

A faint, light blue diagram in the background of the main section. It depicts a central vertical structure with two circular components, from which several concentric, glowing circular arcs emanate, representing the propagation of electromagnetic waves or energy fields.

# **WIRELESS ELECTRICITY**

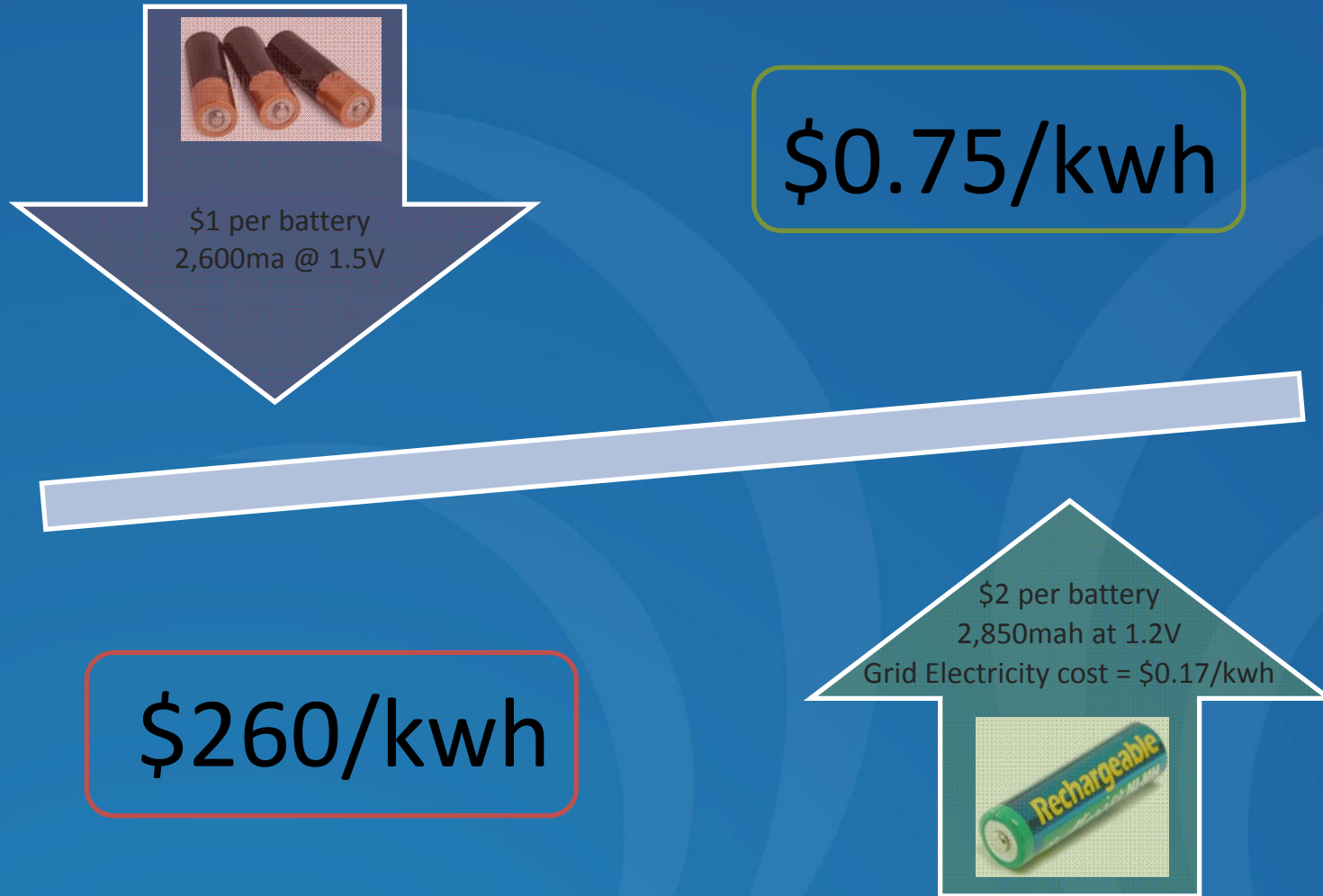
**SAFE, EFFICIENT & OVER DISTANCE**

# Power Cords & Disposable Batteries

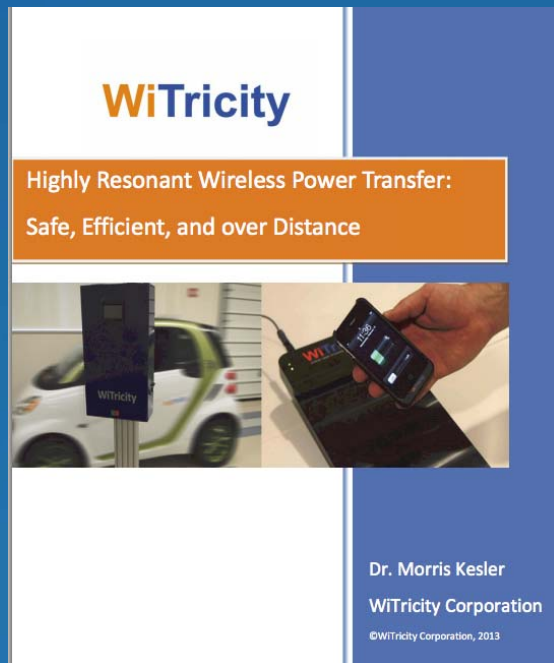


# Total Cost of Ownership

## *Disposable vs. Rechargeable Battery*



# WiTricity is Wireless Electricity



*Safe*



*Efficient*

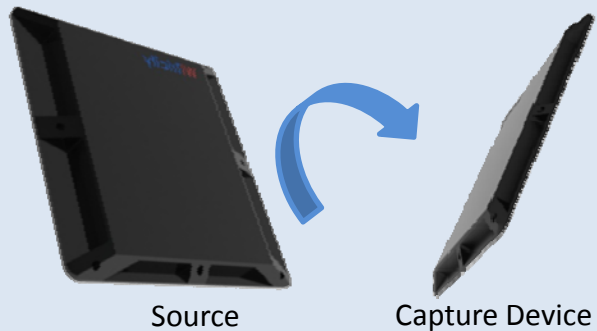


*Works Over Distance*



# Technology Benefits

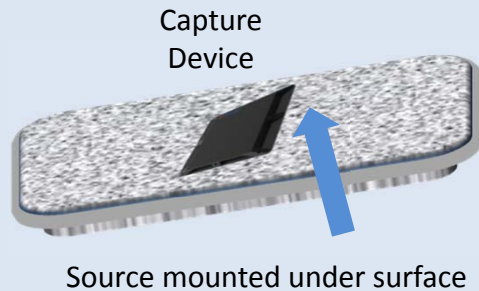
**Flexible orientation** between the source and capture device(s)



**Supports multiple devices** with differing coil sizes and power requirements



**Powers through surfaces** including wood, granite, plastics, glass, and more



**Extended wireless range** with WiTricity *Resonant Repeaters*



# How It Works

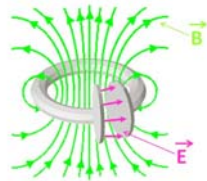
## Resonance

Stored energy *oscillates* between two modes



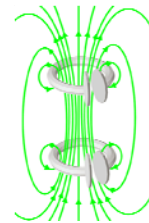
## Magnetic Resonator

Stored energy oscillates between *magnetic* (B) and *electric* fields (E)



## Coupled Resonators

*Efficient* and *selective* energy transfer can be achieved between *high Q* magnetic resonators



Safe and Efficient Energy Transfer Over Distance and Through Materials

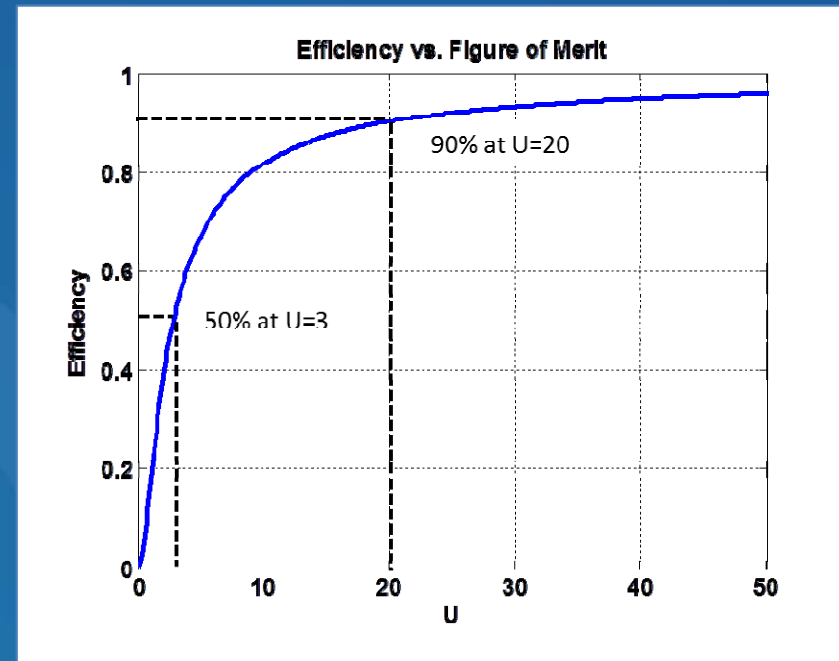
# Efficient Energy Transfer Over Distance

$$\eta = \frac{U^2}{\left(1 + \sqrt{1 + U^2}\right)^2}$$

Optimum efficiency  $\eta$  is only a function of the figure-of-merit  $U$

$$U = \frac{\kappa}{\sqrt{\Gamma_1 \Gamma_2}} = k \sqrt{Q_1 Q_2}$$

Coupling and Quality factor are important parameters



*Resonators with **High Quality** factor enable efficient energy transfer over distance*

# Application: Consumer Electronics



Wireless Charging  
of Mobile Devices  
(through surfaces)



Wireless Rechargeable  
Batteries (charge  
in the device)



Wireless Charging of  
Laptops & Peripherals  
(multiple devices)

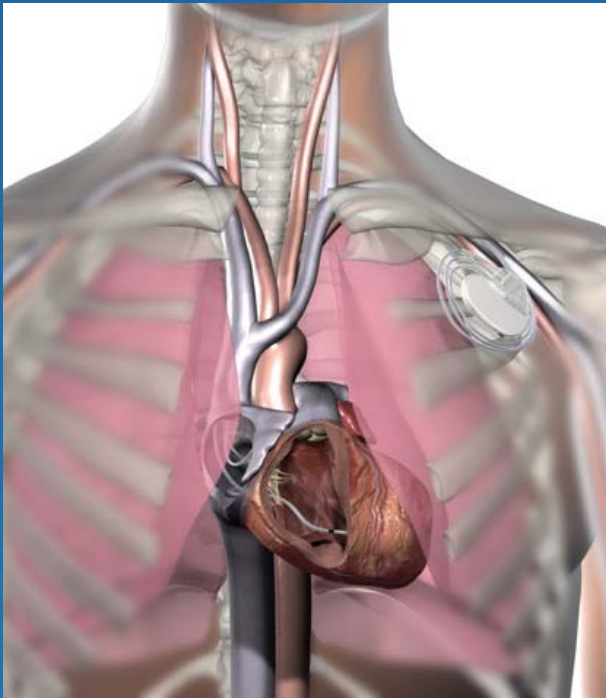


# Application: Automotive



Wireless Charging  
of EVs and HEVs

# Application: Medical

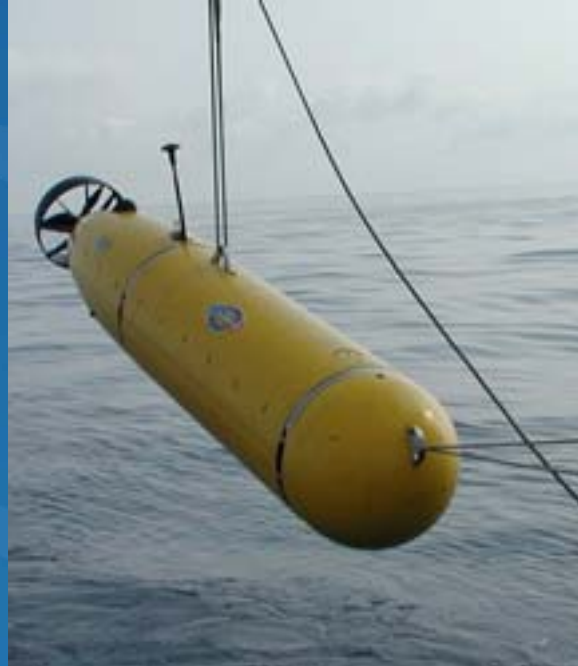


Implantable Devices: LVADs & CRMs, Opthmalic & Cochlear  
Surgical & Handheld Devices, Mobile Equipment Carts

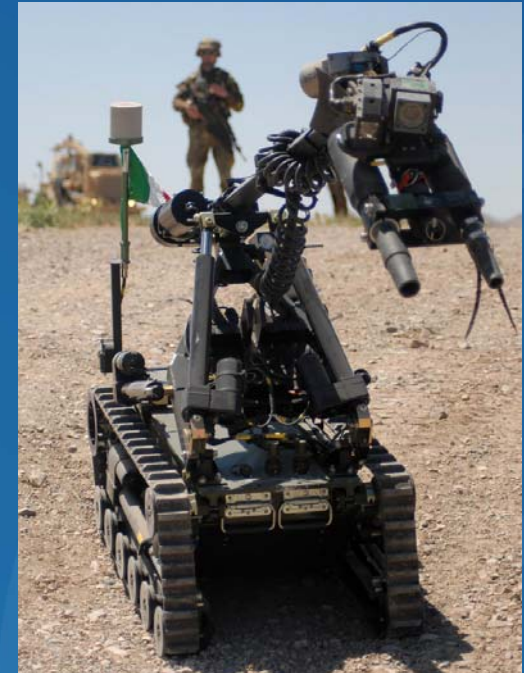
# Application: Defense



Wireless Charging  
for Soldier  
Electronics to Extend  
Battery Life



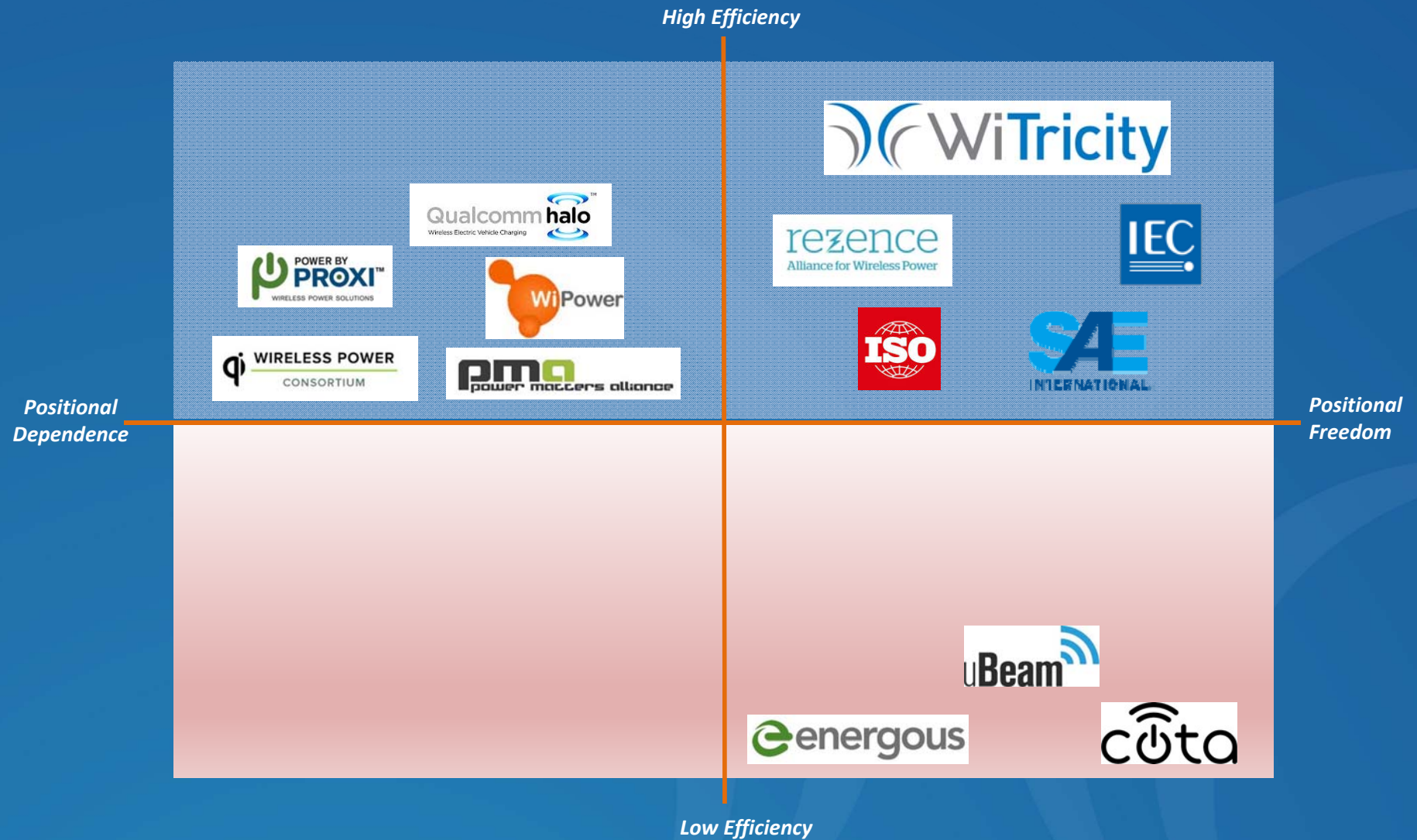
Wireless Charging  
of UUVs



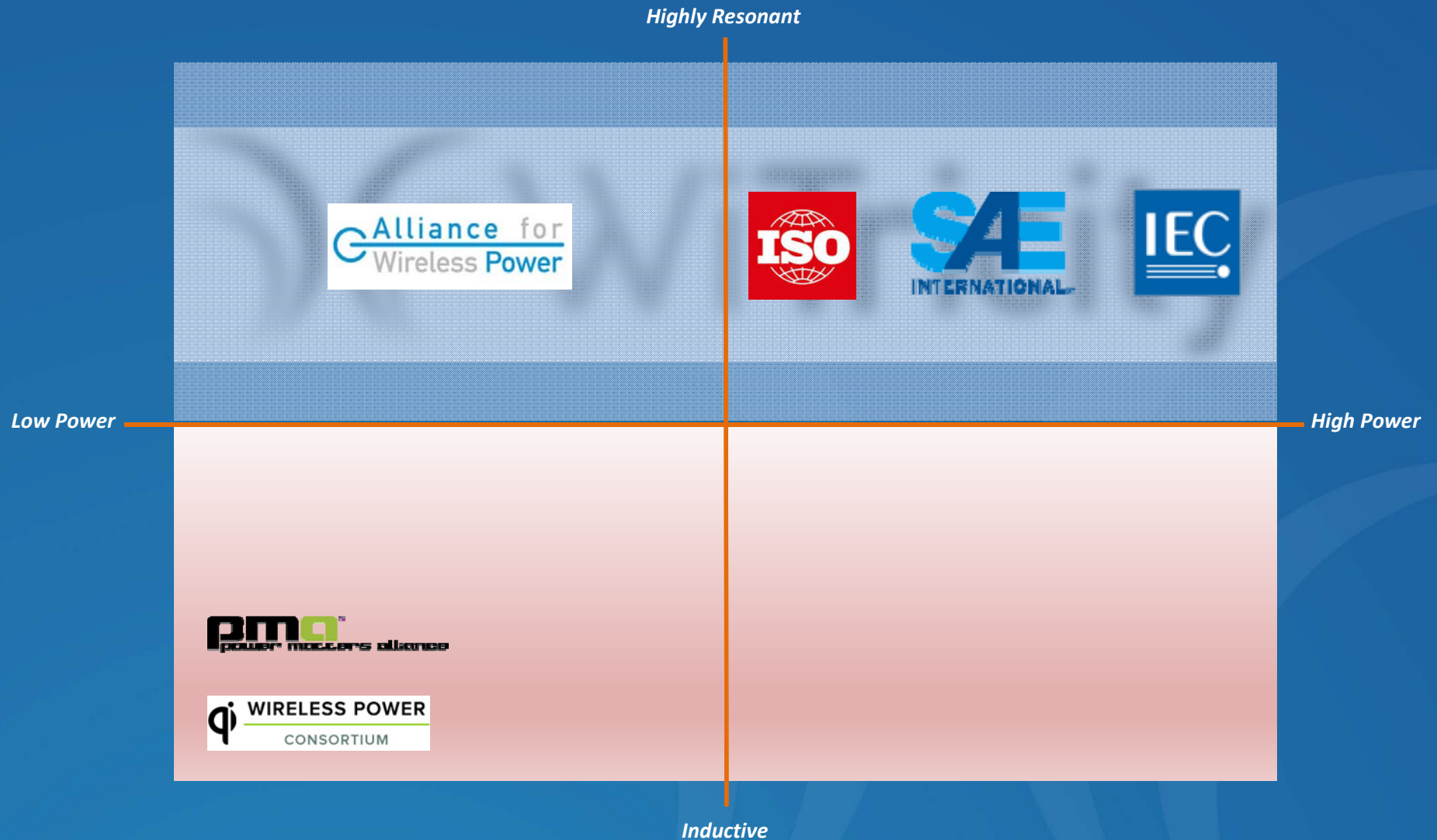
Wireless Charging  
of Military Mobile  
Robots in the  
Battlefield



# Market Landscape



# Standards Landscape





# Working with Wireless Electricity



- Take advantage of existing reference designs
- Reduce your time-to-market through technology transfer
- Accelerate development with Software tools that simulate the application environment
- Leverage custom development services & support

*WiTricity – The foundational technology for highly resonant wireless power transfer*

**“Any Sufficiently  
Advanced Technology is  
Indistinguishable from  
Magic”**

Arthur C. Clarke, 1961  
The Third Law