

IMPORTANT CONSIDERATIONS BEFORE YOU MAKE A GENERATOR BUYING DECISION

We hope that 15-20 minutes spared in reading the following article would result in a better decision for you and your Company.

A generator is major equipment, which a Company adds to its inventory of machines. It is capital expense decision and the Company enjoys its benefits for a long time to come (even ten years or more). Therefore, care must be exercised that all factors are duly considered before making the final decision. In this article, ESL tries to outline major considerations, which the buyer must take into account:

1. Go for best-in-class!

It should be equipped with a top of the line engine, alternator and controller etc.



2. Your machine should feel home in rugged conditions.

The product should be meant for the hot, harsh and humid conditions of Pakistan market and a truly 50 degree C radiator should be an integral part of the scope of supplies. No compromise should be made in this regard.



3. Your product should have tasted success where it matters the most.

The product should be known to have a high degree of success in Middle East, Africa markets where extreme conditions prevail.



4. Should have the capability to run round-the-clock.

It should be an equipment meant for unlimited prime operations, which is the only suitable rating applicable to Pakistan's market in the context of the duration of power outages. Standby rating is a misnomer for Pakistan's market and is appropriate only for those countries where continuous supply of electricity is possible without any interruption. These points are discussed in more detail in the article of Generators rating.



5. Should meet quality standards.

The product should meet all quality standards relevant to diesel power generation e.g. ISO 3046, VDE 0530, BS 4999, BS 5000, IEC 34 etc.



6. Your Generator should be in safe hands after you purchase it.

A fully functional after market network of the supplier should be available to look after the generator in terms of effective design, engineering, generator sizing and safe installation for a long time to come. A track record should be thoroughly checked in this regard with a focus on the existing customers' profile and after market capability of the supplier Company. For more details, please refer to the articles related to Generators sizing, installation and after-sales services.

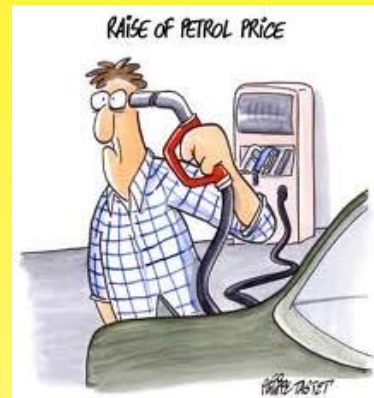


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7. Watch out Total Cost of Ownership (TCO).

In Pakistan, fuel contributes almost 90% to the total cost of generation (per kWh) from diesel generators. Therefore, it is essential that specific fuel consumption of the chosen equipment should be as low as possible to achieve the lowest total life cycle cost.



8. Chosen machine should be able to parallel with others.

The equipment, especially above 500 kVA, should be able to parallel with others. Consideration should be given to selecting a number of small units instead of one large unit, especially when the load is variable. Paralleling of generators if carefully exercised often results in sum of the parts being greater than the whole. This is described in more detail in the article on paralleling of gensets. This point is also very important from the perspective of future expansion.



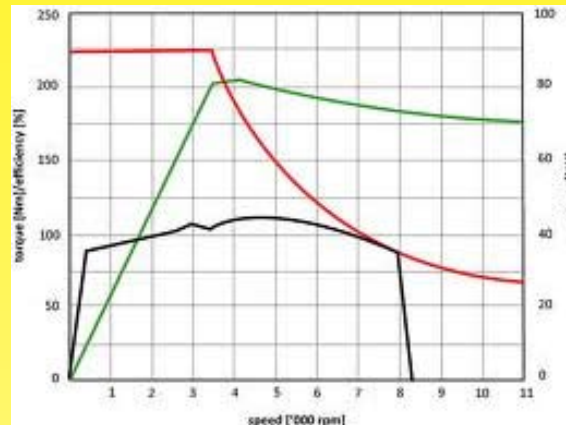
9. Go for user friendly controllers!

Care should be exercised to avoid proprietary controllers which are not customer friendly and use an expensive array of control cards leaving the customer at the mercy of the supplier for all times to come.



10. Consider high torque bearing capability.

Consideration should be given to the “single step load acceptance” characteristics of the engine. A higher value is always an advantage.



11. Rough-and-tough sets should be preferred over nice-and-easy version.

If the sets are to be used in rental operations, it is better to choose a generator with skid fabricated with strengthened channel and base fuel tank made of solid steel. This ensures longer life, safer operation, easier deployment / un-deployment.

12. Canopies should match Generator in terms of reliability and durability – icing is as important as the cake itself.

Canopy should be made to last as long as the set itself. It should preferably be made with thick steel sheet, of bolted construction instead of welded type. The canopy should be painted with long lasting powder coated paint. All these things ensure longevity of the canopy.

13. Consider Bump-less transfer between Wapda and the generator(s).

Bump-less transfer of power between WAPDA and generator should also be considered as it can eliminate interruptions to the customers’ operations. The resulting savings can ensure a fast payback on additional investment. This is described in detail elsewhere.

14. Consider Load and demand management for greater flexibility.

Load management and demand management panels may also be considered as they provide load add / shed facility in view of gensets availability or conversely automatic switching on / off gensets in view of the load required to be serviced.



15. Consider savings from Cogeneration

While selecting large generating sets, considerations should also be given to engine exhaust volume, temperatures and jacket water heat content from the standpoint of steam generation, which may be utilized for absorption chilling or for other in-house purposes. More details can be obtained from the article related to Cogeneration.



Why Customers choose Aksa generators?

ESL supplies gensets from Aksa Turkey. Turkey is the fast emerging economic power and is rapidly gaining access to the markets of Western Europe, North America, Middle East, Africa etc. by virtue of its quality and excellent business reputation. Aksa is amongst one of the leading companies in Turkey. Aksa generators consist of the following features as an essential part of its scope of supplies:

Rental Grade Equivalence

Aksa generators are resilient, rugged and robust and correspond to rental grade specifications. Rental grade generators are designed to use in merciless conditions which include harsh, hot summer, chilling winter, dusty and corrosive surroundings, continuous and uninterrupted incidence of ruthless loads etc. They consist of the following characteristics:

1. **Portability:** Capability to easily move from one place to another.
2. **Durability:** The sets which are suitable for rental operations can also successfully meet the other requirements on long term basis.
3. **Ease of Use:** Rental grade generators can be easily used without the complicated steps of set up, which is an important aspect for other applications.
4. **Ease of Maintenance:** To cater the requirements of rental operations, such generators are required on which operators having little knowledge or less experience of generators can work easily. This is why quantity of complex/Proprietary cards and components is kept low in Aksa generators.

Because of the above mentioned reasons, our generators are extensively used for rental basis.

Building Blocks

1. **Engines:** Aksa uses Cummins and Perkins engines. All of these have a wide network of customer support in Pakistan.
2. **Controllers:** Aksa sets are equipped with Deep Sea or Woodward controllers, which consist of the following features:
 - These controllers are universally used by major genset manufacturers worldwide.
 - They are based on far fewer components (3 only) as against an array of discrete components / cards (up to 9) from others. Fewer cards make troubleshooting not only easier but inexpensive also.



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- Standard AVR's and EFC cards are used which are readily and inexpensively available in the market.
 - Per phase KVA, KW, KVAR, Power Factor monitoring is available.
 - Digital paralleling signals are available. This ensures that maximum distance between two paralleling gensets can be as high as 1200 feet (10 times vs. analog). This allows generators to be more freely and conveniently placed in accordance with the available space.
 - They put a stop to customers' dependence on suppliers with proprietary controllers, which allows them advantage in terms of high prices for repair and replacement of components.
3. **Radiators:** Aksa uses truly 50 degree C radiator, which is made in its own factory and ideally suited to harsh, hot and humid weather conditions existing in Pakistan.
 4. **Skid:** Skids made of solid steel are used in Aksa generators and steel fuel tanks are the necessary part of their scope of supplies. Because of solid skid and high quality Vibration pads, generators can work without vibrations for longer duration.
 5. **Canopies:** Aksa provides imported sound proof canopies with its generators, which are skid mounted. They comprise of the following features:
 - 2mm sheet steel bolted type fabrication, whereas other canopies available in the market are of thin steel welded-type fabrication
 - Electrostatic polyester powder paint,
 - Thermally insulated silencers instead of asbestos cladding,
 - Emergency push button.
 6. **Additional Standard accessories:** Circuit Breaker, Trickle Battery Chargers, Lube oil drain / Filling pumps, Jacket water Heater and Wiring Harness in accordance to military grade are available as standard items without additional cost. Most suppliers sell generators without these items in order to express their product as a low cost/affordable one.

Salient features of Generators

1. **Suitable for unlimited hours of use:** Aksa sets are designed for Prime rating for unlimited hours of operations.
2. **Economical usage:** Aksa sets have low specific fuel consumption which ensures low total life cycle (TLC) cost.
3. **Single Step Load Acceptance characteristic:** Aksa sets have high single-step-load-acceptance characteristics.
4. **Warranty Administration:** Not only the record of failure of Aksa gensets within the warranty period is highly satisfactory (only 0.7%), but the Company is also generous in this regard.
5. **Medium Voltage availability:** Up to 2000 kW Medium voltage generators, i.e. 11 kV, are easily available with Aksa and their lead time is usually shorter than that of other suppliers, with a reasonable price difference. This is why ESL maintains an excellent record of providing these kinds of generators.

ESL Value Addition

1. Aksa sets can easily be paralleled with other sets of any make, model and manufacturer. This is evident from our various accomplished projects.
2. Bump-less transfer between utility and on-site generators can be provided at an affordable price, which pays itself back in matter of months. This can be provided on existing sets also of any make and manufacturer.



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3. Load Management and demand management features are available at a fraction of price of others. This can be provided on existing sets also of any make and manufacturer.
4. Facilities of Remote monitoring, integration with Building Management System (BMS) and Cogeneration can also be provided.

In short, Aksa generators, because of their strong skid steel fuel tanks, heavy duty radiators and state-of-the-art canopies, are very popular in rental operations, banking and telecommunication industry etc. worldwide, especially in the regions of Middle East and Africa.

Next time when you plan to buy a generator, please remember ESL in order to avail quality products and services and contact us at:

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