



RESTRUCTURING PAPER
ON A
PROPOSED PROJECT RESTRUCTURING
OF
CL TECHNICAL ASSISTANCE FOR GEOTHERMAL DEVELOPMENT IN CHILE
APPROVED ON OCTOBER 12, 2016
TO
CHILEAN INTERNATIONAL COOPERATION AGENCY FOR DEVELOPMENT (AGCID)

ENERGY & EXTRACTIVES

LATIN AMERICA AND CARIBBEAN

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ABBREVIATIONS AND ACRONYMS

AGCI	Chilean International Cooperation Agency (AGCI)
AGCID	Agencia Chilena de Cooperación Internacional para el Desarrollo (<i>Chilean International Cooperation Agency for Development</i>)
ESCOs	Energy Service Companies
ESF	Environmental and Social Framework
FM	Financial Management
ME	Ministry of Energy
IFC	International Finance Corporation
ISR	Implementation Status and Results Report
NCRE	Non-conventional renewable energy generation
PDO	Project Development Objective
PIU	Project Implementation Unit
SEC	Superintendence of Electricity and Fuels
TORs	Terms of Reference



BASIC DATA

Product Information

Project ID P152820	Financing Instrument Investment Project Financing
Original EA Category	Current EA Category
Approval Date 12-Oct-2016	Current Closing Date 30-Jun-2021

Organizations

Borrower Chilean International Cooperation Agency for Development (AGCID)	Responsible Agency Ministry of Energy
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Financing (in USD Million)

SUMMARY

Total Project Cost	0
Total Financing	0
Financing Gap	0

DETAILS

Project Development Objective (PDO)

Original PDO

Assist the Government of Chile to improve geothermal energy market conditions by removing key barriers, leading to sustainable investments in this sector.



Summary Status of Financing (US\$, Millions)

TF	Approval	Signing	Effectiveness	Closing	Net		
					Commitment	Disbursed	Undisbursed
TF-A3726	12-Oct-2016	08-Nov-2016	24-Apr-2017	30-Jun-2021	1.78	1.23	.55

Policy Waiver(s)

Does this restructuring trigger the need for any policy waiver(s)?

No

I. PROJECT STATUS AND RATIONALE FOR RESTRUCTURING

A. Introduction

1. The CL Technical Assistance for Geothermal Development in Chile (P152820) is a US\$3.5 million grant including a recipient-executed portion of US\$1.78 million under TF-A3726, and Bank execution of recipient activities in the amount of US\$1.78 million under TFOA528. The proposed restructuring corresponds to the recipient-executed portion of US\$1.78 million and entails a 6-month extension of the closing date from June 30, 2021 to December 31, 2021. A separate 6-month closing date extension (with no changes in the overall project budget or costs) will be requested for the Bank execution of recipient activities through a separate extension process.

B. Project Status

2. The project was approved on October 12, 2016 and the current project closing date is June 30, 2021. The project development objective is to assist the Government of Chile to improve geothermal energy market conditions by removing key barriers, leading to sustainable investments in this sector. Project implementation progress has been steady over the past fiscal year with a number of activities under each component completed and underway. While good progress has been made, there is still various activities that need to be completed before the current revised closing date of June 30, 2021¹. Annex 1 provides a full list of all completed and ongoing project activities to date.

3. During the last project supervision mission, the team confirmed that all the necessary Project Implementation Unit (PIU) technical, fiduciary, and safeguards professionals were in place, and the project has been moving ahead with the preparation of Terms of References (ToRs), contracting of remaining consultancies, and implementation of key project activities required to reach the project development objectives. The Bank has also held bi-weekly coordination meetings with the project counterparts since the last mission to closely supervise and work to advance project implementation.

4. Information on achievements to date and the status of each component is provided below:

¹ The first project extension was required due to delays in project implementation caused by initial delays in project effectiveness, changes in the government administration in March 2018, and the social unrest in the country which started in October 2019.



- (a) **Component 1. Improve policy framework and strengthen management capabilities to help mobilize investments in geothermal energy.** Under this component, critical just-in-time support has been provided to assist the Government of Chile in proposing modifications to its geothermal concessions Law 19657, which was successfully submitted to Congress in April 2019. The modification of the geothermal concessions law is a crucial step to removing regulatory barriers to the development of low-enthalpy geothermal energy in Chile. This work contributed to meeting the PDO Level results indicator two “Submission for Legislative approval of law and/or revised policies necessary for providing greater regulatory clarity to investors”. The closing date extension will allow for also developing technical guidelines to inform development of several regulations under this law to further support meeting this objective. Support to the Ministry of Energy for creating an online platform to manage geothermal concessions in collaboration with the Superintendence of Electricity and Fuels (SEC) was also provided and the Ministry of Energy created an internal concession management platform that was completed in December 2020. Significant stakeholder engagement to raise awareness regarding geothermal development and to account for environmental and social considerations has also been undertaken, including 15 capacity building/consultative workshops with indigenous populations in areas where geothermal exploitation concessions have been requested, far surpassing the two “Stakeholder awareness consultations held” intermediate results target for the project. In addition, three technological tours were organized with leaders from indigenous communities to see examples of geothermal installations in operation, and informative materials (brochures and videos) were developed that have been used in the public consultation and stakeholder awareness activities. A Sector Level Social and Environmental Assessment was also completed to assess gaps and recommend measures to better align the Chilean framework with international standards, such as the WB Environmental and Social Framework (ESF) and International Finance Corporation (IFC) Performance Standards and a proposed action plan to close priority gaps was developed in June 2020. A Stand-alone summary report of Sector Level Social and Environmental Assessment is currently being prepared that will be used to more widely disseminate results. Several additional studies are currently being undertaken under this Component under the Bank Executed portion of the trust-fund including various studies to analyze ways to modernize Chile’s power market and increase system flexibility to enable increased integration of new technologies (wind, solar, etc.), satisfy current and future energy security needs, provide a stable pricing signal, and to identify the potential contribution of geothermal power generation to increased system flexibility and reliability.

Despite good progress being made under this component, there are still several activities pending implementation, including: i) Study on geothermal safety regulations, shallow exploitation registry requirements, and development of a geothermal and renewable energy permits Master Plan, and ii) Evaluation of the impact of implementing geothermal heat pumps for heating systems in intercultural rural schools in the Los Lagos Region. The contracting of these two studies is ongoing and the work is expected to commence in February 2021, but implementation is expected to extend into FY22. Annex 3 of this Restructuring Paper contains the updated implementation schedule indicating the expected date for contracting and implementation of these activities. Under the Bank Executed portion of this trust-fund an assessment to review and recommend measures to optimize Chile’s geothermal concession management framework is also planned, that would be contracted during the first quarter of 2021, but would also not be completed until the beginning of FY22. Once completed, this study would enable achieving Intermediate Results Indicator one - “Review and recommendation report for geothermal concession framework”.

- (b) **Component 2. Enhancing market conditions for promoting sustainable development of the geothermal energy sector.** A number of key activities have been completed and several studies are currently underway for this component. This includes supporting the creation and implementation of the Geothermal Roundtable, a joint public-private exercise that brought together more than 35 entities from the geothermal industry in Chile, including public institutions, academia, and private developers. The Roundtable discussions enabled analyzing the status of geothermal energy in Chile and the main challenges developers face hindering further development, and recommended actions to overcome these barriers. A total of 13 workshops took place, starting in December 2016 and finalizing in December 2017, and analytical work was also conducted to inform these discussions. The final report with conclusions and recommendations from the Geothermal Roundtable was published in July 2018. The assessment reports prepared to inform the geothermal



roundtable discussion and the final report with the recommendations contributed to meeting the project's intermediate results indicators - "Study on integration of Geothermal in electricity market completed" and "Recommendation made for risk mitigation solutions based on global solutions tailored for Chile". This analytical work and discussions also helped inform the "Framework designed to mobilize risk capital toward geothermal exploration in Chile" (PDO results Indicator 3), which was operationalized under the Inter-American Development Bank's Geothermal Risk Mitigation Program (MIRIG). The Bank's Project is now supporting implementation of various recommendations stemming from the Roundtable discussions included in the final report. In 2018 and 2019, various studies were completed including: i) Technical and economic feasibility analysis of the installation of geothermal heat pumps for self-consumption in agricultural facilities in the Regions of Aysen and Magallanes, and ii) Dynamic Simulation Study of the National Stadium Pool for the application of a geothermal heat pump. An additional assessment on the potential to use Energy Service Companies (ESCOs) to deploy geothermal heat pumps in the National Stadium Complex was also undertaken. Furthermore, an "Assessment of District Heating Project for the Cities of Coyhaique and Puerto Williams", two of the most polluted cities in Chile due to significant woodfuel use for heating, was completed in October 2019. Through this work the Intermediate Results Indicator "Study on alternate uses of geothermal in Chile" has been surpassed since multiple studies on this topic to facilitate the development of direct uses of geothermal have been undertaken. Currently, work is being undertaken to develop a geothermal potential/favorability mapping of low enthalpy resources in various regions of Chile is being undertaken with SERNAGEOMIN, but this work is expected to extend into FY22.

Although good progress has been made, there are still several activities under Component 2 pending implementation including: i) An evaluation of the impact of implementing geothermal heat pumps for heating and residential water heating systems in the Cities Puerto Arenas, Puerto Natales and Porvenir, ii) Study on Buildings with Net Zero Energy Consumption and potential use of geothermal technologies for these buildings, and iii) preparation of study results dissemination materials. The contracting of the geothermal heat pumps for southern cities study is ongoing and is expected to commence in February 2021, but implementation is expected to extend into FY22. The terms of reference for the Net Zero Energy Consumption buildings study is not expected to be completed till March and contracting would be done in April 2021 with study implementation extending into FY22. The dissemination materials would also be prepared during the first half of FY22. There are also various Bank executed studies that are currently being contracted under this Component to assist the government with the implementation of its electricity sector flexibility strategy and decarbonization agenda, which are also expected to commence in February 2021, but whose execution will likely extend into FY22. Annex three of this Restructuring Paper contains the updated implementation schedule indicating the expected date for finalization of the Terms of Reference, the contracting, and implementation of these activities.

5. **Disbursement:** As of January 26, 2021, US\$ 1,225,806 of the funds have been disbursed (69 percent of the US\$1.78 million recipient-executed Clean Technology Fund grant amount).

6. **Relevant project fiduciary and safeguards aspects:** Based on the last Financial Management (FM) supervision mission in June 2020, the FM performance rating is Satisfactory as the arrangements for financial management are considered adequate, and the interim financial reports are being submitted on time. There are also no qualified or overdue audit reports. In January 2021, the Procurement rating for the Project was also rated Satisfactory as the client has adequate arrangements and capacity in place. The Overall Safeguards Rating is Satisfactory. All safeguards requirements have been complied with, and there have been no deviations from safeguards requirements during implementation.

C. Rationale for Restructuring Rationale for Restructuring

7. This restructuring is proposed to extend the closing date of the Project by 6 months, as per the Government request, to compensate for the initial and recent implementation delays. Project implementation was originally planned to start in October 2016, however effectiveness was not reached until April 2017 given the need for the grant package to be reviewed and approved by the Contraloria de la Republica prior to issuance of the required legal opinions. Afterwards, some project activities were also



delayed due a change in government and key government authorities, including the Minister of Energy in June 2019. Despite these early challenges, implementation progress moved ahead with many project activities initiated and undertaken. However, the pace of project implementation has been slower than originally anticipated given the social unrest in the country in 2019 and the COVID-19 pandemic during 2020-21, which resulted in office closures due to national protests and later as a health precaution, national lockdown measures, institution of homebased worked for both Ministry of Energy and AGCID employees, and domestic travel restrictions. The social unrest in Chile in 2019 slowed down the pace of implementation due to government office closures on numerous occasions and a temporary halt to the field work needed to complete the social consultations as well as the geothermal resource assessment work. This situation resulted in delays in contracting and fieldwork for the geothermal resources mapping fieldwork and the suspension of additional consultations with indigenous communities as well as of the last technical tour with indigenous leaders. Despite this situation, the first project extension has allowed over the last 7 months for advancing a number of project activities that were delayed, including completing the Sector Level Social and Environmental Assessment, assessment on the potential to use Energy Service Companies (ESCOs) to deploy geothermal heat pumps in the national stadium complex, contracting the geothermal experts and initiating the geothermal potential and favorability mapping of low enthalpy resources work, conducting an assessment of the impact of using different capacity payments methodologies to facilitate greater geothermal and renewable integration into the electricity system, and preparation of the terms of reference and launching the competitive selection/bidding processes for five of the remaining studies that will be implemented under the project.

8. Although the social situation in Chile began improving in early 2020, the country was faced with yet another setback with the COVID-19 national health emergency, national lockdown measures, implementation of home-based work, and international and domestic travel restrictions that began in March 2020. The difficulties arising from the national lockdown measures and transition to homebased working arrangements, both for the Ministry of Energy and AGCID as well as the World Bank, led to delays in preparation of the TORs and contracting of various studies, including for the Component 1 studies on geothermal safety regulations, shallow exploitation registry requirements, and development of a geothermal and renewable energy permits master plan and the evaluation of the impact of implementing geothermal heat pumps for heating systems in intercultural rural schools in the Los Lagos Region, and the Component 2 studies to evaluate of the impact of implementing geothermal heat pumps for heating and residential water heating systems in the Cities Puerto Arenas, Puerto Natales and Porvenir, the Net Zero emissions buildings study, and the assessment to review and recommend measures to optimize Chile's geothermal concession management framework. The implementation of fieldwork for various of these activities, including the geothermal resource mapping with SERNAGEOMIN, the geothermal heating systems for schools analysis, and the geothermal heating systems for buildings analysis for various southern cities has also been postponed until the second quarter of 2021 (and might be pushed further) given domestic travel restrictions due to the COVID-19 situation. This confluence of factors has resulted in overall implementation progress delays, and it is expected that the remaining project implementation timeframe is insufficient to fully meet the PDO of assisting the Government of Chile to improve geothermal energy market conditions by removing key barriers, leading to sustainable investments in this sector.

9. Consequently, and as per the attached Government request, a 6-month extension of the project closing date from June 30, 2021 to December 31, 2021 is being proposed through this Restructuring to allow the Agencia Chilena de Cooperacion Internacional para el Desarrollo (AGCID)² and Ministry of Energy (ME) sufficient time to successfully complete the Project activities and strengthen the achievement of the PDO indicator 2: *“Submission for Legislative approval of law and/or revised policies necessary for providing greater regulatory clarity to investors”*, and enable meeting the intermediate indicator *“Review and recommendation report for geothermal concession framework indicator”*. This is the second extension of the closing date with the first one being from June 30, 2020 to June 30, 2021. Based on the historical implementation progress to date and PIU projections, the project development objectives are expected to be achievable and completion of remaining project activities should be feasible within this additional timeframe, including taking into account the country restrictions imposed due to the pandemic. No additional financing would be required as there is still enough project funding to cover PIU related implementation costs for this additional time period and the ME will continue providing counterpart funding³ to cover the costs of its staff working on the Project.

² Formerly called the Chilean International Cooperation Agency (AGCI).

³ The Government of Chile has already complied with 100 percent regarding its counterpart funding contribution to the project, but has committed to having the Ministry of Energy technical staff working on the project continue supporting implementation until project closing and will report this additional contribution in the project IFRs and audits.



10. To speed-up the implementation progress, the World Bank and the Project Implementing Agencies (AGCID) and the Ministry of Energy have already established a protocol of bi-weekly calls and agreed to an Action Plan for delivery of remaining project activities (see Annex 2 for Action Plan). Furthermore, the Ministry of Energy hired an additional Technical Manager in July 2020 to support the project focal point to accelerate the execution of the remaining project activities and also designated additional Ministry of Energy staff to support the geothermal market assessment work, which is already aiding in expediting the preparation of TORs and review of ongoing studies.

II. DESCRIPTION OF PROPOSED CHANGES

11. The project closing date of the original Grant (TFOA3726) will be extended from June 30, 2021 to December 31, 2021.

12. Project disbursement estimates and the implementation schedule will be adjusted to reflect the new proposed closing date of December 31, 2021.

III. SUMMARY OF CHANGES

	Changed	Not Changed
Loan Closing Date(s)	✓	
Disbursement Estimates	✓	
Implementation Schedule	✓	
Implementing Agency		✓
Project's Development Objectives		✓
Results Framework		✓
Components and Cost		✓
Cancellations Proposed		✓
Additional Financing Proposed		✓
Reallocation between Disbursement Categories		✓
Disbursements Arrangements		✓
Change in Overall Risk Rating		✓
Safeguard Policies Triggered		✓
EA category		✓
Legal Covenants		✓
Institutional Arrangements		✓
Financial Management		✓
Procurement		✓



Other Change(s)		✓
Economic and Financial Analysis		✓
Technical Analysis		✓
Social Analysis		✓
Environmental Analysis		✓

IV. DETAILED CHANGE(S)

LOAN CLOSING DATE(S)

TF	Status	Original Closing	Revised Closing(s)	Proposed Closing	Proposed Deadline for Withdrawal Applications
TF-A3726	Effective	30-Jun-2020	30-Jun-2021	31-Dec-2021	30-Apr-2022

DISBURSEMENT ESTIMATES

Change in Disbursement Estimates
Yes

Expected Disbursements (In US\$)

Fiscal Year	Annual	Cumulative
2017	0.00	0.00
2018	0.00	0.00
2019	0.00	0.00
2020	0.00	0.00
2021	0.00	0.00
2022	0.00	0.00
2023	0.00	0.00



Annex 1: List of Completed and Ongoing Project Activities

STATUS	ACTIVITY	Delivery Date/Ongoing
COMPLETED	Asistencia Congreso Bombas de Calor en Holanda	Abril 2017
	Taller de Bombas de Calor, Puerto Varas	January 2018
	Estudio "Análisis de Factibilidad Técnica y Económica de la Instalación de Bombas de Calor Geotérmicas, para fines de autoconsumo, en instalaciones agrícolas de las Regiones de Aysén y Magallanes"	June 2018
	Redacción e impresión Informe Final Mesa de geotermia	July 2018
	Asistencia Taller "Salva Guardas Ambiental del Banco Mundial", en Lima, Perú	August 2018
	Impresión Brochure sobre geotermia para comunidades indígenas	August 2018
	Contratación Profesional Socio Indígena	October 2018 (first professional contracted in October 2017)
	Servicio de "Producción de dos Videos de Animación Educativos sobre Tecnología Geotérmica y sus Aplicaciones en Chile"	November 2018
	Estudio "Simulaciones Dinámicas de la Demanda Térmica del Centro Acuático del Estadio Nacional (Chile)"	November 2018
	Seminario sobre Energía Distrital y Geotermia en Punta Arenas	January 2019
	Servicios Adicionales "Producción de dos Videos de Animación Educativos sobre Tecnología Geotérmica y sus Aplicaciones en Chile". (Subtítulos en inglés, aymara y mapudungun y maqueta 3D sobre movimiento subterráneo de las aguas)	March 2019
	Presentación al Congreso del Proyecto de Ley que perfecciona la Ley 19.657 sobre Concesiones de Energía Geotérmica	April 2019
	Impresión manual sobre Energía Distrital	May 2019
	Gira tecnológica de calefacción distrital en Europa	June 2019
	Coordinación y apoyo en la gestión de GEOLAC 2019	July 2019
	Estudio "Evaluación de Proyecto de Calefacción Distrital para las Ciudades de Coyhaique y Puerto Williams"	September 2019
	Giras Tecnológicas con Comunidades Indígenas a la Planta Geotérmica Cerro Pabellón	December 2017 - July 2019
	Contratación Profesional Socio Indígena	November 2019
	Realización de 15 Talleres de formación para Líderes Indígenas sobre energía geotérmica	December 2019
	Elaboración y tramitación del Convenio institucional con el SERNAGEOMIN	December 2019
Contratación Profesional Coordinador Técnico Administrativo	Abril 2020	
Estudio "Análisis Integración Distrito Térmico para el Centro de Alto Rendimiento, Centro Acuático y Polideportivo del Estadio Nacional"	April 2020	
Estudio evaluación social y ambiental a nivel sectorial	June 2020	
Diseño e implementación de la plataforma de gestión en línea de las solicitudes de concesiones geotérmicas	July 2020	



	Apoyo en la gestión de GEOLAC 2020.	August 2020
	Contratación softwares, material informático y comunicacional.	December 2017 - August 2020
	Estudio Modelamiento ICSI 1	December 2020
	Apoyo herramienta plataforma residencial térmica	December 2020
ONGOING	Contratación Profesional Analista Financiero	Ongoing (contracted Oct. 2017)
	Contratación Profesional Analista Adquisiciones	Ongoing (contracted Jan. 2017)
	Contratación Profesional Socio Indígena	Contracted July 2020
	Contratación Geólogos SERNAGEOMIN para mapa de favorabilidad geotérmica	Ongoing (contracted July 2020)
	Contratación Coordinador Técnico y de Gestión	Ongoing (Contracted July 2020)
	Asesoría Reglamento Flexibilidad	Ongoing (contracted Sept 2020)
	Asesoría Financiera	Ongoing (contracted Sept 2020)
	Asesoría en flexibilidad	Ongoing (contracted Sept 2020)
	Estudio Estudios de ingeniería térmica geotérmica en comunidades indígenas	Contracting process ongoing
	Estudio Aplicación usos directos de la geotermia en la Región de Magallanes	Contracting process ongoing
	Estudio normativas seguridad faenas geotérmicas, registro de aprovechamientos someros y permisos ambientales	Contracting process ongoing
	Estudio Competitividad Mercado Energético	Contracting process ongoing
PLANNED 2021	Contratación Estudio Modelamiento ICSI 2	Expected January 2021
	Contratación Asesor Financiero	Expected Jan 2021
	Seminarios y talleres difusión usos directos (Online)	Expected Jan. 2021 start date
	Material informativo del Proyecto (trabajo en conjunto con oficina del Banco Mundial en Chile)	Expected March 2021 start date
	Contratación Consultoría Construcción e Implementación de Plataforma de gestión en línea del sistema de concesiones geotérmicas en Chile	Expected April 2021 start date
	Contratación Estudio Edificaciones con Consumo Energético Neto Zero	Expected start date May 2021



The World Bank

CL Technical Assistance for Geothermal Development in Chile (P152820)



Annex 2: Action Plan for Project Implementation

	Acción	Responsable	Fecha
Aspectos Financieros			
1	Envío de IFR S1-2020, incluyendo los aportes nacionales en los reportes financieros.	AGCID	Realizado
2	Presentación de informe auditado 2019.	AGCID	Realizado
Aspectos Adquisiciones			
1	Capacitación sobre las Regulaciones de Adquisiciones del BM.	BM	Realizado
2	Capacitación en STEP.	BM	Realizado
3	Actualización del Plan de Adquisiciones en base a modificaciones acordadas durante la misión.	ME/AGCID	Realizado: Noviembre 2020
Subcomponente 1A – Mejora Marco Regulatorio			
1	Compartir con BM estudio realizado en 2014 por la Universidad Mayor sobre reglamento de seguridad para faenas geotérmicas.	ME	Realizado: Septiembre 2020
2	Elaborar y compartir con BM, TdR para estudio de criterios para elaborar un reglamento de seguridad para todo tipo de faenas geotérmicas.	ME	Realizado: En evaluación ofertas
3	Elaborar y compartir con BM, TdR para estudio de lineamientos para elaborar un reglamento que permita gestionar la inscripción de los aprovechamientos someros que hagan un uso directo de la energía geotérmica.	ME	Realizado: En evaluación ofertas
4	Definir si se incluye en las actividades de este Subcomponente la preparación de una Guía para Inversionistas en Geotermia.	ME	Definido: Se incluyó en los TdR el análisis de la permisología pertinente a proyectos geotérmicos
Subcomponente 1B – Mejora Gestión Concesiones Geotérmicas			
1	Enviar al BM acceso a plataforma en línea para gestionar solicitudes y tramitaciones de concesiones geotérmicas.	ME	Realizado: Octubre 2020
2	Verificar que no existan restricciones para el uso de fondos CTF para financiar plataformas digitales.	BM	En consulta
3	Enviar al BM TdRs para evaluación procedimientos internos del ME para optimizar la gestión del sistema de concesiones.	ME	Pendiente: Se enviarán al Banco en febrero de 2021
Subcomponente 1C – Unidad Ejecutora del Proyecto			
1	Acordar y coordinar actividades de soporte técnico just-in-time en función de las necesidades del proyecto.	BM y ME	En ejecución
Subcomponente 1D – Gestión Social y Ambiental			
1	Terminar el resumen del estudio de evaluación social y ambiental a nivel sectorial para geotermia y eólica. Compartirlo con BM.	ME	Pendiente: Comenzará en febrero de 2021 la elaboración del resumen



2	Presentar al BM Plan de Acción para implementar recomendaciones del estudio de evaluación social y ambiental mencionado en el punto anterior.	ME	Realizado: Septiembre 2021
3	Concluir el proceso de consulta comunitaria indígena para la concesión de la empresa Compañía Minera Doña Inés de Collahuasi.	ME	Por definir, dependiendo de la contingencia Covid-19
4	Preparar los TdR y realizar la contratación para estudios de ingeniería para aplicaciones geotérmicas en comunidades indígenas (escuelas rurales) <i>(dependiendo de la evolución de la situación Covid-19, el ME y el BM evaluarán la posibilidad de realizar el estudio de forma virtual o cancelar esta actividad).</i>	ME y BM	En ejecución
Subcomponente 2A2 – Análisis de Mercado de la Energía Geotérmica			
1	Elaboración y envío al BM de TdR estudio para evaluar las condiciones de competencia del mercado de energía, considerando también las condiciones y costos para la geotermia.	ME	En ejecución
2	Elaboración y envío al BM de TdR estudio para evaluar los costos en el sistema de transmisión dentro de la evaluación de ofertas en licitaciones de suministro a clientes regulados.	ME	Pendiente: Realización del estudio dependerá de las necesidades de la CNE
Subcomponente 2B1- Potencial Geotérmico			
1	Mantener informado al BM sobre avances del SERNAGEOMIN en la preparación de los mapas de favorabilidad geotérmica.	ME	Según avance el trabajo. En todo caso, de manera bimestral
Subcomponente 2B2- Elaboración y difusión de videos, manuales, trípticos, etc.			
1	Analizar viabilidad de realizar un micro documental sobre aprovechamientos someros de la energía geotérmica, mediante ilustración de tres casos exitosos en distintos sectores económicos	ME y BM	Pendiente: Dependerá de las restricciones sanitarias producto de la pandemia mundial del Covid-19
Subcomponente 2B8 - Edificaciones con Consumo Energético Neto Zero			
1	Elaborar TdR estudio para evaluar el potencial de la geotermia y otras energías renovables para lograr viviendas sociales de consumo de energía neto Zero y emisiones de carbono neto Zero.	ME	Pendiente. Estudio iniciará en junio del 2021
Otros Estudios			
1	Establecer el alcance específico, plazos, y montos del estudio para definir los indicadores que permitan caracterizar una inclusión favorable, técnica y económicamente, de bombas de calor geotérmicas en proyectos de energía distrital en Chile.	ME	En ejecución. El estudio tiene relación con la evaluación de instalar bombas de calor geotérmicas en edificaciones de la región de Magallanes
Comunicaciones			
1	Enviar al BM propuesta de la estrategia de comunicaciones y difusión de logros del Proyecto.	ME	Pendiente: En enero del 2021 comenzará a desarrollarse la estrategia



Annex 3: Revised Project Implementation Schedule

GANTT ACTIVIDADES ASISTENCIATÉCNICA GEOTERMIA															
N°	Nombre Actividad	Administrador Fondos	2021								2021				
			Nov	Dic	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov
1	Estudio sobre Marco normativo en proyectos geotérmicos para fines eléctricos y aprovechamientos Someros	Banco Mundial	1	2	3	4	5	6	7	8	9	10	11	12	
2	Estudio sobre procedimientos internos para optimizar la gestión del sistema de concesiones, a través de Plataforma de sistema de información en línea para la gestión (digital)	Banco Mundial	1	2	3	4	5	6	7	8	9	10	11	12	
3	Estudio sobre metodología de adjudicación de licitaciones de suministro considerando efectos de costos de inversión en el sistema de transmisión	Banco Mundial	1	2	3	4	5	6	7	8	9	10	11	12	
4	Estudio de estimación de las condiciones de competencia del mercado eléctrico chileno bajo un esquema de ofertas de energía y propuesta de medidas para la transición a dicho esquema	Banco Mundial	1	2	3	4	5	6	7	8	9	10	11	12	
5	Study to include the flexibility contribution of the power system facilities for the Chilean capacity payments	Banco Mundial	1	2	3	4	5	6	7	8	9	10	11	12	
6	Estudios de ingeniería térmica geotérmica en comunidades indígenas	AGCID	1	2	3	4	5	6	7	8	9	10	11	12	
7	Documentos sistematización resultados estudio socioambiental	AGCID	1	2	3	4	5	6	7	8	9	10	11	12	
8	Elaboración de material de difusión del proyecto, en conjunto con la oficina del Banco Mundial en Chile	AGCID								1	2	3	4	5	6
9	Aplicación usos directos de la geotermia en la región de Magallanes	AGCID	1	2	3	4	5	6	7	8	9	10	11	12	
10	Edificaciones con Consumo Energético Neto Zero	AGCID					1	2	3	4	5	6	7	8	9
11	Estudio aplicación de sistema distrital en la localidad de San José de Maipo	AGCID					1	2	3	4	5	6	7	8	9
12	Estudio sinergias proyectos generación eléctrica a través de la geotermia e hidrógeno	Banco Mundial					1	2	3	4	5	6	7	8	9

1	Preparación/Revisión TdRs (Licitación Estudio-Licitación Consultoría-Concurso Honorarios). Preparación Solicitud Adquisición Servicio/Bienes.
2	Licitación/Adjudicación de Estudio/Consultoría. Concurso/Adjudicación Honorarios. Cotización/Emisión Orden de Compra Servicio/Bienes.
3	Ejecución Estudio/Consultoría. Ejecución Trabajos Honorarios. Adquisición de Servicios/Bienes.