make. Offerors are requested to make every effort to limit the length of the Executive Summary to no more than five (5) pages.

3.2 U.S. FIRM INFORMATION

A U.S. Firm Information Form in .pdf fillable format is attached at the end of this RFP in Annex 6. The Offeror must complete the U.S. Firm Information Form and include the completed U.S. Firm Information Form with its proposal.

3.3 ORGANIZATIONAL STRUCTURE, MANAGEMENT, AND KEY PERSONNEL

Describe the Offeror's proposed project organizational structure. Discuss how the project will be managed including the principal and key staff assignments for this Feasibility Study. Identify the Project Manager who will be the individual responsible for this project. The Project Manager shall have the responsibility and authority to act on behalf of the Offeror in all matters related to the Feasibility Study.

Provide a listing of personnel (including subcontractors) to be engaged in the project, including both U.S. and local subcontractors, with the following information for key staff: position in the project; pertinent experience, curriculum vitae; other relevant information. If subcontractors are to be used, the Offeror shall describe the organizational relationship, if any, between the Offeror and the subcontractor.

A manpower schedule and the level of effort for the project period, by activities and tasks, as detailed under the Technical Approach and Work Plan shall be submitted. A statement confirming the availability of the proposed Project Manager and key staff over the duration of the project must be included in the proposal.

3.4 TECHNICAL APPROACH AND WORK PLAN

Describe in detail the proposed Technical Approach and Work Plan (the "Work Plan"). Discuss the Offeror's methodology for completing the project requirements. Include a brief narrative of the Offeror's methodology for completing the tasks within each activity series. Begin with the information gathering phase and continue through delivery and approval of all required reports.

Prepare a detailed schedule of performance that describes all activities and tasks within the Work Plan, including periodic reporting or review points, incremental delivery dates, and other project milestones.

Based on the Work Plan, and previous project experience, describe any support that the Offeror will require from the Grantee. Detail the amount of staff time required by the Grantee or other participating agencies and any work space or facilities needed to complete the Feasibility Study.

3.5 EXPERIENCE AND QUALIFICATIONS

Provide a discussion of the Offeror's experience and qualifications that are relevant to the objectives and TOR for the Feasibility Study. If a subcontractor(s) is being used, similar information must be provided for the prime and each subcontractor firm proposed for the project.

The Offeror shall provide information with respect to relevant experience and qualifications of key staff proposed. The Offeror shall include letters of commitment from the individuals proposed confirming their availability for contract performance.

As many as possible but not more than six (6) relevant and verifiable project references must be provided for each of the Offeror and any subcontractor, including the following information:

Project name,
Name and address of client (indicate if joint venture),
Client contact person (name/position/current phone and fax numbers),
Period of Contract,
Description of services provided,
Dollar amount of Contract, and
Status and comments.

Offerors are strongly encouraged to include in their experience summary primarily those projects that are similar to the Feasibility Study as described in this RFP.

SECTION 4: AWARD CRITERIA

Individual proposals will be initially evaluated by a Procurement Selection Committee of representatives from the Grantee. The Committee will then conduct a final evaluation and completion of ranking of qualified Offerors. The Grantee will notify USTDA of the best qualified Offeror, and upon receipt of USTDA's no-objection letter, the Grantee shall promptly notify all Offerors of the award and negotiate a contract with the best qualified Offeror. If a satisfactory contract cannot be negotiated with the best qualified Offeror, negotiations will be formally terminated. Negotiations may then be undertaken with the second-most qualified Offeror and so forth.

The selection of the Contractor will be based on the following criteria and their corresponding assigned point value:

- Firm or Consortium Qualifications (25 points)
- Team Member Qualifications (75 points)

The firm or consortium qualifications will be evaluated as follows (25 points total):

- Experience with wind power projects (10 points)
- Experience in Chile (5 points)
- Experience with environmental and social impact assessment (5 points)
- Experience with economic and financial analysis of renewable energy projects (5 points)

The team members' qualifications will be evaluated as follows (75 points total):

- **Team Leader** (15 points) – The Team Leader should have at least 10 years' experience in diverse aspects of power project development including financial, technical, environmental, and social aspects. He or she should also have experience managing an interdisciplinary team and managing projects of similar size. The Team Leader should have a MS in engineering or MA in business or finance.
- **Wind Resource Engineer** (10 points) – The Wind Resource Engineer should have at least 10 years' experience in the collection, elaboration, and analysis of onsite wind resource data. His or her recommendations should have informed the development of similarly sized wind energy developments. The Wind Resource Engineer should have a MS in a relevant engineering discipline
- **Power Engineer** (10 points) **–** The Power Engineer should have at least 10 years' experience in the development and maintenance of transmission systems. In particular, the Power Engineer should have experience with the interconnection of wind energy projects and the design of feeder lines. The Power Engineer should have a MS in a relevant engineering discipline
- **Civil Engineer** (10 points) – The Civil Engineer should have at least 10 years' experience conducting site studies, designing roads, and performing geotechnical studies. He or she should also have experience designing or evaluating transport infrastructure capable of

transporting wind turbines to their final location. The Civil Engineer should have a MS in a relevant engineering discipline

- **Economic and Financial Specialist** (10 points) – The Economic and Financial Specialist should have at least 15 years' experience in the economic and financial analysis of large infrastructure projects, particularly renewable energy generation plants. The Economic and Financial Specialist should have experience evaluating wind energy projects of a similar size and profile. He or she should have a Master's degree in finance, business administration, or economics
- **Local Environmental and Social Specialist** (10 points) – The Local Environmental and Social Specialist should have at least 10 years' experience preparing environmental and/or social evaluations for infrastructure projects. The majority of this experience should be in Chile. The Local Environmental and Social Specialist should have a Master's degree or law degree (or local equivalent)
- **Local Lawyer** (10 points) – The Local Lawyer should have at least 10 years' experience practicing law in Chile. He or she should also have experience with securing easements and Chilean electric sector regulation. The Local Lawyer should have a degree in law

Points for each team member listed above will be determined based on the following weighted criteria:

- Relevant experience related to the Project (60%)
- Academic qualifications (30%)
- Spanish language ability (10%)

Proposals that do not include all requested information may be considered non-responsive.

Price will <u>not</u> be a factor in Contractor selection.

A N N E X 1

FEDBIZOPPS ANNOUNCEMENT

Mauricio Zeman, Gerente General, Eolica Tablaruca S.A., Av. Las Condes 9792, Oficina 802, Comuna de Las Condes, Santiago, Chile

CHILE: 99 MW TABLARUCA WIND FARM ON CHILOÉ ISLAND

POC: Anthony O'Tapi, USTDA, 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901, Tel: (703) 875-4357, Fax: (703) 875-4009. 99 MW TABLARUCA WIND FARM ON CHILOÉ ISLAND. The Grantee (Empresa Eólica Tablaruca S.A.) invites submission of qualifications and proposal data (collectively referred to as the "Proposal") from interested U.S. firms that are qualified on the basis of experience and capability to develop a feasibility study for the construction of the Andalucía River Port Terminal.

Empresa Eólica Tablaruca S.A., a Chilean company, is pursuing the development, construction and operation of a 99 megawatts (MW) wind farm on uninhabited land on Chiloé Island. The wind farm is to be located on a 20,000 hectare (nearly 50,000 acre) plot on the island of Chiloé in the Los Lagos Region of Chile. The Grantee has commissioned a number of initial studies, including a wind resource assessment and data certification by GL Garrad Hassan, that have confirmed the wind resource potential of the site.

The objective of this Feasibility Study is to determine the technical, economic, financial and environmental viability of a wind farm of approximately 99 MW on the Chilean island of Chiloé. The Study would also include the completion of a full environmental and social impact assessment that corresponds to the requirements of pertinent lenders and authorities, ancillary studies such as an interconnection study and an engineering study on site access and logistics, and a review of relevant regulatory matters.

The U.S. firm selected will be paid in U.S. dollars from a $610,000 grant to the Grantee from the U.S. Trade and Development Agency ("USTDA"). The Grantee would be responsible for the lease or purchase of the mast for wind measurement and other associated equipment as well as for operating and maintaining the wind data collection system over the course of the feasibility study.

A detailed Request for Proposals (RFP), which includes requirements for the Proposal, the Terms of Reference, and portions of a background desk study report are available from USTDA, at 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901.

To request the RFP in PDF format, please go to:
https://www.ustda.gov/businessopps/rfpform.asp.

Requests for a mailed hardcopy version of the RFP may also be faxed to the IRC, USTDA at 703-875-4009. In the fax, please include your firm's name, contact person, address, and telephone number. Some firms have found that RFP materials sent by U.S. mail do not reach them in time for preparation of an adequate response. Firms that want USTDA to use an overnight delivery service should include the name of the delivery service and your firm's account number in the request for the RFP. Firms that want to send a courier to USTDA to retrieve the RFP should allow one hour after faxing the request to USTDA before scheduling a pick-up. Please note that no telephone requests for the RFP will be honored. Please check

your internal fax verification receipt. Because of the large number of RFP requests, USTDA cannot respond to requests for fax verification. Requests for RFPs received before 4:00 PM will be mailed the same day. Requests received after 4:00 PM will be mailed the following day. Please check with your courier and/or mail room before calling USTDA.

Only U.S. firms and individuals may bid on this USTDA financed activity. Interested firms, their subcontractors and employees of all participants must qualify under USTDA's nationality requirements as of the due date for submission of qualifications and proposals and, if selected to carry out the USTDA-financed activity, must continue to meet such requirements throughout the duration of the USTDA-financed activity. All goods and services to be provided by the selected firm shall have their nationality, source and origin in the U.S. or host country. The U.S. firm may use subcontractors from the host country for up to 20 percent of the USTDA grant amount. Details of USTDA's nationality requirements and mandatory contract clauses are also included in the RFP. The Grantee's cash contributions are not subject to USTDA's nationality provisions.

Interested U.S. firms should submit their Proposal in English directly to the Grantee by 5 pm on June 20, 2013 at the above address. Evaluation criteria for the Proposal are included in the RFP. Price will not be a factor in contractor selection, and therefore, cost proposals should NOT be submitted. The Grantee reserves the right to reject any and/or all Proposals. The Grantee also reserves the right to contract with the selected firm for subsequent work related to the project. The Grantee is not bound to pay for any costs associated with the preparation and submission of Proposals.

A N N E X 2

EXCERPTED BACKGROUND DESK STUDY REPORT

4 Project Recommendation 1: Tablaruca Wind Farm

We recommend that USTDA support the wind farm of approximately 99MW ('the Tablaruca project') that is being developed on the island of Chiloé by Empresa Eólica Tablaruca ('Tablaruca SA'), by funding a feasibility study aimed at proving the project's technical, economic and commercial, and environmental feasibility. The Tablaruca project is likely to have positive development benefits for the host country by generating electricity at a competitive cost, using locally available primary energy sources, and decreasing pollution as well as greenhouse gas (GHG) emissions from power generation. The Tablaruca project may also provide positive economic benefits for the US economy, mainly through the export of US-made goods.

Following an executive summary of this opportunity from USTDA's perspective (4.1), the remainder of this section analyzes the Tablaruca project in detail as follows:

- The project is at a prefeasibility stage appropriate for USTDA consideration (4.2), and is being promoted by a sponsor that has shown to be well-organized, effective, and responsive in spite of its lack of specific experience in wind project development (4.3)
- There are interested potential lenders and at least one equity partner for the project (4.4), as well as various companies interested in exporting US-made goods and services for developing it (4.5)—although there is competition from non-US providers of goods and, especially, services (4.6)
- The project is likely to create a positive developmental impact (4.7), an acceptably low impact on the environment (4.8), and no serious threat to US labor (4.9)
- Qualified contractors are needed to prove the project's viability (4.10).

As required by our contract, we complete this section by explaining the justification for USTDA to fund a feasibility study for the Tablaruca project (4.11); present the TORs (4.12) and budget (4.13) for the proposed feasibility study—the full TORs are contained in Appendix A; and summarize our reasoning for recommending that USTDA support the Tablaruca project (4.14).

4.1 Executive Summary

On behalf of USTDA, Castalia has evaluated the Tablaruca project proposed by Tablaruca SA. The project, which has been under development since 2010, would be constructed on uninhabited land owned exclusively by Mr. Mauricio Zeman. Mr. Zeman has signed a contract with Tablaruca SA—of which he is also the principle shareholder—permitting wind farm development on the property. The Tablaruca project aims at selling electricity to the SIC market through an interconnection point approximately 25 kilometers (km) from the project site. Electricity sold to the SIC would be transmitted over an evacuation (feeder) line, also to be constructed as part of the project.

The Tablaruca project has a good potential to benefit the economy of the host country, Chile, as well as that of the US. The project has the potential to reduce local pollution and global GHG emissions, improve energy security, and lower electricity costs for the host country. Also, there is strong interest on the part of Tablaruca SA to purchase equipment for the Tablaruca project (potentially worth over US$150 million) from the US.

The proposed wind project is likely to be:

- Technically feasible, based on a preliminary assessment
- Economically and commercially viable, also based on a preliminary assessment
- Acceptable under the regulatory regime of Chile, including under an environmental perspective according to criteria of potential lenders and the SEA.

Assuming that the Tablaruca project proves its technical, economic and commercial, and environmental viability, it is likely to be considered a good investment by lending institutions and equity partners. Tablaruca SA has provided documentation showing that is has taken meaningful steps to move the project forward—however, to support the project's bankability Tablaruca SA must contract specialized consultants to complete and expand on the steps already taken with a feasibility studies that will:

- **Prove technical viability** by conducting a technical resource assessment supplementing the wind assessment already carried out
- **Prove economic and financial viability** by developing the Tablaruca project's financial model; developing a commercial strategy for it; and supporting financing negotiations with lending institutions and potential equity partners
- **Prepare an environmental and social impact assessment** that reviews the key requirements of relevant lenders and authorities; analyzes and assesses environmental and social matters; and develops a *Declaración de Impacto Ambiental*
- **Prepare ancillary studies** including an interconnection study; an engineering study on site access and logistics; an easement study (to be carried out by Tablaruca SA's lawyer); and a geotechnical study
- **Review relevant regulatory matters.**

In addition, the specialized consultants should analyze host country development impacts and assess the potential US sources of supply to quantify the positive benefits that the USTDA grant can have for both the host country and the US; and provide an implementation plan for the project's next steps. Appendix A contains the full Terms of Reference and indication of budget for the proposed feasibility study.

4.2 Project Description

The Tablaruca project was originally conceived in 2010 by the entrepreneur Mauricio Alejandro Zeman Vergara (Mr. Zeman). The project started when Mr. Zeman contracted the consulting firm Poch Ambiental to conduct a study of the potential for entering the Chilean electricity sector by generating electricity from wind power on a plot of land that Mr. Zeman owns on the island of Chiloé in the Los Lagos Region of Chile. The land comprises 20,000 hectares and extends 20km from the Pirulul mountain range in the east to the Pacific Ocean in the west. Once it reaches the ocean, the land stretches 13km along the coast. Within the property, the elevation ranges from sea level to an altitude of 350m, rising and falling over a series of river valleys and small mountains.[27]

[27] POCH Ambiental. "ANÁLISIS DE POTENCIAL EÓLICO FUNDO TABLARUCA, CHILOÉ." March, 2010

This initial study, which was delivered in March 2010, suggested that the wind resource in Chiloé was strong enough to justify further exploration. On the basis of this report, Mr. Zeman commissioned the "Estudio del Recurso Eólico de Tablaruca (Isla de Chiloé)" by Meteosim Truewind; this study was completed in December 2010. The study used atmospheric models to estimate average wind speed on the site of the Tablaruca project, and concluded that a wind resource appropriate for wind energy is likely to be available on the site.[28]

On the basis of the Meteosim Truewind study, Mr. Zeman formed Tablaruca SA (4.2.1) in January 2011 pursuant to Chile's corporate requirements (4.2.2). Since its founding, Tablaruca SA has taken further steps to move the project towards implementation, including commissioning a study on interconnection completed in May 2011 (4.2.3). Most recently Tablaruca SA commissioned a further wind resource assessment completed in August 2012 (4.2.4), and developed a basic financial model for the project (4.2.5).

The sponsor expects that commissioning the project will require:

- Nine to twelve months to complete the remaining feasibility studies
- Six to nine months to secure financing
- Three to six months to complete the planning stage of construction—including finalizing building plans
- Nine months to complete construction.

Therefore, Tablaruca SA assumes that it will require between 27 and 36 months to put the Tablaruca project into operation. Assuming this process starts in March 2013, this means that the project could begin commercial operations at some point between July 2015 and April 2016.[29]

4.2.1 Team of Tablaruca SA

Tablaruca SA—the project sponsor—is a special purpose vehicle created with the sole purpose of developing the Tablaruca project. As of February 2013, the team of Tablaruca SA is comprised of the following:

- General Manager (Mr. Zeman)—a commercial engineer and entrepreneur. He oversees all operations
- Project Manager (Pablo Blanco Vera)—an environmental engineer who has been managing the contractors and implementation of studies for the Tablaruca project
- Lawyer (Alvaro Anriquez Novoa)—a lawyer who helped to legally establish the company and prepare the land lease
- Financial specialist (Alberto Martín)—who holds a Masters in Business Administration and handles the financial aspects of the project.

Tablaruca SA also has an expert with 20 years of experience developing wind farms on retainer.[30] In addition, the company contracts well-known and qualified specialists such as

[28] Meteosim Truewind SL. "Estudio del Recurso Eólico de Tablaruca (Isla de Chiloé)." December, 2010

[29] Discussion with Tablaruca SA on February 7, 2013

[30] Discussion with Tablaruca SA on March 1, 2013

Poch and Garrad Hassan to provide technical assistance for areas where it does not have internal capabilities. Tablaruca SA do not intend to contract new employees until it enters the construction phase of the project.

4.2.2 Tablaruca SA corporate and legal aspects

Tablaruca SA was legally established in accordance with Chile's corporate regulations on 19 January 2011 as an incorporated company[31] set up exclusively for the development, construction, and operation of the Tablaruca project.[32] Ownership of Tablaruca is divided into 100 shares, 99 of which are owned by Mr. Zeman and the remaining one by Bridge Ventures SA—a Chilean export-import company.

Following its incorporation, Tablaruca SA has also completed the following legal steps in accordance with Chile's regulations:

- Formation of Tablaruca SA's Board of Directors, appointment of its General Manager, and legalization of the association *(Reducción a Escritura Publica Primera Sesión Eólica Tablaruca SA; 28 January 2011)*
- Registration of Tablaruca SA in the trade registry of Santiago, Chile (*Copia de Inscripción al Registro de Comercio de Santiago, 24 January 2013)*
- Signing of a lease for the installation of the Tablaruca wind farm[33] on the land of the Hacienda Tablaruca (*Arrendamiento para la instalación de Parque Eólico, 28 June 2011)*
- Registration of the lease for the installation of the wind farm in the Real Estate Registry of Castro, Chiloé (*Inscripción: Arrendamiento Para la Instalación de Parque Eólico, 19 October 2011).*

4.2.3 Infrastructure requirements

The infrastructure requirements of the Tablaruca project are divided into two separate categories: those for building the project, and those for transmitting electricity generated by the project to the SIC. Both requirements require further study to assess precisely what infrastructure the Tablaruca project will require to be completed and operational, and how much it will cost.

Infrastructure for building the project

Building the Tablaruca project will require access roads for high tonnage trucks to carry the required components to the construction site. There are no roadways capable of bearing the high tonnage trucks to access the planned construction site from existing roadways in Chiloé. As a result, Tablaruca SA will need to build between 50km and 100km of roadways capable of bearing high tonnage trucks between the construction site and existing roadways. As an alternative, Tablaruca SA could build roadways from the construction site to the

[31] Constitución de la Sociedad Anónima Eólica Tablaruca, 19 January 2011

[32] Tablaruca SA plans to start selling company shares once the main feasibility studies have been completed

[33] The General Manger of Eólica Tablaruca SA, who is also the landowner of 50 percent of the Hacienda Tablaruca where the wind farm is to be sited (with an option to purchase the other 50 percent), signed a lease with Eólica Tablaruca SA that allows it to develop the wind farm on this land, and for the wind farm to use the land to produce electricity for a period of 30 years

shore, where it would also need to build a berth for barges to carry the required components to the shore—under this option, Tablaruca SA would need fewer kilometers of roadway.[34]

Transmission infrastructure

Transmission infrastructure for the Tablaruca project requires construction of a feeder line to the transmission grid, and upgrading the transmission line that connects Chiloé to the SIC.

The Tablaruca project is located approximately 25km from the SIC transmission line, and 37km from the nearest substation located in Chonchi. As a result, the project will require either an evacuation (feeder) line of approximately 25km and a substation to interconnect, or a 37km evacuation (feeder) line to the SIC.[35]

In addition, the transmission line that connects Chiloé to the SIC—maintained by the private company Transelec—may not have enough capacity to transmit all of the electricity that could potentially be produced by wind farms on the island. This is a critical concern for the Tablaruca project, because the project is set up to export electricity off of the island of Chiloé. There is not enough domestic demand in Chiloé to justify the Tablaruca project (or any large renewable energy project) without the ability to export electricity off the island.

As a result, the Tablaruca project, in coordination with other wind farm developers in Chiloé and the Asociación Chilena de Energías Renovables (ACERA), is discussing the possibility of Transelec increasing the capacity of its transmission line to mainland Chile so that all of the electricity from wind projects on Chiloé could be exported to the mainland.[36] For this reason, the Terms of Reference for feasibility studies for the Tablaruca project detailed in Appendix A require careful consideration of island-wide transmission aspects.

4.2.4 Wind resource assessment

Garrad Hassan determined that the wind resource available at the project site has an average wind speed of 8 meters per second at a hub height of 80 meters. Garrad Hassan bases its findings on wind data captured by wind measurement equipment mounted on a 80 meter-tall mast over a one-year period. Based on this wind speed, Garrad Hassan projects wind energy capture of the proposed 99MW wind farm at 339.7GWh per year. The result is a 39.1 percent capacity factor. However, Garrad Hassan strongly recommends that this result be verified by additional studies.[37] The additional studies should consider the effect that choosing turbines from different manufacturers would have on the capacity factor.

A 39 percent capacity factor is considered a very good one for wind energy projects—a capacity factor over 30 percent is generally considered viable. For the LRMC of the Tablaruca project calculated in Figure 2.4, we use a more conservative capacity factor of 35 percent (as the Tablaruca team also does). Using a capacity factor of 39 percent, the LRMC of the Tablaruca project falls to US$0.06 per kWh. Conversely, if additional wind studies determine that the Tablaruca project's capacity factor were as low as 30 percent, the LRMC would be US$0.08 per kWh—still a viable LRMC in the Chilean electricity market.

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[34] POCH Ambiental. "ANÁLISIS DE POTENCIAL EÓLICO FUNDO TABLARUCA, CHILOÉ." March, 2010

[35] Fernando Abarca. "Alternativas de Evacuación de Energía Lineas de Salida." Fernando Abarca & Asociados. May 23, 2011

[36] ACERA. "Polo de Generación Eólica de Chiloé." December, 2012

[37] Garrad Hassan. "Assessment of the Energy Production of the Proposed Tablaruca Wind Farm." August, 2012

4.2.5 Economic Fundamentals

Tablaruca SA estimates an investment requirement of about US$200 million for implementing its wind project. Tablaruca SA has developed a basic financial model that estimates that the project may recover the cost of the investment in eight years with an internal rate of return (IRR) of 12 percent.

Table 4.1 shows a breakdown of project costs as estimated by Tablaruca SA. The turnkey cost, defined for the purposes of this report as the sum of all costs required to hand over a completely finished and operational asset, amounts to about US$185 million.

Table 4.1: Proposed Costs for the Tablaruca Wind Farm

Item	Cost (US$)
Wind turbines	151,396,816
Roads and foundations	6,488,435
Interior electric installations	1,730,249
Evacuation (feeder) line	4,812,256
Transport and cranes	1,676,179
Mounting	1,351,757
Operation start-up costs	1,622,109
Working capital	1,189,546
Deploying the teams	1,622,109
Social compensation*	1,622,109
Unforeseen costs attributable to turnkey cost	11,081,406
Turnkey Cost	**184,592,971**
Unforeseen costs not attributable to turnkey cost	11,081,406
Project development costs	4,325,623
Total Investment	**200,000,000**

Source: Empresa Eólica Tablaruca SA

*Social compensation refers the cost that Tablaruca SA expects to incur to acquire the easements to build the transmission cable and roads to the project. This includes monetary as well as in-kind compensation (for example, building schools).

Based on the wind resource estimate describes in section 4.2.4, Tablaruca SA more conservatively estimates that assuming a 35 percent capacity factor it could sell 303GWh of electricity per year at a price of US$0.11 per kWh. This would result in revenue of US$33,388,740 per year. After subtracting costs of investment, operations and maintenance, depreciation, administration, rent, taxes, and depreciation, Tablaruca SA's basic financial model calculates a Net Present Value (NPV) of US$114,979,532 over a 20-year period.

4.3 Project Sponsor's Capabilities and Commitment

Tablaruca SA's multi-disciplinary team of professionals set up to develop the wind project has no specific experience in wind farm development; however, its overall experience, skills, and organization seem appropriate to move the project forward (4.3.1). Tablaruca SA has demonstrated its commitment to the project by investing adequate time and resources into it. It has also demonstrated its responsiveness and commitment to the project by effectively providing USTDA and Castalia with most of the information required to assess the project (4.3.2).

4.3.1 Experience of project sponsor

Tablaruca SA has assembled a team with adequate skills to successfully carry out the Tablaruca project. The diverse team profiled in Section 4.2.1 covers the core skills necessary to successfully implement and manage a large project: business, legal, and financial expertise. In particular, the general manager has previous experience managing a US$50 million family business formed 66 years ago dedicated to real estate investments, the textile industry, and household items. He also has experience managing Agrícola y Exportadora Don Otto, a family business devoted to fruit production.

As evidence of the team's adequacy for the project, the team has taken progressive and effective steps to develop the Tablaruca project over the last three years. From the technical perspective, the Tablaruca team has correctly identified wind assessments, interconnection studies, and other engineering and logistical studies necessary for the project. From the legal perspective, the team has compiled all of the required documents, formed an appropriate corporate structure, and identified further permits it will need to comply with. From the financial perspective, the team has identified the need to develop a detailed financial model. From the project development perspective, the team has been in touch with four wind turbine manufacturers in the US (Acciona, Vestas, GE, and Nordex) to evaluate the possibility of procuring wind turbines from one of these companies.

Furthermore, the team has effectively outsourced work that it could not do in-house to qualified and reputable consultants. In particular, Tablaruca SA hired Garrad Hassan, a company that is internationally renowned for renewable resource assessments, to elaborate and certify wind data. Tablaruca SA continues to seek qualified consultants to perform remaining tasks in the feasibility stage—for example, to conduct the environmental impact assessment. Finally, Tablaruca SA has expressed an interest in seeking an equity partner with experience developing wind farms, which should further bolster the strength of the Tablaruca team.

4.3.2 Commitment of the project sponsor

We assess Tablaruca SA to be committed to developing the wind farm based on its time commitment, financial commitment, and our own interactions with the project team.

As noted in section 4.3.1, the Tablaruca team has spent over three years preparing the Tablaruca project. In addition to having spent time advancing the project, the project sponsor has stated that it has invested about US$390,000 in developing the wind project. Tablaruca SA has invested:

- US$150,000 in development costs for resource studies

- US$80,000 for the services of a technical expert with experience developing wind farms
- US$160,000 for legal fees to establish Tablaruca SA and pursue required permits.[38]

In Castalia's interactions with Tablaruca SA, the project sponsor has displayed a good degree of responsiveness for completing the project, and a level of dedication that seems appropriate based on our experience with renewable energy developers. The Tablaruca team has effectively and efficiently provided information about the technical, commercial, financial, and environmental aspects of the project to USTDA and Castalia. It has provided all information requested within one week of requesting the information (and often in less time). It has also accepted all meeting requests, and has met with Castalia on a weekly basis since the start of our assignment. These meetings have been productive, and Tablaruca SA has responded to all inquiries made by Castalia and USTDA. It has also provided additional information after the meetings to verify the information discussed.

4.4 Implementation Financing

Tablaruca SA has proposed a reasonable—although somewhat high—cost (4.4.1), and a reasonable target capital structure for its wind farm project (4.4.3). There are several potential lenders who are interested in providing debt financing for the wind farm. Among these lenders, the Export-Import Bank of the United States ('Ex-Im Bank') is among the most likely sources of financing due to its interest in financing the project and the attractive lending terms it can offer (4.4.2). Finally, Tablaruca SA has provided initial qualification materials that, if strengthened, will meet the requirements of interested lenders (for example, a detailed financial model). However, some key items are missing. In particular, Tablaruca SA needs to conduct a detailed environmental and social impact assessment (4.4.4).

4.4.1 The proposed costs are overall reasonable—but attention to transmission

Tablaruca SA estimates that the wind project will require an overall investment of about US$200 million dollars, of which approximately US$185 million dollars may be considered the project's turnkey (or 'installed') capital cost. This is a reasonable cost based on our previous experience in the Latin America and the Caribbean (LAC) region, although on the higher end of the spectrum. Based on the costs summarized in Table 4.1, we calculate a turnkey unit capital cost of US$1,865 per kilowatt—after subtracting project development costs and half of the unforeseen costs. This cost is in line with our previous experience in the region—for example, in Colombia (2011) and Barbados (2010-2012)—where installed capital cost of utility scale wind farms has ranged between US$1,500 to US$2,000 per kilowatt. Unforeseen costs (estimated at US$11 million for their full amount) seem prudently budgeted, given that interconnection costs to cover a distance of at least 25km may end up being significantly higher than the estimated US$4.8 million.

Tablaruca SA's cost estimates are based on the project team's conversations with equipment manufacturers as well as a technical study on the cost of the evacuation (feeder) line.[39]

[38] Conversation with Tablaruca SA staff on March 1, 2013.

[39] Fernando Abarca. "Alternativas de Evacuación de Energía Lineas de Salida." Fernando Abarca & Asociados. May 23, 2011

4.4.2 There are good options from interested debt financers

The Ex-Im Bank is among the most likely sources of implementation funding, considering it can offer very favorable terms for financing the wind farm, and its policy priority of supporting US-manufactured renewable energy exports. In addition an Ex-Im Bank staff member expressed a high degree of motivation to finance the project, provided the project's viability is backed up by the necessary studies and permits.[40] Tablaruca SA is in the process of requesting a letter of intent from the Ex-Im Bank,[41] and is awaiting an official response.

Provided that Tablaruca SA purchases wind turbines from a manufacture in the United States[42], the Ex-Im Bank could offer financing that:

- Has an interest rate of 2.92 percent
- Has a term of up to 18 years[43]
- Capitalizes interest during construction.[44]

In addition to the Ex-Im Bank, Tablaruca SA has had preliminary conversations with PNC Bank and Huntington National Bank—two interested US-headquartered commercial banks that would provide financing backed by a guarantee from the Ex-Im Bank. Castalia has contacted the International Finance Corporation (IFC), the Inter-American Investment Corporation (IIC, part of the Inter-American Development Bank), and the Overseas Private Investment Corporation (OPIC) in addition to the potential lenders that Tablaruca SA has contacted. To qualify for OPIC funding, at least 25 percent of the equity should be held by US investors—this may become a possibility if and when Tablaruca SA sells shares and seeks for an equity partner from the US.[45]

There is a high degree of interest in the project among all of the potential lenders that we contacted, provided that Tablaruca SA can meet their lending requirements. Therefore, Tablaruca SA should further explore their financing options, supported by specialized consultants—and based on a solid commercial strategy and detailed financial model.

4.4.3 Capital Structure corresponds to the requirements of prospective lenders

Tablaruca SA targets a capital structure comprising 40 percent equity and 60 percent debt.[46] The capital structure targeted by Tablaruca SA meets or exceeds the equity requirements of potential US Government, multi-lateral, and private sector lenders.

The Ex-Im Bank of the United States[47] and OPIC[48] offer to finance up to 85 percent and 75 percent of the cost of projects that they finance, respectively. However, OPIC's finance

[40] Conversation with Craig O'Connor, Director, Ex-Im Bank/Office of Renewable Energy & Environmental Exports on February 7, 2013. The letter provided to Tablaruca SA by the US Commercial Service/US Department of Commerce cannot be considered the Ex-Im Bank's official response—the US Commercial Service simply acts as a liaison with Ex-Im Bank for places where the bank does not have a representation

[41] Conversation with Tablaruca SA on March 1, 2013

[42] The Ex-Im Bank requires that its funding support the purchase of goods shipped from the United States to a foreign buyer shipped from the United States to a foreign buyer

[43] The Export-Import Bank of the United States. "Commercial Interest Reference Rates." Accessed February 6, 2013 at: http://www.exim.gov/tools/commercialinterestreferencerates/

[44] The Export-Import Bank of the United States. "Environmental Export Financing: Good News for U.S. Exporters." Accessed February 6, 2013 at: http://www.exim.gov/about/whatwedo/specialinitiatives/environment/

[45] Conversation with Robert Sexton, Director, OPIC/Renewable Energy and Sustainable Development Finance on February 6, 2013

[46] Conversation with Tablaruca SA staff on February 7, 2013.

percentage is the maximum amount allowable—unlikely to be secured by a company borrowing from OPIC for the first time. The IIC, a multi-lateral lender, requires that the capital structure be at least 20 percent equity, although it prefers 25 to 30 percent equity.[49] The IFC declined to provide a target capital structure, and just noted that the proposed capital structure should contain more equity if the wind energy project does not obtain a PPA.[50] PNC Bank did not specify a target capital structure either; however, PNC Bank generally follows guidelines established by the Ex-Im Bank.[51]

Tablaruca SA proposes to seek an equity partner that will have experience developing wind power projects; this could potentially be a wind turbine manufacturer—although not all wind turbine manufacturers pursue this business model. This is a reasonable approach that may help meet potential lender requirements that wind farm developers have experience in the wind power market.[52] In addition, it is a model that has been successfully implemented in Chile by the turbine manufacturer Nordex, which purchased an equity stake in Llay-Llay.[53]

4.4.4 There are other lending requirements that need to be met

Some of the preliminary feasibility studies that Tablaruca SA has conducted, if strengthened, will comply with lender requirements. However, some lender requirements are lacking and some need to be further developed. In particular, the environmental and social impact assessments need to be conducted. Aside from capital structure requirements explained above, all potential lenders that Castalia contacted require that Tablaruca SA provide:

- A summary of all aspects of the project, contained in an independently prepared feasibility study—Tablaruca SA does not have a feasibility study for its project
- A detailed financial model—Tablaruca SA needs to strengthen its basic financial model with much greater detail, or better just get a new one prepared
- Existing offtake agreements and supply contracts—Tablaruca SA does not have offtake agreements or supply contracts (although, as noted in section 2.5.3, there is a precedent in Chile of a wind project financed without a PPA)
- A detailed technical viability study, including a wind study with at least one year of data—Tablaruca SA needs to complement its existing wind resource study with readings from an additional 80m mast and appropriate data elaboration and certification
- An environmental impact assessment in compliance with standards of the IFC and those for a Declaración de Impacto Ambiental required by local law—Tablaruca needs to commission a compliant environmental impact assessment
- A social impact assessment—Tablaruca needs to commission one together with the environmental impact assessment

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[47] Conversation with Craig O'Connor, Director, Ex-Im Bank/Office of Renewable Energy & Environmental Exports on February 7, 2013

[48] Conversation with Robert Sexton, Director, OPIC/Renewable Energy and Sustainable Development Finance on February 6, 2013

[49] Conversation with Javier Hernandez, Senior Investment Officer, IIC on February 7, 2013

[50] Conversation with Juan Payeras Principal Investment Officer, IFC on February 6, 2013

[51] Conversation with Juan Francisco Correa, Senior Vice President, Trade Finance Group, PNC Bank on February 6, 2013

[52] Conversation with Javier Hernandez, Senior Investment Officer, IIC on February 7, 2013

[53] Power Engineering International. "Nordex takes part-ownership of Chilean wind project." Accessed February 7, 2013 at: http://www.powerengineeringint.com/articles/2012/11/nordex-takes-part-ownership-of-chilean-wind-project.html

- Proof of land rights and required permits—Tablaruca has satisfactory initial documentation, although further work is needed from their lawyer on easements.

Among the potential lenders there is consensus that all of these elements are crucial for the project to be approved. However, with the exception of the environmental and social impact assessments, there are no specific formats or templates to comply with these requirements. The industry standard for environmental and social impact assessments for a wind farm is the IFC's 'Environmental, Health, and Safety Guidelines'.[54] These guidelines call for consideration of:

- Environmental factors including:
  - Visual impacts
  - Noise
  - Species mortality or injury and disturbance
  - Shadow flicker and blade glint
  - Habitat alteration
  - Water quality
- Occupational health and safety factors including:
  - Working at heights
  - Working over water (if relevant)
- Community Health and Safety Factors including:
  - Aircraft and marine navigation safety
  - Blade and ice throw
  - Electromagnetic interference and radiation
  - Public access.[55]

The IFC standard for environmental and social impact assessment is the standard which the Ex-Im Bank, the IIC, and PNC Bank reference to determine eligibility for financing.

4.5 US Export Potential

The US export potential for the Tablaruca project is expected to be up to US$153 million—about 75 percent of the total project cost.[56] Of the US$153 million, US$151 million is for wind turbines that have an average of 50 to 60 percent US content.[57] As a result, there is the potential for export of between US$76 million and US$93 million in US content. Tablaruca SA has expressed an interest in purchasing the turbines from US companies; and is open to

[54] Conversations with Javier Hernandez, Senior Investment Officer, IIC and Craig O'Connor, Director, Ex-Im Bank/Office of Renewable Energy & Environmental Exports on February 7, 2013

[55] IFC. "Envrionmental Health, and Safety Guidelines: Wind Energy." Accessed February 7, 2013 at:http://www1.ifc.org/wps/wcm/connect/3af2a20048855acf8724d76a6515bb18/Final%2B-%2BWind%2BEnergy.pdf?MOD=AJPERES&id=1323162509197

[56] Conversation with Tablaruca SA on February 7, 2013

[57] Platzer, M. "U.S. Wind Turbine Manufacturing: FederalSupport for an Emerging Industry." Congressional Research Service. Washington, DC 2011. Accessed on 02/19/2013 at: http://fpc.state.gov/documents/organization/175861.pdf

purchasing the transformers needed from the US, too. Table 4.2 shows the components of the project that represent a US export potential.

Table 4.2: Estimated Value of US Exports for Tablaruca Project

Item	US$
Wind turbines	151,396,816
Interior electric installations (transformers)	1,730,249

Source: Eólica Tablaruca SA, 2012. "Costos Parque Eólico Tablaruca", tabla 1.

Tablaruca SA has stated that it has procured goods and services in the past by assessing offers from various companies, and then selecting the best goods or services provider. The procurement process was open—any company could submit a bid. This is the same process that Tablaruca SA plans to use in the future to procure the goods and services for the project. In particular, Tablaruca SA is open to allowing all interested companies to conduct studies on the Tablaruca SA's property to determine how efficient each wind turbine producer's products will be under the conditions present on Tablaruca SA's property. This will allow each wind turbine manufacturer to make an informed offer to Tablaruca SA.

Bidders seeking to export from the US would probably consist of major multinational companies with manufacturing and/or assembly facilities in the US. To date, Tablaruca SA has contacted five wind turbine suppliers that manufacture or assemble the wind turbines in the US: Acciona, General Electric, NORDEX, Siemens, and Vestas. The list below includes these companies as well as other major wind turbine producers with production facilities in the US:

- **Acciona Windpower**—a renewable energy company with a wind turbine generator assembly plant in Iowa[58]
- **Gamesa Corporación Tecnológica—**a renewable energy company headquartered in Spain that manufactures nacelles (Fairless Hills, PA) and blades (Ebensburg, PA) in the US[59]
- **General Electric Energy**—a US-headquartered company that manufactures wind turbines (the towers, hubs, and blades) in Pensacola, Florida[60]
- **NORDEX USA, Inc.**—a wind turbine manufacturer and developer that manufactures wind turbines in Jonesboro, Arkansas[61]
- **Siemens SA**—a conglomerate that provides equipment for a range of industries, and that manufactures wind turbines (the blades, and assembles the cells) at its factories in Fort Madison, Iowa and Hutchinson, Kansas[62]

[58] Acciona Energy. 2013. "In the World: A Global Presence". http://www.acciona-energia.com/world.aspx (accessed February 4, 2013)

[59] Gamesa. "Global Presence." Accessed 02/19/2013 at: http://www.gamesacorp.com/en/gamesaen/global-presence/

[60] Congressional Research Service. 2012, "U.S. Wind Turbine Manufacturing: Federal Support for an Emerging Market". http://www.fas.org/sgp/crs/misc/R42023.pdf (accessed February 4, 2013)

[61] NORDEX USA, Inc. http://www.nordex-online.com/en (accessed February 8, 2013)

- **Suzlon—**an Indian renewable energy company that manufactures rotor blades and nose cones for wind turbines in Pipestone, Minnesota[63]
- **Vestas**—a renewable energy company headquartered in Denmark that is the market leader in manufacturing wind turbines. Vestas manufactures blades (Windsor, CO), towers (Brighton, CO), and nacelles (Brighton, CO) in the US.[64]

These companies all have manufacturing facilities in countries other than the US; however, the manufacturing facilities located in the US are located closest to Chile. As evidence of this, Vestas is manufacturing turbines that it sells to Chile in the US.[65]

In conversations with Castalia, Acciona,[66] General Electric,[67] NORDEX,[68] and Siemens[69] all expressed a strong interest in supplying wind turbines for the Tablaruca project. Acciona Windpower is also interested in providing the civil works, electrical wiring, and manpower for the project, as it has local capacity to do so. Siemens could provide both wind turbines and transformers for the project, although it stated that its transformers sourced from the US are generally not competitive in Chile—unless Ex-Im financing is provided.[70] NORDEX could provide the wind turbines, and also potentially contribute equity for the project.[71]

Acciona has given Tablaruca SA detailed information on the size of the wind turbines that it could provide, and their expected performance. Acciona has offered to supply 3MW wind turbines (AW116/3000 IIA model), and has submitted a preliminary technical study that estimates the potential electricity generation of these turbines at the project site. The wind resource study conducted by Garrad Hassan discussed in Section 4.2.4 assumed Vestas 1.8MW wind turbines (V100 model) to calculate the wind capture potential.

Tablaruca SA has not researched or contacted any transformer suppliers with manufacturing facilities located in the US—and in particular has not discussed transformers with Siemens. However, there are many internationally competitive companies that manufacture transformers in the United States including Hyundai Heavy Industries (Montgomery, AL), ABB (South Boston, VA and St. Louis. MO), Waukesha (Waukesha, WI), Mitsubishi (Memphis, TN), and Delta Star (Lynchburg, VA and San Carlos, CA).[72]

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[62] Siemens. http://www.energy.siemens.com/hq/en/power-generation/renewables/wind-power/ (accessed February 8, 2013)

[63] Suzlon. "Manufacturing." Accessed on 02/19/2013 at: http://www.suzlon.com/manufacturing/facilities_by_location.aspx?l1=5&l2=19

[64] Vestas. "Find Vestas." Accessed on 02/19/2013 at: http://www.vestas.com/en/about-vestas/find-vestas.aspx

[65] Castalia discussion with Pattern Energy Group on 25 January 2013.

[66] Castalia discussion with Acciona Windpower SA on 6 February, 2013

[67] Castalia discussion with General Electric Power and Water on 5 February 2013

[68] Castalia discussion with NORDEX USA, Inc. on 7 February 2013

[69] Castalia discussion with Siemens SA on 8 February 2013

[70] Siemens said its transformers manufactured in the U.S. would only make sense if the project has Ex-Im financing given the low interest rate and the U.S. content requirements for sourcing goods

[71] NORDEX has recently started discussions with the Tablaruca project sponsor about potentially being a partner on the project and funding 50 percent of the project cost. However, NORDEX mentioned that it plans to wait until the capacity and reliability of the transmission line from Chiloé to mainland Chile is improved before entering into any arrangement, and expects this will take another 3 years (although it has not looked into if it might happen more quickly given the electric corridor policy that Government may pass)

[72] US DOE. "Large Power Transformers and the U.S. Electric Grid." June, 2012 Accessed 02/13/2013 at: http://energy.gov/sites/prod/files/Large%20Power%20Transformer%20Study%20-%20June%202012_0.pdf

4.6 Market Entry Issues and Foreign Competition

Market entry issues and foreign competition are unlikely to prevent US companies from successfully competing in exporting goods and services for the Tablaruca project. Chile has a commitment to welcoming foreign investment enshrined in its Constitution (4.6.1). As a result of Chile's openness to foreign competition, its market for developing renewable energy projects and for supplying goods and services related to renewable energy is open and highly competitive. Despite the competition, US based manufacturers are well placed to compete in Chile's renewable energy market (4.6.2).

4.6.1 Market entry of foreign companies in Chile

The Constitution of Chile establishes the main principles for the rules on foreign investment, including equality before the law, economic freedom, and non-discrimination. Non-discrimination guarantees that foreign investors will receive the same treatment from the Government as domestic investors; it also guarantees foreign investors free access to all sectors of the economy. Only in exceptional circumstances can the Government reserve areas for domestic investment.[73]

Chile has adhered to these practices in the energy sector since the 1980s, allowing for a large degree of foreign private investment including from the US. For example, AES Gener—a major player in the Chilean electricity market—is majority owned by AES Corporation, which is based in the US.[74] Chile has also allowed for foreign investment in the renewable energy sphere, including by US companies.

Finally, Chile has a good business environment, with a low level of perceived corruption.[75] Chile signed a Free Trade Agreement with the US in 2003, under which trade between the two countries has increased by 400 percent.[76]

4.6.2 Foreign competition in Chile

Table 4.3 provides an overview of the competitiveness of US companies for providing goods and services for renewable energy projects in Chile, as described in more detail below.

[73] EO Consorio Eolico SA, 2011. "Why invest in Chile", http://eolico.cl/en/index.php/eolic-energy-in-chile/por-que-invertir-en-chile-5/ (accessed February 1, 2013)

[74] AES Gener. "Generation." Accessed February 13, 2013 at: http://www.aes.com/Business/generation

[75] Chile has 2012 Corruption Perception Index of 20, nearly the same as the U.S.'s index of 19; and much lower than Brazil's index of 69 and Argentina's index of 102

[76] Ambassador Alex Wolff and Dr. Hugh Rudnick, 2013. "Direct line webchat on renewable energy opportunities in Chile"

Table 4.3: Overview of US Competitiveness for Supplying Goods and Services

Item	US Firm Competitiveness	Main Competitors
Project Developers	Good	European companies (Spain, Germany, Italy, and Portugal), Chinese companies, Chilean Companies
Wind Turbine Suppliers	Very good	European companies with no wind turbine manufacturing in the US, Chinese companies
Transformers	Good	European Companies, Canadian Companies, Mexican Companies, South Korean Companies
Construction Companies	Low	Spanish construction companies, Chilean construction companies
Engineering Companies	Low	Chilean and Latin American engineering companies

Project developers

At least one US company; Pattern Energy Group has entered the market and started constructing a 115MW wind project in Chile. In addition, several US companies are developing renewable energy projects in Chile, such as Pattern Energy, Element Power, and First Solar. The main competition on the project development side is from European companies. These companies are primarily from Spain, Germany, Italy, and Portugal. There are also some Chinese companies and local Chilean companies developing renewable energy projects.[77]

Wind turbine suppliers

Companies that provide wind turbines manufactured in the US are very competitive in Chile. The main wind turbine providers in Chile are US and European wind turbine manufacturers or assembly companies. The table

Table 4.4 below shows the market share of the twelve largest wind turbine manufacturers in the world.

Table 4.4: Global Wind Turbine Manufacturers in 2010 (installed capacity)

Manufacturer	Location of Headquarters	Market Share (%)
Vestas	Denmark	14.8
Sinovel	China	11.1
General Electric	US	9.6
Goldwind	China	9.5
Enercon	Germany	7.2

[77] Castalia discussion with Pattern Energy Group on 25 January 2013. Pattern Energy recently began construction of a 115 MW wind project in Chile, which once completed will be Chile's largest wind-farm (as there is only 205MW of wind capacity installed in Chile to date, although another 215MW currently under construction)

Suzlon	India	6.9
Dongfang	China	6.7
Gamesa	Spain	6.6
Siemens	Germany	5.9
United Power	China	4.2
Acciona	Spain	≈3
Nordex	Norway	≈3

Source: Congressional Research Service

In the table above, the manufacturers have a combined market share of 89 percent globally. Therefore, the companies represent nearly all of the competition for selling wind turbines to Chile. Of the companies listed above, companies that manufacture turbines in the US represent 50 percent of the market share of wind turbines globally.

The main competition for US companies would likely come from Enercon, the only large European wind turbine supplier that does not have manufacturing capacity in the US[78], and Chinese wind turbine suppliers. Competition in the wind turbine market is stiff and pricing for turbines is very similar. Given the locational advantage of US suppliers, the only way for Chinese firms or Enercon to be more competitive than firms that manufacture in the US is to provide more attractive financing.[79] However, the very inexpensive financing provided by the Ex-Im bank makes this unlikely.

Of the companies that manufacture turbines in the US:

- **Vestas** has supplied wind turbines to many of the existing wind farms in Chile. In addition, US-based Pattern Energy Group's Parque Eólico El Arrayán, which will be the largest wind farm in Chile once completed, will use fifty Siemens 2.3MW wind turbines[80] that are manufactured in the US. Pattern Energy Group is planning to develop another wind farm in Chile, and will likely source these wind turbines from the US as well[81]
- **Siemens** is discussing supplying turbines for 20 different wind projects in Chile; these projects are at different stages of project development
- **Acciona** has supplied wind turbines for Endesa's wind farms in Chile
- **NORDEX** bought an equity share in the 56MW Llay-Llay wind project in Chile, and plans to begin construction of the project late this year using its wind turbines
- **General Electric** has not sold any wind turbines in Chile as of February 2013.[82]

[78] Enercon. "Facts and Data." Accessed 02/19/2013 at: http://www.enercon.de/en-en/85.htm

[79] Nielsen, S. "China Grabs Share in Latin America Wind With Cheap Loans." Bloomberg News Accessed 02/19/2013 at: http://www.bloomberg.com/news/2012-11-20/china-grabs-share-in-latin-america-wind-with-cheap-loans.html

[80] Pattern Energy Group . 2013. "Parque Eólico El Arrayán" http://www.patternenergy.com/business/projects/el_arrayan (accessed February 1, 2013)

[81] Castalia discussion with Pattern Energy Group on 25 January 2013

[82] Castalia discussion with General Electric Power and Water on 5 February 2013

Construction companies

Currently, US construction companies are not competitive in the Chilean renewable energy market. Spanish construction companies are said to be very competitive in the country, in part because there is no language barrier for them to do business. Chilean construction companies have of course an additional competitive advantage in that they do not have to mobilize labor and materials from overseas (or if they do, in smaller quantities than foreign companies).

Therefore, US companies will only be competitive when the construction project requires significant specialized labor and materials that must be imported. For this reason, Pattern Energy hired a Chilean company (Skanska Chile) to construct the el Arrayán wind project. Although US companies face tough competition, Mortenson Construction and RES (two US construction companies), are interested in entering the renewable energy market in Chile.[83]

Engineering companies

US companies face significant competition, particularly from local companies, for carrying out engineering studies such as those required by Tablaruca SA. Tablaruca SA stated that it is considering hiring Delphos Laboratorio de Planificación Minera—a Chilean engineering research center—to perform these studies, because the Tablaruca team is familiar with this center. However, Tablaruca SA is also fully prepared to select the consultant through a competitive tender if that is USTDA's recommendation.[84]

4.7 Developmental Impact

The Tablaruca project is expected to have various positive developmental impacts for Chile. These include positive impacts on infrastructure development, human capacity building, and technology transfer. To a limited extent, the project will also have other positive impacts such as improved environmental sustainability, enhanced energy security, and cost reduction impacts.

Table 4.5 summarizes the expected developmental impacts, which are reviewed below.

Table 4.5: Developmental Impacts of the Tablaruca Wind Project

Category	Expected Developmental Impact
Infrastructure development	▪ 99MW wind farm ▪ Potential upgrade of interconnection line with mainland ▪ Road used to transport the equipment to the project site (tentative) ▪ Creation of a port on the Pacific coast of Chiloé (tentative)
Market-Oriented Reform	▪ No further market-oriented reforms in Chile; but will help Chile achieve its Renewable Portfolio Standard—mandatory percentage of renewable generation in total generation—and goal to diversify its energy matrix ▪ Additional incentive to support electric transmission highway initiative
Human Capacity Building	▪ 100 new positions to construct the wind farm ▪ 12 permanent jobs, potentially more
Technology Transfer	▪ Technology transfer impacts through wind turbine importation, and

[83] Castalia discussion with Pattern Energy Group on 25 January 2013
[84] Letter from Eólica Tablaruca SA to USTDA on 11 January 2013

and Productivity Improvement	operation and maintenance skills transfer ▪ Productivity improvements through reduced cost of electricity ▪ Financial revenue gains of NPV114,979,532[85], and IRR of 12 percent[86]
Other	▪ Improved energy security through reduced fossil fuel imports ▪ Cost savings, if electricity purchased from wind farm at lower cost than conventional generation

4.7.1 Infrastructure impacts

The project may have several infrastructure benefits. The project itself would result in the construction of a wind farm with an estimated installed capacity of 99 MW, generating approximately 303GWh per year[87]. This electricity would be injected into the SIC, which supplies over 90 percent of the population (including the island of Chiloé).

As noted, Tablaruca SA, in collaboration with other wind farm developers in Chiloé and ACERA, is discussing the possibility of Transelec increasing the capacity of its transmission line to the mainland so that all of the electricity from wind projects on Chiloé may be evacuated (this has not yet been agreed on with Transelec).

The project would also require the construction of roads to transport equipment and materials to the project construction site. Finally, the project may result in the creation of a port on the Pacific coast of Chiloé. However, a logistics study (see section 4.12) should weigh the possibility of using the existing port of Quellón instead of creating a new one.[88]

4.7.2 Market-oriented reforms

Given the advanced state of the electricity market in Chile, this project is not expected to generate market-oriented reforms in addition to those that have been implemented over the past several years—although it would help Chile achieve its RPS, as well as its goal to diversify its energy matrix. In addition, projects like Tablaruca may give further impetus to the 'transmission highway initiative' that aims to facilitate the connection of conventional and NCRE projects to the grid. The electric transmission highway initiative could increase the transmission capacity of Transelec so that several wind projects in Chiloé may sell their electricity through the SIC.

4.7.3 Human capacity building

Tablaruca SA expects the project to create 100 new jobs during its construction phase. After construction is completed, Tablaruca SA expects to create 12 positions that will last the lifetime of the project (20 years). Full time staff will need to be trained to operate the wind farm—training that a turbine manufacturer typically provides. In addition, although the wind turbine manufacturer selected typically maintains the turbines for the first three years of the

[85] The project has an estimated NPV of 54,212,849,494 Chilean Pesos, converted this value to US$ using a conversion rate of 1 US$ = 471.706 CLP. http://www.xe.com/ucc/convert/?Amount=54212849494&From=CLP&To=USD (accessed February 1, 2013)

[86] Eólica Tablaruca S.A Modelo Financiero Eólica Tablaruca_v2, 30 January 2013.

[87] Eólica Tablaruca S.A Modelo Financiero Eólica Tablaruca_v2, 30 January 2013

[88] Discussion with Tablaruca SA on February 7, 2013

project's life, after this period the project may hire qualified maintenance staff (or train staff to become qualified).[89]

4.7.4 Technology transfer and productivity improvement

The project allows for technology transfer between goods and services providers and Tablaruca SA. State of the art wind turbines are expected to be deployed as a result of the project. Although wind turbines are not a new technology for Chile, wind turbines are still fairly uncommon—there are only five operating wind farms in Chile, and none of them are in Chiloé. As a result, knowledge of operating turbines is limited to few people in the Chilean labor force. Thus, this project represents the introduction of an advanced technology to a new region of the country and the opportunity to introduce greater numbers of people to the planning, construction, and operation of the technology.

Furthermore, there would be productivity improvements from the project. As discussed in section 2.5, the Tablaruca wind farm could produce electricity less expensively than several forms of conventional generation in Chile. Since electricity is a key input for most economic activity, lowering its cost would result in a productivity improvement.

In addition, as noted in section 4.2.5, the project is expected to generate a financial revenue with a net present value of approximately US$114,979,532 [90] over its economic lifetime, resulting in an IRR of 12 percent.[91]

4.7.5 Other developmental impacts

To some extent, the project could also help improve energy security by reducing the amount of fossil fuels that need to be imported to meet demand. It may also help lower electricity costs and tariffs for customers connected to the SIC, if the price that Tablaruca sells the electricity at is lower than the price paid for conventional generation. However, these potential impacts would be very limited, because the project would represent a tiny fraction of the SIC's total installed capacity[92] and gross generation.[93]

4.7.6 Alternatives

There are several alternative types of renewable energy projects that have been proposed for increasing the level of NCRE in Chile. The most direct alternative to wind energy is solar energy, because it also provides intermittent NCRE. As noted in section 2.5.2, however, wind energy is less expensive than solar energy. In Chiloé, the alternatives for achieving the goal of increasing NCRE include small hydroelectric and biomass cogeneration projects—however, these technologies would provide firm power (power that can be dispatched at any time, and that can supply base load).

Endesa, the largest electric utility in Chile, has considered building a 7.6MW micro-hydroelectric plant on the Carihueico River in Chiloé. Small hydro is an economically and commercially viable option in Chile. Its LRMC is below the marginal cost of generation

[89] Discussion with Tablaruca SA on February 7, 2013

[90] The project has an estimated NPV of 54,212,849,494 Chilean Pesos, converted this value to US$ using a conversion rate of 1 US$ = 471.706 CLP. http://www.xe.com/ucc/convert/?Amount=54212849494&From=CLP&To=USD (accessed February 1, 2013)

[91] Eólica Tablaruca S.A Modelo Financiero Eólica Tablaruca_v2, 30 January 2013

[92] Ambassador Alex Wolff and Dr. Hugh Rudnick, 2013. "Direct line webchat on renewable energy opportunities in Chile"

[93] Ministerio de Energia, Gobierno de Chile. 2012. "National Energy Strategy 2012-2030" http://pds.kallman.com/shows/iftenergy_2012/pdfs/Energy-for-the-Future-Chile's-National-Energy-Strategy-2012-2030-English.pdf (accessed February 1, 2013)

using conventional energy, and below the marginal cost of the SIC. This means it could help lower generation costs by selling electricity competitively through the SIC. Despite the fact that large hydroelectric projects are often controversial in Chile,[94] small hydro projects below 3MW are generally easier to develop, as they have a limited environmental impact.[95] The Endesa project is a small hydropower project (based on the World Bank definition of small hydropower being less than 10MW), so it would be less likely to encounter public opposition.

Chiloé also has good biomass potential, as there is a large forest on the main island. A 2MW demonstration combined heat and power (CHP) plant has been proposed that would require 19,000 tons of biomass per year. Biomass cogeneration on a large scale is an economically and commercially viable technology. However, Chiloé's biomass potential is difficult to exploit, because of small-scale ownership of the forests.[96] The biomass would thus have to be sourced from many different owners, potentially increasing costs of supply.

4.8 Impact on the Environment

The Tablaruca project is expected to have a minimal impact on the environment according to preliminary analysis carried out by Tablaruca SA. It is not expected to affect the flora and fauna, as there is no native vegetation on the site (4.8.1). As a result, the Tablaruca project should be able to easily gain approval for the project from the SEA by submitting a Declaración de Impacto Ambiental (DIA) or a Estudio de Impacto Ambiental (EIA); any DIA or EIA submitted should be also compliant with lending agency standards (4.8.2).

4.8.1 Environmental impacts

Based on an initial assessment, Tablaruca SA does not envision that the Tablaruca project would cause significant adverse environmental impacts. Given the project's early stage of development, Tablaruca SA has only done a desk review of existing literature on the potential environmental impacts, and consulted with a few Chilean experts on the matter. The project sponsor has also spoken with other wind developers, including those in Chiloé, to obtain additional information about the potential impacts.

The vegetation on the 12,000 hectare site where the project will be located was destroyed during a forest fire 50 years ago. Due to this fire, there are no plantations or forests in this area. Thus, it is expected that no flora or fauna would be displaced or negatively impacted by the Tablaruca project. There is also no record of archeological remains in this area. However, a 'depth analysis' (or archeological study) needed to confirm this has not been done.[97]

Non-governmental organizations (NGOs) and adjacent communities have raised concerns about the potential impacts of other wind projects in the northern part of Chiloé on birds and the fishing and tourism industries.[98] Environmentalists are particularly concerned about possible impacts of turbine vibrations on the local blue whale populations near the Mar

[94] Nelsen, Aaron, 2012. "Could the Wind Turbines of Chile Harm Blue Whales". Time Magazine. http://www.time.com/time/world/article/0,8599,2106064,00.html (accessed February 4, 2013)

[95] Castalia discussion with Aaktei, a Chilean company that develops mini-hydro projects, on January 24, 2013

[96] Global Islands Network. "Chile: Chiloe". http://www.globalislands.net/greenislands/index.php?region=9&c=50 (accessed February 4, 2013).

[97] Castalia discussion with POCH on 7 February 2013.

[98] Global Islands Network. "Chile: Chiloe". http://www.globalislands.net/greenislands/index.php?region=9&c=50 (accessed February 4, 2013).

Brava shore of Chiloé.[99] However, because the Tablaruca project is located on the southern part of the island, Tablaruca SA does not expect to have the same types of potential environmental impacts. Several of the concerns from environmentalists and NGOs over the potential impacts of wind vibrations on whales may be unfounded, and not based on scientific evidence. However, the Tablaruca project should carefully communicate with the local community, and consider bringing an international expert to Chiloé to help ease any concerns.[100]

4.8.2 Compliance with environmental standards

The preliminary environmental and social assessment performed by Tablaruca SA suggests that the Tablaruca project should not cause significant environmental and social impacts. Regardless, Tablaruca SA would still need to prepare an environmental impact assessment as the wind farm is larger than 3MW, and would have an evacuation (feeder) line that interconnects to the SIC. This task is critical to developing the Tablaruca project, as it is not possible to develop the wind farm without a DIA or EIA.

For this reason, the project sponsor has requested USTDA funding to cover the costs of this assessment and we endorse including a full environmental and social impact assessment (ESIA), which will include a compliant DIA or EIA, in the Terms of Reference for the Tablaruca project's feasibility study. As explained in section 4.4.4, by preparing an ESIA with a DIA or EIA for the Tablaruca project that is compliant with Chilean environmental law, the Tablaruca project should also comply with the IFC's performance standards and the Equator Principles. As a result, the Tablaruca project would meet the environmental and social due diligence requirements of international finance institutions. Furthermore, since the Tablaruca project is not expected to have significant impacts on the environment, the additional cost of preparing a full ESIA after conducting a preliminary review of environmental impacts would be relatively small. Therefore, the additional cost of the full ESIA will be outweighed by the benefit that an ESIA will bring to the project by allowing the Tablaruca project to receive authorization to be implemented from the SEA.

4.9 Impact on US Labor

The Tablaruca project is not expected to have any negative impact on US labor, and it is compliant with the legislative prohibitions on the use of Foreign Assistance Funds. In addition, funding for feasibility studies provided by USTDA would be performed by a US company; therefore, USTDA funding would not be used to fund foreign employment beyond 20 percent of the feasibility study's contract value.

The Tablaruca project would purchase goods manufactured in a market where there are several competitive US-based manufacturers with a high likelihood of submitting winning bids.[101] The Tablaruca project does not propose establishing manufacturing facilities in Chile or anywhere else. Therefore, it does not provide any financial incentives to any US goods and services suppliers to establish manufacturing operations outside of the US or replace US employees with foreign ones. The sales opportunities from the project for US goods and services providers would instead encourage companies to continue manufacturing these

[99] Nelsen, Aaron, 2012. "Could the Wind Turbines of Chile Harm Blue Whales". Time Magainze. http://www.time.com/time/world/article/0,8599,2106064,00.html (accessed February 4, 2013).
[100] Castalia discussion with POCH on 7 February 2013.
[101] Matthew Hilgendorf, U.S. Commercial Office. Letter to Tablaruca SA. February 11,2013

products in the US. As a result, this project would encourage them to retain workers (or possibly hire new manufacturing or assembly workers given the size of the potential wind turbine supply contract).

The project is not expected to contribute to the violation of internationally recognized workers' rights. Tablaruca SA plans to procure goods and services for the project from reputable companies with no known workers' rights abuse complaints. In addition, the key goods and services providers considered are located in the US, the European Union, or Chile. All of these countries have ratified fundamental labor conventions, such as those on forced labor, freedom of association, rights to organize, minimum age, and hours of work.[102] Companies located in these countries must adhere to these conventions.

The project does not plan to provide direct assistance for establishing or expanding production of any commodity that is in surplus. USTDA funding would be used solely to fund a feasibility study performed by a US company. The Tablaruca project would only construct a wind farm in Chile. The Tablaruca project would only generate electricity that is not in surplus and is not a commodity for export.

4.10 Qualifications

In order to accomplish all the tasks required by the TORs (see the following section 4.12), the bidding company (likely to be consortium, given the tasks covered) will need to propose a study team with diverse skills and backgrounds. Local participation (up to 20 percent of the value of the feasibility study contract, consistent with USTDA requirements) will also be important to the project's success.

Based on the tasks and sub tasks included in the TORs, at least the following key team members will be required:

- Team Leader
- Wind Resource Engineer
- Power Engineer
- Civil Engineer
- Economic and Financial Specialist
- Local Environmental and Social Specialist
- Local Lawyer.

The recommended tasks and responsibilities for the key team members are shown in

Table 4.6 below.

Table 4.6: Tasks and Responsibility of Each Key Team Member

Team Member	Task or Sub Task (from TORs)	Responsibilities
Team Leader	All (11)	Overall project development, implementation plan, final report with findings of all tasks

[102] International Labor Organization. "Ratifications by Country" http://www.ilo.org/dyn/normlex/en/f?p=1000:11001:0::NO:::#G (accessed February 5, 2013)

Wind Resource Engineer	3	Collection of onsite data, data analysis and certification, development of final recommendations on resource quality
Power Engineer	2	Interconnection study
Civil Engineer	6.1, 6.2	Engineering study on site access and logistics, geotechnical study
Economic and Financial Specialist	4, 8, 9	Economic and financial analysis, development impact analysis, and assessment of US sources of supply
Local Environmental and Social Specialist	1,5	Environmental and social site review, submission of environmental and social documents to relevant authorities
Local Lawyer	7	Review of regulatory matters

The key team members should have extensive professional experience in their respective disciplines, as well as appropriate educational backgrounds. Spanish language ability and experience with NCRE in Chile is desired, but not required for team members. The desired experience and educational background for each key team member is as follows:

- **Team Leader**—the Team Leader should have at least 10 years' experience in diverse aspects of power project development including financial, technical, environmental, and social aspects. He or she should also have experience managing an interdisciplinary team and managing projects of similar size. The Team Leader should have a MS in engineering or MA in business or finance
- **Wind Resource Engineer**—the Wind Resource Engineer should have at least 10 years' experience in the collection, elaboration, and analysis of onsite wind resource data. His or her recommendations should have informed the development of similarly sized wind energy developments. The Wind Resource Engineer should have a MS in a relevant engineering discipline
- **Power Engineer—t**he Power Engineer should have at least 10 years' experience in the development and maintenance of transmission systems. In particular, the Power Engineer should have experience with the interconnection of wind energy projects and the design of feeder lines. The Power Engineer should have a MS in a relevant engineering discipline
- **Civil Engineer**—the Civil Engineer should have at least 10 years' experience conducting site studies, designing roads, and performing geotechnical studies. He or she should also have experience designing or evaluating transport infrastructure capable of transporting wind turbines to their final location. The Civil Engineer should have a MS in a relevant engineering discipline
- **Economic and Financial Specialist**—The Economic and Financial Specialist should have at least 15 years' experience in the economic and financial analysis of large infrastructure projects, particularly renewable energy generation plants. The Economic and Financial Specialist should have experience evaluating wind energy

projects of a similar size and profile. He or she should have a Master's degree in finance, business administration, or economics

- **Local Environmental and Social Specialist**—the Local Environmental and Social Specialist should have at least 10 years' experience preparing environmental and/or social evaluations for infrastructure projects. The majority of this experience should be in Chile. The Local Environmental and Social Specialist should have a Master's degree or law degree (or local equivalent)

Local Lawyer—the Local Lawyer should have at least 10 years' experience practicing law in Chile. He or she should also have experience with securing easements and Chilean electric sector regulation. The Local Lawyer should have a degree in law.

Table 4.7 summarizes recommended evaluation criteria to be used by the Project Sponsor for a competed feasibility study (assuming the fixed budget will be announced to bidders, and therefore will not be an evaluation criterion).

Table 4.7: Evaluation Criteria

	Evaluation Criteria	Points
Firm or consortium	Relevant firm/consortium experience and qualifications	25/100
Team Leader	Relevant experience related to the Project: 60 percent of points for each team member Academic qualifications: 30 percent of points for each team member Spanish language ability: 10 percent of points for each team member	15/100
Wind Resource Engineer		10/100
Power Engineer		10/100
Civil Engineer		10/100
Economic and Financial Specialist		10/100
Local Environmental and Social Specialist		10/100
Local Lawyer		10/100
Total		**100/100**

4.11 Justification

USTDA support for the project is justified because it is necessary to realize an opportunity to increase the export of US goods and services by up to US$153 million and help mitigate climate change through reducing carbon dioxide emissions. USTDA funding can enable this opportunity by providing funding to allow the project to overcome early hurdles often faced by promising renewable energy projects.

The Tablaruca project is at a the development phase wherein it must rely on development equity to finance the cost of necessary studies and authorizations that will enable the project to present itself to a lending institution, and reach financial close to finance the construction

phase. In the development phase, a project is considered most risky; therefore, development equity is difficult to acquire. For this reason, many renewable energy projects stall in this phase.[103] USTDA grant funding adds value to the project because it will enable Tablaruca SA to hire experts to prepare required studies necessary to move the project forward.

This is consistent with the US Government's policy, because enabling the project to go forward is likely to promote the export of US goods. In addition, energy sector development in low and middle-income countries is a strategic priority for USTDA. This project will result in commercial and developmental outcomes including diversification of energy sources through development of clean, renewable, and alternative fuels.[104] Furthermore, by introducing additional clean generation capacity to the Chilean electricity grid, the Tablaruca project may contribute to mitigating climate change—a goal of USTDA and the US Government more broadly.[105]

The success of the project can be measured in three ways:

- Value of US goods and services exported to Chile in order to construct and operate the Tablaruca project
- Economic savings on electricity costs—USTDA can measure the savings realized in the Chilean electricity grid through the use of inexpensive NCRE compared to more expensive conventional generation
- Tons of Carbon Dioxide Emissions Equivalent (tCO_2e) mitigated—using the emissions factor for the Chilean electricity sector, USTDA can measure the GHGs mitigated per megawatt of electricity generated by the Tablaruca project.

The above indicators can assure the USTDA that their investment in the Tablaruca project may have positive impacts on Chile's economic development, the global environment, and the US economy.

4.12 Terms of Reference

Appendix A contains the TORs for the feasibility study for the Tablaruca wind project. Based on the project's needs, we recommend that the feasibility study be broken into two phases. The feasibility study will be broken up into two phases to ensure that there no fatal flaws—fundamental problems with the project that would prevent the project from going forward—in the Tablaruca project before conducting the full feasibility study.

In Phase I, USTDA will fund the completion of a preliminary environmental and social impact analysis and an interconnection study. These two studies will clear the Tablaruca project of any potential fatal flaws. The Tablaruca project has not raised any environmental or social concerns and Tablaruca SA is part of a constructive dialogue with Transelec—the transmission network operator—to resolve any transmission concerns. However, Phase I will serve to remove any doubt about the viability of the Tablaruca project. After the completion of the two studies conducted in Phase I, USTDA will assess the results those

[103] USDOE. "Developing Large-Scale Renewable Energy Projects at Federal Facilities Using Private Capital." May 2012 Accessed February 13, 2013 at: http://www1.eere.energy.gov/femp/pdfs/largereguide.pdf

[104] USTDA. "Renewable Energy Sector." Accessed February 13, 2013 at: http://www.ustda.gov/program/sectors/renewableenergy.asp

[105] USTDA. "Promoting Programs to Combat Climate Change." Accessed on February 13, 2013 at: http://www.docstoc.com/docs/22882042/USTDA-Sector-Brief-Climate-Change

studies and determine if it is appropriate to continue to Phase II. The two phases contain the following tasks:

- Phase I
  - Task 1: Preliminary Environmental and Social Impact Analysis
  - Task 2: Interconnection Study
- Phase II
  - Task 3: Technical Resource Assessment
  - Task 4: Economic and Financial Analysis
    - Sub Task 4.1: Financial Model
    - Sub Task 4.2: Commercial Strategy
    - Sub Task 4.3: Financing Negotiations
  - Task 5: Environmental and Social Impact Assessment
    - Sub Task 5.1: Environmental and Social Requirements of Relevant Financers and Authorities
    - Sub Task 5.2: Environmental Matters
    - Sub Task 5.3: Social Matters
    - Sub Task 5.4: Declaración de Impacto Ambiental or Estudio de Impacto Ambiental
  - Task 6: Ancillary Studies
    - Sub Task 6.1: Engineering Study on Site Access and Logistics
    - Sub Task 6.2: Geotechnical Study
  - Task 7: Relevant Regulatory Matters
  - Task 8: Host Country Development Impacts
  - Task 9: US Sources of Supply
  - Task 10: Implementation Plan
  - Task 11: Final Report

A N N E X 3

USTDA NATIONALITY REQUIREMENTS

U.S. TRADE AND DEVELOPMENT AGENCY
Arlington, VA 22209-2131

NATIONALITY, SOURCE, AND ORIGIN REQUIREMENTS

The purpose of USTDA's nationality, source, and origin requirements is to assure the maximum practicable participation of American contractors, technology, equipment and materials in the prefeasibility, feasibility, and implementation stages of a project.

USTDA STANDARD RULE (GRANT AGREEMENT STANDARD LANGUAGE):

Except as USTDA may otherwise agree, each of the following provisions shall apply to the delivery of goods and services funded by USTDA under this Grant Agreement: (a) for professional services, the Contractor must be either a U.S. firm or U.S. individual; (b) the Contractor may use U.S. subcontractors without limitation, but the use of subcontractors from host country may not exceed twenty percent (20%) of the USTDA Grant amount and may only be used for specific services from the Terms of Reference identified in the subcontract; (c) employees of U.S. Contractor or U.S. subcontractor firms responsible for professional services shall be U.S. citizens or non-U.S. citizens lawfully admitted for permanent residence in the U.S.; (d) goods purchased for implementation of the Study and associated delivery services (e.g., international transportation and insurance) must have their nationality, source and origin in the United States; and (e) goods and services incidental to Study support (e.g., local lodging, food, and transportation) in host country are not subject to the above restrictions. USTDA will make available further details concerning these standards of eligibility upon request.

NATIONALITY:

1) Rule

Except as USTDA may otherwise agree, the Contractor for USTDA funded activities must be either a U.S. firm or a U.S. individual. Prime contractors may utilize U.S.

subcontractors without limitation, but the use of host country subcontractors is limited to 20% of the USTDA grant amount.

2) Application

Accordingly, only a U.S. firm or U.S. individual may submit proposals on USTDA funded activities. Although those proposals may include subcontracting arrangements with host country firms or individuals for up to 20% of the USTDA grant amount, they may not include subcontracts with third country entities. U.S. firms submitting proposals must ensure that the professional services funded by the USTDA grant, to the extent not subcontracted to host country entities, are supplied by employees of the firm or employees of U.S. subcontractor firms who are U.S. individuals.

Interested U.S. firms and consultants who submit proposals must meet USTDA nationality requirements as of the due date for the submission of proposals and, if selected, must continue to meet such requirements throughout the duration of the USTDA-financed activity. These nationality provisions apply to whatever portion of the Terms of Reference is funded with the USTDA grant.

3) Definitions

A "U.S. individual" is (a) a U.S. citizen, or (b) a non-U.S. citizen lawfully admitted for permanent residence in the U.S. (a green card holder).

A "U.S. firm" is a privately owned firm which is incorporated in the U.S., with its principal place of business in the U.S., and which is either (a) more than 50% owned by U.S. individuals, or (b) has been incorporated in the U.S. for more than three (3) years prior to the issuance date of the request for proposals; has performed similar services in the U.S. for that three (3) year period; employs U.S. citizens in more than half of its permanent full-time positions in the U.S.; and has the existing capability in the U.S. to perform the work in question.

A partnership, organized in the U.S. with its principal place of business in the U.S., may also qualify as a “U.S. firm” as would a joint venture organized or incorporated in the United States consisting entirely of U.S. firms and/or U.S. individuals.

A nonprofit organization, such as an educational institution, foundation, or association may also qualify as a “U.S. firm” if it is incorporated in the United States and managed by a governing body, a majority of whose members are U.S. individuals.

SOURCE AND ORIGIN:

1) Rule

In addition to the nationality requirement stated above, any goods (e.g., equipment and materials) and services related to their shipment (e.g., international transportation and insurance) funded under the USTDA Grant Agreement must have their source and origin in the United States, unless USTDA otherwise agrees. However, necessary purchases of goods and project support services which are unavailable from a U.S. source (e.g., local food, housing and transportation) are eligible without specific USTDA approval.

2) Application

Accordingly, the prime contractor must be able to demonstrate that all goods and services purchased in the host country to carry out the Terms of Reference for a USTDA Grant Agreement that were not of U.S. source and origin were unavailable in the United States.

3) Definitions

“Source” means the country from which shipment is made.

"Origin” means the place of production, through manufacturing, assembly or otherwise.

Questions regarding these nationality, source and origin requirements may be addressed to the USTDA Office of General Counsel.

A N N E X 4

USTDA GRANT AGREEMENT,
INCLUDING MANDATORY CONTRACT CLAUSES

GRANT AGREEMENT

This Grant Agreement is entered into between the Government of the United States of America, acting through the U.S. Trade and Development Agency ("USTDA") and Eólica Tablaruca S.A ("Grantee"). USTDA agrees to provide the Grantee under the terms of this Grant Agreement US$610,000 ("USTDA Grant") to fund the cost of goods and services required for a feasibility study ("Study") on the proposed 99 MW Tablaruca Wind Farm on Chiloé Island ("Project") in Chile ("Host Country").

1. USTDA Funding

The funding to be provided under this Grant Agreement shall be used to fund the costs of a contract between the Grantee and the U.S. firm selected by the Grantee ("Contractor") under which the Contractor will perform the Study ("Contract"). Payment to the Contractor will be made directly by USTDA on behalf of the Grantee with the USTDA Grant funds provided under this Grant Agreement.

2. Terms of Reference

The Terms of Reference for the Study ("Terms of Reference") are attached as Annex I and are hereby made a part of this Grant Agreement. The Study will examine the technical, financial, environmental, and other critical aspects of the proposed Project. The Terms of Reference for the Study shall also be included in the Contract.

3. Standards of Conduct

USTDA and the Grantee recognize the existence of standards of conduct for public officials and commercial entities in their respective countries. Therefore, USTDA, the Grantee, and the Contractor shall not directly or indirectly provide, offer or promise to provide money or anything of value to any public official in violation of any United States or Host Country laws relating to corruption or bribery.

4. Grantee Responsibilities

The Grantee shall undertake its best efforts to provide reasonable support for the Contractor, such as office space, secretarial support, and facilitation of ground transportation in Santiago and on Chiloe Island. The Grantee shall also provide the required wind measurement equipment as described in more detail in the Terms of Reference.

5. Contract Matters and USTDA's Rights as Financier

(A) Grantee Competitive Selection Procedures

Selection of the U.S. Contractor shall be carried out by the Grantee according to its established procedures for the competitive selection of contractors with advance notice of the procurement published online through *Federal Business Opportunities (www.fedbizopps.gov).* Upon request, the Grantee will submit these contracting procedures and related documents to USTDA for information and/or approval.

(B) USTDA's Right to Approve Contractor Selection

The Grantee shall notify USTDA at the address of record set forth in Article 16 below upon selection of the Contractor to perform the Study. USTDA then shall notify the Grantee whether or not USTDA approves the Grantee's Contractor selection. Upon USTDA approval of the Grantee's Contractor selection, the Grantee shall notify in writing the U.S. firms that submitted unsuccessful proposals to perform the Study that they were not selected. The Grantee and the Contractor then shall enter into a contract for performance of the Study.

(C) USTDA's Right to Approve Contract Between Grantee and Contractor

(1) Contract

The Grantee and the Contractor shall enter into a contract for performance of the Study. The Grantee (or the Contractor on the Grantee's behalf) shall transmit to USTDA, at the address set forth in Article 16 below, a photocopy of an English language version of the signed contract or a final negotiated draft version of the contract. USTDA then shall notify the Grantee and the Contractor whether or not USTDA approves the contract.

(2) Amendments and Assignments

The Grantee or the Contractor may submit any proposed amendment to the contract, including any proposed amendment to any annex thereto, or any proposed assignment of the contract, to USTDA at the address set forth in Article 16 below. USTDA then shall notify the Grantee and the Contractor whether or not USTDA approves the proposed amendment or assignment.

(D) USTDA Not a Party to the Contract

It is understood by the parties that USTDA has reserved certain rights such as, but not limited to, the right to approve the terms of the contract and any amendments thereto, including assignments, the selection of all contractors, the Terms of Reference, the Final Report, and any and all documents related to any contract funded under the

Grant Agreement. The parties hereto further understand and agree that USTDA, in reserving any or all of the foregoing approval rights, has acted solely as a financing entity to assure the proper use of United States Government funds, and that any decision by USTDA to exercise or refrain from exercising these approval rights shall be made as a financier in the course of funding the Study and shall not be construed as making USTDA a party to the contract. The parties hereto understand and agree that USTDA may, from time to time, exercise the foregoing approval rights, or discuss matters related to these rights and the Project with the parties to the contract or any subcontract, jointly or separately, without thereby incurring any responsibility or liability to such parties. Any approval or failure to approve by USTDA shall not bar the Grantee or USTDA from asserting any right they might have against the Contractor, or relieve the Contractor of any liability which the Contractor might otherwise have to the Grantee or USTDA.

(E) Grant Agreement Controlling

Regardless of USTDA approval, the rights and obligations of any party to the contract or any subcontract thereunder must be consistent with this Grant Agreement. In the event of any inconsistency between the Grant Agreement and the contract or any subcontract funded by the Grant Agreement, the Grant Agreement shall control.

6. Disbursement Procedures

(A) USTDA Approval of Contract Required

USTDA will make disbursements of Grant funds directly to the Contractor only after USTDA approves the Grantee's contract with the Contractor.

(B) Contractor Invoice Requirements

The Grantee should request disbursement of funds by USTDA to the Contractor for performance of the Study by submitting invoices in accordance with the procedures set forth in the USTDA Mandatory Clauses in Annex II.

7. Effective Date

The effective date of this Grant Agreement ("Effective Date") shall be the date of signature by both parties or, if the parties sign on different dates, the date of the last signature.

8. Study Schedule

(A) Study Completion Date

The completion date for the Study, which is June 30, 2015, is the date by which the parties estimate that the Study will have been completed.

(B) Time Limitation on Disbursement of USTDA Grant Funds

Except as USTDA may otherwise agree, (i) no USTDA funds may be disbursed under this Grant Agreement for goods and services which are provided prior to the Effective Date of the Grant Agreement; and (ii) no USTDA funds may be disbursed more than four (4) years after the Effective Date of the Grant Agreement.

9. USTDA Mandatory Contract Clauses

All contracts funded under this Grant Agreement shall include the USTDA Mandatory Contract Clauses set forth in Annex II to this Grant Agreement. All subcontracts funded or partially funded with USTDA Grant funds shall include the USTDA Mandatory Contract Clauses, except for clauses B(1), G, H, I, and J.

10. Use of U.S. Carriers

(A) Air

Transportation by air of persons or property funded under this Grant Agreement shall be on U.S. flag carriers in accordance with the Fly America Act, 49 U.S.C. 40118, to the extent service by such carriers is available, as provided under applicable U.S. Government regulations.

(B) Marine

Transportation by sea of property funded under this Grant Agreement shall be on U.S. carriers in accordance with U.S. cargo preference law.

11. Nationality, Source and Origin

Except as USTDA may otherwise agree, the following provisions shall govern the delivery of goods and professional services funded by USTDA under this Grant Agreement:

(a) the Contractor must be a U.S. firm;

(b) the Contractor may use U.S. subcontractors without limitation;

(c) employees of U.S. Contractor or U.S. subcontractor firms shall be U.S. citizens or non-U.S. citizens lawfully admitted for permanent residence in the United States, except as provided pursuant to subpart (d) below;

(d) up to twenty percent (20%) of the USTDA Grant amount may be used to pay for services performed by (i) Host Country subcontractors, and/or (ii) Host Country nationals who are employees of the Contractor;

(e) a Host Country subcontractor may only be used for specific services from the Terms of Reference identified in the subcontract;

(f) subcontractors from countries other than the United States or Host Country may not be used;

(g) goods purchased for performance of the Study and associated delivery services (e.g., international transportation and insurance) must have their nationality, source and origin in the United States; and

(h) goods and services incidental to Study support (e.g., local lodging, food, and transportation) in Host Country are not subject to the above restrictions.

USTDA will make available further details concerning these provisions upon request.

12. Taxes

USTDA funds provided under this Grant Agreement shall not be used to pay any taxes, tariffs, duties, fees or other levies imposed under laws in effect in Host Country, except for taxes of a de minimis nature imposed on local lodging, food, transportation, or airport arrivals or departures. Neither the Grantee nor the Contractor will seek reimbursement from USTDA for taxes, tariffs, duties, fees or other levies, except for taxes of a de minimis nature referenced above.

13. USTDA Project Evaluation

The parties will cooperate to assure that the purposes of the Grant Agreement are accomplished. For five (5) years following receipt by USTDA of the Final Report, the Grantee agrees to respond to any reasonable inquiries from USTDA about the status of the Project. Inquiries will include, but not be limited to, whether the Final Report recommendations have been or will be used to implement the Project, anticipated Project implementation timeline, and likely source of financing. In addition, the Grantee agrees to notify USTDA any time the Grantee selects a new primary contact person for this Project during the five-year period referenced above.

14. Recordkeeping and Audit

The Grantee agrees to maintain books, records, and other documents relating to the Study and this Grant Agreement adequate to demonstrate implementation of its responsibilities under this Grant Agreement, including the selection of contractors, receipt and approval of contract deliverables, and approval or disapproval of contractor invoices for payment by USTDA. Such books, records, and other documents shall be separately maintained for three (3) years after the date of the final disbursement by USTDA. The Grantee shall afford USTDA or its authorized representatives the opportunity at reasonable times to

review books, records, and other documents relating to the Study and the Grant Agreement.

15. Representation of Parties

For all purposes relevant to this Grant Agreement, the Government of the United States of America will be represented by the U. S. Ambassador to Host Country or USTDA and Grantee will be represented by its General Manager. The parties hereto may, by written notice, designate additional representatives for all purposes under this Grant Agreement.

16. Addresses of Record for Parties

Any notice, request, document, or other communication submitted by either party to the other under the Grant Agreement shall be in writing or through an electronic medium that produces a tangible record of the transmission, such as a facsimile or e-mail message, and will be deemed duly given or sent when delivered to such party at the following:

To: Mauricio Zeman
Gerente General
Eolica Tablaruca S.A.
Av. Las Condes 9792, Oficina 802
Comuna de Las Condes, Santiago
Chile

Phone: +562 951 66 40
Mobile: +569 989 566 00
E-Mail: mzeman@eolicatablaruca.cl

To: U.S. Trade and Development Agency
1000 Wilson Boulevard, Suite 1600
Arlington, Virginia 22209-3901
USA

Phone: (703) 875-4357
Fax: (703) 875-4009
E-Mail: grantnotices@ustda.gov, lac@ustda.gov and jflewelling@ustda.gov

All such communications shall be in English, unless the parties otherwise agree in writing. In addition, the Grantee shall provide the Commercial or Economic Section of the U.S. Embassy in Host Country with a copy of each communication sent to USTDA.

Any communication relating to this Grant Agreement shall include the following fiscal data:

Appropriation No.: 1113/141001
Activity No.: 2013-51015A
Reservation No.: 2013136
Grant No.: GH201351136

17. Implementation Letters

To assist the Grantee in the implementation of the Study, USTDA may, from time to time, issue implementation letters that will provide additional information about matters covered by this Grant Agreement. USTDA may also issue implementation letters to (i) extend the estimated completion date set forth in Article 8(A) above, or (ii) change the fiscal data set forth in Article 16 above. The parties may also use jointly agreed upon implementation letters to confirm and record their mutual understanding of matters covered by this Grant Agreement.

18. Grant Agreement Amendments

Either party may submit to the other party at any time a proposed amendment to the Grant Agreement. A Grant Agreement amendment shall be effective only if it has been signed by both parties.

19. Termination Clause

Either party may terminate this Grant Agreement by giving the other party written notice thereof. The termination of the Grant Agreement will end any obligations of the parties to provide financial or other resources for the Study, except for payments that may be made pursuant to Clause I of the USTDA Mandatory Contract Clauses set forth in Annex II to this Grant Agreement. This article and Articles 5, 12, 13, 14, and 21 of the Grant Agreement shall survive termination of the Grant Agreement.

20. Non-waiver of Rights and Remedies

No delay in exercising any right or remedy accruing to either party in connection with the Grant Agreement shall be construed as a waiver of such right or remedy.

21. U.S. Technology and Equipment

By funding this Study, USTDA seeks to promote the project objectives of the Host Country through the use of U.S. technology, goods, and services. In recognition of this purpose, the Grantee agrees that it will allow U.S. suppliers to compete in the procurement of technology, goods and services needed for Project implementation.

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IN WITNESS WHEREOF, the Government of the United States of America and Eólica Tablaruca S.A., each acting through its duly authorized representative, have caused this Grant Agreement to be signed in the English language in their names and delivered as of the day and year written below. In the event that this Grant Agreement is signed in more than one language, the English language version shall govern.

For the Government of the United States of America	**For Eólica Tablaruca S.A.**
By:_____	By:_____
Date:_____	Date: _____
Witnessed:	Witnessed:
By:_____	By:_____

Annex I -- Terms of Reference

Annex II -- USTDA Mandatory Clauses

Annex I

Terms of Reference

Purpose and Background

The purpose of this feasibility study ("Study") is to determine the viability of a 99 megawatt (MW) Tablaruca wind project ("Project") in the Los Lagos region in southern Chile, on the island of Chiloé. The project sponsor is Eólica Tablaruca S.A. (the "Grantee"), a private Chilean company created to develop the Tablaruca wind farm. The Grantee has commissioned various pre-feasibility studies for the Tablaruca site, and now requires further feasibility and related analyses to proceed with development and ensure Project bankability.

The Grantee's pre-feasibility studies have not revealed any significant environmental, social, or interconnection concerns that would prevent the Project from going forward. However, USTDA would like to ensure that there are no major issues or fatal flaws with the environmental, social, or interconnection aspects of the Project before the full Study is completed. Therefore, the Contractor shall carry out the Study in two phases.

Provided that the first phase does not reveal any disqualifying environmental, social, or interconnection issues, USTDA will, at its sole discretion, give the Grantee and Contractor the approval to move to Phase II to fully examine technical, economic, financial, environmental, social, and regulatory factors affecting overall Project viability. In the event that the results of Phase I bring to light major environmental, social, or transmission concerns, the Contractor will only be paid for Tasks 1 and 2 and the Grant Agreement will be terminated.

The Contractor shall carry out the feasibility study with the full cooperation of the Grantee. The Grantee shall be responsible for providing key inputs for the Study. As is detailed below, this includes leasing or purchasing wind measurement equipment and providing data collected using that equipment to the Contractor.

Phase I

The first phase will consist of a preliminary environmental and social impact assessment and an interconnection study. The Contractor shall submit the Task 1 and 2 deliverables to USTDA (in addition to the Grantee) for its review.

Task 1: Preliminary Environmental and Social Impact Analysis

The Contractor shall conduct a preliminary environmental and social impact analysis to determine if there are any significant environmental or social concerns or fatal flaws in the Project.

The analysis will consider:

- Conflicts with national parks/biospheres
- Conflicts with social heritage sites
- Impact on migratory birds and endemic species
- Impact on waterways and impact of runoff
- Legal and regulatory conflicts (for example, land rights)

The Contractor shall conduct a desk review of relevant documents provided by the Grantee as well as independent research. In addition, the Contractor shall conduct a two day on-site examination of the Tablaruca site. Finally, the Contractor shall conduct a meeting with local stakeholders to assess any potential social conflicts.

Task 1 Deliverable: The Contractor shall submit a preliminary environmental and social impact analysis in English as detailed in Task 1.

Task 2: Interconnection Study

The Contractor shall conduct an interconnection study, evaluating the transmission of electricity from the Tablaruca site to the national grid. In particular, the Contractor shall study the technical and economic viability of connecting the Project's feeder line to a grid substation to bring to market the electricity produced by the Project. This study should focus on:

- Proposing potential feeder line routes
- Identifying equipment and material requirements of the proposed routes
- Evaluating the technical and economic viability of proposed feeder line routes

The Contractor shall recommend the interconnection route that is the most technically and economically viable, as well as two alternative routes (in a ranked order) in the event that eventual easement issues prevent the best route from being developed. The Contractor shall also prepare an Interconnection Report explaining the advantages and disadvantages of the routes considered. This report shall include a course of action for developing the recommended route.

In addition to the above, the Interconnection Report shall also review any potential interconnection risk posed by the technical limitations of the connection from Chiloé to mainland Chile. The Interconnection Report should detail any project risk posed by the technical limitations of the connection to the mainland, taking into consideration future development of other power projects on the island and collective initiatives under way between wind developers and the national transmission company, Transelec. These findings shall also be included in the Interconnection Report.

Task 2 Deliverable: The Contractor shall submit an Interconnection Report in English as detailed above in Task 2.

USTDA shall review the deliverables from Tasks 1 and 2 and determine if the Contractor will continue to the second phase of the feasibility study. If USTDA finds that the Preliminary Environmental and Social Impact Analysis and the Interconnection Study do not reveal any major concerns regarding the viability of the Project, the Contractor shall proceed to complete the subsequent tasks.

Phase II

Task 3: Technical Resource Assessment

The Contractor shall conduct a technical resource assessment at the Tablaruca site, utilizing the equipment and measurements provided by the Grantee. This technical assessment shall build on the results of a pre-feasibility study conducted by Garrad Hassan through measurements taken from at least one additional meteorological tower appropriate for measuring the wind resource. The Grantee shall be responsible for leasing or purchasing all required wind measurement equipment, including the meteorological tower. The Grantee will collect on-site wind resource data from the wind measurement equipment and provide it to the Contractor, who shall analyze the data and have it certified through a reputable third party. The final product of this work shall be a report containing a wind resource assessment.

The Grantee shall provide all wind resource assessment data it possesses to the Contractor. In addition, the Grantee shall conduct the supplemental wind resource data gathering for a period of 12 months to verify vertical profiles of the wind regime at the site and provide data for optimizing the micro-siting of turbines. The Grantee shall record:

- Wind speed
- Wind direction
- Temperature
- Humidity

Wind speed, direction, temperature, and humidity recording instruments should be Class One instrumentation.

The Contractor shall process data and produce the following wind resource assessment products:

- A table of annual and monthly average temperature, air pressure, and humidity
- Annual wind variation over a period of 20-30 years
- Wind variation of measurement station relative to wind mast
- Daily wind variation of the site
- Annual wind variation of the site
- Wind speed and wind power frequency distributions
- Annual wind direction rose figure
- Annual wind energy rose figure

- Monthly wind direction rose figure
- Monthly wind energy rose figures
- Daily wind speed and wind power density variation

All of these data and wind resource assessment products should be included in a Technical Resource Assessment Report. The Contractor shall analyze and error-check all collected data. The Contractor shall also hire a third party to certify that the Contractor's wind resource assessment is accurate. This certification must be provided by a reputable engineering firm whose certification will support the credibility of the Project vis-à-vis potential lenders and investors. The certification and any analysis by the third party engineering firm shall be included in the Technical Resource Assessment Report.

Using the certified data as well as the Geotechnical Report (to be developed as part of Task 6), the Contractor shall assist the Grantee with micro-siting and performance estimate for each wind turbine, taking into consideration the site topography and meteorological conditions as well as the shading of back-row wind turbines by front row wind turbines. The Grantee shall provide any relevant geotechnical information it has to the Contractor. The Contractor's micro-siting recommendation shall be included as part of the Technical Resource Assessment Report.

Based on the data collected, the Contractor shall provide an assessment of the different turbine types, sizes, vendors, and technologies; and their relative strengths and weaknesses with the Grantee. The Contractor shall only present commercially proven technology (i.e., no prototypes or experimental technology). The Contractor shall also address other technical details including, but not limited to, blade dimensions and inclination; and their impact on turbine performance. The Contractor shall present this information in the Technical Resource Assessment Report and recommend a turbine type and specifications for use at the Tablaruca site.

The Contractor shall provide a formal estimate of the annual generation of the wind farm. This will also include a standard deviation of the annual generation estimate, accounting for any periodical weather patterns. The intent is not to precisely predict the timing and severity of wind resource variations but rather to reflect their probable effects on the financial performance of the Project. The Contractor shall present this information in the Technical Resource Assessment Report.

Task 3 Deliverable: The Contractor shall submit a Technical Resource Assessment Report in English that includes:

- Wind resource assessment data
- Wind resource analysis certification and commentary from a third party engineering firm
- Micro-siting for wind turbine towers
- Assessment of turbine technology and a recommended turbine
- Estimated annual electricity generation of the site.

Task 4: Economic and Financial Analysis

The Contractor shall develop a Financial Model that includes investment costs, operating costs, revenues, financial analysis, and profitability analysis. Based on this Financial Model and the Contractor's market analysis, the Contractor shall develop a Commercial Strategy for the Project, including recommending financing terms that the Grantee should seek. The Contractor shall also support the Grantee in the course of financing negotiations.

Subtask 4.1: Financial Model

The Contractor shall prepare a detailed Financial Model (using Microsoft Excel) of the Project based on assumptions from its technical assessment and current market conditions in Chile. The Financial Model should be flexible (allowing a clear and easy modification of key operating and financial assumptions); and allow the assessment of different scenarios, positive and negative, that can impact Project success and profitability. At a minimum, the Financial Model shall include the following components:

- Project development costs
  - Primary and auxiliary energy equipment (for example, turbines, transformers, inverters, etc.)
  - Site development, preparation, and construction
  - Costs of interconnection (transmission line development cost, easement costs)
  - Permitting, licensing, legal, and other professional service fees
  - Insurance during construction
- Operating costs
  - Personnel training
  - Social, general, and administrative costs and maintenance
  - Insurance during operations
- Financing costs
  - Interest during construction
  - Contingency reserve
  - Cost of letters of credit
  - Debt service during operation
  - Any refinancing fees
- Revenues
  - Projected revenues from selling on the spot market
  - Projected revenues from selling via a power purchase agreement (PPA)
  - Projected revenues under different performance scenarios (for example, in the event of abnormal wind patterns or equipment failure)
- All relevant taxes

The Financial Model shall calculate the profitability, return on investment, and internal rate of return (IRR) of the Project under different scenarios, including: different capital structures, alternative methods of depreciation, varying plant performance, construction

cost overruns, selling on the spot market versus via PPA, different interest rate, and others. The Financial Model shall be provided to the Grantee for its ongoing use as a tool during and subsequent to the completion of the Study and shall therefore be flexible, clearly structured, and easy to use in order to allow the Grantee to model scenarios that the Project may experience during the course of its operations.

Subtask 4.2: Commercial Strategy

The Contractor shall conduct profitability analysis under different scenarios using the Financial Model. The Contractor shall also conduct a wind market analysis covering prevailing commercial arrangements, terms, and conditions; competition by other wind projects as well as other renewable technologies; availability of finance; criteria of lenders, as well as providers of equity and quasi-equity through interviews and secondary data; and identification of key barriers to financing.

Based on these analyses, the Contractor shall develop a Commercial Strategy for the Grantee. The commercial strategy should make recommendations to the Grantee on the following issues:

- Debt and equity providers - recommended providers based on the Project profile
- Power sale strategy (PPA versus spot market)
- Capital structure – debt-to-equity ratio and use of subordinated debt
- Safeguards to mitigate risks to the Project's profitability

The Commercial Strategy shall be presented in a Commercial Strategy Report to be used alongside the Financial Model.

Subtask 4.3: Financing Negotiations

The Contractor shall support the Grantee in financing negotiations with providers of debt, equity, and quasi-equity finance. The Contractor shall do this by advising the Grantee on the terms proposed by potential financing partners. For example, the Contractor shall provide guidance to the Grantee on apply directly for working capital and direct loans from the Export-Import Bank of the United States and/or the Overseas Private Investment Corporation, and participate in meetings with potential financing partners. The Contractor shall also draft letters of interest for use by the Grantee in soliciting debt and equity investments.

Task 4 Deliverable: Contractor shall submit the following materials in English to the Grantee:

- A Financial Model
- A Commercial Strategy Report
- Letters of interest to support the Grantee in soliciting investment.

Task 5: Environmental and Social Impact Assessment

The Contractor shall prepare an environmental and social impact assessment (ESIA) in English and Spanish that builds on the preliminary environmental and social analysis conducted in Task 1. Doing this work will require first analyzing and then assessing both environmental and social matters, taking into consideration typical requirements of financers and relevant authorities. Based on the Contractor's assessment, the Contractor shall then develop (in Spanish) a *Declaración de Impacto Ambiental* (DIA, Declaration of Environmental Impact) or an *Estudio de Impacto Ambiental* (EIA, Environmental Impact Assessment), which can be submitted to the Servicio de Evaluación Ambiental (SEA, Environmental Evaluation Service), the Chilean Government ministry responsible for environmental management, as well as to all prospective providers of debt and equity.

Subtask 5.1: Environmental and Social Requirements of Relevant Financers and Authorities

The Contractor shall review the environmental and social requirements of relevant financers and authorities. Relevant financers are considered to be debt and equity providers who have expressed interest in investing, or could reasonably be expected to invest in the Project. Most lenders use the International Finance Corporation's (IFC) environmental, health, and safety guidelines for wind energy development; therefore, the Contractor shall begin by reviewing these guidelines.

Relevant authorities are considered to be national, regional and local governments in Chile, including ministries responsible for relevant issues. The Contractor shall identify and review any environmental and social regulations pertinent to development of the Project. The review of environmental and social requirements of relevant lenders and authorities will inform the Contractor's work on Subtasks 5.2 and 5.3.

Subtask 5.2: Environmental Matters

The Contractor shall analyze and assess environmental matters affecting the development of the Tablaruca site. The Contractor shall base its analysis and assessment on the environmental requirements of relevant lenders and authorities (identified as part of Subtask 5.1). At a minimum, the analysis and assessment of environmental matters shall include:

- Visual impacts
- Noise
- Species mortality or injury and disturbance
- Light and illumination issues
- Habitat alteration
- Water quality impacts

The analysis and assessment of the Contractor in this Subtask shall be used to complete Subtask 5.4.

Subtask 5.3: Social Matters

The Contractor shall analyze and assess social matters pertinent to the Project. The Contractor shall base its analysis and assessment on the social requirements of relevant lenders and authorities (identified as part of Subtask 5.1). At a minimum, the analysis and assessment of social matters shall include:

- Impact of construction and site access on the local community
- Visual impact of the Project
- Employment opportunities for the local community
- Ancillary benefits of infrastructure development (roads, transmission infrastructure, ports)
- Safety issues including:
  - Aircraft and marine navigation safety
  - Blade and ice throw
  - Electromagnetic interference and radiation
- General community concerns about the Project

The Contractor shall prepare a Social Impact Report in English and Spanish describing the social matters it encountered as part of Subtask 5.3. This report will provide the Grantee with information to complete social assessments required by lenders.

Subtask 5.4: Declaración de Impacto Ambiental or *Estudio de Impacto Ambiental*

The Contractor shall develop a DIA or EIA on behalf of the Grantee to be submitted to the SEA). The Contractor shall determine whether a DIA or EIA is required, and shall assist the Grantee in submitting the appropriate document to the SEA. The Contractor should follow the most up-to-date requirements of the SEA.

Task 5 Deliverables
Task 5 will have the following deliverables:

- Either a DIA or an EIA in English and Spanish
- A Social Impact Report in English and Spanish

Task 6: Ancillary Studies

The Grantee also requires two ancillary studies in order to proceed with development of the Project. It shall be the responsibility of the Contractor to develop an engineering study on site access and logistics and a geotechnical study.

Subtask 6.1: Engineering Study on Site Access and Logistics

The Contractor shall conduct an engineering study on site access and logistics, taking into consideration especially the transport of turbines and machinery to the site. The engineering study on site access and logistics shall review the following:

- Road networks from port facilities to the Tablaruca site
- Existing port facilities available to receive shipment of wind turbine components, and potential for construction of a new port
- Potential access roads to individual turbine installation locations at the Tablaruca site

The Contractor shall assess the existing infrastructure affecting site access and logistics and recommend infrastructure to be developed. The Contractor shall also create plans and bid documents to develop the recommended infrastructure. The work of the Contractor on Subtask 6.1 shall be included in an Engineering Study and Site Access and Logistics Report.

Subtask 6.2: Geotechnical Study

The Contractor shall conduct geotechnical studies and establish the baseline conditions of the proposed site including:

- Assessment of the underlying bedrock stability
- Assessment of the topographical conditions and their impact on turbine siting
- Assessment of potential geological instability associated with natural slopes, erosion and infrastructure development, or any other geographic feature

The geotechnical study data will be used to complete micro-siting of turbines, as part of Task 3; as well as for the interconnection study conducted under Task 2. All the geotechnical study data will be presented to the Grantee in a Geotechnical Report.

Task 6 Deliverables: The Contractor will submit to the following reports in English to the Grantee:

- Engineering Study and Site Access and Logistics Report
- Geotechnical Report

Task 7: Permitting and Other Regulatory Issue Analysis

The Contractor shall confirm that the Project meets the requirements of existing site permits, including land use, water use, waste disposal, highway access, security, wildlife preservation, noise limits, and other such criteria; as well as any requirements under Chile's electricity sector regulatory framework by reviewing the grantee's existing documentation. The Contractor shall provide documentation, calculations, and other support to the Grantee in filing for waivers, extensions, or new permits as required.

Task 7 Deliverable: The Contractor shall prepare a Permitting and Other Regulatory Issues Analysis Report listing the regulatory requirements for development of the site, their current status, and an action plan to guide the Grantee in meeting remaining requirements.

Task 8: Developmental Impact Assessment

The Contractor shall assess the developmental impacts associated with the implementation of the Project as defined during the Study and the methodology for measuring those benefits or adverse impacts. The assessment shall include examples of the expected development impacts if the Project is implemented as outlined in the Final Report. The Contractor shall also develop a methodology for assessing the Project's impact over time.

The Contractor shall use the categories below as a guide for evaluating the impact of the Project and shall include quantitative estimates where possible:

- Infrastructure—the Contractor shall estimate the expected scale of infrastructure development and improvements needed to carry out the Project
- Human capacity building—the Contractor shall estimate the number and types of jobs created if the Project is implemented, as well as any training and skills development resulting from the Project
- Environmental —the Contractor shall present the environmental benefits of the Project.

Task 9: US Sources of Supply

The Contractor shall identify potential sources of equipment and services that can be procured competitively from US vendors for construction of a 99 MW wind farm. The Contractor shall compile a list of such vendors and the equipment and services that they provide, as well as preliminary estimates from the vendors for the cost of their services and products relevant to the Project. This list shall comprise the Sources of Supply Report.

Task 10: Implementation Plan

The Contractor shall recommend an Implementation Plan to the Grantee. At a minimum, the Implementation Plan shall include schedules for:

- Development activities
- Contracts and commercial agreements
- Regulatory consent
- Securing financing
- Key ownership and management decisions

The Contractor shall also provide the following as part of the Implementation Plan:

- A standard interconnection agreement for the Project to connect to the grid (based on the technical assessment from Task 3)
- Bid documents to initiate a bidding process for the construction of the wind farm. The Contractor shall not be responsible for publicizing the bid documents or evaluating proposals.

Task 11: Final Report

The Contractor shall prepare and deliver to the Grantee and USTDA a substantive and comprehensive final report of all work performed under these Terms of Reference ("Final Report"). The Final Report shall be organized according to the above tasks, and shall include all deliverables and documents that have been provided to the Grantee. The Final Report shall be prepared in accordance with Clause J of Annex II of the Grant Agreement.

Annex II

USTDA Mandatory Contract Clauses

A. USTDA Mandatory Clauses Controlling

The parties to this Contract acknowledge that this Contract is funded in whole or in part by the U.S. Trade and Development Agency ("USTDA") under the Grant Agreement between the Government of the United States of America acting through USTDA and Eólica Tablaruca S.A. ("Client"), dated _____ ("Grant Agreement"). The Client has selected _____ ("Contractor") to perform the feasibility study ("Study") for the 99 MW Tablaruca Wind Farm on Chiloé Island project ("Project") in Chile ("Host Country"). The Client and the Contractor are the parties to this Contract, and they hereinafter are referred to collectively as the "Contract Parties." Notwithstanding any other provisions of this Contract, the following USTDA Mandatory Contract Clauses shall govern. All subcontracts entered into by Contractor funded or partially funded with USTDA Grant funds shall include these USTDA Mandatory Contract Clauses, except for clauses B(1), G, H, I, and J. In addition, in the event of any inconsistency between the Grant Agreement and the Contract or any subcontract thereunder, the Grant Agreement shall be controlling.

B. USTDA as Financier

(1) USTDA Approval of Contract

This Contract, and any amendment thereto, including any amendment to any annex thereto, and any proposed assignment of this Contract, must be approved by USTDA in writing in order to be effective with respect to the expenditure of USTDA Grant funds. USTDA will not authorize the disbursement of USTDA Grant funds until the Contract conforms to modifications required by USTDA during the Contract review process and the Contract has been formally approved by USTDA. To make this review in a timely fashion, USTDA must receive from either the Client or the Contractor an English language version of a final negotiated draft Contract or a signed Contract to the attention of the General Counsel's office at USTDA's address listed in Clause N below.

(2) USTDA Not a Party to the Contract

It is understood by the Contract Parties that USTDA has reserved certain rights such as, but not limited to, the right to approve the terms of this Contract and amendments thereto, including assignments, the selection of all contractors, the Terms of Reference, the Final Report, and any and all documents related to any contract funded under the Grant Agreement. The Contract Parties hereto further understand and agree that USTDA, in reserving any or all of the foregoing approval rights, has acted solely as a financing entity to assure the proper use of United States Government funds, and that any decision by USTDA to exercise or refrain from exercising these approval

rights shall be made as a financier in the course of financing the Study and shall not be construed as making USTDA a party to the Contract. The Contract Parties hereto understand and agree that USTDA may, from time to time, exercise the foregoing approval rights, or discuss matters related to these rights and the Project with the Contract Parties or the parties to any subcontract, jointly or separately; and in consideration of USTDA's role as financier, the Contract Parties further agree that USTDA's rights may be exercised without thereby incurring any responsibility or liability, in contract, tort, or otherwise, to the Contract Parties or the parties to any subcontract. Any approval or failure to approve by USTDA shall not bar the Client or USTDA from asserting any right they might have against the Contractor, or relieve the Contractor of any liability which the Contractor might otherwise have to the Client or USTDA.

C. Nationality, Source and Origin

Except as USTDA may otherwise agree, the following provisions shall govern the delivery of goods and professional services funded by USTDA under the Grant Agreement:

(a) the Contractor must be a U.S. firm;

(b) the Contractor may use U.S. subcontractors without limitation;

(c) employees of U.S. Contractor or U.S. subcontractor firms shall be U.S. citizens or non-U.S. citizens lawfully admitted for permanent residence in the United States, except as provided pursuant to subpart (d) below;

(d) up to twenty percent (20%) of the USTDA Grant amount may be used to pay for services performed by (i) Host Country subcontractors, and/or (ii) Host Country nationals who are employees of the Contractor;

(e) a Host Country subcontractor may only be used for specific services from the Terms of Reference identified in the subcontract;

(f) subcontractors from countries other than the United States or Host Country may not be used;

(g) goods purchased for performance of the Study and associated delivery services (e.g., international transportation and insurance) must have their nationality, source and origin in the United States; and

(h) goods and services incidental to Study support (e.g., local lodging, food, and transportation) in Host Country are not subject to the above restrictions.

USTDA will make available further details concerning these provisions upon request.

D. Recordkeeping and Audit

The Contractor and subcontractors funded under the Grant Agreement shall maintain, in accordance with generally accepted accounting procedures, books, records, and other documents, sufficient to reflect properly all transactions under or in connection with the Contract. These books, records, and other documents shall clearly identify and track the use and expenditure of USTDA funds, separately from other funding sources. Such books, records, and documents shall be maintained during the period of performance of work provided for by this Contract, and for a period of three (3) years after final disbursement by USTDA. The Contractor and subcontractors shall afford USTDA, or its authorized representatives, the opportunity at reasonable times for inspection and audit of such books, records, and other documentation.

E. U.S. Carriers

(1) Air

Transportation by air of persons or property funded under the Grant Agreement shall be on U.S. flag carriers in accordance with the Fly America Act, 49 U.S.C. 40118, to the extent service by such carriers is available, as provided under applicable U.S. Government regulations.

(2) Marine

Transportation by sea of property funded under the Grant Agreement shall be on U.S. carriers in accordance with U.S. cargo preference law.

F. Workman's Compensation Insurance

The Contractor shall provide adequate Workman's Compensation Insurance coverage for work performed under this Contract.

G. Reporting Requirements

The Contractor shall advise USTDA by letter as to the status of the Project on March 1st annually for a period of two (2) years after completion of the Study. In addition, if at any time the Contractor receives follow-on work from the Client, the Contractor shall so notify USTDA and designate the Contractor's contact point including name, telephone, fax number, and e-mail address. Since this information may be made publicly available by USTDA, any information which is confidential shall be designated as such by the Contractor and provided separately to USTDA. USTDA will maintain the confidentiality of such information in accordance with applicable law.

H. Disbursement Procedures

(1) USTDA Approval of Contract

Disbursement of Grant funds will be made only after USTDA approval of this Contract.

(2) Payment Schedule Requirements

A payment schedule for disbursement of Grant funds to the Contractor shall be included in this Contract. Such payment schedule must conform to the following USTDA requirements: (1) up to twenty percent (20%) of the total USTDA Grant amount may be used as a mobilization payment; (2) all other payments, with the exception of the final payment, shall be based upon Contract performance milestones; and (3) the final payment may be no less than fifteen percent (15%) of the total USTDA Grant amount, payable upon approval by USTDA of a Final Report that has been (i) prepared and submitted in accordance with the requirements set forth in Clause J below, and (ii) approved in writing by the Client in the manner provided for by Clause H(3)(b)(iii) below. Invoicing procedures for all payments are described below.

(3) Contractor Invoice Requirements

USTDA will make all disbursements of USTDA Grant funds directly to the Contractor. The Contractor must provide USTDA with an ACH Vendor Enrollment Form (available from USTDA) with the first invoice. The Client shall request disbursement of funds by USTDA to the Contractor for performance of the Contract by submitting the following to USTDA:

(a) Contractor's Invoice

The Contractor's invoice shall include reference to an item listed in the Contract payment schedule, the requested payment amount, and an appropriate certification by the Contractor, as follows:

(i) For a mobilization payment (if any):

"As a condition for this mobilization payment, the Contractor certifies that it will perform all work in accordance with the terms of its Contract with the Client. To the extent that the Contractor does not comply with the terms and conditions of the Contract, including the USTDA Mandatory Contract Clauses contained therein, it will, upon USTDA's request, make an appropriate refund to USTDA. "

(ii) For Contract performance milestone payments:

"The Contractor has performed the work described in this invoice in accordance with the terms of its Contract with the Client and is entitled to payment thereunder. To the extent the Contractor has not complied with the terms and conditions of the Contract, including the USTDA Mandatory Contract Clauses contained therein, it will, upon USTDA's request, make an appropriate refund to USTDA."

(iii) For final payment:

"The Contractor has performed the work described in this invoice in accordance with the terms of its Contract with the Client and is entitled to payment thereunder. Specifically, the Contractor has submitted the Final Report to the Client, as required by the Contract, and received the Client's approval of the Final Report. To the extent the Contractor has not complied with the terms and conditions of the Contract, including the USTDA Mandatory Contract Clauses contained therein, it will, upon USTDA's request, make an appropriate refund to USTDA."

(b) Client's Approval of the Contractor's Invoice

(i) The invoice for a mobilization payment must be approved in writing by the Client.

(ii) For Contract performance milestone payments, the following certification by the Client must be provided on the invoice or separately:

"The services for which disbursement is requested by the Contractor have been performed satisfactorily, in accordance with applicable Contract provisions and the terms and conditions of the USTDA Grant Agreement."

(iii) For final payment, the following certification by the Client must be provided on the invoice or separately:

"The services for which disbursement is requested by the Contractor have been performed satisfactorily, in accordance with applicable Contract provisions and the terms and conditions of the USTDA Grant Agreement. The Final Report submitted by the Contractor has been reviewed and approved by the Client. "

(c) USTDA Address for Disbursement Requests

Requests for disbursement shall be submitted to the attention of the Finance Department at USTDA's address listed in Clause N below, or by e-mail to invoices@ustda.gov.

I. Termination

(1) Method of Termination

Either Contract Party may terminate this Contract upon giving written notice to the other party and USTDA. This notice shall be effective after either 30 days, or any other period set forth elsewhere in this Contract. Furthermore, this Contract shall terminate immediately upon notification of USTDA's termination of the Grant Agreement or the term of availability of any funds thereunder.

(2) Ramifications of Termination

In the event that this Contract is terminated prior to completion, the Contractor will be eligible, subject to USTDA approval, for payment for the value of the work performed pursuant to the terms of this Contract. Likewise, in the event of such termination, USTDA is entitled to receive from the Contractor all USTDA Grant funds previously disbursed to the Contractor (including but not limited to mobilization payments) which exceed the value of the work performed pursuant to the terms of this Contract.

(3) Survivability

Clauses B, D, G, H, I, and O of the USTDA Mandatory Contract Clauses shall survive the termination of this Contract.

J. USTDA Final Report

(1) Definition

"Final Report" shall mean the Final Report described in the attached Annex I Terms of Reference or, if no such "Final Report" is described therein, "Final Report" shall mean a substantive and comprehensive report of work performed in accordance with the attached Annex I Terms of Reference, including any documents delivered to the Client.

(2) Final Report Submission Requirements

The Contractor shall provide the following to USTDA:

(a) One (1) complete hard copy of the Final Report for USTDA's records. This version shall have been approved by the Client in writing and must be in the English language. It is the responsibility of the Contractor to ensure that confidential information, if any, contained in this version be clearly marked. USTDA will maintain the confidentiality of such information in accordance with applicable law.

and

(b) One (1) hard copy of the Final Report suitable for public distribution ("Public Version"). The Public Version shall have been approved by the Client in writing and must be in the English language. As this version will be available for public distribution, it must not contain any confidential information. If the report in (a) above contains no confidential information, it may be used as the Public Version. In any event, the Public Version must be informative and contain sufficient Project detail to be useful to prospective equipment and service providers.

and

(c) Two (2) CD-ROMs, each containing a complete copy of the Public Version of the Final Report. The electronic files on the CD-ROMs shall be submitted in a commonly accessible read-only format. As these CD-ROMs will be available for public distribution, they must not contain any confidential information. It is the responsibility of the Contractor to ensure that no confidential information is contained on the CD-ROMs.

The Contractor shall also provide one (1) hard copy of the Public Version of the Final Report to the Commercial or Economic Section of the U.S. Embassy in Host Country for informational purposes.

(3) Final Report Presentation

All Final Reports submitted to USTDA must be paginated and include the following:

(a) The front cover of every Final Report shall contain the name of the Client, the name of the Contractor who prepared the report, a report title, USTDA's logo, and USTDA's address. If the complete version of the Final Report contains confidential information, the Contractor shall be responsible for labeling the front cover of that version of the Final Report with the term “Confidential Version.” The Contractor shall be responsible for labeling the front cover of the Public Version of the Final Report with the term “Public Version.” The front cover of every Final Report shall also contain the following disclaimer:

> "This report was funded by the U.S. Trade and Development Agency (USTDA), an agency of the U.S. Government. The opinions, findings, conclusions or recommendations expressed in this document are those of the author(s) and do not necessarily represent the official position or policies of USTDA. USTDA makes no representation about, nor does it accept responsibility for, the accuracy or completeness of the information contained in this report."

(b) The inside front cover of every Final Report shall contain USTDA's logo, USTDA's address, and USTDA's mission statement. Camera-ready copy of USTDA Final Report specifications will be available from USTDA upon request.

(c) The Contractor shall affix to the front of the CD-ROM a label identifying the Host Country, USTDA Activity Number, the name of the Client, the name of the Contractor who prepared the report, a report title, and the following language:

> "The Contractor certifies that this CD-ROM contains the Public Version of the Final Report and that all contents are suitable for public distribution."

(d) The Contractor and any subcontractors that perform work pursuant to the Grant Agreement must be clearly identified in the Final Report. Business name, point of contact, address, telephone and fax numbers, and e-mail address shall be included for Contractor and each subcontractor.

(e) The Final Report, while aiming at optimum specifications and characteristics for the Project, shall identify the availability of prospective U.S. sources of supply. Business name, point of contact, address, telephone and fax numbers, and e-mail address shall be included for each commercial source.

(f) The Final Report shall be accompanied by a letter or other notation by the Client which states that the Client approves the Final Report. A certification by the Client to this effect provided on or with the invoice for final payment will meet this requirement.

(g) The Client, USTDA, and the Commercial and/or Economic Section(s) of the U.S. Embassy in Host Country shall have irrevocable, worldwide, royalty-free, non-exclusive rights to use and distribute the Final Report.

K. Modifications

All changes, modifications, assignments or amendments to this Contract, including the appendices, shall be made only by written agreement by the Contract Parties hereto, subject to written USTDA approval.

L. Study Schedule

(1) Study Completion Date

The completion date for the Study, which is June 30, 2015, is the date by which the Contract Parties estimate that the Study will have been completed.

(2) Time Limitation on Disbursement of USTDA Grant Funds

Except as USTDA may otherwise agree, (a) no USTDA funds may be disbursed under this Contract for goods and services which are provided prior to the Effective Date of the Grant Agreement; and (b) no USTDA funds may be disbursed more than four (4) years after the Effective Date of the Grant Agreement.

M. Business Practices

The Contract Parties recognize the existence of standards of conduct for public officials and commercial entities in their respective countries. Therefore, the Contract Parties shall fully comply with all United States and Host Country laws relating to corruption or bribery. For example, the Contractor and its subcontractors shall fully comply with the requirements of the Foreign Corrupt Practices Act, as amended (15 U.S.C. §§ 78dd-1 et seq.). Each Contract Party agrees that it shall require that any agent or representative hired to represent it in connection with the Study will comply with this paragraph and all laws which apply to activities and obligations of that Contract Party, including, but not limited to, those laws and obligations referenced above.

N. USTDA Address and Fiscal Data

Any communication with USTDA regarding this Contract shall be sent to the following address and include the fiscal data listed below:

U.S. Trade and Development Agency
1000 Wilson Boulevard, Suite 1600
Arlington, Virginia 22209-3901
USA

Phone: (703) 875-4357
Fax: (703) 875-4009

Fiscal Data:
Appropriation No.: 1113/141001
Activity No.: 2013-51015A
Reservation No.: 2013136
Grant No.: GH201351136

O. Taxes

USTDA funds provided under the Grant Agreement shall not be used to pay any taxes, tariffs, duties, fees or other levies imposed under laws in effect in Host Country, except for taxes of a de minimis nature imposed on local lodging, food, transportation, or airport arrivals or departures. Neither the Client nor the Contractor will seek reimbursement from USTDA for taxes, tariffs, duties, fees or other levies, except for taxes of a de minimis nature referenced above.

P. Export Licensing

The Contractor and all subcontractors are responsible for compliance with U.S. export licensing requirements, if applicable, in the performance of the Terms of Reference.

Q. Contact Persons

The Client designates the following person as the contact person for matters concerning this Contract:

Name:
Title:
Phone:
Fax:
E-Mail:

The Contractor designates the following person as the contact person for matters concerning this Contract:

Name:
Title:
Phone:
Fax:
E-Mail:

If anyone designated by a Contract Party as a contact person ceases service as a contact person at any point during the ten-year period following the date of signing of this Contract, the Contract Party that had designated that contact person shall provide USTDA and the other Contract Party with the name and contact information of a replacement contact person.

R. Liability

This Contract may include a clause that limits the liability of the Contract Parties, provided that such a clause does not (i) disclaim liability for special, incidental, general, or punitive damages, or (ii) limit the total amount of damages recoverable to an amount less than the total amount disbursed to the Contractor pursuant to this Contract.

S. Arbitration

If the Contract Parties submit any dispute arising under this Contract for arbitration, the scope of any such arbitration shall be limited to the Contract Parties' rights and/or obligations under this Contract and may not extend to any right or obligation of USTDA. The arbitrator(s) shall not arbitrate issues directly affecting the rights or obligations of USTDA.

A N N E X 5

TERMS OF REFERENCE
(FROM USTDA GRANT AGREEMENT)

TERMS OF REFERENCE

Purpose and Background

The purpose of this feasibility study ("Study") is to determine the viability of a 99 megawatt (MW) Tablaruca wind project ("Project") in the Los Lagos region in southern Chile, on the island of Chiloé. The project sponsor is Eólica Tablaruca S.A. (the "Grantee"), a private Chilean company created to develop the Tablaruca wind farm. The Grantee has commissioned various pre-feasibility studies for the Tablaruca site, and now requires further feasibility and related analyses to proceed with development and ensure Project bankability.

The Grantee's pre-feasibility studies have not revealed any significant environmental, social, or interconnection concerns that would prevent the Project from going forward. However, USTDA would like to ensure that there are no major issues or fatal flaws with the environmental, social, or interconnection aspects of the Project before the full Study is completed. Therefore, the Contractor shall carry out the Study in two phases.

Provided that the first phase does not reveal any disqualifying environmental, social, or interconnection issues, USTDA will, at its sole discretion, give the Grantee and Contractor the approval to move to Phase II to fully examine technical, economic, financial, environmental, social, and regulatory factors affecting overall Project viability. In the event that the results of Phase I bring to light major environmental, social, or transmission concerns, the Contractor will only be paid for Tasks 1 and 2 and the Grant Agreement will be terminated.

The Contractor shall carry out the feasibility study with the full cooperation of the Grantee. The Grantee shall be responsible for providing key inputs for the Study. As is detailed below, this includes leasing or purchasing wind measurement equipment and providing data collected using that equipment to the Contractor.

Phase I

The first phase will consist of a preliminary environmental and social impact assessment and an interconnection study. The Contractor shall submit the Task 1 and 2 deliverables to USTDA (in addition to the Grantee) for its review.

Task 1: Preliminary Environmental and Social Impact Analysis

The Contractor shall conduct a preliminary environmental and social impact analysis to determine if there are any significant environmental or social concerns or fatal flaws in the Project.

The analysis will consider:

- Conflicts with national parks/biospheres
- Conflicts with social heritage sites
- Impact on migratory birds and endemic species

- Impact on waterways and impact of runoff
- Legal and regulatory conflicts (for example, land rights)

The Contractor shall conduct a desk review of relevant documents provided by the Grantee as well as independent research. In addition, the Contractor shall conduct a two day on-site examination of the Tablaruca site. Finally, the Contractor shall conduct a meeting with local stakeholders to assess any potential social conflicts.

Task 1 Deliverable: The Contractor shall submit a preliminary environmental and social impact analysis in English as detailed in Task 1.

Task 2: Interconnection Study

The Contractor shall conduct an interconnection study, evaluating the transmission of electricity from the Tablaruca site to the national grid. In particular, the Contractor shall study the technical and economic viability of connecting the Project's feeder line to a grid substation to bring to market the electricity produced by the Project. This study should focus on:

- Proposing potential feeder line routes
- Identifying equipment and material requirements of the proposed routes
- Evaluating the technical and economic viability of proposed feeder line routes

The Contractor shall recommend the interconnection route that is the most technically and economically viable, as well as two alternative routes (in a ranked order) in the event that eventual easement issues prevent the best route from being developed. The Contractor shall also prepare an Interconnection Report explaining the advantages and disadvantages of the routes considered. This report shall include a course of action for developing the recommended route.

In addition to the above, the Interconnection Report shall also review any potential interconnection risk posed by the technical limitations of the connection from Chiloé to mainland Chile. The Interconnection Report should detail any project risk posed by the technical limitations of the connection to the mainland, taking into consideration future development of other power projects on the island and collective initiatives under way between wind developers and the national transmission company, Transelec. These findings shall also be included in the Interconnection Report.

Task 2 Deliverable: The Contractor shall submit an Interconnection Report in English as detailed above in Task 2.
USTDA shall review the deliverables from Tasks 1 and 2 and determine if the Contractor will continue to the second phase of the feasibility study. If USTDA finds that the Preliminary Environmental and Social Impact Analysis and the Interconnection Study do not reveal any major concerns regarding the viability of the Project, the Contractor shall proceed to complete the subsequent tasks.

Phase II

Task 3: Technical Resource Assessment

The Contractor shall conduct a technical resource assessment at the Tablaruca site, utilizing the equipment and measurements provided by the Grantee. This technical assessment shall build on the results of a pre-feasibility study conducted by Garrad Hassan through measurements taken from at least one additional meteorological tower appropriate for measuring the wind resource. The Grantee shall be responsible for leasing or purchasing all required wind measurement equipment, including the meteorological tower. The Grantee will collect on-site wind resource data from the wind measurement equipment and provide it to the Contractor, who shall analyze the data and have it certified through a reputable third party. The final product of this work shall be a report containing a wind resource assessment.

The Grantee shall provide all wind resource assessment data it possesses to the Contractor. In addition, the Grantee shall conduct the supplemental wind resource data gathering for a period of 12 months to verify vertical profiles of the wind regime at the site and provide data for optimizing the micro-siting of turbines. The Grantee shall record:

- Wind speed
- Wind direction
- Temperature
- Humidity

Wind speed, direction, temperature, and humidity recording instruments should be Class One instrumentation.

The Contractor shall process data and produce the following wind resource assessment products:

- A table of annual and monthly average temperature, air pressure, and humidity
- Annual wind variation over a period of 20-30 years
- Wind variation of measurement station relative to wind mast
- Daily wind variation of the site
- Annual wind variation of the site
- Wind speed and wind power frequency distributions
- Annual wind direction rose figure
- Annual wind energy rose figure
- Monthly wind direction rose figure
- Monthly wind energy rose figures
- Daily wind speed and wind power density variation

All of these data and wind resource assessment products should be included in a Technical Resource Assessment Report. The Contractor shall analyze and error-check all collected data. The Contractor shall also hire a third party to certify that the Contractor's wind resource assessment is accurate. This certification must be provided by a reputable engineering firm whose certification will support the credibility of the Project vis-à-vis potential lenders and

investors. The certification and any analysis by the third party engineering firm shall be included in the Technical Resource Assessment Report.

Using the certified data as well as the Geotechnical Report (to be developed as part of Task 6), the Contractor shall assist the Grantee with micro-siting and performance estimate for each wind turbine, taking into consideration the site topography and meteorological conditions as well as the shading of back-row wind turbines by front row wind turbines. The Grantee shall provide any relevant geotechnical information it has to the Contractor. The Contractor's micro-siting recommendation shall be included as part of the Technical Resource Assessment Report.

Based on the data collected, the Contractor shall provide an assessment of the different turbine types, sizes, vendors, and technologies; and their relative strengths and weaknesses with the Grantee. The Contractor shall only present commercially proven technology (i.e., no prototypes or experimental technology). The Contractor shall also address other technical details including, but not limited to, blade dimensions and inclination; and their impact on turbine performance. The Contractor shall present this information in the Technical Resource Assessment Report and recommend a turbine type and specifications for use at the Tablaruca site.

The Contractor shall provide a formal estimate of the annual generation of the wind farm. This will also include a standard deviation of the annual generation estimate, accounting for any periodical weather patterns. The intent is not to precisely predict the timing and severity of wind resource variations but rather to reflect their probable effects on the financial performance of the Project. The Contractor shall present this information in the Technical Resource Assessment Report.

Task 3 Deliverable: The Contractor shall submit a Technical Resource Assessment Report in English that includes:

- Wind resource assessment data
- Wind resource analysis certification and commentary from a third party engineering firm
- Micro-siting for wind turbine towers
- Assessment of turbine technology and a recommended turbine
- Estimated annual electricity generation of the site.

Task 4: Economic and Financial Analysis

The Contractor shall develop a Financial Model that includes investment costs, operating costs, revenues, financial analysis, and profitability analysis. Based on this Financial Model and the Contractor's market analysis, the Contractor shall develop a Commercial Strategy for the Project, including recommending financing terms that the Grantee should seek. The Contractor shall also support the Grantee in the course of financing negotiations.

Subtask 4.1: Financial Model

The Contractor shall prepare a detailed Financial Model (using Microsoft Excel) of the Project based on assumptions from its technical assessment and current market conditions in Chile. The Financial Model should be flexible (allowing a clear and easy modification of key operating and financial assumptions); and allow the assessment of different scenarios, positive and negative, that can impact Project success and profitability. At a minimum, the Financial Model shall include the following components:

- Project development costs
  - Primary and auxiliary energy equipment (for example, turbines, transformers, inverters, etc.)
  - Site development, preparation, and construction
  - Costs of interconnection (transmission line development cost, easement costs)
  - Permitting, licensing, legal, and other professional service fees
  - Insurance during construction
- Operating costs
  - Personnel training
  - Social, general, and administrative costs and maintenance
  - Insurance during operations
- Financing costs
  - Interest during construction
  - Contingency reserve
  - Cost of letters of credit
  - Debt service during operation
  - Any refinancing fees
- Revenues
  - Projected revenues from selling on the spot market
  - Projected revenues from selling via a power purchase agreement (PPA)
  - Projected revenues under different performance scenarios (for example, in the event of abnormal wind patterns or equipment failure)
- All relevant taxes

The Financial Model shall calculate the profitability, return on investment, and internal rate of return (IRR) of the Project under different scenarios, including: different capital structures, alternative methods of depreciation, varying plant performance, construction cost overruns, selling on the spot market versus via PPA, different interest rate, and others. The Financial Model shall be provided to the Grantee for its ongoing use as a tool during and subsequent to the completion of the Study and shall therefore be flexible, clearly structured, and easy to use in order to allow the Grantee to model scenarios that the Project may experience during the course of its operations.

Subtask 4.2: Commercial Strategy

The Contractor shall conduct profitability analysis under different scenarios using the Financial Model. The Contractor shall also conduct a wind market analysis covering prevailing commercial arrangements, terms, and conditions; competition by other wind

projects as well as other renewable technologies; availability of finance; criteria of lenders, as well as providers of equity and quasi-equity through interviews and secondary data; and identification of key barriers to financing.

Based on these analyses, the Contractor shall develop a Commercial Strategy for the Grantee. The commercial strategy should make recommendations to the Grantee on the following issues:

- Debt and equity providers - recommended providers based on the Project profile
- Power sale strategy (PPA versus spot market)
- Capital structure – debt-to-equity ratio and use of subordinated debt
- Safeguards to mitigate risks to the Project's profitability

The Commercial Strategy shall be presented in a Commercial Strategy Report to be used alongside the Financial Model.

Subtask 4.3: Financing Negotiations

The Contractor shall support the Grantee in financing negotiations with providers of debt, equity, and quasi-equity finance. The Contractor shall do this by advising the Grantee on the terms proposed by potential financing partners. For example, the Contractor shall provide guidance to the Grantee on apply directly for working capital and direct loans from the Export-Import Bank of the United States and/or the Overseas Private Investment Corporation, and participate in meetings with potential financing partners. The Contractor shall also draft letters of interest for use by the Grantee in soliciting debt and equity investments.

Task 4 Deliverable: Contractor shall submit the following materials in English to the Grantee:

- A Financial Model
- A Commercial Strategy Report
- Letters of interest to support the Grantee in soliciting investment.

Task 5: Environmental and Social Impact Assessment

The Contractor shall prepare an environmental and social impact assessment (ESIA) in English and Spanish that builds on the preliminary environmental and social analysis conducted in Task 1. Doing this work will require first analyzing and then assessing both environmental and social matters, taking into consideration typical requirements of financers and relevant authorities. Based on the Contractor's assessment, the Contractor shall then develop (in Spanish) a Declaración de Impacto Ambiental (DIA, Declaration of Environmental Impact) or an Estudio de Impacto Ambiental (EIA, Environmental Impact Assessment), which can be submitted to the Servicio de Evaluación Ambiental (SEA, Environmental Evaluation Service), the Chilean Government ministry responsible for environmental management, as well as to all prospective providers of debt and equity.

Subtask 5.1: Environmental and Social Requirements of Relevant Financers and Authorities

The Contractor shall review the environmental and social requirements of relevant financers and authorities. Relevant financers are considered to be debt and equity providers who have expressed interest in investing, or could reasonably be expected to invest in the Project. Most lenders use the International Finance Corporation's (IFC) environmental, health, and safety guidelines for wind energy development; therefore, the Contractor shall begin by reviewing these guidelines.

Relevant authorities are considered to be national, regional and local governments in Chile, including ministries responsible for relevant issues. The Contractor shall identify and review any environmental and social regulations pertinent to development of the Project. The review of environmental and social requirements of relevant lenders and authorities will inform the Contractor's work on Subtasks 5.2 and 5.3.

Subtask 5.2: Environmental Matters

The Contractor shall analyze and assess environmental matters affecting the development of the Tablaruca site. The Contractor shall base its analysis and assessment on the environmental requirements of relevant lenders and authorities (identified as part of Subtask 5.1). At a minimum, the analysis and assessment of environmental matters shall include:

- Visual impacts
- Noise
- Species mortality or injury and disturbance
- Light and illumination issues
- Habitat alteration
- Water quality impacts

The analysis and assessment of the Contractor in this Subtask shall be used to complete Subtask 5.4.

Subtask 5.3: Social Matters

The Contractor shall analyze and assess social matters pertinent to the Project. The Contractor shall base its analysis and assessment on the social requirements of relevant lenders and authorities (identified as part of Subtask 5.1). At a minimum, the analysis and assessment of social matters shall include:

- Impact of construction and site access on the local community
- Visual impact of the Project
- Employment opportunities for the local community
- Ancillary benefits of infrastructure development (roads, transmission infrastructure, ports)
- Safety issues including:
  - Aircraft and marine navigation safety
  - Blade and ice throw
  - Electromagnetic interference and radiation

- General community concerns about the Project

The Contractor shall prepare a Social Impact Report in English and Spanish describing the social matters it encountered as part of Subtask 5.3. This report will provide the Grantee with information to complete social assessments required by lenders.

Subtask 5.4: Declaración de Impacto Ambiental or Estudio de Impacto Ambiental

The Contractor shall develop a DIA or EIA on behalf of the Grantee to be submitted to the SEA). The Contractor shall determine whether a DIA or EIA is required, and shall assist the Grantee in submitting the appropriate document to the SEA. The Contractor should follow the most up-to-date requirements of the SEA.

Task 5 Deliverables
Task 5 will have the following deliverables:

- Either a DIA or an EIA in English and Spanish
- A Social Impact Report in English and Spanish

Task 6: Ancillary Studies

The Grantee also requires two ancillary studies in order to proceed with development of the Project. It shall be the responsibility of the Contractor to develop an engineering study on site access and logistics and a geotechnical study.

Subtask 6.1: Engineering Study on Site Access and Logistics

The Contractor shall conduct an engineering study on site access and logistics, taking into consideration especially the transport of turbines and machinery to the site. The engineering study on site access and logistics shall review the following:

- Road networks from port facilities to the Tablaruca site
- Existing port facilities available to receive shipment of wind turbine components, and potential for construction of a new port
- Potential access roads to individual turbine installation locations at the Tablaruca site

The Contractor shall assess the existing infrastructure affecting site access and logistics and recommend infrastructure to be developed. The Contractor shall also create plans and bid documents to develop the recommended infrastructure. The work of the Contractor on Subtask 6.1 shall be included in an Engineering Study and Site Access and Logistics Report.

Subtask 6.2: Geotechnical Study

The Contractor shall conduct geotechnical studies and establish the baseline conditions of the proposed site including:

- Assessment of the underlying bedrock stability

- Assessment of the topographical conditions and their impact on turbine siting
- Assessment of potential geological instability associated with natural slopes, erosion and infrastructure development, or any other geographic feature

The geotechnical study data will be used to complete micro-siting of turbines, as part of Task 3; as well as for the interconnection study conducted under Task 2. All the geotechnical study data will be presented to the Grantee in a Geotechnical Report.

Task 6 Deliverables: The Contractor will submit to the following reports in English to the Grantee:

- Engineering Study and Site Access and Logistics Report
- Geotechnical Report

Task 7: Permitting and Other Regulatory Issue Analysis

The Contractor shall confirm that the Project meets the requirements of existing site permits, including land use, water use, waste disposal, highway access, security, wildlife preservation, noise limits, and other such criteria; as well as any requirements under Chile's electricity sector regulatory framework by reviewing the grantee's existing documentation. The Contractor shall provide documentation, calculations, and other support to the Grantee in filing for waivers, extensions, or new permits as required.

Task 7 Deliverable: The Contractor shall prepare a Permitting and Other Regulatory Issues Analysis Report listing the regulatory requirements for development of the site, their current status, and an action plan to guide the Grantee in meeting remaining requirements.

Task 8: Developmental Impact Assessment

The Contractor shall assess the developmental impacts associated with the implementation of the Project as defined during the Study and the methodology for measuring those benefits or adverse impacts. The assessment shall include examples of the expected development impacts if the Project is implemented as outlined in the Final Report. The Contractor shall also develop a methodology for assessing the Project's impact over time.

The Contractor shall use the categories below as a guide for evaluating the impact of the Project and shall include quantitative estimates where possible:

- Infrastructure—the Contractor shall estimate the expected scale of infrastructure development and improvements needed to carry out the Project
- Human capacity building—the Contractor shall estimate the number and types of jobs created if the Project is implemented, as well as any training and skills development resulting from the Project
- Environmental —the Contractor shall present the environmental benefits of the Project.

Task 9: US Sources of Supply

The Contractor shall identify potential sources of equipment and services that can be procured competitively from US vendors for construction of a 99 MW wind farm. The Contractor shall compile a list of such vendors and the equipment and services that they provide, as well as preliminary estimates from the vendors for the cost of their services and products relevant to the Project. This list shall comprise the Sources of Supply Report.

Task 10: Implementation Plan

The Contractor shall recommend an Implementation Plan to the Grantee. At a minimum, the Implementation Plan shall include schedules for:

- Development activities
- Contracts and commercial agreements
- Regulatory consent
- Securing financing
- Key ownership and management decisions

The Contractor shall also provide the following as part of the Implementation Plan:

- A standard interconnection agreement for the Project to connect to the grid (based on the technical assessment from Task 3)
- Bid documents to initiate a bidding process for the construction of the wind farm. The Contractor shall not be responsible for publicizing the bid documents or evaluating proposals.

Task 11: Final Report

The Contractor shall prepare and deliver to the Grantee and USTDA a substantive and comprehensive final report of all work performed under these Terms of Reference ("Final Report"). The Final Report shall be organized according to the above tasks, and shall include all deliverables and documents that have been provided to the Grantee. The Final Report shall be prepared in accordance with Clause J of Annex II of the Grant Agreement.

A N N E X 6

U.S. FIRM INFORMATION FORM

USTDA-Funded Feasibility Study, Technical Assistance, or Training Grant

U.S. Firm Information Form

This form is designed to enable the U.S. Trade and Development Agency ("USTDA") to obtain information about entities and individuals proposed for participation in USTDA-funded activities. Information in this form is used to conduct screening of entities and individuals to ensure compliance with legislative and executive branch prohibitions on providing support or resources to, or engaging in transactions with, certain individuals or entities with which USTDA must comply.

USTDA Activity Number [*To be completed by USTDA*]	2013-51015A						
Activity Type [*To be completed by USTDA*]	✔	Feasibility Study		Technical Assistance		Other (specify)	
Activity Title [*To be completed by USTDA*]	99 MW Tablaruca Wind Farm on Chiloe Island						
Full Legal Name of U.S. Firm							
Business Address (street address only)							
Telephone		Fax		Website			
Year Established (include any predecessor company(s) and year(s) established, if appropriate). Please attach additional pages as necessary.							
Please provide a list of directors and principal officers as detailed in Attachment A. Attached?		Yes					
Type of Ownership		Publicly Traded Company					
		Private Company					
		Other (please specify)					
If Private Company or Other (if applicable), provide a list of shareholders and the percentage of their ownership. In addition, for each shareholder that owns 15% or more shares in U.S. Firm, please complete Attachment B.							
Is the U.S. Firm a wholly-owned or partially owned subsidiary?		Yes					
		No					
If so, please provide the name of the U.S. Firm's parent company(s). In addition, for any parent identified, please complete Attachment B.							
Is the U.S. Firm proposing to subcontract some of the proposed work to another firm?		Yes					
		No					
If yes, U.S. Firm shall complete Attachment C for each subcontractor. Attached?		Yes					
		Not applicable					
Project Manager							
Name		Surname					
		Given Name					
Address							
Telephone							
Fax							
Email							
Negotiation Prerequisites							
Discuss any current or anticipated commitments which may impact the ability of the U.S. Firm or its subcontractors to complete the Activity as proposed and reflect such impact within the project schedule.							
Identify any specific information which is needed from the Grantee before commencing negotiations.							

U.S. Firm may attach additional sheets, as necessary.

U.S. Firm's Representations

U.S. Firm shall certify to the following (or provide any explanation as to why any representation cannot be made):

1. U.S. Firm is a *[check one]* ☐ Corporation ☐ LLC ☐ Partnership ☐ Sole Proprietor ☐ Other:

duly organized, validly existing and in good standing under the laws of the State of: [insert state]

The U.S. Firm has all the requisite corporate power and authority to conduct its business as presently conducted, to submit this proposal, and if selected, to execute and deliver a contract to the Grantee for the performance of the USTDA Activity. The U.S. Firm is not debarred, suspended, or to the best of its knowledge or belief, proposed for debarment or ineligible for the award of contracts by any federal or state governmental agency or authority.

2. The U.S. Firm has included herewith, a copy of its Articles of Incorporation (or equivalent charter or document issued by a designated authority in accordance with applicable laws that provides information and authentication regarding the legal status of an entity) and a Certificate of Good Standing (or equivalent document) issued within 1 month of the date of signature below by the State of: [insert state]

The U.S. Firm commits to notify USTDA and the Grantee if it becomes aware of any change in its status in the state in which it is incorporated. USTDA retains the right to request an updated certificate of good standing.

3. Neither the U.S. Firm nor any of its principal officers have, within the ten-year period preceding the submission of this proposal, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a federal, state or local government contract or subcontract; violation of federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating federal or state criminal tax laws, or receiving stolen property.

4. Neither the U.S. Firm, nor any of its principal officers, is presently indicted for, or otherwise criminally or civilly charged with, commission of any of the offenses enumerated in paragraph 3 above.

5. There are no federal or state tax liens pending against the assets, property or business of the U.S. Firm. The U.S. Firm, has not, within the three-year period preceding the submission of this proposal, been notified of any delinquent federal or state taxes in an amount that exceeds US$3,000 for which the liability remains unsatisfied. Taxes are considered delinquent if (a) the tax liability has been fully determined, with no pending administrative or judicial appeals; and (b) a taxpayer has failed to pay the tax liability when full payment is due and required.

6. The U.S. Firm has not commenced a voluntary case or other proceeding seeking liquidation, reorganization or other relief with respect to itself of its debts under any bankruptcy, insolvency or other similar law. The U.S. Firm has not had filed against it an involuntary petition under any bankruptcy, insolvency or similar law.

7. The U.S. Firm certifies that it complies with USTDA Nationality, Source, and Origin Requirements and shall continue to comply with such requirements throughout the duration of the USTDA-funded activity. The U.S. Firm commits to notify USTDA and the Grantee if it becomes aware of any change which might affect U.S. Firm's ability to meet the USTDA Nationality, Source, and Origin Requirements.

The U.S. Firm shall notify USTDA if any of the representations are no longer true and correct.

U.S. Firm certifies that the information provided in this form is true and correct. U.S. Firm understands and agrees that the U.S. Government may rely on the accuracy of this information in processing a request to participate in a USTDA-funded activity. If at any time USTDA has reason to believe that any person or entity has willfully and knowingly provided incorrect information or made false statements, USTDA may take action under applicable law. The undersigned represents and warrants that he/she has the requisite power and authority to sign on behalf of the U.S. Firm.

Name		Signature	
Title			
Organization		Date	

ATTACHMENT A

USTDA-Funded Feasibility Study, Technical Assistance, or Training Grant

U.S. Firm Information Form – Directors and Principal Officers

Provide a list of all directors and principal officers (e.g., President, Chief Executive Officer, Vice-President(s), Secretary and Treasurer). Please provide full names including surname and given name.

USTDA Activity Number [*To be completed by USTDA*]	2013-51015A
Activity Title [*To be completed by USTDA*]	99 MW Tablaruca Wind Farm on Chiloe Island
Full Legal Name of Entity	

Title	Name		
(e.g., Director, President, Chief Executive Officer, Vice-President(s), Secretary, Treasurer) ***** *Please place an asterisk (*) next to the names of those principal officers who will be involved in the USTDA-funded activity*	**Surname**	**Given Name**	**Middle Name**

ATTACHMENT B

USTDA-Funded Feasibility Study, Technical Assistance, or Training Grant

U.S. Firm Information Form – Shareholder(s) and Parent Company(s)

If applicable, U.S. Firm provided a list of shareholders and the percentage of their ownership. This form shall be completed for each shareholder that owns 15% or more shares in U.S. Firm, as well as any parent corporation of the U.S. Firm ("Shareholder"). In addition, this form shall be completed for each shareholder identified in Attachment B that owns 15% or more shares in any Shareholder, as well as any parent identified in Attachment B.

USTDA Activity Number [*To be completed by USTDA*]	2013-51015A
Activity Title [*To be completed by USTDA*]	99 MW Tablaruca Wind Farm on Chiloe Island
Full Legal Name of U.S. Firm	
Full Legal Name of Shareholder	
Business Address of Shareholder (street address only)	
Telephone number	
Fax Number	
Year Established (include any predecessor company(s) and year(s) established, if appropriate). Please attach additional pages as necessary.	
Country of Shareholder's Principal Place of Business	
Please provide a list of directors and principal officers as detailed in Attachment A. Attached?	✔ Yes
Type of Ownership	☐ Publicly Traded Company ☐ Private Company ☐ Other
If applicable, provide a list of shareholders and the percentage of their ownership. In addition, for each shareholder that owns 15% or more shares in Shareholder, please complete Attachment B.	
Is the Shareholder a wholly-owned or partially owned subsidiary?	☐ Yes ☐ No
If so, please provide the name of the Shareholder's parent(s). In addition, for any parent identified, please complete Attachment B.	

Shareholder may attach additional sheets, as necessary.

ATTACHMENT C

USTDA-Funded Feasibility Study, Technical Assistance, or Training Grant

Subcontractor Information Form

This form is designed to enable the U.S. Trade and Development Agency ("USTDA") to obtain information about entities and individuals proposed for participation in USTDA-funded activities. Information in this form is used to conduct screening of entities and individuals to ensure compliance with legislative and executive branch prohibitions on providing support or resources to, or engaging in transactions with, certain individuals or entities with which USTDA must comply.

USTDA Activity Number [*To be completed by USTDA*]	2013-51015A
Activity Title [*To be completed by USTDA*]	99 MW Tablaruca Wind Farm on Chiloe Island
Full Legal Name of Prime Contractor U.S. Firm ("U.S. Firm")	
Full Legal Name of Subcontractor	
Business Address of Subcontractor (street address only)	
Telephone Number	
Fax Number	
Year Established (include any predecessor company(s) and year(s) established, if appropriate). Please attach additional pages as necessary.	

Subcontractor Point of Contact

Name	Surname	
	Given Name	
Address		
Telephone		
Fax		
Email		

Subcontractor's Representations											
Subcontractor shall provide the following (or any explanation as to why any representation cannot be made), made as of the date of the proposal:											
1. Subcontractor is a *[check one]*		Corporation		LLC		Partnership		Sole Proprietor		Other	
duly organized, validly existing and in good standing under the laws of:	[insert state (if U.S.) or country]	.									
The subcontractor has all the requisite corporate power and authority to conduct its business as presently conducted, to participate in this proposal, and if the U.S. Firm is selected, to execute and deliver a subcontract to the U.S. Firm for the performance of the USTDA Activity and to perform the USTDA Activity. The subcontractor is not debarred, suspended, or to the best of its knowledge or belief, proposed for debarment or ineligible for the award of contracts by any federal or state governmental agency or authority.											
2. Neither the subcontractor nor any of its principal officers have, within the ten-year period preceding the submission of the Offeror's proposal, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a federal, state or local government contract or subcontract; violation of federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating federal or state criminal tax laws, or receiving stolen property.											
3. Neither the subcontractor, nor any of its principal officers, is presently indicted for, or otherwise criminally or civilly charged with, commission of any of the offenses enumerated in paragraph 2 above.											
4. There are no federal or state tax liens pending against the assets, property or business of the subcontractor. The subcontractor, has not, within the three-year period preceding this RFP, been notified of any delinquent federal or state taxes in an amount that exceeds $3,000 for which the liability remains unsatisfied. Taxes are considered delinquent if (a) the tax liability has been fully determined, with no pending administrative or judicial appeals; and (b) a taxpayer has failed to pay the tax liability when full payment is due and required.											
5. The subcontractor has not commenced a voluntary case or other proceeding seeking liquidation, reorganization or other relief with respect to itself or its debts under any bankruptcy, insolvency or other similar law. The subcontractor has not had filed against it an involuntary petition under any bankruptcy, insolvency or similar law.											
6. The Subcontractor certifies that it complies with the USTDA Nationality, Source, and Origin Requirements and shall continue to comply with such requirements throughout the duration of the USTDA-funded activity. The Subcontractor commits to notify USTDA, the Contractor, and the Grantee if it becomes aware of any change which might affect U.S. Firm's ability to meet the USTDA Nationality, Source, and Origin Requirements.											
The selected Subcontractor shall notify the U.S. Firm, Grantee and USTDA if any of the representations included in its proposal are no longer true and correct.											
Subcontractor certifies that the information provided in this form is true and correct. Subcontractor understands and agrees that the U.S. Government may rely on the accuracy of this information in processing a request to participate in a USTDA-funded activity. If at any time USTDA has reason to believe that any person or entity has willfully and knowingly provided incorrect information or made false statements, USTDA may take action under applicable law. The undersigned represents and warrants that he/she has the requisite power and authority to sign on behalf of the Subcontractor.											
Name				Signature							
Title											
Organization				Date							