West Midlands Conversions Electrical system in conjunction with **Sterling Power Products**

The pressure to convert to electric is intensifying. More and more councils and pitch operators insist on silent operation and pollution free ice cream vans in order to protect the health of the public.
West Midlands Conversions have been developing our system over the last few years in conjunction with Sterling Power to create the optimal electrical operated ice cream van.
As a professional ice-cream van operator and builder, we have used our many years of experience to ensure massive amount of on board battery power is employed to not only use the standard ice cream machine but also auxiliary equipment such as slush machines this is to ensure the maximum performance and financial return from our machines both for standard stop / start operation and long term stationary pitch use.
Only the most robust equipment (which has been modified for maximum efficiency) and batteries are being used to ensure many years of operational life is being used to build the ultimate electric vehicle.
What are the benefits to converting to a hybrid ice cream van?
We are 100% committed to the green movement and also to providing our clients with the best experience there is, here are a few of the many reasons why our Terra Verde ice-cream vans are the way forward.

- Environmentally friendly
- A massive saving on fuel costs
- Zero emissions whilst serving
- A much quieter serving experience!
- A minimum 8 hours of static serving time, virtually unlimited start stop operation
- Keep in line with more stringent and ever evolving council guidelines
- Packages will be available to extend running times

Advantages of the system over competition.
1) Larger battery storage and so longer operational time and ability to run accessories **including slush machines**.
2) Powerful recharging off battery while driving, meaning for normal start stop operation main battery will deliver all day unlimited operation.
3) Large battery bank allowing for long term stationary use up to 12+ hrs / 2700 cones (depending on operation).
4) Modular system allowing enhancements such as extra portable battery banks and solar.
5) Extra power charging modules to reduce AC charge times, if required.
6) Extra alternators fitted to the engine to max charge between each stop (depends on vehicle if fitting possible).

Cone operation (at 20 DegC ambient) (see graphs on other side for recorded test information)
Cones made at rate of 100+ cones per KWh equals about 2700 cones on full charge in static operation, this number is virtually unlimited on start stop operation.

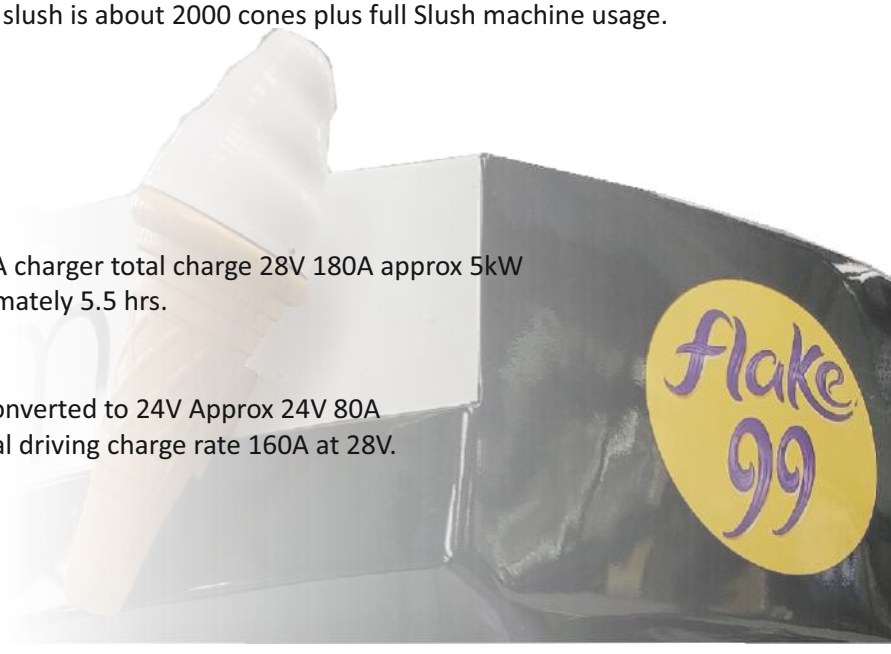
Slush machine (see graphs on other side for recorded test information)
Power on average used for liquid start and freeze with 2 x drum slush with 6 litre per drum total 12 litres ~ 0.8kWh
Power consumption after freeze to maintain operation ~0.2kWh

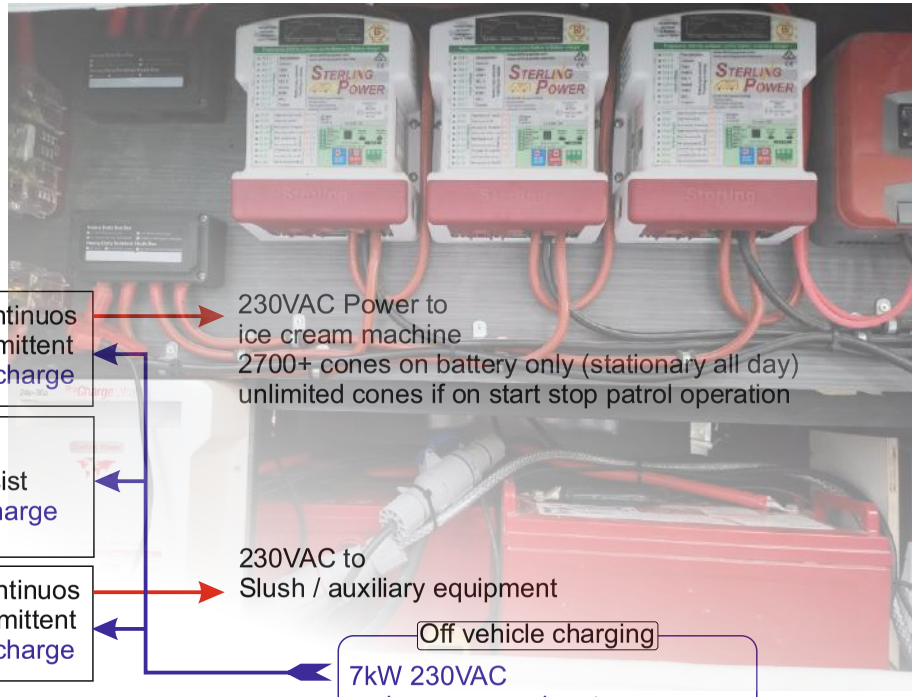
Reasonable expected usage using Ice cream plus slush is about 2000 cones plus full Slush machine usage.

Main system specification
LiFePO4 battery bank 24V 2100Ah = 27kWh
Inverter power 2 x 3500W = 7kW continuous

Recharging power from 230VAC
2 x Combis charging power 24V 60A plus 2 extra 30A charger total charge 28V 180A approx 5kW
recharge time for full charge from empty in approximately 5.5 hrs.

Recharge power while driving
Standard alternator approx 12V 180 amps, power converted to 24V Approx 24V 80A
extra 24V 80A alternator direct to battery bank. Total driving charge rate 160A at 28V.
= 3KW into battery.



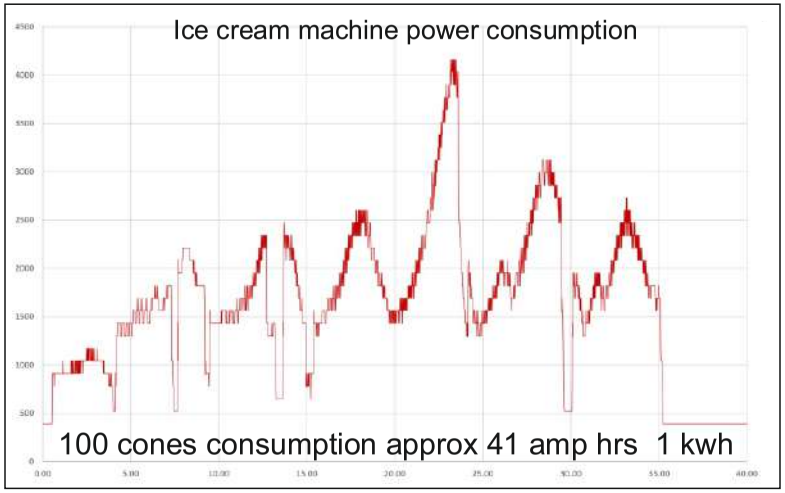


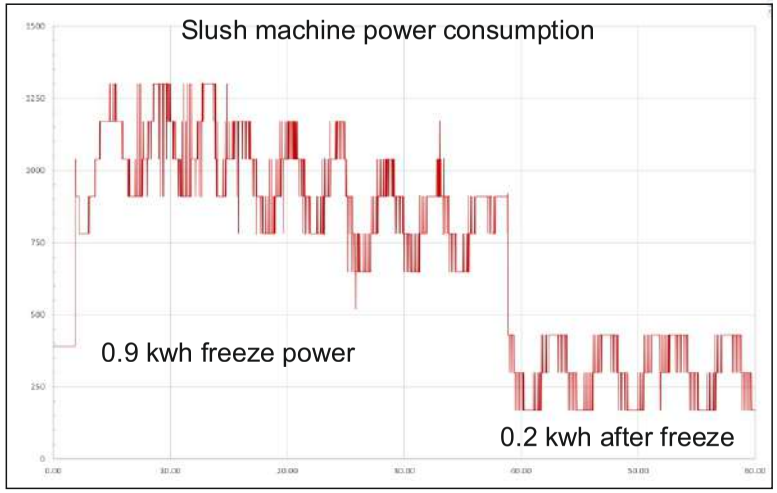
Extra Options

1) **Extra Alternator**. 24V 80A alternator, this allows extra charging while vehicle is driving. This extends the operational time for the system, for static operation this offers a limited value but to mobile start/stop operation this vastly extends the usage of the vehicle as you are fast charging between each stop and so reducing the power draw from the buffer battery allowing all day operation.

2) **Solar on roof.** On a normal British cloudy day the solar will offer little to no useful power to the system. However, on a hot sunny day the system will certainly deliver the power to compensate for the extra power required for a hot day operation. However, the great value lies in the fact that is has 'green' credentials and many local councils shall allow operation in green zones - this ticks the box.

3)**Trailer booster.** Long term static operation is a problem with the electrical system. So, why not add a battery trailer pack. This can double the operational time frame. Or, have 2 trailers and simply shuttle on and off site to recharge off site for unlimited time on site.





West Midlands Conversions
Unit 19A Bayton Rd,
Exhall,
Coventry
CV7 9EL
Tel: 02476363651
Web: westmidlandsconversions.com
Email: info@westmidlandsconversions.com
WhatsApp: 07821114764