

PLANNER  
2013

# ENGINEERING SOLUTIONS FOR YOUR **POWER NEEDS**



**ENERGY SOLUTIONS (PVT) LIMITED**

☎ 111-222-ESL (375) 🌐 [www.eslpk.com](http://www.eslpk.com) ✉ [support@eslpk.com](mailto:support@eslpk.com) ✉ [customercare@eslpk.com](mailto:customercare@eslpk.com)



“

*Most people don't plan to fail; they fail to plan.*

*John L. Beckley*

”



 **Shirazi Trading**  
An Atlas Group Company

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# 2013

## January

S	M	T	W	T	F	S
	1	2	3	4	5	
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

## February

S	M	T	W	T	F	S
		1	2			
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		

## March

S	M	T	W	T	F	S
				1	2	
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

## April

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

31

## May

S	M	T	W	T	F	S
		1	2	3	4	
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

## June

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

## July

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

## August

S	M	T	W	T	F	S
						1
				2	3	
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24

30

## September

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

## October

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

## November

S	M	T	W	T	F	S
						1
				2		
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23

## December

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			



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# ENERGY SOLUTIONS (PVT) LIMITED

## SELECT YOUR GENERATOR

### POWER CONSUMPTION CHART FOR GENERATOR SIZING

Item	Wattage (W)
	4000
Air Conditioner (1 ton = 12000 BTU) Starting: 3250 W / Running: 2250 W	Running: 2250W / Starting: 3250W
Clothes Dryer (electric)	5750
Coffeemaker	1000
Computer	800
Disc Grinder	4000
Dish Washer	500
Drill	1000
DVD Player	100
Electric Heater, Portable	1500
Energy Saving Light Bulb	20
Fan	200
Fax Machine	65
Freezer	400
Garage Door Opener (1/4 HP)	550
Hair Dryer	1200
Iron	1200
Lift	25000
Oven	7000
Plasma Television	500
Printer	700
Refrigerator	500
Security System	1000
Sound System	500
Standard Light Bulb	100
Television (color) 51 screen	300
Tube Light	40
Vacuum Cleaner	1200
Washing Machine	1150
Water Pump	1000
3 phase Electric Motor 1 hp	Running: 1.5kVA / Starting: 13kVA
3 phase Electric Motor 2 hp	Running: 2.7kVA / Starting: 19kVA
3 phase Electric Motor 3 hp	Running: 3.7kVA / Starting: 25kVA
3 phase Electric Motor 5 hp	Running: 6.3kVA / Starting: 35kVA
3 phase Electric Motor 7.5 hp	Running: 9.3kVA / Starting: 48kVA

3 phase Electric Motor 10 hp to 200 hp (approximate)

If all the motors need to start at the same time, we need to know the starting kW or kVA for each motor and add them together. If we can start these motors one after the other, take the largest motor first and determine what it takes to start it. Then add the Running kVA of the largest motor to the starting kVA of the second motor, and determine what it takes to run the first and start the second. Continue this process until all motors have started. For more details, please visit [www.eslpk.com/customercare.html](http://www.eslpk.com/customercare.html) and read relevant articles on gensizing.

Running: 1.0 to 1.2kVA per hp  
Starting: 5.5 to 6kVA per hp



# ENERGY SOLUTIONS (PVT) LIMITED

kVA	kW	220V	240V	380V	400V	440V	450V	480V	600V	2400V	3300V	11000V
12.5	10	33	30.1	19.2	18.2	16.6	16.2	15.1	12			
18.7	15	49.5	45	28.8	27.3	24.9	24.4	22.5	18			
25	20	66	60.2	38.4	36.4	33.2	30.1	24	6			
31.3	25	82.5	75.5	48	45.5	41.5	40.5	37.8	30			
37.5	30	99	90.3	57.6	54.6	49.8	48.7	45.2	36			
50	40	132	120	77	73	66.5	65	60	48			
62.5	50	165	152	96	91	83	81	76	61			
75	60	198	181	115	109	99.6	97.5	91	72			
93.8	75	247	226	143	136	123	120	113	90			
100	80	264	240	154	146	133	130	120	96			
125	100	330	301	192	182	166	162	150	120			
156	125	413	375	240	228	208	204	188	150			
187	150	495	450	288	273	249	244	225	180			
219	175	577	527	335	318	289	283	264	211			
250	200	660	601	384	364	332	324	301	241			
312	250	825	751	480	455	415	405	376	300			
375	300	990	903	576	546	498	487	451	361			
438	350	1155	1053	672	637	581	568	527	422			
500	400	1320	1203	770	730	665	650	602	481			
625	500	1650	1504	960	910	830	810	752	602			
750	600	1980	1803	1150	1090	996	975	902	721			
875	700	2310	2104	1344	1274	1162	1136	1052	842			
1000	800	2640	2405	1540	1460	1330	1300	1203	962	241	176	91
1125	900	2970	2709	1730	1640	1495	1460	1354	1082	271	197	102
1250	1000	3300	3009	1920	1820	1660	1620	1504	1202	301	218	114
1563	1250	4130	3765	2400	2280	2080	2040	1885	1503	376	273	142
1875	1500	4950	4520	2880	2730	2490	2440	2260	1805	452	327	170
2188	1750		5280	3350	3180	2890	2830	2640	2106	528	380	199
2500	2000		6020	3840	3640	3320	3240	3015	2405	602	436	227

## Standard Electrical Formulas Used for Power Consumption Calculations

TO DETERMINE:	SINGLE-PHASE	THREE-PHASE	DIRECT CURRENT
KVA	$\frac{I \times E}{1000}$	$\frac{I \times E \times 1.73}{1000}$	-----
Kilowatts	$\frac{I \times E \times PF}{1000}$	$\frac{I \times E \times 1.73 \times PF}{1000}$	$\frac{I \times E}{1000}$
Horsepower	$\frac{I \times E \times \%EFF \times PF}{746}$	$\frac{I \times E \times 1.732 \times \%EFF \times PF}{746}$	$\frac{I \times E \times \%EFF}{746}$
Amperes (when HP is known)	$\frac{HP \times 746}{E \times \%EFF \times PF}$	$\frac{HP \times 746}{1.73 \times E \times \%EFF \times PF}$	$\frac{HP \times 746}{E \times \%EFF}$
Amperes (when kW is known)	$\frac{KW \times 1000}{E \times PF}$	$\frac{KW \times 1000}{1.73 \times E \times PF}$	$\frac{KW \times 1000}{E}$
Amperes (when KVA is known)	$\frac{KVA \times 1000}{E}$	$\frac{KVA \times 1000}{1.73 \times E}$	-----



# ENERGY SOLUTIONS (PVT) LIMITED

**CUMMINS  
POWERED**



**50  
HZ**



GENSET MODEL	400/230 V 1500 rpm		CONTROLLER	ENGINE MODEL	OPEN SET DIMENSIONS	
	Stand by Power	Prime Power			LxWxH(mm)	Weight (kg)
	kVA	kVA				
AC55	55	50	DSE720	S3.8G6	1780x950x1250	870
AC66	66	60	DSE720	S3.8G7	2150x1050x1450	950
AC110	110	100	DSE720	6BTA 5.9-G5	2200x1050x1600	1250
AC175	175	160	DSE720	6BTAA 5.9-G5	2300x1150x1700	1470
AC200	200	180	DSE720	6CTA 8.3-G2	2300x1150x1700	1700
AC250	250	225	DSE7320	6CTAA 8.3-G2	2600x1150x1750	1940
AC350	350	316	DSE7320	NT 855 G6	3000x1150x1900	2630
AC350	350	300	DSE7320	QSL9-G5	3000x1150x1900	2630
AC400	400	360	DSE7320	NTA 855 G4	3250x1150x2000	3110
AC500	500	455	DSE7320	QSX 15 G6	3560x1300x1970	4150
AC550	550	500	DSE732	QSX 15 G	3560x1300x197	4150
AC700	700	638	DSE7320	VTA 28 G5	4000x1350x2180	5590
AC825	825	750	DSE7320	VTA 28 G6	4000X1350X2180	5610
AC880	880	800	DSE7320	QSK 23 G3	4000x1710x2260	6060
AC1100	1100	1000	DSE7320	QST 30 G4	4400x1760x2350	7350
AC1410	1410	1280	DSE7320	KTA 50 G3	4950X2100X2500	9900
AC1675	1625	1500	DSE7320	KTA 50 GS8	5500X1950X2450	10400
AC2250	2250	2000	DSE7320	QSK 60 G4	6000x2500x3220	15500
AC2500	2500	2000	DSE7320	QSK 60 G13	6050x2600x3300	17200

## Standby :

- Continuous running at variable load for duration of an emergency. No overload is permitted on these ratings. In accordance with **ISO 3026**.

## Prime :

- Continuous running at variable load for unlimited periods with 10% overload available for 1 hour in any 12 hour period. In accordance with ISO 8528, ISO 3046.
- Manufacturer reserves the right to make changes in model, technical specifications, color, equipment and accessories without prior notice.



# ENERGY SOLUTIONS (PVT) LIMITED

**PERKINS  
POWERED**



**50  
HZ**



GENSET MODEL	400/230 V 1500 rpm		CONTROLLER	ENGINE MODEL	OPEN SET DIMENSIONS	
	Stand by Power	Prime Power			LxWxH(mm)	Weight (kg)
	kVA	kVA				
APD10PE	10	9	DSE6020	403D.11G	1200x760x982	307
APD14PE	14	12.5	DSE6020	403D.15G	1200x760x982	317
APD22PE	22	20	DSE6020	404D.22G	1500x900x1172	655
APD33P	33	30	DSE6020	1103A.33G	1730x900x1185	750
APD50P	50	45	DSE6020	1103A.33GT1	1730x900x1185	800
APD66P	66	60	DSE6020	1103A.33GT2	1730x900x1185	830
APD72P	72	65	DSE6020	1103A.44GT1	1860x900x1285	970
APD88P	88	80	DSE6020	1103A.33GT2	1860x900x1287	1042
APD110P	110	100	DSE6020	1006TGT2A	2150x1000x1519	1080
APD110PE	110	100	DSE6020	1104C.44TAG2	1860x900x1315	1050
APD150P	150	136	DSE6020	1006TAG	2295x1000x1460	1420
APD165P	165	150	DSE6020	1006TAG2	2295x1000x1460	1440
APD200PE	200	180	DSE6020	1106C.E66TAG4	2300x1100x1643	1920
APD220PE	220	200	DSE6020	1306C.E87TAG3	2600x1250x1785	1850
APD275PE	275	250	DSE7320	1306C.E87TAG6	2600x1250x1785	1950
APD330PE	330	300	DSE7320	2206C-E13TAG2	3100x1400x2004	3217
APD385PE	385	350	DSE7320	2206C-E13TAG2	3100x1400x2004	3292
APD440PE	440	400	DSE7320	2206C-E13TAG3	3190x1400x2004	3427
APD500PE	500	455	DSE7320	2506C-E15TAG1	3430x1420x2187	3900
APD550PE	550	500	DSE7320	2506C-E15TAG2	3430x1420x2187	3985
APD660P	660	600	DSE7320	2806A-E18TAG1A	3450x1536x2161	4600
APD715P	715	650	DSE7320	2806A-E18TAG2	3581x1698x2186	4750
APD800P	800	730	DSE7320	4006-23TAG2A	4000x1800x2300	5100
APD900P	900	810	DSE7320	4006-23TAG3A	4000x1800x2300	5240
APD1100P	1110	1000	DSE7320	4008TAG2A	4655x2050x2300	7900
APD1400P	1400	1250	DSE7320	4012-46TWG2A	4752x1868x2344	N/A
APD1650P	1650	1500	DSE7320	4012-46TAG2A	5200x2200x2410	10000
APD1875P	1875	1705	DSE7320	4012-46TAG3A	5200x2200x2410	11050
APD2250P	2250	2000	DSE7320	4016TAG2A	5800x2250x2900	12000
APD2500P	2420	2200	DSE7320	4016-61TRG3A	5650x2250x2900	12214

## Standby :

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- Continuous running at variable load for unlimited periods with 10% overload available for 1 hour in any 12 hour period. In accordance with ISO 8528, ISO 3046.
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# ENERGY SOLUTIONS (PVT) LIMITED

**AKSA  
POWERED**



**50  
HZ**



GENSET MODEL	400/230 V 1500 rpm		CONTROLLER	ENGINE MODEL	OPEN SET DIMENSIONS	
	Stand by Power	Prime Power			LxWxH(mm)	Weight (kg)
	kVA	kVA				
APD12A	11.5	10.6	DSE6020	A3CRX14	1300x796x910	400
APD16A	15.5	14.5	DSE6020	A4CRX18	1300x796x910	440
APD20A	20	18	DSE6020	A4CRX22	1500x900x1063	640
APD25A	25	23	DSE6020	A4CRX25	1500x900x1061	665
APD33A	33	30	DSE6020	A4CRX25T	1500x900x1063	680
APD40A	40	36	DSE6020	A3CRX32T	1730x900x1138	892
APD50A	50	45	DSE6020	A4CRX47	1860x900x1423	960
APD70A	70	64	DSE6020	A4CRX46T	1860x900x1281	1060
APD90A	93	85	DSE6020	A4CRX46TI	2150x1000x1587	1285
APD125A	125	115	DSE6020	A6CRX65TI	2300x1100x1675	1510
APD150A	150	137.5	DSE6020	A6CRX69TI	2390x1100x1616	1590
APD250A	250	230	DSE6020	A6CRX98TI	2900x1400x2045	2645

## Standby :

- Continuous running at variable load for duration of an emergency. No overload is permitted on these ratings. In accordance with ISO 3026.

## Prime :

- Continuous running at variable load for unlimited periods with 10% overload available for 1 hour in any 12 hour period. In accordance with ISO 8528, ISO 3046.
- Manufacturer reserves the right to make changes in model, technical specifications, color, equipment and accessories without prior notice.

Brand Origin

Engines

Alternators





# ENERGY SOLUTIONS (PVT) LIMITED

## AN OVERVIEW

Energy Solutions (Private) Limited (ESL) is a Sales and Service Company in Power Generation business and operates in conjunction with Shirazi Trading Company (STC), which is an Atlas Group Company. It has been created with a mission to help customers select and buy, install and commission, operate and maintain power generation equipment from 1kVA to 2500 kVA with focus on high horsepower machines. The Company believes in "doing what has been said and delivering what has been promised". The management of ESL knows what this age-old cliché means to the customers, employees and the society at large.

Energy Solutions (Private) Limited (ESL) is a Company run and managed by professionals having a cumulative experience of over 250 years in power generation. The Company is associated with Aksa Power Generation Turkey as its official distributor. ESL and Aksa have become a force to reckon with in Power Generation market of Pakistan, with an enviable sales tally of over a thousand units. However, the main strength of ESL is its ability to provide value adding engineering services, with focus on doing job right the first time around. This is precisely why customers like Banks, Telecommunication Companies and those in Oil and Gas sector find solace while working with ESL. The value package provided by ESL to its customers includes:

Turn key energy solutions with complete range of Aksa diesel gensets and Cummins UK lean burn gas generators upto 2 MW.

Power generation parts including load demand and management panels and bumpless transfer panels from Woodward Germany.

Paralleling, synchronizing, and load sharing solutions between generators of different makes, models, manufacturers, fuel mix and Main(s).

Portable generators and inverters from Aksa Turkey, made to military specifications.

Operation & Maintenance (O&M) Solutions for Banks, Telecommunication industry, Oil & Gas sector, etc.

Rental solutions with Diesel and Gas Generators up to 1.5 MW.

Genuine aftermarket parts for Cummins engines from FP, USA.

Complete range of battle-hardened screw compressors from Ekomak.

ESL customers in Pakistan include Companies from virtually all sectors of the economy and the industry viz. Hospitals, Textile, Pharmaceuticals, Automobile sector, Banks, Leasing Companies, Telecommunication Companies, Airlines, Poultry, Beverage industry, Oil and Gas sector, Port operations, CNG stations, etc. One of the important feathers in our cap is that our generators have become very popular and trustworthy in Genset rental operations where the equipment has to undergo most grueling operating conditions and the Total Life Cycle Cost (TLC) of the equipment is a decisive factor.

## Our Mission

To attain business excellence by providing fast, cost effective and state of the art energy solutions. To help customers get a quality job done on-time, first-time and every-time. This, we believe, can only be achieved with a truly sincere approach, absolutely safe practices while at work and away, a genuine spirit to serve, a keen desire to create lifelong customers and continuous efforts to develop our own skills and that of our supply chain partners including our own workforce.

## Our Vision

Add value to customers' business by providing sound engineering solutions with truly sincere attitudes, safe working habits, service excellence and salesmanship that builds long term relationships.

## Our Focus

Create permanent customers by the following:

- Devising customized value packages.
- Delighting customers with a sincere spirit to serve.
- Delivering services in excess of customer's expectations and contract value.
- Developing skills of our people and partners as a vehicle to continuous improvement.
- Depending on people and partners to gel them into a team, which can set high standards of service.

## Our Strengths

- Spirit to serve
- Value added engineering
- Technical Expertise and experienced staff
- Long-term vision
- Teamwork
- Commitment
- Never "give up" attitude
- Putting our foot in the customer shoes---  
Feeling the pain of customer



# ENERGY SOLUTIONS (PVT) LIMITED

## ESL Customer Care

Energy Solutions (Private) Limited – ESL has, as a part of its corporate social responsibility, started a customer care section in its website. The purpose is to emphasize importance of safety, quality and continuous improvement (training) in our day-to-day work. Our top management stands committed to make these a cornerstone of its business. The target audience is ESL employees, customers, suppliers and society at large.

We will continue to update the information and add more from time to time. Please reach us at [www.ESLpk.com/CustomerCare.html](http://www.ESLpk.com/CustomerCare.html) and keep watching for what is new. Some of the existing topics are as under :

- Safety of Our People and Family
- HSSE Training and Awareness
- The Safety Culture We should Adopt
- Why should We Invest in Avoiding an Accident?
- Role of Leader in HSSE
- Safety Considerations while Handling Generators
- Safety Concerns while Handling Diesel
- Five S Approach to Our HSSE Commitment
- Safety of Our Generators and Our Personnel
- Actions which Must Precede Start of Work on Generator
- Check Out Before You Step Out - Talk Not Tick
- Discretion is Better than Valor - Lockout and Tag Out (LOTO)
- Return to Service after Lockout
- Defensive Driving Techniques
- Why Use Diesel Generators
- Power Generation - FAQs (Frequently Asked Questions)
- Know Your Generators
- How an Alternator and a Voltage Regulator Work
- Important Considerations before You Make a Generator Buying Decision
- Cummins High Performance Lean Burn Gas Generators – Technology of Tomorrow Unleashed Today
- Co-Generation – Killing Many Birds with One Stone
- Allow No Interruption in Operations - Use Bumpless Transfer between Utility
- Improving Life and Overhaul Interval of Our Generators to Several Thousand Hours
- Maintenance Considerations for Improving Life and Overhaul Interval of Our Generators to Several Thousand Hours
- Run in Your New or Recently Overhauled Diesel Generator
- Do the Parts Talk?
- Annual Maintenance Contract - Ten Commandments
- Sizing Our Generators
- Steps in Sizing Our Generators
- How Power Factor can Influence the Sizing of Generator Sets for Motor Starting Loads
- How Various Loads Affect the Sizing of Generator Sets
- Gensizing for Motors
- How to Select a Generating Set for My Home?
- How to Select a Generating Set for My Workplace?
- Duty Rating of Our Generators
- Understanding Power Factor of Our Plant
- Improving Fuel Consumption of Our Generators
- Paralleling of Generators - Is the Sum of the Parts Greater than the Whole?
- Paralleling and Synchronizing Aksa Gensets
- Paralleling Generators of Different Makes, Models and Manufacturers
- Measuring, Metering and Monitoring Generators
- Output Derating of Our Generators
- Don't Kill Your Engine by Operating at Light Loads
- Guidelines to Prevent Wet Stacking Caused by Operations at Light Loads
- Understanding the Difference between Three-Phase and Single Phase Generators
- Converting Our Generators from Three-Phase Power to Single Phase
- Converting Our Generators from 60Hz to 50Hz Power
- Dos and Don'ts of Portable Generators
- Rid Yourself from Continuous Load Shedding
- Cummins Installation, Operations & Maintenance Manual
- Diesel Generating Sets Installation-Recommendations Manual
- Glossary of Terms



# ENERGY SOLUTIONS (PVT) LIMITED

## AKSA AS A BRAND- FEATURES

Brand Name	<b>Aksa</b> <ul style="list-style-type: none"><li>o Full range of gasoline, diesel and gas generators.</li><li>o Tried, tested and trustworthy – world over.</li></ul>
Brand Origin	<b>Turkey</b> <ul style="list-style-type: none"><li>o One of the world's fastest growing economies</li><li>o Approximately 140 billion dollars worth of exports – mainly Europe.</li><li>o Increasing presence in Pakistan and preparing for more</li></ul>
Engines	Cummins / Perkins / Mitsubishi / Aksa / Briggs & Stratton / GM / John Deere / Doosan
Alternators	Stamford / Meccalte
Distribution and Marketing	Energy Solutions (Pvt) Limited in conjunction with Shirazee Trading (STC), which is an Atlas Group Company. The two form one of the largest generator marketing and distribution networks in Pakistan.
Aftermarket Support	Energy Solutions (Pvt) Limited through its countrywide network tailored to meet requirements of Banks (e.g. Allied Bank, etc.) , Telecom (e.g. Mobilink, etc.) and Oil & Gas Companies (e.g. Shell, etc.)
Generator Quality	<ul style="list-style-type: none"><li>• Conforms to ISO 3046, VDE 0530, BS 4999, BS 5000, IEC 34, etc.</li><li>• Meant for unlimited hours, prime operations at 80% loads.</li><li>• Resilient, robust, rugged, reliable, rental grade product, which means:<ul style="list-style-type: none"><li>o Ease of use</li><li>o Ease of movement</li><li>o Ease of maintenance in terms of parts and skill matrix.</li></ul></li></ul>
Radiator	<ul style="list-style-type: none"><li>• Truly 50 degree C meant for harsh, hot and humid conditions.</li><li>• Built in vertically integrated factories in Aksa, Turkey</li></ul>
Controllers	<ul style="list-style-type: none"><li>• Deep Sea UK or Woodward Germany (Marine compliant)</li><li>• Choice of leading genset manufacturers, world over.</li><li>• Just 2 cards instead of rigmarole of cards (up to ten) in proprietary controllers.</li><li>• Customer friendly with simple and inexpensive trouble shooting.</li><li>• Per phase monitoring of KVA, KW, KVAR, PF, etc.</li><li>• Remote monitoring &amp; Integration with BMS</li><li>• Digital paralleling signals allow distance of 1200 ft between paralleling generators instead of 120 ft attainable with analogue type.</li><li>• Puts an end to dependence on proprietary controllers, their highly costly cards and single supplier domination with respect to repairs, cost and time.</li><li>• Paralleling version available as standard on most generator models.</li></ul>
Governing & Voltage Regulation	<ul style="list-style-type: none"><li>• Cummins standard, low-cost AVR and EFC cards</li></ul>



# ENERGY SOLUTIONS (PVT) LIMITED

## Skid

- Solid, strengthened steel skid to facilitate frequent movement of sets for rental operations.
- Built-in day fuel tanks made with thick steel sheet.

## Canopy / Container

- Imported, skid mounted, made to match generator life
- 2mm thick steel sheet
- Bolted type construction instead of welded type
- Electro-statically painted for life with polyester powder paint
- Thermally insulated silencer instead of asbestos clad
- Emergency Stop Push Button.

## Additional Equipment offered as Standard

- Circuit breakers – as standard and not as an option at additional price.
- Wide array of protections available through controllers
- Day fuel tanks, Trickle battery chargers, Jacket water heater, Lube oil filling, drain pumps, etc.

## ESL Value Addition (for new as well as existing generators - optional)

- Generator sizing advice.
- Installation & Commissioning solutions with customized fuel tanks, lube oil tanks, fuel automation systems, sound proofing, piping, cabling, earthing, transfer switching, etc.
- Annual Maintenance solutions for a reliable, low total cost of operations (TCO).
- Genuine aftermarket parts matching and exceeding performance of OE parts at fairly reduced prices.
- Overhauling solutions to substantially increase engines' life, performance and reliability.
- Synchronizing, Paralleling and Load Sharing solutions involving sets of any make, model, manufacturer, mix of fuel and Mains.
- Bumpless transfer solutions with any number of transformers.
- Load management and demand management solutions to add / shed loads and number of running generators as per requirement.
- Remote monitoring & Integration with BMS
- Rental solutions with diesel and gas generators up to 1.5 MW.

## Warranty

- 1 year, unlimited hours

## Existing Customers in Pakistan

- Coca Cola – 12 - 15 MW approximately
- Atlas Group – 10 MW approximately
- Mobilink – Scores of sets
- Shaikat Khanum Hospital – 3 MW approximately
- Orix + Saudi Pak + Security Leasing – 60 sets (approx.)
- Allied Bank – 425 sets approximately
- Meezan Bank – 175 sets approximately
- Bank Islami – dozens of 12kVA sets
- PICTL – 2.5 MW approximately
- University of Engineering & Technology – 4 MW approximately
- Dow University of Health & Sciences – dozens of sets.

## Special Offer

- Free of cost training whether customer buys or not. Please visit [www.esl.pk.com/customercare.html](http://www.esl.pk.com/customercare.html)



# ENERGY SOLUTIONS (PVT) LIMITED

## JANUARY

## 2013

Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Trusted Source of Diesel & Gas Generators & Spare Parts



# ENERGY SOLUTIONS (PVT) LIMITED

## FEBRUARY

## 2013

Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	

Trusted Source of Diesel & Gas Generators & Spare Parts



# ENERGY SOLUTIONS (PVT) LIMITED

## MARCH

## 2013

Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
30	31					1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

Trusted Source of Diesel & Gas Generators & Spare Parts





# ENERGY SOLUTIONS (PVT) LIMITED

## APRIL

## 2013

Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Trusted Source of Diesel & Gas Generators & Spare Parts



# ENERGY SOLUTIONS (PVT) LIMITED

## MAY

## 2013

Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
		1		1	2	3
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Trusted Source of Diesel & Gas Generators & Spare Parts



# ENERGY SOLUTIONS (PVT) LIMITED

## JUNE

## 2013

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22	23	24	25	26	27	28
29	30					

Trusted Source of Diesel & Gas Generators & Spare Parts



# ENERGY SOLUTIONS (PVT) LIMITED

## JULY

## 2013

Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Trusted Source of Diesel & Gas Generators & Spare Parts



# ENERGY SOLUTIONS (PVT) LIMITED

## AUGUST

## 2013

Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
31		1			1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

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# ENERGY SOLUTIONS (PVT) LIMITED

## SEPTEMBER

## 2013

Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
31	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

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# ENERGY SOLUTIONS (PVT) LIMITED

## OCTOBER

## 2013

Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
			1	2	3	4
5	6	7	8	9	10	11
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# ENERGY SOLUTIONS (PVT) LIMITED

## NOVEMBER

## 2013

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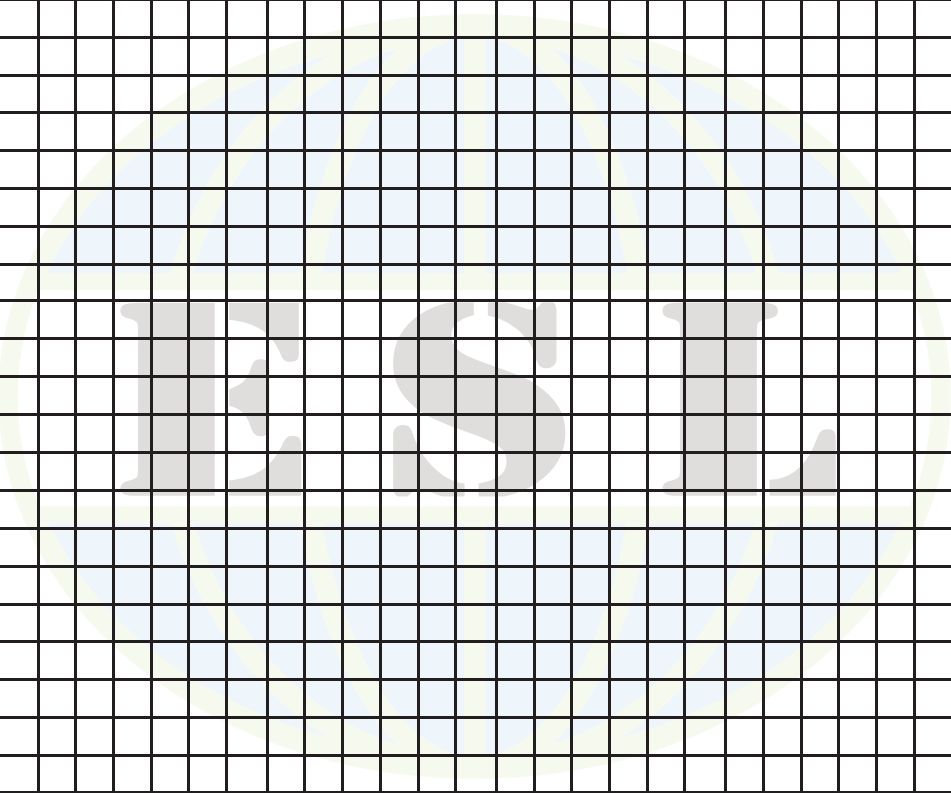
# ENERGY SOLUTIONS (PVT) LIMITED

## DECEMBER

## 2013

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31	1	2	3	4	5	6
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21	22	23	24	25	26	27
28	29	30	31			

Trusted Source of Diesel & Gas Generators & Spare Parts



DATE: \_\_\_\_\_

Handwriting practice lines consisting of 20 horizontal lines. A large, faint watermark of a globe with the letters 'ESL' is centered over the middle of the page.

#### Head Office

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#### Multan Office

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Tel: +92-61-5404323, Cell: +92-300-6308986

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☎ 111-222-ESL (375)    🌐 [www.eslpk.com](http://www.eslpk.com)    ✉ [support@eslpk.com](mailto:support@eslpk.com)  
✉ [customercare@eslpk.com](mailto:customercare@eslpk.com)

#### Display Centers

**Lahore**    E-170, Al-Tawakal Centre, Near Defence Gate, Main Boulevard, D.H.A. Lahore Cantt.  
Cell: +92-302-8487965

**Multan**    14, Dubai Plaza, Multan Cantt. Tel: +92-61-5404323, Cell: +92-300-630898