



# **Rapidly Deployable Renewable Power Systems**

**JSEM, NDIA**

**May 24, 2007**

**David J. Muchow, President and CEO**

# SkyBuilt Power

## Company Profile

- **Leading Renewable Energy Systems Integration Company, Arlington, VA**
- **Leader in solar, wind, and other renewable energy power systems.**
- **Some can set up in hours to a day or two and run for years with no fuel and little maintenance.**
- **Advantages:**
  - **Cut energy costs: fuel and maintenance**
  - **Cleaner power**
  - **More reliable power on or off the grid**
  - **Rapid deployment Ideal for government, commercial, military, and Homeland Security markets**



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## Some Areas of Interest

- How can we provide power without logistics, pollution, radar signature?
- How can we cut the rising cost of fuel, logistics, and manpower?
- How can facilities and bases comply with tightening clean air, noise and other pollution standards?
- How can we reduce IED events in the field?
- How can we win the hearts and minds of the people with leave behind renewable power stations?



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## Company Profile

Experienced, Well Connected, Arlington, VA Team

- **Chairman of the Board, William G. Buck**
  - President, William G. Buck and Associates, former manufacturing CEO and principal in other businesses
- **President and CEO, David J. Muchow**
  - Business executive, former General Counsel, Director, International Programs, American Gas Association, National Security Council, OMB, DOJ, Capitol Hill, mutual fund officer, principal to various energy firms
- **Vice President, Scott Sklar**
  - Former Executive Director, Solar Energy Industries Association (SEIA) and BioEnergy Industries Association, 30 years energy experience



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## Other Board Members: Seasoned Leadership

- Lt. Gen. John Fairfield, (USAF, Ret.), Officer, IBM; formerly DynCorp; Deputy Chief of Staff, Communications and Information, USAF
- Sen. Edward Holland, former Senator, banking executive, attorney
- David Holmes, Vice President, defense firm.; former Counselor to Executive Director, CIA and Deputy General Counsel, CIA
- Kenneth Schweers, former President, ICF Kaiser Consulting Group and former COO, Development Alternatives, Inc.
- S. Kinnie Smith, Jr., former Vice Chair and General Counsel, CMS Energy, Michigan – major electric and natural gas utility
- Robert Hahne, former Managing Director, Utility/Energy Practice, Worldwide, Deloitte & Touche LLP



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- In 2006, the Pentagon's fuel bill reached \$13B.
- IN FY04, US military fuel consumption increased to 144 million barrels. IN FY05, it fell to 132,788 (Defense Energy Support Center Fact Book 2005).
- DoD deployed fuel costs vary...
  - The current cost of petroleum to DoD is \$2/gallon or \$84/barrel (DESC)
  - The Army estimates the average cost of deployed fuel to be \$7 - \$8/gallon or \$294 - \$336/barrel.
  - PM-Mobile Electric Power estimates the average cost of deployed fuel to be ~\$14/gallon.
- ...but all estimates respond

## Impact of Petroleum Market Fluctuations on DoD Fuel Costs

to changes in market price:

Market Price		Estimated DESC Price		Estimated Army Deployed Price	
(\$/gallon)	(\$/barrel)	(\$/gallon)	(\$/barrel)	(\$/gallon)	(\$/barrel)
1.5	63	2	84	7	294
1.67	70	2.16	91	7.16	300.72
1.90	80	2.40	101	7.40	310.80
2.14	90	2.64	111	7.64	320.88
2.38	100	2.88	121	7.88	330.96
2.61	110	3.11	131	8.11	340.62

As of 12 July 06,  
Market Price was  
\$74.09/barrel

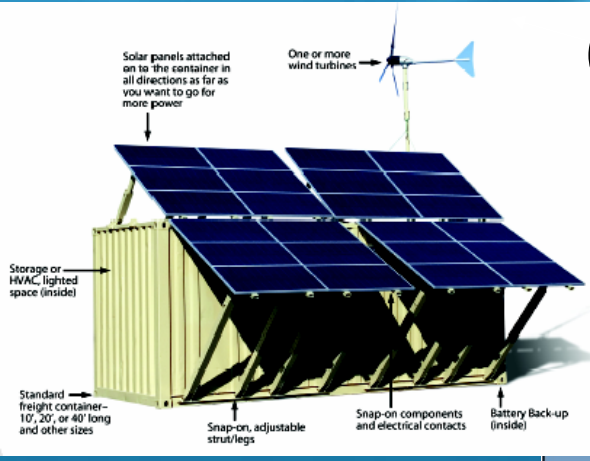


# Next-Generation Technology Concepts

## Hybrid Power Generation

Opportunities to insert mature technologies into operations—plug-and-play energy concepts.

## Rechargeable Batteries and Portable Chargers



BA-3058s (AA Batteries)

BB-2590s

Developed by Army  
CECOM



## Garrison Recharging Stations



PP-8498U



PP-8481B/U



Solar



Wind



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- **An Ideal Power Solution**
  - **Power without fuel**
  - **Sets up in hours runs for years**
  - **Virtually no maintenance**
  - **Mobile – air, rail, road, sea**
  - **Plug and Play like a computer**
  - **Any power source in and out – hybrid**
  - **Operates in any climate - rugged**
  - **Expandable .5kW to 150kW or more**
  - **Any Commercial Components**





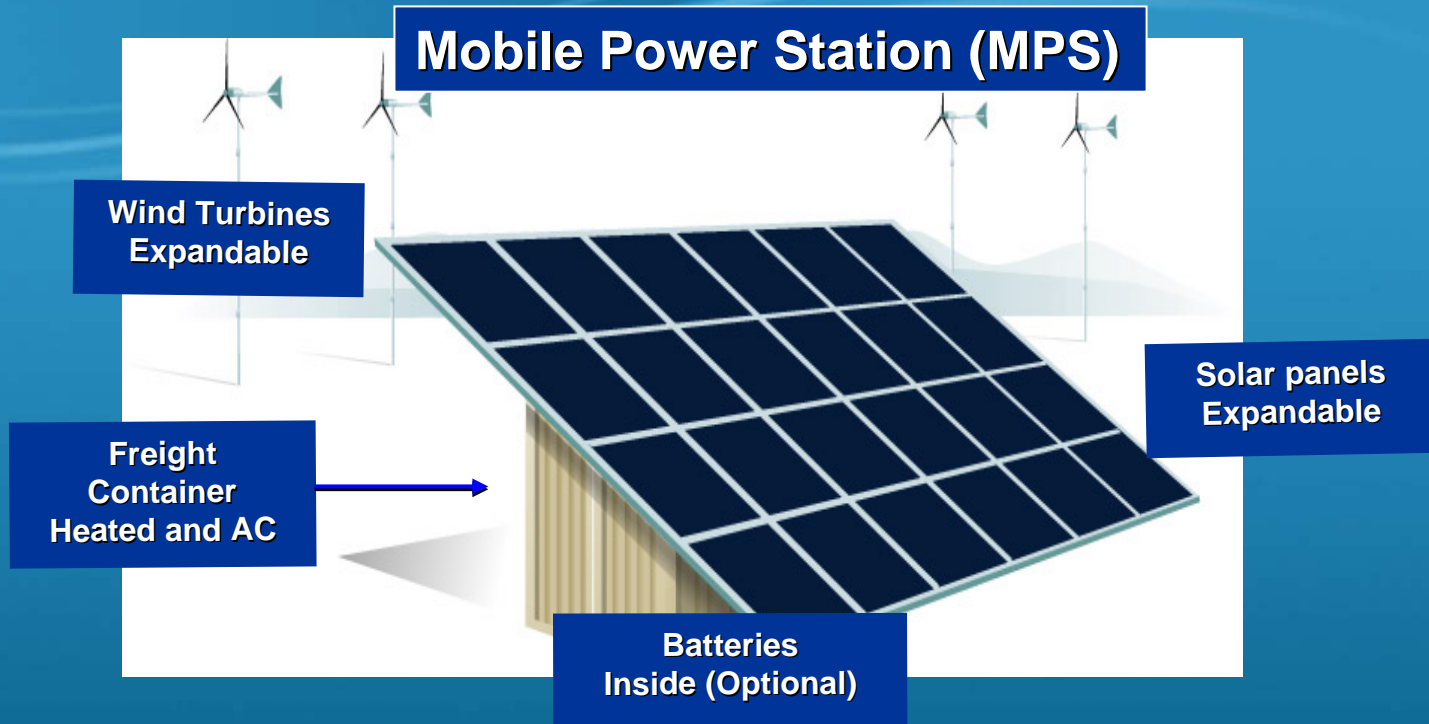
# SkyBuilt Power

## SkyBuilt's Innovative Products, Fixed or Mobile: An example:

- SkyBuilt's Mobile Power Station (MPS)
- The world's first renewable energy, mobile power station -- sets up in hours or a day or two, runs for years with no fuel and virtually no maintenance -- or can use renewables + any fuel.
- Comes self contained in a standard freight container or on a trailer. Demo located at 1425 N. Quincy Street, Arlington, VA.



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Like the PC that revolutionized the computer industry and made computers easier to use, SkyBuilt's Mobile Power Station can do the same things for renewable energy world-wide.



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...take the components out of the container...



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## How Can I Use It?

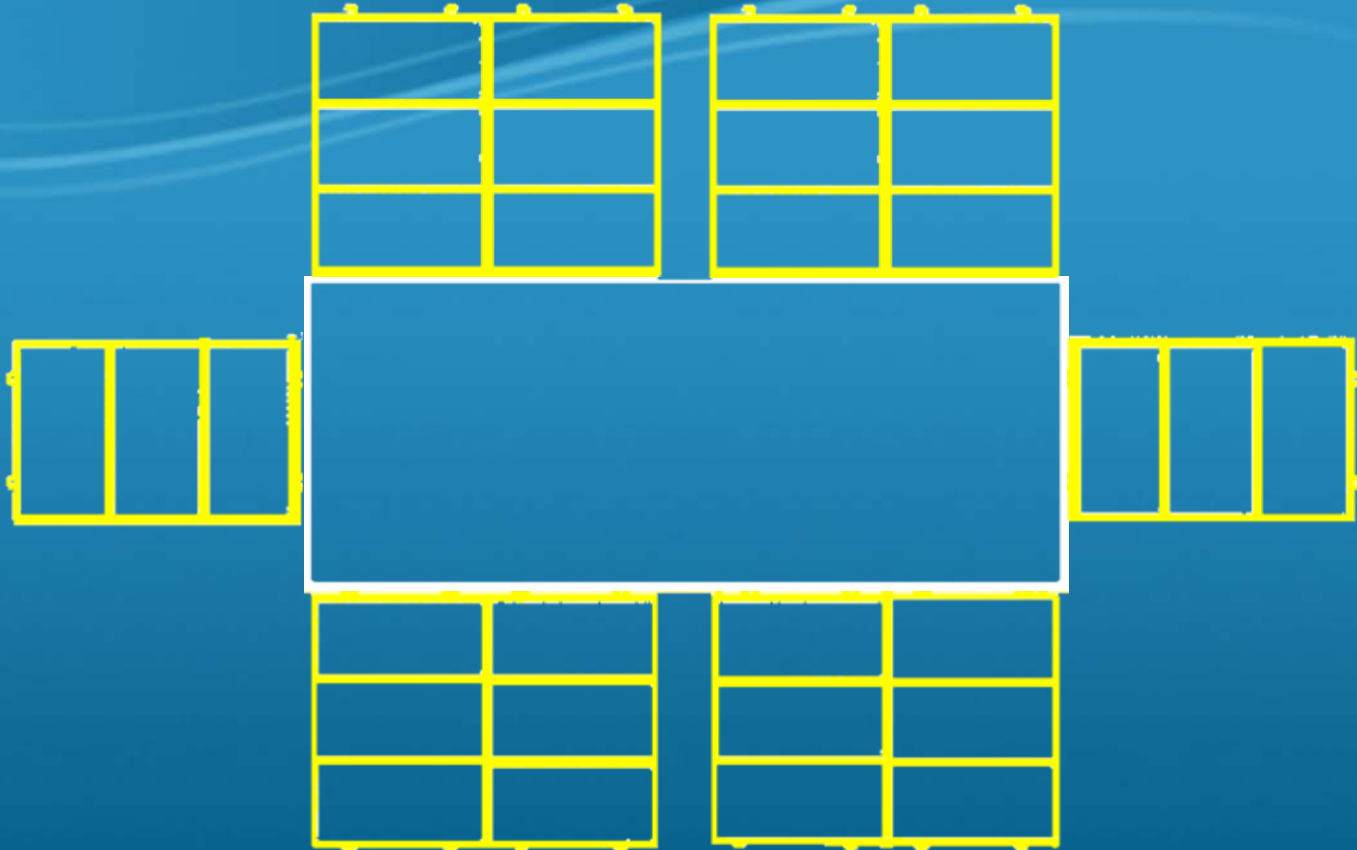
Use the inside for lots of applications —



- An HVAC conditioned office
- All-purpose storage facility
- Telecom center
- Emergency operations and command center
- Or use it to pack in more power



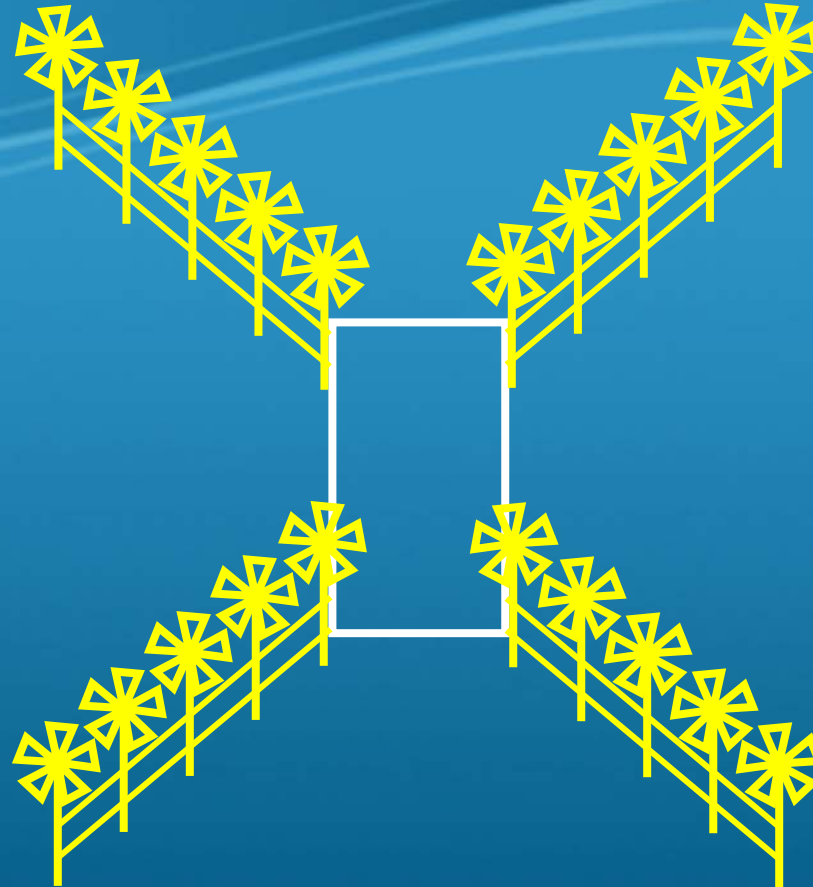
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**Instant Solar Farm - Just add more solar panels**



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**Instant Wind Farm - Just add more Wind Turbines**



[www.skybuilt.com](http://www.skybuilt.com)

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**SkyBuilt's Renewable  
Humvee Pullable Trailer**

**Cut fuel use, quiet, more  
reliable, low heat/radar  
signature**

**Solar + Wind + Batteries +  
Backup Diesel Generator**

**Deploys in 45 min.**



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## SkyBuilt's Fold Out Instant Solar



[www.skybuilt.com](http://www.skybuilt.com)



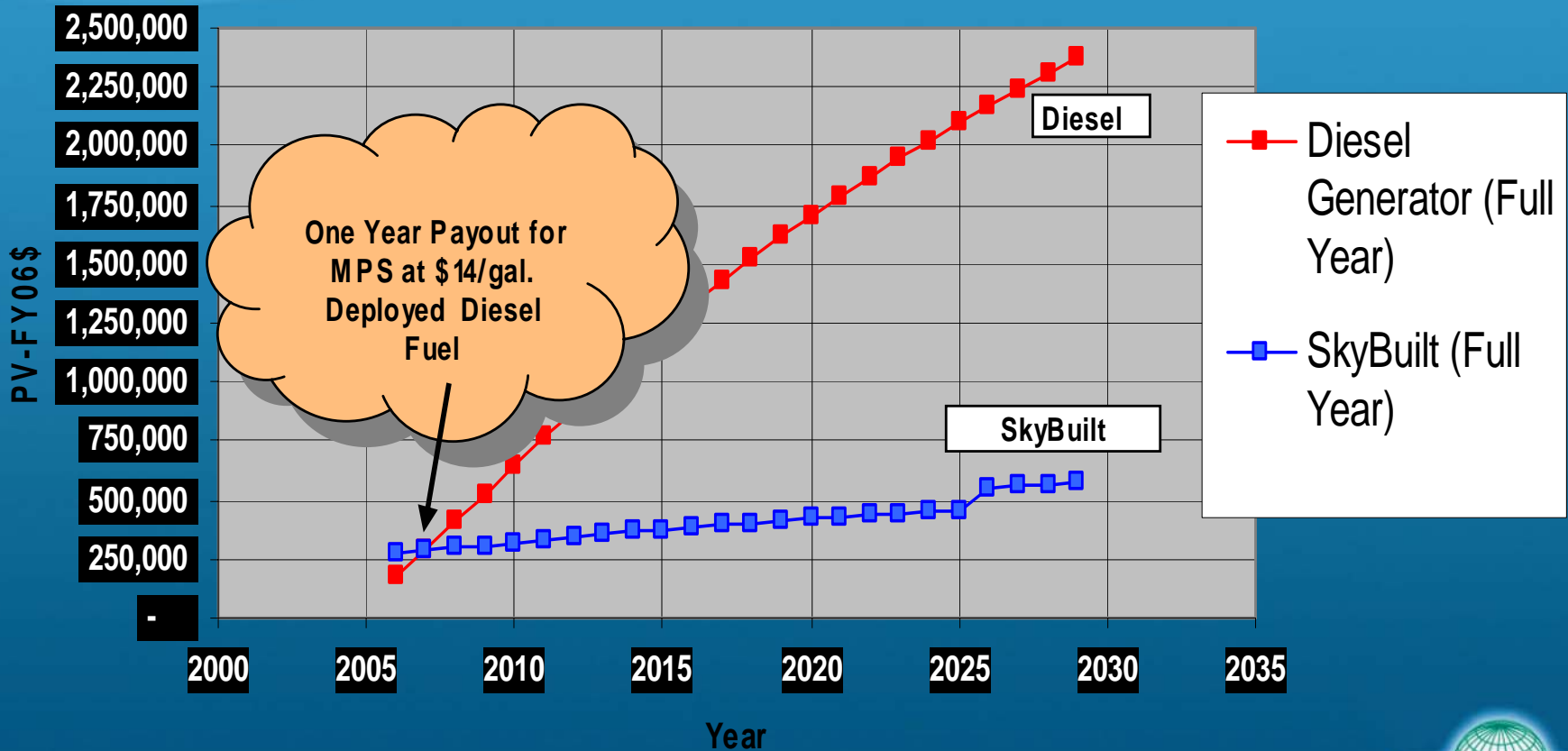
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## Instant Solar Deployed



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## Life Cycle Costs Diesel vs. SkyBuilt's MPS



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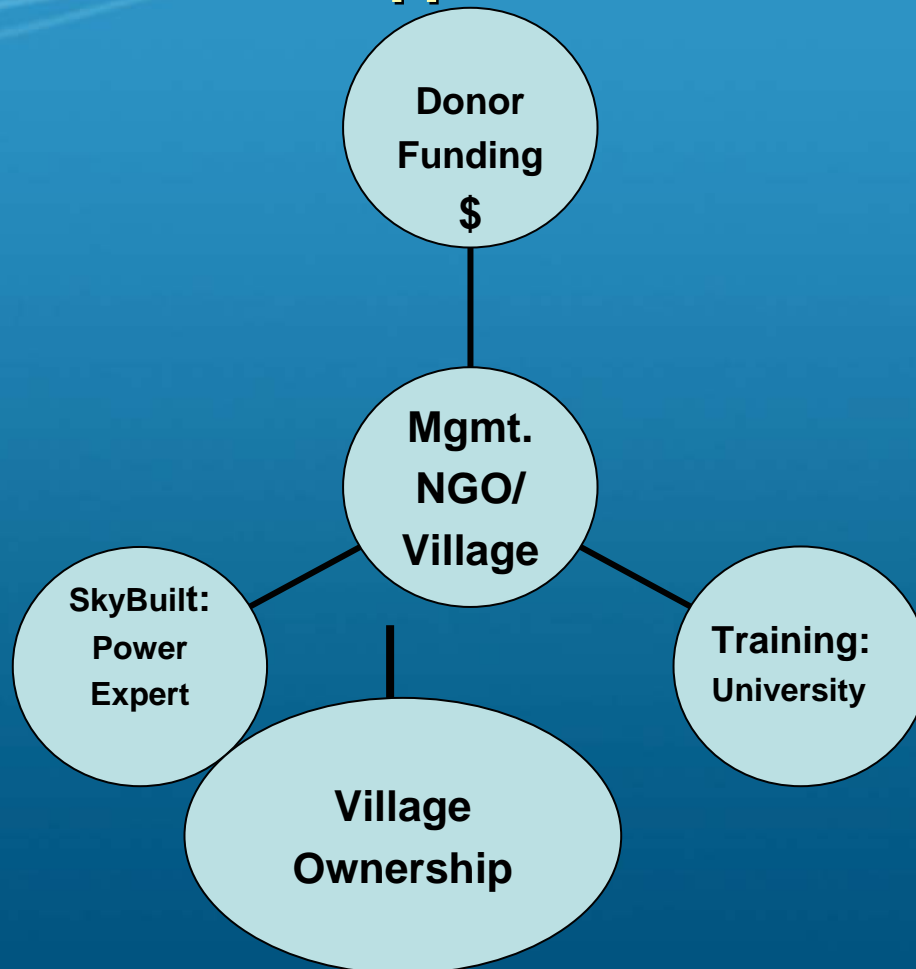
## The Need for Water - SW Ethiopia



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## Structure for Sustainable Economic Development – Holistic Approach



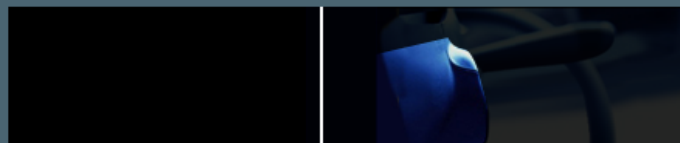
# Defense Industry Daily

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Posted 23-Aug-2006 12:19

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On July 25, 2006 Al-Anbar commander and U.S. Marine Corps Maj. Gen. Richard Zilmer submitted an MNF-W priority 1 request pointing to the hazards inherent in American supply lines, and noted that the up to many of the supply convoys on Iraq's roads (up to 70%, by some studies) are carrying

fuel. Much of that fuel isn't even for vehicles - it's for diesel generators used to generate power at US bases et. al. In response, the document requests alternative energy solutions to power US forward operating bases... and the US military looks like it will act on the request.

DID has covered a number of Pentagon projects to use alternative energy at various installations, but Zilmer's request is believed to be the first formal request from a front line commander. Not to mention the first formal request that acknowledges the security dimension of alternative energy sources in response to the growth of "systempunkt" terrorism and the non-linear battlefield. This is also an issue of cost, and reports indicate that foresighted CIA venture funding has even produced a front-runner for the coming contracts...

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## Competitive Advantage – Some Examples:

- “If you have a unique power need that is off grid and you want something that can deploy quickly, is rugged and will last for a long time, *SkyBuilt is who you call*. The CIA shouldn’t be the only one to benefit.” Pure Energy Systems News, emphasis added, 10/20/2005.
- Maj. Gen. Zilmer, head of Multi-National Forces West, in Iraq, urgently requests renewable power systems, “*singles out the Mobile Power system (MPS) a containerized solution built by SkyBuilt...*” Defense Industry Daily, emphasis added, 8/23/06.



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## Competitive Advantage (cont'd.)

- **“SkyBuilt Aims to Be the Dell of renewable energy systems,”** Open Source Energy Network, 10/20/2005
- **“SkyBuilt Wins Energy Award for its Revolutionary Mobile Power Station,”** Netscape, Money and Business, 5/3/2006.
- **“In Iraq, SkyBuilt systems could cut costs by 75 percent.”** USA Today online, 9/9/2006.



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