



ACCO Defense, National Security and Climate Change Workshop

Washington, D.C.

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 June 25, 2012

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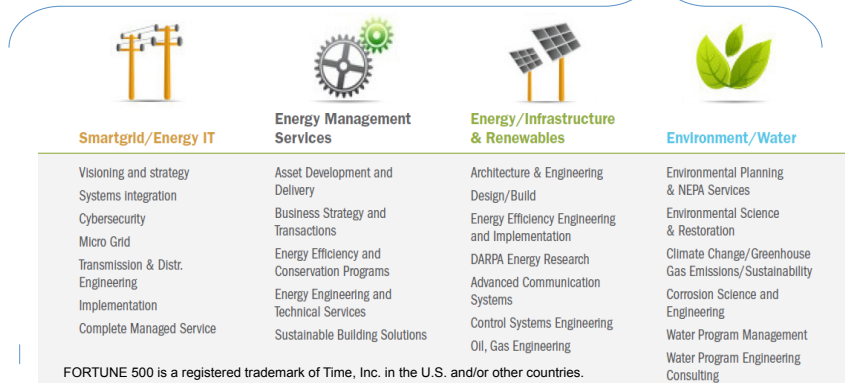
Background on SAIC

Profile

- \$10.6 billion in annual revenues for fiscal year ended January 31, 2012
- FORTUNE 500® Company – No. 245

Focus Areas

- National Defense
- Critical Infrastructure
- Health
- Energy
- Environment



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SAIC Industry Rankings

Fortune

#6 World's Most Admired Companies: IT Services (March 2012)

Newsweek

#44 500 Greenest Big Companies in America (October 2011)

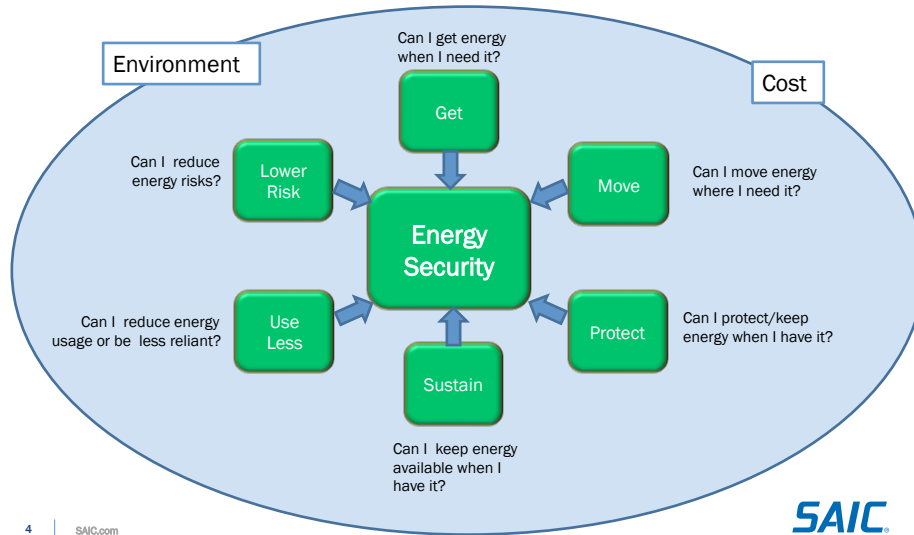
Verdantix

Leader Green Quadrant Sustainable Engineering (2010)
Leader Green Quadrant Environmental Services Firm (2012)

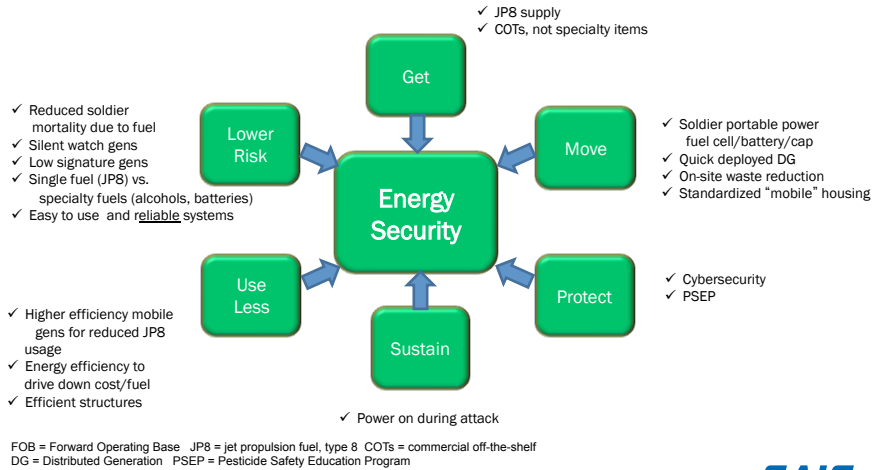
Engineering News Record

#19 Top Design Firms in Power (April 2011)
#9 Top 15 Transmission and Distribution (July 2011)
#8 Top 50 Program Management (June 2012)
#44 Top 100 DesignBuild (June 2012)
#33 Top 500 Design (April 2012)
#19 Top 200 Environmental Firms (August 2011)
#219 Top 400 Contractors (May 2012)
#19 Top Fossil Fuel (July 2011)
#9 Top 100 Construction Management-for-Fee (June 2012)

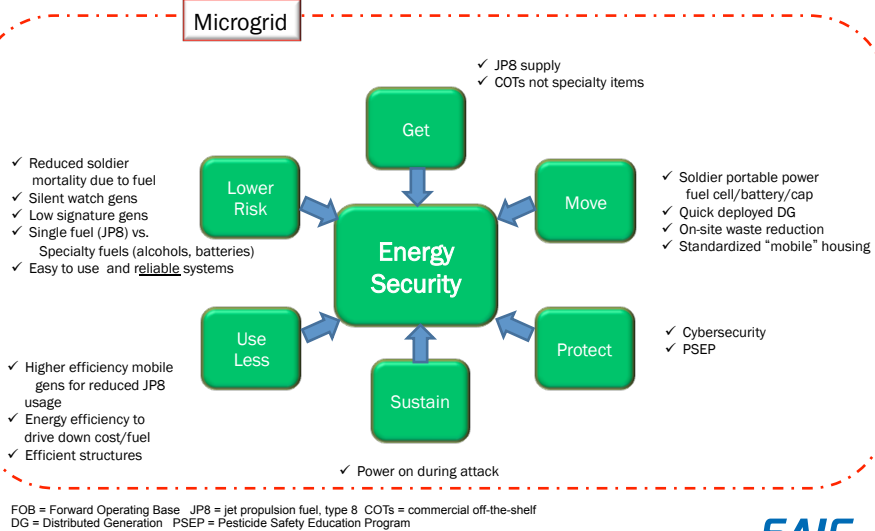
Energy Security



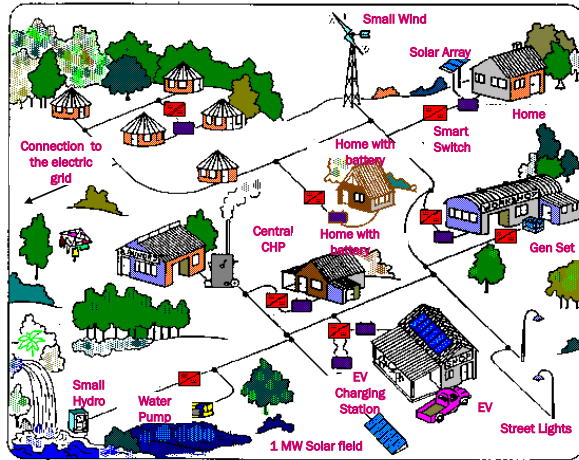
U.S. FOB Issues



U.S. FOB Issues



What Is a Micro Grid?

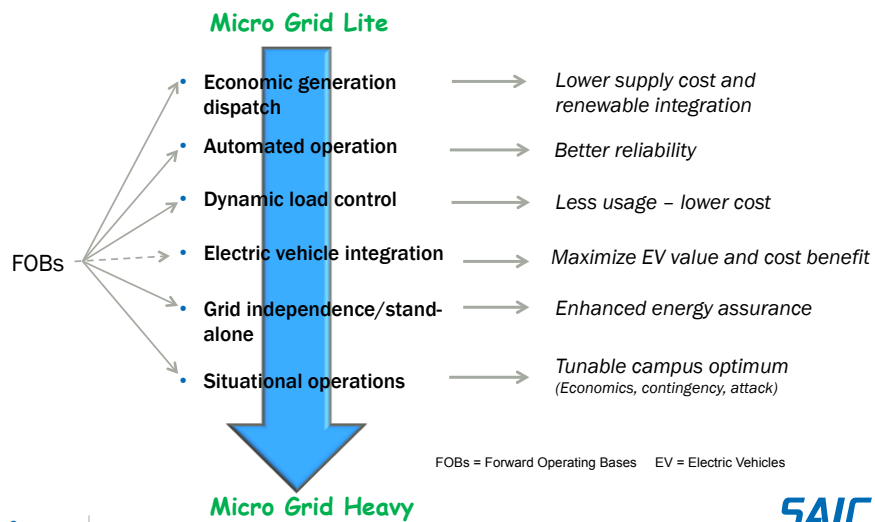


CHP = Central Heating Plant EV = Electric Vehicle Gen Set = Generator Set
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In simplest terms, a micro grid is a small, electric utility that can be separated from the larger electrical grid for stand-alone, independent operation, when needed.

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Not All Micro Grids Are Equal



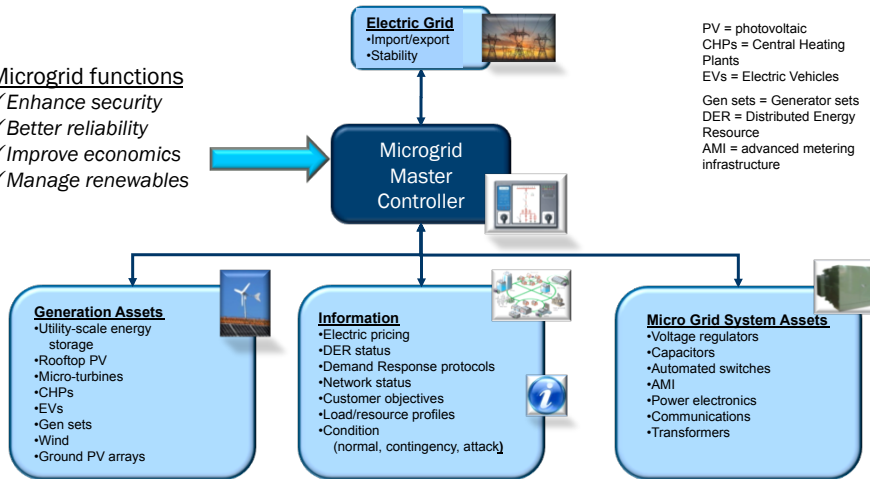
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Micro Grid Architecture

Microgrid functions

- ✓ Enhance security
- ✓ Better reliability
- ✓ Improve economics
- ✓ Manage renewables



PV = photovoltaic
 CHPs = Central Heating Plants
 EVs = Electric Vehicles
 Gen sets = Generator sets
 DER = Distributed Energy Resource
 AMI = advanced metering infrastructure

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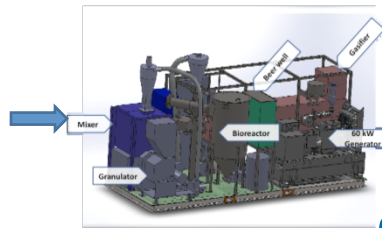
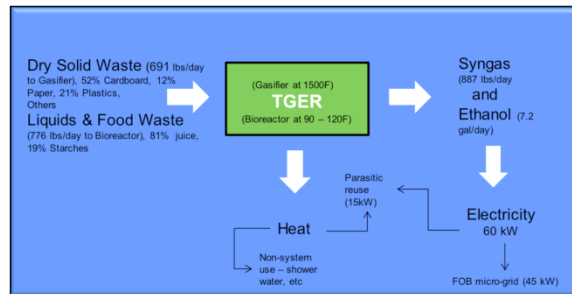
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Diagram modified from original source: Horizon Energy Group

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SAIC Cutting-Edge Technologies: TGER Waste to Energy



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TGER = Tactical Garbage to Energy Refinery

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SAIC's Innovative SLiM "OutPost"

Solar Panels for Hot Water

Daylighting With Blackout Shades

Kevlar® Panels

SHOWER MODULE 3

LATRINE MODULE 2

SLEEPING MODULE 7

SLEEPING MODULE 8

SUPPORT MODULE 1

SLEEPING MODULE 4

SLEEPING MODULE 5

SLEEPING MODULE 6

LED Lighting

Folding Bunks

Storage Lockers

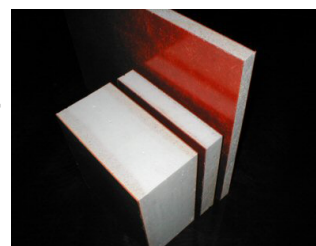
POSSIBLE CONFIGURATION

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SAIC SLiM Construction Features

- Elevated above ground
- Leveling feet
- Lightweight polycarbonate wall panels
- Mounting rails for storage racks, tables, gear clips
- Power strips on interior walls
- Ballistic windows with collapsible awnings for blackout conditions
- Roof-ceiling system
 - Water collection
 - Mounting brackets for solar panels or wind mills
 - Interior lighting
 - DX System for heating and cooling



DuraSip Phenolic-Fiberglass Panels

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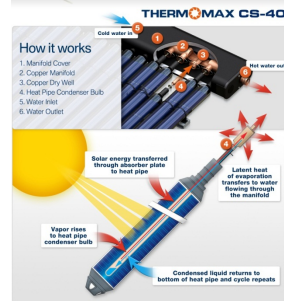
DX = Direct Exchange

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SAIC SLiM: Energy Efficiency Features

- Wall panels R-factor = R24
- Awnings shade windows to prevent radiation heat exchange between interior and sky
- Dimmable LED lighting
- Solar heating of water (for showers and sinks)



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SAIC SLiM: Energy Efficiency Features

- SAIC's micro grid links energy sources, storage, power conditioning and distribution
 - Provides capability to integrate various energy harvesting technologies
 - Solar-voltaic power generation
 - Wind power generation
 - Thermo-electric effect (emerging technology from vendor/teammate)

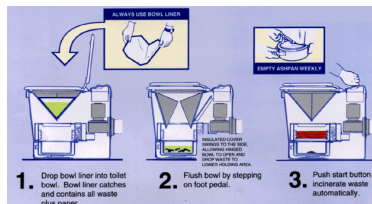
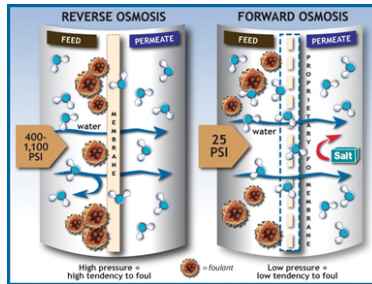
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SAIC SLiM: Water and Waste Management Features

- **Gray water collection**
 - Rainwater
 - Shower water
- **Gray water filtration**
 - For shower water re-use
 - For potable water
 - NASA developed Forward Osmosis Filtration System
- **Black water**
 - Incinolet[®] latrine



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What's Next?

- "Soldier as a micro grid" concept?
 - Power management
 - Micro grid controller
 - Demand management
 - Power plant development
 - Steady state (72 hours at 500W) – fuel cell
 - Supplemental – battery
 - Burst – ultracaps
 - Wireless charging



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Thank you

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