

ORIENT ENERGY SYSTEMS (PVT) LIMITED

Orient Energy Systems (PVT) Limited is one of the leading multinational engineering company distributing internationally recognized power generation and industrial solutions and services.

Established in year 1996, Orient has operations in five countries; Pakistan, UAE, Oman, Bahrain and Qatar. In Pakistan offices are located at Karachi, Lahore, Islamabad, Faisalabad & Multan.

Orient Energy Systems (PVT) Limited started its operation in the year 1996. Pursuant to the Company's philosophy, 'Power for All', Orient empowers people and their businesses by bringing to them best global performers in the field of power generation and industrial solutions. Our strength lies in our ability to understand market demands, keeping up with the changing technological trends, building relationships and offering solutions, which are most dependable, efficient and cost-effective. Our diverse client- base ranges from household consumers, government bodies, local industries and multinational giants, displaying our capability and the power of the brands that we represent. We have served in sectors such as, textiles, pharmaceuticals, hospitals, telecom, oil & gas, hospitality, poultry farms, shopping malls, educational institutes, commercial buildings and many more.

Gas Engines

As the global village grows, the competition is getting intense. Ever rising cost of electricity followed by frequent power outages is making it tougher for Pakistan's industrial sector to compete. The sector requires a reliable alternate solution. Orient Energy Systems proudly offers power system solutions from INNIO Jenbacher which is one of the world's best gas generator manufacturer with highest efficiency and low operating cost.

OES has to-date installed capacity of 2,110 MW+ INNIO Jenbacher gas gensets all over Pakistan.

INNIO

INNIO is a leading solutions provider of gas engines, power equipment, a digital platform and related services for power generation and gas compression at or near the point of use. With our Jenbacher* and Waukesha* product brands, INNIO pushes beyond the possible and looks boldly toward tomorrow.

A transformation is taking place in the energy sector around the globe, and INNIO is at its center. Today's energy customers demand affordable, reliable and sustainable solutions for day to day operations. INNIO is here to provide exactly that, today and for the future.

With a strong portfolio, featuring the Jenbacher and Waukesha gas engine lines, we will continue to provide power and gas compression solutions around the world. Harnessing a history of energy industry firsts with the power of digital innovation, INNIO is perfectly poised to build on the 64 GW of installed capacity and 48,000 engines we have already delivered to our customers in more than 100 countries.

INNIO stands for innovation, inspiration, ignition...and much more. With INNIO, we call upon our rich legacy in the power and gas compression space and combine it with pioneering technology to bring our customers affordable, reliable and sustainable solutions for the future.

INNIO's solutions provide businesses and communities the ability to generate reliable and efficient power anywhere, anytime—whether on or off the grid.

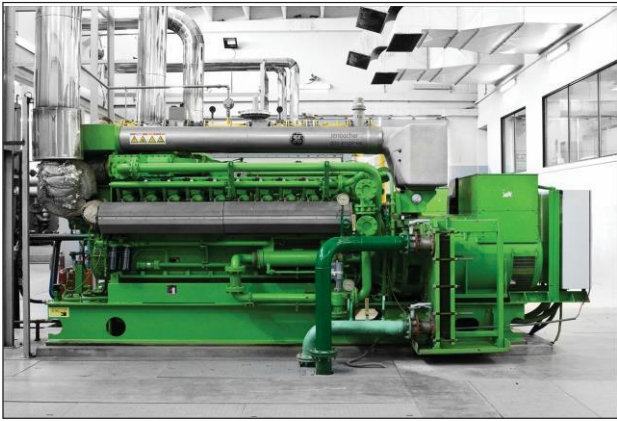
INNIO Jenbacher, Austria

INNIO Jenbacher is a leading gas gensets manufacturer in Austria ranked 1st in the world's gas gensets industry. Its gas engine division is one of the world's leading manufacturers of gas- fueled reciprocating engines, packaged generator sets and cogeneration units for power generation. In Pakistan, the gensets range in power from 0.25 to 4.4MW which can be run either on natural gas or a variety of other gases such as biogas, landfill gas, coal mine gas, sewage gas and combustible industrial waste gases.

Patented combustion systems, engine controls and monitoring enable its power generation plants to meet stringent emission standards whilst offering high levels of efficiency, durability and reliability. With more than 50 years of experience in gas genset manufacturing, Jenbacher offers world leading technical support for each of its products. Jenbacher furnish onsite power, heat and cooling for a variety of commercial, industrial and municipal applications – particularly renewable and waste-to-energy, industrial power generation and cogeneration/CHP (combined heat and power), and oilfield power generation. More than 48,000 Jenbacher gas engines have been delivered in 100-plus countries.

Product Range

Model	Guaranteed Output in kWe
JGS208	330
JGS312	635
JGS316	851
JGS320	1067
JGS416 B05	1203
JGS420 B05	1500
JMS612 J101	2000
JMS616 J101	2679
JMS620 J101	3356
JMS624 H	4401



Most Versatile Applications

- Natural Gas
- Coke Gas
- Associated Petroleum Gas (Flare Gas)
- Landfill Gas
- Bio Gas
- Coal Mine
- Sewage Gas
- Wood Gas

Salient Features

- Original gas engine design for hot & humid countries.
- Most efficient gas engine - best fuel consumption in its class.
- Minimum vibration.
- High powerdensity.
- State-of-the-art Le-Nox system to control air fuel ratio.
- Control system designed, produced and tested by Jenbacher.
- Can run on power & island mode.
- Minor overhaul at 30,000 hrs and major overhaul at 60,000 hrs.
- Jenbacher's worldwide experience in natural gas as well as non-natural gas engines.
- Orient's product support coverage all

KESC., Karachi. 192.8



Dadu Energy (Pvt.) Ltd., Dadu.



Omni Power (Pvt.) Ltd., Matli, Sindh



Faysal Bank Head Office, Karachi



over Pakistan.

- o Two-year product warranty

WHY TO BUY JENBACHER

1. LEANOX Designed for Lean, NOx and auto adjustment of change in Gas Quality
2. Application at 50C
3. Generator Classes Range from G1-G4
4. Low Pressure ranging from 120mbar to 550 mbar
5. Low Methane Number from 78 to onwards
6. Low LHV from 550 BTU / Scft
7. Min Maintenance Cost due to high intervals
8. Unconditional warranty support
9. Internationally recognized
10. High Electrical & Thermal Efficiency
11. Torque Capability as per competition by following ISO8528-9
12. 1st Stage Intercooler 2% / oC high heat
13. Application on Radiator, Sizing of Radiator / Cooling Tower
14. Low Parasitic Load of Genset
15. Monitoring of Radiator in Genset HMI / Diane (Special Request)
16. Lowest Oil Consumption
17. High Maintenance Interval (Plug Life of Type 3 (16k), Type 4 (8k), Type 6 (2k))
18. Facility of monitoring through Myplant
19. FOC IS Panel on first genset sales (Special Request)
20. FOC Forward Grid Synch Facility (Special Request)
21. Forward HT Circuit 95oC which improves heat recovery & quality of Heat
22. Continuous New Product Development / R&D from C to D in Type 3
23. Continuous New Product Development / R&D from B05 to B105 in Type 4
24. Continuous New Product development / R&D from E to J in Type 6
25. 02 Years Spare Parts
26. Rugged Engine Design
27. Lowest Vibration / 3% of Static Load which is minimum in market showing best quality / design because of high length not height, balance engine design
28. Proven Track Record of Market Leadership in innovation / electrical efficiency
29. Lowest De-Rating
30. Freezing Parts Prices till Major Overhaul by Signing MSA (Material Stream Agreement) subject to GPI (German Price Index)
31. Jenbacher History

OES USPs

1. Highest Population In Industry
2. 63% Market Share
3. Max Parts Availability
4. 150 USD Billion Organization
5. Stock Listed Company – ORM
6. More than 3000 employees including 150 Qualified Professional Engineers, 400 Diploma Holders, 200 B Tech

7. Distributor of 20 World Renowned Brands
8. Full Engineering Support for Project Application & Installation with vast experience & latest tools of Auto Cad, E Tap, Matlab, 3D Modeling, Primeavera
9. Proven Company for EPC Jobs
10. Core Business of Power Generation since 04 Decades
11. State of The Art Workshop Facility for Major / Minor Overhauls with designed SOPs & Latest Tools (Bore scope, Digital Video scope, Sequence Meter, Power Analyzer, Impedance Meter, Oscilloscope, Milli Ohm Meter, Nox Analyzers, Differential T/F, Vibration Analysis, HV Insulation, Load Bank, Sound Level Meters, Karcher Machines, Shaft Polishing, Magger Testing, Laser Distance Meter, Annemometer for CFM (Air Flow), Clamp Meter etc.)
12. O&M (Operation & Maintenance) Facility
13. Lowest Employee Turnover
14. AMC (Annual Maintenance Contract) Facility
15. One Window Solution
16. Frequent Training of Staff & Customers
17. Proven Track Record of 24 x 7 Service

INNIO Waukesha, Wisconsin, USA

Waukesha engines are hard at work powering the world's energy infrastructure - driving compressors in gas-gathering, processing and transmission operations and providing electrical power for industries, rugged oil and gas fields in remote corners of the globe. Meeting the needs of today's energy-hungry world with clean, efficient power requires knowledgeable, trustworthy partners at every point along the energy supply chain.

The ability to run under high stress conditions while still having the flexibility to use multiple fuels, makes Waukesha gas engines a proper solution for dependable energy. Our engines are designed to perform reliably in isolated, mission-critical, and demanding applications. Durable and flexible, Waukesha engines meet emissions compliance levels in diverse applications around the globe. And, by offering both rich -and lean-burn Waukesha reciprocating engine designs, we can help you make smart choices.

INNIO Waukesha gas engines business is a recognized leader in the industry for:

- Specially designed for high ambient Conditions.
- Reliable, Rugged and High Endurance
- Fuel Flexibility (Higher BTU Fuel Capability)
- State of the art - Low Emissions
- Improved Thermal Efficiency
- Low Lifecycle Cost
- Extended Maintenance Intervals
- Manufacturer's Warranty

Waukesha Channel Partner in Pakistan – Orient Energy Systems Pvt Ltd.

Orient Energy Systems (Pvt.) Ltd. is the Channel Partner of INNIO Waukesha - one of the leading names in gas engines manufacturing. In Pakistan, there are more than 1,000 Waukesha gas generator sets running in all type of industries, oil and gas sectors and enjoying following key benefits:

- Strong and committed Sales team
- Equipped with designing and project management software systems
- Well-equipped workshops and trained engineers
- 24/7 back support at your doorstep
- Availability of complete range of spare parts

INNIO Waukesha Power Generation Product Portfolio (From 230kWe to 3605kWe)

Genset Model	Remote Radiator Cooling		Engines Only	
	Voltage	Continuous Rating* (kWe)	Engine Model	Continuous Rating* (kWb)
275GL+ Series (50 Hz, 1000 RPM)				
16V 275GL+	3.3/6.6/11kV	3605	16V 275GL+	3729
12V 275GL+	3.3/6.6/11kV	2705	12V 275GL+	2796
VHP Series (50 Hz, 1000 RPM)				
VHP9504GSI	400V	1460	P9394GSI	1531
VHP9500GSI	400V	1175	P9394GSI	1224
VHP9500GL	400V	1175	P9394GL	1224
VHP7104GSI/GSID	400V	1100	L7044GSI	1153
VHP7100GSI/GSID S4	400V	875	L7042GSI S4	920
VHP7100GL	400V	875	L7042GL	919
VHP5904LT/LTD	400V	900	L5794LT	947
VHP5904GSI/GSID	400V	900	L5794GSI	947
VHP3604GSI/GSID	400V	540	F3524GSI	573
VGf Series (50 Hz, 1500 RPM)				
VGf48GL/GLD	400V	685	P48GL	730
VGf48GSI/GSID	400V	625	P48GSI/GSID	660
VGf36GL	400V	515	L36GL	550
VGf36GLD	400V	515	L36GLD	550
VGf36GSI/GSID	400V	475	L36GSI/GSID	500
VGf24GL	400V	340	H24GL	365
VGf24GLD	400V	340	H24GLD	365
VGf24GSI/GSID	400V	310	H24GSI/GSID	330
VGf18GL	400V	250	F18GL	275
VGf18GLD	400V	250	F18GLD	275
VGf18GSI/GSID	400V	230	F18GSI/GSID	250

Salient Features & Benefits

Designed for a demanding industry and backed by more than a century of engine building experience, a Waukesha engine is a sound investment that provides peace-of-mind through multiple benefits.

Most Versatile Applications

- Flare Gas
- Associated Gas
- Field Gas
- HD-5 Quality Propane Gas

Superior Product Support Network

Orient Energy Systems has the best product support infrastructure in power & industrial engineering solutions in Pakistan.

With 'round the clock' services and internationally trained service engineers along with well-equipped workshops and spare parts inventory, we excel at catering to urgent needs of our customers.

WHY TO BUY WAUKESHA

- Low Gas Pressure
- Low Knock Index
- Low Methane Number
- High LHV / Low LHV
- Low De Ration
- Rugged / Reliable
- High Torque Capability
- Less Cylinders
- Life Cycle Cost is half as compared to Lean Burn Engine
- High Maintenance Interval / Low Maintenance Cost
- Less Installation Cost
- No Pressurized System
- Less Electronics / Ease of Maintenance / Trouble Free
- Availability of Parts / Expertise in Open Market
- Flexibility of Operations
- Immediately Available / Less Transit Time
- High Waste Heat Recovery
- Designed for High Ambient Temperature (50C)
- Warranty & Spare Parts
- Complete New Genset USA Brand