



LIST OF DG-SETS

MICRO MARITIMES

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“Providing Comprehensive Power Solutions”



**MICRO MARITIMES
(POWER GENERATION GROUP)**

1) Product Code: MM/9810/2017/UP

| Sr. No. | Item Description | Make/ ESN | Qty | Remarks |
|---------|---|-------------------------------|-----|----------------------|
| 1. | FO engine No. 1 with Alternator | Wartsial/22189/18V32LN | 01 | 6.20MW at 50Hz/6.6KV |
| 2. | FO engine No. 2 with Alternator | Wartsial/ PAAE-009176/18V32LN | 01 | 6.20MW at 50Hz/6.6KV |
| 3. | Engine No. 1 Total running Hrs | 64828 | | |
| 4. | Engine No. 2 Total running Hrs | 49183 | | |
| 5. | Engine No. 1 last major over hauling hrs | 56461 | | |
| 6. | Engine No. 2 Last major over hauling hrs | 44996 | | |
| 7. | Engine No. 1 TC Last major over hauling hrs | 63958 | | |
| 8. | Engine No. 2 TC Last major over hauling hrs | 49072 | | |
| 9. | Fuel Booster Unit | BJK-901/WIN1465 | 02 | |
| 10. | Fuel oil Feeder Unit | BJM-901/BJM-902 | 02 | |
| 11. | Central Water PHE | Alfa Laval/ M15BFM8 | 02 | |
| 12. | Lube oil PHE | Alfa Laval/ M15BFM8 | 02 | |
| 13. | Maintenance water tank with pump | WIN-1200VBA-901 | 02 | |
| 14. | Starting air compressors | Ingersoll- rand/7T2 | 02 | |
| 15. | Lube Oil Separator unit | Alfa Laval/ SU830 | 02 | |
| 16. | Oil bath filter unit | AAF | 04 | |
| 17. | Starting air vessels | SWP-32 Kg/Cm2 | 02 | |
| 18. | Instrument Air vessel | SWP-7.0 Kg/Cm2 | 02 | |
| 19. | Ventilation Fan with motor | ABB-22KW | 02 | |
| 20. | MCC Panel | BFA-901/902 | 02 | |
| 21. | Battery Charger with battery bank110/24 Volt. | BEY-903 | 02 | |
| 22. | Synchronization panel | CFA-901/902 | 02 | |
| 23. | Engine Control panel DG No. 1 | CFC-011 | 01 | |
| 24. | Engine Control panel DG No. 2 | CFC-021 | 01 | |
| 25. | Engine Breaker panel DG No. -1 | ABB/BAE-031/BAO-903 | 01 | 6.6KV |
| 26. | Engine Breaker panel DG No. -2 | ABB/BAE-041/BAO-904 | 01 | 6.6 KV |
| 27. | NGR Panel Engine No. 1 | BAN-031 | 01 | |
| 28. | NGR Panel Engine No. 2 | BAN-041 | 01 | |
| 29. | Transformer 8 MVA DG-1 | Kanohar | 01 | 6.6KV/33KV |
| 30. | Transformer 8 MVA DG-2 | Kanohar | 01 | 6.6KV/33KV |
| 31. | Station Transformer (1MVA) | Kanohar | 01 | 6.6KV/0.415KV |
| 32. | HRU on Exhaust gas attached with Engine -2 | Thermax | 01 | 1X600 Tr. |
| 33. | WHRB on Exh. gas attached with Engine-1 | Thermax | 01 | 2.0 Ton |
| 34. | HRU RC Water pump with motor | Sulzer/ ZE-100-2160 | 02 | |
| 35. | WHRB RC Water pump with motor | Sulzer/ ZE-40-1160 | 02 | |
| 36. | WHRB Control panel | MCC CUM INSTT. | 01 | |



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|-----|-------------------------------------|-------------------------------------|----|----------------------------|
| 37. | HRU Feed water pump with motor | CRI-23AFGJ-A-F | 02 | |
| 38. | WHRB Feed water pump with motor | CRI-A96447767P20315 | 02 | |
| 39. | HRU Control panel | MCC CUM INSTT. | 01 | |
| 40. | Cooling Tower water pump with motor | Beconweir/SDB125X150& SDB150X200 | 04 | |
| 41. | Cooling Tower cell | Paharpur | 02 | Paharpur C.T. cell type |
| 42. | VAM (Engine jacket water) | Thermax | 02 | 2X400Tr. |
| 43. | VAM (HRU & WHRB Exhaust gas) | Thermax | 02 | 2X800Tr. |
| 44. | Exhaust Gas Chimney | Wartsila | 02 | |
| 45. | FO Separator unit (MOPX-207) | Alfa Laval | 01 | |

Detailed Specification

| | | |
|----------------------------|-------------------------------------|---------------------------|
| Capacity | | 2 x 6.2MW (12.4MW) |
| Location | | Uttar Pradesh |
| Commissioning date | | 2003, 2004 |
| Running hour, | | 64,828 |
| | | 49,183 |
| SFC, gr/kWh | Loading 80 to 90% and CV 9980 cal/g | 219 |
| | or liter/kWh | 0.238 |
| SLOC,gr/kWh | | 0.68 |
| Engine | | Wartsila |
| Engine type | | VASA 18V32LN |
| bore, mm | | 320 |
| stroke, mm | | 350 |
| piston displacement, liter | | 28.15 |
| direction rotation | | Clock wise Rotation |
| RPM | | 750 |
| Output, kW | | 6,487 |
| Number of valves | | 4 |
| V angle degree | | 20 |
| Gross weight, kg | | 57,600 |
| Turbo | | ABB LTD |
| Turbo type | | VTR/TPL |
| Governor | | Woodward |
| Generator | | ABB LTD |
| Output , kVA | | 7,825 |
| Duty | | S1 |
| PF | | 0.8 |
| Type of cooling | | IC0A1 |
| RPM | | 750 |
| Mounting arrangement | | IM1101 |
| Degree protection | | IP23 |
| Insulation class | | F |
| Generating voltage | | 6.6KV |
| Current | | 685A |



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| | | |
|--|----------|-----------------------|
| Frequency, Hz | | 50 |
| Generator weight, kg | | 22,700 |
| No load excitation | | 3.1A/31.4V |
| Rated load excitation | | 8.1A/81.3V |
| Resistance at 20°C | | ?? |
| stator winding, ohm | | 0.026 |
| field winding, ohm | | 0.6046 |
| exciter winding, ohm | | 7.9 |
| AVR | ABB Make | UNITROL-1000 |
| Cooling | | Cooling tower |
| Charge air filter unit | | AAF Provided |
| Air intake duct | | Provided |
| Air intake silencer | | Provided |
| Station trafo | | Provided |
| Unloading station | | Provided |
| HFO main tank, KL | 60 KL | Provided |
| HFO transfer unit #1 | | Provided |
| HFO transfer unit #2 | | Provided |
| HFO buffer tank, KL | 300 KL | Provided |
| HFO separator unit 1&2 | | Provided |
| HFO day tank , KL | 20/15 KL | Provided |
| HFO feeder unit #1 | | Provided |
| HFO feeder unit #2 | | Provided |
| HFO booster unit #1 | | Provided |
| HFO booster unit #2 | | Provided |
| Fuel oil unit | | Provided |
| Lube oil separator | | Provided |
| Lub oil filter & pre lub pump | | Provided |
| Lub oil cooler | | Provided |
| Expansion tank | | Provided |
| Water treatment | | Provided |
| Boosting water unit | | Provided |
| Starting air compressor | | Provided |
| Air starting vessel | | Provided |
| Pressurized fan | | Provided |
| Exhaust silencer | | Provided |
| Exhaust chimney | | Provided |
| Exhaust boiler | | Provided |
| Exhaust duct | | Provided |
| Switch gear | | Provided |
| Power control center | | Provided |
| Control system | | Provided |
| Power trafo / step up trafo | | Provided, 6.6KV /33KV |
| NGR | | Provided |
| service by | | Wartsila India |



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Photographs 2 x 6.2 MW Wartsila





**MICRO MARITIMES
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2) Product Code: MM/9811/2017/GJ

Wartsila 2 x 6.5 MW Power Plant ready for delivery at site comprising of following auxiliaries

- 1) Engine: - Wartsila Finland LN
- 2) Model: - 18 V-32 LN
- 3) Alternator:- 6.5 MW
- 4) Volts: - 6.6 volts
- 5) Year of Manufacture: - 1997-98
- 6) Running hrs :- 43000 hrs per log book duly maintained by wartsila Engineers

It also include complete accessories such as

- 1) Heat ex changer
- 2) Lub oil cooler centrifuge units
- 3) Booster Unit
- 4) Bellow with silencers A
- 5) Air system
- 6) Air Bottle
- 7) Com-pressure NGR Panel
- 8) AUX Panel Engine softy panel
- 9) Main Breaker Panel as standard units.

Extra (Not included in the offer price)

- 1) Pipe line
- 2) Flanges
- 3) NRV
- 4) Gate volve (due to we are dismantling the complete power plant at the site), at present both sets are on foundation



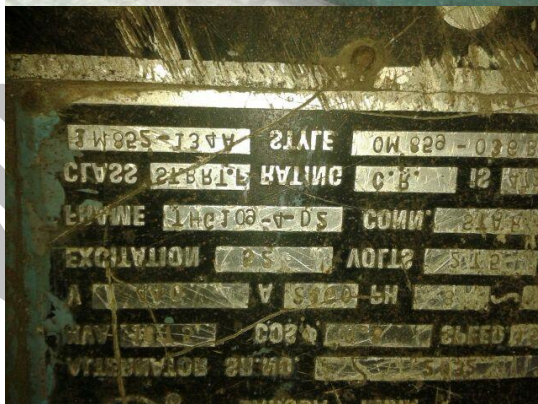
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Photographs of 2 x 6.5 MW Wartsila





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**MICRO MARITIMES
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3) Product code: MM/9812/2017/GU

| | |
|-----------------------------|--|
| Capacity | 3 x 6.3MW (18.9MW) |
| Location | Gujarat |
| Commissioning date | 1999, 1999, 2007 |
| Running hour, | 88,945 |
| | 84,252 |
| | 46,342 |
| SFC, gr/kWh | 0.96 density 231.973 as per may 2014 report |
| or liter/kWh | 4.138 as per may 2014 |
| SLOC,gr/kWh | 0.910 density , 1.356 as per may 2014 report |
| Engine | Wartsila |
| Engine type | VASA 18V32LN |
| bore, mm | 320 |
| stroke, mm | 350 |
| piston displacement, liter | 28.15 |
| direction rotation | clock wise |
| RPM | 750 |
| Output, kW | 6,310 |
| Number of valves | 2 inlet & 2 outlet |
| V angle degree | 50 |
| Gross weight, kg | 60,800 |
| Turbo | ABB |
| Turbo type | VTR 354 P 11/21 |
| Governor | WOOD WARD 723 /Besler |
| Generator | ABB |
| Output , kVA | 7,962 |
| Duty | S1 |
| PF | 0.8 |
| Type of cooling | IC 0A1 |
| RPM | 750 |
| Mounting arrangement | IM 1101 |
| Degree protection | IP23 |
| Insulation class | F |
| Generating voltage | 11,000 |
| Current | 418 |
| Frequency, Hz | 50 |
| Generator weight, kg | 22,300 |
| No load excitation | 2.8 A / 28.5 V |
| Rated load excitation | 9.6 A / 97.0 V |
| Resistance at 20°C | ?? |
| stator winding, ohm | 0.0800 |
| field winding, ohm | 0.575 |
| exciter winding, ohm | 7.9 |
| AVR | DECS 125-15 |
| Cooling | AIR COOL |
| Station trafo | 11/440 |
| Unloading station | 40 L/ MIN |
| HFO main tank, KL | 1160 |
| HFO transfer unit #1 | 2.4 M ³ /hr |



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| | |
|--|---|
| HFO transfer unit #2 | 4.1 M ³ /hr |
| HFO buffer tank, KL | 70 |
| HFO separator unit 1&2 | unit 1 flow oil 0-8 M ³ /hr , 10-48 cst max 110 C ⁰ |
| HFO day tank , KL | 70 |
| HFO feeder unit #1 | 8.1 M ³ /hr |
| HFO feeder unit #2 | 4.75 M ³ /hr |
| HFO booster unit #1 | 10.33 M ³ /hr , 16 cst, 135 C ⁰ |
| HFO booster unit #2 | 4.37 M ³ /hr , 16 cst, 135 C ⁰ |
| Fuel oil unit | 6 bar |
| Lube oil separator | 2 and 3 MOPX 207 S4T-24, 991 kg/M ³ at 15 C ⁰ |
| Lub oil filter & pre lub pump | 11 kW pump |
| Lub oil cooler | 200 M ³ hr |
| Expansion tank | 300 Ltr |
| Water treatment | 4000 Ltr |
| Boosting water unit | 1.4 l/sec, h 37.7 mtr |
| Starting air compressor | 25 bar |
| Air starting vessel | 3 nos, 34.10 kg/cm ² |
| Pressurized fan | main 60000m ³ /hr and Aux. side 20000m ³ /hr |
| Exhaust chimney | 60 mtr |
| Switch gear | 11 kV/2000A HT |
| Power control center | 440 V/4000Amp |
| Control system | 110V DC |
| NGR | 63.51 ohm/100A/11000V |
| service by | Wartsila India |

Photographs of 3 x 6.3 MW Wartsila





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4) Product Code: MM/9813/2017/TN

Engine: 18V28/32H

Make: MAN B&W

MW: 3.8

Year of Manufacturing: 1997

Running Hours

Fuel type: FO

Frequency: 50z

RPM: 760

Pictures of MAN B&W Set



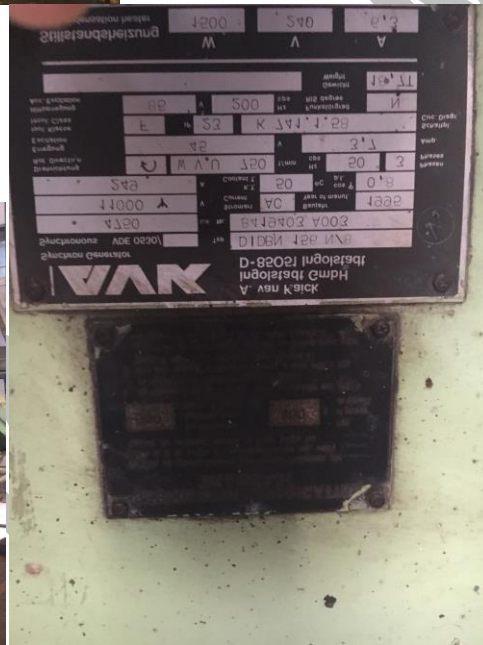


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5) Product Code: MM/9814/2017/TN

Engine: 12V32 LN

Make: Wartsila

MW: 4.2

Year of Manufacturing: 1997

Running Hours:

Fuel type: FO

Frequency: 50z

RPM: 750

Pictures of Wartsila





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6) Product Code: MM/9815/2017/TN

Engine: 12V32

Make: Wartsila

MW: 4

Year of Manufacturing: 1998

Running Hours:

Fuel type: FO

Frequency: 50z

RPM: 750

Pictures of Wartsila





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7) Product Code: MM/9816/2017/AL

Engine:

Make: Cummins

KW: 500 KW

Year of Manufacturing: 2015

Running Hours:

Fuel type: FO

Frequency: 60z

RPM: 1800

Pictures of Cummins





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8) Product Code: MM/9816/2017/AL

Engine: 2 x 1500 KVA Jenbacher

Make: Jenbacher

KW: 1500 KVA

Year of Manufacturing:

Running Hours:

Fuel type: FO

Frequency: 60z

RPM: 1800

Pictures of Jenbacher 2 x 1500 KVA





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9) Product Code: MM/9817/2017/OL

Engine: 12V 32 LN

Make: Wartsila

MW: 4.27 MW

Year of Manufacturing: 2000

Running Hours:

Fuel type: FO

Frequency: 60z

RPM: 750

Pictures of Wartsila





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10) Product Code: MM/9818/2017/MH

Engine:

Make: Wartsila

KVA: 11250

Year of Manufacturing: 2008

Running Hours: 0

Fuel type: FO

Frequency: 50z

RPM:

Pictures of Wartsila





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For more information regarding **Micro Maritimes** or this document please feel free to contact undersigned.

"We are looking forward to build our relationship with you"

Thank you in anticipation!

Warm Regards

Dhawal Chandra
MICRO MARITIMES
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