

*“Conservation through Innovation”*

# Real Idling Problems – Real *Anti*-Idling Solutions

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# Introduction

Robyn Knocke  
Energy Xtreme

Located in Austin, Texas

## *Power Solutions Company*

### *Remote power*

*inverter/generator replacement, light towers, hybrid mobile trailer, ELSAG trailer, PELSUE*

### *Consulting*

*energy efficiency, carbon consulting, project management, technology integration, grant writing.*

### *Power Integration*

*large scale load leveling, micro grid, peak shaving, blink less power supply, demand curtailment, pragmatic renewable platforms.*

### *Design*

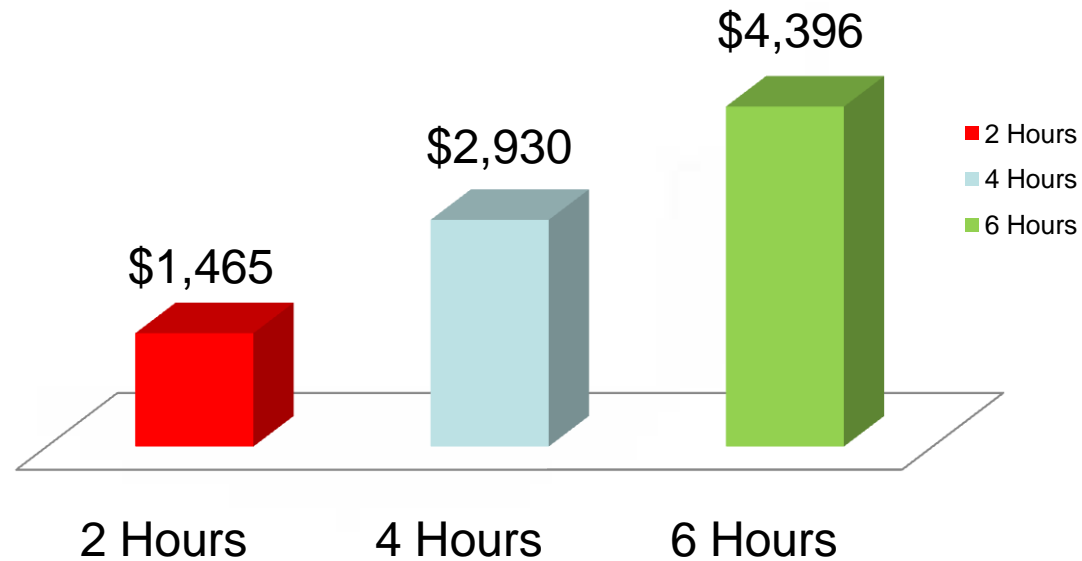


# Real Idling Problems

1. Escalating Cost
2. Legislation/Emission Constraints
3. Technology/Efficiency Limits



# -Escalating Cost- Annual Fuel Savings Per Vehicle



Assume :

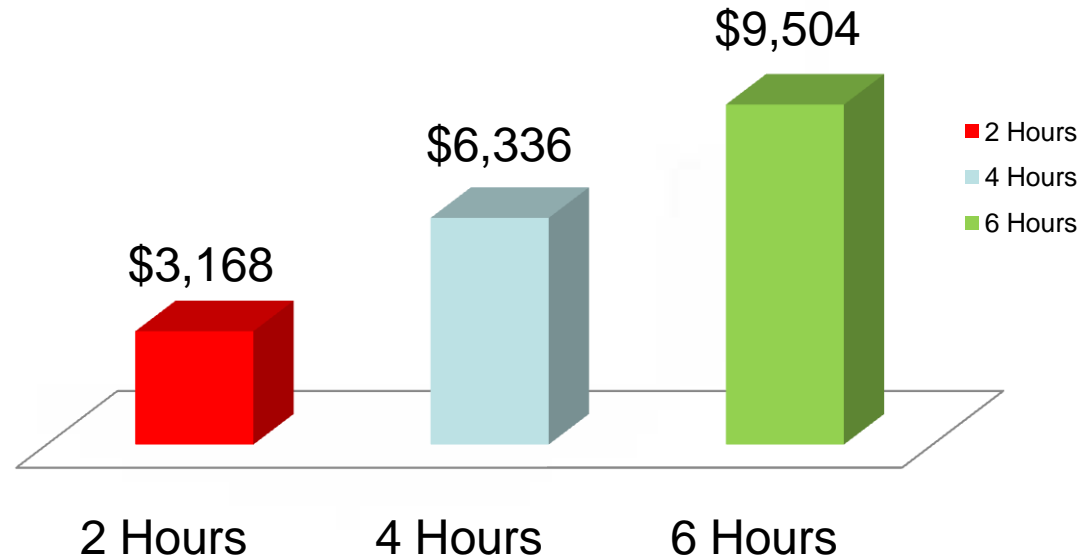
**\$1.85/gallon**

1.5 gal burned / hour idled

22 work days / month



# -Escalating Cost- Annual Fuel Savings Per Vehicle



Assume :

**\$4.00/gallon**

1.5 gal burned / hour idled

22 work days / month



# -Escalating Cost- Fleet Maintenance

Each hour idled equates 35 miles driven on your engine.

- Idling—Subpar performance



# -Escalating Cost- Increased Liability/Health Hazard

Combustible engines are dangerous!

Ambient Air Quality:

- Micro-
  - Chronic illness to death by asphyxiation
  - Workman's compensation
  - Transportation of combustible fuels
- Macro-
  - Carbon constrained markets
  - Cost of health impacts, local, regional, global.



# Emissions

“23lbs of CO<sub>2</sub> is created per gallon of gasoline burned.” EPA

## Argonne Laboratories

Small to Medium Duty Fleets create over 23 billion pounds of emissions annually, **Idling.**

### Annual Emissions Profile:

11 million tons of carbon dioxide

200,000 tons of nitrogen oxide

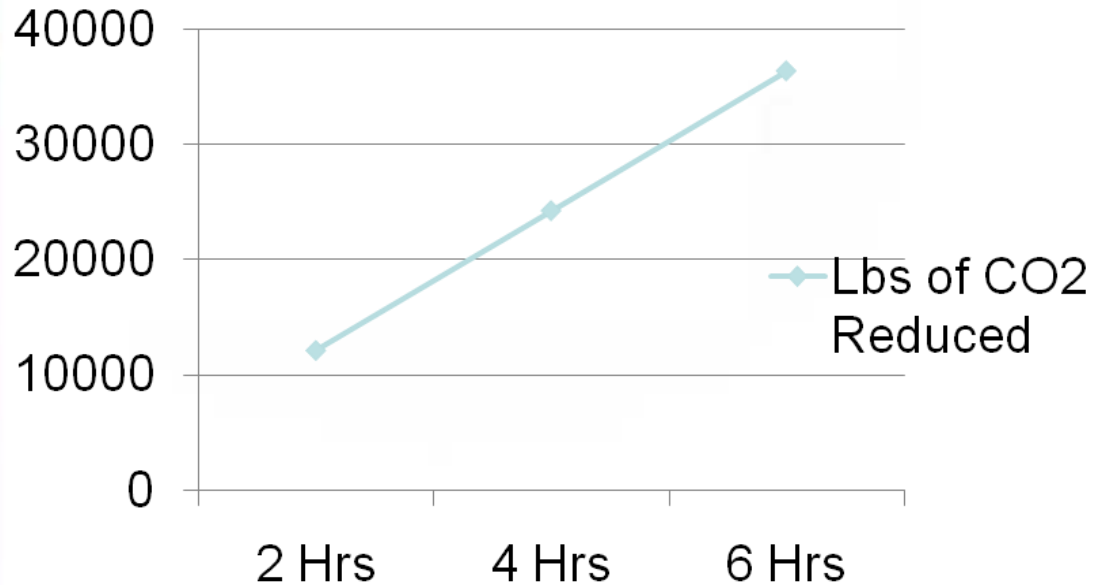
5,000 tons of particulate matter



# Lbs. of CO2 Reduced Annually



## Lbs of CO2 Reduced



Assume

1 Gallon of Gasoline Burned  
creates 23 lbs of CO2 –  
EPA

22 work days/month

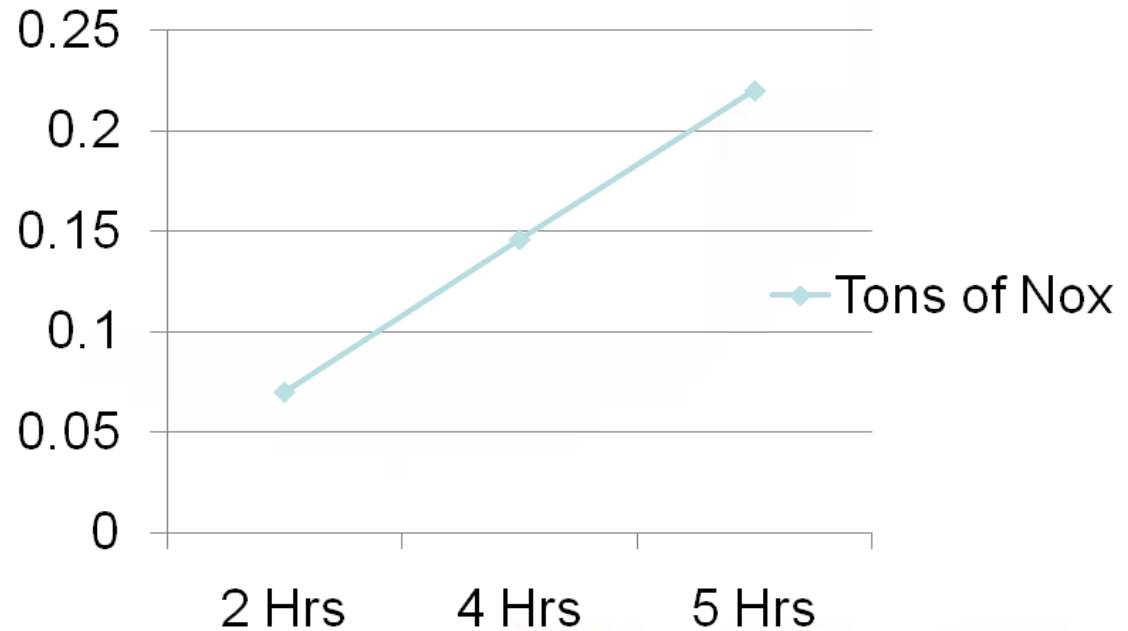
1 gal gas burned/hour idled



# Tons of NOx Reduced Annually



**Tons of Nox**



Assume:  
1 gallon of fuel  
burned per hour  
idled



# Real Idling Solutions



# Power Cell Technology



NO EMISSIONS

Non-Hazmat, dry, solid state

No Maintenance

Highly Resilient; abuse tested, short circuit, high current, high temp (130 degrees)

Excels at 24/7 operations

Recyclable, buyback program

5-10 year life

Capable of Running AC, DC & LED lights



# Background

Originally Developed by Tracor - US Defense Contractor – now part of British Aerospace

10+ years ago

Technology based on Material Processes for Aerospace Weapons Countermeasures

Other Contributing Companies/Associations

- EPRI – Electric Power Research Institute
- Ford
- Chrysler
- Owens Corning



# Mobile Units

Power Output: 5000 Watts

Power Output Peak: 10,000 Watts

Output Voltage: 110VAC &  
220VAC & DC

Output Frequency: 60 Hz

Circuits: 20, 30 and/or 50 Amps

Capacity: 2000 – 4000 kW Hrs

Starting Power: 2500 Amps



# Vehicle Mounted Units

Power Output: 5000 Watts

Power Output Peak:  
10,000 Watts

Output Voltage: 110VAC  
& 220VAC & DC

Output Frequency: 60 Hz  
Circuits: 20, 30 and/or 50  
Amps

Capacity: 4000 – 10,000  
kW Hrs

Starting Power: 2500  
Amps



# Independence Package Specifications



Starting Power	2500 Amps
Power Cell Capacity	2000 Whrs
Charger Input Voltage	115 VAC
Charger Input Power	950 Watts
Charger Output Current	55 Amps

Enclosure Powder Coated Aluminum  
Dimensions (LxWxH) 12.25" x 8.75" x 33.25"  
Weight 140 lbs

Options:  
High Output Alternator  
Pure Sine Wave Inverter  
Heavy Duty Jumper Cables



# Satisfied Customers

**City of Austin, Texas**

**Farbor**

**Tuff Sheds**

**Friday Night Lights**

**City of Louisville, Kentucky**

**ELSAG North America**

**Disney**



# Other Storage Applications



Large Scale Utility Grade Applications

Austin Pecan Street Project/SmartGrids

Wind Farms

Solar Farms

Load Leveling/Peak Shaving



# Thank you!!

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