VALIDATION REPORT PUNTA COLORADA WIND FARM PROJECT PHASE I

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Report Title	Validation Report of Punta Colorada Wind Farm Project Phase I
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Summary:

SGS United Kingdom Ltd has been contracted by Barrick Chile Generación Limitada to perform a validation of the project Punta Colorada Wind Farm Project Phase I based on the requirements of VCS Standard version 3.4.

The purpose of a validation is to have an independent third party assessment of the project design. The validation process has been performed on the basis of all issues and criteria of the VCS Standard version 3.4, VCS Program Guide version 3.5, VCS Validation and Verification Manual version 3.1 and the host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The project activity is a 20MW grid-connected wind farm project in La Higuera Municipality of Coquimbo Region in Chile. The project involves the installation of 10 wind turbines, each with a capacity of 2 MWh, which is expected to deliver 45,885 MWh per year to the grid (SIC). This project uses the UNFCCC approved methodology ACM0002 version 13.

The total emission reductions from the project are estimated to be 286,444 tCO_2e over a 10 year crediting period (that could be renewed twice), averaging 28,644 tCO_2e annually.

There are no restrictions of uncertainty related to this validation. The report and the annexed validation describes a total of 09 Findings, which include:

- 01 Corrective Actions Requests (CARs)
- 08 Clarification Requests (CLs)

In our opinion, the project meets all relevant VCS criteria and all relevant host country criteria.

The project correctly applies methodology ACM0002 v13 and it has been demonstrated that the project activity is not the likely baselines scenario; thus emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

All findings raised have been closed satisfactorily and the project: “Punta Colorada Wind Farm Project Phase I” is recommended by SGS to the VCS Board for registration.

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1 INTRODUCTION

1.1 Objective

Barrick Chile Generación Limitada has commissioned SGS to perform the validation of the project "Punta Colorada Wind Farm Project Phase I" with regards to the relevant requirements for VCS Standard version 3.4. The purpose of a validation is to have an independent third party assessment of the project design. In particular, the project's baseline, additionality, monitoring plan (MP), and compliance with VCS Standard version 3.4 are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of Voluntary Carbon Units (VCU's). The VCS criterion refers to the VCS Standard version 3.4 rules and modalities and related decisions by the VCSA.

1.2 Scope and Criteria

The scope of the validation is defined as an independent and objective review of the project description document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against VCS Standard version 3.4 requirements and rules and also associated interpretations. SGS has employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of VCUs.

The validation is not meant to provide any consulting towards the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

1.3 Level of assurance

SGS has employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of VCU's.

The level of assurance of the validation is reasonable with respect to material errors, omissions and misrepresentations.

1.4 Summary Description of the Project

The project activity is a 20MW grid-connected wind farm project located in the Municipality of La Higuera, in Coquimbo Region in Chile. The objective of the project is to use wind resources to generate renewable electricity, to be injected to the Central Interconnected System (SIC) through the Punta Colorada substation. The SIC is the main electricity system, from the 4 interconnected electricity systems in Chile; which supplies over 90% of the country population (from II to X region).

The project involves the installation of 10 wind turbines, each of them with a capacity of 2MW, providing a total installed capacity of 20MW. The average expected electricity injection of the

project is 45,885 MWh per year (the generation indicated in the PD for 2012 is based on the real injection).

This grid-connected renewable energy project generates carbon reductions through directly displacing the electricity that would have otherwise been provided by the plants/units of the SIC.

2 VALIDATION PROCESS

2.1 Method and Criteria

The validation is performed primarily as a document review of the VCS project description document version 001 dated 27/09/2013 entitled "DRAFT_PDD_1149_27 Sep2013" and the subsequent version 002 entitled "PCWF-VCS Project Description _v2"; version 003 entitled "41113_PCWF-VCS Project Description _v8"; version 004 entitled "71113_PCWF-VCS Project Description _v9"; version 005 entitled "141113_PCWF-VCS Project Description _v10"; version 006 entitled "151113_PCWF-VCS Project Description _v11"; version 007 entitled "261113_PCWF-VCS Project Description _v12" and relevant supporting documents against the VCS rules. The assessment is performed by trained assessors using a validation protocol (Appendix 3).

The site visit was performed on 3rd and 4th October 2013 by members of the assessment team.

As a final step of the validation, the validation report has to undergo internal quality control by means of technical review following SGS procedures. The technical reviewer is a competent person from SGS, independent of the team that carried out the validation of the project activity.

As an outcome of the verification process, the team can raise different types of findings.

A Clarification Request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met

Where a non-conformance arises the Assessor shall raise a **Corrective Action Request (CAR).** A CAR is issued, where:

I. The project proponent have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
II. The VCS requirements have not been met;
III. There is a risk that emission reductions cannot be monitored or calculated.

The validation process may be halted until this information has been made available to the assessors' satisfaction. Failure to address a CL may result in a CAR. Information or clarifications provided as a result of a CL may also lead to a CAR.

A Forward Action Request (FAR) is raised during validation to highlight issues related to project implementation that require review during the first verification of the project activity. FARs shall not relate to the VCS requirements for registration.

The report is based on the findings of document reviews, the stakeholder consultation process and responses from the project proponent to the findings raised in this report.

The report and the annexed validation protocol describe a total of 9 findings which include:

- 01 Corrective Actions Requests (CARs)

- 08 Clarification Requests (CLs)

All the findings raised during the validation assessment of the project activity are closed satisfactorily and the project is recommended to the VCS board for registration.

2.2 Document Review

The validation is performed primarily as a document review of the publicly available project documents and other supporting documents from reliable sources (national authorities, grid administrator, IPCC, among other). The assessment is performed by trained assessors and technical and financial experts based on the VCS rules and requirements and using validation protocols.

2.3 Interviews

During the site visit and along the entire validation process, interviews and conference calls with the project proponent (Marcelo Robledo (Mine Closure and Climate Change Manager), Luis Pavez (Head of Operation), Victor Rojas (Plant Supervisor), Juan Monzoncillo (Shift Manager)) regarding the technical and commercial aspects and relevant stakeholders, i.e. members of the local communities around the project activity (Luis Tapia (homeowners association N°6), Robinson Villalobos (homeowners association N°5)).

2.4 Site Inspections

The on-site inspection was conducted on 3rd and 4th October 2013 to verify the physical situation and complement the desk based assessment of the project boundary, baseline, additionality and the monitoring aspects. The opening meeting for the validation assessment was performed on 3rd October 2013, during the on-site inspection. This is in line with the VCS Standard version 3.4, section 5.2.3, as the project was listed in the VCS pipeline on 30/09/2013.

Location: Punta Colorada Wind Farm, Coquimbo region, Chile	
Date: 03/10/2013 – 04/10/2013	
Coverage:	**Source of Information / Persons Interviewed**

On-site assessment of the wind farm project in order to validate the accuracy and completeness of the project description. Interviews with personnel in charge of the project activity to confirm that the daily operational and data collection procedures; and also information flows for generating, aggregating and reporting the monitoring parameters, are implemented in accordance with the methodology and the VCS PD. Review of information from internal records and external certificates. Visual checks, document review and photos taken of the monitoring equipment to confirm the type, serial number and the measurements/recording frequency of them. Observations of defined activities, monitoring practices, the calibration performances and the QA/QC procedures established in the VCS PD and the applicable methodology in order to prevent or identify and correct any errors or omissions in the reported monitoring parameters. Documentation review of data sources (internal, external and assumptions) and calibration certificates in order to confirm the correct VCU's calculations.	Marcelo Robledo - Mine Closure and Climate Change Manager from Barrick Chile Generación Limitada Luis Pavez - Head of Operation from Barrick Chile Generación Limitada Victor Rojas - Plant Supervisor from Barrick Chile Generación Limitada Juan Monzoncillo - Shift Manager from Barrick Chile Generación Limitada

The project site was inspected, which includes, the wind turbines and their control on each turbine, the office and control room of the entire wind farm project, the electricity meters property of the project proponent and also the electricity meter in the substation, which is the connection point where the electricity generated by the project activity is delivered to the national grid (SIC).

During the inspection it was verified that the facilities were well organised, the staff are properly trained for the activities they performed and the equipment were in good conditions.

The results are summarised as Appendix 3 (Validation Protocol) and Appendix 2 (Findings Overview) in this validation report. The validation team has checked the statement mentioned in the VCS PD through review of documents and communications with stakeholders.

2.5 Resolution of Any Material Discrepancy

During the validation, the project proponent was requested to address all material discrepancies and in the end provided the validation assessment team with sufficient evidence to determine that the applicable VCS rules and methodology requirements have been met.

After the validation assessment of the project activity and the proper corrections, no material discrepancies are observed. A detail of the discrepancies raised and closed can be found in Appendix 2 of this report.

3 VALIDATION FINDINGS

3.1 Project Design

Project scope, type, technologies and measures implemented, and eligibility of the project

The project activity is categorized under scope 1 – Energy (renewable/non-renewable), applying the CDM methodology "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" version 13 and it is a multiple project activity instances.

The project is a grid connected wind farm with an installed capacity of 20 MW, consisting of 10 wind turbines, each with a capacity of 2 MW each.

The technical specifications of the wind turbines installed have been confirmed through document review (ref. 35, 36) and an on-site inspection carried out by the assessment team, including the technical area expert. The technical specifications are as follows:

Wind Turbine	DeWind D8
Wind turbine capacity	2,000 kW
Number of blades	3
Rotor diameter	80 m
Hub height	80 m
Total height	120 m
Nacelle	TECO Westinghouse
Hub	TECO Westinghouse
Blades	SINOI GmbH
Tower	Win&P

Project proponent

The project proponent is Barrick Chile Generación Limitada. This has been verified in the Environmental approval (ref. 33), the lease agreement (ref. 49) and by the grid administrator information (ref. 16).

Project start date

The start date defined for this project activity is December 15th 2011, which is the date when it began commercial operation in the national grid (SIC) and therefore began reducing GHG emissions. This is in line with the indications of the VCS Standard v3.4 that states "*The project start date is the date on which the project began generating GHG emission reductions or removals".*

This information has been validated by reviewing the official document of the CDEC-SIC "Operating Statistics 2002-2011" (ref. 16) where it is reported on page 5 and 75 that on 15/12/2011 Punta Colorada wind farm project, property of Barrick Chile Generación Ltda. was delivered for

exploitation. This date (15/12/2011) has also been confirmed in the letters sent by the PP, announcing the start of the commercial operation of the project, to the national authorities: CDEC-SIC (grid administrator), Superintendence of Electricity and Fuels and the National Energy Commission (ref. 15).

Project crediting period

The crediting period for this project activity is 10 years which can be renewed for 2 times. The first crediting period is from 15/12/2011 until 14/12/2021.

Project scale and estimated GHG emission reductions or removals

The projects annual GHG emission reductions or removals of tCO_2e per year have been estimated in 28,644 tCO_2e. Based on the definitions of the VCS Standard v3.4, section 3.9.1, this project activity is categorised as "Project" because the GHG emission reductions are below 300,000 tCO_2e per year.

Project activities

The project is a multiple instance of project activity, as it involves 10 wind turbines, each with a capacity of 2 MW each. This is not a grouped project.

Project location

The latitude and longitude of the project activity (10 wind turbines) have been correctly indicated in the PD section 1.9 as it has been reviewed through maps (please refer to CL 2 in appendix 2 of this report for further information). The geodetic coordinates of each wind turbine have also been reported by the authority in the environmental approval (ref. 33 in UTM).

Project compliance with applicable laws, statutes and other regulatory frameworks

It can be confirmed that the project is in compliance with all the applicable laws and requirements of the host country. This has been verified by the on-site inspection and by the review of the website from the authority (SEA – Environmental Evaluation System), where all the required approvals from the different national sectors are provided (http://www.sea.gob.cl/); also by the review of the final environmental approval (ref. 33); and finally by the confirmation on the grid administrator reports (ref. 16, 32 the project is authorised to inject electricity to the grid (SIC) only when the authority (CDEC-SIC) ensures the compliance with the national regulations).

Ownership and other programs

- **Right of use**

  The right of use of Barrick Chile Generación Limitada, the project proponent, has been verified by review of the DIA (environmental impact declaration), where it is reported that Barrick Chile Generación Limitada assumes the ownership of the project activity regarding environmental issues.

  Furthermore, during the on-site inspection the copy of the lease contract of the land where the project is installed was provided by the PP. In the contract (ref. 49) dated 30/01/2008 clearly states that Barrick Chile Generación Limitada will install a wind farm project and that these lease is valid for 20 years, renewable for 20 more years. This lease contract is a valid document to justify the right of use based on the requirements of the VCS Standard v3.4 section 3.11.1.

- **Emission trading programs and other binding limits**
  It has been verified by document review (websites of the Ministry of Energy (http://www.minenergia.cl/#) , Ministry of Environment (http://www.mma.gob.cl/1304/w3-channel.html) and Santiago Climate Exchange (http://www.scx.cl/) and the on-site interviews, that the project activity is not participating in any emission trading program or any other mechanism that includes GHG allowance trading.
  It has been verified that there is no cap and trade system implemented in Chile, neither an emission tax system, so it can be confirmed that the emission reductions will not be used in any other program or to comply with any local regulations.

- **Participation under other GHG programs**
  It has been verified by document review (UNFCCC website (http://cdm.unfccc.int/index.html), Gold Standard-markit website (http://mer.markit.com/br-reg/public/index.jsp?s=cp)) and the on-site interviews that the project activity is not participating, or seeking registration, in any other GHG program approved or not by VCS.

- **Other forms of environmental credit sought or received**
  According to the Chilean law 20,257 (ref. 31a), non conventional renewable energy (NCRE) projects like this can obtain a certificate called "atributo ERNC", but this certificate is only to demonstrate that the electricity is generated by a solar, wind, hydro, geothermal or biomass plant ≤20MW; so this electricity could have a better price in the market.
  Actually, this law 20,257 states that the electricity companies (consuming electricity for a capacity higher than 200MW) should market 10% of the energy from ERNC. The increase is gradual and starts with 5% for 2010-2014 and then it has to increase in 0.5% per year until 2024 to reach the 10%. The power plants that do not comply with this law will need to pay a fine of 0.4 UTM (31.4 USD calculated on 23/08/2013) for each MWh from a non-authorised source. But, given the fine which the large generators are subject to, in some cases, it may be more economically beneficial to them, to pay the penalty instead of buying the electricity.
  Today there is more NCRE electricity generation (ref. 38b) than that which is required by the mentioned law, for this reason the price for ERNC credits is very low.
  The law 20,257 is dated 20/03/2008; according to the CDM rules on type E+ and E- policies (ref. 40), this corresponds to an E- policy; and given that it was implemented after COP 17 (11/11/2001), it does not need to be taken into account when determining the baseline scenario. Notwithstanding the aforementioned, possible income from NCRE credits have been considered in the investment analysis and the project remains additional.
- **Rejection by other GHG programs**
  The project has not been rejected by any other GHG program.

Additional information relevant to the project

- **Eligibility criteria grouped projects**
  Not applicable, as this is not a grouped project
- **Leakage management for AFOLU projects**
  Not applicable as this is not an AFOLU project

- **Commercially sensitive information**
  All the relevant information for the determination of project boundary, baseline scenario, demonstration of additionality and the estimation of the GHG emission reductions have been provided by the PP and not considered as commercially sensitive information.
- **Any further information**
  No further information has been required for this project activity

Based on the information reviewed and the on-site inspection it can be confirmed that the description provided in the VCS PD version 007 is accurate, complete and provides a clear understanding of the nature of the project activity.

3.2 Application of Methodology

3.2.1 *Title and Reference*

The project activity applies the following CDM approved methodology and tools:

ACM0002 version 13.0 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", this version of the methodology is valid from 11/05/2012 until 03/10/2013, but it can be used for registration of a project activity until 31/05/2014.

Methodological tool "Tool for the demonstration and assessment of additionality" version 07.0

Methodological tool "Tool to calculate the emission factor for an electricity system" version 04.0

3.2.2 *Applicability*

The use of the approved CDM methodology ACM0002 version 13.0 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" is justified in section 2.2 of the VCS PD version 007 and is confirmed to be the most appropriate choice of methodology for this project activity.
Based on the document review and the on-site inspection it can be confirmed that the proposed project activity satisfies the applicability criteria defined in the mentioned methodology because of the following:

- "*The project activity is the installation, capacity addition, retrofit or replacement of a power plant/unit of one of the following types: hydro power plant/unit (either with a run-of-river reservoir or an accumulation reservoir), wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit*;"

The project activity consists of the installation of a Greenfield wind power plant connected to the grid. This has been verified by the review of the Environmental Approval (ref. 33), the authorisations for investment (ref. 57a, 57b), the lease land agreement (ref. 49), the information from the grid administrator (ref. 16) and also by the on-site inspection.

- "*In the case of capacity additions, retrofits or replacements (except for wind, solar, wave or tidal power capacity addition projects which use Option 2: on page 10 to calculate the parameter $EG_{PJ,y}$): the existing plant started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion or*

retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity."

This is not applicable; as it has been mentioned above; this is a Greenfield project that started commercial operation on 15/12/2011.

"*In case of hydro power plants:*

- *One of the following conditions must apply:*
  - *The project activity is implemented in an existing single or multiple reservoirs, with no change in the volume of any of reservoirs; or*
  - *The project activity is implemented in an existing single or multiple reservoirs, where the volume of any of reservoirs is increased and the power density of each reservoir, as per the definitions given in the project emissions section, is greater than 4 W/m2; or*
  - *The project activity results in new single or multiple reservoirs and the power density of each reservoir, as per the definitions given in the project emissions section, is greater than 4 W/m2.*

In case of hydro power plants using multiple reservoirs where the power density of any of the reservoirs is lower than 4 W/m^2 all the following conditions must apply:

- *The power density calculated for the entire project activity using equation 5 is greater than 4 W/m2;*
- *Multiple reservoirs and hydro power plants located at the same river and where are designed together to function as an integrated project1 that collectively constitute the generation capacity of the combined power plant;*
- *Water flow between multiple reservoirs is not used by any other hydropower unit which is not a part of the project activity;*
- *Total installed capacity of the power units, which are driven using water from the reservoirs with power density lower than 4 W/m2, is lower than 15 MW;*
- *Total installed capacity of the power units, which are driven using water from reservoirs with power density lower than 4 W/m2, is less than 10% of the total installed capacity of the project activity from multiple reservoirs.*"

Not applicable, this is not a hydro power project, as it has been described in the VCS PD and verified during the on-site inspection, this is a wind farm project connected to the grid.

"*The methodology is not applicable to the following:*

- *Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site;*
- *Biomass fired power plants;*
- *A hydro power plant that results in the creation of a new single reservoir or in the increase in an existing single reservoir where the power density of the power plant is less than 4 W/m^2.*"

This is not applicable to this wind power plant, because this is a Greenfield project; where the baseline is the electricity delivered to the grid by the project activity that would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources.

"*In the case of retrofits, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is .the continuation of the current situation, i.e. to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance.*"

This is not applicable to this wind farm project, since this is a Greenfield project, the project does not involve any retrofit, replacements or capacity additions.

3.2.3 *Project Boundary*

According to the applicable methodology ACM0002 v13 "*the spatial extend of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the project power plant is connected to*". This has been verified by the assessment team throughout the on-site inspection and the review of documents from the grid administrator (ref. 16, 17) and the National Energy Commission (ref. 23a-23d) and has been found to be correct. The project boundary includes this wind farm project and all of the power plants connected to the SIC (Central Interconnected System).

As per the applied methodology requirements, the emission sources to be included for the baseline are the "CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity". No project activity emissions need to be considered for a wind farm project. Also according to the applied methodology, no leakage emissions have to be considered.

It has been verified by the review of the VCS PD (ref. 1g), the emission reductions estimations (ref. 12f), the grid emission factor calculation (ref. 24e) and the information from the grid (ref. 16, 23a, 23b, 27, 44) that these emissions have been correctly considered in this project activity.

3.2.4 *Baseline Scenario*

The baseline scenario for project activities that involve the installation of a new grid-connected renewable power plant/unit (Greenfield project) is defined in the applicable methodology ACM0002 v13 as: "*Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system"*."

Since the baseline scenario is defined in the applicable methodology, no further analysis is required; this is in line with the requirement of the VCS Standard v3.4, section 3.13.1. Additionally; different alternatives were not considered for the determination of the baseline, because according to the applied methodology, only one baseline is applicable for Greenfield projects, like this wind power plant.

The baseline scenario defined by the methodology ACM0002 v13 has been correctly indicated in the VCS PD (ref. 1g) and followed in the emission reductions calculations (ref. 12f, 24e).

3.2.5 Additionality

Since the project activity consists of the installation of a grid-connected renewable power plant, the PP has to apply the methodology ACM0002 version 13 (the latest version available at the beginning of the validation, currently version 14 of the methodology has been released, but version 13 is valid for validations until 31/05/2014). According to this methodology, the additionality of the project activity shall be demonstrated and assessed using the latest version of the UNFCCC Tool for the demonstration and assessment of additionality.

For the above mentioned reason, it has been verified that the PP correctly demonstrates the additionality of this project activity, following all the steps detailed in the "Tool for the demonstration and assessment of additionality" version 07.0, which is the latest version available. The steps mentioned in the tool and the verified information is detailed as follows:

(a) Step 0 Demonstration whether the proposed project activity is the first-of-its-kind:

This step has not been applied, because the project activity is not the first-of-its-kind. This is correct based on the information of the electricity generation in Chile (ref. 23a-23d).

(b) Step 1 Identification of alternatives to the project activity:

According to the CDM Validation and Verification Standard v5 for the identification of alternatives, it states the following: "*Where the baseline scenario is not prescribed in the approved methodology, the DOE shall assess the list of identified credible alternatives to the project activity in the PDD selected to determine the most realistic baseline scenario. Where the baseline scenario is prescribed in the approved methodology, no further analysis is required*".

Even though, this step is not applicable for this project activity, as the baseline is defined in the methodology ACM0002 v13, the VCS PD details the two alternatives mentioned in the applicable methodology in sub-step1a, which are:

- The proposed project activity undertaken without being registered as a CDM (VCS) project activity
- Continuation of the current situation

These both are realistic and credible alternative scenario(s) that comply with the mandatory laws (ref. 15, 16, 33) and regulations (sub-step 1b); it also has to be mentioned that neither in the region nor the country exists any enforcement for building renewable energy projects.

(c) Step 2 Investment analysis:

Through the assessment of this step, it has been verified that the PP correctly demonstrated in the PD (ref. 1g) and financial spreadsheet (ref. 12f) that the proposed project activity is neither "*a) the most economically or financially attractive"*, nor "*b) economically or financially feasible, without the revenues from the sale of CERs"* (VCU´s).

In order to demonstrate the above mentioned assumptions, the following assessment has been performed:

Sub-step 2a, 2b: Determine appropriate analysis method. In this case the PP determined that the Option III of the Tool "Benchmark analysis" is the most suitable for this project type. This has been found to be in line with the Tool because "*if the CDM project activity and the alternatives identified in Step 1 generate no financial or economic benefits other than CDM related income, then apply the simple cost analysis (Option I). Otherwise, use the investment comparison analysis (Option II) or the benchmark analysis (Option III)*." As the project generates revenue by the sale of electricity, Option I is not applicable. Also it is in line with the "Guideline for the assessment of investment analysis" guidance 19, as it states "*If the alternative to the project activity is the supply of electricity from a grid this is not to be considered an investment and a benchmark approach is considered appropriate*". "*The benchmark approach is therefore suited to circumstances where the baseline does not require investment or is outside of the direct control of the project developer, i.e. cases where the choice of the developer is to invest or not to invest*"

According to the Option III of the tool, (benchmark analysis) the discount rate and benchmark shall be derived from 1 of 5 (a - e) different sources and the PP has decided to use option "a)"

and apply the default benchmark of 10.3% for Energy Industries in Chile provided by the "Guideline for the assessment of investment analysis".

Sub-step 2c: Calculation and comparison of financial indicators. The PP indicated in the PD (ref. 1g) and financial spreadsheet (ref. 12f) the costs and revenues from the project activity and based on those values, the following assessment has been performed (for further information please refer to CL 4 in Appendix 2 of this document):

- **Identification of the investment decision:** according to the "Guideline on the assessment of investment analysis" v5, guidance 6 "*Input values used in all investment analysis should be valid and applicable at the time of the investment decision taken by the project participant*"; for this reason the PP clarified that the investment decision is April 2010. This has been verified to be correct, because even though the project was planned in 2007 (see detail below on AFE authorisations), is not until 21/04/2010, when the last authorisation for investment was issued (ref. 57b) and approved by the Board (ref. 72b, 06/05/2010), that the PP was certain of the project implementation.

  It is important to mention that since the project was conceived in 2007, the main reasons for the implementation were the costs savings to the holding (other Barrick's companies) by the use of renewable energy; the preparation for the change in the Chilean Law (law 20,257) and also because the project will be a significant example to the mining industry.
- **CAPEX:** This information has been obtained from the Authorization for Investment (AFE, ref. 57b) report from Barrick (PP) dated 21/04/2010. It has been verified that the first (US$18,200,000), second (US$18,926,000) and third (US$1,000,000) investment for this project were authorised in 2007 (ref. 57a-57b). The project was on hold for a long period of time and finally in April 2010 the AFE BRC-701(S2), that provides the authorisation for the final design and expenditure of additional US$ 9,908,955 required for the project activity, was approved by the Board. These AFE documents (ref.,72a-72e) are saved in the internal system of Barrick Chile Generación Limitada, in the section AFE Document Repository for Santiago (ref. 72d). Also the supporting evidence of the Turbines (ref. 78a), Towers (ref. 78b) and EPC for BOP (ref. 78c, engineering, procurement and construction for balance of plant) were provided by the PP. It was verified that the CAPEX has been correctly included in the financial spreadsheet (ref. 12f) and the calculations have been correctly performed.

  Additional information was reviewed and it was found that in Europe, the cost of a wind farm (ref. 80) varies between 1,533 US$/kW to 1,823 US$/kW (1,150€/kW - 1,350€/kW); in USA (ref. 82) the costs are between 1,400 US$/kW and 2,900 US$/kW; and in Chile this values is estimated in 2,300US$/kW (ref. 13). The cost of this project activity is 2,400 US$/kW, which has been considered above the average, but in line with the above mentioned references. The higher investment costs in Chile could be explained by a number of reasons, as further distances and higher transportation costs from production centres (this is not a cost included in the above mentioned price for Europe and represents 10% of the investment for this project activity); undeveloped wind power industry (providing limited suppliers for services associated to their transport, installation); lack of technical trained staff, inter alia.

  According to the Renewable Energy Foundation (ref. 77) the residual value for wind farm projects are likely to be well below 10% of the initial costs, moreover, most of these projects do not consider a residual value (ref. 74), given the high decommissioning costs. For these reasons, the assumption made by the PP of considering 20% of the wind turbines and towers as residual value (ref. 12f) has been found to be correct and conservative.

  It is worth noting that the Benchmark of this project activity (10.3%) is only reached if the CAPEX decrease by 29.8%.
- **Operation & Maintenance Costs:** The information for the O&M cost 7.7USD/MWh has been obtained from a publication of recognised authors in electricity matters in Chile and published by Systep Engineering and Design, a Chilean consulting firm highly specialised in the field of technical and economic studies of the energy sector, founded in 1989 (http://www.systep.cl/?page_id=7). Even this publication is from April 19th 2012 (after the investment decision). The value has been accepted because the correct value for this parameter is provided by the CNE (National Energy Commission in Chile) twice a year in the

node price reports (ref. 26a-26c) and it is also 7.7USD$/MWh (same value in both reports of 2010, 2011 and 2012). In addition the grid administrator (CDEC-SIC) used this same value from the node price reports for the variable non-fuel costs of wind farms in Chile. Furthermore, this cost (7.7USD$/MWh) is lower than the average values in Europe, where for load factors of 20% and 30%, the O&M costs are between 10 US$/MWh and 15 US$/MWh, respectively (ref. 63).

- **Energy Generation:** The estimation for the electricity generation was made considering the capacity of the wind farm (20MW), the load factor (27%), the operation of the plant (24 hours a day for the whole year, every year) and 3% of losses (from the generation until the injection point). There is an uncertainty for the electricity generation (e.g. availability of wind, availability of spare parts in case of failure), therefore the estimation made by the PP was considered correct and the value has been properly used in the financial spreadsheet (ref. 12f). Additionally, the electricity generation for the year 2012 was 13,155 MWh, which is only 28.7% of the annual estimations (45,885 MWh); thus the calculation made by the PP is a conservative approach for the investment analysis.
- **Energy Price:** the original support from the CNE of the electricity price estimation is not available, but an additional support also from CNE (publicly available), dated 20/12/2010 (same year of the defined investment decision), was provided (ref. 73) by the PP. The CNE (National Energy Commission of Chile) develops a price projections from 2010 to 2025 where the average value for energy is 90 US$/MWh (with higher values between 2010-2013). This document (ref. 73) was reviewed by the assessment team (including the technical area expert) and because the energy price reported is lower than the value used by the PP in the financial analysis (but very similar, as the information is from the same source), it has been accepted and considered conservative.

  The energy price is not only the price of the electricity, but also the sale of the firm capacity.

  The firm capacity estimated for this project activity was based on a study from the University of Chile for 2006 (ref. 59). Even though this information is prior to the investment decision, it can be considered consistent with the information defined by PNUD for wind farms in Chile in 2007 (ref. 60) and with the information obtained from the SIC for 2011 (ref. 67). In addition, according to the estimations made by the PP, the firm capacity for this project activity is 3.4 MW and the real firm capacity determined by the grid administrator (CDEC-SIC) for 2012 is 0.4 MW - 0.7 MW. As the firm capacity of the plant is part of the revenue, the value considered by the PP is a conservative approach.

  The firm capacity price is determined by the grid administrator (CDEC-SIC) and for this assessment the average capacity price is obtained from the "*Informe_Tecnico PNP_Fijacion_Abril_2010*" (ref. 19b), which is the correct source.

  Furthermore, according to the sensitivity analysis (ref. 12f) it was verified that an increase as high as 48.7% in the energy price is required to reach the project benchmark of 10.3%.
- **Load Factor:** The load factor used for the analysis has been obtained from a study developed by Seawind (ref. 51), a third party contracted by Barrick Chile Generación Limitada. This study reports a projection for the wind farm of 31% P50 and 24% P20. For the investment analysis a load factor of 27% was used (the simple average). The load factor of 27% has been accepted because the average load factor for the wind farm projects in Chile was 21% for 2010 (ref. 64) and 22.4% for 2011 (ref. 67). In addition, alternative investment analysis have been performed using the 24% and the 31% of load factor and in none of these cases the Benchmark (10.3%) was reached. Using a load factor of 24%, the IRR results were: 4.18%; 4.78% including VCU's revenues; 5.60% including NCRE certificates revenues; and 6.17% including NCRE certificates and VCU's revenues. Using a load factor of 31%, the IRR results were 6.92%; 7.55% including VCU's revenues; 8.44% including NCRE certificates revenues; and 9.04% including NCRE certificates and VCU's revenues.
- **NCRE (non-conventional renewable energy) certificate price:** The NCRE certificates do not have a public market price; moreover at the moment of the investment decision, no value was attributable to this revenue. Even though, the PP has considered in the investment decision a value of USD$13/MWh for this income. This value has been provided by the

Ministry of Energy as an average price for 2010 (ref. 58). Taking into account that this is an E-policy implemented after 11/11/2001 it has been considered a conservative approach to include this revenue in the financial analysis.

- **Other information of the investment analysis:** the depreciation in the investment analysis has been performed in 10 years; this is in line with the Internal Revenue Service in Chile (SII) that indicates a 10 year useful life for the generation equipment and the equipment used in the generation of the electricity sector (ref. 83a).

  The income tax in Chile is defined by the Internal Revenue Service (SII) and it is 17% from 2004 to 2010 and 20% from 2011 onwards (ref. 83b). The correct income tax of 17% has been indicated in the investment analysis (ref. 12f).

  Based on the above discussed information and the review of the investment analysis (ref. 12f), it can be confirmed that the input data is consistent for this project activity and that the analysis has been performed in line with the "Guideline for the assessment of investment analysis" version 5.

  The IRR obtained with the above mentioned information is 5.40% and including the NCRE certificates revenues, the IRR increases to 6.90%; both values are below the Benchmark (10.3%). Even when the NCRE certificates and the VCUs revenues are included in the analysis the IRR reaches the value 7.45%, also below the Benchmark.

Sub-step 2d: Sensitivity analysis.

The VCS PD (ref. 1g), financial spreadsheet and the sensitivity analysis (ref. 12f), are in line with the requirements of the "Guideline on the assessment of investment analysis" paragraphs 20 and 21; where the CAPEX and energy sale prices were analysed with a variation of ±10% and in neither of the cases the Benchmark was reached. Also the load factor (27%) has been sensibilised from 24% to 31% (values from the wind study, which is more conservative than increasing in 10% the electricity production) and the results are also below the Benchmark.

Additionally, the CAPEX was decreased by 10% and in addition the energy price was increased by 10% and the value obtained (7.96%) was also below the Benchmark (10.3%). In this scenario, the IRR including the VCU's revenues is 8.57%; including the NCRE credits revenues, it is 9.40%; and including the NCRE certificates and the VCUs revenues, it increases to 9.98%; all of these results are below the Benchmark.

According to the sensitivity analysis performed by the PP, it is only possible to reach the Benchmark of 10.3%, if the electricity price increases by 48.7% or the CAPEX decreases by 29.8%.

Based on the above information it can be confirmed that after performing the sensitivity analysis in line with the requirements of the "Guideline on the assessment of investment analysis" v5 the proposed project activity resulted in neither the most economically or financially attractive option, nor is it economically feasible, without the revenues from the sale of VCU´s and NCRE certificates.

(d) Step 3 Barriers analysis:

No barrier analysis has been performed in this project activity, which is in line with the "Tool for the demonstration and assessment of additionality" version 07.0. The barrier analysis is only an optional step of the tool, if after the investment analysis the outcome is that the project activity is not financially attractive; as in this case.

(e) Step 4 Common practice analysis:

Common practice has been determined using the "Guidelines on Common Practice" version 02.0; which is correct, as this project activity applies measure (ii) of the "Tool for the demonstration and

assessment of additionality". The applicable geographical area has been correctly identified as the entire country (Chile) and the five steps of the tool have been completed has follows:

Step 1: calculate applicable capacity or output range as ±50% of the total design capacity or output of the project activity (20MW for this project activity). In this case the results are 10MW – 30 MW of installed capacity.

Step 2: Identify similar projects (both CDM/VCS and non-CDM/VCS) which fulfil all of the following conditions:

(a) "*The projects are located in the applicable geographical area*"; this has been correctly identified in the VCS PD table 13. Based on the information of the National Energy Commission (ref. 23a-23d) there is no additional wind energy produced in Chile.

(b) "*The projects apply the same measure as the proposed project activity*"; this has been found correct, as only wind electricity projects have been used for the determination of the common practice (ref. 1g).

(c) "*The projects use the same energy source/fuel and feedstock as the proposed project activity, if a technology switch measure is implemented by the proposed project activity*". The same energy source is used in all the wind farms and it is the power of the wind; no technology switch measure has been implemented in this project activity.

(d) "*The plants in which the projects are implemented produce goods or services with comparable quality, properties and applications areas (e.g. clinker) as the proposed project plant activity*". This is in line with the similar projects identified, as all of them are wind farm projects that generate electricity.

(e) "*The capacity or output of the projects is within the applicable capacity or output range calculated in Step 1*"; this has been already defined between 10 MW-30 MW and correctly indicated in the VCS PD table 12.

(f) "*The projects started commercial operation before the project design document (CDM-PDD) is published for global stakeholder consultation or before the start date of proposed project activity, whichever is earlier for the proposed project activity*". In this case the starting date is 15/12/2011 which is the earliest date, so all the wind farm projects that started commercial operation before 15/12/2011 have been adequately considered in table 12 of the VCS PD.

Step 3: Within the projects identified in step 2, identify those that are neither registered, submitted for registration nor undergoing validation (N_{all}). After the document review (ref. 23a-23d) it was verified that all the wind farm project in Chile that comply the conditions of step 2 are part of the CDM system; the only exception is the proposed project activity, for this reason $N_{all}=1$.

Step 4: Within similar projects identified in step 3, identify those that apply technologies that are different to the technology applied in the proposed project activity (N_{diff}). In this case N_{diff} is "0", because the only alternative in step 3 is the proposed project activity.

Step 5: Calculate factor $F=1-N_{diff}/N_{all}$ representing the share of similar projects (penetration rate of the measure/technology) using a measure/technology similar to the measure/technology used in

the proposed project activity that deliver the same output or capacity as the proposed project activity. It was verified that as per the results of steps 3 and 4, F resulted in a value of "1".

According to the Guideline (ref. 6), "*the proposed project activity is a "common practice" within a sector in the applicable geographical area if the factor F is greater than 0.2 and Nall-Ndiff is greater than 3*". Based on this information it can be concluded that the proposed project activity is not common practice because N_{all}-N_{dif} = 1.

Based on the above assessment of the alternatives to the project activity, the additionality and the common practice, it can be concluded that the steps defined in the "Tool for the demonstration and assessment of additionality" version 07.0 were rigorously followed by the PP and that the additionality of the project has been clearly demonstrated.

3.2.6 Quantification of GHG Emission Reductions and Removals

The GHG emission reductions calculations have been performed in accordance with the applicable methodology ACM0002 v13 and "Tool to calculate the emission factor for an electricity system" v4.

The emission reductions (ERs) are calculated as follows (equation 11 of the methodology):

$ER_y = BE_y – PE_y$

Where:

ER_y: Emission reductions in year y (tCO_2e/y)

BE_y: Baseline emissions in year y (tCO_2e/y)

PE_y: Project emissions in year y (tCO_2e/y)

Quantification of baseline emissions

In accordance with the applicable methodology, *"the baseline includes only CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaces due to the project activity";* for this reason the applicable formula (6) of the methodology has been correctly indicated in the VCS PD (ref. 1g), section 3.1 and it is:

$$BE_y = EG_{PJ,y} * EF_{grid,CM,y}$$

Where:

- $EG_{PJ,y}$: Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year *y* (MWh/yr)
- $EF_{grid,CM,y}$: Combined margin CO_2 emission factor for grid connected power generation in year *y* calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (tCO_2/MWh)

Considering that this project activity is a Greenfield power plant $EG_{PJ,y}$ is equal to $EG_{facility,y}$; where $EG_{facility,y}$ represents the quantity of net electricity generation supplied by the project plant/unit to the grid in year *y* (MWh/yr). Hence, the approach adopted by the Project Proponent to calculate the baseline emissions is in accordance with the applied methodology ACM0002 version 13.

Regarding the calculation of the parameter $EF_{grid,CM,y}$ (grid emission factor), it was verified that it was calculated according to the "Tool to calculate the emission factor for an electricity system" v 4.0. The calculation of the grid emission factor was provided by the PP in the spreadsheet "*151113_Grid Emission Factor 2012_V9.xlsx*" (ref. 24e); a step-by-step assessment is detailed below:

Step 1: Identify the relevant electricity systems:

The electric power system identified by the PP is Chile's Central Interconnected System (SIC). This approach has been considered correct, since the following information was validated:

- The project is located in Chile, in the Coquimbo Region, which is within the geographical boundaries of the SIC (from the Antofagasta District in the North to Lake District in the South). There are other interconnected systems in Chile, but they are not connected to the SIC.
- There are no electricity imports or exports applicable for this electricity system. There are electricity imports in Chile, but only for the Northern Electricity System (SING), and since it is not connected to the SIC, it does not apply.

Step 2: Choose whether to include off-grid power plants in the project electricity system:

The PP has indicated in the VCS PD that off grid power plants were not included in the calculation (i.e. Option I of the tool). This approach is considered valid, because the electricity grid in Chile is stable and reliable and Off-grid generation is not significant.

Step 3: Select a method to determine the operating margin (OM):

It is indicated in the VCS PD that the Operating Margin was calculated using the Simple Adjusted OM method. According to the applied Tool, there are no constraints to the application of this method to determine the operating margin; simple OM and dispatch data analysis are the only methods for calculating the OM that have special requisites. Furthermore, the total electricity generated by low-cost/must-run power plants represents more than 50% of the total grid generation during the last five years (ref. 23b). so according with the applied Tool, Simple OM method could not have been used. Considering the aforementioned reasons, the election of simple adjusted OM has been deemed valid.

The OM was chosen to be calculated using ex ante option, as per paragraph 36 (a) of the Tool (ref. 4b), which considers a 3 year generation-weighted average based on the latest information available, namely years 2010, 2011 and 2012. The data vintage was documented in section 3.1 of the VCS PD as per paragraph 38 of the applicable Tool.

Step 4: Calculate the operating margin factor according to the selected method:

Simple adjusted OM is indicated to be calculated as per equation 8 of the Tool

$$EF_{grid,OM-adj,y} = (1-\lambda_y) \times \frac{\sum_m EG_{m,y} \times EF_{EL,m,y}}{\sum_m EG_{m,y}} + \lambda_y \times \frac{\sum_K EG_{k,y} \times EF_{EL,k,y}}{\sum_k EG_{k,y}}$$

Where

- $EF_{grid,OM-adj,y}$ = Simple adjusted operating margin CO2 emission factor in year y (tCO_2/MWh)
- λ_y = Factor expressing the percentage of time when low-cost/must-run power units are on the margin in year *y*
- $EG_{m,y}$ = Net quantity of electricity generated and delivered to the grid by power unit *m* in year *y* (MWh)
- $EG_{k,y}$ = Net quantity of electricity generated and delivered to the grid by power unit *k* in year *y* (MWh)

- $EF_{EL,m,y}$ = CO_2 emission factor of power unit *m* in year *y* (tCO_2/MWh)
- $EF_{EL,k,y}$ = CO_2 emission factor of power unit *k* in year *y* (tCO_2/MWh)
- m = All grid power units serving the grid in year *y* except low-cost/must-run power units
- k = All low-cost/must run grid power units serving the grid in year *y*
- y = The relevant year as per the data vintage chosen in Step 3

It was verified that the electricity generation data ($EG_{m,y}$, $EG_{k,y}$) and emission factors ($EF_{EL,m,y}$ and $EF_{EL,k,y}$) were correctly calculated and reported.

Generation data for years 2010, 2011 and 2012 were obtained from the National Energy Commission; an official, publicly available source which can be downloaded from the following link:
http://www.cne.cl/images/stories/estadisticas/energia/Electricidad/generacion_bruta_sic_sing.xls
It was verified that the generation data used in the calculation of the emission factor was consistent as in ref. 23b.

Regarding the emission factor, for most of the plants that generated electricity during 2010 and 2011, both generation and fuel consumption data was available, so the emission factor was calculated using Option A1, eq. (2) of the Tool:

$$EF_{EL,m,y} = \frac{\sum_i FC_{i,m,y} \times NCV_{i,y} \times EF_{CO2,i,y}}{EG_{m,y}}$$

Where:

- $EF_{EL,m,y}$ = CO_2 emission factor of power unit *m* in year *y* (t CO_2/MWh)
- $FC_{i,m,y}$ = Amount of fuel type *i* consumed by power unit *m* in year *y* (Mass or volume unit)
- $NCV_{i,y}$ = Net calorific value (energy content) of fuel type *i* in year *y* (GJ/mass or volume unit)
- $EF_{CO2,i,y}$ = CO_2 emission factor of fuel type *i* in year *y* (tCO_2/GJ)
- $EG_{m,y}$ = Net quantity of electricity generated and delivered to the grid by power unit *m* in year *y* (MWh)
- *m* = All power units serving the grid in year *y* except low-cost/must-run power units
- *i* = All fuel types combusted in power unit *m* in year *y*
- *y* = The relevant year as per the data vintage chosen in Step 3

- Fuel consumption data $FC_{i,m,y}$ was verified against the data published in CDEC-SIC's 2012 yearbook (ref. 16) , which reports data from 2002 until 2011. No inconsistencies were found in this regard. For some power plants whose fuel consumption was not directly available in the yearbook, specific fuel consumption data (publicly available from CDEC-SIC's biannual node price reports) was used to calculate the fuel consumption. The data used in the calculation was checked against Node Price Reports (ref. 26a-26c) and it was deemed correct.

- The Net calorific values $NCV_{i,y}$ were obtained from 2011's National energy Balance (ref. 27). Although it is not explicitly reported in the National energy Balance, it was confirmed by the authority (ref. 28c) that NCV values reported in that document were considered as HHV, so they were adjusted as per IPCC 2006 Guidelines volume 2 (ref. 28a), by multiplying said factors by 0.95 (or 0.9 if the fuel is in gaseous state).

- CO_2 emission factor for the different fuels used, $EF_{CO2,I,y}$, were obtained from IPCC 2006 Guidelines, Volume 2 Chapter 1, Table 1.4, lower 95% confidence interval, as required in the applied Tool.

Fuel consumption data is still not publicly available for 2012 generation, so all the plants that generated electricity in 2012 from fossil fuels were calculated using Option A2, eq. (3) of the Tool.

When only generation data was available for 2010 and 2011, Option A2, eq. (3) of the tool was applied.

$$EF_{EL,m,y} = \frac{EF_{CO2,m,i,y} \times 3.6}{\eta_{m,y}}$$

The Efficiency factors $\eta_{m,y}$ were obtained from Appendix 1, table 1 of the Tool. It was verified that the factors applied were applied correctly for old (year 2000 and before) and new generation units (commissioned after year 2000). The equation above was also used in the calculation of 2010 and 2011 OMs, in the cases when only the generation data was available (and not the fuel consumption).

The set of low-cost/must-run units was determined based on the type of fuel that the generation unit uses. All Coal, Diesel, Fuel Oil, Gas and Petcoke fuelled power plants were considered as NON-LCMR, while all hydro, wind and biomass were considered as LCMR. The total energy generated by LCMR plants was calculated using this definition. Only one fossil fuel power plant was included in the set of LCMR, due to its low operating costs; because of this reason, the emission factor for LCMR units was different to 0, and was calculated in accordance with the Tool.

Lambda factor λ_y was calculated for years 2010, 2011 and 2012. After the review of the data it was verified that it was calculated according to the steps in the Tool:

- Step i) Load duration curves were plotted for each year using hourly generation data sorted in descending order. The input data in the spreadsheet (ref. 24e) was verified against the main source from the CDEC-SIC (ref. 44) and no difference was found.
- Step ii) The annual generation of LCMR units was correctly determined for all three years.
  Step iii) A horizontal line was plotted so that the area under the horizontal line and the load duration curve to the right of the intersection point corresponds to the total energy generated by LCMR units. It was verified that the area under the curve is consistent with the LCMR-generated energy and that the intersection point between both curves was correctly determined.
- Step iv) The "Number of hours for which LCMR sources are in margin" was determined for years 2010, 2011 and 2012. The resulting values are λ_{2010}: 0.0065; λ_{2011}: 0.0001; λ_{2012}:0.0000.

The assessment described above represents the calculations relevant to non LCMR power units; the calculations related to LCMR units were performed analogously. Finally, the OM was calculated as the 3-year generation-weighted average, in line with the indications of the Tool paragraph 36(a).

The final value for the Operating Margin is 0.6555 tCO2e/MWh. As a result of the discussion mentioned above, the aforementioned value was considered correct.

Step 5: Calculate the build margin (BM) emission factor:

The Build Margin was calculated using Option 1 (ex-ante calculation). This choice was clearly documented in the VCS PD. After the review of the documentation provided by the PP (EF calculation spreadsheet (24e), CDEC-SIC yearbook (ref. 16, 17)), it was verified that the sample

group of power units that was used to calculate the Build Margin was determined according to paragraph 71 of the Tool.

A step-by-step assessment of the calculation of the parameter $EF_{grid,BM,y}$ is described below:

a) The set of 5 most recent power units of the project electricity system ($SET_{5\ unit}$) was determined; all units within this sample were installed in 2012. The commissioning date of the power plant only indicates year, so with the information reported by the PP in the EF calculation spreadsheet (ref. 24e) it is not possible to determine which are the 5 most recent plants; it is only indicated that they were installed in 2012. As a conservative approach, all the power units installed during 2012 were considered in this sample. Despite this, even if all the power plants installed during 2012 were considered, the sample SET_5 comprises less than 20% of 2012's annual electricity generation (AEG_{total}). This is clearly indicated in the GEF calculation spreadsheet (ref. 24e).

b) SET>20% was determined as per paragraph 71 (b) of the tool, based on the electricity generated during 2012 and the commissioning date informed in ref. 23a. For power plants where one or more units were added or retrofitted, the oldest commissioning date was used, so as to avoid including them in the calculation of the emission factor, as per paragraph 70 of the Tool. The date of commissioning of the Power units installed in 2007 were identified with month and day (ref. 71), so as to correctly identify the newer power units that comprise 20% of the annual generation.

Units identified as CDM projects in the calculation spreadsheet were discarded from the sample group and from AEG_{total}. It was verified that all the power units registered as CDM projects were correctly identified as such.

c) By the comparison of $SET_{5\ unit}$ and $SET_{\geq 20}$, it became clear that $SET_{\geq 20}$ comprises the larger annual electricity generation, so $SET_{\geq 20}$ = SET_{sample}. It was verified that both samples were correctly calculated using reliable sources; therefore, the determination of SET_{sample} is considered valid.

The oldest power plant included in $SET_{\geq 20\%}$ was commissioned on 2007, so there are no power units older than 10 years to be discarded from the sample; hence, steps d) e) and f) of paragraph 71 of the Tool were ignored.

The Build Margin was correctly calculated as equation (13) of the Tool using 2012's generation data:

$$EF_{grid,BM,y} = \frac{\sum_m EG_{m,y} \times EF_{EL,m,y}}{\sum_m EG_{m,y}}$$

The resulting value for $EF_{grid,BM,2012}$ is 0.7188 tCO_2e/MWh.

Step 6: Calculate the combined margin emission factor:

The combined margin was calculated using the weighted average CM, as per equation (14) of the Tool:

$$EF_{grid,CM,y} = EF_{grid,OM,y} \times w_{OM} + EF_{grid,BM,y} \times w_{BM}$$

W_{OM} and W_{BM} were defined as. W_{OM} = 0.75 and w_{BM} = 0.25; this is consistent with paragraph 81 (a) of the tool. Simplified CM does not apply for projects in Chile.

The resulting value for $EF_{grid,CM,y}$ is 0.6713 tCO_2e/MWh. The parameters $EF_{grid,OM,y}$ and $EF_{grid,BM,y}$ were verified to be calculated correctly, and the weights w_{OM} and w_{BM} were determined in accordance with the Tool; therefore, the parameter $EF_{grid,CM,y}$ was deemed correct.

Quantification of project emissions

Based on the information of the applicable methodology ACM0002 v13; for most renewable power generation project activities, $PE_y = 0$. Project emissions are only considered for the following cases:

- Geothermal power plants: fugitive emissions of CO_2 and CH_4 from non-condensable gases contained in geothermal steam.
- CO_2 emissions from combustion of fossil fuel for electricity generation in solar thermal power plants and geothermal power plants (the use of fossil fuel for the back up or emergency purposes (e.g. diesel generator) can be neglected.
- For hydro power plants, emissions of CH_4 from the reservoir.

Based on the above mentioned information, no project emissions have to be considered for this wind power plant that has a backup generator installed. This has been correctly indicated in the PD section 3.2.

Quantification of leakage

The applicable methodology indicates "*No leakage emissions are considered. The main emissions potentially giving rise to leakage in the context of electric sector projects are emissions arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g. extraction, processing, transport). These emissions sources are neglected*". This has also been correctly indicated in the VCS PD section 3.3.

Although there is an inherent uncertainty in the emissions reductions to be obtained by this project activity that can't be resolved prior to project implementation (e.g. wind availability), it can be confirmed that no uncertainties associated with the calculations of emissions were found.

Given the above description for the identification of the baseline emissions, project emissions and leakage, it can be confirmed that: the data and parameters used are considered reasonable in the context of the project; and that all the estimates of the baseline emissions can be replicated using these values, which have been correctly listed in the VCS Project Description (ref. 1g), Emission Factor calculation spreadsheet (ref. 24e) and financial spreadsheet (ref. 12f); thus it can be confirmed that the applicable methodology (ref. 2) and Tool (ref. 4b) have been correctly followed for the quantification of the GHG emission reductions.

3.2.7 *Methodology Deviations*

No methodology deviation has been applied in this project activity.

3.2.8 *Monitoring Plan*

In accordance with the requirements of the applicable methodology ACM0002 v13, the only parameters that need to be monitored are $EG_{facility,y}$ and $EF_{grid,CM,y}$; and this second parameter has to be calculated as per the "Tool to calculate de emission factor for an electricity system".

The PP selected the ex-ante option for the parameter $EF_{grid,CM,y}$, following the indications of the Tool and the procedure described in section 3.2.6 of this report.

For this reason, the only parameter to be monitored ex-post is the "*Quantity of net electricity generation supplied by the project plant/unit to the grid in year y*" ($EG_{facility,y}$).

Based on the document review (ref. 43, 52, 70, 75a, 75b) and the on-site inspection it can be confirmed that this parameter is measured continuously by the Jem Star JS-09R5010-46 bidirectional electricity meter and recorded once a month by the PP (in 15 minute intervals). The data is downloaded from the meter following the internal procedure (ref. 45b) and saved in an excel file (finally on a daily interval). The PP also has to prepare a monthly report with the recorded information for the grid administrator. The Jem Star is the invoicing meter and is located in Punta Colorada Substation (connection point to the grid); for this reason the grid administrator (CDEC-SIC) has access to the information of this meter.

Based on the above mentioned information, it can be confirmed that the record-keeping practices result in the generation of sufficient levels of documentary evidence for the project assessment.

The accuracy of this meter is 0.2% (class 0.2), which is in compliance with the technical regulation for security and quality for medium systems in Chile (ref. 79). The PP has considered a 2 year verification frequency for this meter; this has been found to be correct and conservative, as there is no defined calibration frequency for electricity meters in Chile and because the manufacturer recommended a 4 year calibration frequency (ref. 76a).

The PP also reported two additional electricity meters Schneider ION 8600, with serial numbers PT-0901A398-01 and PT-0901A397-01 (accuracy 0.2%) that are the property of the PP and are installed in the control room. Each of these meters records the electricity generation of 5 wind turbines (already discounting the electricity used for the electricity generation, but not discounting the electricity consumption from the office and control room; as it was verified by the technical area expert by the review of the layout of the plant (ref. 52) and the on-site inspection.) The PP has also established a 2 year verification frequency for these meters; this is a conservative approach because according to the manufacturer's recommendation (Schneider Electric), no calibration is required for these meters (ref. 76b).

In line with the grid (SIC) regulations, the PP has to report hourly the electricity generation of the wind farm and for these reports the information of the ION 8600 meters is used.

Given that the Jem Star meter records the electricity generation of the wind farm project and another generation unit, the PP has an approved procedure (ref. 45b) to determine the electricity generation by the wind farm project. The electricity generation of the wind farm is also informed once a month by the grid administrator in the IFAC (Invoicing Reports), which are the records of the sold electricity reported by the authority (CDEC-SIC), so these are used to crosscheck the electricity injections of the project activity. Even though controls and procedures are in place to avoid intentional or unintentional alteration or destruction of data, the crosscheck with the authority (CEDC-SIC) reports (IFAC's), guarantees that the real electricity generation supplied to the grid is being used.

According to the applicable methodology the parameter $EG_{facility,y}$ involves "*(i) The quantity of electricity supplied by the project plant/unit to the grid; and (ii) The quantity of electricity delivered to the project plant/unit from the grid*". The first point *(i)* has been described above and as it is

reported by the Chilean authority, the CDEC-SIC, it can be considered correct. The second point *(ii)* is reported as a whole by the Jem Star meter and the CDEC-SIC (this involves the electricity consumption of the office and control room of the project activity and other generation unit), for this and in order to be conservative, the entire consumption recorded by the Jem Star meter and reported by the CDEC-SIC in the monthly IFACs is discounted from the monthly electricity injections of the project activity to the grid, which is a correct procedure.

Based on the on-site inspection interviews, it can be confirmed that the roles and responsibilities of the personnel working in the project activity are well defined for the correct operation of the project activity and the roles are as follows:

- Head of Operation: Leads the technical and environmental management of the plant and is the responsible person for CDEC-SIC.
- Plant Supervisor: Is responsible for the daily operation and control of the plant. Is also in charge of the maintenances including the costs, purchase orders and environmental reports.
- Shift Manager: In charge of the daily operative tasks, including the hourly report from the generated electricity to the CDEC-SIC.
- Operators: have to operate the plant; including maintenances.

These roles and responsibilities have been correctly reported in the VCS PD (ref. 1g) and it can be confirmed that the controls and trainings (ref. 42) are in place to ensure that the personnel are sufficiently qualified for the tasks that they are performing.

Additionally to the above procedure for the account of the $EG_{PJ,y} = EG_{facility,y}$ parameter, it was verified during the on-site inspection that the equipments were in good condition and that the PP has the necessary procedures in place (maintenance manual ref. 45c, procedure for data downloaded from the invoicing meter ref. 45b). Also the Plant Supervisor (ref. 45d) prepares a monthly executive report for the management of Barrick Chile Generación Limitada in order to report all the details of the weekly operation; these reports, amongst others, ensure the management oversight and accountability of the monitoring process in the plant.

Based on the above mentioned information, it can be confirmed that in section 4.2 of the VCS PD, the PP has reported, in line with the applicable methodology, the relevant information regarding the monitoring conditions, frequency, data units, data source and the QA/QC procedure for the parameter $EG_{facility,y}$.

3.3 Environmental Impact

In accordance to Chilean law N° 19,300 on General Environmental Foundation, and its Regulation (Decree 30/97), every project detailed in article 3 of the Decree and article 10 of the law shall be subjected to the Environmental Impact Assessment System by presenting a DIA (Environmental Impact Declaration) or an EIA (Environmental Impact Assessment).

For the case of Punta Colorada Wind Farm Project Phase I, it falls within the type of projects that only need to present a DIA and not an EIA; as it is a "*Power Plants greater than 3 MW*" (article 5 of the Decree and 11 of the law).

In order to comply with the regulation, Laura Emery, the legal representative of Barrick Chile Generación Limitada, presented, on 12/07/2007, the Environmental Impact Declaration (DIA – ref. 21, 22), to the Environmental Assessment Service (SEIA) of Chile. Then, after the approval of all the corresponding authorities, on 30/10/2007 the Environmental Qualification Resolution (RCA – ref.33) was issued by the Environmental Commission of Coquimbo Region (jurisdictional authority of the project activity), because the project complies with all the environmental regulations and has obtained all the required sectoral permits.

This RCA N°186 (ref. 33) was later communicated to the project proponent on 08/11/2007 by the Secretary of the Environmental Commission of Coquimbo Region. All the details of the study and the reviews by the authority are publicly available on the website of the SEIA.

3.4 Comments by stakeholders

Based on the document review it was verified that two public consultations were performed; but only records of the second stakeholder consultation 04/04/2013 were available (ref. 30a-30f). The photos of the public consultation (ref. 30f) and the comments raised by the stakeholders (ref. 30e) were provided by the PP and in section 6 of the VCS PD a summary of these questions are provided.
The presentation shown during the stakeholder consultation (ref. 30c) contained details of the wind farm project, information about climate change, GHGs and the intention of the PP to participate in the VCS. To confirm their participation, the stakeholders signed the attendance list providing their name, institution, national ID number and signature.
By phone conversation with stakeholders, it was verified that the information provided by the PP is correct and that one of the main concerns of the local communities is waste generation (plastics), but no opposition to the project was identified. During the on-site inspection it was verified that the area was clean and special containers for different type of waste were installed.

Besides these stakeholder consultations; during the environmental evaluation stage (required by the Chilean law) relevant authorities visited the project activity on 09/04/2008 (before starting construction) and then on 20/05/2009 in order to confirm that the information indicated in the DIA was in line with the project activity and no issue was raised. All this information is publicly available in the government website http://seia.sea.gob.cl/expediente/expedientesSyF.php?modo=ficha&id_expediente=2253615 .

4 VALIDATION CONCLUSION

SGS United Kingdom Limited has been contracted by Barrick Chile Generación Limitada to perform the validation of the project: "Punta Colorada Wind Farm Project Phase I".

The validation was performed in accordance with the VCS Standard version 3.4 requirements and host country criteria, as well as, criteria given to provide for consistent project operations, monitoring and reporting.

1 CAR and 8 CLs were raised during the assessment. The response by the PP to these findings was satisfactory and they were properly closed (details in appendix 2 of this report).

SGS confirms that the project meets the requirements of the VCS and is recommended for registration with the VCSA.

Signed on behalf of the Verification Body by Authorized Signatory

SGS United Kingdom Limited

Dated: 04/12/2013	Dated: 05/12/2013
Signature:	Signature:
	
Lead Assessor: Paulina Kellenberger	**Technical Reviewer: Michael Wu**

Appendix 1 REFERENCE LIST

PD Version	Date of Revision	Main changes and reason for Revision (non-exhaustive), Section in PD where changes were made
Version 1	27/09/2013	Original version uploaded to the VCS project pipeline
Version 2	11/10/2013	Correction in the estimation of ERs (CL 1). Geographical coordinates included (CL 2). Benchmark for financial analysis modified (CL 3), clarification with the common practice analysis (CL 5), EF updated (CAR 6, CL 7), and compliance with the VCS PD template improved (CL 8), section 4.2 parameter EGfacility,y corrected (CL 9)
Version 3	04/11/2013	Section 4.3 corrected (CL 8), Section 4.2 corrected (CL 9)
Version 4	06/11/2013	Section 4.3 corrected (CL 8)
Version 5	14/11/2013	Decimal separator corrected, NCRE certificates included in table 7 (CL 8)
Version 6	15/11/2013	Grid emission factor corrected (CL 7)
Version 7	26/11/2013	Modification in the number of days corresponding to 2011 (CL 8)

1a. PD version 001 dated 27/09/2013 entitled “DRAFT_PDD_1149_27Sep2013.pdf”

1b. PD version 002 dated 11/10/2013 entitled “PCWF-VCS Project Description _v2.doc”

1b. PD version 002 dated 11/10/2013 clean version entitled “PCWF-VCS Project Description _v2.pdf”

1c. PD version 003 dated 04/11/2013 entitled “41113_PCWF-VCS Project Description _v8.doc”

1c. PD version 003 dated 04/11/2013 clean version entitled “41113_PCWF-VCS Project Description _v8.pdf”

1d. PD version 004 dated 06/11/2013 track changes entitled “71113_PCWF-VCS Project Description _v9.doc”

1d. PD version 004 dated 06/11/2013 clean version entitled “71113_PCWF-VCS Project Description _v9.pdf”

1e. PD version 005 dated 14/11/2013 track changes entitled “141113_PCWF-VCS Project Description _v10.doc”

1e. PD version 005 dated 14/11/2013 clean version entitled “141113_PCWF-VCS Project Description _v10.pdf”

1f. PD version 006 dated 15/11/2013 track changes entitled “151113_PCWF-VCS Project Description _v11.doc”

1f. PD version 006 dated 15/11/2013 clean version entitled “151113_PCWF-VCS Project Description _v11.pdf”

1g. PD version 007 dated 26/11/2013 track changes entitled “261113_PCWF-VCS Project Description _v12.doc”

1g. PD version 007 dated 26/11/2013 clean changes entitled "261113_PCWF-VCS Project Description _v12.pdf"
2. ACM0002 version 13.0.0.pdf – Consolidated baseline methodology for grid-connected electricity generation from renewable sources version 13.0.0
3. Tool for the demonstration and assessment of additionality v7.0.0.pdf
4. Tool to calculate the emission factor for an electricity system v03.0.0.pdf
4b. Tool to calculate the emission factor for an electricity system v04.0.pdf
5. Guidelines on the assessment of investment analysis v05.pdf
6. Guideline on Common Practice v02.0.pdf
7a. VCS Program Guide, v3.4.pdf
7b. VCS Program Guide, v3.5.pdf
8a. VCS Standard, v3.3.pdf
8b. VCS Standard, v3.4.pdf
9a. VCS Validation Verification Manual, v3.0.pdf
9b. VCS Validation Verification Manual, v3.1_1.pdf
10a. VCS Program Definitions, v3.4.pdf
10b. VCS Program Definitions, v3.5.pdf
11. VCS Project Description Template, v3.1.doc
11b. VCS Project Description Template, v3.2_0.doc
12ª. 8613_PCWF .xlsx – financial spreadsheet version 1
12b. 111013_Modelo PCWF_V2.xlsx – financial spreadsheet version 2
12c. 311013_Modelo PCWF_V6 .xlsx – financial spreadsheet version 3 (internal version 6)
12d. 71113_Modelo PCWF_V7.xlsx – financial spreadsheet version 4 (internal versión 7)
12e. 141113_Modelo PCWF_V8.xlsx – financial spreadsheet version 5 (internal version 8)
12f. 261113_Modelo PCWF_V9.xlsx – financial spreadsheet version 6 (internal version 9)
13. BezerraMocarquerBarrosoRudnick 2012.pdf – technical report Energy Challenges in Brazil and Chile dated 19/04/2012
14. PCWF Energy Balance 2012.xlsx – internal records for electricity generation by the PP
15. Carta Inicio Operación Comercial 15 dic 2011.pdf – letters sent by PP announcing the start of 30ommercial operation of the project activity
16. CDEC anuario2012.pdf – Operating Statistics from the CDEC-SIC
17. CDEC anuario2011.pdf – Operating Statistics from the CDEC-SIC
18. PCWF Plant Factor – Info FP Punta Colorada (11-6-13).pdf – Summary of the Seawind report
19a. Node Price ITD_SIC_ABR_2010.rar – Node Price report from the National Energy Commision from April 2010
19b. Informe_Tecnico_PNP_Fijacion_Abril_2010.pdf – Technical Report of Node Price from CDEC-SIC
20. D.F.L.+N4-20018.pdf – General Law of electric service
21. DIA_PC.doc – Environmental Impact Declaration from the Project activity
22. PCWF_Environmental Impact Statement – Supporting documents and annexes of the Environmental Impact Declaration
23a. capacidad_instalada_de_generacion CNE.xls – National Energy Commision report of the installed capacity of the SIC
23b. generacion_bruta_sic_sing CNE.xls – National Energy Commision report of the electricity generation in the SIC and SING
23c. generacion_bruta_Magallanes CNE.xls – National Energy Commision report of the electricity generation in Magallanes

23d. generacion_bruta_Aysxn CNE.xls – National Energy Commision report of the electricity generation in Aysen
24a. 14813_Grid Emission Factor 2012 .xlsx – GEF calculation version 1
24b. 14813_Grid Emission Factor 2012_V2.xlsx – GEF calculation version 2
24c. 311013_Grid Emission Factor 2012_V6.xlsx – GEF calculation version 3 (internal version 6)
24d. 71113_Grid Emission Factor 2012_V7.xlsx – GEF calculation version 4 (internal version 7)
24e. 151113_Grid Emission Factor 2012_V9.xlsx - GEF calculation version 5 (internal version 9)
25. Actual Operation 2012 op12.zip – CDEC-SIC records
26. Node Price Report 2010-2012
26a. ITD_OCT_2010_SIC.rar Node Price Reports from 2010
26b. ITD_SIC_Octubre_2011.rar - Node Price Reports from October 2011
26c. ITD SIC OCT 2012.rar - Node Price Reports from October 2012
27. BNE2011.xls – National Energy Balance from 2011
28a. V2_1_Ch1_Introduction.pdf - 2006 IPCC Guidelines for National Greenhouse Gas Inventories
28b. V2_2_Ch2_Stationary_Combustion.pdf - 2006 IPCC Guidelines for National Greenhouse Gas Inventories
28c. AclaracionPoderCalorificoSup_y_carbon.pdf – Clarification of the HHV from the Ministry of Energy
29. Calibración Medidor CERTIFICADO_Fact.pdf – Calibration certifícate of the Jem Star meter
30a. Invitación Consulta Pública (27-3-13).docx – Invitation to the Stakeholder consultation
30b. Lista Asistencia Consulta Publica Punta Colorada 4 abril 2013.pdf – Attendance list to the stakeholder consultation
30c. Presentación Consulta Punta Colorada VF(4-4-13).pptx – Presentation from the stakeholder consultation
30d. Recepción Invitacion Consulta Pública – confirmations of the invitations to the stakeholder consultation
30e. Minuta consulta pública (4-4-13).docx – Record of the stakeholder consultation
30f. fotos consulta pública (4-4-13) – photos of the stakeholder consultation
31a. LEY-20257_01-ABR-2008.pdf – law 20,257 dated 20/03/2008
31b. Res_1278_REFUNDIDA.pdf – Resolution for the implementation of the law 20,257
32. anuario2013.pdf - Operating Statistics from the CDEC-SIC
33. RCA_parque_eolico_punta_colorada_def.doc – Environmental Approval
34a. LEY-19300_09-MAR-1994.pdf – Environmental Law
34b. DTO-30_03-ABR-1997.pdf – Regulation of the Environmental Assessment System
34c. DTO-95_07-DIC-2002.pdf - Regulation of the Environmental Assessment System
34d. DTO-40_12-AGO-2013.pdf - Regulation of the Environmental Assessment System
35. Presentación Barrick Julio 2008.pdf – Presentation of the project activity
36. PARQUE EOLICO PUNTA COLORADA.pdf - Presentation of the project activity
37. Systep 2009.pdf – Presentation of non conventional renewable energy: wind case in Chile
38a. CER-Maria-Paz-de-la-Cruz_mayo_2012_final.pdf – Ministry of Energy presentation of ERNC current situation and promotion mechanisms
38b. CER CORFO ERNC.pdf – Center of Renewal Energy information
39. FIMA 14.12.2010 .pdf – Financial Daily report of the “Green Certificates” dated 14/12/2010
40. CDM Project Standard v4.0.pdf -
40b. CDM Project Standard v05.0.pdf
41. Site visit photos from 3rd and 4th October 2013

42. Training certificates from Dewind to the personnel involved in the Project activity (service level 1 to 4)
43. Calibration certificates

Barrick_PT0901A397-01_Dir.pdf – certificate for direct connection from 12/08/2009

Barrick_PT0901A397-01_Rev.pdf - certificate for invert connection from 12/08/2009

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Barrick_PT0901A398-01_Rev.pdf - certificate for invert connection from 12/08/2009

CERTIFICADO_Facturacion.pdf – certifícate of Jem Star meter from 01/12/2011

CERTIFICADO_Turbina_1.pdf – certificate of Schneider meter from 01/12/2011

CERTIFICADO_Turbina_2.pdf - certificate of Schneider meter from 01/12/2011

44. Lambda hourly data – hourly electricity generation by the SIC for 2010, 2011 and 2012
45. Management

45a. INFORME__CERTIFICACION_DE_MEDIDORES_ION.pdf – Report from Cam Endesa for the on-site meters

45b. INS-OPE-0087_EXTRACCION_DATA_MEDIDOR_JEM_STAR_REV.1.doc – internal PP procedure

45c. Manual de Mantenimiento D-8.pdf – Maintenance Manual of the plant

45d. organigrama CBCGL2 0.pdf – Organization chart of the PP

46. IFAC – Invoicing reports issued by the CDEC-SIC
47. Invoicing

FACTURACION 2011.xls – Internal records for the electricity generated and consumed in 2011

FACTURACION 2012.xls - Internal records for the electricity generated and consumed in 2012

FACTURACION 2013.xls - Internal records for the electricity generated and consumed in 2013

48. Balance CDEC – Excel sheets of the IFAC reports from the CED-SIC
49. Modificación Contrato de Arrendamiento 1.777-2008.pdf – Lease agreement of the land
50. Single line diagram - NEVA0681-8500-E-DI-0001-0.pdf – of the wind farm
51. Punta Colorada Final + APPENDICES.pdf – Seawind complete Report on the fast track resource assessment
52. Layout PCWF.pdf – of the wind farm power plant
53. Site visit opening meeting.pdf – from 3rd October 2013
54. Site visit closing meeting validation.pdf – from 4th October 2013
55. Site visit interview registry.pdf – interviews performed during the site visit
56. Investment decision timeline.pdf

57a. AFE BRC-701 (S1).pdf – Authorization for Investment S1

57b. AFE BRC-701 (S2).xls – Authorization for Investment S2

58. boletin_CER_abril_VF3.pdf – State NCRE projects in Chile newsletter
59. HerreraB.pdf – Payment for firm capacity study from Chile University
60. Renewable Energy 2007 PNUD.pdf – Renewal Energies and electric generation in Chile
61. Electricity prices in SIC.xlsx – Systep report
62. ERNC entering SIC law 20-20 PUCC.pdf – Analysis of the impact in the electric market in Chile of the new law
63. Greenpowerconferences.pdf – Optimising Wind Power O&M: Europe
64. CER load factor 2010 wind farm in Chile.pdf - Center of Renewal Energy report
65. Firm Capacity CDEC-SIC 2012.zip
66. Wind Energy - PUCC.pdf – Technical report developed by the Catolica University

67. Herrera & Watts 2012 Potencia firme eolica.pdf – The Capacity Value of Wind: Foundations, Review and Applications in Chile
68. Cuadros ITD SIC ABR10 eolica 7.7.xls – Information from the Node Price Reports
69. Terms and conditions for technical audits CDEC-SIC.pdf
70. JEMStar_Manual.pdf
71. Estadísticas Operación CDEC-.SIC 1997-2007.pdf – Operational Statistics
72a. AFE BRC 701 (S2) print fecha (29-10-13).pdf - Authorization for Investment S2 with date
72b. AFE BRC 701 (S2) pag 1.pdf - Authorization for Investment S2 with date
72c. AFE BRC 701(S1) print fecha (24-10-13).pdf - Authorization for Investment S1 with date
72d. AFE Documents Repository Santiago.pdf – screenshot of the section AFE Document Repository for Santiago from the PP server
72e. AFE BRC 701 (S2) resumen (30-10-13).pdf – communications regarding the AFE's
73. Informe Final Parte III SICETT.pdf – Trunk Transmission Study from the National Energy Commission
74. appendix totoral proyeccion marginal costs pan de azucar.pdf
75a. _ RE_ Información Pérdidas.pdf – information from distances between wind turbines from the project activity
75b. Line length1.CBCGL015-8500-Z-DG-0001_REV_1.pdf – from the project activity
76a. RE Frecuencia calibración JS-09R5010-46 – Calibration frequency from Jem Star
76b. ION_ RE_ Información Pérdidas.pdf – Calibration frequency from Schneider
77. Residual value of assets .pdf – The performance of Wind Farms in the UK and Denmark
78a. Item 2 - Turbines.pdf – invoices and internal information
78b. Item 3 - Towers.pdf – invoices and internal information
78c. Item 13 - EPC for BOP.pdf – invoices and internal information
79. Norma Tecnica de seguridad y calidad.pdf - regulation for security and quality for medium systems in Chile
80. Economics_of_Wind_Energy__March_2009_.pdf – A report by the European Wind Energy Association
81. Windustry USA.pdf – Information from Windustry Organization
82. US Department of Energy.pdf – Cost of Wind Energy by National Renewable Energy Laboratory
83a. www.sii.cl pagina valores bienes tabla_vida_enero.pdf – Information from the Internal Revenue Service in Chile
83b. www.sii tax.pdf - – Information from the Internal Revenue Service in Chile

Appendix 2 Validation Findings Overview

	CARs	CLs	FARs
Total Number raised	1	8	0

Date:	07/10/2013		Raised by:	Assessment team	
Type:	CL	Number:	1	Reference:	Section A.4

Lead Assessor Comment:

During the review of the expected emission reductions to be achieved by the project activity, it was found that in the financial spreadsheet (ref. 12a) and in section 1.7 of PDD an estimation of 31,124 tCO_2e/per year was defined.

But then on section 1.1 and 1.7 of the PDD the emission reductions for the year 2012 were reported as 8,897 tCO_2e and 9,291 tCO_2e, respectively.

PP is requested to clarify the reasons for the differences between the estimations and the results obtained as per section 1.1 and 1.7 of the PD.

CL 1 was raised.

Project Participant Response:	**Date:** 11/10/2013

Inconsistency corrected (section 1.1 and 1.7) in the PD an Model excel spreadsheet.

Documentation Provided by Project Participant:

111013ModeloPCWF_V2.xlsx - Table2

PCWF-VCS Project Description_v2

Information Verified by Lead Assessor:

Ref. 12b. 111013_Modelo PCWF_V2.xlsx

Ref. 1b. PCWF-VCS Project Description _v2.doc (PD version 002) (received on 11/10/2013, but the date was not fixed inside the document)

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 16/10/2013

The PP provided the updated PD (ref. 1b) and financial spreadsheet (ref. 12b). In the updated documents an emission reduction estimation of 29,738 tCO_2/MWh per year (from 2013 onwards) has been reported. This value has been obtained by multiplying the estimated electricity generation by the grid emission factor. The estimation for the electricity generation was considering the capacity of the wind farm (20MW), the load factor (27%), the operation of the plant (24 hours a day for the whole year) and a 3% of losses (from the generation until the injection point). Even there is an uncertainty for the electricity generation (e.g. availability of wind or spare parts in case of failure) the estimation was considered correct. On the other hand, in the PD; Table 1 an emission reduction estimation of 8,311 tCO_2e was provided for the year 2012 only and no information for 2011 was mentioned. Also in the same document, table 13 an estimation of 9,311 tCO_2e has been reported. Please clarify this difference and explain how these values have been obtained. **CL 1 remains open.**

Acceptance and Close out by Lead Assessor:	**Date:** 16/10/2013
Project Participant Response:	**Date:** 04/11/2013
In table 1 in the PD the amount of estimated GHG emission reductions for year 2012 was corrected and information for the period considered in 2011 was included. The GHG emission reductions from 2013 until 2021 are estimated considering the theoretical net electricity generation, with a load factor of 27%. The emission reductions in 2012 were calculated with the actual electricity generation from 2012 and 15 days from 2011, according the starting date of the project activity. Inconsistency was corrected in Table 14 in the PD.	
Documentation Provided by Project Participant:	
41113_PCWF-VCS Project Description _v8 *311013_Modelo PCWF_V6 .xlsx*	
Information Verified by Lead Assessor:	
Ref. 1c. 41113_PCWF-VCS Project Description _v8.doc (Project Description version 003 dated 04-11-2013) Ref. 12c. 311013_Modelo PCWF_V6 .xlsx (financial spreadsheet internal version 6, third version received by the VVB) Ref. 44. Lambda hourly data Ref. 46. IFAC	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 06/11/2013

The PP provided the updated PD v003 and financial spreadsheet. In the financial spreadsheet, tab "Table2", the emission reduction estimations have been calculated for 2012 as the sum of the actual electricity generation from 15th to 31st December 2011 (583 MWh) plus the actual electricity generation for 2012 (13,155 MWh). The tabs "IFAC 2011" and "IFAC 2012" contain the input data for this calculation. These values (583 MWh +13,155 MWh) were verified against the main sources from the grid administrator (ref. 44 for 2011 and ref. 46 for 2012) and were found to be correct.

The calculation performed for the emission reductions estimations for the years 2013 to 2021 remains to be the same, but the final value is 30,803 tCO_2e, due to the corrections in the grid emission factor calculations (for further information please refer to CAR 6 and CL 7 below).

The values included in table 1 and 14 of the PD (ref. 1c) are in line with the calculations verified in the financial spreadsheet (ref. 12c).

CL 1 was closed.

Acceptance and Close out by Lead Assessor:	**Date:** 06/11/2013

Date:	07/10/2013		Raised by:	Assessment team	
Type:	CL	Number:	2	Reference:	Section A.6

Lead Assessor Comment:

Reviewing the identification of the project location in the PD as per the VCS Standard requirements it was found that the information provided in the PD gives a clear identification of the location of the project activity, but the geodetic coordinate of each wind turbine are not reported.

PP is requested to complete the PD as per the VCS Standard requirements.

CL 2 was raised.

Project Participant Response:	**Date:** 11/10/2013

Exact coordinates of each wind turbine were added to the PD, section 1.9 – Project Location, page 8

Documentation Provided by Project Participant:

PCWF-VCS Project Description_v2

Information Verified by Lead Assessor:

Ref. 1b. PCWF-VCS Project Description _v2.doc (PD version 002) (received on 11/10/2013, but the date was not fixed inside the document)

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 16/10/2013

The revised PD version 2 provided by the PP was reviewed and it was found that in section 1.9 of the mentioned document a diagram has been included with the location of the turbines and below this diagram a table has been included with the geographical coordinates of each turbine. The information was verified and it was found to be correct.

CL 2 was closed.

In the updated PD version 003, dated 04/11/2013, the PP modified the coordinates from degrees, minutes and seconds to UTM coordinate system. These new coordinates of each wind turbine were also reviewed and even though they are not the complete coordinates, they are satisfactory and are the same coordinates indicated in the environmental approval (ref. 33).

Acceptance and Close out by Lead Assessor:	**Date:** 16/10/2013

Date:	07/10/2013		Raised by:	Assessment team	
Type:	CL	Number:	3	Reference:	Section B.4

Lead Assessor Comment:

During the assessment of the investment analysis as per the requirements of the "Tool for the demonstration and assessment of additionality" version 07; PP correctly applied Option III of the Tool "Benchmark analysis", being this most suitable for this project type.

According to Option III of the mentioned tool, the discount rate and benchmark shall be derived from 1 of 5 different sources and the PP chooses option (d) "*Government/official approved benchmark where such benchmarks are used for investment decisions*". The benchmark considered in the PD is 10% based on DFL-4 Decree with force of law issued by the Ministry of Economy, Promotion and Reconstruction; but according to the information provided by the National Energy Commission, the 10% mentioned in DFL-4 article N°174, is used as an actualization rate by the ministry to carry out evaluations of the system expansion plan every 4 years, but is it not used for decision making or evaluation of new project potentially entering the grid.

PP is requested to demonstrate how the selected benchmark of 10% complies with the requirements of the Additionality Tool paragraph 38a-38e.

CL 3 was raised.

Project Participant Response:	**Date:** 11/10/2013

Discount rate was adjusted in section 2.5 – Additionality, sub-step 2c, table 4, of the PD and the Investment model according to default value for the expected return on equity of "Tool for the demonstration and assessment of additionality" version 07 version 03.00 CDM

Documentation Provided by Project Participant:

PCWF-VCS Project Description_v2.docx

111013ModeloPCWF_V2.xlsx – Parameters

Information Verified by Lead Assessor:

Ref. 1b. PCWF-VCS Project Description _v2.doc (PD version 002) (received on 11/10/2013, but the date was not fixed inside the document) Ref. 12b. 111013_Modelo PCWF_V2.xlsx	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 16/10/2013
The PP provided the updated PD (ref. 1b) and financial spreadsheet (ref. 12b). In both documents the Benchmark has been updated from 10% to 10.3%; which is the default value for Group 1 projects in Chile provided by the "Tool for the demonstration and assessment of additionality" version 07. This value has been found to be correct for this wind farm project activity, as Group 1 involves: 1. Energy Industries; 2. Energy Distribution; 3. Energy Demand and 13. Waste handling and disposal. **CL 3 was closed.**	
Acceptance and Close out by Lead Assessor:	**Date:** 16/10/2013

Date:	07/10/2013		Raised by:	Assessment team	
Type:	CL	Number:	4	Reference:	Section B.4
Lead Assessor Comment:					
During the review of the investment analysis as per the requirements of the "Tool for the demonstration and assessment of additionality" version 07 and the "Guideline on the assessment of investment analysis" version 05 the following issues were identified: - The input values used in all investment analysis should be valid and applicable at the time of the investment decision taken by the project proponent. PP is requested to clarify the time of the investment decisions and provide the corresponding supports for each item of the investment analysis (e.g investment costs, electricity price, price of the NCRE certificates). - According to the study performed by Seawind (ref. 18) the load factor determined for the wind farm was 31% P50 and 24% P20. PP is requested to clarify the 27% load factor used in the investment analysis (ref. 12a). - 3% for transmission losses was used for the electricity generation estimations. PP is requested to confirm the source of this value and how it is representative for this project activity. - The firm capacity defined in the investment analysis is 3.40 MW, the PP is requested to provide the source of data used to determine this value. **CL 4 was raised.**					
Project Participant Response:			**Date:** 11/10/2013		
Responses related to each letters of lead assessor comments: a) *Final investment decision is 21st of April 2010 as stated in the final AFE (Approval for Expenditure BRC-701 (S2)) for the project, and related to the investment analysis parameters are supported in the following evidences:* • *Investments cost: AFE BRC-701 (S2).xlsx*					

- *Electricity price forecast: initial evaluation of final design for the wind farm including electricity Price form CNE (National Energy Commission) AFE BRC-701 (S1).xlsx*
- *Price of the NCRE certificates: Report from Renewable Energy Centre (Boletin_CR_Abril_VF3.pdf pg.2)*
- *O&M costs: IEEE power&Energy Magazine, page 55, table 2 (IEEE Magazine.pdf)*
- *Average capacity price: Informe_tecnico_PNP_fijación_Abril_2012.pdf page 20 (Chilean pesos: $4.864,04 converted to US$9,22)*

b) *Load factor for Investment analysis has been studied by Seawind and stated in their report as: 31% P50 and 24% P20. Investment analysis of the wind farm used an arithmetic mean of those two values and included a sensitivity analysis to assess potential significant variations of return on equity for the variation of Load Factor. Load factor sensitivity analysis is presented in section 2.5 – Additionally, sub-step 2c of PD, page 16. (Full seawind study: Punta Colorada Final + APENDICES.pdf)*

c) *3% of transmission losses was used as an average value of transmission losses for Year 2010, as stated in the Estadisticas de operación 2001/2011 (Anuario 2011.pdf page 59): Annual 2010 Transmission losses divided by annual 2010 Gross generation = 3%.*

d) *Firm capacity was estimated as a 17% of Installed capacity, using a study from University of Chile of effective firm capacity of wind farm in Chile: HerreraB.pdf page 44.*

Documentation Provided by Project Participant:

AFE BRC-701 (S2).xls

AFE BRC-701 (S1).xlsx

Boletin_CR_Abril_VF3.pdf

Punta Colorada Final + APENDICES.pdf

Informe_tecnico_PNP_fijación_Abril_2010.pdf

PCWF-VCS Project Description_v2

HerreraB.pdf (study of firm capacity)

Anuario 2011.pdf

IEEE Magazine.pdf

Information Verified by Lead Assessor:

Ref. 1b. PCWF-VCS Project Description _v2.doc (PD version 002) (received on 11/10/2013, but the date was not fixed inside the document) Ref. 12b. 111013_Modelo PCWF_V2.xlsx Ref. 57a. AFE BRC-701 (S1).pdf Ref. 57b. AFE BRC-701 (S2).xls Ref. 58. boletin_CER_abril_VF3.pdf Ref. 51. Punta Colorada Final + APPENDICES.pdf Ref. 19b. Informe_Tecnico_PNP_Fijacion_Abril_2010.pdf Ref. 1b. PCWF-VCS Project Description _v2.doc (PD version 0002) Ref. 59. HerreraB.pdf Ref. 17. CDEC anuario2011.pdf Ref. 13. BezerraMocarquerBarrosoRudnick 2012.pdf (same as IEEE Magazine.pdf) Ref. 65. Firm Capacity CDEC-SIC 2012.zip Ref. 63. Greenpowerconferences.pdf Ref. 50. Single line diagram - NEVA0681-8500-E-DI-0001-0.pdf Ref. 52. Layout PCWF.pdf Ref. 67. Herrera & Watts 2012 Potencia firme eolica.pdf	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 16/10/2013
Based on the information reviewed during the on-site inspection and the evidences provided by the PP, it has been verified that the first (US$18,200,000), second (US$18,926,000) and third (US$1,000,000) investment for this project were authorized by Barrick Gold Corporation through the internal AFE reports (Authorization for Expenditure) in 2007 (ref. 56) for the basic design, the land lease and the modified design, respectively. Then, after a long period of internal discussions, in April 2010 the AFE BRC-701(S2) that provides the authorization for the final design and expenditure of additional US$ 9,908,955 required for the project activity was approved. This is the date defined by the PP as the investment decision. Based on this date, the following has been verified: - Only the first AFE of 2007 contains the signatures, please confirm how the following AFE can be considered valid. Issue remains open. - The PP informed that the electricity price estimation was taken from CNE (National Energy Commission in Chile) but this support has not been provided. Issue remains open. - Even the NCRE certificate do not have a public market price and even though that at the moment of the investment decision, no value was attributable to this revenue, the PP has considered in the investment decision a value of USD$13/MWh for this income. This value has been provided by the Ministry of Energy as an average price for 2010 (ref. 58). Taking into account that this is a E- policy implemented after 11/11/2001 it has been considered a conservative approach to include this revenue in the financial analysis. Issue closed. - The information regarding the O&M cost provided refers to a confident source, but from 2012. The through value for this parameter is the one provided by the CNE (National Energy Commission in	

Chile) this value is 7.7USD$/MWh, which is also the value reported by the grid administrator (CDEC-SIC) for the variable non-fuel costs of wind farms in Chile (ref. 26). Furthermore, this is lower than the average values from the experience in Europe where for load factors of 20% and 30%,the O&M costs are between 10 US$/MWh and 15 US$/MWh, respectively (ref. 63). Issue closed.

- The capacity price is determined by the grid administrator (CDEC-SIC) and for this assessment the average capacity price is obtained from the "*Informe_Tecnico_PNP_Fijacion_Abril_2010*" (in the response the PP mentioned 2012, but the report was reviewed and it is from 2010), which is the correct national source for this parameter. Issue closed.
- The PP clarified that the load factor used for the analysis was the simple average of the results provided in the Seawind study (ref. 51). Even the procedure to calculate the values is not correct; it has been accepted as the average load factor for the wind farm projects in Chile, provided by the grid administrator is 21% for 2010 (ref. 64) and 22.4% for 2011 (ref. 67), so the 27% used in the investment analysis is a conservative value. Issue closed.
- Through the review of the document it was found that neither the PD (ref. 1b) nor the line diagrams of the plant (ref. 50, 52) describe the injection line or mention its length. Given that losses would vary considerably depending on the length and the 3% of the SIC does not mention information relating to the line, this issue remains open.
- The firm capacity estimated for this project activity has been calculated based in a study from the University of Chile for 2006, even this information is previous to the investment decision, it can be considered consistent with the information defined by PNUD for wind farms in Chile in 2007 (ref. 60) and with the information obtained from the SIC for 2011 (ref. 67). Furthermore, according to the estimations made by the PP, the firm capacity for this project activity is 3.4 MW and the real firm capacity determined by the grid administrator for 2012 is 0.4 MW - 0.7 MW. As the firm capacity of the plant is also sold, the value considered by the PP is a conservative approach.

CL 4 remains open.

Acceptance and Close out by Lead Assessor:	**Date:** 16/10/2013
Project Participant Response:	**Date:** 04/11/2013

AFE BRC 701(S1) contains signature and also evidence of the date of document creation is presented

For the AFE BRC 701(S2) evidence of the date of document creation is presented.

Evidence of Barrick's AFE Document Repository for Santiago is presented

Seawind Agreement July 2007 is presented

Studies of marginal cost of energy projection for a specific node are not public available such as the energy price projection presented in PCWF evaluation. Therefore as a reference a study of marginal cost of energy projection for 3 nodes in the SIC is presented, "Estudio de Transmisión Troncal" National Energy Commission, CNE December 2010. This projection is a reference to compare the projected marginal cost of energy presented by the PCWF project activity.

Another reference is the marginal cost of energy projection presented in the Totoral CDM project activity.

Information regarding the length of the line is presented; a plan of the PCWF and the respective coordinates.

Documentation Provided by Project Participant:

AFE BRC 701 (S2) print fecha (29-10-13) *AFE BRC 701 (S2) pag 1* *AFE BRC 701(S1) print fecha (24-10-13)* *AFE Documents Repository Santiago* *Seawind Agreement July 2007* *Informe Final Parte III SICETT* *appendix totoral proyección marginal costos pan de azúcar* *_ RE_ Información Pérdidas* *Line length1.CBCGL015-8500-Z-DG-0001_REV_1*
Information Verified by Lead Assessor:
Ref. 72a. AFE BRC 701 (S2) print fecha (29-10-13).pdf Ref. 72b. AFE BRC 701 (S2) pag 1.pdf Ref. 72c. AFE BRC 701(S1) print fecha (24-10-13).pdf Ref. 72d. AFE Documents Repository Santiago.pdf Ref. 72e. AFE BRC 701 (S2) resumen (30-10-13).pdf Ref. 73. Informe Final Parte III SICETT.pdf Ref. 74. appendix totoral proyeccion marginal costs pan de azucar.pdf Ref. 75a. _ RE_ Información Pérdidas.pdf Ref. 75b. Line length1.CBCGL015-8500-Z-DG-0001_REV_1.pdf

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 06/11/2013

In response the PP provided the above mentioned documents and the following was reviewed

- In the files “AFE BRC 701 (S2) print fecha (29-10-13)” (ref. 72a), “AFE BRC 701 (S2) pag 1” (ref. 72b), “AFE BRC 701(S1) print fecha (24-10-13)” (ref. 72c) it was verified that in fact the documents are from the mentioned date and all of them are saved in the internal system of Barrick, in the section AFE Document Repository for Santiago (ref. 72d).
- The PP clarified that the original support of the electricity price estimation is not available, but an additional support also from CNE, dated 20/12/2010 (same year of the defined investment decision), was provided (ref. 73). This document was reviewed by the assessment team (including the technical area expert) and it was found that in the scenario of price projections from 2010 to 2025 proposed by CNE, the average value is 90 US$/MWh (with higher values between 2010-2013), which is lower than the value used by the PP, but very similar, as the information is from the same source (CNE).

  Based on this CNE report (ref. 73) it can be confirmed that the electricity price projections used by the PP in the investment analysis is higher than the average for the sector, thus it is a conservative approach for the financial analysis. Additionally, as per the review of the sensitivity analysis presented it was verified that even with an increase of 48% in the electricity price the project benchmark is not reached.

  The PP also provided the information published for a registered CDM project, were the estimations of

the electricity price is also lower than the used by the PP in the investment analysis. - Issue already closed. - Issue already closed. - Issue already closed. - Issue already closed. - The information from the line length from each wind turbine to the injection point (ref. 75a, 75b) provided by the PP was reviewed by the technical area expert and it can be confirmed that the 3% of losses considered for the ex-ante estimation of the emission reduction is a consistent value. Issue closed. - Issue already closed. **CL 4 was closed.**

Acceptance and Close out by Lead Assessor:	**Date:** 06/11/2013

Date:	07/10/2013		Raised by:	Assessment team	
Type:	CL	Number:	5	Reference:	Section B.4

Lead Assessor Comment:
The Common practice analysis has been determined using the "Guidelines on Common Practice" version 02.0; which is correct as this project activity applies measure II listed in the "Tool for the demonstration and assessment of additionality". According to this Guideline, the applicable geographical area should be the host country and in this project activity only the SIC has been considered part of the geographical area. In order to validate this assumption, please provide the corresponding supports to confirm "*essential distinctions between the identified specific geographical area and the rest of the host country*". **CL 5 was raised.**

Project Participant Response:	**Date:** 11/10/2013
PD has been modified to clearly state that all host country has been integrated in the analysis of the Common practice, but only central Grid do have relevant wind power projects for the analysis. PD section 2.5 Additionality, sub-step 4a, page 18 was modified.	
Documentation Provided by Project Participant:	
PCWF-VCS Project Description_v2	
Information Verified by Lead Assessor:	
Ref. 1b. PCWF-VCS Project Description _v2.doc (PD version 002) (received on 11/10/2013, but the date was not fixed inside the document)	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 16/10/2013

The PP provided the updated PD version 2. In section 2.5 of this document has been clarified that the recommendation of the "Guideline on Common Practice" version 02.0 has been followed and the applicable geographical area for the assessment is the entire country. This has been verified against the information from the National Energy Commission in Chile (CNE) and from the grid administrator (CDEC-SIC) and it was found to be correct and also conservative, as in fact there are essential distinctions between the SIC (grid where the project delivers the electricity) and the other national grids in Chile. **CL 5 was closed.**

Acceptance and Close out by Lead Assessor:	**Date:** 16/10/2013

Date:	07/10/2013		Raised by:	Assessment team	
Type:	CAR	Number:	6	Reference:	Section B.5

Lead Assessor Comment:

During the assessment of the grid emission factor calculation against the "Tool to calculate the emission factor for an electricity system" v03 the following issues were identified:

- It is indicated in the PD that the Operating Margin was calculated using ex ante option, but it was identified that the OM was not calculated using the approach indicated in Para 36 (a) of the mentioned tool. PP is requested to correct the calculation of the OM.
- PP is asked to correct the list of power plants identified as Low-cost/must-run in the grid emission factor calculation.
- BM calculation $SET_{>20\%}$ was determined as per paragraph 71 (b) of the tool ($SET_{5\text{-unit}}$ comprises less than 20% of 2012's annual electricity generation), but not all CDM project were identified as such and excluding from the calculation. PP is requested to identify the entire set of CDM projects and correct the calculation.

CAR 6 was raised.

Project Participant Response:	**Date:** 11/10/2013

EF calculation was amended on the basis of the CAR from the lead assessor, and values were updated in the spreadsheet (111013ModeloPCWF_V2.xlsx – Tabla 2) and in the PD section 1.7 page 5, table 1 and following mentions in the PD.

Documentation Provided by Project Participant:

PCWF-VCS Project Description_v2.docx

111013ModeloPCWF_V2.xlsx – Tabla 2

Information Verified by Lead Assessor:

Ref. 24b. 14813_Grid Emission Factor 2012_V2

Ref. 1b. PCWF-VCS Project Description _v2.doc (PD version 002) (received on 11/10/2013, but the date was not fixed inside the document)

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 16/10/2013
The following was verified after the review of the documentation provided by the PP: • The list of low cost/must run power plants was corrected. • All CDM projects were correctly identified for the calculation of the Build Margin. The following issue needs to be corrected • OM calculation was modified; low cost/must run power units are now included in the calculation. However, it is not in accordance with the provisions in the Tool. Please correct **CAR 6 remains open.**	
Acceptance and Close out by Lead Assessor:	**Date:** 16/10/2013
Project Participant Response:	**Date:** 04/11/2013
The calculation was corrected and now is in accordance with the latest version(04.0) of the tool	
Documentation Provided by Project Participant:	
311013_Grid Emission Factor 2012_V6	
Information Verified by Lead Assessor:	
Ref. 24c. 311013_Grid Emission Factor 2012_V6.xlsx (spreadsheet internal version 6, third version received by the VVB)	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 06/11/2013
The PP provided the updated grid emission factor calculation spreadsheet (ref. 24c). In this document it has been verified that the calculation of the OM is now in line with the indications of equation 8 of the "Tool to calculate the emission factor for an electricity system" v04. Also the BM has been updated because in the previous version the parameter AEG_{total} considered the annual electricity generation of the project electricity system without excluding the CDM project activities (were only identified but not discounted). **CAR 6 was closed.**	
Acceptance and Close out by Lead Assessor:	**Date:** 06/11/2013

Date:	07/10/2013		Raised by:	Assessment team	
Type:	CL	Number:	7	Reference:	Section B.5
Lead Assessor Comment:					

During the assessment of the grid emission factor calculation against the "Tool to calculate the emission factor for an electricity system" v03 the following issues were identified:

- In the determination of the Fuel Consumption ($FC_{i,m,y}$) for some power plants, whose fuel consumption was not directly available, specific fuel consumption data was used to calculate the fuel consumption. It was identified that for some power plants with more than one generation unit, generation data is aggregated while specific fuel consumption is disaggregated. PP is requested to how the specific fuel consumption was determined in such cases, and how the specific fuel consumption of Campanario was determined for 2011.
- Efficiency factors were obtained from Appendix 1 of the mentioned Tool, but some generation plants did not report their commissioning date in the calculation of 2010's operating margin. PP is asked to clarify how the efficiency of the power plants was determined in such cases.
- For the BM calculation, the oldest power plant included in $SET_{>20\%}$ was commissioned on 2007. However, there were other power plants installed during that year which were not considered in SET>20%. PP is asked to provide further evidence to verify that the power units included in SET>20% are correct.

CL 7 was raised.

Project Participant Response:	**Date:** 11/10/2013
EF calculation was amended on the basis of the CAR from the lead assessor, and values were updated in the spreadsheet (111013ModeloPCWF_V2.xlsx – Tabla 2) and in the PD section 1.7 page 5, table 1 and following mentions in the PD.	
Documentation Provided by Project Participant:	
PCWF-VCS Project Description_v2.docx *111013ModeloPCWF_V2.xlsx – Tabla 2*	
Information Verified by Lead Assessor:	
Ref. 24b. 14813_Grid Emission Factor 2012_V2 Ref. 1b. PCWF-VCS Project Description _v2.doc (PD version 002) (received on 11/10/2013, but the date was not fixed inside the document)	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 16/10/2013

The following was verified after the review of the documentation provided by the PP:

- Specific fuel consumption was modified in the calculation of the operating margin corresponding to 2012; whenever there were two values for specific fuel consumption, the most conservative (lower) value was applied. However, for the years 2010 and 2011 no further clarification was provided regarding the specific fuel consumption applied in those cases. Please clarify the specific fuel consumption values applied.
- Information about the commissioning date of the power plants was completed in the calculation for 2010's Operating Margin. However, the efficiency factors used were not consistent with the information provided; as it was checked that efficiency values corresponding to old plants were used for power plants installed after the year 2000; In addition, it was identified that not all the efficiency values used for 2011 and 2012 were in accordance with the Tool. Please correct the efficiency factors applied according to Appendix 1 of the Tool.
- The list of power plants $SET_{>20\%}$ was modified, but no further information or evidence was provided regarding the power plants that started delivering electricity to the grid on 2007, so it was not possible to verify that the $SET_{>20\%}$ was correctly determined.

CL 7 remains open

Acceptance and Close out by Lead Assessor:	**Date:** 16/10/2013
Project Participant Response:	**Date:** 04/11/2013

Specific fuel consumption values were corrected and the most conservative values were applied.

Efficiency factors were corrected as per in the Appendix 1 of the tool.

The commissioning date of the power plants that started to delivering electricity to the grid on 2007 is provided.

Documentation Provided by Project Participant:

Estadísticas Operación CDEC-.SIC 1997-2007

311013_Grid Emission Factor 2012_V6

Information Verified by Lead Assessor:

Ref. 24c. 311013_Grid Emission Factor 2012_V6.xlsx (spreadsheet internal version 6, third version received by the VVB)

Ref. 71. Estadísticas Operación CDEC-.SIC 1997-2007.pdf

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 06/11/2013

The PP provided the updated grid emission factor calculation spreadsheet (ref. 24c). In this document the following information was verified:

- In the OM, the specific fuel consumption for 2010 and 2011 were modified and the most conservative (lower) values were applied.
- The efficiency values used for the OM of 2010, 2011 and 2012 were correctly modified following the indications of Appendix 1 of the "Tool to calculate the emission factor for an electricity system" v04.
- In the tab "OM-BM 2012" of the emission factor calculation spreadsheet (ref. 24c) the exact day and month when the power plants started delivering electricity to the grid on 2007 was included. This information was found in line with the information provided by the grid administrator (ref. 17).
- The tab "Consolidated" of the spreadsheet (ref. 24c) reports two final values for the grid emission factor, please clarify.

CL 7 remains open.

Acceptance and Close out by Lead Assessor:	**Date:** 06/11/2013
Project Participant Response:	**Date:** 06/11/2013

The grid emission value used in the PCWF project activity is 0.6713. The default values for WOM and WBM are : WOM= 0.75 and WBM =0.25 for wind generation project activities, according the tool to calculate the emission factor for an electricity system version 04.0.

Documentation Provided by Project Participant:

71113_Grid Emission Factor 2012_V7

Information Verified by Lead Assessor:

Ref. 24d. 71113_Grid Emission Factor 2012_V7.xlsx (spreadsheet internal version 7, version 4 received by the VVB)

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 07/11/2013

The updated grid emission factor calculation spreadsheet (ref. 24d) provided by the PP was reviewed and it was verified that on tab "Consolidated" only one Combined Margin Emission Factor is provided. This factor has been correctly calculated as per the indications of the "Tool to calculate the emission factor for an electricity system" v04.

~~**CL 7 was closed.**~~

Acceptance and Close out by Lead Assessor:	**Date:** ~~07/11/2013~~

Lead Assessor Comment:

During the TR stage it was found that not all the efficiency values used for the OM of 2010 were in line with Appendix 1 of the "Tool to calculate the emission factor for an electricity system" v04. Please clarify.

CL 7 was reopened.

Project Participant Response:	**Date:** 15/11/2013

Efficiency values were corrected, according to the "Tool to calculate the emission factor for an electricity system" v04

Documentation Provided by Project Participant:

151113_PCWF-VCS Project Description _v11
Information Verified by Lead Assessor:
Ref. 24e. 151113_PCWF-VCS Project Description _v11 (grid emission factor calculation spreadsheet version 5, internal version 9) Ref. 1f. 151113_PCWF-VCS Project Description _v11.doc (Project Description version 006 dated 15-11-2013, track changes version, internal version 11) Ref. 1f. 151113_PCWF-VCS Project Description _v11.pdf (Project Description version 006 dated 15-11-2013, clean version, internal version 11)

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 15/11/2013
In response the PP provided the updated grid emission factor calculation spreadsheet (ref. 24e). This document was reviewed and it was found that the efficiency indicated in Appendix 1 of the "Tool to calculate the emission factor for an electricity system" v04 has been correctly indicated for the plant Curanilahue of the company SAESA. The modified information of the grid emission factor has been correctly reported in the updated PD version 006. **CL 7 was closed.**	
Acceptance and Close out by Lead Assessor:	**Date:** 15/11/2013

Date:	16/09/2013		Raised by:	Assessment team	
Type:	CL	Number:	8	Reference:	Section B.7
Lead Assessor Comment:					

During the assessment of the Project Description version 001 provided by the Project Proponent against the VCS Project Description Template version 3 (ref. 11) and the applicable methodology ACM0002 version 13.0, the following was identified:

- Section 1.3 of the PD v001 does not indicate the roles and responsibilities of the PP.
- Section 4.3 of the PD v001 does not "d*escribe procedures for handling internal auditing and non-conformities".*
- In section 4.2 "*Data and Parameters Monitored*" of the PD v001, the *"type, accuracy class, serial number of equipment*" have not been indicated for the Jem Star and Schneider meters; and in the QA/QC section the "*date of last calibration and validity*" have not been reported.
- The methodology indicates that the measurements results have to be crosschecked with records for sold electricity, but this information is not mentioned in PD section 4.2.

PP is requested to update the PD in line with the requirements of VCS Project Description Template version 3 (ref. 11) and the applicable methodology ACM0001 version 13.0.

CL 8 was raised.

Project Participant Response:	**Date:** 11/10/2013
PD was corrected according to lead assessor clarification need. Sections 1.3, 4.2 and 4.3 of the PD were amended.	
Documentation Provided by Project Participant:	
PCWF-VCS Project Description_v2.docx	
Information Verified by Lead Assessor:	
Ref. 1b. PCWF-VCS Project Description _v2.doc (PD version 002) (received on 11/10/2013, but the date was not fixed inside the document) Ref. 69. Terms and conditions for technical audits CDEC-SIC.pdf	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 16/10/2013

In the updated PD version 2 provided by the PP the following has been verified:

- Section 1.3 now reports that the project owner is also responsible for the monitoring of the project activity, which is in line with the on-site observations.
- In section 4.3 it has been included that "*the compliance of procedures will be integrated to the general internal audit…*", but according to the information provided during the on-site inspections, there are no internal audits, please clarify and provided the corresponding supports.

  In this section it has also been indicated that the CDEC-SIC performs external audits every year, but according to the information found from the National Energy Commission (2006) the frequency for the audit is not defined (ref. 69), please clarify.

- In section 4.2, parameter $EG_{PJ,y}$=$EG_{facility,y}$, the type, accuracy class and serial number of the Jem Star meter has been provided. The accuracy reported for this meter is 0.07% and according to the information in the meter observed during the on-site inspection, it is 0.2%, please clarify and provide the corresponding support to confirm the correct value. Furthermore, the "*date of last calibration and validity*" has not been provided.
- This issue has not been covered.

CL 8 remains open.

Acceptance and Close out by Lead Assessor:	**Date:** 16/10/2013
Project Participant Response:	**Date:** 04/11/2013

Section 4.3 was corrected and clarified. The internal procedure corresponds to weekly summary report of PCWF plant operation and the main activities.

Section 4.3 was corrected, no internal audits are performed by the CDEC-SIC

The Jem Star meter accuracy type is 0.2, value was corrected. The corresponding support is presented.

Documentation Provided by Project Participant:

JEMStar_Manual

CERTIFICADO_Facturacion

41113_PCWF-VCS Project Description _v8

Information Verified by Lead Assessor:

Ref. 70. JEMStar_Manual.pdf

Ref. 43 Calibration certificates file, containing "CERTIFICADO_Facturacion.pdf"

Ref. 1c. 41113_PCWF-VCS Project Description _v8.doc (Project Description version 003 dated 04-11-2013)

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 06/11/2013

By the review of the updated PD version 3 provided by the PP, the following has been identified:

- Issue previously closed.
- Section 4.3 has been modified and now states that "*a weekly summary report of PCWF plant operation is elaborated and sent to Barrick's general services management...*" this statement has been found to be in line with the information verified during the on-site inspection and by the interview to the Plant Supervisor, who prepares these weekly executive reports. Even these documents are not internal audits, are elaborated for the general management, who use these documents for the control of the project; so it can be considered that comply with the indications of the VCS Project Description Template version 3.1.

  As the grid administrator does not have an established frequency for the audits, the previous statement has been deleted, which has been found to be correct.
- Section 4.2 has been updated and the correct accuracy class (0.2%) for the Jem Star meter, as per the indications of the manual (ref. 70) and the on-site inspection has been indicated. Also the date of last calibration (ref. 43) has been reported.

  In order to complete the description of section 4.2, the PP informed that there are also two electricity meters installed in the plant, but only one serial number was reported.
- This issue has also not been discussed in the updated PD version 3 (QA/QC section).

CL 8 remains open.

Acceptance and Close out by Lead Assessor:	**Date:** 06/11/2013
Project Participant Response:	**Date:** 06/11/2013
Both serial numbers for ION 8600 meters are presented. Section QA/QC was corrected according the methodology ACM002 v13.0.0	
Documentation Provided by Project Participant:	
71113_PCWF-VCS Project Description _v9	
Information Verified by Lead Assessor:	
Ref. 1d. 71113_PCWF-VCS Project Description _v9.pdf (PD clean version 004 dated 06/11/2013, internal version 9) Ref. 1d. 71113_PCWF-VCS Project Description _v9.doc (PD track changes version 004 dated 06/11/2013, internal version 9)	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 07/11/2013

The updated PD version 4, provided by the PP, was reviewed and it was found that: - Issue previously closed. - Issue previously closed. - The two correct serial numbers of the ION 8600 electricity meters have been included in section 4.2 of the PD. - In section 4.2, the QA/QC requirements of the methodology "*Cross check measurement results with records for sold electricity*" were included. The records for the sold electricity are the IFAC (Invoicing Reports) developed by the grid administrator (CDEC-SIC), which is a correct source. ~~**CL 8 was closed.**~~

Acceptance and Close out by Lead Assessor:	**Date:** ~~07/11/2013~~
Lead Assessor Comment:	
During the TR stage it was found that in several sections of the PD version 4 a comma (,) instead of a dot (.) was used for decimals, which is not correct. **CL 8 was reopened.**	
Project Participant Response:	**Date:** 14/11/2013
Commas were changed by dots for decimals	
Documentation Provided by Project Participant:	
141113_PCWF-VCS Project Description _v10	
Information Verified by Lead Assessor:	
Ref. 1e. 141113_PCWF-VCS Project Description _v10.doc (Project Description version 005 dated 14-11-2013, track changes version) Ref. 1e. 141113_PCWF-VCS Project Description _v10.pdf (Project Description version 005 dated 14-11-2013, clean version) Ref. 12e. 141113_Modelo PCWF_V8.xlsx (financial spreadsheet version 5, internal version 8)	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 14/11/2013
In response the PP provided the updated PD version 5. This PD (ref. 1e) was reviewed and it was found that along the entire document the dot (.) has been used for decimals and the comma (,) for thousand. In addition, for consistency reasons, the PP included in table 7 of the PD the IRR of the Project +NCRE certificates; the tab "Sensitivity" of the financial spreadsheet (ref. 12e) was updated accordingly. ~~**CL 8 was closed.**~~	
Acceptance and Close out by Lead Assessor:	**Date:** ~~14/11/2013~~
Lead Assessor Comment:	

During the final review stage it was found that in footnote 5 of the PD version 006, states "*emission reductions in 2012 were calculated with the actual electricity generation from 2012 and 15 days from 2011*", but the number of days indicated for 2011 is not consistent with the information provided in the financial spreadsheet tab "Table2" cell B2. Please clarify. **CL 8 was reopened.**	
Project Participant Response:	**Date:** 26/11/2013
The number of days was corrected to 17 instead of 15.	
Documentation Provided by Project Participant:	
261113_Modelo PCWF_V9 *261113_PCWF-VCS Project Description _v12*	
Information Verified by Lead Assessor:	
Ref. 1g. 261113_PCWF-VCS Project Description _v12.doc (PD track changes version 007, dated 26/11/2013, internal version 12) Ref. 1g. 261113_PCWF-VCS Project Description _v12.pdfc (PD clean version 007, dated 26/11/2013, internal version 12) Ref. 12f. 261113_Modelo PCWF_V9.xlsx	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 27/11/2013
In response the PP provided the updated PD version 007 and the updated financial spreadsheet (ref. 12f), which includes the CERs estimations. The PD was reviewed and it was found that in footnote 5 indicates that 17 days from 2011 were considered for the electricity generation, which is in line with the crediting period of this project activity. Furthermore, this has also been updated in the financial spreadsheet tab "Table2"", cell D2, in line with the information used for the calculation in cell B2. Additionally, the PP included the following editorial changes in the PD version 007: - Indicated on section 1.1 that the annual expected emission reductions are 30,803 tCO_2e for 2013. This is in line with the project estimations from 2013 onwards. - In section 1.6 the text "*project start date*" was modified to "*project crediting period start date*", even it is the same date (15/12/2011), the change is in line with the guidelines of the VCS Project Description Template version 3.1. - In section 1.7, table 1 "*Estimated GHG emission reductions*", line "*Total estimated ERs*" a footnote was included in order to clarify that "*This values was calculated adding all decimals as per in the financial evaluation spreadsheet*"; which was verified to be correct. - In section 2.5, table 4, the version 3.3 of the VCS Standard was updated to version 3.4, which is the current available and valid version of the Standard. **CL 8 was closed.**	
Acceptance and Close out by Lead Assessor:	**Date:** 27/11/2013

Date:	16/09/2013		Raised by:	Assessment team	
Type:	CL	Number:	9	Reference:	Section B.7

Lead Assessor Comment:

According to the requirements of the applicable methodology ACM0002 version 13.0, the parameter $EG_{facility,y}$ has to report *"(i) The quantity of electricity supplied by the project plant/unit to the grid; and (ii) The quantity of electricity delivered to the project plant/unit from the grid*".

As per the information verified during the on-site inspection, PP is requested to clarify how the measurement procedure implemented for the parameter $EG_{facility,y}$ is in compliance with the aforementioned requirement of the methodology.

CL 9 was raised.

Project Participant Response:	**Date:** 11/10/2013

PD was corrected according to lead assessor clarification need. Section 4.2 of the PD was amended, page 34, "Any comments" cell regarding $EG_{facility,y}$ *metering in relation to power supply to the project from the grid.*

Documentation Provided by Project Participant:

PCWF-VCS Project Description_v2.docx

Information Verified by Lead Assessor:

Ref. 1b. PCWF-VCS Project Description _v2.doc (PD version 002) (received on 11/10/2013, but the date was not fixed inside the document)

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 16/10/2013

In the updated PD version 2, the PP clarified in the QA/QC section of the parameter $EG_{PJ,y}$=$EG_{facility,y}$ that "*Jem Star is a bidirectional meter that accounts for the (i) quantity of electricity supply to the grid and (ii) the quantity of electricity delivered to the project by the grid*". This information has been found in line with the applicable methodology and also with the observations during the on-site inspections. But as per the information provided from the grid administrator (CDEC-SIC) and corroborated on-site, the electricity injection and consumption from the grid reported by this meter is not only for this project activity; for this reason please provide further information to clarify this issue.

CL 9 remains open.

Acceptance and Close out by Lead Assessor:	**Date:** 16/10/2013
Project Participant Response:	**Date:** 04/11/2013

In section 4.2 Data and Parameters Monitored an explanation regarding electricity injection and consumption by the PCWF is presented. And also an explanation regarding how the electricity delivered to the PCWF by the grid will be calculated.

Documentation Provided by Project Participant:

41113_PCWF-VCS Project Description _v8

Information Verified by Lead Assessor:

Ref. 1c. 41113_PCWF-VCS Project Description _v8.doc (Project Description version 003 dated 04-11-2013)

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 06/11/2013
The updated PD version 3, section 4.2, has been verified and it can be considered that now is in line with the statement of the methodology and also with the information verified during the on-site inspection. The project activity will use the entire electricity consumption recorded by the Jem Star meter (invoicing meter) for the "*(ii) the quantity of electricity delivered to the project by the grid*", which is a correct and conservative approach, because not all this consumption is for the Punta Colorada Wind Farm Project Phase I. Furthermore, the information from the grid administrator (CDEC-SIC) will be used for the *"(i) The quantity of electricity supplied by the project plant/unit to the grid"*. This is considered correct, because the CDEC-SIC is the relevant authority and also because the electricity generation by the wind farm project can be crosschecked with the electricity generation recorded by the ION 8600 electricity meters, property of the PP but sealed by the calibration company. **CL 9 was closed.**	
Acceptance and Close out by Lead Assessor:	**Date:** 06/11/2013

Appendix 3 Checklist

* MoV = Means of Verification, DR= Document Review, I= Interview

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
A. General Description of Project Activity					
A.1. Project Title					
A.1.1. Does the project title clearly enable to identify the unique VCS activity?	Ref. 1	DR	The project title "Punta Colorada Wind Farm Project Phase I" is unique as per the projects under VCS.	OK	OK
A.1.2. Is there an indication of a revision number and the date of the revision?	Ref. 1	DR	Yes, PD includes version 001 on page 1 and the document is dated 27/09/2013. The latest version of the PD is 006 dated 15/11/2013.	OK	OK
A.2. Project Proponent					
A.2.1. The VCS templates have been completed in such a way that the names and details of all project proponents are contained on a single document and this is consistent with the VCS registration representation	VCS Standard version 3.4 issued on 8th October 2013 for single and multiple PP's.		The "Validation Deed of Representation" has been provided by the PP and it is also available in the VCS website (pipeline). The name of the project proponent in this documents is in line with the information indicated in the PD, in the Environmental approval and in the lease contract of the land, where the windfarm is located. Section 1.3 of the PD v1 does not indicate the roles and responsibilities of the PP as per the PD template. **CL 8a was raised.** PD v2 provided by the PP indicate the mission information on section 1.3. **CL 8a was closed.** (the same information is also included in the following PD versions).	CL 8 was raised	CL 8 was closed
A.3. Type/Category of the project					
A.3.1. Define the sectoral scope which is part of a GHG programme that has been approved by	Section 1.2	DR,	Yes, the sectoral scope is clearly defined in the PD. It	OK	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
the VCSA?	of the VCS PD	I	is sectoral scope 1 Energy (renewable/non-renewable), as per the VCS definition available in the following link: http://www.v-c-s.org/sectoral-scopes.		
A.3.2. Is the project a Multiple project activities	Section 3.2 of the VCS Standard version 3.4	DR, I	No, it is a multiple project activity instance.	OK	OK
A.3.3. Is the project a Multiple instances of project activities?	Section 3.3 of the VCS Standard version 3.4	DR, I	Yes, it is a wind farm project that includes 10 wind turbines of 2 MWh each.	OK	OK
A.3.4. Is the project a Grouped project?	Section 3.4 of the VC Standard version 3.4	DR, I	No, it is not a grouped project. The project activity it is only 1 wind farm located in Punta Colorada area in La Higuera Municipality, Region of Coquimbo – Chile.	OK	OK
A.4. Estimation of Emission Reduction and Project Size					
A.4.1. How many emission reductions per year have been estimated from the project activity?	Section 1.7 of the VCS PD	DR	According to section 1.7 of the PD and the financial spreadsheet (ref. 12a), the expected annual emission reductions of the project activity are 31,124 tCO_2e. But during the first year of operation (2012) only 8,897 tCO2 have been calculated, please clarify the reasons for the difference between the estimations and the obtained as per page 1 of the PD and also please clarify why in section 1.7 an estimation of 9,291 tCO_2e is indicated for 2012. **CL 1 was raised.**	CL 1 was raised	CL 1 was closed

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			In response the PP provided the updated PD v003 and financial spreadsheet (ref. 12c). In these documents it was verified that the emission reduction estimations for 2012 was calculated as the sum of the actual electricity generation from 15th to 31st December 2011 (583 MWh, ref. 44) plus the actual electricity generation for 2012 (13,155 MWh, ref. 46) multiplied by the grid emission factor (GEF). For the following years the formula was the same (electricity multiplied by the GEF), but the estimation for the electricity generation for 2013 and onwards was made considering the capacity of the wind farm (20MW), the load factor (27%), the operation of the plant (24 hours a day for the whole year) and a 3% of losses (from the generation until the injection point). Even there is an uncertainty for the electricity generation (e.g. availability of wind or spare parts in case of failure) the estimation was considered correct. **CL1 was closed.**		
A.4.2. What type of project is this? (Based on ER numbers).	Section 3.9 of the VCS standard version 3.4	DR	According to the estimated average annual GHG emission reductions, this project activity is categorized as : 1) Projects: Less than or equal to 300,000 tonnes of CO_2e per year.	OK	OK
A.5. Brief description of the project technology					
A.5.1. Does the description of the technology to be applied provide sufficient and transparent input to evaluate its impact on the	Section 1.8 of the VCS	DR	Yes, the technology applied is a wind farm project connected to the national grid (SIC), which will deliver	OK	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
greenhouse gas balance and is the explanation on how the project will reduce greenhouse gas emission transparent and suitable? Note: In case of multiple project instance the description of the technology is essential for all project types	PD		to the grid, electricity that otherwise would have been generated by other grid-connected power plants and by the addition of new generation sources. The project activity does not generate emissions according to the information provided in the PD, this has been found to be correct and in line with the applicable methodology indications and the on-site inspection.		
A.6. Project locations and specific extent					
A.6.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)?	Section 1.9 of the VCS PD	DR	Yes, the information provided in the PD provide a clear identification of the location of the project activity, but the geodetic coordinate of each wind turbine are described in the Environmental Impact Declaration (DIA, ref. 21), but not in the PD. **CL 2 was raised.** In response the PP provided in PD version 2, section 1.9, a diagram with the location of the turbines and below this diagram a table with the geographical coordinates of each turbine and **CL 2 was closed**. Then in PD version 3 the PP modified the coordinates from degrees, minutes and seconds to UTM coordinate system. These new coordinates of each wind turbine were also reviewed and even though they are not the complete coordinates, they are satisfactory and are the same coordinates reported in the environmental approval (ref. 33).	CL 2 was raised	CL 2 was closed
A.6.2. Is the project boundary defined clearly? Are the latitude and longitude of the site indicated	Section 1.9	DR	The project boundary is indicated in the PD to be "*the project power plant and all power plants connected*	CL 2 was	CL 2 was

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
(decimal points)?	of the VCS PD And section 3.10 of the VCS standard version 3.4		*physically to the electricity system that the CDM project power plant is connected to, this is the Chilean Central Interconnected System (SIC)*". This information has been verified to be in line with the boundary defined in the applicable methodology ACM0002 v13. **CL 2 was previously raised** because the geodetic coordinate of each wind turbine is not provided in the PD and because a KML file has also not been provided. Due to finally the coordinates were provided in the PD (ref. 1b) for each wind turbine **CL 2 was closed**.	raised	closed
A.7. Duration of the Project / Crediting Period					
A.7.1. Is the project start date defined and reasonable?	Section 1.5 of the VCS PD	DR	Yes, the start date is December 15th 2011, this has been correctly indicated in the PD (ref. 1a – 1g) as per the letter s from Barrick provided to the Chilean authorities CDEC-SIC, SEC (Superintendence of electricity and fuels) and to the Nacional Energy Commision (ref. 15). In order to confirm the information provided by Barrick, the official report of the CDEC-SIC "Operating Statistics 2002-2011" was reviewed and it can be confirmed (ref. 16) that on December 15th 2011 the wind power plant Punta Colorada of 20,0 MW capacity owned by Barrick Chile Generación Limitada was delivered for exploitation. The project was inaugurated on 17/11/2011 (ref. 36), start up testing were carried out during October to December 15th 2011, when it was finally delivered to exploitation and began to generate VCU's.	OK	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
A.7.2. Is the crediting period start date defined?	Section 1.6 of the VCS PD	DR	Yes, the crediting period start date is 15/12/2011, which is also the project start date. This has been found to be correct, as December 15th is the first date when the project activity started commercial operation (by delivering electricity to the grid), thus reducing GHG emissions.	OK	OK
A.7.3. Are the VCS project crediting period and life time of the project reasonable?	Section 3.8 of the VCS Standard version 3.4	DR	Yes, the life time of the project is 20 years (ref. 22, DIA page 6), this has been found to be correct.. The PP applied a 10 years crediting period to be renewed twice, this means 30 years. This is longer that the estimated operational life time of the project activity; but as no major overhaul or major maintenance has been considered in the investment analysis the option has been accepted, because it is conservative.	OK	OK
A.7.4. Where appropriate has the correct VCS guidance been followed with regards to the start of the crediting period?	Section 3.7, 3.8 of the VCS Standard version 3.4	DR	Yes, as per the guidelines, "*the project start date is the date on which the project began generating GHG emission reductions or removals*"; for this project activity is the date when it began the commercial operation (it was delivered for exploitation on the grid), thus began reducing GHG emissions. The crediting period is 10 years to be renewed twice, in line with the VCS requirements and the project is not registered under other GHG program.	OK	OK
A.8. Conditions prior to project initiation					
A.8.1. Are the conditions prior to the project initiation described in the VCS PD?	Section 1.10 of the	DR	According to the PD, this is a Greenfield plant. Prior to the project implementation, the electricity was	OK	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
	VCS PD		supplied by the different plants of the grid (SIC). By the review of the Environmental Impact Declaration, it can be confirmed that there was not plant implemented before this wind farm; thus it is "*demonstrated that the project has not been implemented to generate GHG emissions for the purpose of their subsequent reduction, removal or destruction*."		
A.8.2. Is it demonstrated in the VCS PD that the project was not implemented to create GHG emissions primarily for the purpose of its subsequent removal or destruction?	Section 1.10 of the VCS PD	DR	Based on the applicable technology, the project does not generate GHG. Therefore it can't be implemented to later destroy its own emissions. As it has been mentioned above, this is a Greenfield plant and has not been implemented to generate GHG emissions for the purpose of their subsequent reductions.	OK	OK
A.8.3. Do the dates of VCS consideration comply with the version of the VCS standard being used?	Section 3.7.2 of the VCS standard version 3.4	DR	Yes and in this regards, the project has to complete the validation process before December 15th 2013.	OK	OK
A.9. Compliance with relevant local laws and regulations related to the project					
A.9.1. Are relevant local laws and regulations related to the project identified in the VCS PD?	Section 1.11 of the VCS PD	DR	Yes, it has been specified in section 1.11 of the PD, that the project comply with the environmental laws and that they received the approval from the environmental authority to execute the project in October 2007. This has been verified to be correct through the review of the website of the authority were all the approvals from the different national sectors required are provided: http://seia.sea.gob.cl/expediente/expedientesEvaluacion.php?modo=ficha&id_expediente=2253615	OK	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			The final approval is the RCA (Environmental Quality Resolution) that was issued on 30/10/2007 with N° 186 and notified to the PP on 08/11/2007. According to the regulations of Chile, the RCA is issued to a project activity after they comply with all the relevant laws and regulations (these are part of the input data for the environmental approval). Furthermore, when the project is authorized to inject electricity to the grid (SIC), the authority ensures the compliance with the national regulations; if they do not comply with any requirements, the project is not authorized to inject electricity to the grid.		
A.9.2. Is the demonstration of compliance with them described in the VCS PD?		DR	Yes, in section 1.11 it is reported that they received the RCA, which has been previously explained, is the final approval after the project comply with all the applicable laws and regulations of the host country.	OK	OK
A.9.3. The project shall not be mandated by any law, statute or other regulatory framework. Specifically; — for UNFCCC non-Annex I countries, any systematically enforced law, statute or other regulatory framework — For UNFCCC non-Annex I countries, laws, statutes, regulatory frameworks or policies implemented3 since 11 November 2001 that give comparative advantage to less emissions-intensive technologies or activities relative to more emissions-intensive technologies or activities need not be taken into account	Section 3.11.1 (7) of the VCS standard version 3.4	DR	This Project is not mandate by any law statute or other regulatory framework. The main laws that affect this project activity is the following: Law 20257 published on 01/04/2008, which states that the electricity plants (consuming electricity from the grid for a capacity higher than 200MW) should market 10% of the energy from ERNC (non-conventional renewable energies: wind, solar, geothermal and hydroelectric smaller than 20MW), owned or bought, since 01/01/2010, for SIC and SING. (SIC is the grid applicable to this project activity). The increase is gradually and starts with 5%	OK	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
— For all countries, laws, statutes, regulatory frameworks or policies implemented since 11 December 1997 that give comparative advantage to more emissions-intensive technologies or activities relative to less emissions-intensive technologies or activities shall not be taken into account.			for 2010-2014 and then it has to increase in 0.5% per year until 2024 to reach the 10%. The power plants that do not comply with this law will need to pay a fine of 0.4 UTM (31.4 USD calculated on 23/08/2013) for each MWh from a non-authorized source. As per the assessment of the Universidad Catolica de Chile of this law (http://web.ing.puc.cl/~power/): This Law forces major power generating plants to buy based on renewable energies, for which latter it may be able to establish long-term contracts, stimulating the development of this technology. However, given the fine to which are subject the large generators in the event of failure, may in some cases be more economically beneficial to them, to pay the penalty instead of buying the electricity. Today there are more ERNC (not conventional renewable energy) than the required by the mentioned law (ref. 38b), for this reason the price for ERNC credits in short-terms is very low, but it is expected to increase in the future.		
			During 2010 (ref. 39 – 14.12.2010) there were discussions of how this “certificates” or “ERNC attribute” could be traded and also there was also no clarity on the price, but due to the fine, they probably would be below 0.4 UTM/MWh or 31.75 USD/MWh (cost of UTM on December 2010 37,605 chilean pesos = 79.38 USD on 14.12.2010).		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			It was estimated by the CER (Center of Renewable Energies, ref. 38a) that the average price for the certificates during 2011 was 14USD/MWh; but this same governmental institution indicated on 2013 that the electricity produced by ERNC in the SIC and SING is above the required 5%. CDEC-SIC information on ERNC http://www.cdec-sic.cl/est_opera_publica.php#C24 CDEC-SING: http://www.cdec-sing.cl/pls/portal/cdec.pck_transf_pub_inf_pub.sp_reportes_etapas		
A.10. Identification of Risks that may substantially affect the project's GHG emission reductions or removal enhancements					
A.10.1. Are there risks which may substantially affect the project's GHG emission reductions or removal enhancements identified in the VCS PD?		DR	Yes. The project is going to generate electricity using the power of wind, in case the wind is lower than the expected the project activity will generate less emission reductions, but even in this case, it not will generate project emissions because according to the applicable methodology and on-site inspections, there are no GHG emission sources in this project activity.	OK	OK
A.11. Demonstration that the project has not created another form of environmental credit					
A.11.1. Is it demonstrated in the VCS PD that the project has not created another form of environmental credit?		DR	It has been declared by Barrick (the project owner) and by the search of this project activity in other GHG programs, that this project is not going to create other form of environmental credits. The UNFCCC website was reviewed and it can be confirmed that the project is not registered neither is seeking registration on CDM. According to the law 20,257, non conventional	OK	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			renewable energy (NCRE) projects like this, can obtain a certificate ("atributo ERNC"), but this certificate is only to demonstrate that the electricity is generated by a solar, wind, hydro, geothermal or biomass plant ≤20MW; so this electricity could have a better price in the market. The law 20,257 is dated 20/03/2008 (published on 01/04/2008). According to the CDM rules on type E+ and E- policies (ref. 40), this corresponds to an E- policy; and given that it was implemented after COP 17 (11/11/2001), it does not need to be taken into account when determining the baseline scenario. Notwithstanding the aforementioned, possible income from NCRE credits have been considered in the investment analysis and the project remains additional.		
A.12. Projects registered/rejected under other GHG programmes (if applicable)					
A.12.1. Has the project rejected under another GHG programme?	VCS standard version 3.4 section 3.11.11	DR	No, the project has not sought registration or issuance in any other GHG programme.	N/A	N/A
A.12.2. Is the project participating under an approved GHG program (3.11.9) or a GHG that is not an approved GHG program (3.11.10)?	VCS standard version 3.4 section 3.11.2 - 3.11.11)	DR	No, the project activity is not participating in any other GHG program approved or not by VCS.	N/A	N/A
A.12.3. Is the project proponent of the project included in an emission trading programme?	Section 3.11.2 of	DR	This project activity is not participating in any other	N/A	N/A

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
	the VCS standard version 3.4		emission trading program. But, for transparency reasons it has been reported along this document, that according to Law 20257, those companies drawing energy from the central grid (SIC) have to supply 5% (growing to 10%) from ERNC. They can produce themselves with ERNC or purchase from others. Production from ERNC provides both energy and ERNC "certificates" (atributo ERNC). The decoupling from energy and "ERNC attribute" allows for selling the "certificate" individually. This produces a market for the certificates.		
A.12.4. Is evidence that the reductions or removals generated by the project have or will not be used in the Programme or jurisdiction for the purpose of demonstrating compliance provided?	Section 3.11.2 of the VCS standard version 3.4	DR	There is no cap and trade system implemented in Chile, neither an emission tax system, so it can be confirmed that the emission reductions will not be used in any other program or to comply with any local regulations. Furthermore and in order to minimize the risk of double counting, the corresponding DOE will check, at the time of each verification, that emission reductions are not claimed or intended to claim for the same monitoring period in other GHG program.	N/A	N/A
A.12.5. Does the project take place in a jurisdiction or sector in which binding limits are established on GHG emissions?	Section 3.11.2 of the VCS	DR	There is no cap and trade system, neither an emission tax system implemented in Chile.	N/A	N/A

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
	standard version 3.4		The electricity market has no binding limits regarding the source of electricity to be generated, but as it has been mentioned above, if the % of ERNC in the market is higher than the required by the law 20,257, the "ERNC attribute" or "certificate" would probably have no value in the market. According to the CDM rules on type E+ and E- policies (ref. 40), this corresponds to an E- policy, and since it was implemented after COP 17 (11/11/2001), it is not necessary to consider it when determining the baseline scenario, although possible income from NCREC have been considered in the investment analysis. These "certificates" or "ERNC attribute" are only valid for Chile and has no intention to be used to compensate GHG emissions, this is only a mechanism that could stimulate the development of ERNC in Chile. It is stated that "could stimulate" because there is no clear outcome of the application of the law 20,257.		
A.12.6. Has the Project been rejected by other GHG programmes, due to procedural or eligibility requirements where the GHG programme applied?	VCS standard version 3.4 section 3.11.11	DR	No, the project has not sought registration or issuance in any other GHG programme.	N/A	N/A
A.12.7. Is the GHG programme which rejected this project approved under VCS Programme	Section 3.11.11 of the VCS Standard version 3.4	DR	N/A	N/A	N/A

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
A.12.8. Is it clearly stated in the VCS PD all GHG programmes for which the project has applied for credits and why the project was rejected?	Section 1.12.5 of the VCS PD	DR	N/A. The project has not sought registration or issuance in any other GHG programme.	N/A	N/A
A.12.9. Have the actual rejection document(s) including explanation provided?		DR	N/A. The project has not sought registration or issuance in any other GHG programme.	N/A	N/A
A.13. List of commercially sensitive information (if applicable)					
A.13.1. Has a list of commercially sensitive information been provided by the project proponent?	Section. 3.18.2 of the VCS Standard version 3.4	DR	All the information for the determination of baseline, demonstration of additionality and estimations of GHG emission reductions, required as per VVS requirements has been provided by the project proponent; none of them has been considered to be commercially sensitive. This has been correctly indicated on section 1.13 of the PD.	OK	OK
B. Baseline and Monitoring Methodology					
B.1. Choice and Applicability					
B.1.1. Is the baseline methodology approved under the VCS?	Section 3.13 of the VCS Standard version 3.4	DR	Yes, the methodology applied for this project activity is the CDM methodology ACM0002 version 13; and according to the VCS requirements, any methodology developed under the United Nations Clean Development Mechanism can be used for VCS projects.	OK	OK
B.1.2. Is the methodology approved by any other GHG programme approved by VCS Programme?	Section 2 of the VCS PD	DR	Yes, the methodology is approved by the Clean Development Mechanism from the UNFCCC.	OK	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
B.1.3. Is the baseline methodology the one deemed most applicable for this project?	Section 3.13 of the VCS Standard version 3.4	DR	Yes, the methodology is the most applicable of the CDM methodologies for this project activity. The applicability conditions of this methodology indicates that "*this methodology is applicable to grid-connected renewable power generation project activities that (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (Greenfield plant)*", which is the case of this wind farm project.	OK	OK
B.1.4. Is the choice of the methodology correctly justified by the VCS PD and is the project in conformance with all applicability criteria of the applied methodology?	Section 2.2 of the VCS PD	DR	Yes, in section D.2 of the PD it has been clearly mentioned the applicability conditions of the methodology ACM0002 version 13 and the compliance of the project activity.	OK	OK
B.1.5. Are the project specific deviations against the applied methodology discussed clearly?	Section.3.5 of the VCS Standard version 3.4	DR	As per it has been reviewed along the documents (ref. 1a-1g, 2, 4, 12a-12f, 24a-24e), there are no deviations of the applied methodology ACM0002 v13. This has been clearly reported in the PD section 2.6.	N/A	N/A
B.1.6. Are the deviations project-specific?	Section 2.6 of the VCS PD	DR	N/A	N/A	N/A
B.1.7. Do the deviations include changes in; — Baseline scenario — Additionality determination — Included projects GHG sources, sinks and reservoirs	Sections 3.5 and 3.6 of the VCS Standard version 3.4	DR	N/A. There is no deviation of the applied methodology ACM0002 v13.	N/A	N/A
B.1.8. Is it sufficiently explained and accepted that the deviation does not result in reduction of	Sections 3.5 and 3.6	DR	N/A	N/A	N/A

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
conservativeness? Provide sufficient evidence to support your arguments.	of the VCS Standard version 3.4				
B.1.9. Is there any revision to the methodology that has been applied?	Sec. 4.2 of the VCS Standard version 3.4	DR	The applied methodology ACM0002 version 13 was the latest revision of this methodology and was valid from 11/05/2012 and the on. Then on 04/10/2013 the version 14 of this methodology was issued. Given the updates of the methodology refer only to requirements of CPA-DD's and the change of the name; the PP continued using the ACM0002 version 13, that is valid for submissions until 04/06/2014.	OK	OK
B.2. Project Boundary					
B.2.1. Are all emission sources and gases related to the baseline scenario, project scenario and leakage clearly identified and described in a complete manner?	Section.3.1 2 of the VCS Standard version 3.4	DR	Yes, the emission sources described in section 2.3 of the PD have been clearly identified and in line with the applied methodology. According to the methodology ACM0002 v13, the emission sources included and excluded in from the project boundary are the following: Baselines: CO_2 emission from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. Project emissions: none is mentioned for wind power plants. Only CO_2 and CH_4 emissions for geothermal power plants; CO2 for fossil fuel combustion in solar thermal and geothermal power plants and CH_4 for emissions from reservoirs in hydro power plants.	OK	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			Leakage: none. According to the methodology this emissions can neglected.		
B.2.2. Are the GHG sinks and reservoirs identified clearly for baseline scenario and project activity?	Section 3.12 of the VCS Standard version 3.4	DR	N/A. There are no sink or reservoirs for this project activity.	N/A	N/A
B.2.3. The project boundary defines clearly the geographical and the physical location of the project. Are there any overlaps in the geographical boundaries in relation to processes involved in the projects?	Section 3.12 of the VCS Standard version 3.4		Yes, according with the methodology the project boundary is the spatial extend that includes the project power plant and all power plants connected physically to the electricity system that the proposed project is connected. For this project activity, section 2.3 clearly indicated the same geographical extension (as per the methodology) for the project boundary and the relevant electricity system is the SIC (Central Interconnected System). According to the information reviewed (ref. 16, 17), it can be confirmed that the SIC is the relevant electricity system for this project activity.	OK	OK-
B.3. Identification of the Baseline Scenario					
B.3.1. Is the baseline defined using a project method or a standardized method? If a project method is used for baseline determination, please complete sections "B.3.2 to B.3.10", otherwise complete sections "B.3.4-B.3.10"		DR	The PP selected the project method for the determination of the baseline scenario. This is in line with the indications of the applied methodology ACM0002 v13, which clearly states that*:* *"If the project activity is the installation of a new grid-connected renewable power plant/unit,* (as in this case) *the baseline scenario is the following:*	OK	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			• Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the .Tool to calculate the emission factor for an electricity system." This baseline scenario has been correctly indicated in the PD, section 2.4.		
B.3.2. Does the VCS PD discuss the identification of the most likely baseline scenario? Does the VCS PD follow the steps to determine the baseline scenario required by the methodology and is the application of the methodology and the discussion and determination of the chosen baseline transparent?	Section 3.13 of the VCS Standard version 3.4	DR	Yes, section 2.4 clearly identified the baseline scenario as per the indications of the applicable methodology ACM0002 v13 page 4. Different alternatives were not considered for the determination of the baseline, because according to the applied methodology, only one baseline is applicable for Greenfield projects, like this wind farm.	OK	OK
B.3.3. Does the application consider all potential realistic and credible baseline scenarios in the discussion taking into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?	Section 3.13 of the VCS Standard version 3.4	DR	As it has been mentioned above, the baseline scenario is defined by the applicable methodology and it has been used for this project activity. It is in line with the applicable national policies, as the project activity is connected to the national grid called SIC.	OK	OK
B.3.4. Is the baseline scenario determined in accordance with the requirements set in the applied methodology?	VCS Standard version 3.4 Section	DR	Yes, the baseline has been determined as per the indications of the applied methodology ACM0002 v13.	OK	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
	3.13.1				
B.3.5. Does the project and baseline scenarios provide products or services equivalents in type and level activity?	VCS Standard version 3.4 Section 3.13.2	DR	Yes, the baseline scenario is the delivery of electricity to the grid (SIC), by the generation sources already installed and the new generation sources. This is the same service to be provided by this project activity; electricity to the grid (SIC).	OK	OK
B.3.6. Is conservativeness addressed in the way of identifying the baseline scenario?	VCS Standard version 3.4 Section 3.13.3	DR	N/A; the baselines is defined by the applicable methodology ACM0002 v13 and it has been correctly followed in the project activity.	OK	OK
B.3.7. Is the information used to determine the baseline scenario available for public review?	VCS Standard version 3.4 Section 3.18.2	DR	Yes, the information of the power plants connected to the grid SIC and the electricity delivered is publicly available information from the CDEC-SIC (https://www.cdec-sic.cl/index_es.php), some specific information as fuel consumption/efficiency of the power plant is not always directly available at the CDEC-SIC web site. In such cases, this information has been obtained indirectly from other publicly available sources, such as Node Price reports (ref. 26).	OK	OK
B.3.8. Does the information used to determine the baseline scenario meet the requirements of the VCS?	VCS Standard version 3.4 Section 3.17	DR	Yes, according to the VCS Standard v3.4 (ref. 8b), "*baseline scenario for a project activity shall be determined in accordance with the requirements set out in the methodology applied to the project…".* This has been exactly the case in this project activity; the baseline scenario is defined by the applicable methodology and it has been correctly indicated in the	OK	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			PD and followed in the emission reductions calculations.		
B.3.9. In case of multiple project activities, do the applicable methodologies specify criteria and procedures for combining baseline scenarios?	VCS Standard version 3.4, Section 3.2.2 (2b)	DR	N/A	N/A	N/A
B.3.10. Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	Section 2.4 of the VCS PD	DR	Yes, the selected baseline it is the most like baseline scenario for this Greenfield project activity.	OK	OK
B.4. Additionality					
B.4.1. Does the VCS PD clearly demonstrate the additionality using additionality tests as defined by VCS version 3.4 standard?	Section 3.14 of the VCS Standard version 3.4	DR	Yes, according to the VCS standard v3.3 "*Additionality shall be demonstrated and assessed in accordance with the requirements set out in the methodology applied to the project*". In this case the methodology ACM0002 v13 indicates that the "*additionality of the project activity shall be demonstrated and assessed using the latest version of the Tool for the demonstration and assessment of additionality. agreed by the Board*". The PD was reviewed and it was found that, in fact, the project activity is using the latest version available of the "Tool for the demonstration and assessment of additionality" version 07.0. The steps for the determination of additionality are the	OK	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			following: Step 0 Demonstration whether the proposed project activity is the first-of-its-kind: N/A for this project activity. Step 1 Identification of alternatives to the project activity: According to the CDM Standard v4 for the identification of alternatives, it states the following: "*Where the baseline scenario is not prescribed in the approved methodology, the DOE shall assess the list of identified credible alternatives to the project activity in the PDD selected to determine the most realistic baseline scenario. Where the baseline scenario is prescribed in the approved methodology, no further analysis is required".* Even though, the PD details the two alternatives mentioned by applicable methodology in sub-step1a, which are: a) The proposed project activity undertaken without being registered as a CDM (VCS) project activity b) Continuation of the current situation		
			Both alternatives a) and b) comply with the mandatory laws and regulations (sub-step 1b).		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			Step 2 Investment analysis: Through this step, the PP has to determined that the proposed project activity is not a) the most economically or financially attractive, or b) economically or financially feasible, without the revenues from the sale of CERs (VCU´s). Sub-step 2a, 2b: Determine appropriate analysis method. In this case the PP determined that the Option III of the Tool "Benchmark analysis" is the most suitable for this project type. This has been found to be in line with the Tool because "*if the CDM project activity and the alternatives identified in Step 1 generate no financial or economic benefits other than CDM related income, then apply the simple cost analysis (Option I). Otherwise, use the investment comparison analysis (Option II) or the benchmark analysis (Option III)*." As the project generate revenues by the sale of electricity, Option I is not applicable. Also it is in line with the "Guideline for the assessment of investment analysis" guidance 19, as it states "*If the alternative to the project activity is the supply of electricity from a grid this is not to be considered an investment and a benchmark approach is considered appropriate*". "*The benchmark approach is therefore suited to circumstances where the baseline does not require investment or is outside of the direct control of the project developer, i.e. cases*		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			where the choice of the developer is to invest or not to invest"		
			According to the Option III of the tool, (benchmark analysis) the discount rate and benchmark shall be derived from 1 of 5 different sources and the PP chooses option (d) "*Government/official approved benchmark where such benchmarks are used for investment decisions*". The benchmark considered in the PD is 10% based on DFL-4 Decree with force of law issued by the Ministry of Economy, Promotion and Reconstruction, but according to the information provided by the National Energy Comission, the 10% mentioned in DFL-4 article N°174, is used as an actualization rate by the ministry to carry out evaluations of the system expansion plan every 4 years, but is it not used for decision making or evaluation of new project potentially entering the grid. It is important to note that all the companies involved in the electricity system are private entities and the state of Chile has no presence in the market. **CL 3 has been raised** requesting the PP to demonstrate how the selected benchmark of 10% comply with the requirements of the Additionality Tool paragraph 38a-38e. In response the PP changes the Benchmark from 10% to 10.3%; which is the default value for Group 1 projects in Chile provided by the "Tool for the demonstration and assessment of additionality"	CL 3 was raised	CL 3 was closed

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			version 07. This value is correct for this wind farm project activity, as Group 1 involves: Energy Industries. **CL 3 was closed.**		
			- Sub-step 2c: Calculation and comparison of financial indicators. The PP indicated in the PD and spreadsheet (ref. 12a) the costs and revenues from the project activity and the following was found: - According to the "Guideline on the assessment of investment analysis" v5, the input values used in all investment analysis should be valid and applicable at the time of the investment decision taken by the project proponent. PP is requested to clarify the time of the investment decisions and provide the corresponding supports for each item of the investment costs. This includes the source for the estimation of the electricity price, in order to confirm if it is in line with the "Guideline on the assessment of investment analysis" and the clarification of how the price of the NCRE certificates was estimated **CL 4a was raised**. In response the PP clarified that the investment decision is in April 2010, when the AFE BRC-701(S2) that provides the authorization for the final design and expenditure of additional US$ 9,908,955 required for the project activity was approved. This has been found to be correct based on the information reviewed during the on-site inspection and the evidences provided by the PP. It was verified that the first (US$18,200,000), second (US$18,926,000) and third	CL 4 was raised	CL 4 was closed

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			(US$1,000,000) investment for this project were authorized by Barrick Gold Corporation through the internal AFE reports (Authorization for Expenditure) in 2007 (ref. 56) for the basic design, the land lease and the modified design, respectively, but the proyect was stopped until the last expenditure was approved in 2010. It was also verified that the AFE documents are saved in the internal system of Barrick (PP), in the section AFE Document Repository for Santiago (ref. 72d). Regarding the electricity price it was verified that the original support of the electricity price estimation is not available, but an additional support also from CNE, dated 20/12/2010 (same year of the defined investment decision), was provided (ref. 73). This document was reviewed by the assessment team (including the technical area expert) and it was found that in the scenario of price projections from 2010 to 2025 proposed by CNE, the average value is 90 US$/MWh (with higher values between 2010-2013), which is lower than the value used by the PP, but very similar, as the information is from the same source (CNE). Thus the information applied in the financial analysis it has been found to be correct. The information regarding the O&M cost provided refers to a confident source, but from 2012 (ref. 13 = 7.7 USD/MWh). The through value for this parameter is the one provided by the CNE		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			(National Energy Commission in Chile) this value is 7.7USD$/MWh, which is also the value reported by the grid administrator (CDEC-SIC) for the variable non-fuel costs of wind farms in Chile (ref. 26). Furthermore, this is lower than the average values from the experience in Europe where for load factors of 20% and 30%,the O&M costs are between 10 US$/MWh and 15 US$/MWh, respectively (ref. 63). Thus, it has also been considered correct. The capacity price is determined by the grid administrator (CDEC-SIC) and for this assessment the average capacity price is obtained from the "*Informe_Tecnico_PNP_Fijacion_Abril_2010*", which is the correct national source for this parameter. **CL 4a was closed**. - According to the report of Seawind the load factor determined for the investment decision was 31% P50 and 24% P20 and not 27% as per the information indicated in the investment analysis. PP is requested to clarify this information. **CL 4b was raised**. In response the PP clarified that the load factor used for the analysis was the simple average of the results provided in the Seawind study (ref. 51). Even the procedure to calculate the values is not correct; it has been accepted as the average load factor for the wind farm projects in Chile, provided by the grid administrator is 21% for 2010		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			(ref. 64) and 22.4% for 2011 (ref. 67), so the 27% used in the investment analysis is a conservative value. **CL 4b was closed.** - PP is requested to confirm the source of the 3% transmission losses used for the electricity generation estimations. **CL 4c was raised**. In response the PP provided the information from the line length from each wind turbine to the injection point (ref. 75a, 75b). This information was reviewed by the technical area expert and it was confirmed that the 3% of losses considered for the ex-ante estimation of the emission reduction is a consistent value. **CL 4c was closed**. - The firm capacity defined in the investment analysis is 3.40 MW, the PP is requested to provide the source of data used to determine this value. **CL 4d was raised**. In response it was clarified that the firm capacity estimated for this project activity was calculated based in a study from the University of Chile for 2006. Even this information is previous to the investment decision, it can be considered consistent with the information defined by PNUD for wind farms in Chile in 2007 (ref. 60) and with the information obtained from the SIC for 2011 (ref. 67). Furthermore, according to the estimations made by the PP, the firm capacity for this project activity is 3.4 MW and the real firm capacity determined by the grid administrator for		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			2012 is 0.4 MW - 0.7 MW. As the firm capacity of the plant is also sold, the value considered by the PP is a conservative approach.		
			Sub-step 2d: sensitivity analysis. The PP provided in the PD and spreadsheet (ref. 12a-12f) a sensitivity analysis of where the CAPEX and energy sale prices were analyzed with a variation of ±10%. It was verified that even with an increase of 10% in the electricity and also a decrease of 10% in the investment, the project remains to be additional. It is necessary an increase of 48.7% in the electricity price or a decrease of 29.8% in the CAPEX to reach the Benchmark of 10.3%. Step 3: Barrier analysis. No barrier analysis has been performed in the project activity. Step 4: Common practice analysis. Please check the detail below in section B.4.6.	OK	-
B.4.2. Is the discussion on additionality and the evidence provided consistent with the starting date of the project If the project has started before the validation is it discussed how the fund from VCU was taken into account in the decision to go ahead with the project activity.	Section 3.14 of the VCS Standard version 3.4 and Section 2.5 of the VCS PD	DR	**CL 4 was previously raised and closed.** Yes, the discussion on additionality and the evidence provided is consistent with the project starting date. Based on the invest analysis it has been demonstrated that the project is not financially attractive, without the revenues from the sale of VCU´s.	OK	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
B.4.3. Is the discussion on additionality consistent with the identification all potential realistic and credible baseline scenarios Do the identified alternative include technologies and practices that include outputs (e.g.) cement or services comparable with the proposed project activity	Section 3.14 of the VCS Stand version 3.4 and Section 2.5 of the VCS PD	DR	The discussion of additionality is consistent with the identified baseline scenario; this is because according to the CDM Standard v4 for the identification of alternatives, it states the following: "*Where the baseline scenario is not prescribed in the approved methodology, the DOE shall assess the list of identified credible alternatives to the project activity in the PDD selected to determine the most realistic baseline scenario.* *Where the baseline scenario is prescribed in the approved methodology, no further analysis is required".*	OK	OK
B.4.4. If Project Method has been used, then has it followed all steps including 'Regulatory Surplus'?	Section 3.14 of the VCS Standard version 3.4 and Section 2.5 of the VCS PD	DR	No project method has been used. The information presented is in line with the applicable methodology and tools.	N/A	N/A
B.4.5. If an implementation barrier analysis has been used, has it been shown that the proposed project activity faces barriers that prevent the implementation of this type of proposed project activity but would not have prevented the implementation of at least one of the alternatives?	Section 3.14 of the VCS Standard version 3.4	DR	No barrier analysis has been used in the project activity.	N/A	N/A
B.4.6. Has it been shown in step three that the	Section	DR	The step 4 of the "Tool for the demonstration and	CL 5 was	CL 5 was

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
project is not common practice?	3.14 of the VCS Standard version 3.4		assessment of additionality" refers to the Common practice analysis. Common practice has been determined using the "Guidelines on Common Practice" version 02.0; which is correct as this project activity applies measure II as per the Tool. The applicable geographical area should be the host country and in this project activity only the SIC has been considered part of the geographical area. In order to validate this assumption, please provide the corresponding supports in order to confirm "essential distinctions between the identified specific geographical area and the rest of the host country". **CL 5 was raised.** In response the PP provided the updated PD v2, where in section 2.5 was clarified that the recommendation of the "Guideline on Common Practice" was followed and the applicable geographical area for the assessment is the entire country. This was verified against the information from the National Energy Commission in Chile (CNE) and from the grid administrator (CDEC-SIC) and it was found to be correct and conservative. **CL 5 was closed**. According to this guideline 5 steps need to be completed. Step 1: calculate applicable capacity or output range as ±50% of the total proposed project activity (20MW	raised	closed

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			for this project activity). So, in this case the results are 10MW – 30MW. Step 2: Identify similar project (CDM and not CDM) which fulfils the following conditions: (a) The projects are located in the applicable geographical area; - only SIC considered in the PDD, but according to the tool has to be the entire host country.		
			(b) The projects apply the same measure as the proposed project activity; (c) The projects use the same energy source/fuel and feedstock as the proposed project activity, if a technology switch measure is implemented by the proposed project activity; - N/A no technology switch. (d) The plants in which the projects are implemented produce goods or services with comparable quality, properties and applications areas (e.g. clinker) as the proposed project plant activity – yes, electricity generation. (e) The capacity or output of the projects is within the applicable capacity or output range calculated in Step 1; - this should be between 10 MW-30MW. (f) The projects started commercial operation before the project design document (CDM-PDD) is published for global stakeholder consultation or before the start		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			date of proposed project activity, whichever is earlier for the proposed project - this is consistent with the information published by the CNE. Step 3: within the projects identified in Step 2, identify those that are neither registered, submitted for registration nor undergoing validation CDM project activities (N_{all}). The result was only this project activity. Step 4: within similar projects identified in Step 3, identify those that apply technologies that are different to the technology applied in the proposed project activity (N_{diff}). The result is cero. Step 5: calculate factor $F=1-N_{diff}/N_{all}$ representing the share of similar projects (penetration rate of the measure/technology) using a measure/technology similar to the measure /technology used in the proposed project activity that deliver the same output or capacity as the proposed project activity.		
			In conclusion the project is not common practice because. $N_{all}=1$; $N_{diff}=0$ F is equal to: 1 (greater than 0.2) $N_{all}-N_{dif}=1$ (lower than 3).		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			Only the project activity informed by the National Energy Commission until 31.12.2012 has been used.		
B.5. Application of the Baseline Methodology					
B.5.1. Has the approved methodology been applied correctly for determining **baseline emissions**?	Section 3.15 of the VCS Standard version 3.4	DR	According to the applicable methodology, *"the baseline includes only CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaces due to the project activity".* For this reason the applicable formula (6) of the methodology has been correctly indicated in the PD, section 3.1 and it is: $BE_y = EG_{PJ,y} * EF_{grid,CM,y}$ Where: $EG_{PJ,y}$: Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year *y* (MWh/yr) $EF_{grid,CM,y}$: Combined margin CO_2 emission factor for grid connected power generation in year *y* calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (tCO_2/MWh) Considering that this project activity is a Greenfield power plant $EG_{PJ,y}$ is equal to $EG_{facility,y}$; where $EG_{facility,y}$: Quantity of net electricity generation supplied by the project plant/unit to the grid in year *y* (MWh/yr). Hence, the approach adopted by the Project Proponent to calculate the baseline emissions	CAR 6 was raised CL 7 was raised	CAR 6 was closed CL 7 was closed

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			is in accordance with the applied methodology ACM0002 version 13. Regarding the calculation of the parameter $EF_{grid,CM,y}$ (grid emission factor) $EF_{grid,CM,y}$ it was verified to be calculated according to the "Tool to calculate the emission factor for an electricity system" v 4.0. The calculation of the grid emission factor was provided by the PP in the spreadsheet 151113_Grid Emission Factor 2012_V9 (ref. 24e), a step-by-step assessment is detailed below: **Step 1:** Identify the relevant electric power system: The electric power system identified by the PP is Chile's Central Interconnected System (SIC). This approach is correct, since the following was verified: • The project is located in Chile, in the Atacama District, which is within the geographical boundaries of the SIC (from the Antofagasta District in the North to Lake District in the South). There are other interconnected systems in Chile, but they are not connected to the SIC. • There are no electricity imports or exports applicable for this electricity system. There are electricity imports in Chile but only for the Northern Electricity System (SING), and since it is not connected to the SIC, it does not apply.		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			Step 2: Choose whether to include off grid power plants in the project electricity system Off grid power plants were not included in the calculation (Option I of the tool). This approach is correct, whenever the electricity grid in Chile is stable and reliable, and Off-grid generation is not significant. **Step 3:** Select a method to determine the operating margin (OM) It is indicated in the PD that the Operating Margin was calculated using the Simple Adjusted OM method. According to the applied Tool, there are no constraints to the application of this method to determine the operating margin; simple OM and dispatch data analysis are the only methods for calculating the OM that have special requisites. Furthermore, considering that the low cost must run resources represents more than 50% of the total grid generation during the last five years, Simple OM could not have been used. Considering the aforementioned reasons, the election of simple adjusted OM has been deemed valid. The OM was chosen to be calculated using ex ante option, as per Para 36 (a), a 3 year generation-weighted average based on the latest information available, which corresponds to years 2010, 2011 and		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			2012. The data vintage was documented in section 3.1 of the PD as per Para 36(a) of the applicable Tool. The 3 years average was calculated using an approach different from what is required Para 36(a) of the tool, so **CAR 6a was raised** asking the PP to correct the calculation of the 3 years average In response the PP updated the GEF calculation spreadsheet (ref. 24c), where the low cost/must run power units were included in the calculation and these calculations was performed in line with equation 8 of the "Tool to calculate the emission factor for an electricity system" v04. **CAR 6a was closed**. **Step 4:** Calculate the operating margin factor according to the selected method Simple adjusted OM is indicated to be calculated as per equation 8 of the tool $EF_{grid,OM-adj,y} = (1-\lambda_y) \times \frac{\sum_m EG_{m,y} \times EF_{EL,m,y}}{\sum_m EG_{m,y}} + \lambda_y \times \frac{\sum_K EG_{k,y} \times EF_{EL,k,y}}{\sum_k EG_{k,y}}$ Where • $EF_{grid,OM-adj,y}$ = Simple adjusted operating margin CO_2 emission factor in year *y* (t CO_2/MWh) • λ_y = Factor expressing the percentage of time		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			when low-cost/must-run power units are on the margin in year *y* • $EG_{m,y}$ = Net quantity of electricity generated and delivered to the grid by power unit *m* in year *y* (MWh) • $EG_{k,y}$ = Net quantity of electricity generated and delivered to the grid by power unit *k* in year *y* (MWh) • $EF_{EL,m,y}$ = CO2 emission factor of power unit *m* in year *y* (t CO2/MWh) • $EF_{EL,k,y}$ = CO2 emission factor of power unit *k* in year *y* (t CO2/MWh) • *m* = All grid power units serving the grid in year *y* except lowcost/must-run power units • *k* = All low-cost/must run grid power units serving the grid in year *y* • *y* = The relevant year as per the data vintage chosen in Step 3 The calculation of the grid emission factor was provided by the PP in the spreadsheet 151113_Grid Emission Factor 2012_V9 (ref. 24e). It was verified that the electricity generation data ($EG_{m,y}$, $EG_{k,y}$) and emission factors ($EF_{EL,m,y}$ and $EF_{EL,k,y}$) were correctly calculated. Generation data for years 2010 2011 and 2012 were obtained from an official, publicly available source which can be downloaded in the link below http://www.cne.cl/images/stories/estadisticas/energia/Electricidad/generacion_bruta_sic_sing.xls. It was verified that the generation data used in the		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			calculation of the emission factor was consistent as in ref. 23b. Regarding the emission factor, for most of the plants that generated electricity during 2010 and 2011, both generation and fuel consumption data was available, so the emission factor was calculated using Option A1, eq. (2) of the tool $$EF_{EL,m,y} = \frac{\sum_i FC_{i,m,y} \times NCV_{i,y} \times EF_{CO2,i,y}}{EG_{m,y}}$$ Where: • $EF_{EL,m,y}$ = CO_2 emission factor of power unit *m* in year *y* (tCO_2/MWh) • $FC_{i,m,y}$ = Amount of fuel type *i* consumed by power unit *m* in year *y* (Mass or volume unit) • $NCV_{i,y}$ = Net calorific value (energy content) of fuel type *i* in year *y* (GJ/mass or volume unit) • $EF_{CO2,i,y}$ = CO_2 emission factor of fuel type *i* in year *y* (tCO_2/GJ) • $EG_{m,y}$ = Net quantity of electricity generated and delivered to the grid by power unit *m* in year *y* (MWh) • *m* = All power units serving the grid in year *y* except low-cost/must-run power units • *i* = All fuel types combusted in power unit *m* in year *y* • *y* = The relevant year as per the data vintage chosen in Step 3 • Fuel consumption data $FC_{i,m,y}$ was verified that against the data published in CDEC-		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			SIC's 2012 yearbook (ref. 16), which reports data from 2002 until 2011. No inconsistencies were found in this regard. For some power plants whose fuel consumption was not directly available in the yearbook, specific fuel consumption data (publicly available from CDEC-SIC's biannual node price reports) was used to calculate the fuel consumption. The data used in the calculation was checked against Node Price Reports and it was deemed correct. Nonetheless, it was identified that for some power plants with more than one generation unit, generation data is aggregated while specific fuel consumption is disaggregated (for example Campanario, Emelda, Esperanza, San Lorenzo). **CL 7a was raised** asking the PP how the specific fuel consumption was determined in such cases, and how the specific fuel consumption of Campanario was determined for 2011. In response the PP provided the GEF calculation version 3 (ref. 24c, internal v6). This spreadsheet was reviewed and it was found that the specific fuel consumption was modified in the calculation of the operating margin corresponding to 2010, 2011, 2012; and whenever there were two values for specific fuel consumption, the most conservative (lower) value was applied. **CL 7a was closed.**		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			• The Net calorific values $NCV_{i,y}$ were obtained from 2011's National energy Balance (ref. 27). Although it is not explicitly reported in ref. 27; it was confirmed by the authority (ref. 28c) that NCV values reported in that document were considered as HHV, so they were adjusted as per IPCC 2006 Guidelines volume 2 (ref. 28a), by multiplying said factors by 0.95 (or 0.9 if the fuel is in gaseous state). • CO_2 emission factor for the different fuels used, $EF_{CO2,I,y}$, were obtained from IPCC 2006 Guidelines, Volume 2 Chapter 1, Table 1.4, lower 95% confidence interval, as required in the applied Tool When only generation data was available on 2010 and 2011, Option A2, eq. (3) of the tool was applied. Fuel consumption data is still not publicly available for 2012 generation, so all the plants that generated electricity in 2012 from fossil fuels used this approach. $$EF_{EL,m,y} = \frac{EF_{CO2,m,i,y} \times 3.6}{\eta_{m,y}}$$ Efficiency factors $\eta_{m,y}$ were obtained from Appendix 1 of the Tool. It was verified that the factors used were correctly applied for old and new generation units; however some generation plants did not report their		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			commissioning date in the calculation of 2010's operating margin, and in that cases the efficiency factor corresponding to old plants was used. **CL 7b was raised** asking the PP to clarify this approach. The PP informed the commissioning year for those plants in 2010 that were not included it in the original calculation of the grid emission factor, and efficiency values were corrected according to the new commissioning dates provided. Efficiency values were also corrected for some plants in the calculation of 2011 and 2012 operating margin, where the original information was not consistent with the Tool to calculate the grid emission factor. No further discrepancies were found regarding the efficiency values used to calculate the specific fuel consumption, so **CL 7b was closed.** The set of Low cost/must run units is based on the type of fuel that the generation unit uses. All Coal, Diesel, Fuel Oil, Gas and Petcoke fuelled power plants were considered as NON-LCMR, while all hydro, wind and biomass were considered as LCMR. The total energy generated by LCMR plants was calculated using this definition. However, Petropower, a petcoke-powered plant that due to its low variable cost is dispatched whenever available, was not included as a LCMR plant. **CAR 6b was raised** asking the PP to identify the set of LCMR units		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			according to Para 10 (g) of the applicable Tool. The set of Low Cost Must run units was amended in the spreadsheet ref. 24b. 14813_Grid Emission Factor 2012_V2.The power unit Petropower was included in the set of Low cost/Must Run power generation units, in the calculation sheets corresponding to years 2010, 2011 and 2012. **CAR 6b was closed.** Lambda factor λ_y was calculated for 2010, 2011 and 2012. After the review of the data it was verified that it was calculated according to the steps in the tool. Step i) Load duration curves were plotted for each year using hourly generation data sorted in descending order. The data used in the determination of the load duration curves corresponding to years 2010, 2011, 2012 in the calculation spreadsheet (ref. 24b) was checked against the data in the supporting files (hourly electricity generation information from the grid administrator, ref. 44), and it was verified to be consistent. Step ii) the annual generation of LCMR units was correctly determined for all three years. Step iii) a horizontal line was plotted so that the area under the horizontal line and the load duration curve to the right of the intersection point corresponds to the total energy generated by LCMR units.		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			It was verified that the area under the curve is consistent with the LCMR-generated energy, and that the intersection point between both curves was correctly determined. Step iv) The "Number of hours for which LCMR sources are in margin" was determined for years 2010, 2011 and 2012. The resulting values were λ_{2010}: 0.0065;: λ_{2011}: 0.0001;: λ_{2012}.: 0.0000. The assessment described above represents the calculations relevant to non LCMR power units; the calculations related to LCMR units were performed analogously. Finally, the OM was calculated as $EF_{grid,OM-adj,2010-2012} = \frac{EF_{grid,OM-adj,2010} \times EG_{2010} + EF_{grid,OM-adj,2011} \times EG_{2011} + }{EG_{2010} + EG_{2011} + EG_{2012}}$ The final value for the Operating Margin was 0.6555 tCO_2e/MWh. As a result of the discussion above, the aforementioned value was deemed valid. **Step 5: Calculate the build margin emission factor**		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			The Build Margin was calculated using Option 1 (ex-ante calculation). This choice was clearly documented in the PD. After the review of the documentation provided by the PP, it was verified that the sample group of power units that was used to calculate the Build margin was determined according to Para 71 of the Tool. A step-by-step assessment of the calculation of the parameter $EF_{grid,BM,y}$ is described below: a) The set of 5 most recent power units of the project electricity system ($SET_{5\ unit}$) was determined; all units within this sample were installed in 2012. The commissioning date of the power plant only indicates year, so with the information made available by the PP it is not possible to determine which are the 5 most recent plants; it is only indicated that they were installed on 2012. As a conservative approach, all the power units installed during 2012 were considered in this sample.		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			Despite this, even if all the power plants installed during 2012 were considered, the sample $SET_{5\ unit}$ comprises less than 20% of 2012's annual electricity generation (AEG_{total}). This is clearly indicated in the GEF calculation spreadsheet. b) SET>20% was determined as per Para 71 (b) of the tool, based on the electricity generated during 2012 and the commissioning date informed in ref. 23a. For power plants where one or more units were added or retrofitted, the oldest commissioning date was used, so as to avoid including them in the calculation of the emission factor, as per Para 70 of the tool. The date of commissioning of the Power units installed on 2007 were identified with month and day, so as to correctly identify the newer power units that comprises 20% of the annual generation. (please refer to CL 7c below for further information) Units identified as CDM projects were discarded from the sample group and from AEG_{total}, but not all CDM project were identified as such. **CAR 6c was raised** requesting the project participant to exclude all the CDM projects from $SET_{>20\%}$ and AEG_{total}. The PP corrected the list of power units identified as CDM projects. The power plant FPC (also named as		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			"Escuadrón" due to a change of the ownership of the plant) was included in the list of projects identified as CDM projects. After the modifications made by the PP, it was verified that the list of power units identified as CDM projects was correct and this were correctly discounted from AEG_{total}, so **CAR 6c was closed**. The oldest power plant included in SET>20% was commissioned on 2007, so there are no power units older than 10 years to be discarded from the sample and steps d) e) and f) of Para 71 were ignored. However, there were other power plants installed during 2007 that added a significant amount of capacity to the grid and were left out of SET>20% (e.g. San Isidro), and since the installation date was not fully indicated, it is not clear with the information available that such units were correctly dismissed from the sample. **CL 7c was raised** asking the PP to provide further evidence to verify the power units included in SET>20%. PP provided more complete information about the power units that entered commercial operation in 2007. Additional documentation was provided by the project participant, in order to support this information; this information was obtained from a publicly available report from the grid administrator (ref. 71). This information was checked and it was considered valid.		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			After the review of the revised calculation, it was verified that the power plants installed during 2007 informed a correct entry date. Therefore, it was confirmed that the sample $SET_{>20}$ was correctly determined; the latest unit included in this sample is Palmucho (run of river) and the overall electricity generation of this sample was 45,947.6687 GWh. No other discrepancies were found regarding the determination of SET>20%, so **CL 7c was closed.** The build margin was correctly calculated as equation (13) of the Tool using 2012's generation data $$EF_{grid,BM,y} = \frac{\sum_m EG_{m,y} \times EF_{EL,m,y}}{\sum_m EG_{m,y}}$$ **Step 6: Calculate the combined margin emission factor** It was verified that the combined margin was calculate using a weighted average CM, as per equation (14) of the tool (Simplified CM does not		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			apply for projects in Chile): $EF_{grid,CM,y} = EF_{grid,OM,y} \times w_{OM} + EF_{grid,BM,y} \times w_{BM}$ W_{OM} and W_{BM} were defined as. w_{OM} = 0.75 and w_{BM} = 0.25; this is consistent with Para 81 (a) of the tool. The resulting value for $EF_{grid,CM,y}$ was 0.6713 tCO_2e/MWh. The parameters EF_(grid,$OM_{,y}$), EF_(grid,$BM_{,y}$) were verified to be calculated correctly, and the weights w_{OM} and w_{BM} were determined in accordance with the Tool; therefore, the parameter $EF_{grid,CM,y}$ was deemed correct.		
B.5.2. Has the approved methodology been applied correctly for determining **project emissions**?	Section 3.15 of the VCS Standard version 3.4	DR	According to the applicable methodology emissions are only considered for the following: - Geothermal power plants: fugitive emissions of CO_2 and CH_4 from non-condensable gases contained in geothermal steam.	OK	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			- CO_2 emissions from combustion of fossil fuel for electricity generation in solar thermal power plants and geothermal power plants (the use of fossil fuel for the back up or emergency purposes (e.g. diesel generator) can be neglected. - For hydro power plants, emissions of CH_4 from the reservoir. As this project activity is a wind power plant no project emissions have to be considered according to the applicable methodology. This has been correctly indicated in the PD section 3.2.		
B.5.3. Has the approved methodology been applied correctly for determining **leakage**?	Section 3.15 of the VCS Standard version 3.4	DR	According to the applicable methodology ACM0002 v13 "*No leakage emissions are considered. The main emissions potentially giving rise to leakage in the context of electric sector projects are emissions arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g. extraction, processing, transport). These emissions sources are neglected*" This has been correctly considered in the PD section 3.3.	OK	OK
B.5.4. Where applicable, has the approved methodology been applied correctly for the **direct calculation of emission reductions**	Section 3.15 of the VCS Standard version 3.4	DR	Not applicable. The methodology does not consider the direct calculation of the emission reductions. Equation (11) of the methodology describe the equation to determine the emission reductions, which is the following: $ER_y = BE_y – PE_y$	N/A	N/A

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
B.6. Ex-ante Data and Parameters Used					
B.6.1. Is the data provided in compliance with the methodology?	Section 3.16.1 of the VCS Standard version 3.4	DR	Yes, according to the applicable methodology ACM0002 v13 and the "Tool to calculate the emission factor for an electricity system" v04.0, the following parameters need to be considered. $FC_{i,m,y}$: Amount of fuel type i consumed by power plant m, k in year y. The data for this parameter has been correctly obtained from two national official sources CDEC-SIC (ref. 16) Yearbook 2002-2011 and Node Price Report from the Energy Commission (ref. 26 2010 - 2012) published every 6 month. The values reported in the GEF calculations spreadsheet (ref. 24a-24e) were validated to be in line with the mentioned sources. $NCV_{i,y}$: Net calorific value (energy content) of fuel type i in year y. The values for this parameter have been correctly obtained from the latest National Energy Balance published by the Ministry of Energy (ref. 27). Due to the authority provides the GCV (ref. 28c), the conservative conversion factor of IPCC (ref. 28a) has been used. The values reported in the GEF calculations spreadsheet (ref. 24a-24e) were validated to be in line with the mentioned sources. $EF_{CO2,i,y}$ and $EF_{CO2,m,i,y}$: CO_2 emission factor for fuel type i used in power unit m in year y. The dara for this parameter has been correctly taken from the IPCC 2006, chapter 1, volume 2, lower bound of the 95% confidence interval. This has been found to be correct	OK	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			and conservative, because the information of the supplier is not available from the power plants of the system and because the value from the Ministry of Energy (used mainly for carbon footprints and carbon inventories) (http://huelladecarbono.minenergia.cl/calculo_huella_FE_termico_1.html) are higher than IPCC values.		
			$EG_{m,y}$, $EG_{k,y}$: Net electricity generated by power plant/unit m or k in year y. The values for this parameter have been correctly taken from official published information from the relevant national institution: National Energy Commission (CNE) (ref. 23b). The values reported in the GEF calculations spreadsheet (ref. 24a-24e) were validated to be in line with the mentioned source. $Ɗ_{m,y}$: Average net energy conversion efficiency of power unit m or k in year. This parameter is used only when the information of the fossil fuel consumption is not available from the national sources. In those cases the default values of the "Tool to calculate the emission factor for an electricity system" v04.0 have been used. This has found to be correct, as the local information is not available from the relevant authorities and power plant do not publish this information. For parameter $EG_{PJ,y}$, please refer to section B.7.		
B.6.2. Is the data derived from reliable data sources or replicable records and have these been correctly quoted?	Section 3.16.1 of	DR	Yes, the data used is from reliable national sources and/or IPCC default factor, please see detail above.	OK	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
	the VCS standard version 3.4				
B.7. Data and Parameters Monitored					
B.7.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the emission reductions within the project boundary during the crediting period?	Section 3.16.2, 3.16.3 of the VCS Standard version 3.4	DR	Yes. According to the applicable methodology ACM0002 v13, the only parameters to be monitored are $EG_{facility,y}$ and $EF_{grid,CM,y}$, but as this second parameter has to be calculated as per the "Tool to calculate de emission factor for an electricity system", the project proponent chooses the option ex-ante, for this reason the only parameter to be monitored is "*Quantity of net electricity generation supplied by the project plant/unit to the grid in year y*" ($EG_{facility,y}$). This parameter has been correctly indicated in section 4.2 of the PD. The information contained in the table of this parameter was reviewed and it was found that it is not in line with the requirements of the VCS version 3 project description template (ref. 11) because the "*type, accuracy class, serial number of equipment" for the Jem Star meters has not been provided. Also in the QA/QC section the following information has not been provided as per the template requirements "… date of last calibration and validity".* **CL 8c was raised.** In section 4.2 of the updated PD (ref. 1d), parameter $EG_{PJ,y}=EG_{facility,y}$, the type, accuracy class and serial number of the Jem Star meter has been provided. The accuracy reported for this meter is 0.2% (in line	CL 8 was raised	CL 8 was closed

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			with the manual of the equipment ref. 70) and the on-site observation). Also the date of last calibration (in line with the calibration certificate, ref. 43) and the information from the other two additional ION8600 electricity meter was included. The calibration frequency indicated is 2 years, which is in line with the local regulations (that do not specify a calibration frequency and with the information from the equipments manufacturers, ref. 76a, 76b) **CL 8c was closed**.		
			Furthermore, according to the methodology requirements the measurements results have to be crosschecked with records for sold electricity. Please clarify the reason for not including this information. **CL 8d was raised**. The PP included in the updated PD the following section in the QA/QC of the parameter $EG_{facility,y}$ "*Cross check measurements results with records for sold electricity (IFAC reports)*", which is correct. **CL 8d was closed**. Additionally, section 4.3 of the PD was reviewed and it was found that the description of the monitoring plan is clear and in line with the local regulations and the applicable methodology. It describes the methods for generating, recording, storing, aggregating, collating and reporting data on monitored parameters, and also the organizational structure and responsibilities of the persons involved in the project		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			activity; but it does not describe the procedures for handling internal auditing and non-conformities. **CL 8b was raised.** In response the PP provided the PD v3, where in section 4.3 the following information was included "*a weekly summary report of PCWF plant operation is elaborated and sent to Barrick's general services management...*" as this statement is in line with the information verified during the on-site inspection and by the interview to the Plant Supervisor(who prepares these weekly executive reports), it can be confirmed that these documents are elaborated for the general management, who use these documents for the control of the project; so it can be considered that comply with the indications of the VCS Project Description Template version 3.1. **CL 8b was closed**.		
B.7.2. Are the data and parameters used for the quantification of GHG emission reductions and/or removals provided exactly in accordance with the methodology	Section 3.16.1 of the VCS Standard Version 3.4	DR	Yes, the description of the parameter $EG_{facility,y}$ in the PD version 0001 is in line with the requirements of the methodology but during the on-site inspection it was identified that the invoicing meter considers th*e quantity of electricity delivered to the project plant and to a thermal power plant from the grid.* **CL 9 was raised** requesting the PP clarify how the project activity comply with the requirements of the methodology that states: *the parameter $EG_{facility,y}$ has to report "(i) The quantity of electricity supplied by the project plant/unit to the grid; and (ii) The quantity of electricity delivered to the project plant/unit from the*	CL 9 was raised	CL 9 was closed

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			grid". In the updated PD v3, the PP indicated in the QA/QC section of the parameter $EG_{PJ,y}$=$EG_{facility,y}$ that "*Jem Star is a bidirectional meter that accounts for the (i) quantity of electricity supply to the grid and (ii) the quantity of electricity delivered to the project by the grid".* This information has been found in line with the applicable methodology and also with the observations during the on-site inspections. Additionally in this parameter is was clarified that project activity will use the entire electricity consumption recorded by the Jem Star meter (invoicing meter) for the "*(ii) the quantity of electricity delivered to the project by the grid",* which is a correct and conservative approach, because not all this consumption is from this project activity. **CL 9 was closed.** The option of determine the parameter $EF_{grid,CM,y}$ ex-ante is in line with the "Tool to calculate de emission factor for an electricity system" and hence, with the methodology ACM0002 v13.		
B.8. Quality Control (QC) and Quality Assurance (QA) Procedures					
B.8.1. Is the selection of data undergoing quality control and quality assurance procedures complete?	Section 3.16.2-3.16.3 of the VCS Standard	DR	Yes, the information established ex-ante has been reviewed against their source and crosschecked with relevant information (in case it was applicable), please see detail in section B.6 of this document. After the assessment it has been found that the	OK	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
	version 3.4		information is correct and conservative.		
B.8.2. Is the belonging determination of uncertainty levels done correctly for each ID in a correct and reliable manner?	Section 3.16.1-3.16.3 of the VCS Standard version 3.4	DR	Yes, all the information was reviewed and the entire mistakes found were corrected in the latest documents (PD; financial spreadsheet and GEF calculation spreadsheet).	OK	OK
B.8.3. Are quality management procedures and quality assurance procedures sufficiently described to ensure the delivery of high quality data?	Section 3.17.1 of the VCS Standard version 3.4	DR	Yes, the procedures are in place and the information can be cross checked with reliable sources (mostly CDEC-SIC, grid administrator).	OK	OK
B.8.4. Is it ensured that data will be bound to national or internal reference standards?		DR	Yes, the data used for the ex-ante calculations and to be used in the quantification of the emission reductions has been verified to be in accordance with national public available information from reliable sources and it case the information is not available for the host country, an international recognized source (IPCC) has been used.	OK	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
C. Environmental Impacts					
C.1.1. Has an analysis of the environmental impacts of the project activity been sufficiently described?	Section 5 of the VCS PD	DR	Yes, on 12/07/2007 Laura Emery, the legal representative of the Company Barrick Chile Generación Limitada, PP, presented the Environmental Impact Declaration (DIA – ref. 22), as per the requirements of the environmental law 19300 (section 10c) for review, to the Environmental Assessment Service (SEIA) of Chile. Then, after the approval of all the corresponding authorities, on 30/10/2007 the Environmental Qualification Resolution (RCA – ref.33) was issued by the Environmental Commission of Coquimbo Region (jurisdictional authority of the project activity) because the project comply with all the environmental regulations and has obtained all the required sectoral permits. This RCA N°186 was later communicated to the project proponent on 08/11/2007 by the Secretary of the Environmental Commission of Coquimbo Region.	OK	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
C.1.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?		DR	Yes; according to the law N°19300 on General Environmental Foundation, and its Regulation (Decree 30/97), every project detailed in section/article 3 of the Decree (and 10 of the law) shall be subjected to environmental impact assessment system by presenting a DIA (Environmental Impact Declaration) or EIA (Environmental Impact Assessment. In this case the project was under types of projects detailed in section 10c) "Power Plants greater than 3 MW" and as per section/article 5 of the Decree (11 of the law), this project activity only needs to present a DIA and not an EIA. As it has been mentioned above, the DIA was approved and the RCA was issued on 30/10/2007	OK	OK
C.1.3. Have the summary of environmental impacts assessment been provided in the project design?	Section 5 of the VCS PD	DR	Yes, section 5 of the PD provides a complete detail of all the environmental impacts to be generated by the project activity and how these will be mitigated. This information has been taken from the approved Environmental Impact Declaration, which is correct.	OK	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
D. Stakeholder Comments					
D.1.1. Have relevant stakeholders been consulted? Is the summary of stakeholder consultation outcome included in the PD	Section 6 of the VCS PD	DR	The PD indicates that two public consultations were performed, but only records of the second stakeholder consultation 04/04/2013 area available (ref. 30a-30f). The photos of the public consultation (ref. 30f) and the question raised by the stakeholders (ref. 30e) were provided by the PP and in section 6 of the PD a summary of these questions are provided. Furthermore, the PP also provided the presentation showed to the stakeholders, where a detail of the wind farm project is provided and also some information about climate change, GHG and the intention of the PP to participate of the VCS. To confirm their participation the stakeholder signed the attendance list providing their name, institution to which they belong, their national ID number and their signature. Besides these consultations, during the environmental evaluation stage (required by Chilean law) relevant authorities visited the site on 09/04/2008 (before starting construction) and then on 20/05/2009 in order to confirm the information indicated in the DIA was in line with the project activity. This has been verified in the government website (http://www.sea.gob.cl/).	OK	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
D.1.2. Has the appropriate media been used to invite comments by local stakeholders?			Three letters were issued to different representative of the Municipality of La Higuera and other stakeholders and the PP has a records of the receipt of this invitations (ref. 30d).	OK	OK
D.1.3. Is the undertaken stakeholder process described in a complete and transparent manner?	Section 6 of the VCS PD	DR	Yes, the information provided in the PD section 6, described the stakeholder process from 04/04/2013; this section also provides a summary of the relevant questions raised by the stakeholders during this meeting (ref. 30e).	OK	OK
D.1.4. Is a summary of the stakeholder comments received provided?	Section 6 of the VCS PD	DR	Yes, the summary of the stakeholder comments was provided (ref. 30e) and also the photos of the meeting (ref. 30f), the presentation (ref. 30c), the invitation letter to the Municipality representatives and the receipt of the invitation to different stakeholders (ref. 30d) and the attendance lists (ref. 30b). All the documents were found to be reliable and also attendees to the meeting were contacted by phone in order to corroborate the information presented by the PP.	OK	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
E. Ownership					
E.1. Right of use					
E.1.1. Is evidence of right of use provided?	VCS standard 3.4 section 3.11.1 Section 1.12.1 of the VCS PD	DR	The PD v001 only indicates that the information is established in the DIA. This (ref. 22) document was reviewed and on page 2 it is stated that Barrick Chile Generación Limitada assumes the ownership of the project activity regarding environmental issues. Then, during the on-site inspection the copy of the lease contract of the site where the project is installed was provided by the PP. In the contract (ref. 49) dated 30/01/2008 clearly states that Barrick Chile Generación Limitada will install a wind farm project and that the lease is for 20 years, renewable for 20 more years. This lease contract is a valid document to justify the right of use (as per VCS standard v3.4 section 3.11.1 requirements).	OK	OK

Appendix 4 Abbreviations

CAR	Corrective Action Request
CDEC	Centro de despacho economico de carga (Spanish for "Load Economic Dispatch center")
CDM	Clean Development Mechanism
CNE	National Energy Commission
CL	Clarification Request
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
DIA	Environmental Impact Declaration (by its acronyms in Spanish, similar to an Environmental Impact Assessment in the host country)
EF	Emission Factor
EIA	Estudio de Impacto Ambiental (Spanish for "Environmental Impact Study")
ERs	Emission Reductions
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
HHV	Higher Heating Value
IFAC	Informe de Facturación (Spanish for "Invocing Reports")
IPCC	Intergovernmental Panel on Climate Change
LCMR	Low-cost/must-run
MP	Monitoring Plan
NCRE	Non-Conventional Renewable Energy
NCV	Net calorific value
OM	Operating Margin Emission factor
PA	Project Activity
PD	Project Description
PP	Project Proponent
PS	CDM Project Standard version 04.0 and version 05.0
QA	Quality Assurance
QC	Quality Control
RCA	Resolución de calificación ambiental (Spanish for "Environmental qualification resolution")
SEC	Superintendence of electricity and fuels in Chile
SEIA	Servicio de evaluación de impacto ambiental (Spanish for "Environmental impact assessment service").
SGS	SGS United Kingdom Ltd
SIC	Sistema interconectado central (Spanish for "Central Interconnected system")
SING	Sistema interconectado del Norte Grande (Spanish for "Northern Interconnected system")
UNFCCC	United Nations Framework Convention on Climate Change
UTM	Universal Transverse Mercator
VCS	Verified Carbon Standard
VCSA	Verified Carbon Standard Association
VCU	Verified Carbon Unit
VVB	Validation/Verification Body
VVS	CDM Validation and Verification Standard version 04.0 and version 05.0

Appendix 5 Team Members Statements of Competency

Statement of Competence

Name: Paulina Kellenberger

Status

-	Lead Assessor	x	-	Expert	x
-	Assessor	x	-	Financial Expert	
-	Local Assessor	Chile	-	Technical Reviewer	

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)
Technical Area(s*):*

2. Energy Distribution
Technical Area(s*):*

3. Energy Demand
Technical Area(s*):*

4. Manufacturing
Technical Area(s*):*

5. Chemical Industry
Technical Area(s*):*

6. Construction
Technical Area(s*):*

7. Transport
Technical Area(s*):*

8. Mining/Mineral Production
Technical Area(s*):*

9. Metal Production
Technical Area(s*):*

10. Fugitive Emissions from Fuels (solid, oil and gas)
Technical Area(s*):*

11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride
Technical Area(s*):*

12. Solvent Use
Technical Area(s*):*

13. Waste Handling and Disposal **x**
Technical Area(s*): TA 13.1 Waste handling and disposal*

14. Afforestation and Reforestation
Technical Area(s*):*

15. Agriculture
Technical Area(s*):*

Approved Member of Staff by: Siddharth Yadav Date: 05/07/2012

Statement of Competence

Name: Pablo Osorio

Status

-	Lead Assessor		-	Expert	
-	Assessor		-	Financial Expert	
-	Local Assessor	Chile	-	Technical Reviewer	

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)
Technical Area(s*):*

2. Energy Distribution
Technical Area(s*):*

3. Energy Demand
Technical Area(s*):*

4. Manufacturing
Technical Area(s*):*

5. Chemical Industry
Technical Area(s*):*

6. Construction
Technical Area(s*):*

7. Transport
Technical Area(s*):*

8. Mining/Mineral Production
Technical Area(s*):*

9. Metal Production
Technical Area(s*):*

10. Fugitive Emissions from Fuels (solid, oil and gas)
Technical Area(s*):*

11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride
Technical Area(s*):*

12. Solvent Use
Technical Area(s*):*

13. Waste Handling and Disposal
Technical Area(s*):*

14. Afforestation and Reforestation
Technical Area(s*):*

15. Agriculture
Technical Area(s*):*

Approved Member of Staff by: Siddharth Yadav Date: 07/03/2012

Statement of Competence

Name: Davis Watts

Status

-	Lead Assessor		-	Expert	x
-	Assessor		-	Financial Expert	
-	Local Assessor		-	Technical Reviewer	

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	**x**
Technical Area(s): *TA 1.2 Energy generation from renewable energy sources*	
2. Energy Distribution	
Technical Area(s):	
3. Energy Demand	**x**
Technical Area(s): *TA 3.1 Energy Demand*	
4. Manufacturing	
Technical Area(s):	
5. Chemical Industry	
Technical Area(s):	
6. Construction	
Technical Area(s):	
7. Transport	
Technical Area(s):	
8. Mining/Mineral Production	
Technical Area(s):	
9. Metal Production	
Technical Area(s):	
10.Fugitive Emissions from Fuels (solid, oil and gas)	
Technical Area(s):	
11.Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
Technical Area(s):	
12.Solvent Use	
Technical Area(s):	
13.Waste Handling and Disposal	
Technical Area(s):	
14.Afforestation and Reforestation	
Technical Area(s):	
15.Agriculture	
Technical Area(s):	

Approved Member of Staff by: Siddharth Yadav Date: 30/01/2013

Statement of Competence

Name: David Diaz

Status

-	Lead Assessor		-	Expert	
-	Assessor		-	Financial Expert	x
-	Local Assessor		-	Technical Reviewer	

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)
Technical Area(s*):*

2. Energy Distribution
Technical Area(s*):*

3. Energy Demand
Technical Area(s*):*

4. Manufacturing
Technical Area(s*):*

5. Chemical Industry
Technical Area(s*):*

6. Construction
Technical Area(s*):*

7. Transport
Technical Area(s*):*

8. Mining/Mineral Production
Technical Area(s*):*

9. Metal Production
Technical Area(s*):*

10. Fugitive Emissions from Fuels (solid, oil and gas)
Technical Area(s*):*

11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride
Technical Area(s*):*

12. Solvent Use
Technical Area(s*):*

13. Waste Handling and Disposal
Technical Area(s*):*

14. Afforestation and Reforestation
Technical Area(s*):*

15. Agriculture
Technical Area(s*):*

Approved Member of Staff by: Siddharth Yadav Date: 25/01/2012

Statement of Competence

Name: Michael Wu

Status

-	Lead Assessor	x	-	Expert	x
-	Assessor	x	-	Financial Expert	
-	Local Assessor	China	-	Technical Reviewer	x

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	**x**
Technical Area(s): TA 1.2 Energy generation from renewable energy sources	
2. Energy Distribution	
Technical Area(s):	
3. Energy Demand	
Technical Area(s):	
4. Manufacturing	
Technical Area(s):	
5. Chemical Industry	
Technical Area(s):	
6. Construction	
Technical Area(s):	
7. Transport	
Technical Area(s):	
8. Mining/Mineral Production	
Technical Area(s):	
9. Metal Production	
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
Technical Area(s):	
12. Solvent Use	
Technical Area(s):	
13. Waste Handling and Disposal	
Technical Area(s):	
14. Afforestation and Reforestation	
Technical Area(s):	
15. Agriculture	
Technical Area(s):	

Approved Member of Staff by: Siddharth Yadav Date: 19/10/2012