

Powered by Nature

Hybrid Generator Sets



Hybrid Generator

Teksan Hybrid Generator is a clean energy system powered by nature, which is easily configurable to meet requirements in a wide range of power.

Optimum
Energy Solutions

High Savings in
Operating Costs

Remote Monitoring
and Control System

Your Benefits

Green
Energy

Corporation-Specific
Wide Range of Solutions



Why Choose Teksan Hybrid Generators



Reduced Maintenance Costs

Our products continue to work up to **1000 hours** without the need for maintenance and technical service.



Tailor-made Solutions

We offer different solutions to **customer demand**.



Remote Monitoring

With our remote monitoring feature, the number of **site operations has been reduced**. Service support at longer intervals and minimum number of technical staff



Affordable Investment

Investment **payback** period **down to 2 years**.



Reduction in OPEX

With the contribution of renewable energy use, generator **operating time has been reduced by 80%**. With the use of variable speed engine and fuel optimization algorithm, **65% fuel savings** are achieved.



Ultra Silent Canopy

Decreased sound level from **65 dBA @1m** is provided with custom design solutions.



UNSTABLE GRID AREAS



■ Low Noise Level with Dedicated Designed Exhaust System

■ Variable Speed Diesel Generator Set
■ Hybrid Control Unit with Remote Monitoring System

■ 800 L Included Double Wall Fuel Tank



■ 20U Free Space for Telecom Customer Equipments

ALL IN ONE
COMPACT DESIGN
FOR TELECOM
APPLICATIONS



MINIMUM
CARBON
FOOTPRINT

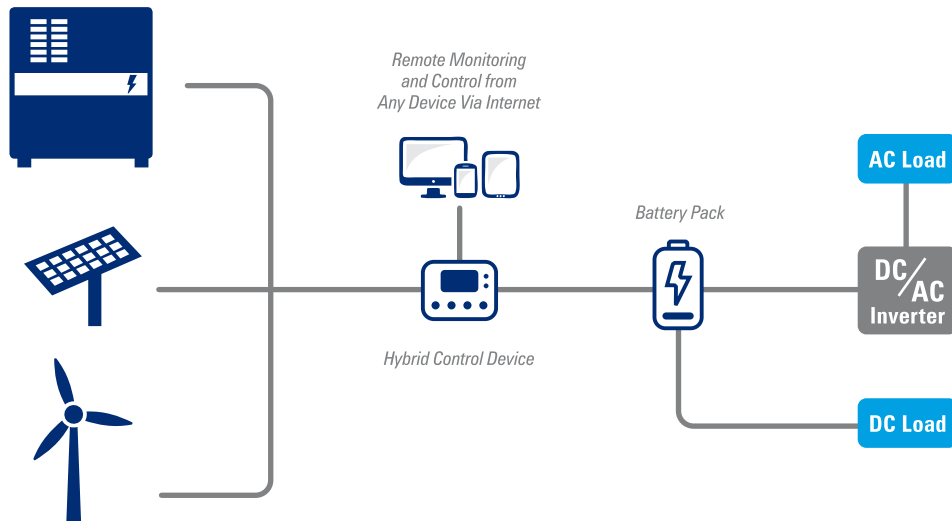
Field of Application

- Areas with power outages
- Locations with daily scheduled power outages up to 8 hours
- Locations having short-time power outages up to 16 hours in total on a daily basis

The Objective of the Solution

- Optimum solution for lower OPEX and CAPEX
- 100% facility utilization at lower costs
- Minimizing diesel engine running time and fuel consumption
- Emergency power supply meeting up to several weeks period without refueling when there is no grid connection





How It Works

- The main power supply is the central grid.
- In case of any grid outage, the load is powered from batteries for up to 8 hours.
- If the grid outage continues for more than 8 hours, the diesel generator starts up automatically and continues to supply the load. While the generator supplies the load, it charges the storage batteries at the same time.
- When the grid power comes back, the generator stops and automatically transfers the load to the grid.
- Batteries are fully charged with the grid.
- Grid-generator changeover operates trouble-free and does not cause fluctuation.

UNSTABLE GRID AREAS				
Average Load	kW	2	4	6
Maximum Permanent Load	kW	3	6	10
Battery Capacity	Ah	500	1000	1600
Generator Power	kVA	12	26	39
DC Power	kW	9	18	27
Fuel Tank	lt	800	800	1000
OPTIONAL FAST CHARGE SOLUTION				
Generator Power	kVA	26	51	77
DC Power	kW	18	36	51
Optional Solar Energy System Configuration				
Total Solar Power	kWp	6,4	12,8	25,6



Field of Application

- Off grid areas
- Locations where emission and fuel consumption should be minimized
- Optimized solution based on both OPEX and CAPEX for off grid areas

How It Works

- The main power source is solar / wind energy (if applicable)
- If solar energy is insufficient, the batteries balance the load.
- When the batteries are discharged, the generator will start and supply the load
- The generator will stop after the batteries are charged

The Objective of the Solution

- Providing the most suitable solution for off grid facilities
- Reducing engine running time and maintenance costs
- Lower fossil fuel consumption
- Low number of site visits due to low generator running time and fuel consumption

Average Load	kW	2	4	6
Maximum Permanent Load	kW	3	6	10
Battery Capacity	Ah	500	1000	1600
Generator Power	kVA	12	26	39
Rectifier Power	kW	9	18	27
Fuel Tank	lt	800	800	1000
Optional Solar Energy System Configuration				
Total Solar Power	kWp	6,4	12,8	25,6



Field of Application

- Off grid sites with extremely limited access
- Low power consumption facilities

The Objective of the Solution

- Reduce operating costs
- Reduce site visit to minimum

How It Works

- The main power source is solar energy
- Batteries are charged during daylight hours
- Power is supplied from the batteries at night and on cloudy days

Average Load	kW	2	4	6
Total Solar Power	kWp	16	32	48
Minimum Installation Area	m ²	80	160	240
Battery Capacity	Ah	3000	6000	9000

TECHNICAL SPECIFICATIONS

	TJ 3000 HD				TJ 6000 HD				TJ 10000 HD		
MAXIMUM LOAD	3.000 W				6.000 W				10.000 W		
Average Load	2.000 W				4.000 W				6.000 W		
Optimized Load Range	1.000 - 3.000 W				3.000 - 6.000 W				6.000 -10.000 W		
Nominal Output Voltage	48 VDC										
AC Output Power (optional)	250 - 3.000 VA				250 - 5.000 VA				250 - 9.000 VA		
ENGINE											
Make	Perkins		Deutz		Perkins		Deutz		Perkins		
Model	403D-11		F2M-2011		404D-22		F3M-2011		1103A-33TG		
Output Power at 1800rpm	10,3 kW		15,0 kW		21,6 kW		23,3 kW		32,2 kW		
Cooling Type	Water		Oil		Water		Oil		Water		
Operating Speed	1300-2000 rpm										
Fuel	Diesel										
Standard Maintenance Interval	500 hours										
Increased Maintenance Interval (opt.)	1.000 hours										
ALTERNATOR											
Technology	Brushless Synchronous		Permanent-Magnet		Brushless Synchronous		Permanent-Magnet		Brushless Synchronous		
Model	TAL040 D		PMG140K/18-90		TAL040 F		PMG140K/18-180		TAL042 C		
Output Power at 1800rpm	9 kW				18 kW				30 kW		
BATTERY											
Technology	Lead Acid / Li-Ion								Li-Ion		
Type	Lead Carbon / LiFePO4								LiFePO4		
Nominal Capacity	500 Ah		500 Ah		1.000 Ah		1.000 Ah		1.600 Ah		
Rated Voltage	48 V										
DoD (Depth of Discharge)	80%								80%		
Cycle Life (25 °C @ 80% DoD)	3.200 / 5.000								5.000		
Maintenance Requirement	No										
Running Temperature (°C)	-15 to 45 / -10 to 55										
SIZE											
	PERKINS		DEUTZ		PERKINS		DEUTZ		PERKINS		
	LEAD CARBON	LFP	LEAD CARBON	LFP	LEAD CARBON	LFP	LEAD CARBON	LFP	LFP		
Weight	2313	1775	2348	1810	3267	2191	3307	2231	2800		
Dimensions (WxLxH)	1506x2550x2000				1506x2550x2000				1607x2800x2160		

Standard Features

DC Power Distribution			Communication Interface		RS232/ RS485
Critical loads (BLVD)	3x63A, 2x32A, 2x16A		System Operating Temp. Range		0 °C / +45 °C
Non-critical loads (LLVD)	1x63A, 2x32A, 2x16A		Remote Monitoring/Control		2G/3G/4G/Ethernet
Internal Fuel Tank	800 litres		Location Tracking		GPS

Optional Features

230V AC Output	250VA- 6.000VA	Solar Energy Kit -1 (panel, MPPT charger, fusebox)	
Residual Current Protection	For 230V AC circuit		6,4 kWp optimized for TJ3000
Auto-Transfer Switch	Auto-Transfer Board		12,8 kWp optimized for TJ6000
Free Contacts for External Signals	8 Inputs / Outputs		25,6 kWp optimized for TJ10000
Increased Operating Temp. Range	-20°C / +55°C	Solar Energy Kit -2 (panel, MPPT charger, fusebox)	
Load Priority Selection	Critical / Non-critical		Can be optimized acc. to the project req.
Increased Maintenance Interval	1.000 hours	IP Protection Class	Can be optimized acc. to the project req.
External Fuel Tank	up to 5000 liters	Super Silent Cabinet	Can be optimized acc. to the project req.
External Battery Capacity	up to 2000Ah	Dust Filters	Can be optimized acc. to the project location
Multiple User Support	Power measurement per user	Improved Security	Can be optimized acc. to the project location

Additional Options on The Site

- Increased rectifier power output by adding extra modules
- Adding an external fuel tank without any modifications
- Increasing the discharge time by adding an external battery group
- Power output increase with additional hybrid generator paralleling
- Increased Solar Panel Capacity for sites with low solar radiation

	TJ 3000 HD			TJ 6000 HD			TJ 10000 HD	
EXPECTED PERFORMANCE VALUES (LOAD)	1,0 kW	2,0 kW	3,0 kW	4,0 kW	5,0 kW	6,0 kW	6,0 kW	10,0 kW
Battery Discharge Time (hours)	16,8	8,4	5,6	8,4	6,7	5,6	9	5,4
Battery Charge Time (hours)	4						4,4	4,8
Battery Cycle per Day	1,16	1,94	2,51	1,94	2,25	2,51	1,79	2,36
Expected Battery Life (years)	9,5	5,6	4,4	5,6	4,9	4,4	7	5,1
Genset Running Hours per Day (hours)	4,6	7,7	9,9	7,7	8,9	9,9	8,6	11,4
Engine Maintenance Period (days) (per 500 hours / per 1000 hours)	108 / 216	65 / 130	50 / 100	65 / 130	56 / 112	50 / 100	58 / 116	43 / 86
Fuel Consumption per Day (liters)	10,4	20,1	29,3	38,7	47,5	56	51,2	81,9
Fuel Transfer Period (days)	77	40	27	21	16	14	19	12
HYBRID + SOLAR SYSTEM								
Recommended Solar Power (kWp)	6,4			12,8			25,6	
Number of Solar Panels (pcs)	16			32			64	
Genset Running Hours per Day (hours)	1,4	5,2	6,7	4,2	5,5	6,8	5,4	8,2
Engine Maintenance Period (days) (per 500 hours / per 1000 hours)	357 / 714	96 / 192	74 / 148	119 / 238	90 / 180	73 / 146	92 / 184	60 / 120
Fuel Consumption per Day (liters)	2,7	11,7	20,7	22,6	30,3	40,3	31,1	53,9
Fuel Transfer Period (days)	296	68	38	35	26	20	32	18
Solar Energy Rate (%)	78,9	45,3	31,9	45,3	37,9	31,8	51,1	37
Expected Battery Life (years)	10	7,5	5,7	7,4	6,1	5,6	9,8	6,8



Some of our References in the Telecommunications Industry

■ Airtel	KONGO	■ Saudi Telecom	SAUDI ARABIA
■ Alkan Telecom	EGYPT	■ Sultan Telecom	KUWAIT
■ Alsys Telecommunication	ROMANIA	■ Telecel	BURKINA FASO
■ Brt Media	CYPRUS	■ Turkcell	TURKEY
■ Camusat	TANZANIA	■ Turk Telekom	TURKEY
■ Helios Tower	KONGO	■ Tigo	D.R. CONGO
■ Iceland Telecom Ltd.	ICELAND	■ Ucell	UZBEKISTAN
■ JV Coscom	UZBEKISTAN	■ Uganda Telecom	UGANDA
■ Kazakh Telecom	KAZAKHISTAN	■ Ums	UZBEKISTAN
■ Magticom Ltd.	GEORGIA	■ Vodacom	D.R.CONGO / TANZANIA
■ Mts	BELARUS / UZBEKISTAN	■ Vodafone	THE NETHERLANDS
■ Newroz Telecom	IRAQ	■ Xpress Telecom	JORDAN
■ Orange	SENEGAL / MALI / IVORY COAST	■ Yemen Telecom	YEMEN
■ Ooredoo Telecom	ALGERIA	■ Zain	SUDAN





Hybrid Generators, which provide environmentally friendly efficient energy, are preferred in many areas thanks to their remote monitoring system.



Remote Telecom
Base Stations



Oil Well-heads
& Signalization
Nodes



Off-shore
Platforms



Remote Military
Platforms



Meteorological
Measurement
Stations



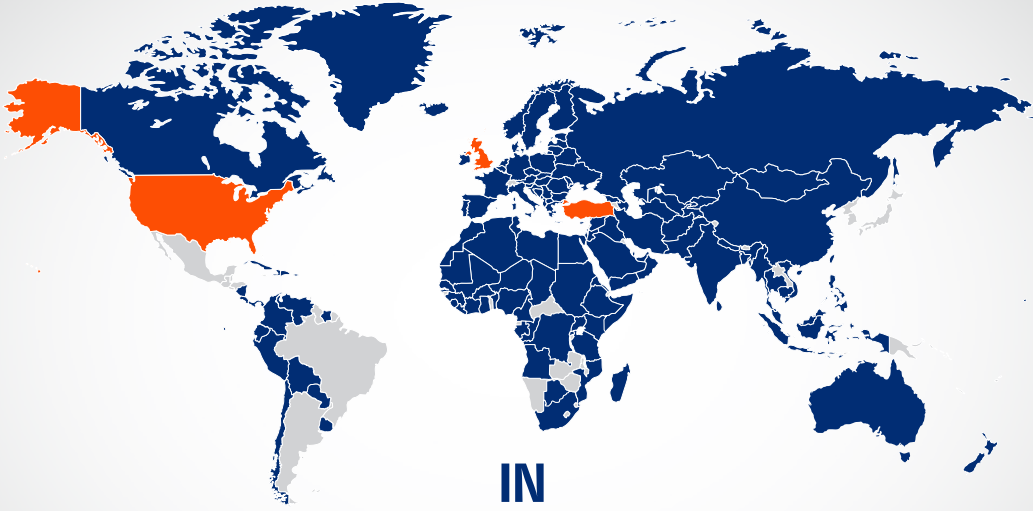
Residential Areas
without Electricity
Grid Connection



Outdoor Events
& Camping



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