



**MAPNA GROUP**

**TUGA**

MAPNA Turbine Engineering and Manufacturing Company

# MGT-30prefab-Portable Power Plant (4-chassis)





## **MGT-30mobile;**

### **Fast-track power solution to ensure demands are kept up with**

Steadily increasing power consumption in tandem with long timeframes of conventional grid extension practices may lead to electricity shortfalls if the gap between supply and demand remains unaddressed.

As one of the most economic and fastest ever power generation solutions provided by MAPNA Group, the MGT-30prefab with up to 25 MW of portable electrical power can be reliably called in to provide sustainable power to the grid and restore its security, efficiency and reliability under the most demanding conditions. It can also be used as an interim power generation unit when electrical energy is needed on short notice in remote areas or areas struck by natural disasters.

Based on the proven MGT-30 gas turbine platform, MGT-30prefab is a modular, skid-mounted power plant packaged on four flatbed chassis. The unit is easily transportable by land and/or sea to any remote area, providing a grid connected or standalone electrical power generation set in less than 1 month.

## **Key Features**

### **High Power Density**

- Space-conscious and compact design with about 30×45 m site area to locate all the chassis and auxiliaries

### **Fuel Flexibility**

- Run and switch seamlessly between gas and diesel oil fuels

### **Scalable, Reliable Power**

- Able to add 25 MW blocks of dependable power as demand increases

### **Distributed Power**

- Localized power supply, eliminating the need for additional transmission and distribution infrastructures

### **Easy and Quick Installation**

- Optimal design to reduce on-site flooring and civil work, pre-fabricated piping and socket type quick-connection cabling

### **Easy Transport to Site and Relocation**

- Optimized shipping sizes
- Swift dispatch and deployment at the required site

### **Quick Lead Time, Fast start & Flexible Operation**

- Fast portable power on demand
- Reaching full power within 25 minutes



## Turnkey Design

- Integrated portable power solution
- BOP design, supply and install

## Economic and Cost-effective

- Lower capital investment and marked reduction of transmission costs by bringing power close or near to the point of use

## Applications

### Limited or No Access to the Power Distribution Grid

- Remote, isolated areas with lack of power distribution networks and/or mobile facilities/ industries

### Rapid Electricity Demand Growth

- Sharp increase in electricity demand during seasonal or peak periods or subsequent to large-scale construction or industrial projects

### Emergencies and Natural Disasters

- Urgent power needs for areas struck by natural disasters or other unpredictable incidents

### Lengthy Construction of Power Generation Infrastructures

- Long construction processes with a number of unpredictable delays putting the security & reliability of the power grid at risk

### Backup Power Supply

- During overhauls, maintenance operations or outages at power plants or other applications

### Restricted Space

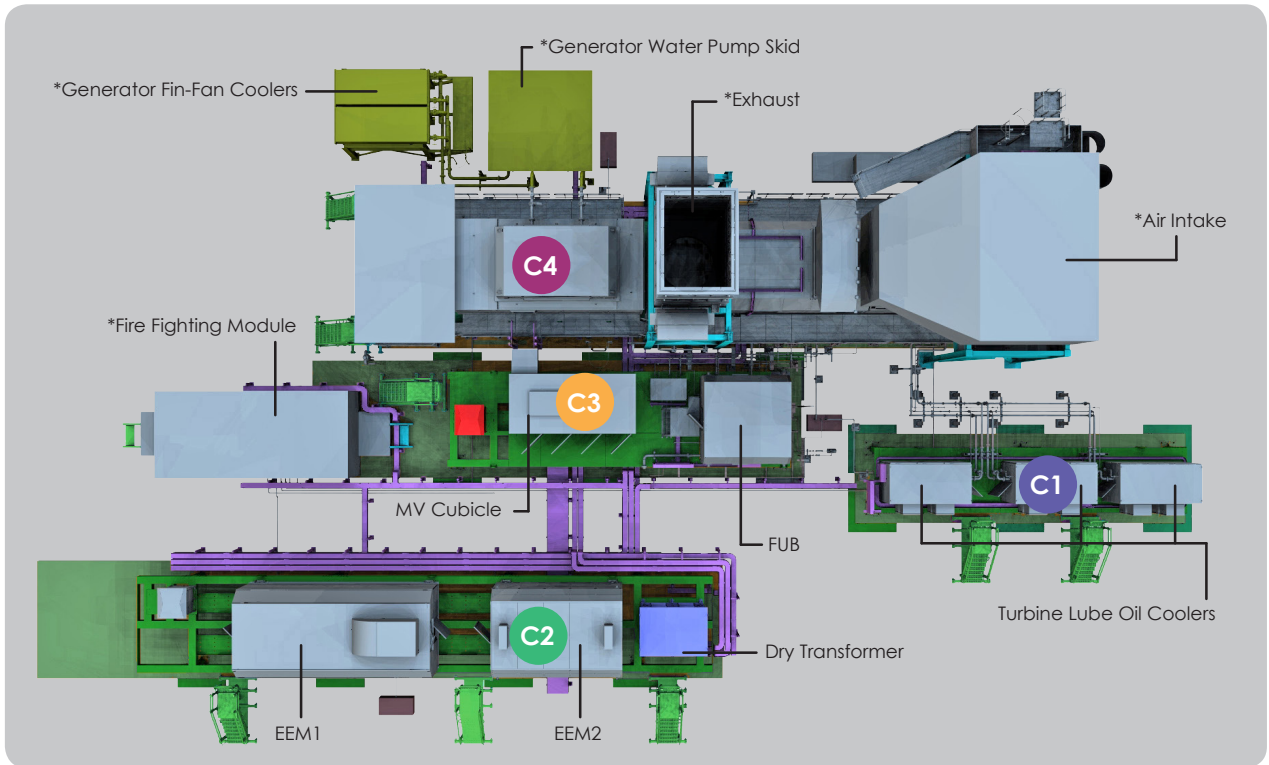
- Rapid demand growth at densely populated areas and communities where there are tight space constraints

### Offshore and Onshore Oil and Gas Applications

- Large power demands in a fast and reliable fashion

## General Arrangement

The main equipment of the MGT-30prefab are mounted on four flatbed chassis (C1 to C4) as pre-assembled modules. There are also some ancillary systems and equipment to be installed at site, as shown and identified below:



\* Systems and equipment to be installed at site

MGT-30prefab Power Plant General Arrangement

**C1** Turbine Lube Oil Air Coolers

**C3** Turbine Lube Oil Air Coolers

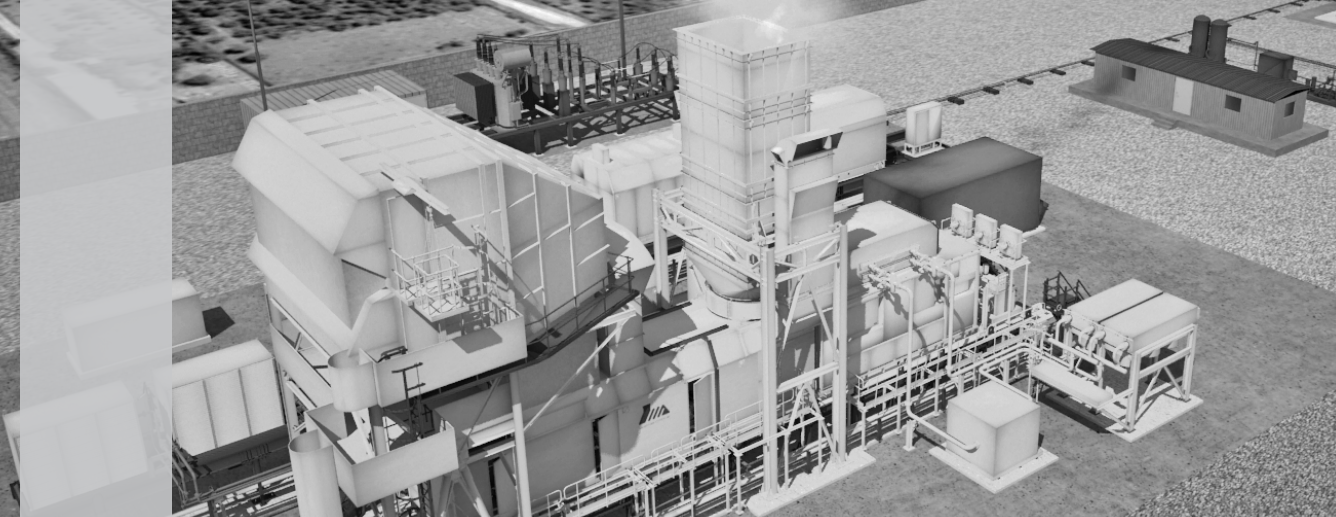
**C2** Turbine Lube Oil Air Coolers

**C4** Turbine Lube Oil Air Coolers

## Specifications

Parameters	Unit	Fuel Gas	Fuel Oil
Gross Power Output*	MW	25	23.8
Gross Efficiency*	%	35.9	35.4
Shaft Speed	rpm	3000	3000
Exhaust Gas Temperature	°C	472	476
Exhaust Mass Flow Rate	kg/sec	89	87.3
Frequency	HZ	50	50
Generator Rated Voltage	kV	11	11

\* Standard ISO Conditions



### Chassis C1 Turbine Lube Oil Air Coolers

Cooling Medium	Atmospheric air from °20-C to °50+C
Cooled Medium	Mineral and Synthetic oils with kinematic viscosity not more than 30 cSt at °50C
Cooling Capacity (kW)	209
Weight (tonnes)	13
Dimensions (mm)	2650 × 12500



### Chassis C2 EEM1, EEM2 & Dry Transformer

Transformer Rated Power (kVA)	600
Transformer HV Rated Voltage (kV)	11
Transformer LV Rated Voltage (kV)	0.42
Transformer Dimensions (mm)	2760 × 2400 × 3100
EEM1 Dimensions (mm)	4580 × 3560 × 7566
EEM2 Dimensions (mm)	5000 × 3417 × 3558
Weight (tonnes)	60
Chassis Dimensions (mm)	3900 × 23000



### Chassis C3 MV Cubicle & Fuel Unit Block (FUB)

MV-Cubicle Dimensions (mm)	2729 × 3300 × 4800
Fuel	Dual (Gas/Fuel Oil)
FUB Dimensions (mm)	3908 × 3628 × 3425
Weight (tonnes)	31
Chassis Dimensions (mm)	3860 × 13700



### Chassis C4 MGT-30 Gas Turbine & Generator

Gas Turbine Power* (MW)	25
Gas Turbine Efficiency (%)	35.9
Nominal Power Turbine Shaft Speed (rpm)	3000
Generator Rated Voltage (kV)	11
Generator Coupling Type	Star
Weight (tonnes)	170
Chassis Dimensions (mm)	22600 × 4100



\* ISO rated power based on natural gas fuel



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