

Developing Chile's Automotive Fuel Economy Policy

1.1 Background

Chile ratified the Kyoto Protocol in 2002 and the United Nations Framework Convention on

Climate Change (UNFCCC) in 1995.

While Chile currently has no binding international or national obligations to reduce GHG emissions, the country is an active member in UN-led global climate change negotiations and embraces the principle of common but differentiated responsibilities for a post-Kyoto framework.

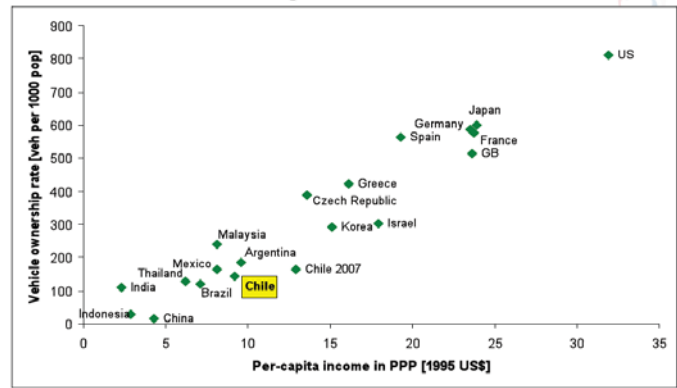
In a national context, the Chilean government has said that measures to address climate change will not impede economic growth; government policies seek to slow the rate of emissions growth, primarily via energy efficiency measures. Chile participates in extensive bilateral, regional and global co-operative efforts on energy, reflecting an outward-looking approach to energy development. Examples of Chile's multilateral engagement include APEC, IRENA, IAEA, OECD, IEA and UN-led efforts on energy and the environment. At the regional level, Chile participates in UNASUR, ECLAC, MERCOSUR and OLADE initiatives. Chile also developed various bilateral energy co-operation agreements with Spain, Germany, the United Kingdom and the United States, among others.

Chile's energy sector has four distinctive characteristics. First, unlike many of its South American neighbors, Chile has limited indigenous fossil energy resources. Yet, fossil fuels account for almost 80% of the country's total primary energy supply. As a result, Chile imports close to 75% of its primary energy in the form of oil, gas and coal. In the case of natural gas, this external dependence was concentrated almost exclusively on one supplier – Argentina – until the arrival of liquefied natural gas in July 2009.

1.2 Chile's Light-Duty Vehicle Fleet

In Chile, as in many other developing countries, transport is one of the most rapidly growing end-use energy sectors. Between 1990 and 2007, final energy consumption in the transport sector grew at an average annual rate of 5.2%, compared with 4.6% for the economy as a whole. The sector depends almost exclusively on oil derivatives for its energy use and accounts for more than 60% of the country's total final oil consumption. According to available

Car ownership: where we stand



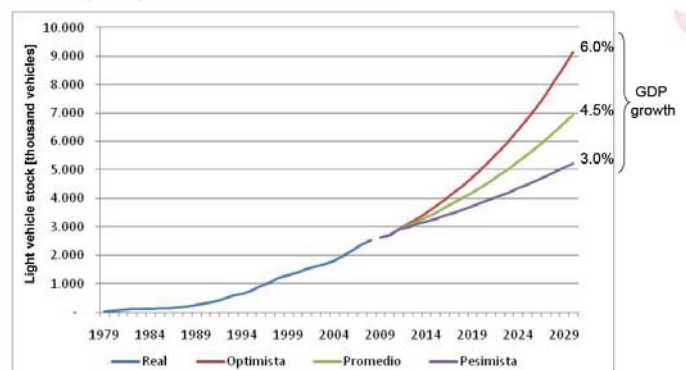
2002 data, taken from Dargay et al. 2007

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Car stock: expected growth

Preliminary analysis based on GDP scenarios:



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estimates, transport emits about one-third of Chile's energy related GHG emissions.

There are no fuel economy policies for vehicles, but the new Ministry of Energy has an Energy Efficiency Division that is taking this issue inside the national policy for energy efficiency, among other topics related with transport. Related with attributions, this Ministry has the power to set standards for energy efficiency in general terms, but in the case of vehicles inter-agency cooperation will be crucial as the Transport Ministry concentrates the capacity and experience related with emission controls, including standards definitions, type approval for new model vehicles, and conformity of production.

There are two main elements of the energy efficiency policy for light-duty vehicles: an incentive program for the purchase of hybrid electric vehicles and a planned vehicle fuel economy labeling system. Labeling regulations and their implementation schedule are currently pending.

1.3 Status of LDV fleet fuel consumption/CO₂ emissions

Of the 2.8 million motor vehicles running in the country in 2007, private vehicles accounted for almost 87%, public transport for 6% and freight vehicles for 7%. Gasoline-powered vehicles still dominate the motor vehicle fleet, particularly in the case of private passenger vehicles. Nonetheless, among the total motor vehicle fleet, diesel vehicles have experienced an important increase in recent years, growing from 13% of the vehicle fleet in 2002 to 19% in 2007. A minor portion of vehicles use natural gas, while electric vehicles are virtually non-existent.

Nationally, over 70% of vehicles are equipped with catalytic converters. Data from Santiago's 2001 household survey suggest that one in three private vehicles is less than five years old, with an average vehicle age of eight years; data from 2008 vehicle inspections reveal a similar average age for private motor vehicles.

Chile's transport sector relies almost entirely on petroleum-based fuels. Gasoline dominates, although diesel has been increasing in recent years, likely in part due to diesel's more favorable treatment under fuel excise tax policy. As in some other countries, the relatively favorable tax treatment of diesel originates in the desire to increase equity (lower cost fuels for public transport buses) and an increase in economic development (reducing road freight costs). However, it appears that the fuel cost differential may result in increasing ownership of light-duty diesel vehicles. Alternative fuels, including bio-fuel mixes for transport, receive a slight fuel tax advantage. Nonetheless, the estimated number of alternative-fuelled road vehicles in the country is small (5,000 natural gas vehicles and less than 100 electric vehicles).

In the early 2000s, Santiago's Metro explored the possibility of sourcing its energy exclusively from hydroelectric sources, but the contract proved unfavorable and the Metro continues to draw its electricity from the Central Interconnected Electricity System (SIC). Several efforts to implement alternative-fuelled buses in Santiago have resulted only in pilot programs (e.g. for natural gas buses), but no widespread implementation of alternatives to diesel combustion. This may be partly due to limited natural gas supplies in Chile. Tests of emissions and performance characteristics of several local biofuel blends (including a rapeseed-based diesel blend and

ethanol gasoline blends) have been carried out by 3CV, and biofuel blends (5%) have been authorized for gasoline and diesel, with fuel tax incentives. Any major shift from petroleum as the primary energy source for the transport sector in the medium term seems unlikely.

Spurred in large part by the need to address Santiago's air pollution problems, the country has embarked on aggressive transportation fuel quality improvements in recent years. Unleaded gasoline was first introduced to Santiago in 1991 (to accommodate the influx of cars with catalytic converters), and since April 2001 the sale of leaded gasoline has been discontinued, nation-wide. For diesel, in Santiago, the maximum sulphur content is already 50 parts per million (ppm); this norm will become nation-wide in 2010, while in Santiago the diesel sulphur norm will be lowered to 15 ppm in September 2011. In addition to directly reducing sulphur emissions, these norms will allow increasingly sophisticated diesel emission control technology on relevant vehicles.

The Mario Molina Center Chile has led an auto market environmental trend study for 2005 - 2008, focused in local pollutants (NO_x and PM) and CO₂ / fuel consumption. Local pollutant emissions for car models are available from the Transport Ministry emission certification lab (3CV). While the CO₂ information for vehicles was not available for all models, 3CV allowed access to emission data sets where CO₂ emission is available for 65% of the car models.

The car model emission data base contains information on 1,259 car models, including information for local pollutants and CO₂ (in local pollutants 100% of data was from 3CV tests, 65% of CO₂ information coming from test performed at Transport Ministry Certification Labs, 30% was taken from web sources). Fifty percent of the models were tested under EURO NEDC procedures (driving cycle according to 70/220/CEE), and the other half under EPA (FTP75) procedures. The fuel consumption was calculated using CO₂ emission concentration (835.8 grams/liter density for EURO).

2.0 Regulatory Policies

2.1 National Standard

There is no national standard for automotive fuel economy in Chile.

2.2 Import restrictions

New Vehicles

Automotive investment in Chile is governed by the "Automotive Statute," which allows any car assembly company to operate in Chile. The Statute establishes a 13 percent minimum of local content in vehicles assembled from completely knocked-down kits and 3 percent for vehicles assembled from semi-knocked down kits. Local vehicle assemblers and part manufacturers benefit from Article 3 of Law 18,483, which exempts imported auto parts and components from customs duties if the importer exports parts and components of specific, certified quality

worth the same amount ex-factory. If exported alone, the parts must include in country value-added of at least 50 percent. If they are built into vehicles that are assembled in Chile and then exported, then the value-added component must be at least 70 percent. This law is being replaced by a new law called the Arica Law which gives incentives to establish in the Arica industrial free trade zone for any manufacturing plant.

Second Hand

In Chile, the importation of used vehicles is prohibited. Chile does allow imports of used ambulances, funeral hearse cars, fire-fighting vehicles, street cleaning vehicles, irrigation vehicles, towing vehicles, television projection equipment vehicles, armored commercial vehicles, workshop vehicles, cement making trucks, prison vans, radiological equipment vehicles, motor homes, off-road transportation vehicles, and other similar vehicles for special purposes, different from common transportation vehicles. These used vehicles pay a 9 percent import duty plus VAT. Fire-fighting vehicles are not subject to import duties, and pay the VAT on the Cost, Insurance and Freight (CIF) value only.

A vehicle is considered new if: 1) it is of the current year; or the model of the last year but the importation occurred before April 30th, and 2) the vehicle has no more mileage than that required to transport the vehicle from the factory to the point of sale and according to customs, it corresponds to a first transaction vehicle (i.e., the invoice is from the distributor or the factory). Special laws allow tax-exempt new/used car imports by persons returning from exile or returning after living abroad (for on complete year or more) for studies or work after a determined number of years. People domiciled in two domestic free trade zones, Iquique in the north and Punta Arenas in the south may also import used cars. Imports in these areas are exempt from customs duties and VAT.

2.3 Technology mandates/targets

There are no technology mandates or targets in Chile at the moment.

3.0 Fiscal Measures and Economic Instruments

3.1 Fuel Taxes

The following taxes are paid on fuel in Chile:

- (i) taxes on imported products;
- (ii) specific taxes for fuels used in transport vehicles; and
- (iii) a value-added tax paid on all fuels. Import taxes or tariffs are paid on all imported products, and current rates are around 6% under the general regime.

This rate varies depending on the country of origin and whether it has signed a trade agreement with Chile. The specific tax for fuels used in transport vehicles is applied to gasoline, diesel oil, LPG and CNG. Gasoline is taxed at a fixed rate of UTM 6/cm I I with a discount of up to UTM

2.5/cm until 1 April 2010 depending on the level of WTI crude prices. Diesel oil is taxed at a fixed rate of UTM 1.5/cm, and companies that use diesel oil fuel for non-vehicular purposes can discount the amount corresponding to the specific tax from the amount of value-added tax that they pay.

3.2 Fee-bate

A vehicle “feebate” scheme – in which vehicle purchase taxes are higher on less efficient vehicles to provide purchase rebates for more efficient vehicles – is possible, but has not yet been explored for the country.

3.3 Buy-back

N/A

3.4 Other tax instruments

N/A

3.5 Registration fees

Vehicle registration fees vary inversely based on vehicle age, with the perverse effect of rewarding older vehicle ownership. The primary challenge to changing this structure is equity-based, as poorer people tend to own older cars. The vehicle sales tax system does not reflect vehicle efficiency.

3.6 R&D

The importance of international co-operation in the R&D field is generally acknowledged. The Chilean government has promoted the participation of foreign experts in peer reviews and workshops discussing technological options. The National Commission for Scientific and Technological Research has also developed bilateral technology co-operation agreements with the United States, Canada, the European Union, France, Germany and Finland, among others, to develop specific research projects, in particular on non-conventional renewable energy sources (NCRE).

4.0 Traffic Control Measures

4.1 Priority lanes

Priority lanes exist for public transport and taxis. At the end of 1977 public road passenger transport in Santiago was provided by a public sector operator with 710 large (90- seat) buses,

a number of strictly regulated private associations operating 3,167 regular (78-seat) buses and 1,558 (40-seat) “midi”-buses. The public operator lost money and service was mediocre. Between November 1979 and June 1983, both entry to the market and fares were deregulated. The public sector operator was driven out of the market and total capacity more than doubled. But by 1985 regular bus fares had tripled and the average age of buses increased from 7 to 11.6 years. Competition concentrated on routes to the center of the city which became congested and polluted by poorly occupied buses.

Initial attempts to rectify the situation included banning 20 percent of the bus fleet from operation on each day of the week and banning buses more than 22 years old. But these measures gave little relief. So, in the early 1990s, the government introduced a system of competitive tendering for franchises to operate buses on routes entering the city center. The capacity was thus constrained by the authorities. The fare to be offered was a main criterion in selecting franchisees, as were the environmental characteristics of the vehicles offered. Congestion, air pollution and fares all fell dramatically so that by the mid-1990s, the improved service which was the benefit of competition was retained while its drawbacks and negative aspects had been largely eradicated.

4.2 Parking

N/A

4.3 Road pricing

Road pricing, plans to modify land development patterns, etc. – have been included over the years in relevant transportation plans, but implementation has remained elusive.

5.0 Information

5.1 Labeling

Chile does not have direct vehicle fuel economy standards, but authorities are working to develop a fuel economy labeling scheme to inform consumers. Several other relevant programs are under development or in pilot stage, including the development of a fleet procurement manual, which will explicitly include life-cycle considerations, allowing for the more expensive up-front purchase price of efficient vehicles to be amortised over the lower lifetime operating costs. Click [here](#) to see the proposed fuel economy label for Chile.

5.2 Public info

N/A

5.3 Industry reporting

N/A

The text above is a summary and synthesis of the following sources:

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