

thereby reducing the absolute number of free floating particles in the air. The exhaust on a natural gas vehicle is clear, odourless, and much safer for human habitation.

Based on these benefits, GasAndes' goal is to convert up to 18,000 vehicles to natural gas usage by the year 2007. Estimated demand is expected to rise to 289,000 m³ per day by 2010.

Despite these optimistic predictions, in the transportation sector in particular, conversion to natural gas must face some significant obstacles. So far, the government has not been offering environmentally motivated incentives to encourage the use of more natural gas in transportation. Committed to letting the market determine all demand, present legal norms on contaminating emissions, allow for existing conditions. Unless public environmental pressure takes a dramatic turn towards more radical action, this situation is unlikely to change.

Obviously, for private transport companies, conversion would be undertaken only if profitable (i.e. costs of conversion and fuel should be equal, if not less than that of diesel). Technically speaking however, average costs of converting an engine today are about US\$ 2000 for a bus and US\$ 1000 per automobile. Furthermore, converting a bus engine to natural gas usage would also involve a 1200 kilogram weight increase, and would take up to 12 min to fill. Most likely then, from the perspective of the private owners, natural gas vehicles will probably not enter the market through conversion of existing equipment; but rather by a gradual replacement of old diesel powered vehicles when they can no longer pass safety inspection. With this in mind, natural gas buses are unlikely to be seen on the roads within the next five years. From a longer term perspective however, natural gas transportation could become reality in the beginning of the next century.

5.5 ADVANTAGES AND DISADVANTAGES OF NATURAL GAS

In discussing and investigating natural gas as a new potentially significant energy source in Chile, a number of advantages of using the product have been cited.

Environmental Benefits

Natural gas provides the opportunity for clean usage of a natural fuel.

- * Production does not cause irreversible harm to nature.
- * Development of natural gas is notably less contaminating than other energy sources.

Low Cost and Efficiency

- * Natural Gas could lead to lower electricity bills because it could supply thermoelectricity plants with a cheaper source of energy.