

# *Micro Grids*



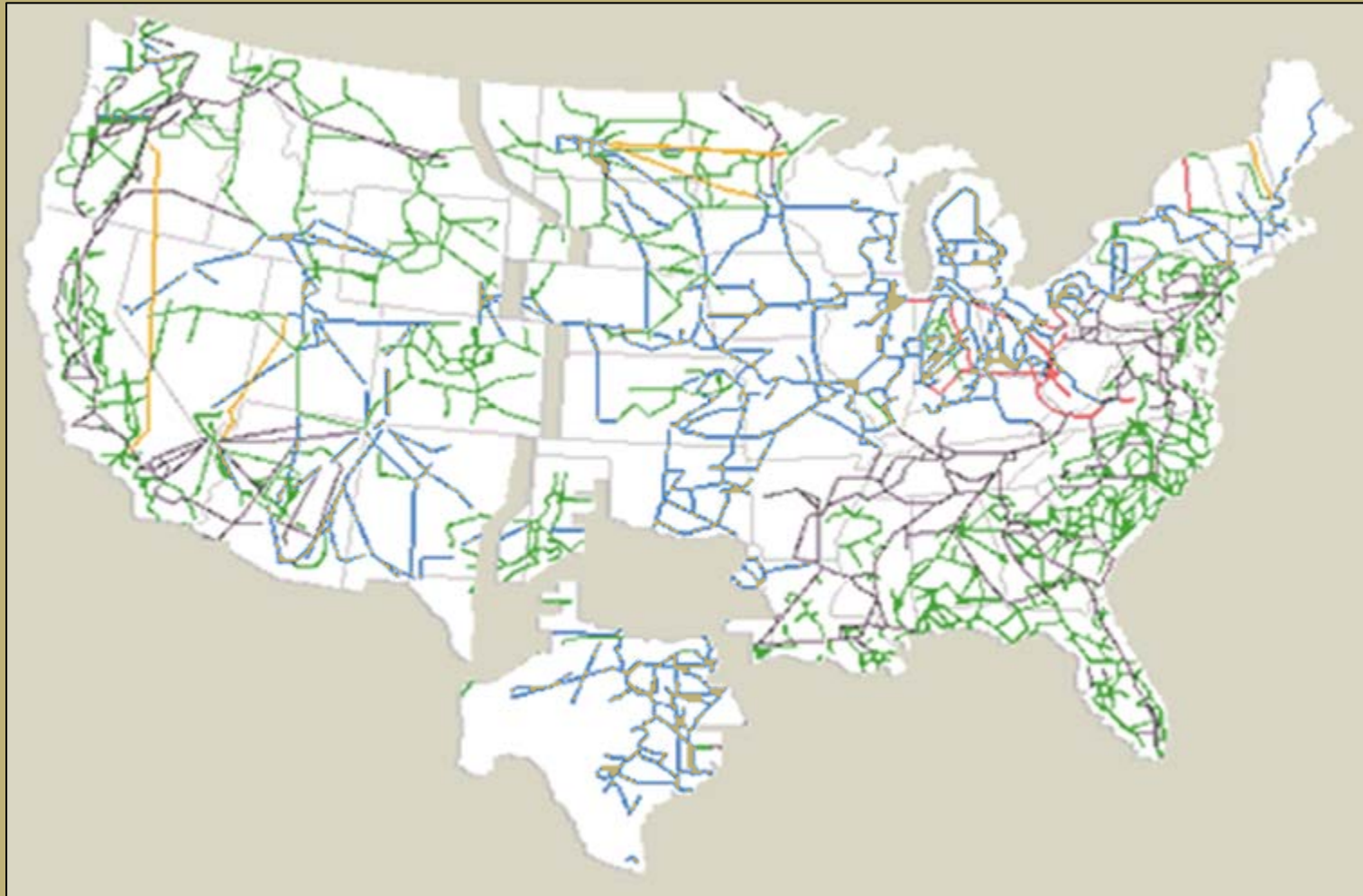
## *Harnessing & Managing Multiple Energy Resources*



# ***Big Grids***



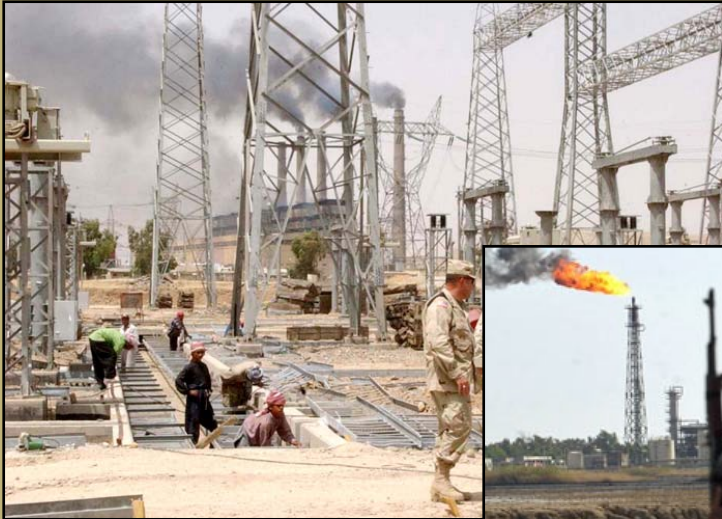
***Serve the Entire Country or Region***



# Micro Grids



*Serve tactical communities*

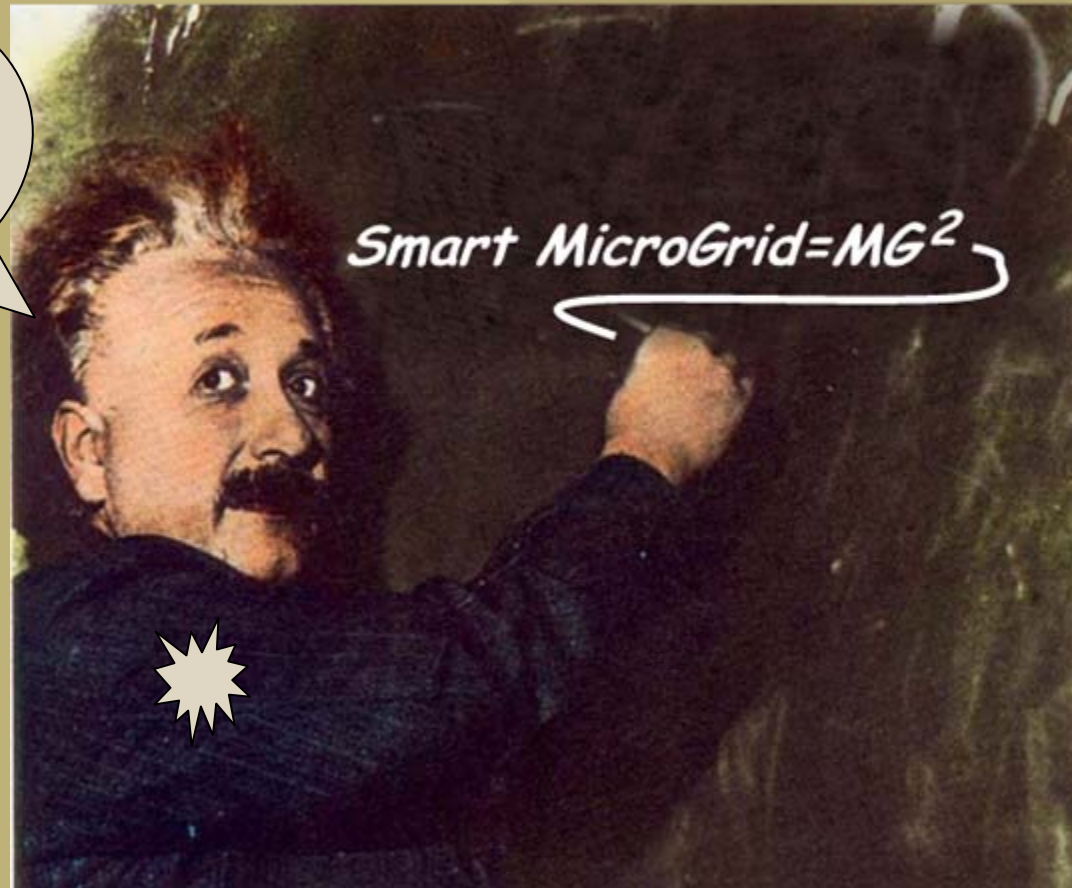


# Smart Micro Grids



*Why should micro grids be “smart?”*

*Who threw  
that?*



# Smart Micro Grids



*Should manage energy sources and loads 24/7*

## Sources



# Smart Micro Grids



*Should manage energy sources and loads 24/7*

## Sources



## Loads



# Smart Micro Grids



*Should manage energy sources and loads 24/7*

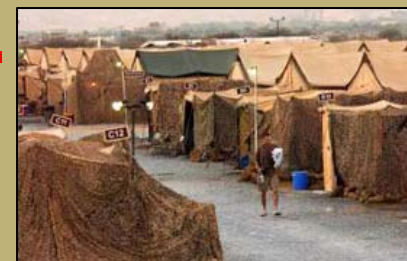
## Sources



## Energy Management



## Loads



# Smart Micro Grids



*Should provide interactive monitoring & control*

Solis Energy Monitor version 2.2 - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Solis Energy Monitor version 2.2

## Energy Monitor System

SYSTEM IDENTIFICATION		SYSTEM STATUS			SECURITY CAM
Location:	2602 N 3rd Unit B	Current Load	Solar Gain	Temp	
Unit Number:	0001	325wP	25wP	54(F)	
Serial Number:	CBP0000001	Grid Faults-24 hrs	Pack Status	St. of Chg	
Current date:	01/05/2009	0	25Vdc	86%	
Current time:	05:54:41				
Network IP address:	192.168.0.101				

LOAD AND ENERGY CONTROL:

#1	#2	#3	#4	
holdONOFFname1	holdONOFFname2	holdONOFFname3	holdONOFFname4	
OFF	OFF	OFF	OFF	
ON	ON	ON	ON	All ON
OFF	OFF	OFF	OFF	All OFF

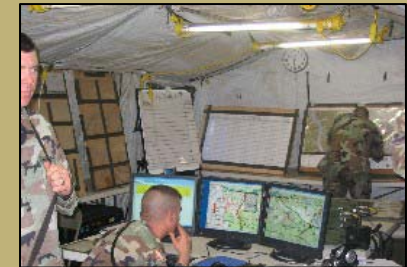
UNIT BATTERY STATUS: St. of Chg.

Battery 1	Battery 2	Battery 3	Battery 4	Battery 5	Battery 6	Battery 7	Battery 8	
12.5Vdc	12.4Vdc	12Vdc	12.2Vdc	12.3Vdc	12.5Vdc	12.1Vdc	12.1Vdc	

Start | Solis Energy Mo... | Microsoft PhotoDraw | 5:54 AM



*From HQ*



*From the field*



# Smart Micro Grids



*Should communicate status/problems*



# Smart Micro Grids



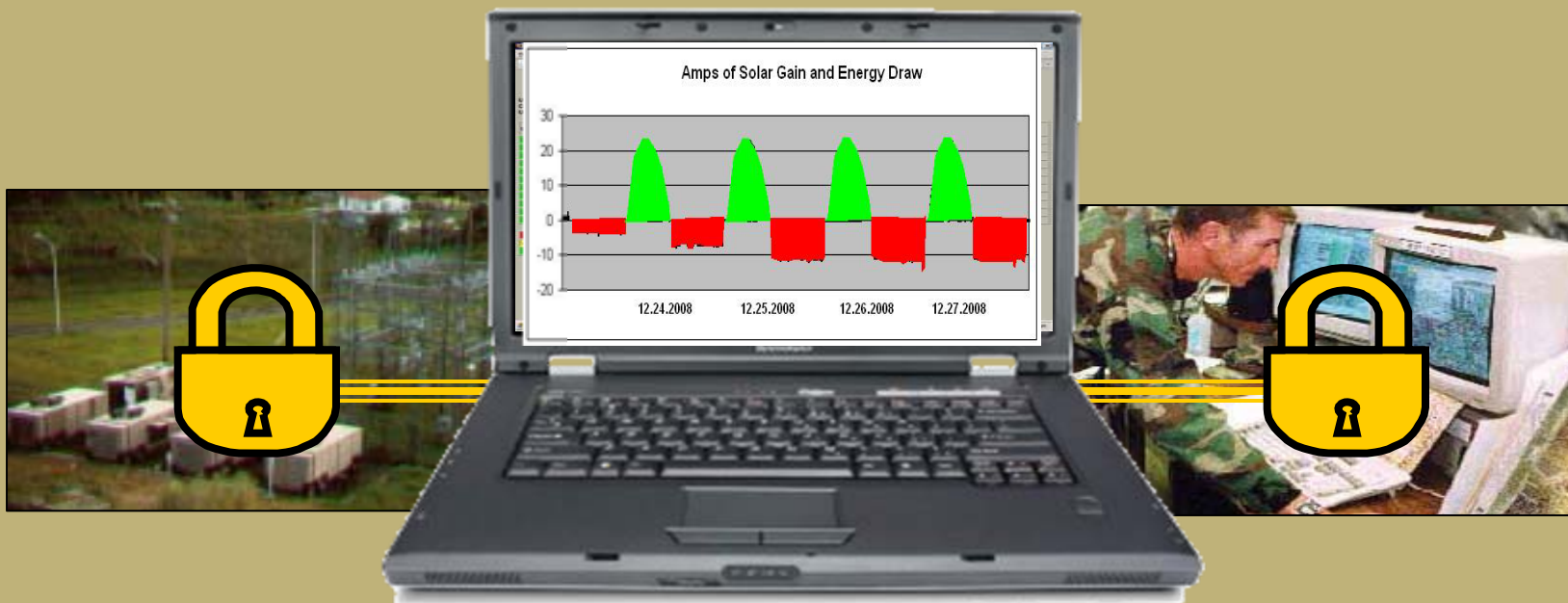
*Should prioritize power distribution*



# Smart Micro Grids



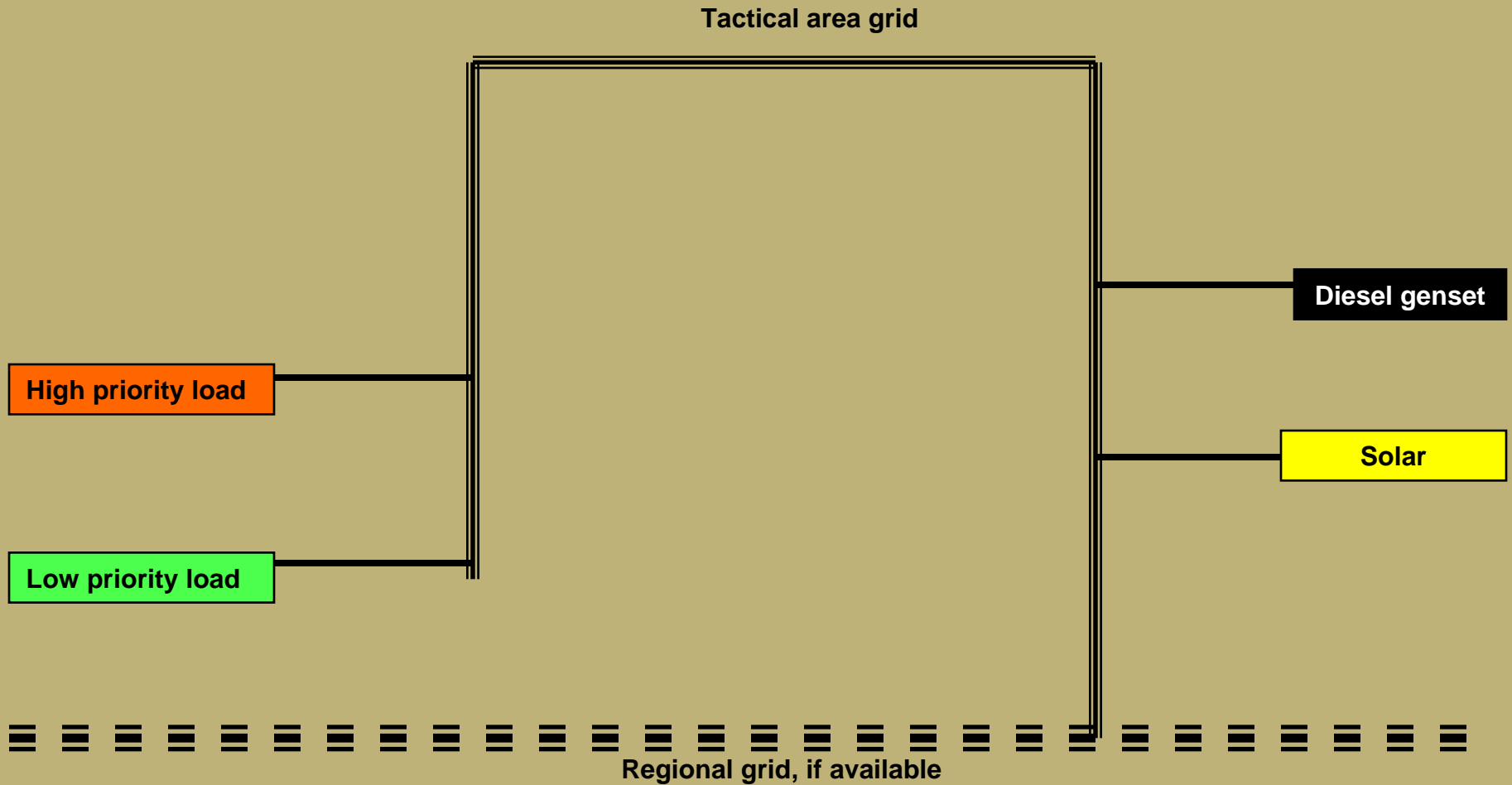
*Should employ advanced system security techniques*



# NEST Smart MicroGrid



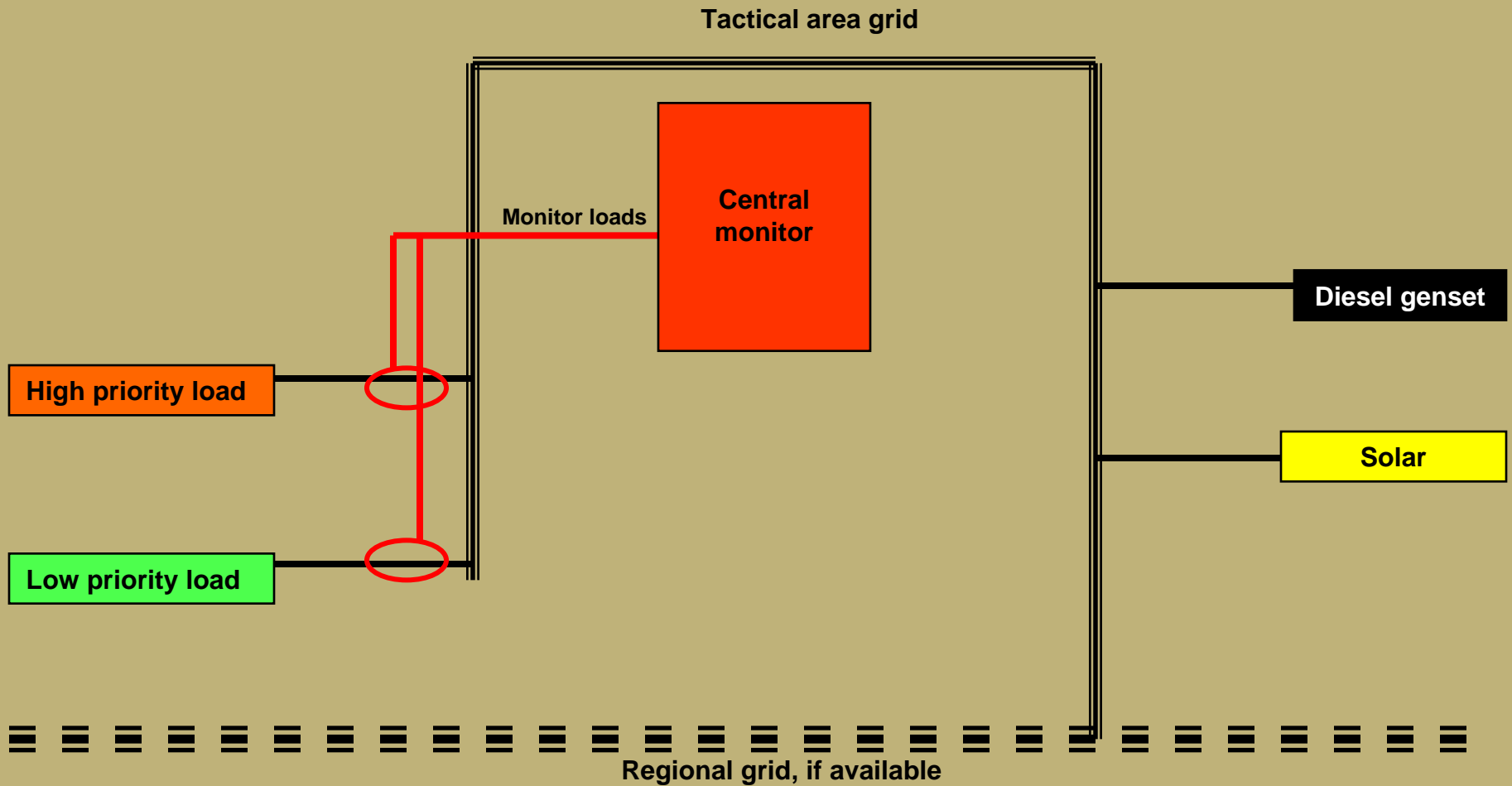
*Patent Pending*



# NEST Smart MicroGrid



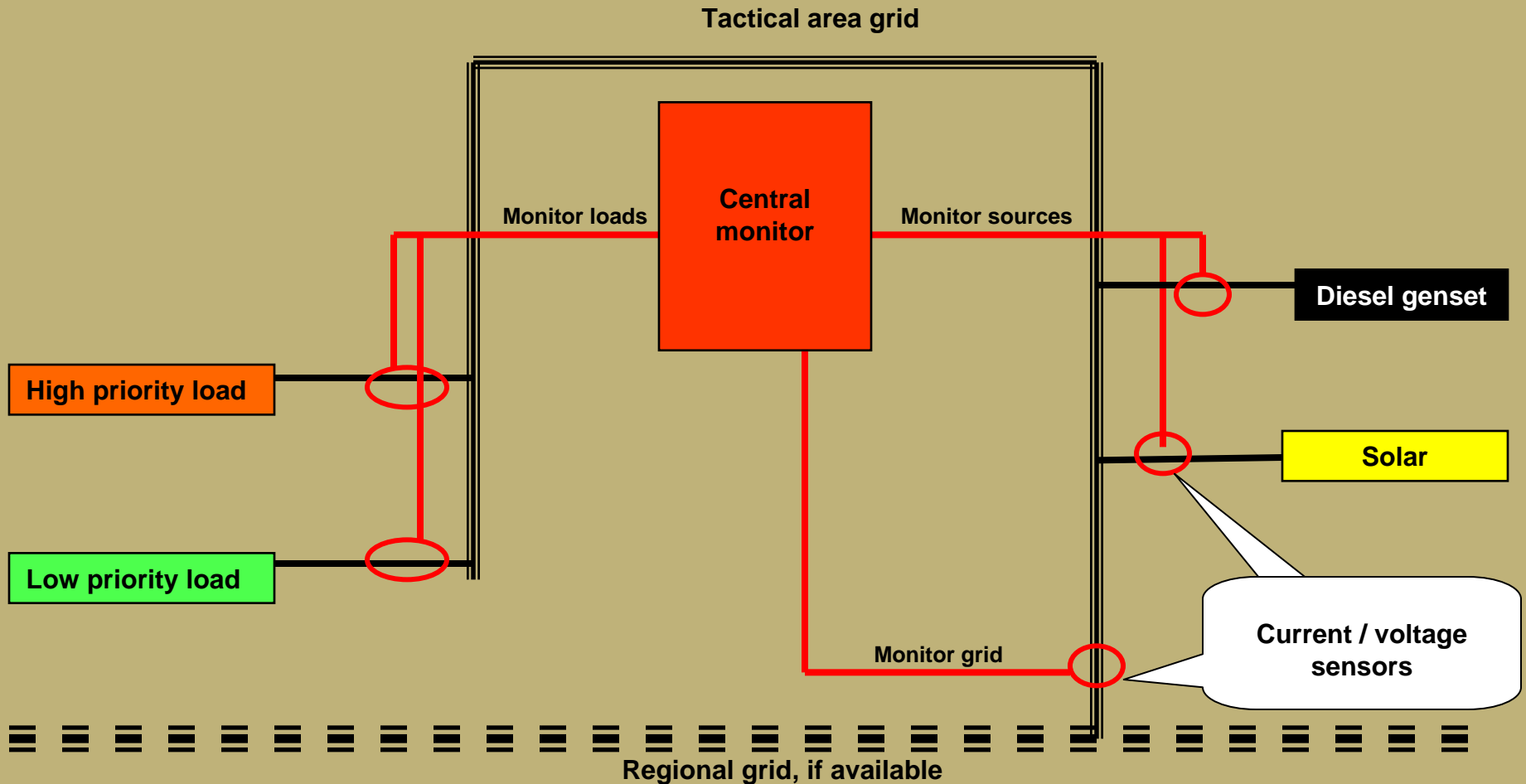
Patent Pending



# NEST Smart MicroGrid



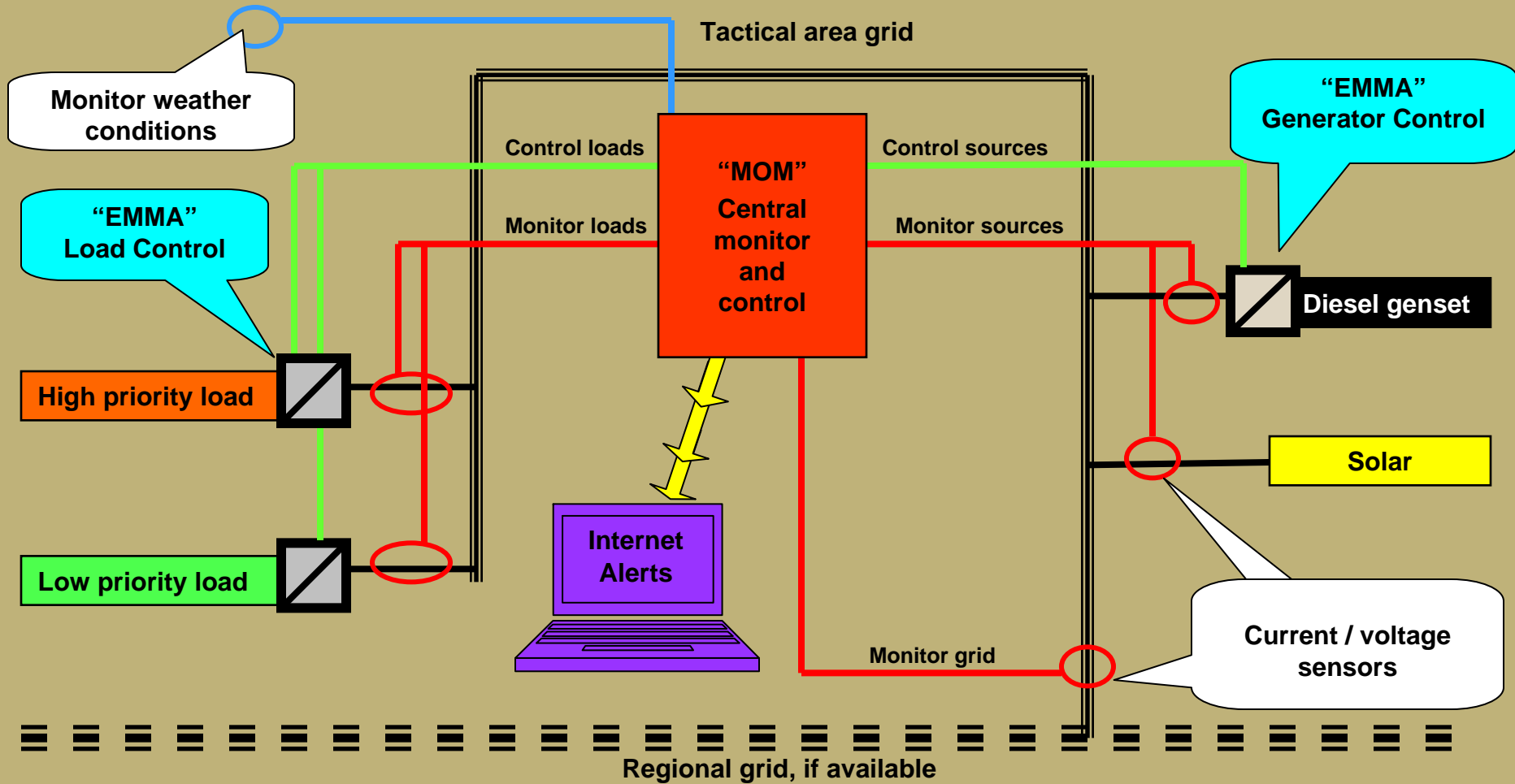
Patent Pending



# NEST Smart MicroGrid



Patent Pending



# NEST Smart MicroGrid



Patent Pending

## MOM

Master Onsite Monitor





# **NEST** Smart MicroGrid



*Patent Pending*

## **EMMA**

*Energy MicroGrid Monitoring Apparatus*



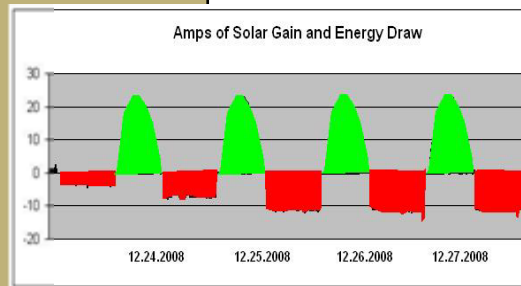
# NEST Smart MicroGrid



Patent Pending

## SOLIS™

### Energy Management & Communications



SOLIS Energy Summary Report

Energy Consumption.....			.....Energy Generation.....					
Mess	HQ	Comm	Solar	Gen1	Gen2			
577.2	18629.8	18644.2	1237.8	1413.9	195.3			
648.0	751.1	748.4	1138.5	1619.2	0.0			
654.0	750.0	743.8	1771.0	0.0	0.0			
670.1	744.2	741.2	1116.0	223.2	0.0			
651.6	759.5	769.2	558.0	1469.6	0.0			
641.2	741.3	736.2	279.0	2643.2	0.0			
648.8	738.0	732.0	2367.5	6253.2	0.0			
302.4	758.4	756.0	2958.0	1450.8	0.0			
61.0	303.8	303.8	1116.0	669.6	0.0			
12/31/2008	7	172.2						
12/31/2008	Daily total	2361.4	4277.1	5546.3	5528.6	2260.8	3582.2	0.0
Grand Total		45058.9	32027.7	85704.3	85612.2	4359.9	5857.4	195.3

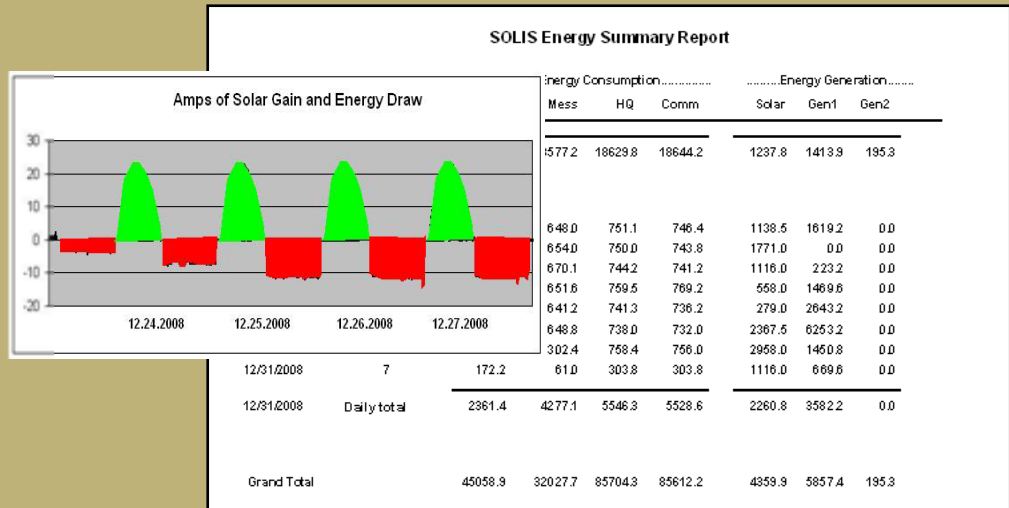
# NEST Smart MicroGrid



Patent Pending

## SOLIS™

### Energy Management & Communications



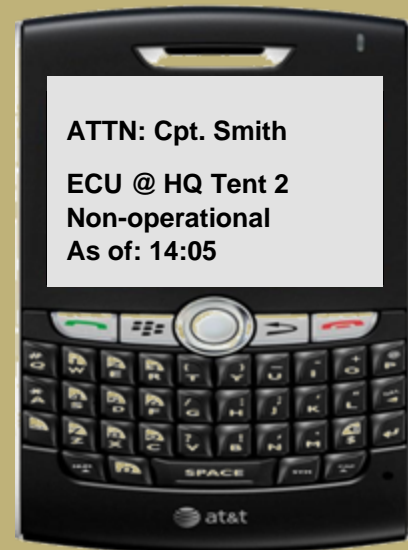
# NEST Smart MicroGrid



Patent Pending



EMMA



# ***NEST*** Smart MicroGrid



*Patent Pending*

*MOM-Master Onsite Monitor*

*EMMA-Energy MicroGrid Monitoring Apparatus*

*SOLIS™-software and communications*



# NES

# Energy Services LLC

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



# T



The Solinator®



Solar-powered  
Light Trailer



Condor Solar Station



Raptor Surveillance



Eagle Solar Station



**Advantage!**  
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Contract GS-07F-95845



Prescott Valley, AZ



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