NS-9 - National Program for Catalyzing Industrial and Commercial Organic Waste Management in Chile

Chile

NAMA Seeking Support for Implementation

A Overview

A.1 Party	Chile
A.2 Title of Mitigation Action	National Program for Catalyzing Industrial and Commercial Organic Waste Management in Chile
A.3 Description of mitigation action	The objective of this NAMA is to catalyse the installation of the first facilities for industrial and commercial organic waste management in Chile (it does not include household organic waste). The waste sector in Chile currently represents approximately 3% of the country´s greenhouse gas (GHG) emissions, the majority of these generated by industrial waste. This NAMA will therefore contribute to the country´s ability to meet its voluntary commitment to the United Nations to achieve a 20% deviation below the “business-as-usual” emissions growth trajectory by 2020, as projected from the year 2007. The National Program seeks to promote a solution for organic waste management in Chile by supporting the installation of approximately five organic waste management facilities (specifically dry fermentation plants that include indoor treatment, power generation or "waste-to-energy" and compost products obtained from the organic treatment process). The National Program will specifically target industrial organic waste produced by agroindustry (wine, fruits, crops), fisheries (salmon), livestock (poultry, pigs), and commercial organic waste generated from pruning activities and the operation of local food markets, hotels and restaurants. Currently in Chile, municipalities are responsible for disposing of household and commercial waste while the industrial sector is responsible for disposing of its own waste separately. The National Program has been designed to address the financial, economic, cultural and social barriers for the development of organic waste management facilities in Chile. In doing so, it will support the creation of a market for organic waste management in Chile which will ultimately allow private sector waste management companies to develop these projects without support. Financial models that have been developed for the preparation of this NAMA indicate that the full cost of implementation of this Program and the resulting organic waste management facilities put in place by the private sector in Chile will total around 160 million USD. The National Program will include four (4) action areas: 1. Regulatory Improvement: The Ministry of Environment of Chile will oversee the National Program and has begun developing national norms to regulate organic waste management (use of digatestate, use of compost, requirements for biodigestor installations). The Ministry also also plans to develop a system for the monitoring, reporting and

	verification of the emissions reductions resulting from plant installations that result from this NAMA (estimated US $ 200,000 in-kind national contribution). 2. Co-financing feasibility studies: The Chilean Economic Development Agency has funds available (accessible through a competitive application process) to co-finance up to 50% of the amount needed by the private sector for feasibility studies related to organic waste management projects (estimated US $ 900,000 national contribution). 3. Financial Support: Support is needed to cover part of the initial investment for approximately five plant installations. This financial support will only be needed and available for these first few projects supported by the NAMA funds (US $ 10,000,000 - international contribution as a grant). 4. Credit Guarantee Fund: As the organic waste management will include technologies yet to be tested and installed in Chile, the first projects will require special guarantees covering the construction and first year of plant operation, to leverage private sector funding (US $ 20,000,000 - international contribution as guarantee). Financial models indicate that this guarantee will be able to cover the first 8-10 organic waste management plants installed in Chile.
A.4 Sector	☐ Energy supply ☐ Residential and Commercial buildings ☐ Agriculture ☒ Waste management ☐ Transport and its Infrastructure ☐ Industry ☐ Forestry ☐ Other
A.5 Technology	☒ Bioenergy ☐ Energy Efficiency ☐ Hydropower ☐ Wind energy ☐ Carbon Capture and Storage ☐ Land fill gas collection ☐ Cleaner Fuels ☐ Geothermal energy ☐ Solar energy ☐ Ocean energy ☐ Low till / No till ☐ Other
A.6 Type of action	☐ National/ Sectoral goal ☐ Strategy ☒ National/Sectoral policy or program ☒ Project: Investment in machinery ☒ Project: Investment in infrastructure ☐ Project: Other ☐ Other
A.7 Greenhouse gases covered by the action	☐ CO2 ☐ N2O ☐ PFCs ☐ CH4 ☐ HFCs ☐ SF6 ☐ Other

B National Implementing Entity

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B.1.11	Phone	
B.1.12	Email	
B.1.13	Comments	

C Expected timeframe for the implementation of the mitigation action

C.1	Number of years for completion	10
C.2	Expected start year of implementation	2013

D Currency

D.1	Used Currency	[X] AED Conversion to USD: 1

E Cost

E.1.1	Estimated full cost of implementation	160000000
E.1.2	Comments on full cost of implementation	
E.2.1	Estimated incremental cost of implementation	30000000
E.2.2	Comments on estimated incremental cost of implementation	

F Support required for the implementation the mitigation action

F.1.1 Amount of Financial support	30000000
F.1.2 Type of required Financial support	[X] Grant [ ] Loan (sovereign) [ ] Loan (Private) [ ] Concessional loan [X] Guarantee [ ] Equity [ ] Carbon finance [ ] Other
F.1.3 Comments on Financial support	In preparing this NAMA, the Ministry of Environment oversaw the development of a financial business model that underlies the main components of this NAMA. This exercise was supported by the Canadian Government and the results of this model as well as other studies developed for the preparation of this NAMA are available upon request to Parties interested in supporting this NAMA. According to the financial model, US $10,000,000 of international financial support in the form of grants is needed to fund part of the initial investment of the organic waste treatment plants. This financial support will only be needed and available for the first few projects supported by the NAMA. Additionally, as this NAMA seeks to promote new technologies yet to be tested and installed in Chile, the first projects will re-quire US $20,000,000 of credit guarantee to cover the construction and first year of plant operation, to leverage private sector funding . The following para-graphs describe in more detail how this financial sup-port will be utilized to transform this National Program into a self-sustaining initiative: Organic waste treatment facilities require tipping fees similar to those charged at landfills to be economically sustainable. An important part of the waste

	generating companies in Chile are currently willing to pay such fees given that many local dumping areas (that do not meet national norms) are in the process of being closed down and many companies are having to transport their waste long distances to be able to dis-pose of their waste in sanitary landfills that comply with national regulations. Current tipping fees for local dumps that do not comply with national regulations are relatively low which is why this National Program has been designed to provide support for the initial plant investment in the short-term, while the market price of tipping fees increase over the next few years due to the closure of local dumps and the construction of sanitary landfills, which will result in an increase in tipping fees. The Ministry of Environment will use a public tendering process with pre-established criteria and conditions to select projects (the installation of organic waste treatment facilities) that will receive support. The support to be granted to each project will be calculated as a percentage discount off of the projected market-rate tipping fee. The first projects selected for the NAMA will be supported at a maximum discount of 50% off of the tipping fee in the first year, 35% off in the second and 20% in the third year. Starting on the fourth year, the full tipping fee will paid by waste generators. This will result in the provision of incentives of up to a 25% of the initial investment, which for a dry fermentation plant of 40,000 tons per year, is equivalent to a contribution of US$ 2.5 million. Projects selected in the second tendering process will receive less financial support, covering, as maximum, the revenue gap created by a discount of the fee up to 30% the first year, 20% the second and 10% the third. Starting on the fourth year, the full tipping fee will be paid by waste generators. This means covering up to a 20% of the initial investment, which for a dry fermentation plant of 40,000 tons per year, is equivalent to a contribution of US$ 2 million. By the third tendering process, all financial support will be phased out, as the costs for alternative options for waste disposal will be much higher than today.
F.2.1 Amount of Technological support	
F.2.2 Comments on Technological support	
F.3.1 Amount of capacity building support	
F.3.2 Type of required capacity building support	☐ Individual level ☐ Institutional level ☐ Systemic level ☐ Other
F.3.3 Comments on Capacity Building support	
F.4 Financial support for implementation required	☐
F.5 Technological support for implementation required	☐
F.6 Capacity Building support for implementation required	☐

G Estimated emission reductions

G.1 Amount	12
G.2 Unit	MtCO2e

G.3 Additional imformation (e.g. if available, information on the methodological approach followed)	The GHG emission reduction estimates consider a baseline of waste disposal in dumps, since private companies are responsible for managing their own waste and currently cannot dispose in municipal landfills. Assumptions surrounding the new organic waste management plants and the reductions that will result from these include: a project life of 20 years; the capability of the plants to produce biogas with a methane concentration of about 60%, which will be transformed into electricity and thermal energy that can be used to replace power of the grid. The reference value used as the grid emission factor is the one from the Central Interconnected System (SIC), which is 0.35 tCO2e/ MWh.

H Other indicators

H.1 Other indicators of implementation	The projects implemented under this program will be contractually required to report the following indicators on a regular basis to the Minsitry of Environment: - Efficiency of biogas generation per ton of waste treated. - Production of energy per ton of waste. - Critical environmental episodes associated with the projects, if any. - Number of jobs created (directly and indirectly) by the projects.

I Other relevant information

I.1 Other relevant information including co-benefits for local sustainable development	The NAMA will generate several benefits for the country's sustainable development, which have been identified qualitatively, but to date there are no quantitative estimates. The main benefits to sustainable development are: - The environmental, social and health benefits associated with closing and / or reducing the use of dumps, which will be replaced by an alternative with social and environmental benefits. - Businesses will dispose with their waste in a more sustainable manner and improve their relation-ship with the local community. - Reduction in emissions of particulate matter that will result from fewer miles traveled by industries to dispose of their waste. - Job creation and urban development associated with the new waste management instalations.

J Relevant National Policies strategies, plans and programmes and/or other mitigation action

J.1 Relevant National Policies	In 2010, law number 20,417 of the Government of Chile created the Ministry of Environment (MMA), the Environmental Assessment Service and the Superintendency of the Environment (SMA). The Superintendency will be fully functioning and begin to exersize its powers later this year and will be in charge of enforcing compliance with environmental regulation in Chile. Law No. 20,417: http://www.leychile.cl/ Navegar?idNorma=1010459 In terms of regulations in the waste sector, the Government of Chile through the Undersecretary of Regional Development (SUBDERE) has a National Solid Waste Program (PNRS). The overall objective is to improve sanitation and environmental quality of urban and rural disposal centers nationwide, through the implementation of an integrated and sustainable strategy to manage mu-nicipal solid waste. The Ministry of Environment is currently developing a new waste law, which will introduce the con-cept of "Extended Producer Responsibility" in Chile, demanding that a producer (manufacturer or importer) should be responsible for its products sold at the market when these reach the bottom of the waste chain. The Ministry of Environment is also developing a Policy for an

	Sustainable Itegrated Waste Management (2013 - 2020). This Policy will establish the framework for the development of activities and initiatives in the area of waste management in the coming years. The Policy aims to shift the focus of waste policy in Chile from the control of health risks related to waste management to the introduction of environmental variables in waste management. The overall objective of the Policy is to ensure the environmentally sound management of waste through the establishment of a hierarchy for waste management which considers the sustainable management of resources. Additionally, in March 2013 the National Waste System (SINADER) will begin a trial phase. This System will collect statistical data to allow the analysis of each of the stages of waste management, thereby allowing policy makers to develop improved public policy and/or regulation related to waste management.
J.2 Link to other NAMAs	

K Attachments

K	Attachments	**Title Description**
K.1	Attachment description	
K.2	File	Browse...

L Support received

L.1 Outside the Registry	
L.2 Within the Registry	**Support provided Support Type Amount Comment Date**