

ENGINE OFF, POWER ON WITH IMPAC EGEN & ZERORPM

Zero emissions power solutions make it possible



OVERVIEW

When it comes to powering your tools and ensuring comfort on the job, both IMPAC eGEN and ZeroRPM are engineered to deliver—each in its own unique way.

SAFEST SYSTEM

Integrated solution with redundant safety features

- Lithium-ion (LiFePO₄) is the safest chemistry on the market today
- Reserve capacity warning to recharge
- Individual cell management ensures each cell is treated safely

HELPS DOWNSIZE A GENERATOR OR EVEN ELIMINATE IT ALTOGETHER

No need to idle to power tools

- Operators can focus on their job without worrying about power shortage
- Elimination of noise and air pollution from a generator and engine idling

1



INVERTER/CHARGER
MULTIPLE OPTIONS

2



LITHIUM-ION BATTERY
105Ah, 125Ah, 240Ah, 310Ah, 410Ah

3



AGGREGATOR DISPLAY
& REMOTE PANEL

4



SOLAR PANELS
MULTIPLE OPTIONS

FLEXIBLE PANELS
115W, 115W Slim, 220W, 330W

BIFACIAL GLASS PANELS
90W, 210W, 240W, 355W, 490W

5



SOLAR CHARGE CONTROLLER
MULTIPLE OPTIONS - MPPT OR PWM

AVAILABLE IN 30A and 60A

6

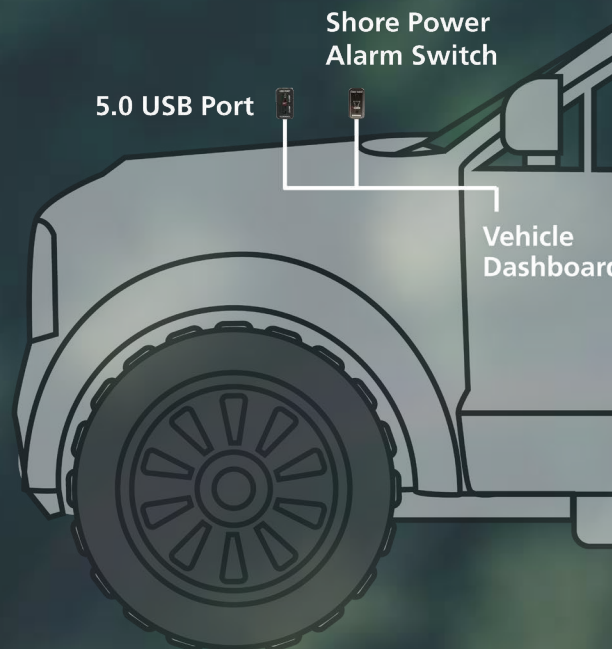


280-AMP ALTERNATOR

Additional components including voltage regulator and auxiliary alternator may be added to complete your system.

UL1973 CERTIFIED BATTERY

Battery will not crush* and if a puncture occurs, the impact will be contained to a single cell, preventing further propagation.



nal generators. It powers your tools and electrical devices while eliminating the noise and fumes associated
re set to enjoy a quieter, cleaner work environment. IMPAC eGEN doesn't just power your tools; it enhances

FULLY CUSTOMIZABLE SYSTEM

Design and build a system to meet your exact needs

- Option to build 12V, 24V or 48V power system

DEDICATED LITHIUM-ION BATTERY BANK FOR JOBSITE TOOLS

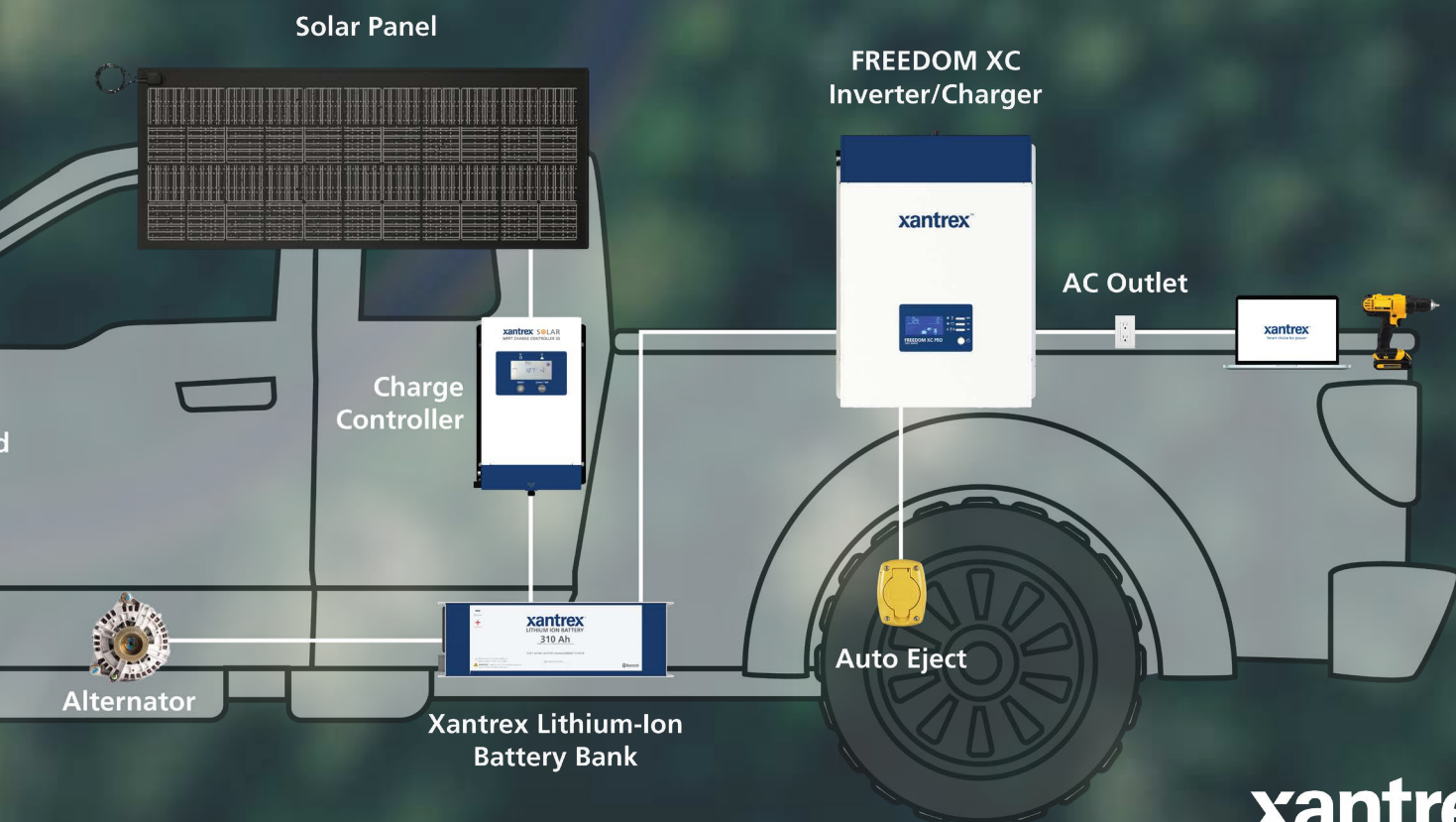
Half the size and weight and engineered to last 6-8 times longer than traditional batteries

- A dedicated battery bank for jobsite tools dramatically reduces wear and tear on starting batteries
- The addition of optional solar further enhances batteries' service life

LONGEST BATTERY LIFE

LiFePO₄ cell balancing and temperature control all contribute to the longest lasting batteries on the market

- Lithium-ion (LiFePO₄) is the safest chemistry on the market today
- Iron phosphate (LiFePO₄) chemistry can have twice the cycle and calendar life than many other lithium chemistries during typical vehicle usage
- UL 1973 certified for safety (310 Ah & 410 Ah)
- No cell is ever overcharged



IMPAC[™] eGEN

BY MISSION CRITICAL ELECTRONICS

LITHIUM-ION POWER SYSTEM

	Lithium Battery	Inverter/Charger	Combiner Controller	Secondary Alternator	Dash Air	IMS	Solar
IMPAC eGEN Lite	●	●	●				Optional
IMPAC eGEN	●	●	●	●			Optional

OUR LITHIUM IS SAFE, POWERFUL AND EFFICIENT

50%
weight savings

50%
space savings

4X
energy density

6-8X
life of traditional batteries

Fully customizable power generation system for trucks, starting from 105Ah.

ELIMINATE ENGINE IDLING, GENERATORS, AND AIR POLLUTION

Let the job site run without any interruptions or delays
Operators no longer have to worry about turning on a generator and resulting nuisance such as noise and air pollution

ROI IN LESS THAN 3 YEARS

Initial upfront investment is easily off-set by savings in fuel, maintenance and battery replacements
The increased uptime and productivity pays off way faster than you think

MULTIPLE CHARGING SOURCES KEEP BATTERIES CHARGED

The alternator charges the battery when the truck is running
The inverter/charger charges the battery when the truck is parked and plugged in and increase runtime of tools and electronics
Solar continuously charges batteries to further extend its service life and electronics runtime

LITHIUM BATTERY MAY LAST UP-TO

6000
CYCLES*

*up to 6000 under ideal conditions.

BEFORE NEEDING REPLACEMENT

8-10
YEARS

MORE INFO:
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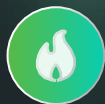
youtube.com/XantrexTechnology



TRANSFORMS CONVENTIONAL VEHICLES INTO HYBRIDS



Engine-off A/C Through
the Factory Vents



Engine-off Heat Through
the Factory Vents



Lithium-Iron Power to
All Electronics



Automatic Recharging



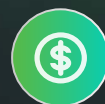
Extend OEM
Warranty*



Lower Fuel Consumption
& Emissions



Improve Operator Safety
& Comfort



Reduce Overall
Operating Costs

*based on reduced engine hours

YOU **IDLE** MORE THAN YOU THINK YOU DO

4 HOURS IDLING per 8 hour shift

250 DAYS per year

5 YEARS of idling

165,000 MILES OF WEAR AND TEAR

\$17,500 IN WASTED FUEL

55 TONS OF CO₂

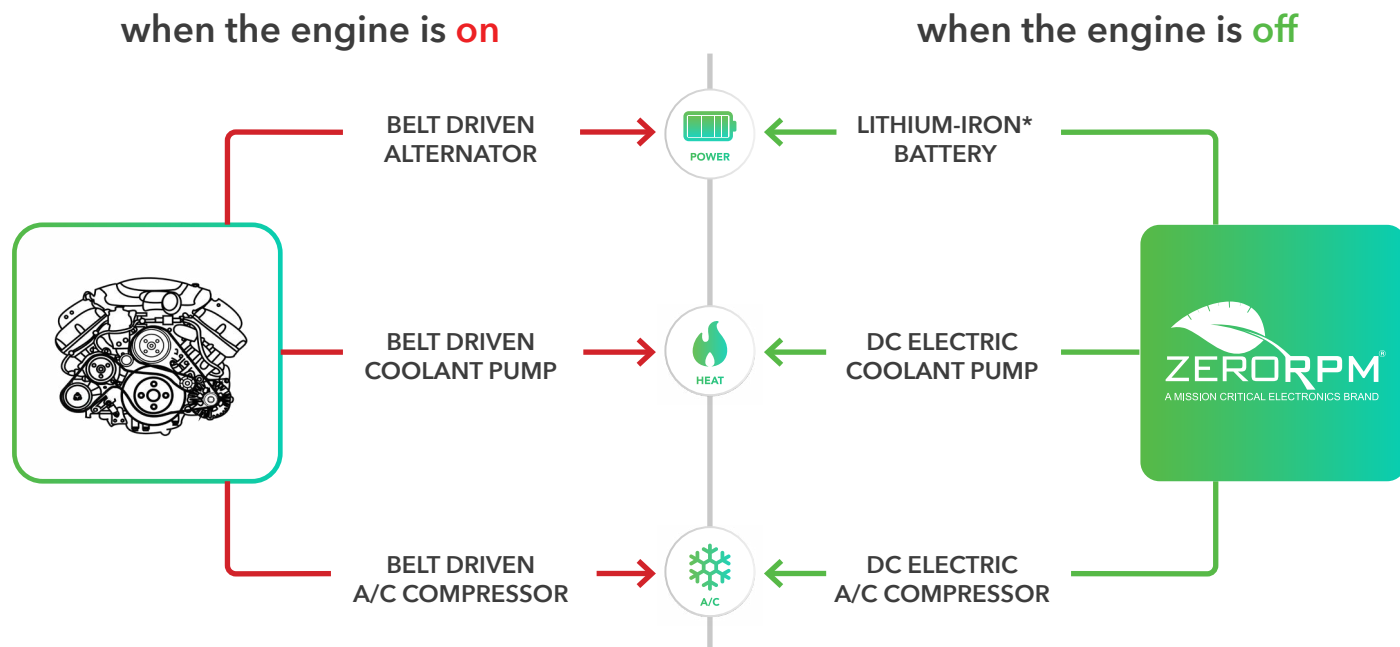
WHAT DOES A ZERORPM[®] SYSTEM DO?

When you put the vehicle in **park** we will **automatically** shut off the engine and **EVERYTHING** continues to operate as if the engine remains on, saving you **MONEY** while protecting the **ENVIRONMENT**.



next level with its automatic system. It powers tools, devices, and powers the climate inside your
re moving from one job site to another or staying put for a while, ZeroRPM ensures that your cabin
ime more efficiently.

HOW DOES IT WORK?



*"Lithium-Iron" is a marketing term for ZeroRPM's LiFeMnPO₄ packaged energy storage systems.

Idle Mitigation System

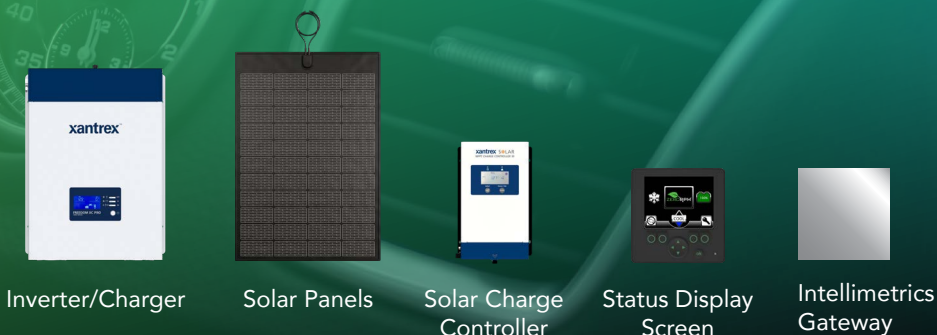
Our Idle Mitigation System is a self contained unit composing of our LiFeMnPO₄ battery and necessary components.

LiFeMnPO₄
Battery



Optional System Add-ons

You can further customize the system with various functions your fleet may need to get the job done.





IDLE MITIGATION SYSTEM

Transforms a conventional vehicle into a hybrid when in park
Reduces emissions, protects the environment, quick ROI

- Lithium-ion battery powered solution delivers power for climate control, to onboard electronics and jobsite tools
- The system integrates with a vehicle's electrical & engine system to provide engine off A/C and heating plus power for all onboard electronics
- Once the vehicle is in park mode, the system shuts down the engine and provides all required power from lithium-ion battery source
- For extended stationary use of vehicle, the system manages engine start/stop to recharge batteries as needed



Engine-off A/C Through the Factory Vents

Using patented ZeroRPM technology, the system provides cooling through the factory vents without running the chassis engine.



Engine-off Heat Through the Factory Vents

The system provides heating through the factory vents without running the chassis engine. You no longer have to enter a freezing vehicle on a cold day!



Lithium-Iron Power to All Electronics

Using safe Lithium-Iron batteries, the system provides power to all electronics (e.g. radio, lights, and computers) without running the chassis engine. The batteries have a five-year warranty.



Automatic Recharging

The batteries charge natively from a 12V alternator. Solar panel and shore power integrations are optional.



ZeroKEY™

ZeroKEY allows you to securely leave the vehicle while our system takes care of climate control and powering your electronics. When you return to the vehicle everything will be in operation as you left it.



ZeroIDLE®

ZeroIDLE prevents the IMS® from automatically starting the engine in "no-idle" zones. The operator can be notified by an optional buzzer, backup alarm, or voice annunciator.



ZeroDRAW™

It protects the chassis batteries from being drained from your vehicle's accessories. That way you don't return to your vehicle with a dead chassis battery.



Electric PTO

The system can provide energy to powered take-off equipment such as hydraulic buckets, booms, and lifts, all while the engine is off. This is optional.

next level with its automatic system. It powers tools, devices, and powers the climate inside your
re moving from one job site to another or staying put for a while, ZeroRPM ensures that your cabin
time more efficiently.

A UNIQUE HYBRID SYSTEM

The ZeroRPM system integrates seamlessly with a vehicle's engine and existing electrical system, providing extended engine-off A/C and heating, plus full power to the onboard electronics, including lights, radio, computers and tools.

The system captures all the data associated with the engine off-technology – utilizing Intellimetrix® software to give users detailed insight into how the system performs. A secure portal provides customized reports and graphs of fuel savings, emissions reduction, and vehicle usage.



HOW DOES A ZERORPM® SYSTEM HELP YOU?



Reduces engine hours and saves you money



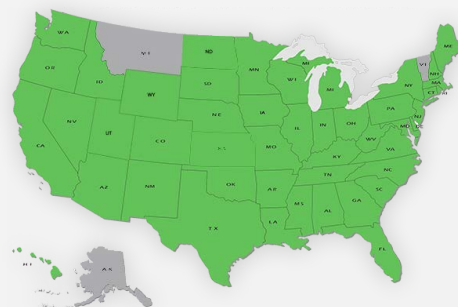
Adding an inverters eliminates the need for a generator for job site 110V loads

GET RETURNS DAY 1

Track your vehicles' savings via Intellimetrix®



SYSTEMS AVAILABLE IN 47 STATES



MORE INFO:
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COMPARING THE TWO SYSTEMS



ZeroRPM Idle Mitigation System

- Reduce your fuel and maintenance costs
 - Transforms a conventional vehicle into a hybrid when in park
 - Reduces emissions, protects the environment, quick ROI
1. Lithium ion battery powered solution delivers power for climate control, onboard electronics and jobsite tools.
 2. The system integrates with a vehicle's electrical & engine system to provide engine off A/C & heating plus power for all onboard electronics.
 3. Once the vehicle is in park mode, the system shuts down engine and provides all required power from lithium ion battery source.
 4. For extended stationary use of vehicle, the system manages engine start/stop to recharge batteries as needed.



IMPAC eGEN Lithium-Ion System

- Practical, clean, green power solution for extended runtime of onboard electronics and jobsite tools
 - Advanced energy storage & multiple charging sources enable an independent power system
1. The IMPAC eGEN system offers a dedicated high power density lithium ion battery bank to run HVAC, hotel loads and tools.
 2. The lithium battery pack delivers **10-12X** life cycle of traditional batteries.
 3. The battery pack may be replenished via multiple sources including high output auxiliary alternator, solar and shore power when plugged in.
 4. The system may be used in conjunction with a generator but it significantly reduces generator runtime or may eliminate its use altogether.



MCE VEHICLE POWER

