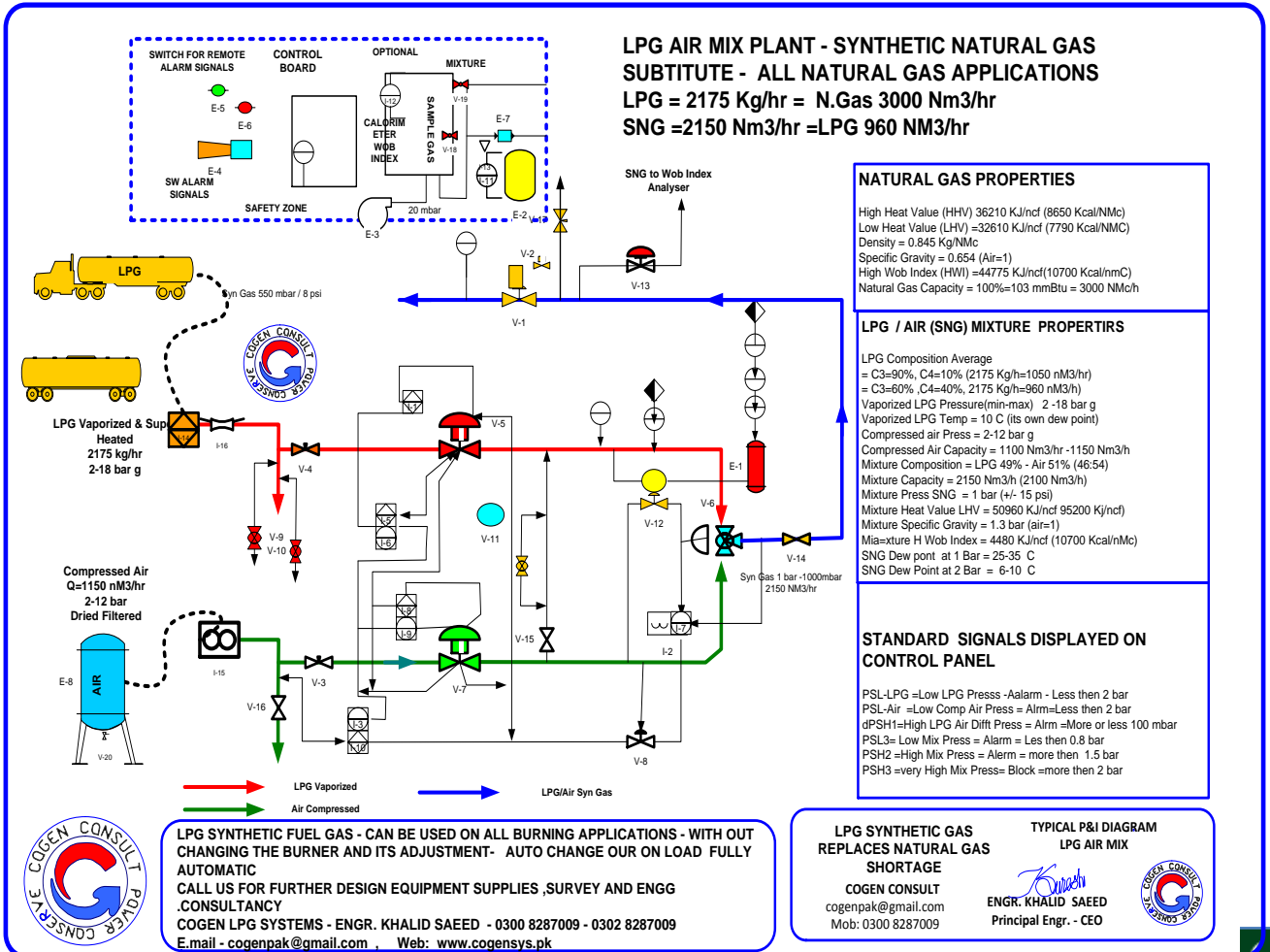


COGEN SYSTEMS

[POWER PLANT –COGEN-COMBINED CYCLE & CONSERVATION
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COGEN NTN NO : 0577814-0 , PEC # 1116/2014



LPG Air Mix Synthetic natural gas is substitute to SSGC Natural Gas. Keep running your Industry

SNG @ 33 Rs/M3 = 22 Rs/M3 Natural Gas

LPG 1250 BTU/FT3 = 900 BTU/FT3 NATURAL GAS

RUN You Boilers, Furnace, Dryers, Stenters. Gas Turbines, Spray Dryers, Roller Dryers...



COGEN SYSTEMS

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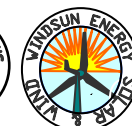
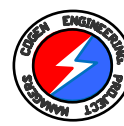


COGEN NTN NO : 0577814-0 , PEC # 1116/2014



RUN YOUR DIESEL GEN, STEAM BOILER, LPG SNG (SYNTHETIC NATIRAL GAS) GAS GENSETS , STORE LPG FOR NATURAL GAS SUBTITUTE, QUICK START,CHEAP AND CLEAN FUEL.

COGEN SYSTEMS



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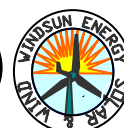
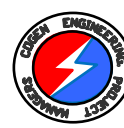
COGEN NTN NO : 0577814-0 , PEC # 1116/2014

LPG INDUSTRIAL PROJECTS POPULATION IN PAK

#	CLIENTS LIST	LPG-SNG-CAPACITY	YR.
25	SHABBIR TILES UNIT -2	90 MMBTU/H @ 6 PSI	2014
24	AGS BATTERIOES SITE KHI	50 MMBTU/H @ 7 PSI	2013
23	BELTEX GLOVES LTD KHI	18 MMBTU/H 15 PSI	2013
22	SHABBIR TILES UNIT -1 KHI	90 MMBTU/H @ 6 PSI	2013
21	AMRELI STETTL SITE KHI	90 MMBTU/H @ 6 PSI	2013
20	HANTEX DENIM KHI	36 MMBTU/H @ 6 PSI	2013
19	PAK GUM KHI	90 MMBTU/H @ 15 PSI	2013
18	YUNUS TEXTILE KHI	90 MMBTU/H @ 15 PSI	2012
17	SOORTY DENIM MILLS KHI	126 MMBTU/H @ 15 PSI	2012
16	ATLAS HONDA LAHORE	36 MMBTU/H @ 15 PSI	2012
15	GHANI GLASS HATTAR NWFP	1000 KG/H @ 15 PSI	2012
14	RAFHAN MAIZ UNIT-2 LAHORE	72 MMBTHU/H @ 6 PSI	2011
13	NISHAT TEX MILLS LHR	36 MMBTU/H @ 15 PSI	2011
12	RAFHAN MAIZ UNIT-1 FAISAL ABAD	72 MMBTHU/H @ 6 PSI	2011
11	FRUNTIER CERAMICS PESHAWER	18 MMBTHU/H @ 6 PSI	2011
10	MILLAT GEARS LAHORE	18 MMBTHU/H @ 6 PSI	2011
09	CENTURI PAPERS LAHORE	18 MMBTHU/H @ 15 PSI	2011
08	TETRA PAK LAHORE	18 MMBTHU/H @ 15 PSI	2011
07	SITARA TEX FAISALABAD	72 MMBTHU/H @ 15 PSI	2011
06	ITTEHAD CHEMICALS LHR	18 MMBTHU/H @ 6 PSI	2011
05	EMCO TILES LHR	54 MMBTHU/H @ 6 PSI	2011
04	SSGC NOSHKI SNG BALUCHITAN	100MMBTHU/H @ 60 PSI	2011
03	SSGC SURAB SNG SYSTEMS BALUCHITAN	100 MMBTHU/H @ 60 PSI	2011
02	SSGC KOT GHULAM MUHD MIRPURKHAN	100 MMBTHU/H @ 60 PSI	2011
01	GAWADER BALUCHISTAN BALOCHISTAN	50 MMBTHU/H @ 60 PSI	2011
#	LPG – SNG CLIENT LIST & CITY	SNG CAPACITY –PRESS.	YREA INSTALL

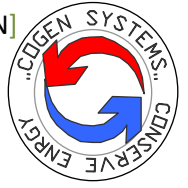


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COGEN NTN NO : 0577814-0 , PEC # 1116/2014



LPG is safe ,store able, transparent before combustion, transparent after combustion, no pollution, not hazard, cheaper as Natural gas LPG mix with air 50:50% is cheap.

COGEN SYSTEMS



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COGEN NTN NO : 0577814-0 , PEC # 1116/2014



LPG LIQUID TO GAS VAPORISOR UNIT SKID MOUNTED
COMPACT READY TO START IMPORTED FROM USA/KOREA

COGEN SYSTEMS



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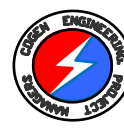


COGEN NTN NO : 0577814-0 , PEC # 1116/2014

- **Auto Gas =LPG=Liquified Petroleum gas** is used as a fuel in ICE Internal Combustion Engines- Generators. It is a mixture of Propoane & Butan gases.
- **In Pakistan 65%Propoane-35% Butan**
- **AUTOGAS –GREEN FUEL** - used as a "Green" fuel, as it decreases exhaust emission it reduces CO2, emissions by around 35% compared to petrol.



COGEN SYSTEMS



COGEN SYSTEMS

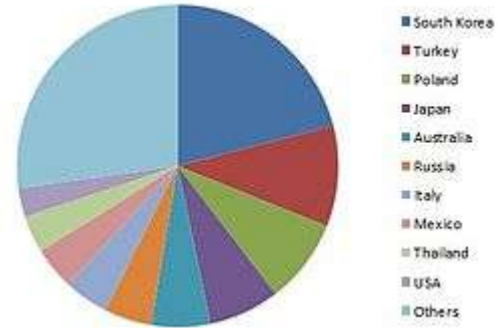
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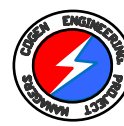
COGEN NTN NO : 0577814-0 , PEC # 1116/2014

- (2.3 VS 1.5 Kg CO2.
- LPG Octan NO (MON/RON) is between 90 - 110 .
- HHV=High Heat Value 25.5 MJ/L (for pure propane)
- HHV pure Butan =28.7 MJ/Ltr butane).
- Autogas is the third most popular automotive fuel in the world.
- 16 million of 600 million passenger cars = 3% of the total market share.
- Approximately half of all autogas-fueled

2008 Global Autogas Consumption



COGEN SYSTEMS



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COGEN NTN NO : 0577814-0 , PEC # 1116/2014

passenger vehicles are in the five largest markets Turkey, South Korea, Poland, Italy, and Australia.

DUAL FUEL DG-LPG injection for DIESEL ENGINES

LPG may be used for a supplemental fuel for diesels of all sizes.

Liter =33868 Btu/Ltr

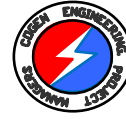
1 Litre LPG= 24128 Btu/Ltr

If LPG is 10-15less expensive, there may very well be a saving.

Any actual sa Pakistan Diesel 115 Rs/Ltr Vs LPG 100 Rs/Ltr , where diesel costs



COGEN SYSTEMS

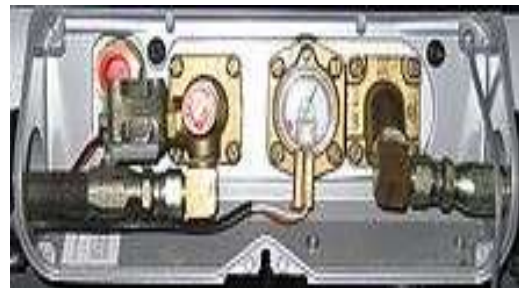


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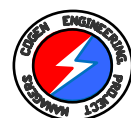


LPG FOR AUTOMOBILE
 CAR TRUCK BUSES
 RICKSHAW, FORK
 LIFTS, GENERATORS
 BOILERS, HEATERS



COGEN SYSTEMS

Cogen Consult Khi



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LPG= LIQUEFIED PETROLEUM GAS (LPG)

LPG is a mixture of commercial butane and commercial propane having both saturated and unsaturated hydrocarbons. LPG marketed as per ISO/API standard Codes.

LPG PHYSICAL PROPERTIES AND CHARACTERISTICS

LPG DENSITY

LPG at atmospheric pressure and temperature is a gas which is 1.5 to 2.0 times heavier than air. It is readily liquefied under moderate pressures. The density of the liquid is approx. half that of water and ranges from 0.525 to 0.580 @ 15 deg. C. Since LPG vapour is heavier than air, it would normally settle down at ground level/ low lying places, and accumulate in depressions.

LPG VAPOUR PRESSURE

The pressure inside a LPG storage vessel/ cylinder will be equal to the vapour pressure corresponding to the temperature of LPG in the storage vessel. The vapour pressure is dependent on temperature as well as on the ratio of mixture of hydrocarbons. At liquid full condition any further expansion of the liquid, the cylinder pressure will rise by approx. 14 to 15 kg./sq.cm. for each degree centigrade. Overfilling of Tank/Cylinder is hazardous .

LPG FLAMMABILITY

LPG has an explosive range of



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1.8% to 9.5% volume of gas in air. This is considerably narrower than other common gaseous fuels. This gives an indication of hazard of LPG vapour accumulated in low lying area in the eventuality of the leakage or spillage. The auto-ignition temperature of LPG is around 410-580 deg. C and hence it will not ignite on its own at normal temperature. Entrapped air in the vapour is hazardous in an unpurged vessel/ cylinder during pumping/ filling-in operation. In view of this it is not advisable to use air pressure to unload LPG cargoes or tankers.

LPG COMBUSTION

The combustion reaction of LPG increases the volume of products in addition to the generation of heat. LPG requires upto 50 times its own volume of air for complete combustion . Thus it is essential that adequate ventilation is provided when LPG is burnt in enclosed spaces otherwise asphyxiation due to depletion of oxygen apart from the formation of carbon-dioxide can occur



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