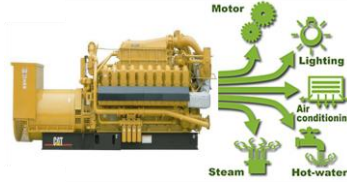


# COGEN™ SYSTEMS



**WASTE TO ENERGY**

**ASME & ENERCON –USAID, ASHRAE – CHP EUROP**

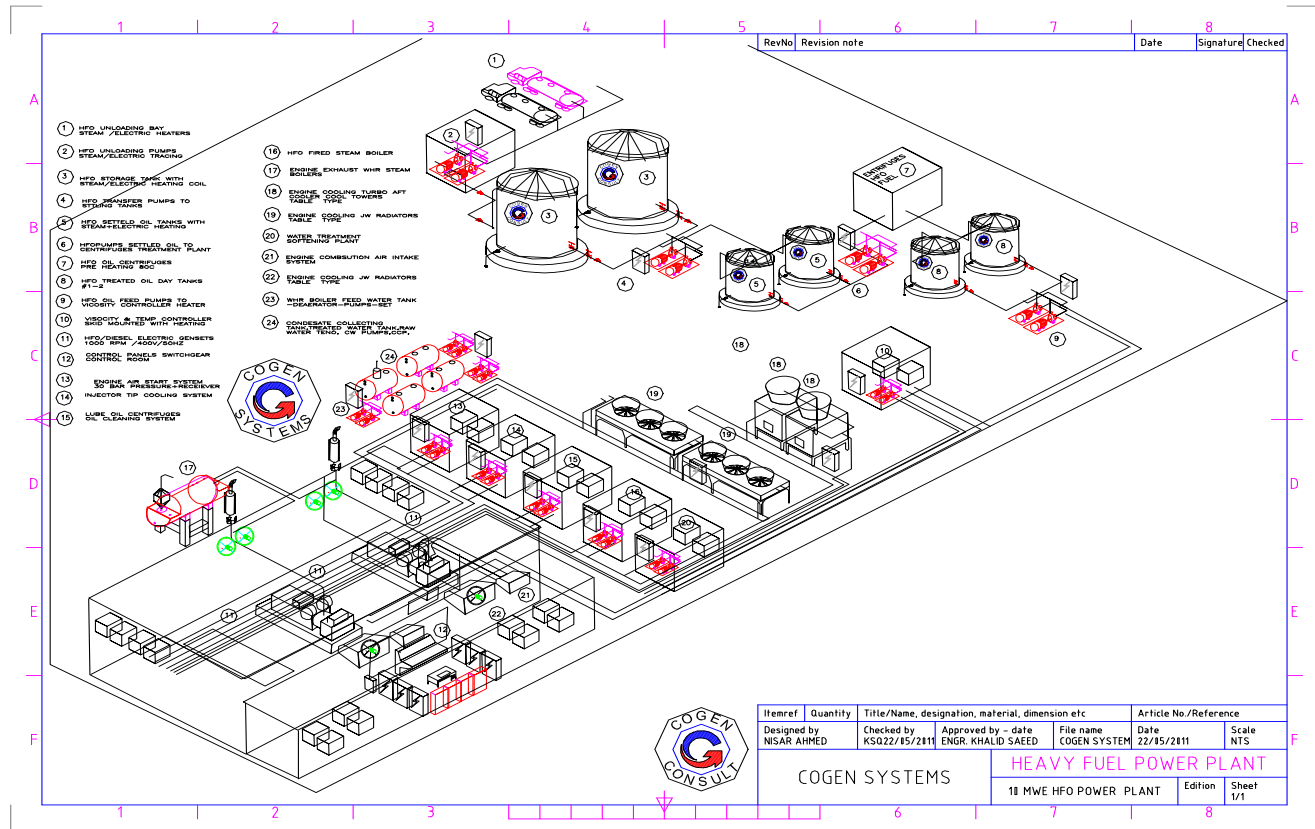
Address: 111-A/2,3<sup>rd</sup>. Street,Phase-6,Kh-e-Muhafiz,DHA,Karachi-75500,Pakistan,, Ph-0092-21-35340068, 35340071, Mob-009221-8287009 E-mail:cogenpak@gmail.com,Web:www.cogensys.pk,

FROM

ENGR KHALID SAEED

JUL 01 2012

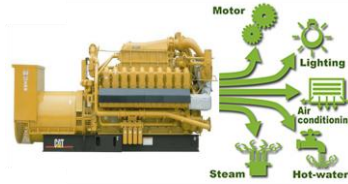
## 1 TO 5 MWE HFO FIRED POWER PLANTS



July 1, 2012



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2 NO X 2 MWE HFO POWER



COGEN CONSULT HAVE 32 YEARS EXPERIENCE IN HFO POWER PLANTS

WE ADVISE ALL INDUSTRIES TO FO FOR HEAVY FUEL/FURNACE OIL FOR CONTINUOUS POWER GEN.

HFO POWER GEN UNIT RATE WILL BE 12 RS/EKWH WITH COGEN SYSTEMS DESIGNED BY COGEN CONSULT ENGR KHALID SAEED AS

DIESEL GENSETS CAPITAL INSTALL COST IS 175/- US DOLLARS /KWE

HFO HAVE SO MAY AUX ITS INSTALL CAPITAL COST WILL BE 850/- /MWE

HFO USED POWER PLANT WILL COST YOU MINMU 4,50/- KWE FROM EUROPE/CHINA

WE WORK WITH YOU AS TURNKEY PROJECT DESIGNER LTOP SUPERVISOR LCONSULTANT AND TURNKEY INSTALLTION GUIDE TILL TESTING COMMISSIONING

SINCE HFO POWER PLANT NEED MINIMUM 32 NO OF AUXILAIRIES AND NOT SIMPLE SYSTEM NEED SPECIAL DESIGN ,COGEN CONSULT HAVE 250 MWE EXPERIENCE IN HAND. SPECIALLY FOLLOWING MAJOR ITEMS

**2.5 - 5 MWE POWER PLANTS @ 850-450 US DOLLAR/EKWH**

GEN RATE IN PAKISTAN

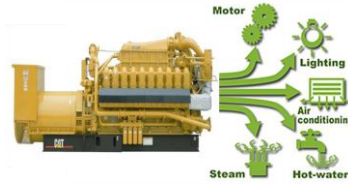
@ 95 RS/KG , EACH KG HFO GENERATE 3.5 KWE ,

@35% ELECTRICAL EFFICENCY

July 1, 2012



# COGEN™ SYSTEMS



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@ 80% THERMAL EFFICIENCY WITH COGEN DESIGN BY COGEN CONSULT

@ 17 RS/EKWH WITH COGEN ,

@ 27 RS/EKWH W/O COGEN

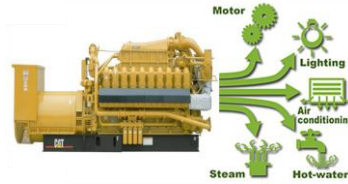
## **MAJOR CONSISTS OF HFO POWER PLANT:**

- HFO GENSETS
- HFO FUEL UNLOADING
- HFO FUEL HEATING
- HFO FUEL SROTAGE WITH HEATING
- HFO PUMPS TO SETTLING TANK
- HFO STEAM TRACE LINE PIPING
- HFO TRANFER PUMPS TO CENTRIFUGES
- HFO CENTRIFUGES FOR SALT AND SLUDGE REMOVAL
- HFO DAYS TANKS
- HFO VISOCITY CONTROLLER MODULE
- HFO RECIRCULATION PIPING FROM ENGINE TO VISOCONTROLS
- HFO ENGINE TIP INJECTORS COOLING
- HFO LUBE OIL CENTRIFUGES
- HFO TURBO WASHING SYSTEM,
- HFO PNEUMATISC START COMPRESSOR N RECEIVE BOTTLES
- HFO ENGINE START SYSTEM
- HFO ENGINE EXHAUST CLEANING SYSTEM
- HFO ENGINE COOLING SYSTEMS JACKET
- HFO ENGINE COOLING SYSTEM AFT COOL
- HFO ENGINE LUBE OIL COOL SYSTEM
- HFO SWITCHGEAR CONTROLS
- HFO STEP DOWN AUX TRANSFORMER
- HFO MAIN CONTROL PANELS
- HFO SYNCHRO SYSTEMS
- HFO POWER N CONTROLS CABLES
- HFO POWER N CONTROLS CONDUITS LADDERS
- HFO FIRE FIGHTING SYSTEMS
- HFO EXHAUST WHR STEAM BOILER FOR STEAM TRACING HEATING
- HFO JACKET HEAT RECOVERY SYSTEM FOR HFO PRE - HEATING SLUDGE HEATING FLUSHING
- HFO EE MCC PANELS FOR AUX MOTORS FANS COOL TOWERS RADIATORS HEATER ETC
- HFO COOLING TOWERS FOR AFT COOL
- HFO RADIATORS FOR JACKET HEAT
- HFO RADIATORS FOR LUBE OIL COOLING

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## HFO RADIATORS FOR INJECTOR TIP COOLING

HOPE YOU HAVE SEEN HOW MANY AUXILIARIES ARE NECESSARY AND THERE ARE FEW ENGINEERS N CONSULTANT WHO HAVE HFO EXPERIENCE WE HAVE INSTALLED FOLLOW HFO POWER PLANTS DURING CATERPILLAR ALLIED 10 YRS. JOB

- 1- GHAZI FABRICS GHAZI POWER = 21 MWE (3.5 MWE X 6 UNITS)
- 2- LAHORE POWER = 2.5 MWE X 2 NO KOT LAKHPAT INDUSTRIAL AREA
- 3- AIJAZ POWER 2X2.5 SHAIKHPOURA LHR ROAD
- 4- ICI BIN QASIM CAT 3612 DIESEL
- 5- KESC BIN QASIM 2X2.5 MWE UNIT # 6

PLEASE CALL FOR MORE DETAILS AND OUR SERVICES WITH 32 YEARS HANDS ON EXPERIENCE IN POWER GEN COGEN COMBINED CYCLE WASTE TO ENERGY

## ENGR KHALID SAEED

COGEN CONSULT

COGEN SYSTEMS

PRINCIPAL ENGINEER

0300 8287009

0303-8287009

021-35340068

021 35340071

cogenpak@gmail.com.pk

cogenpak@hotmail.com

cogenpak@yahoo.com

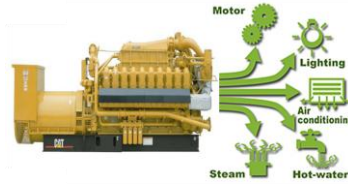
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## Heavy fuel Oil(HFO)Power Plant Project

(power from 0.5MW to 150MW)

HFO gen set is so suitable to be installed in the area where power is scarce very much or the factory as standby power because of its advantages, for example the short construction time and the low electric power cost.

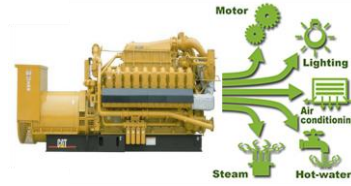
We can contract the HFO power station project which total power capacity range from 1 to 150 MW and provide technology direction after sale based upon couples up technicians and managers who have so much experience of HFO power station operation in our company ( besides installing Ningdong generator sets, we can install other famous brand gen sets like MAN, SULZER, NIGATTA, etc in light of customers' requirements).

HFO gen set is so suitable to be installed in the area where power is scarce very much or the factory as standby power because of its advantages, for example the short construction time and the low electric power cost.

Genset Model	AVGN500	AVGN1000	AVGN1250	AVGN1500	AVGN1600	AVGN2000	AVGN2500
Rated Power(kw)	500	1000	1250	1500	1600	2000	2500
Rated Speed(r/min)	500				550	600	
Rated Voltage(V)	400	400/10500	400/10500	400/10500	400/10500	400/10500	400/10500
Rated Current(A)	902	1804/68.7	2255/85.9	2706/103	2887/110	3608/1374	4510/172
Power Factor	0.8(Lagging)						
Frequency Regulation(%)	Stabilization state 5			Twinkling state ± 10			
StabilizingTime of Frequency(s)	7						
Engine Model	6300ZD2	G6300ZD6	G8300ZD6	G8300ZD6	G8300ZD8	G8300ZD16	G8320ZD
Engine Type	4-stroke, Spray Directly						
Aspiration	Turbocharged Turbocharged , Intercooled						
12h Power of Engine (kw)	552	1103	1471	1650	1765	2200	2750
Fuel Consumption (g/kw. h)	218	208	203	203	203	203	203
Voltage Regulation(%)	± 2.5						



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StabilizingTime of Voltage(S)	1.5
Mode of Voltage Regulating	Auto and Manual
Mode of Frequency Regulating	Manual

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