

AutoLPG is the *future*



With more than 300% growth in AutoLPG over the previous year (2004) and expected to touch 50 TMTA this year, India is probably the fastest growing AutoLPG market in the world. High growth is expected in the years ahead also. Emissions from automobiles are extremely high in India. With a tremendous judicial pressure to convert to alternative fuels, combined with exponentially growing oil prices, AutoLPG appears to be probably, the only viable, unadulterable and environment friendly alternative auto fuel in India.



**Indian
Auto LPG
COALITION**

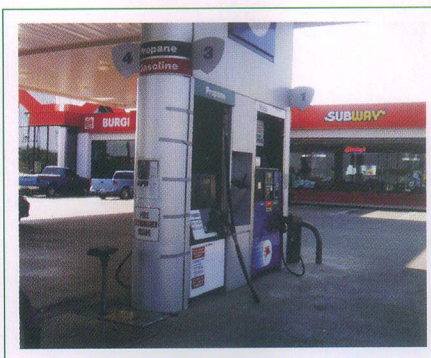


About Auto LPG in India

India imports nearly 60% of its oil requirements. At current world oil prices, India pays about \$28 billion per year for imported oil, comprising nearly 25% of the value of its total imports. Vehicles account for over 70% of air emissions in India with emissions having increased, by more than 8 times over the past 20 years, making India the world's fifth-largest emitter of carbon. India is therefore, looking very seriously towards LPG as one of the most feasible options for improving the air quality. Armed with a 'late mover' advantage, India has the benefit of learning from world experiences. With 130 existing AutoLPG stations and about 50 under commissioning, India is now striving towards an AutoLPG regime, which would be safe and sustainable.

Background

To ensure that AutoLPG in India did not experience those birth pangs, which other alternate fuels witnessed, and instead benefitted from world experience in the usage of LPG as a sustainable auto fuel, some stakeholders together with US DOE (United States Department of Energy) and US-AID (United States Agency for International Development), took initiative in trying to create an auto LPG coalition. In Dec 2002, an expert US delegation visited India and met with virtually all the stakeholders of industry,



(Officials of USDOE alongwith Indian delegates at the 10th Annual Clean Cities conference, held May 2004, in Fort Lauderdale, Florida.)

including the main oil companies - Indian Oil Corporation Limited (IOCL), Bharat Petroleum Corporation (BPCL), Hindustan Petroleum Corporation (HPCL), Reliance Industries Limited (RIL) and Essar Oil. They also met regulatory authorities like CCOE (Chief Controller of Explosives), ARAI (Automobile Research Association of India), transport authorities, pollution control boards and SIAM (Society of Indian Automobile Manufacturers).

Based on various one-to-one interactions with all these stakeholder groups, the first 'all stakeholders' meet was hosted by IOC at its headquarters in Mumbai in Jan 2004. This was followed up with a meeting at RIL's headquarters at Mumbai in October 2004, where a Charter of Intent was signed and a working group formed, to ensure the incorporation of the stakeholder group as a legal

entity. On the strength of the recommendations of the working group, the stakeholders were incorporated as a trust known as Indian Auto LPG Coalition (IAC).

During this interim period, the USDOE/USAID facilitated visits for some of the stakeholders to have a first hand assessment of the LPG conversion technologies and refueling infrastructure in US. Some of the stakeholders also participated in Clean Cities International Conferences at Fort Lauderdale (Florida) and Palm Springs (California) in 2004 and 2005 respectively.

*LPG is
fuel
economical
vehicle,
CNG
Perform*





Stakeholders

IAC identified 9 stakeholder groups as critical partners, who are to work together closely at all times for ensuring a smooth and safe development of AutoLPG in India.

These stakeholder groups are the Oil Companies, Station equipment manufacturers, Explosives Dept, Kit manufacturers, Vehicle certifying agencies – ARAI/VRDE, Automobile manufacturers / SIAM, Government transport departments, International agencies and Environment agencies.

Now known as IAC (Indian Auto LPG Coalition), the Coalition is seen by both - the government and the private sector enterprises, to be the singular nodal point to assist the Industry in solving issues and at the same time, provide credible support to the government to draft implementable and safer regulations for a sustainable AutoLPG regime for India



(Standing left to right, Mr. Curtis Donaldson (President, CleanFUEL USA), Mr David Garman (Assistant Secretary, US Department of Energy), Mr John Joseph (President, IAC and VP Reliance Industries) and Mr. Suyash Gupta (General Secretary, IAC and Director, CleanFUEL India)

Mission

IAC's mission is to facilitate sustainable growth of Auto LPG in India, within the legal framework, on international standards and in a safe and professional manner. The Coalition will take up those causes that are found worthy of pursuing for overall growth of the "Clean and Green Cities movement" in India, and in the process, further the interest of all 9 stakeholders in the Coalition.

Olympic Games Beijing 2008: Auto Gas to meet transportation needs

Why LPG-as an alternative fuel?

- LPG impacts greenhouse emissions less than any other fossil fuel.
- LPG is a clean burning, high octane and an environment friendly fuel.
- In one of the studies, findings state that LPG vehicles emit significantly less pollution than their diesel and petrol fuel counterparts. Compared to Petrol, LPG produces;
 - Up to 15% less greenhouse gas
 - Up to 50% less particulates
 - Up to 60% less CO
 - Up to 33% less NO
 - Virtually Zero Evaporative emissions of hydrocarbons
 - Up to 80% less air toxics like benzene and 1,3 butadiene

A brief comparison of vehicular emissions of Auto LPG vis-à-vis Petrol and Diesel is:

Auto LPG Emissions*

Compared to Petrol	Compared to Diesel
75% less Carbon Monoxide	90% less Particulates
85% less Hydrocarbons	90% less Oxides of Nitrogen
40% less Oxides of Nitrogen	70% less Ozone forming potential
87% less Ozone forming potential	60% less Carbon Monoxide
10% less Carbon Dioxide	

* Based on tests undertaken at the independent Millbrook Vehicle Emissions Laboratories (UK) in 1998 and 1999.

Advantages of ALPG

- Can be used in trucks, buses, LCV's, MUV's, passenger cars and three wheelers.
- Can be easily transported and stored in stand-alone facilities.
- LPG is pressurized as 5-7 bars as against 200 bars for CNG, which makes it safe and conventional fuel.
- The automotive use for LPG has an excellent safety record and various crash tests and fire tests proved that owing to the strength and integrity of the fuel tank, it is safer than petrol and at par with diesel.
- The infrastructure cost on ALDS is far economical at around Rs 40 lakhs (US \$ 90,000) compared to CNG station at Rs. 175 lakhs (US \$ 400,000)
- The retrofitment cost on existing vehicles in case of LPG is about Rs 21000 (US \$ 475) whereas case of CNG the same is about Rs 35000 (US \$ 800)
- LPG fuel systems are sealed and evaporative losses are negligible.
- No possibility of theft/pilferage.
- Life of the engine is extended as a result of the absence of acids and carbon deposits.

Be a part of the success story, **join IAC !!**



Indian AutoLPG Coalition,
E- 268, First Floor,
Greater Kailash - II,
New Delhi - 110048, India
Phone: +91-11-51435370
Fax : +91-11-51435373
<http://www.iac.org.in>

Visit IAC at www.iac.org.in and apply on-line, after which coalition representatives would get in touch and help you join the IAC community!!