

Air Quality Policies

This document is based on research that UNEP conducted in 2015, in response to Resolution 7 of the UNEA 1. It describes country-level policies that impact air quality. Triple question marks (???) indicate that information for the section couldn't be found.

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CHILE, REPUBLIC OF		
GOALS	CURRENT STATUS	CURRENT / PLANNED POLICIES & PROGRAMMES
GENERAL OVERVIEW	<ul style="list-style-type: none"> ● Overall situation with respect to air quality in the country, including key air quality challenges: Urban air pollution often passes standards and is getting worse. Emissions from industry, mining, thermal power plants, wood-burning heaters and vehicles are key sources of pollutants. ● The Santiago Metropolitan Region does not comply the O3, PM2.5 and PM10 air quality standards, and consistently ranks high among cities with the worst air quality, especially during winter. The city has standards that are more stringent or introduced earlier than the rest of the country (especially with respect to vehicles); however these standards don't prevent smog, and in June 2015, an environmental emergency was declared due to high levels of pollutants in the city. ● There are more than 10 cities that do not comply the PM2.5 air quality standard, such as: Puchuncaví, Quintero, Con-con, Rancagua, Talca, Chillan, Los Angeles, 	<ul style="list-style-type: none"> ● National Ambient air quality standards: Chile has air quality standards for the criteria pollutants: SO2, O3, NO2, CO, PM10, PM2.5 and Pb. The Ministry of Environment is revising SO2, O3, NO2, CO and PM10 standard and it will probably finish in 2018. ● National Air Quality Policy: One of the main objectives of the Ministry of Environment, for the period of 2014 to 2018, is to focus in recovering the 14 deteriorate areas that do not comply the PM2.5 air quality standard². ● Air Quality legislation / programmes: air pollution regulatory framework consists of various air emission or air quality standards, in particular there are emission standards for mobile and stationary sources. Also, every new project as well as the expansion of existing facility for any industrial project must be evaluated and authorized by the Environmental Impact Assessment System (in Spanish: SEA)³. ● Other: Also, there is a regulatory agenda for the coming years, that consists of: new air emission standard for reciprocating engine, new air emission standard for boilers and revising the existing air emission and air quality standards.

² Reference: Planes de Descontaminación Atmosférica Estrategia 2014-2018, see: http://portal.mma.gob.cl/wp-content/uploads/2014/08/articles-56174_Plan_Descont_Atmosferica_2014_2018.pdf

³ Reference: Sistema de Evaluación Ambiental, see: <http://www.sea.gob.cl/>

	<p>Temuco, Valdivia, Osorno and Coihayque.</p> <ul style="list-style-type: none"> ● In the main non-attainment regions in urban and mining northern zones, key pollution sources are copper foundries and coal-burning power plants; in the central zone, mobile and point sources; while in southern urban zones, residential wood combustion is a key source. ● Air quality monitoring system: Yes. However, the air quality monitoring system focuses on measuring PM10 and PM2.5 in the main cities and the main industrial sites¹. 	
<p>REDUCE EMISSIONS FROM INDUSTRIES</p>	<ul style="list-style-type: none"> ● Industries that have the potential to impact air quality: mining, iron, steel, cement, wood products, thermal power plants, copper smelters. ● GDP of country: \$258 billion in 2014⁴ ● Industries' share of GDP: 42% ● Electricity sources: there are 2 main electricity systems at national level. For the Central System: thermal (52,5%), hydro (41,9%), wind (4,9%) and solar (1,3%)⁵ and for the North System: thermal (95,6%), hydro (0,2%), wind (1,9%) and solar (1,9%)⁶. 	<ul style="list-style-type: none"> ● Emission regulations for industries: there are the following air emission standards for industrial activities: a) Incineration and co-incineration plants (cement plant); b) Odors from Pulp mill; c) Thermal power plant, d) Copper Smelters and Arsenic Point Sources, e) others emissions standards in Air Actions Plans. ● Small installation's emissions regulated: There is not a national regulation for small installations, which means a power less than 50 MW thermal. However, the air emissions from boilers are regulated from a thermal power over or equal to 75 kW in the Air Actions Plans for the central and south regions of Chile (for example: Metropolitan Region, Temuco, Valdivia, Osorno and Coihayque). Moreover, the Ministry of Environment is elaborating new emission standards for reciprocating engines and boilers at national level, which will focus on small installations, less than 50 MW thermal. This process will finish in the first semester of 2018⁷. Also, any new projects that generate power over 3 MW must be evaluated and authorized by the Environmental Impact Assessment System. ● Renewable energy investment promoted: Renewable Portfolio obliges electricity sellers to include 5% (10% by 2024) of non-conventional renewable energies (everything apart from hydro larger than 20MW); Chile has a renewable energy target of 20% electricity generation by 2025, a renewable energy law, and laws or programmes for solar heating, solar power, geothermal, biomass, and rural access to renewable energy; Incentives include fuel tax exemption and

¹ Reference: Sistema de Información Nacional de Calidad del Aire (SINCA) del Ministerio de Medio Ambiente, see: <http://sinca.mma.gob.cl/>

⁴ Reference: Banco Mundial sobre la economía de Chile, see <http://data.worldbank.org/country/chile>

⁵ Reference: Capacidad Instalada de generación SIC, see <http://generadoras.cl/generacion-electrica/sector-generacion-electrica/>

⁶ Reference: Capacidad Instalada de generación SING, see <http://generadoras.cl/generacion-electrica/sector-generacion-electrica/>

⁷ Reference: Tabla pública del estado de avance de normas y planes atmosféricos, see <http://www.mma.gob.cl/transparencia/mma/tablas-publicas.html>

		<p>transmission discount.</p> <ul style="list-style-type: none"> ● Energy efficiency incentives: National Action Plan for Energy Efficiency 2013 with a goal to reduce energy consumption in 2020 by 12%; Energy Efficiency Agency created; Initiatives to promote energy efficiency include energy efficiency standards and labelling program for electrical products, distribution of efficient bulbs to vulnerable 40% of population, subsidy (ended in 2010) on efficient electric motors for industrial and mining sectors, technical and financial assistance to small and medium sized enterprises to lower energy consumption, and energy efficiency credit line. NRDC had suggestions on how to improve energy efficiency work (https://www.nrdc.org/international/files/chile-energy-efficiency-report.pdf). Also, there is a National Energy Policy for 2050⁸ that establishes the objectives of the future of Chilean energy sector with a social, technical and political perspective to enhance sustainability, such as energy efficiency objectives. ● Incentives for clean production and installation of pollution prevention technologies: There are governmental programmes or financial initiatives that focus on introducing technologies or techniques for clean production by financing part of the cost. One of them is the Clean Production Agreement (in Spanish: Acuerdo de Producción Limpia⁹), which give part of the budget to improve the techniques or introduce new technology for clean production in a local or national industry. Another programme is the Center for the innovation and enhancement the sustainable energy (Centro para la innovación y fomento de las energías sustentables)¹⁰, which develops and support governmental measure to advance on introducing sustainable energy technologies or practices in the industrial process. ● Actions to ensure compliance with regulations: fines, temporary or permanent shut down, revocation of license/permits. There is no specific legal obligation for a polluter to clean up contaminated air or to pay compensation for air pollution; however, a polluter can be pursued through an environmental action (in the Environmental Courts) or civil punishment, unless the polluter files a restoration plan which, if approved, means no action can be brought for
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⁸ Reference: Política Nacional de Energía 2050, see <http://www.energia2050.cl/programa>

⁹ Reference: Acuerdos de Producción Limpia, APL, see [http://www.cpl.cl/Acuerdos\(APL\)/](http://www.cpl.cl/Acuerdos(APL)/)

¹⁰ Reference: Centro para la innovación y fomento de las energías sustentables, CIFES, see <http://cifes.gob.cl/>

		<p>environmental damage once the polluter executes the plan satisfactorily</p> <p>Moreover, there is a new governmental agency since 2012, called Superintendencia del Medio Ambiente¹¹, which works to ensure compliance with environmental requirements, such as: emission standards, air action plans, environmental authorizations, among others.</p> <p>Other actions at national, sub-national and / or local level to reduce industry emissions: In some industrial centers and cities, regulations have lowered pollution levels. For example, the annual SO2 concentrations in the copper mining areas of the north and central regions of Chile decreased substantially (by 77%) from 1993 to 2009. However, the concentrations of SO2 have remained flat or increased from 2004 to 2009 due to the construction of more coal power plants as a result of the expansion of the copper industry and its demand for energy. However, there is an air emission standard for thermal power plants since 2011, and also the environmental regulatory agenda includes to regulate the main stationary sources in air action plans or new air emission standards, such as the new air emission standard for reciprocating engines and boilers.</p>
REDUCE EMISSIONS FROM TRANSPORT	<ul style="list-style-type: none"> ● Key transport-related air quality challenges: vehicle growth creates a significant source of air pollution in urban areas, despite the use of ultra-low Sulphur fuel and Euro 5 vehicle emission standards at national level. 	<ul style="list-style-type: none"> ● There are air emission standards for mobile source as shown in the Annex 1, Table 1. ● Vehicle emission limit: Euro 5 ● Fuel Sulphur content: 15 ppm¹² in diesel and in gasoline. ● Restriction on used car importation: Banned ● Actions to expand, improve and promote public transport and mass transit: all new public transport buses entering Santiago must meet Euro 3 emission standards with particulate filters; \$4.2 billion to be invested in 14 projects to upgrade public transport in Santiago, Antofagasta, Valparaiso and Concepcion, including expansion of Santiago Metro and use of integrated public transport corridors to prioritise pedestrians, bicyclists and bus users ● Actions to promote non-motorized transport: (ex: include sidewalks and bike lanes in new road projects, car-free areas etc) There are some actions to build more bike lanes and promote the use of the bike in Santiago city. One example of these actions is Bikesantiago¹³ that is the first interdistrict public system to facilitate the rent of a bicycle in the capital of Chile, Santiago city. ● Other transport-related actions: Incentives for hybrid vehicles; fuel efficiency labelling system; feebate proposal for fuel economy being considered
REDUCE EMISSIONS	<ul style="list-style-type: none"> ● Outdoor, open burning: agricultural stubble is burned 	<ul style="list-style-type: none"> ● Legal framework: (ex: is burning banned?) Open burning of agricultural waste is restricted to the summer period in some polluted zones of the center and south of Chile (for example:

¹¹ Reference: Superintendencia del Medio Ambiente, SMA, <http://www.sma.gob.cl/>

¹² Reference: Decreto Supremo N°60, del Ministerio de Energía, que establece especificaciones de calidad de combustibles

¹³ Bikesantiago, <http://www.bikesantiago.cl/>

FROM OPEN BURNING OF AGRICULTURAL / MUNICIPAL WASTE (OUTDOOR)		<p>Santiago, Temuco, Rancagua, etc.); this activity is regulated in Air Actions Plans.</p> <ul style="list-style-type: none"> ● Actions to prevent open burning of municipal waste and / or agricultural waste: Ministry of agriculture can enforce and fine open burnings, also some municipalities have these attributions in these issues.
REDUCE EMISSIONS FROM OPEN BURNING OF BIOMASS (INDOOR)	<ul style="list-style-type: none"> ● Dominant fuels used for cooking and space heating: <5% use solid fuels for cooking, although wood-burning heaters are more common, even in Santiago, and contribute to poor air quality in winter ● Impact: Unknown from indoor air pollution (2,400 deaths/year from outdoor air pollution) 	<ul style="list-style-type: none"> ● Indoor air pollution regulated: (Yes / No) There is no regulation for indoor air pollution. There is an indoor air regulation for the workplace. ● Chile Sustainable Dwelling Standard requires an Indoor Air Quality Plan to ensure adequate ventilation. ● Promotion of non-grid / grid electrification: urban electrification is ~100%; in rural areas 93% ● Promotion of cleaner cooking fuels and clean cook stoves: The Ministry of Environment has the Sustainable Heating Programme; this initiative changes old wood stoves (for heating or cooking) with new heating systems like wood pellet stoves, gas stoves, certified wood stoves between other systems. This programme is mostly focus in polluted cities where the principal cause of the pollution is residential wood burning. ● Other actions to reduce indoor biomass burning, or to reduce its emissions: ???

Secondary Sources used in the research: <http://www.cleanairinstitute.org/calidaddelaireamericalatina/cai-report-english.pdf>, http://www.unep.org/Transport/new/PCFV/pdf/Maps_Matrices/LAC/matrix/LAC_FuelsVeh_June2015.pdf, <http://latinlawyer.com/>, http://www.irena.org/DocumentDownloads/Publications/IRENA_RE_Latin_America_Policies_2015.pdf, <http://airlex.web.ua.pt/pm10>, http://www.who.int/quantifying_ehimpacts/national/countryprofile/en/#I, <http://www.nrdc.org/international/files/latin-america-diesel-pollution-IB.pdf>, https://energypedia.info/wiki/Chile_Energy_Situation, <http://www.reegle.info/countries/chile-energy-profile/CL>, <http://www.theguardian.com/world/2015/jun/22/chile-santiago-smog-environment-emergency>, <http://www.ibtimes.com/santiago-smog-chile-declares-environmental-emergency-over-air-pollution-1976819>, <http://www.digitaljournal.com/article/353756>, http://www.researchgate.net/publication/225089100_The_air_quality_in_Chile_Twenty_years_of_challenge, <http://us.practicallaw.com/1-503-4725>, http://switchboard.nrdc.org/blogs/amaxwell/energy_efficiency_a_pillar_of.html, http://ccap.org/assets/CCAP-Booklet_Chile.pdf, <http://latino.foxnews.com/latino/politics/2014/11/05/chile-unveils-plans-to-invest-42-bn-in-public-transportation-projects/>, <http://thecityfix.com/blog/beyond-a-bus-system-complete-streets-to-revitalize-santiago-chile-dario-hidalgo/>

Table 1. Air emission standards for mobile sources and fuel standards

Categorías	Regulación antes PPDA	2010	2011	2012	2013	2014	2015
Vehículos Livianos Gasolina	Norma EURO III		Euro IV Abril			EURO V Sept	
Vehículos Livianos Diesel	Norma EURO IV				Euro V Septiembre		
Norma ASM					Reducción 10% NOx Julio		Reducción 20% NOx Abril
Vehículos Medianos Gasolina	Norma Euro III	Euro IV Septiembre				EURO V Sept	
Vehículos Medianos Diesel	Norma Euro III	Euro IV Septiembre			Euro V Septiembre		
Buses de transporte público	Norma Euro III	Euro III + Filtro Enero		Euro IV + Filtro ó EURO V Septiembre			
Camiones	Norma Euro III			Euro IV Abril			Euro V Octubre
Motos	Norma EPA 80		Euro III-EPA 2010 Enero				Euro III Vigencia 2016
Vehículos de Baja o Cero Emisión	No existe esta categoría	categoría cero y ultra baja emisión					
Diesel			15 ppm Septiembre				
Gasolina	Gasolina	15 ppm Julio					