# GO SOLAR AMERICA

**BRINGING PRACTICAL ENERGY SAVING SOLUTIONS TO YOUR COMMUNITY**

# WHO IS GO SOLAR AMERICA AND WHAT DO WE DO?

Go Solar America was founded in 2011 as a Solar Photovoltaic Broker. Our primary goal is to help homeowners and Small Business Owners cut their electricity cost while simultaneously improving the environment by installing Solar Photovoltaic Systems on their property or facility. We accomplish this goal by helping them get the information they need to feel comfortable about going Solar. We offer our Clients flexibility and options in selecting the most appropriate, Solar PV Systems, Contractors and Financing by utilizing our extensive network (Affiliates) of pre-screened Solar Electric Power System Professionals.

We also offer Energy Management Services for commercial customers such as churches, restaurants, Laundromats, convenient stores, etc. Although Solar PV can be installed for commercial customers, it is not the most cost effective methodology to reduce electricity cost because of the following:

- Insufficient roof space
- Inadequate financing
- Low rebates compared to residential Solar PV
- Utility rate structures that include demand and energy charges
- High cost of capital investment required
- Low rate of return on investment with payback periods of 10 to 20 years

# WHAT IS DEMAND?

Electricity demand is the amount of electricity being consumed at any given time measured in kilowatts. It rises and falls throughout the day in response to the number of electrical devices that are operating and represents the maximum amount of electrical energy that is being consumed.

**Ten 100 watt light bulbs = 1,000 watts**
**or**
**One Kilowatt of DEMAND**

# WHAT IS CONSUMPTION?

The amount of energy electrical devices are consuming over a specific time measured in kilowatt-hours. For example: Ten 100-watt light bulbs burning for 1 hour consumes 1,000 watt-hours or 1 kWh. The entire time they are on requires or "DEMANDS" 1,000 watts or 1 kW from the utility. That means the utility must have that 1 kW ready whenever the customer turns the lamps on.

**One Kilowatt of DEMAND**

X

**One Hour of Operation**

= **One Kilowatt-hour**

# UNDERSTANDING YOUR ELECTRIC UTILITY BILL

**Your Commercial Electric Utility Bill is divided into four categories:**

- **Demand:** The maximum of number Kilowatts reached by electrical devices during a billing cycle.
- **Consumption:** The total number of Kilowatt-hours consumed during a billing cycle.
- **Miscellaneous Charges:** Additional fees such as bond charges, delivery charges, generation charges, customer charges, etc.
- **Taxes:** City, State, and Federal taxes.

SOUTHERN CALIFORNIA EDISON®
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P.O. Box 300
Rosemead, CA
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www.sce.com

# Your electricity bill



For billing and service inquiries call 1-800-990-7788,

For emergency services call 24 hrs a day, 7 days a week

Date bill prepared: Nov 2 '16

Customer account 2-01-714-0997

Service account 3-008-5059-08

Rotating outage Group N001

## Your account summary

| | |
|---|---|
| Previous Balance | $17,858.95 |
| Payment Received 10/03 | -$8,922.00 |
| Payment Received 10/28 | -$8,936.95 |
| Balance forward | $0.00 |
| Your new charges | $4,885.79 |
| Late payment charge | $71.50 |
| **Total amount you owe by Nov 21 '16** | **$4,957.29** |

## Compare the electricity you are using

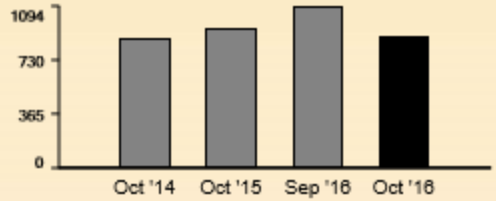
For meter V349N-012680 from Sep 30 '16 to Nov 1 '16
Total electricity you used this month in kWh 28,377

| | Electricity (kWh) | Demand (kW) | |
|---|---|---|---|
| Summer Season | | | |
| On peak | 770 | 172 | (Sep 30 '16 14:00 to 14:15) |
| Mid peak | 666 | 171 | (Sep 30 '16 11:15 to 11:30) |
| Off peak | 261 | 61 | (Sep 30 '16 07:45 to 08:00) |
| Winter Season | | | |
| Mid peak | 16,397 | 153 | (Oct 21 '16 14:15 to 14:30) |
| Off peak | 10,283 | 50 | (Oct 21 '16 07:00 to 07:15) |
| Total | 28,377 | | |

*Your next billing cycle will end on or about Dec 1 '16.*

*Reactive usage is 8,148 kVarh*
*Maximum demand is 172 kW*
*Reactive demand is 64 kVar*

## Your daily average electricity usage (kWh)




## Usage comparison

| | Oct '14 | Oct '15 | Nov '15 | Dec '15 | Jan '16 | Feb '16 | Mar '16 | Apr '16 | May '16 | Jun '16 | Jul '16 | Aug '16 | Sep '16 | Oct '16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total kWh used | 26,325 | 30,224 | 18,703 | 17,693 | 22,049 | 21,135 | 18,132 | 20,434 | 19,683 | 19,454 | 21,316 | 31,333 | 32,832 | 28,377 |
| Number of days | 30 | 32 | 31 | 32 | 29 | 30 | 32 | 29 | 30 | 29 | 32 | 29 | 30 | 32 |
| Appx. average kWh used/day | 877 | 944 | 603 | 552 | 760 | 704 | 566 | 704 | 656 | 670 | 666 | 1,080 | 1,094 | 886 |

# Details of your new charges

Your rate: TOU-GS-2-A
Billing period: Sep 30 '16 to Nov 1 '16 (32 days Summer/Winter Season)

| | | |
|---|---|---|
| **Delivery charges** | | |
| Facilities rel demand | 172 kW x $15.44000 | $2,655.68 |
| Energy-Summer | | |
| On peak | 770 kWh x $0.01829 | $14.08 |
| Mid peak | 666 kWh x $0.01829 | $12.18 |
| Off peak | 261 kWh x $0.01829 | $4.77 |
| Energy-Winter | | |
| Mid peak | 16,397 kWh x $0.01885 | $309.08 |
| Off peak | 10,283 kWh x $0.01885 | $193.83 |
| DWR bond charge | 28,377 kWh x $0.00539 | $152.96 |
| Customer charge | | $223.75 |
| **Generation charges** | | |
| *DWR* | | |
| DWR energy credit | 28,377 kWh x -$0.00022 | -$6.24 |
| *SCE* | | |
| Energy-Summer | | |
| On peak | 770 kWh x $0.27921 | $214.99 |
| Mid peak | 666 kWh x $0.07835 | $52.18 |
| Off peak | 261 kWh x $0.02771 | $7.23 |
| Energy-Winter | | |
| Mid peak | 16,397 kWh x $0.04258 | $698.18 |
| Off peak | 10,283 kWh x $0.03354 | $344.89 |
| Subtotal of your new charges | | $4,877.56 |
| UUT exempt | | |
| State tax | 28,377 kWh x $0.00029 | $8.23 |
| Your new charges | | $4,885.79 |

***Your Delivery charges include:***
- *$674.37 transmission charges*
- *$2,292.75 distribution charges*
- *-$24.12 nuclear decommissioning charges*
- *$331.63 public purpose programs charge*
- *$129.40 new system generation charge*

***Your Generation charges include:***
- *-$3.40 competition transition charge*

***Your overall energy charges include:***
- *$44.36 franchise fees*

***Additional information:***
- *Service voltage: 208 volts*

# WHAT IS ENERGY MANAGEMENT?

*Energy Demand Management involves regulating the rate of energy use so energy is used in a more efficient way.* ***Basically the EMS is connected to specific electrical devices within a commercial facility and is programmed to allow those devices to operate more efficiently by reducing demand charges, unnecessary kilowatt-hour charges and finally cutting electrical utility bills from 10% to 60%****.*

**Effective Energy Management involves the following steps:**

1. Metering your energy consumption and collecting the data.
2. Finding opportunities to save energy, and estimating *how much* energy each opportunity could save. You would typically analyze your meter data to find and quantify routine energy waste, and you might also investigate the energy savings that you could make by replacing equipment (e.g. lighting) or by upgrading your building's insulation.
3. Taking action to target the opportunities to save energy (i.e. tackling the routine waste and replacing or upgrading the inefficient equipment). Typically you'd start with the best opportunities first.
4. Tracking your progress by analyzing your meter data to see how well your energy-saving efforts have worked.

# Billed Month

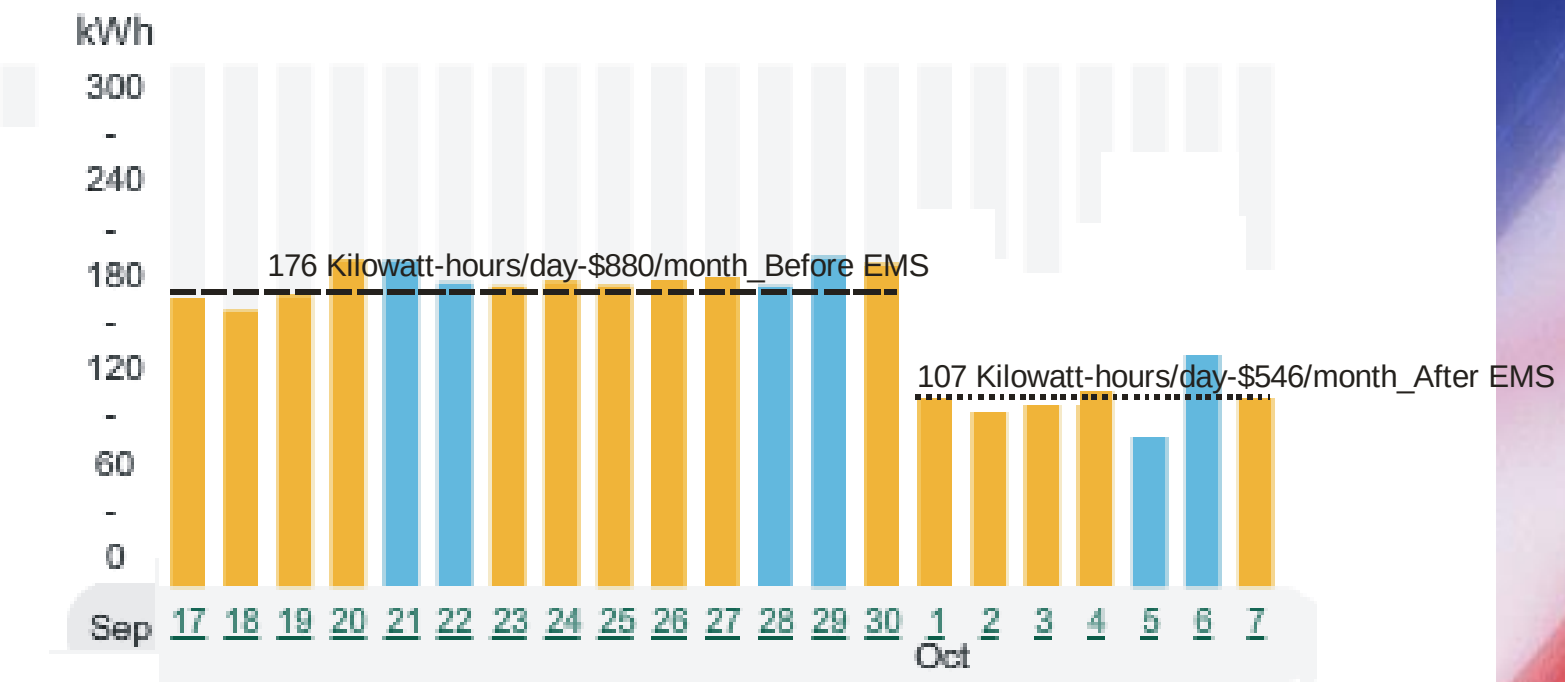
**Sep 09, 2013 - Oct 08, 2013**

View Another Billed Month:

Month

Average Daily Usage: 152.90 kWh

Total Usage: 3,212 kWh



# ENERGY MANAGEMENT VS SOLAR PV

Solar PV has been growing at an astounding rate over the past 10 years and will no doubt continue to provide an important alternative for America's Energy Security. Unfortunately many of the incentives such as rebates and tax credits are no longer available to support the rapid growth of solar. Most Solar companies simply evaluate how much electricity (kilowatt-hours) prospects are using and try to install the largest system that will physically fit on the roof of the home or facility. There is no incentive for Solar Companies to provide an energy audit to help reduce electricity consumption prior to installing Solar PV.

## THE MAIN DIFFERENCES BETWEEN ENERGY MANAGEMENT AND SOLAR PV

| **Solar PV makes or generates electricity.** | **Energy Management reduces electricity consumption.** |
|---|---|
| Solar PV does not require an energy audit. | Energy Management requires and energy audit. |
| Solar PV reduces Kilowatt-hour charges only. | Energy Management reduces kilowatt-hour charges, demand charges and rate schedule related charges. |
| Solar PV cost $20 for every $1 of annual energy cost savings. | Energy Management cost $1.7 for every $1 of annual energy costs savings. |

# GSA5688EMS PROGRAMMBLE SWITCH



**Control Electricity Cost:** Take Control with the **GSA5688EMS Programmable Switch**. By controlling how you use your electricity, you can use the same amount of energy each month at a distinctly lower cost. Your Utility Company charges not only for the total amount of energy you use, but also for your peak demand. Whenever you use a lot of electricity at one time, your demand increases. The highest demand in any one demand interval is your peak demand, and determines the corresponding demand charge. This can be costly; because you may not use this much energy at all times of the day or month, but Your Utility Company bills you for this peak demand. Controlling your demand each month can lead to substantial savings on your monthly electric bill. The GSA5688EMS is a 7-Day Astro Time Switch that is easy to program and provides up to 40 ON/OFF operations per week which can be used for 24-hour or 7-day load control. The astronomic feature provides sunset ON and sunrise OFF settings and the auto daylight savings adjustment means you can "set-it and forget-it". The independent 7-day programing provides complete flexibility for applications where load switching differs each day of the week.

**External Transducer Inputs:** The onboard microprocessor is used to analyze inputs from various transducers such as temperature, pressure, power, conductivity, etc. thereby directly controlling the ON/OFF state of the switch based on the value of the signal received from a specific transducer. Astronomic programming can be combined with independent programs to provide a sunset ON and timed OFF program. A factory supplied CR2 lithium battery provides up to three years of time keeping without AC power and user program selections are stored in non-volatile memory. The switch has an isolated single pole single throw switch capable of directly controlling any load type, including HID and fluorescent lighting, pumps, fans, compressors, heaters, air conditioners, PAR lamps and motor loads from 12 to 277 volts AC or 12 to 28 volts DC, within the specified ratings. A "3 wire" design allows the switch to replace, or be used as a single-pole or 3-way (multi-way) switch.

**Applications for Controlling:** The GSA5688EMS Programmable Switch can be used to control both peak demand and energy consumption of schools, office buildings, convenient stores, libraries, restaurants, churches etc.

**Specifications:**

Switch: Single-pole or 3-way (Multi-way) Compatible
Switch Rating:
- Resistive (heater): 20 Amp, 120-277 VAC
- Tungsten (incandescent): 15 Amp, 120 VAC; 6 Amp, 208-277 VAC
- Ballast (fluorescent): 16 Amp, 120-277 VAC
- Motor: 1 H.P., 120 VAC; 2 H.P., 240 VAC; 4 Amp, DC Loads:12 VDC; 2 Amp, 28 VDC

Events: 40 ON/OFF Events per week.

**Engineering Specification:** Electronic 7-Day astronomic Time-Switch. The Time-Switch shall be a solid state electronic control capable of permitting 40 ON/OFF set points to be distributed through a 7-day time period with 1 astronomic ON and 1 astronomic OFF set point per day. The time and set points shall be programmable to the nearest minute with a minimum ON duration of 1 minute and a maximum ON duration of 6 days, 23 hours, 59 minutes. The Time-Switch shall have a digital LCD readout to show day-of-week and time-of-day using 12 hour AM/PM indicator. The Time-Switch shall provide a manual override control for both temporary and permanent override. The Time-Switch shall operate over a temperature range of 32°F (0°C) to 104°F (40°C). A lithium battery provides up to three years of time keeping without AC power and user program selections are stored in a non-volatile memory. Switch configuration to be SPST with a UL listed rating of: **Resistive (heater)**: 20 Amp, 120-277 VAC; **Tungsten (incandescent)**:15 Amp, 120 VAC; 6 Amp, 208-277 VAC; **Ballast (Fluorescent):** 16 Amp, 120-277 VAC; **Motor**: 1 H.P., 120 VAC; 2 H.P., 240 VAC; 4 Amp, DC Loads: 12 VDC; 2 Amp, 28 VDC. The Time-Switch's electrical contacts shall make or break current according to user adjustable program. The Transducer input signals to the microprocessor shall be 0-20 mA DC and must be supplied by a shielded cable.

**GO SOLAR AMERICA-GSA ENERGY SERVICES_1220 HIGHLAND AVENUE #1464, DUARTE, CA 91010, 323-407-9518**

# SAMPLE ANALYSIS

| CURRENT CHARGES | |
|---|---|
| EXISTING ANNUAL KW-HOURS USAGE | 59,905 KILOWATT-HRS_BASED ON 6-MONTH AVERAGE |
| EXISTING ANNUAL DEMAND USAGE | 108 KILOWATTS |
| | |
| CURRENT KW-HOURS CHARGES ($.165313/KW-HR)-GS1 | $825.26/MONTH |
| CURRENT DEMAND CHARGES ($0.00/KW) | $0.00/MONTH |
| CURRENT MISC. CHARGES | $26.85/MONTH |
| CURRENT TOTAL CHARGES-(PLUS 10.0% TAX) | $937.32/MONTH |
| | |
| TOTAL COST OVER 5 YEARS | $63,405.00 |
| TOTAL COST OVER 20 YEARS | $413,758.00 |
| **ENERGY MANAGEMENT SYSTEM** | |
| SYSTEM COST | $6,900.00 |
| | |
| MONTLY COST BEFORE ENERGY EFF. UPGRADES | 937.32/MONTH |
| | |
| ESTIMATED SYSTEM REQUIRED | 4-CONTROL POINTS EMS |
| ESTIMATED ANNUAL DEMAND REDUCTION | N/A |
| ESTIMATED ANNUAL KW-HOUR REDUCTION | 7,450.00 KILOWATT-HOURS |
| | |
| MONTLY COST AFTER ENERGY EFF. UPGRADES | $625.58/MONTH |
| | |
| 30% FEDERAL TAX CREDIT | N/A |
| MODIFIED ACCELERATED COST RECOVERY | N/A |
| | |
| SYSTEM BREAK-EVEN POINT | IMMEDIATELY |
| | |
| BEFORE ENERGY EFFICENCY UPGRADES -10 YRS | $1,584.00/$0.00 |
| AFTER ENERGY EFFICENCY UPGRADES - 10 YRS | $978.00/49,309.00-SAVINGS |
| | |
| BEFORE ENERGY EFFICENCY UPGRADES -20 YRS | $2,836.00/$0.00 |
| AFTER ENERGY EFFICENCY UPGRADES -20 YRS | $1,751.00/$137,614.00-SAVINGS |
| | |
| NET SAVINGS IN 20 YEARS | $137,614.00 |

GO SOLAR AMERICA

# SAMPLE MONTH-BY-MONTH COMPARISON
# WITH AND WITHOUT ENERGY MANAGEMENT SYSTEM

**JOURNEY OF FAITH'S MONTH-BY-MONTH COMPARISON**
**WITH AND WITHOUT THE GSA ENERGY MANAGEMENT SYSTEM**

The chart below shows a month-by-month comparison of your results with and without the **GSA Energy Management System.** The System was installed May 14, 2015 and the rate schedule for **Customer Account 2-06-412-5214** was changed for the September billing cycle beginning on September 11, 2015. The numbers in red represent estimates.

| | CUSTOMER ACOUNT: 2-06-559-9466 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2014 | | | 2015 | | | 2016 | | |
| | KILOWATT-HRS | DEMAND | COST | KILOWATT-HRS | DEMAND | COST | KILOWATT-HRS | DEMAND | COST |
| DECEMBER | 447 | 26 | $592.25 | 606 | 17 | $112.36 | 606 | 17 | $112.36 |
| NOVEMBER | 173 | 25 | $550.47 | 446 | 14 | $96.62 | 446 | 14 | $96.62 |
| OCTOBER | 831 | 19 | $524.45 | 726 | 16 | $138.72 | 609 | 14 | $111.00 |
| SEPTEMBER | 1,360 | 24 | $657.50 | 1,218 | 20 | $230.37 | 900 | 17 | $159.99 |
| AUGUST | 1,465 | 24 | $680.47 | 1,144 | 20 | $598.04 | 1,003 | 16 | $180.82 |
| JULY | 1,389 | 23 | $704.98 | 1,358 | 20 | $647.13 | 1,366 | 24 | $241.77 |
| JUNE | 1,243 | 23 | $627.32 | 1,266 | 16 | $585.06 | 937 | 18 | $167.19 |
| MAY | 897 | 21 | $565.13 | 524 | 16 | $489.81 | 539 | 12 | $105.82 |
| APRIL | 525 | 21 | $533.07 | 368 | 21 | $524.53 | 481 | 15 | $91.33 |
| MARCH | 663 | 18 | $506.52 | 661 | 18 | $505.75 | 311 | 12 | $69.15 |
| FEBRUARY | 515 | 21 | $532.41 | 233 | 15 | $430.05 | 473 | 17 | $92.15 |
| JANUARY | 860 | 21 | $562.31 | 174 | 16 | $438.73 | 592 | 17 | $106.69 |
| **TOTALS** | 10,368 | 266 | **$7,036.88** | 8,568 | 209 | **$4,797.17** | 8,380 | 193 | $1,534.89 |

# HOW TO GET STARTED WITH THE GSA ENERGY MANAGEMENT SYSTEM TRIAL

**STEP1.** You will provide the most recent copy of your Southern California Edison (SCE) or other utility company electricity bill. A GSA Energy Consultant will analyze the bill and decide if your facility is a good candidate for our Energy Management System Services. If the result of the analysis is positive, we will proceed onto to STEP 2.

**STEP2.** You agree to work with GSA by signing a **non-binding** Memorandum of Understanding (MOU). You also agree that if GSA is able to sufficiently demonstrate at no cost to you that our technology can reduce your out-of-pocket annual electricity expenses, the following will apply:

a. You will set an appointment to install our Micro EMS system for a one month-no-obligation-trial.
b. The first business day following the one month-trial, **YOU and ALL DECISION MAKERS** will meet with a GSA Energy Consultant to review the results of the trial. If the results of the trial meet your expectations and demonstrate that your net monthly out-of-pocket expenses will be less than they are currently, **YOU and ALL DECISION MAKERS will be prepared to sign a one page Lease/Purchase Agreement and make a minimum deposit of $175.00 per EMS module installed.**
c. If the results do not meet your expectations, you do not sign the lease/purchase agreement or do not have the deposit; we will thank you for your participation and remove the equipment.

**STEP3.** We install the Micro EMS units or modules on selected appliances (primarily commercial refrigerators) by simply disconnecting the appliance from the wall outlet, reconnecting it to the power input plug on the Micro EMS, and finally connecting the Micro EMS to the wall outlet. It generally takes about one-hour for the installation of the complete system.

**STEP4.** Go Solar America shall permanently install all equipment and wiring necessary to produce the maximum estimated energy reduction and cost savings. In some cases a **Utility Service Upgrade** will be required. GSA will prepare all required SCE or other Electric Power Utility documentation required to change the rate schedule for more annual costs savings. Two days following the installation, you will be able to go online to SCE.com and begin monitoring your electricity savings.