

ENERGY EFFICIENCY



Energy Solutions

Business & Industry

HOAXES AND HEROES OF 2013

By

Buzz Thielemann

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MEMBER
FORUM
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Energy in Motion.

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GOOD IDEAS



BAD IDEAS



GOOD IDEAS



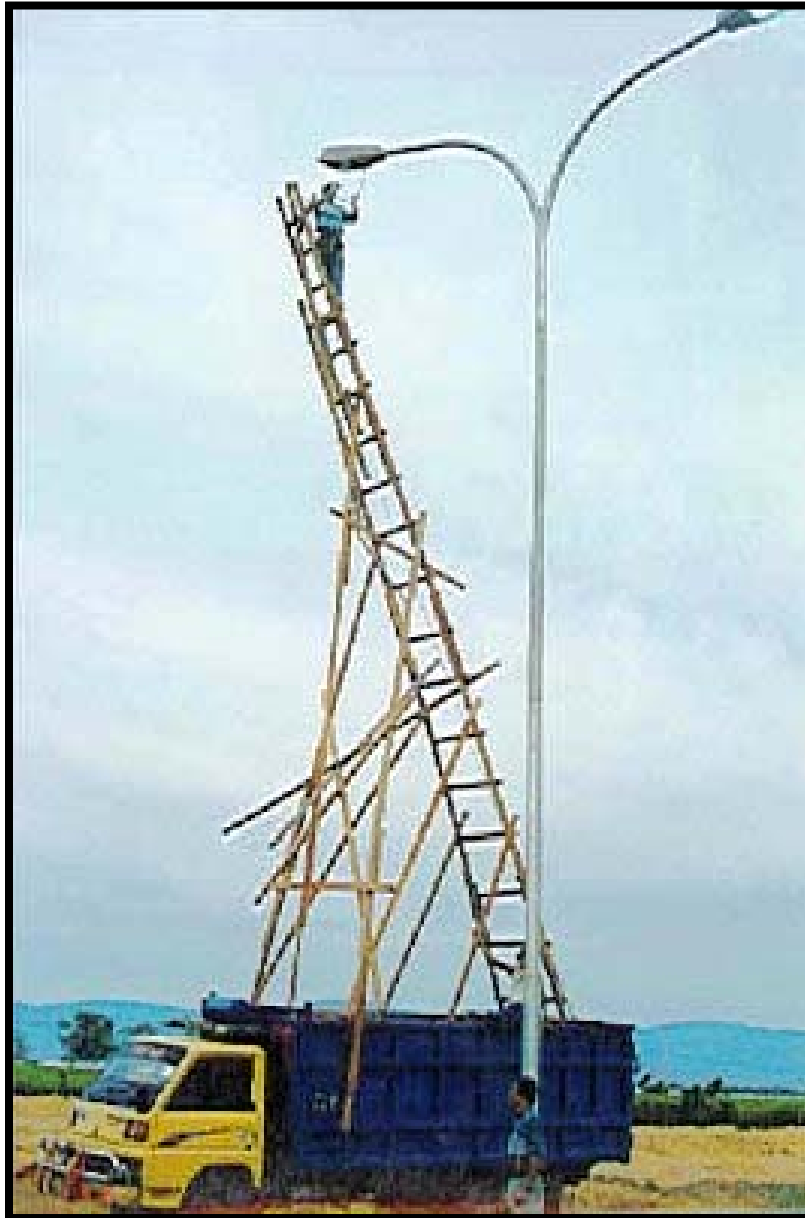
BAD IDEAS



GOOD IDEAS



BAD IDEAS



GOOD IDEAS



BAD IDEAS



GOOD IDEAS



REALLY BAD IDEAS



**(+) OR (-) SO BRILLIANTLY
STUPID – I DON'T KNOW!!!**

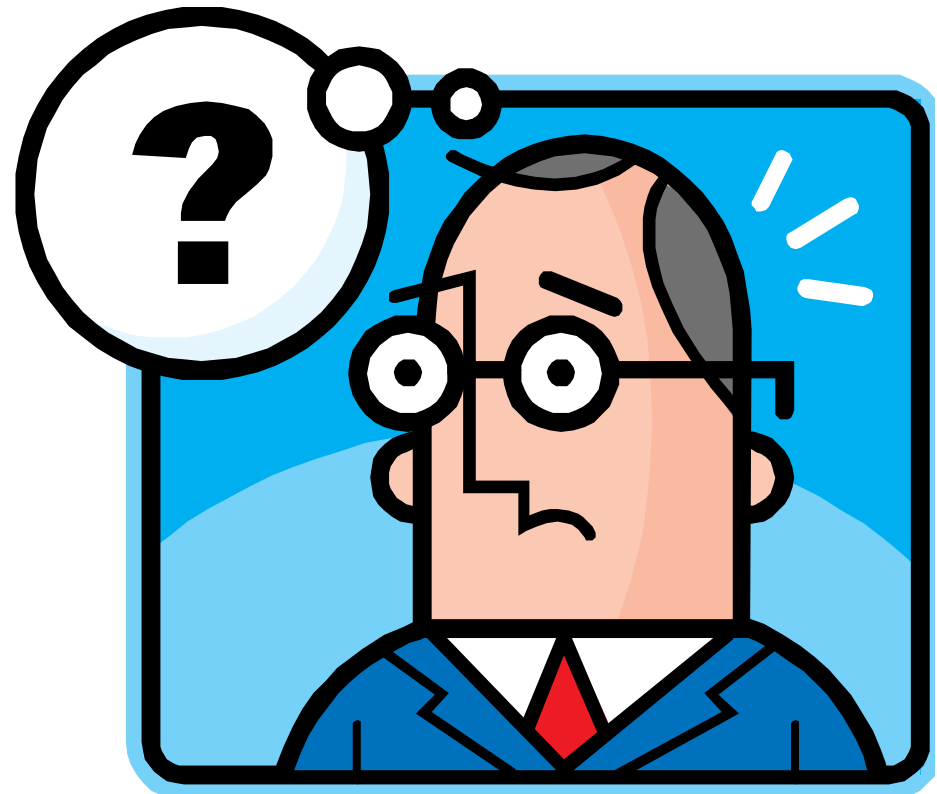


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TERMS OF THE ELECTRICAL UTILITY

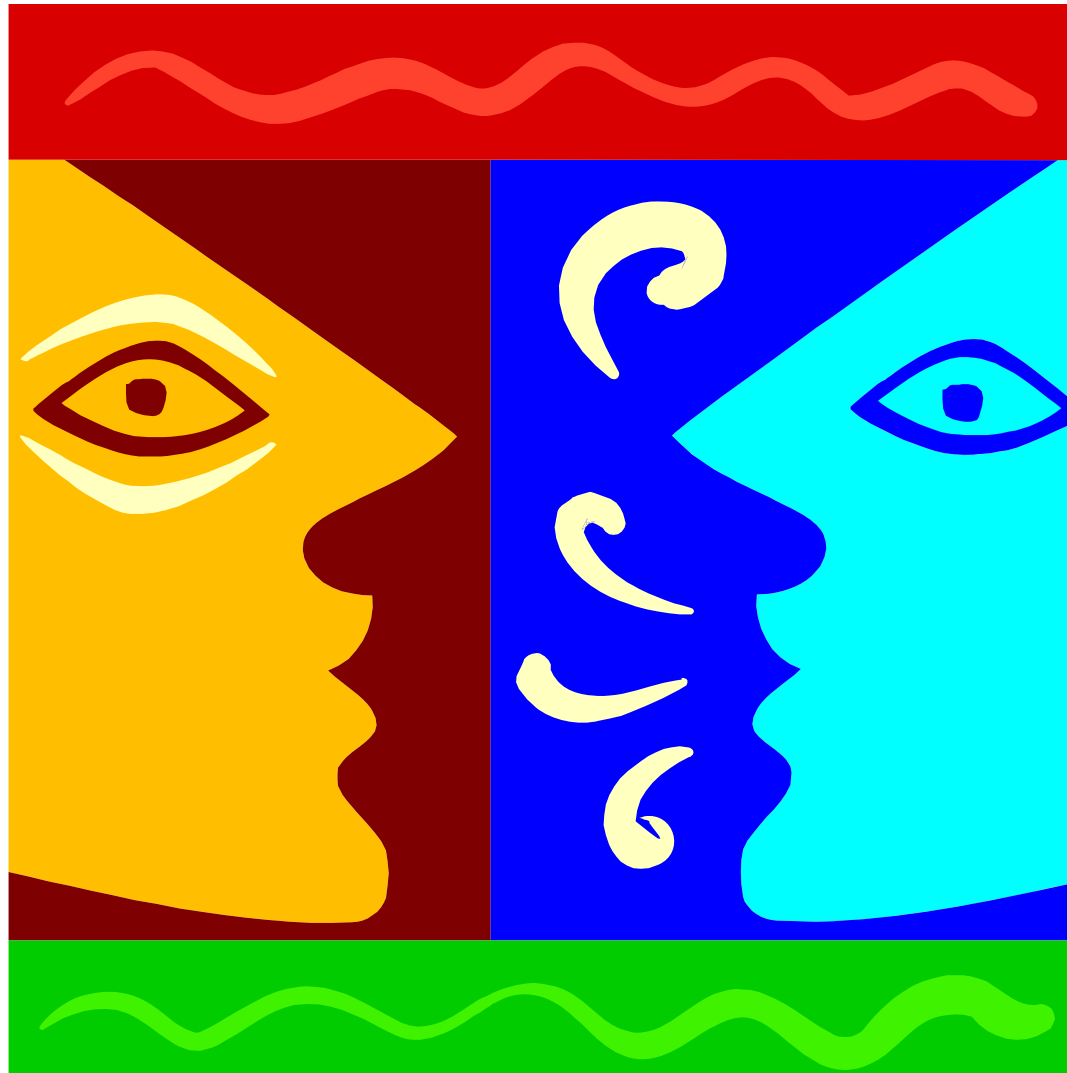
- WATT, KILOWATTS, VAR, POWER FACTOR, VOLTS, AMPS, REACTIVE, R-VALUES, KILOWATT HOURS, DEMAND, PEAK, LOW-E, LEADING, LAGGING, OFF PEAK, ON-PEAK



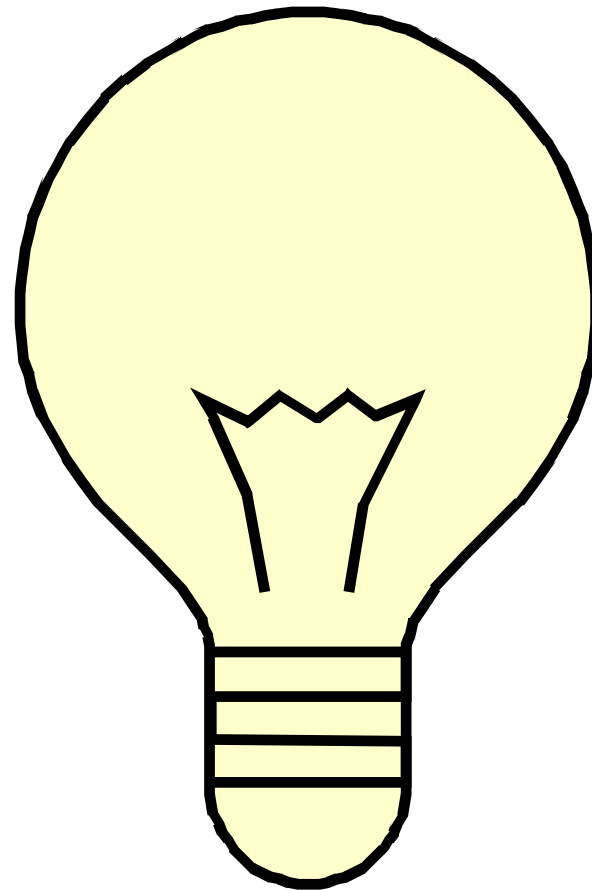
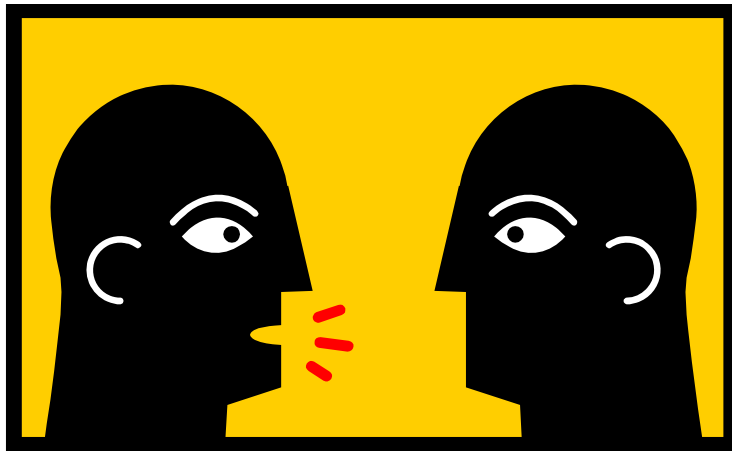
ARCHIE BUNKER



WHEN IN DOUBT – OVER COMMUNICATE!



WORD PICTURES



WORD PICTURES – 1 KW



**WHAT IS OUT THERE????? WHAT IS A HOAX
AND WHAT IS A HERO?**



WHAT KIND OF CUSTOMER DO WE HAVE OUT THERE?



LET'S FIND OUT!



HEROES AND HOAXES PLUS & MINUS



(+) DUCTLESS – MINI – SPLIT HEAT PUMPS



(-) FLEX DUCT



(-) FLEX DUCT



(-) FLEX DUCT



(-) FLEX DUCT



**FLEX DUCT TO BE INSTALLED WITH EITHER
A PANDUIT CABLE AND TERMINATION TOOL
OR SHEET METAL SCREWS, FENDER WASHERS
AND TAPE.**



(+) MECHANICAL ACTUATORS



REPLACES HYDRAULIC PUMP, MOTOR AND TANK




(-) HAVE YOU SEEN THIS AD?

**50%
Savings on
Heating
Bills!**

PAID ADVERTISEMENT

**2013 ZIP CODE
DISTRIBUTION NOTICE**



■ **48 HOUR DISTRIBUTION BEGINS:** Distribution hotlines open at 9:00am this morning for Medford residents only. Trucks are being loaded with new, leading brand, energy saving, infrared heaters and soon will be delivered to lucky state residents who find their zip code on the distribution list below.

Medford residents set to get new infrared heaters to save up to 50% on heating bills for only \$159 and free shipping

Compared to the Suggested Retail Price of \$499.95 this is a great opportunity for our residents to own one of the highest quality, energy saving, cool-to-the-touch, portable infrared heaters available today, and stop spending a fortune on heating bills. The first 362 callers who beat the 48-hour deadline are getting these money saving portable infrared heaters.

(-) QUARTZ PORTABLE HEATERS



- 1500 Watt-5000 BTUs
- Temperature range 65°-86°F
- Heats up to 1,000SF
- Cuts power bills by 60%
- Great **supplemental** heating source.



CONDUCTION-CONVECTION-RADIATION

1 KWH = 3413 BTU

- 1500 watts = 5120 btu
- 1500 watts = 5120 btu
- 1500 watts = 5120 btu
- 1500 watts = 5120 btu
- 1500 watts = 5120 btu

**1500 watt heater
can create a \$90-
\$120 bill. NO
PROBLEM. They
are all the same!!!!**



(+) VARIABLE FREQUENCY DRIVE (VFD)

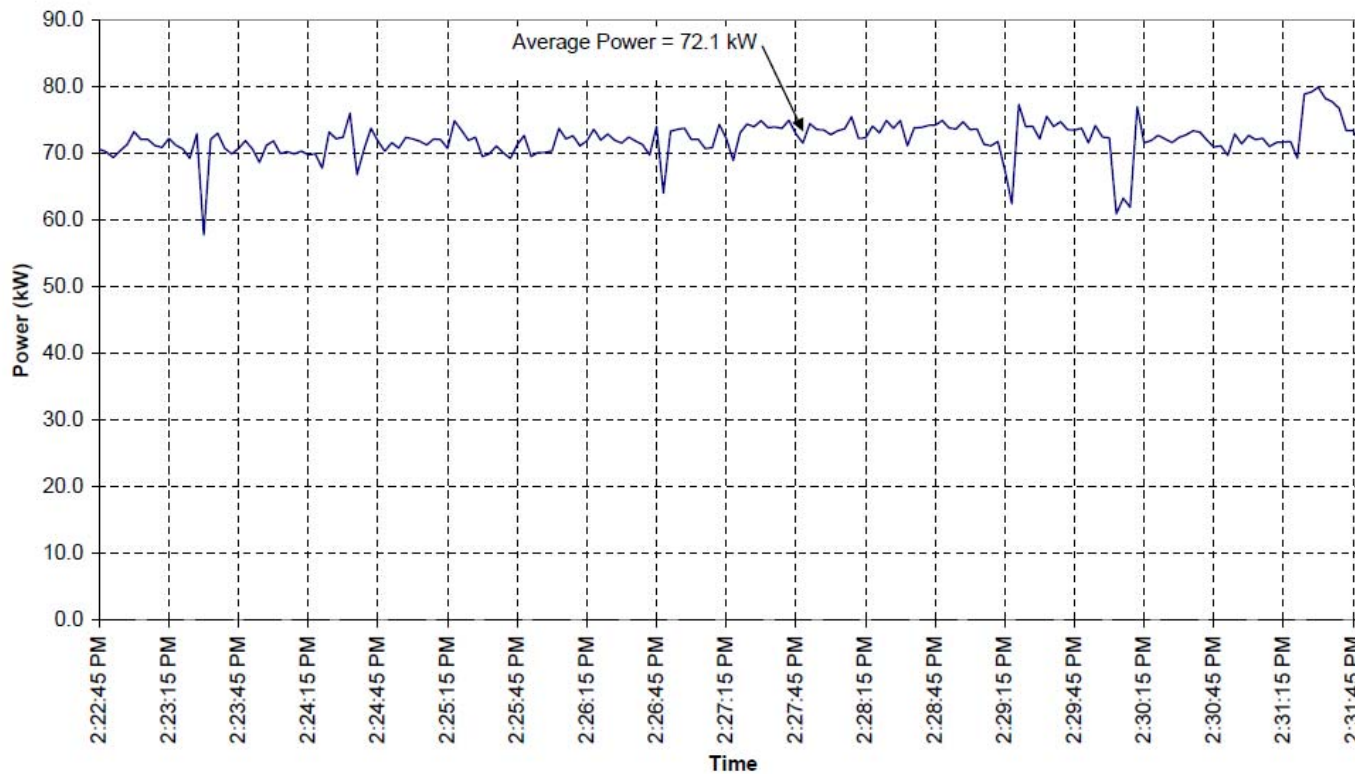


ENERGY USE WITHOUT A VFD

Thur. April 24th, 2008
Elapsed Time: 10 Minutes

Plot 1: Kiln 10, Power Test - no VFD
5/4 Sugar Pine
Average Power

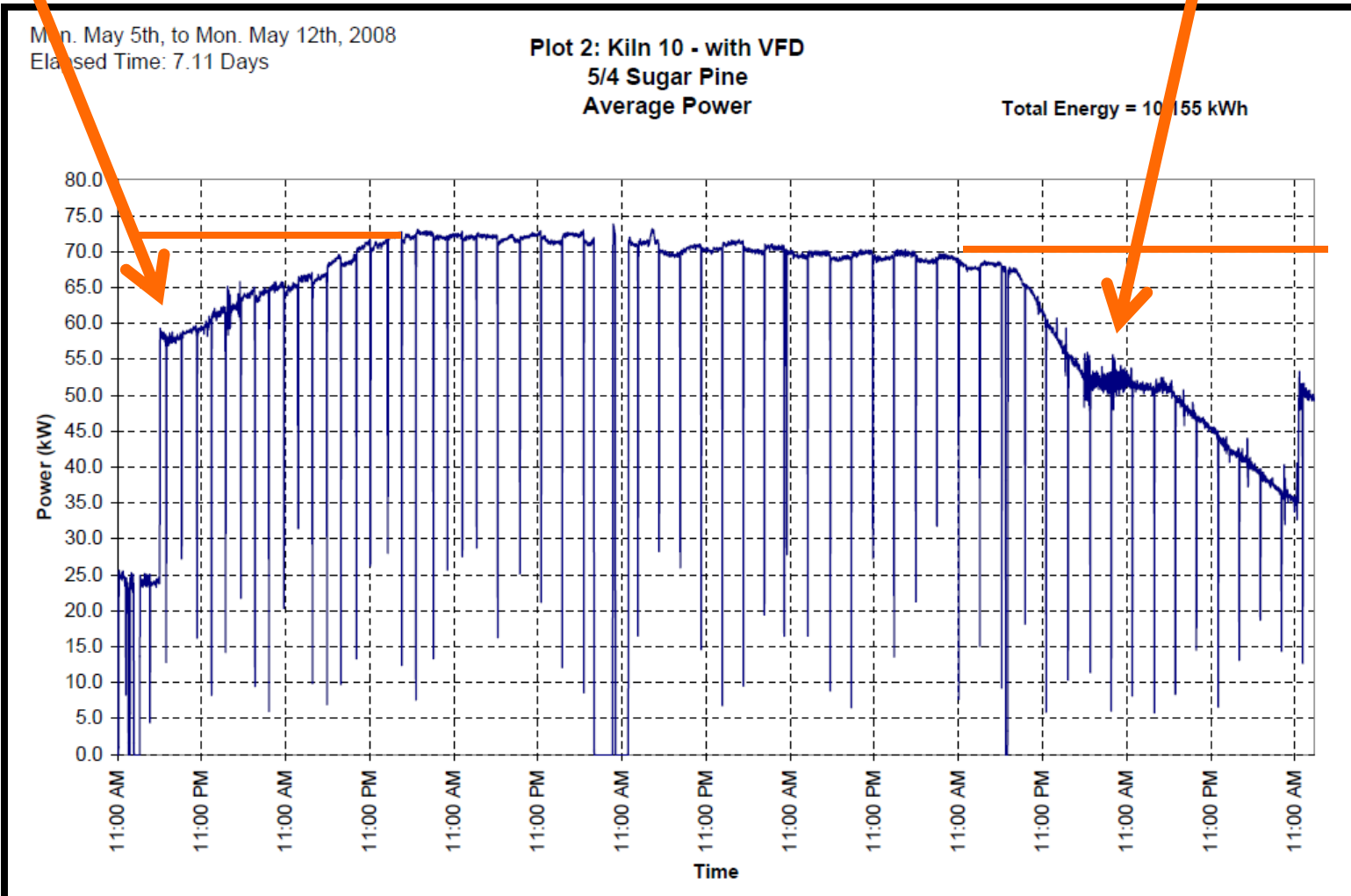
Average Power = 72.1 kW



SAVING ON DRY KILN WITH VFD

SAVINGS

SAVINGS



(-) CFL – THE MOST MISUNDERSTOOD













○ **MOST
MISUNDERSTOOD!**



SYLVANIA LARGE LAMP CATALOG

SYMBOLS & FOOTNOTES FOR FLUORESCENT LAMPS

Symbol	Description
	New item introduced within the past year.
	Item will be discontinued when inventory is depleted.
	QUICK60+ [®] warranty
	Rating given for 200mA operation.
	This fluorescent lamp generates radiant energy which is most beneficial for plant propagation and enhances vegetative and reproductive growth of many plants for home and commercial use.
	This lamp or ballast meets minimum Federal efficiency standards.
	This ECOLOGIC [®] lamp was designed to pass the Federal TCLP criteria for classification as non-hazardous waste in most states. Disposal regulations may vary; check local and state regulations.
	This lamp is a High Color Rendering Lamp
	Product is Canadian Standards Association approved for the Canadian market
	Product is Underwriters Laboratories listed

Footnote	Description
1	Approximate initial lumens after 100 hours operation.
2	The life ratings of fluorescent lamps are based on 3 hr. burning cycles under specified conditions and with ballast meeting ANSI specifications. If burning cycle is increased, there will be a corresponding increase in the average hours life.



COMPACT FLUORESCENT

- Now designed to fit in a standard base socket. Self ballast.
- Good efficiency: 60-80 lumens/watt
- Long life: 8,000-12,000 hours (Hours based on 3 hour run time!! Note #2)
- Does not like frequent “on” and “off”.
- Most misunderstood & installed in poor locations



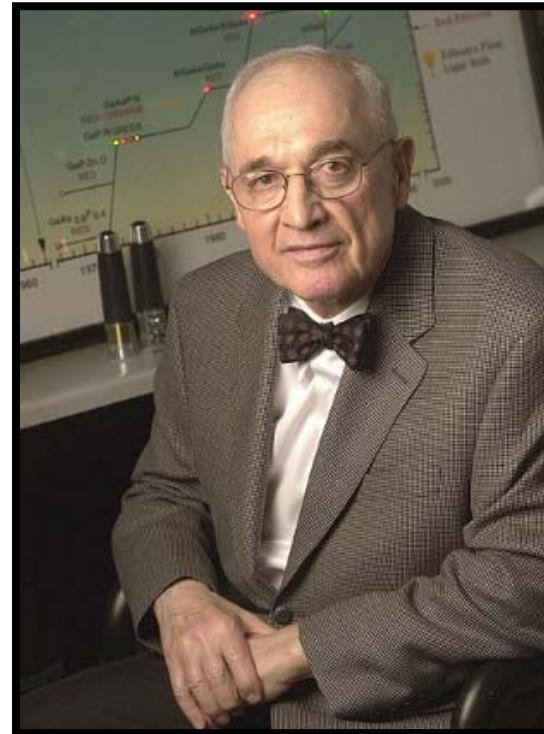
COST-EFFECTIVE LIGHTING CHANGES TO COMPACT FLUORESCENT.

- Replace the highest used fixtures/bulbs with compact fluorescent.
- The Top 5 fixtures in a home:
 - Kitchen ceiling light,
 - Living room table and floor lamps,
 - Bathroom vanity,
 - Outdoor porch or post lamp.



(+) LED

OLEG LOSEV 1927, NICK HOLONYAK 1962



(+) LIGHT EMITTING DIODES

LED

- Semi conductor-one way valve-as electrons pass a junction where impurities are added-creates deficiencies of valance electrons and photons are released causing light.
- Impurities like aluminum gallium phosphide are added to create colors.



LED – ADVANTAGES

- New applications daily
- Lumens/watt = 40 - ~100
- Long life = 50,000+ hours
- No Flicker
- CRI's up to 94
- Dimmable
- (Pushing HID and fluorescent technologies!)



COMPARISON



Comparison of a 60 Watt inc., 13 Watt CFL & 8 watt LED.							\$ 0.11	\$
Bulb	kW	Life	Cost	# bulbs	Bulb Cost	kWhs	\$ Power	Power + bulbs \$
Inc.	0.06	750	\$ 0.60	33.33	\$ 20.00	1500	\$165.00	\$ 185.00
CFL	0.013	8,000	\$ 3.00	3.125	\$ 9.38	325	\$ 35.75	\$ 45.13
LED	0.008	25,000	\$ 9.97	1	\$9.97	200	\$ 22.00	\$ 31.97

Points of consideration: LIFE CYCLE
 1) CFL will ONLY last 8,000 hours if it has 3 hours run/start.
 2) Manual cost of replacement is not considered.



(+) LED LCD TV



LCD vs. LCD-LED TV

- OFF - 40" Sony Bravia

1080P LCD 60Hz = 0
watts

5 VA, PF = 7%

- ON – 40" Sony Bravia

1080P LCD TV = 170
watts

169 VA, PF = 100%

- OFF – 55" Samsung LED

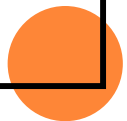
1080P LED 120Hz = 0
watts

0 VA, PF = 100%

- ON – 55" Samsung LED

1080P LED 120Hz = 120
watts

123 VA, PF = 97%



RESTAURANT WITH INCANDESCENT LAMPS



BEFORE

Incandescent 65W BR30 - **Total Power = 5,135W**



RESTAURANT ON LED



AFTER

LR6 - Total Power = 948W



COCINA TUNNEL-ITALY (HID vs. LED)

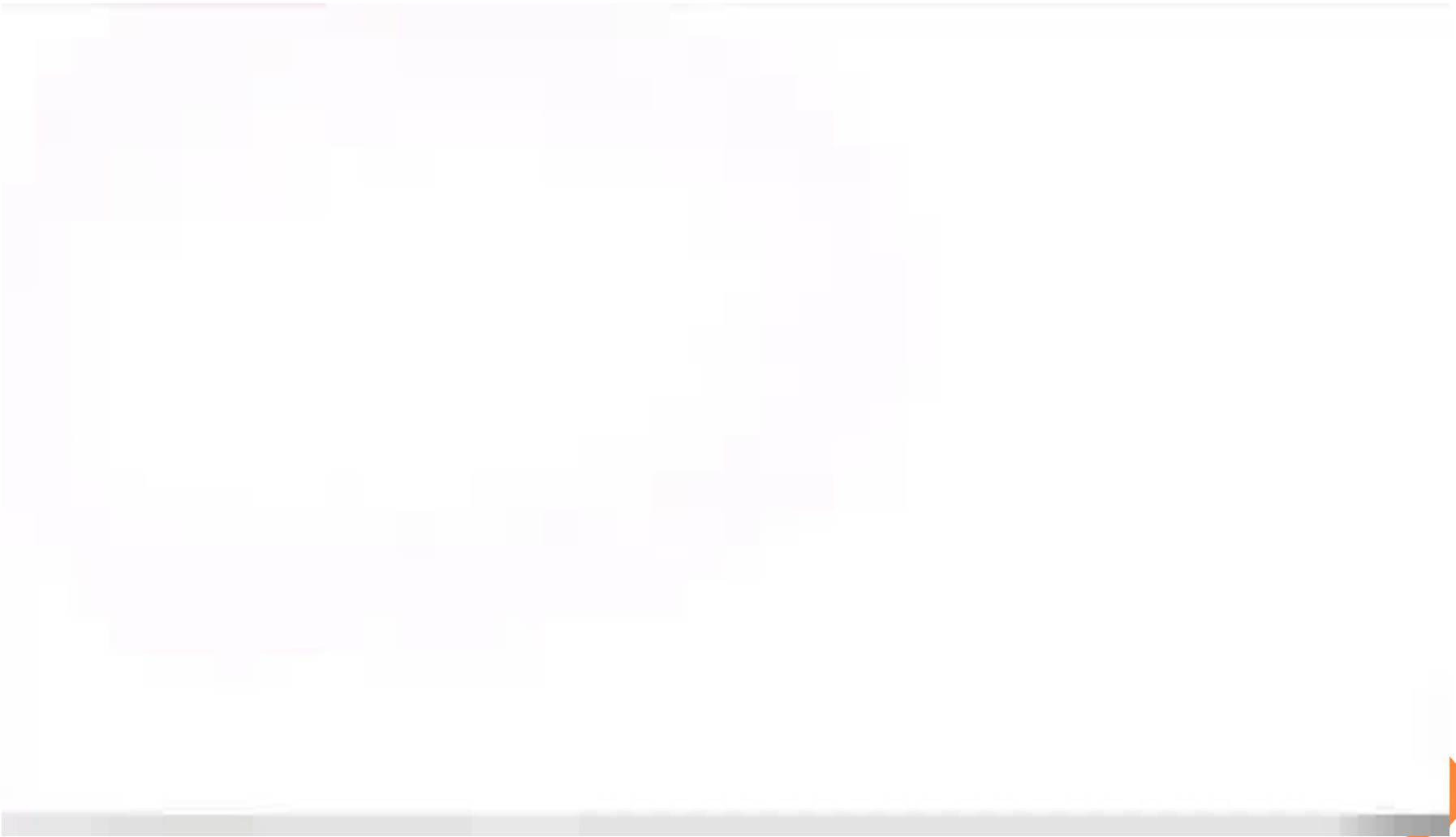


(-) POWER 4 PATRIOTS

**Power Companies
HATE This!** » Shocking
video reveals how over
203,238 Americans
slashed their power bills
with this weird device



POWER 4 PATRIOTS



POWER 4 PATRIOTS - REVIEWS

Disliked the conspiracy talk, useless and unhelpful.



I disliked the conspiracy talk, found it useless and unhelpful. I'm not prepared to build what P4P claims to offer. Instead I'd want to see an actual prototype before committing to anything.

What a scam



Products should be sold on their merits. The hucksters here are trying to use your potential disdain for government or hate for our black President or calling you a patriot, or stoking your fear about the world coming to an end or a fabled race riot or all of the above to get you to act on something that is supposed to mitigate your fears.

Don't fall for it patriots. Do your own research. Generate your own power. But don't reward these morons.

Power for Patriots is a scam



It's all simple information available anywhere. Their alarmist political model shows the real purpose of their system: scare you into buying sub-standard equipment.

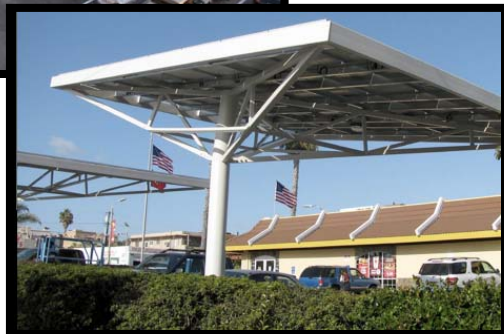
Scammers



If 150,000 idiots pay 27 dollars for this, 4,050,000 dollars for the scammer!



(+) PV SOLAR – POLY AND MONO



PV SOLAR - BENEFITS

Benefits

- Production cost under \$1.00
- Installation < \$4.50
- Simple payback < 5 yrs.
- Warranty 25 yrs.
- ROI > 15%
- Technology –Micro invertors
- Peaks with grid
- Distributive Generation
- Environmentally innocuous

Technology

- Micro Inverters



(+) GOOD NEWS – YOU DON'T WORK FOR FLORIDA POWER



(+) GOOD NEWS – YOU DON'T WORK FOR FLORIDA POWER



Good News

HEROS > HOAXES



THANK YOU

○ Questions?

