

# Calculateur de consommation d'énergie

## Energy Demand

### General Data

|                        |  |
|------------------------|--|
| Country                | <input type="text" value="-- select --"/>    |
| Temperature            | <input type="text"/> °C                      |
| Altitude               | <input type="text"/> m                       |
| Solar daily irradiance | <input type="text"/> kWh/m <sup>2</sup> /day |

### Calculation Settings

|   |                          |
|---|--------------------------|
| Local rated voltage   | n/a Vca                  |
| Local frequency   | n/a Hz                   |
| There is any 3-phase Consumer in the installation?                        | <input type="checkbox"/> |
| The installation provides power to a hospital (very sensitive structure)? | <input type="checkbox"/> |

| Appliance/Device  | Quantity | P<br>(W) | S<br>Max<br>(VA) | S<br>Avg<br>(VA) | Working Hours |        |           |         |       | E |
|---|----------|----------|------------------|------------------|---------------|--------|-----------|---------|-------|---|
|   |          |          |                  |                  | Morning       | Midday | Afternoon | Evening | Night |   |
| <div><div>Add row</div><div>Remove last</div><div>Reset</div></div> |          |          |                  |                  |               |        |           |         |       |   |

- General
- Generator
- Battery
- Solar

## Estimation of Needs

### Energy Consumption per Day

|                                    |             |
|------------------------------------|-------------|
| Total                              | n/a W a day |
| Low consumption devices (Class 1)  | n/a W a day |
| High consumption devices (Class 2) | n/a W a day |
| Usefull energy / day               | n/a Wh      |
| Usefull energy / night             | n/a Wh      |

### Power Needed

|                                   |        |
|-----------------------------------|--------|
| Total                             | n/a VA |
| Low consumption devices (Class 1) | n/a VA |

### Power Needed

|                                    |        |
|------------------------------------|--------|
| High consumption devices (Class 2) | n/a VA |
| Average power necessary            | n/a VA |

## Generator

### Additional Information

|  |                       |
|--|-----------------------|
| Voltage specification (single-P / 3-P)           | Automatic selection ▼ |
| Cable length between:                            |                       |
| the generator and switchgear                     | 10 m ▼                |
| the grid and switchgear                          | 10 m ▼                |
| the switchgear and the main electrical dashboard | 10 m ▼                |
| Wire Gauge recommendation:                       |                       |
| between generator and switchgear                 | n/a mm <sup>2</sup>   |
| between grid and switchgear                      | n/a mm <sup>2</sup>   |
| between switchgear to dashboard                  | n/a mm <sup>2</sup>   |

### Size Recommendations

|                             |            |
|-----------------------------|------------|
| Size recommended (PRP)      | n/a KVA    |
| Power (ESP)                 | n/a VA     |
| Voltage type                | n/a        |
| Rated voltage               | n/a V      |
| Rated frequency             | n/a Hz     |
| Output circuit-breaker size | n/a A      |
| Estimated fuel consumption  | n/a l/h    |
| Estimated oil consumption   | n/a l/h    |
| (1 oil change every 250h)   | n/a l/250h |

## Battery System

### Additional Information


|   |      |    |
|---|------|----|
| Unit voltage                                  | 12   | V  |
| Unit capacity                                 | 1000 | Ah |
| Authorized discharge ratio (no less than 40%) | 50   | %  |
| Charge available time (minimum 4hours)        | 4    | h  |
| Days of autonomy needed if no charge          | 1    |    |

### Recommendation

|   |           |
|---|-----------|
| Energy to accumulate  | n/a Wh    |
| Voltage recommended   | n/a V     |
| Number of batteries needed with the specifications provided | n/a units |
| Type of connection  | n/a       |
| Circuit breaker ideal size                                  | n/a A     |
| Charger size at least                                       | n/a A     |

## Solar System

### Additional Information

|  |  |
|--|--|
| Solar daily irradiance                           | n/a kWh/m <sup>2</sup> /day  |
| Usefull max power per day                        | n/a Wc   |
| Regulator size                                   | n/a A  |
| Solar panels unit voltage (recommendation: n/aV) | 12 V  |
| Solar panels unit max power                      | <input type="text"/> Wc  |

### Recommendation

|  |       |
|--|-------|
| Minimum number of solar panels             | n/a   |
| Recommended number of solar panels         | n/a   |
| Solar charge controller: type of regulator | n/a   |
| Solar charge controller: rated voltage     | n/a V |
| Solar charge controller: unit max current  | n/a A |
| Solar charge controller: quantity          | n/a   |

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