Sustainability Dreams Do Pay Off!

by

David Kendall, PhD

Sustainable Living Goals

- Downsize to smaller house with energy efficient footprint and solar panels
- Conduct energy efficiency repairs
- Eliminate carbon based energy sources & rely on electric energy
- Replace Internal Combustion Energy (ICE) vehicle with Electric Vehicle (EV)
- Become a net energy producer
- Install Cisterns to capture and reuse rainwater

Weatherization Repairs (low hanging fruit)

- Conduct Blower-door test to identify air leaks
- Heating, cooling and ceiling ducts air sealing and insulation
- Attic insulation
- Unheated crawl space sealing and insulation
- Install high efficiency exhaust fans
- Install ceiling fans
- Install low-flow toilets
- Replace leaking skylights & front door
- Replace existing light bulbs with LEDs

Replaced existing one-year old natural gas furnace & hot water heater

Gas furnace

Gas water heater

With heat pump & heat pump water heater & water recirculation pump

Trane heat pump

Heat pump air handler

Water recirculation pump

Air Tap heat pump water heater

Added 13.2 kWh Solar PV System:

33 panels South Roof, 16 panels West Roof, 6 panels East Roof

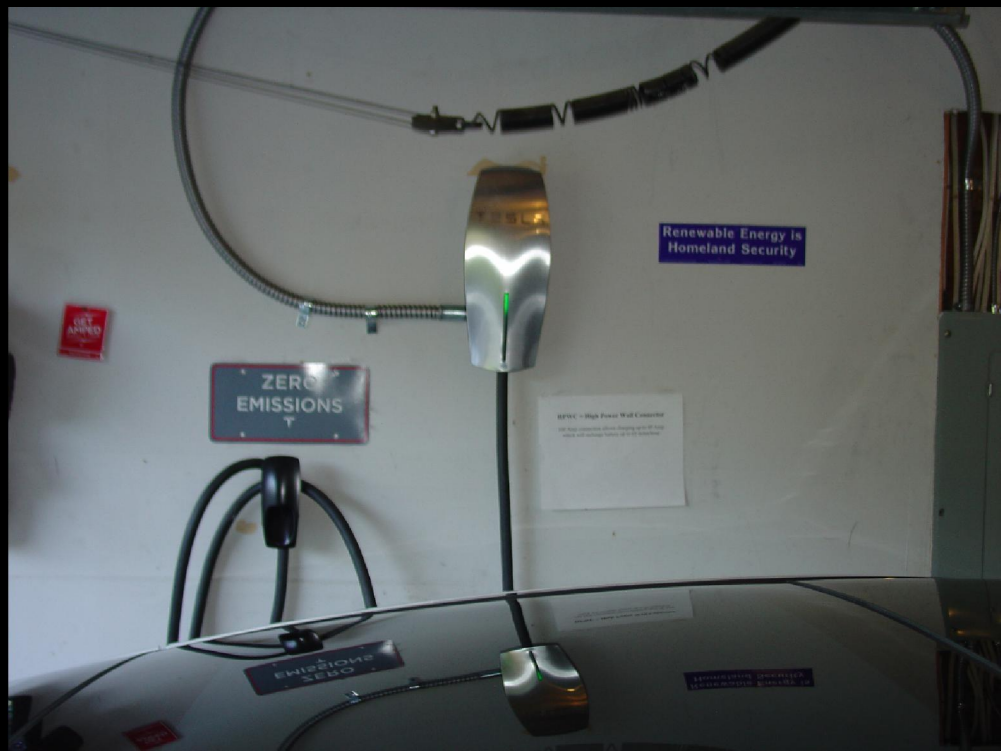
Replacd Prius Hybrid with Tesla Model-S Electric Vehicle (EV)

Tesla-Model S

- Car battery options: 70 kWh & 85 kWh
- Rear Wheel Drive, All Wheel Drive options
- EPA rated range is 265-270 miles @65 mph for 85 kWh battery
- EPA rated range is 240 miles @65 mph for 70 kWh battery

Home Charging

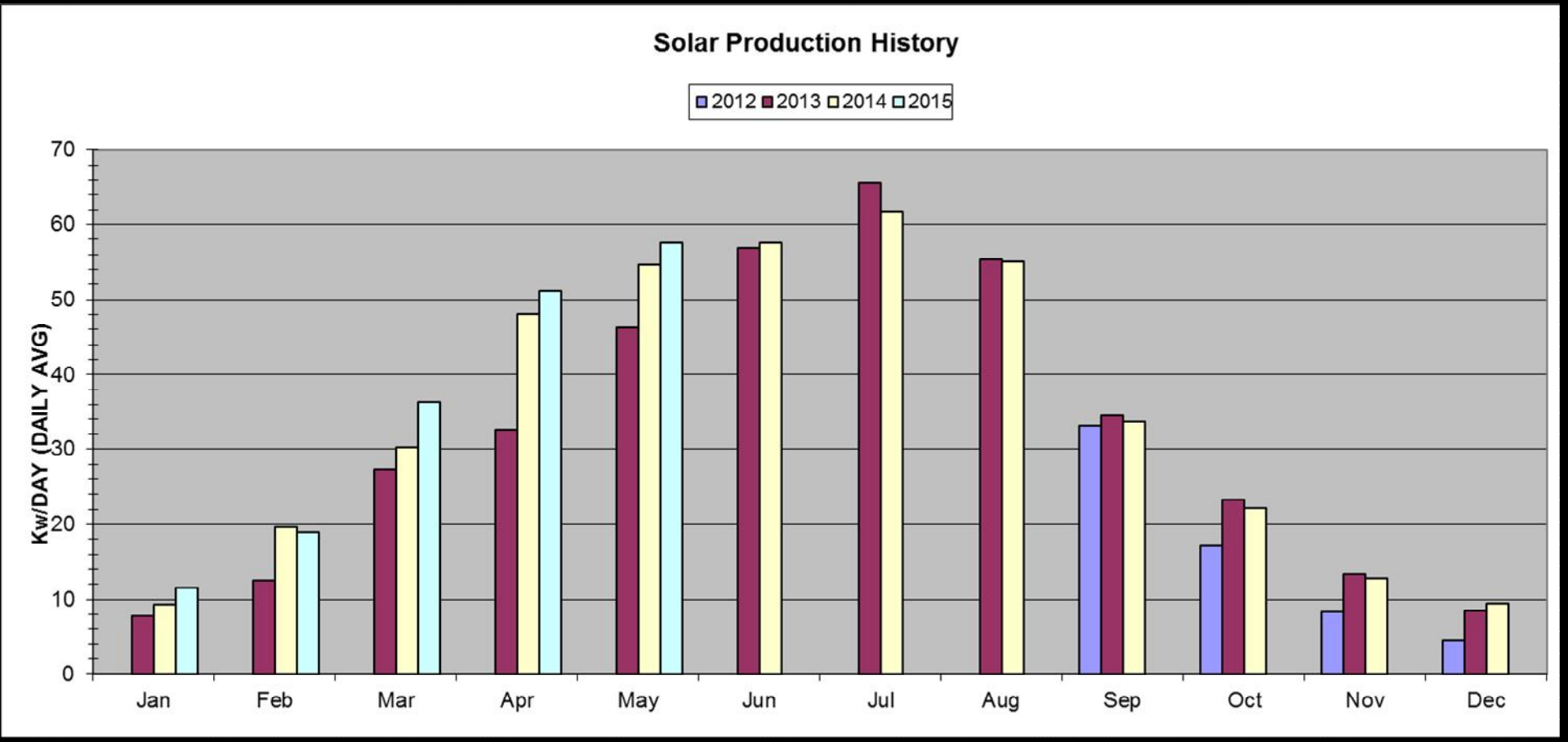
- 100 Amp High Power Wall Connector (HPWC)
- HPWC enables charging up to 80 Amps, at a battery charging rate of 62 miles//hour



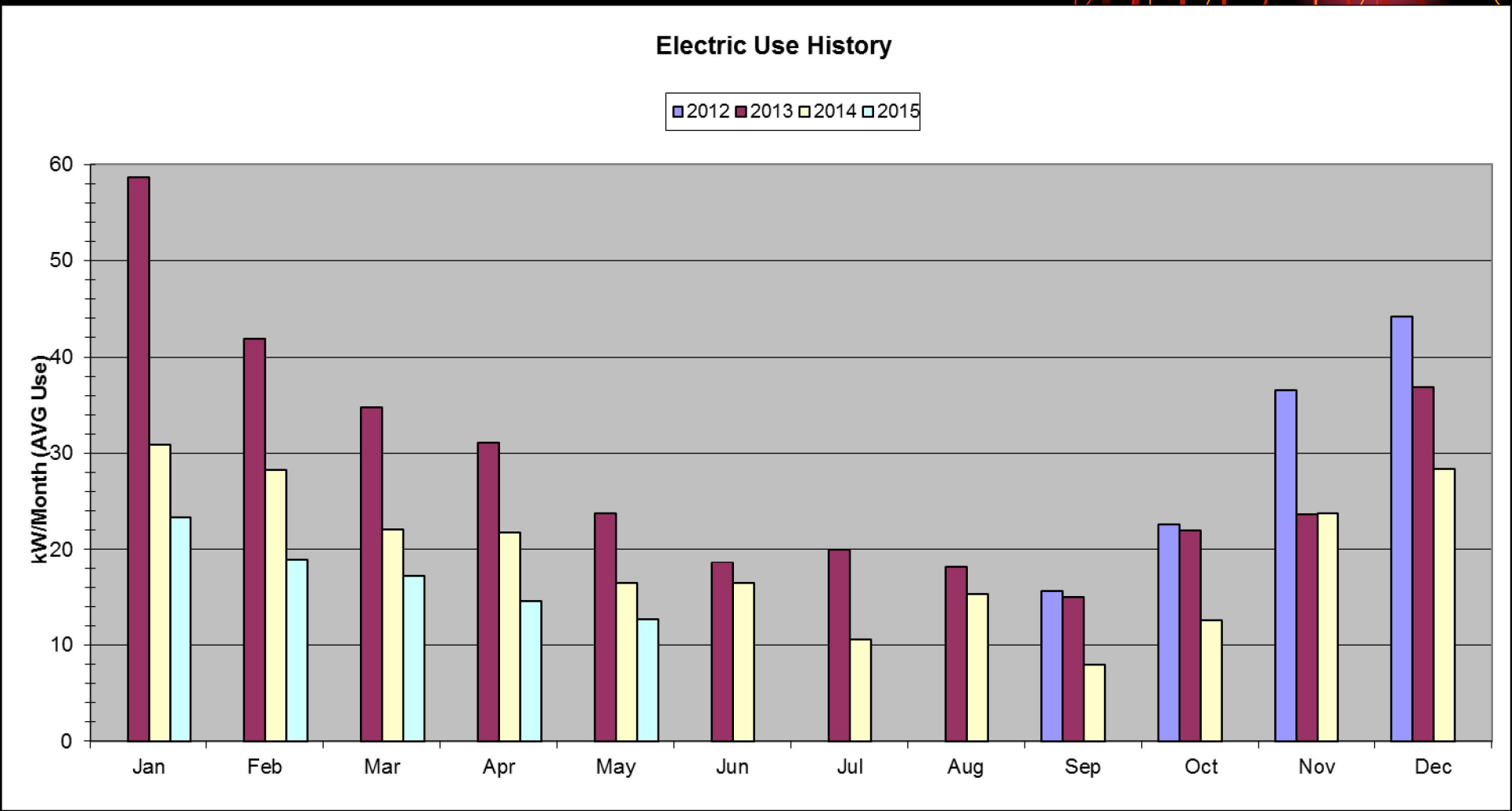
Supercharging Stations (SCS)

- Super charging stations enable fast recharging (20-40 minutes): currently 448 Supercharging Stations, 2,489 Superchargers Worldwide.
- We utilized SCS's during 8,000 mile cross country trip last fall to march in the "People's Climate March" in NYC on 9/21/14.

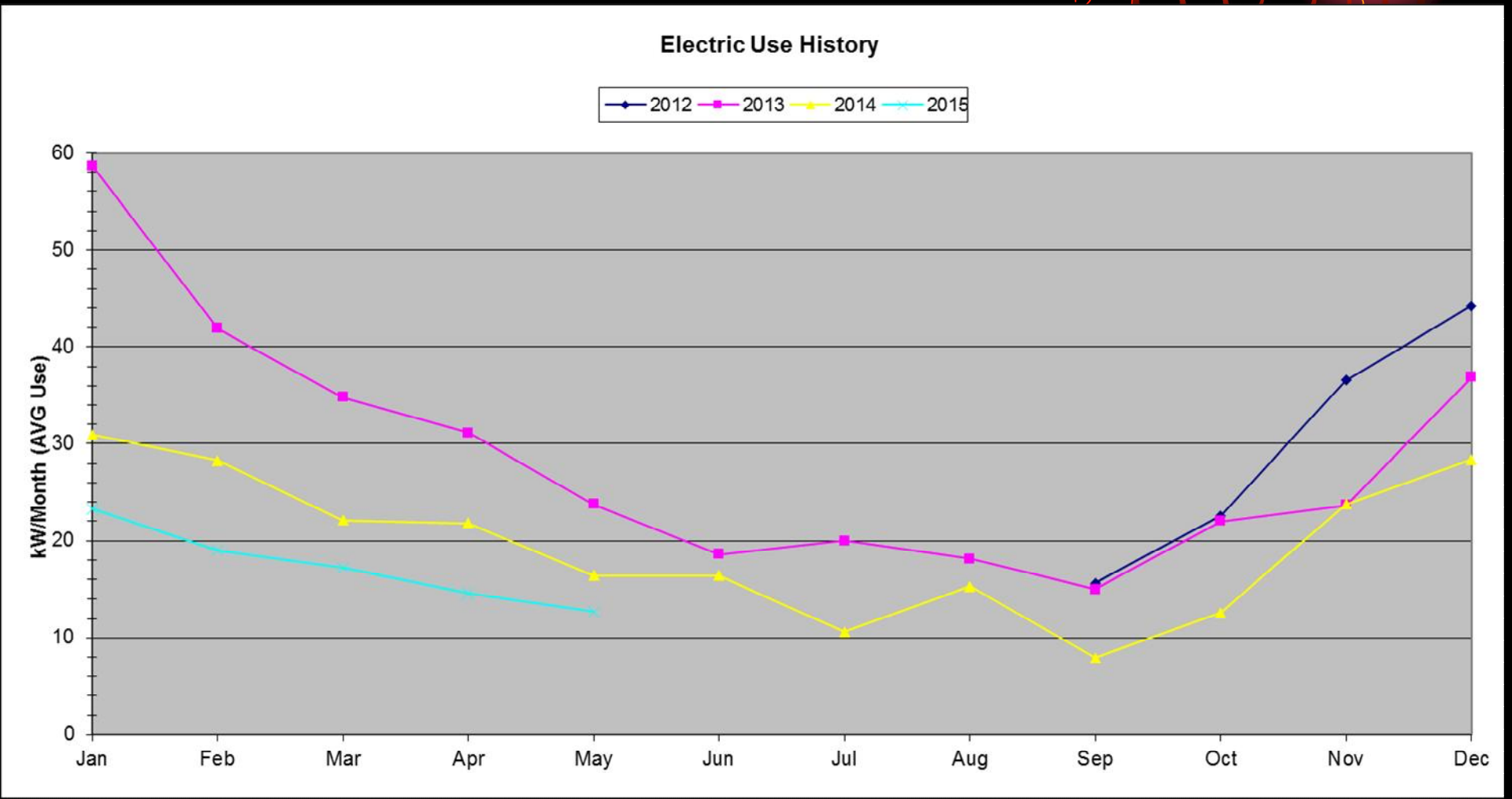
Solar Production History



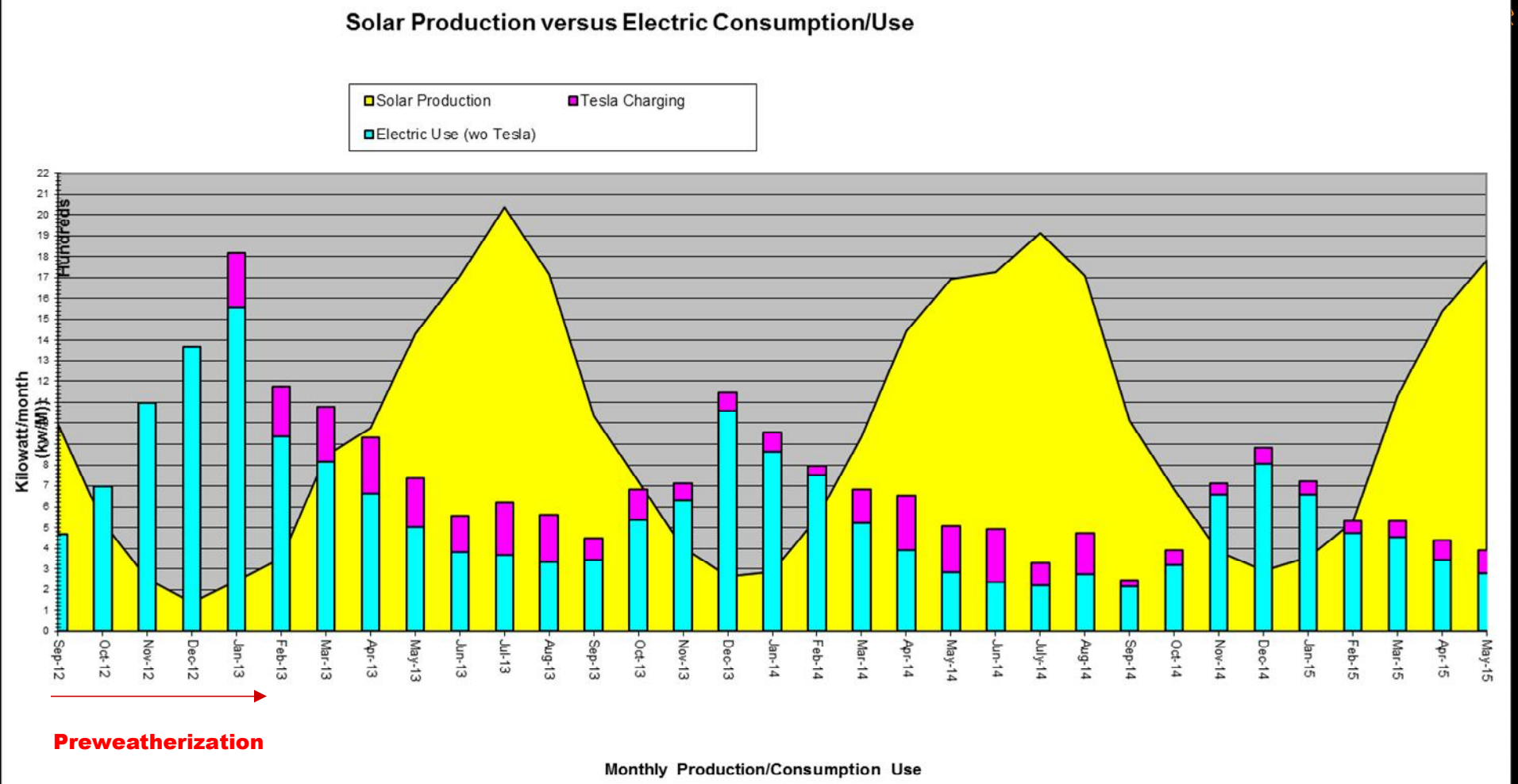
Electric Use Summary



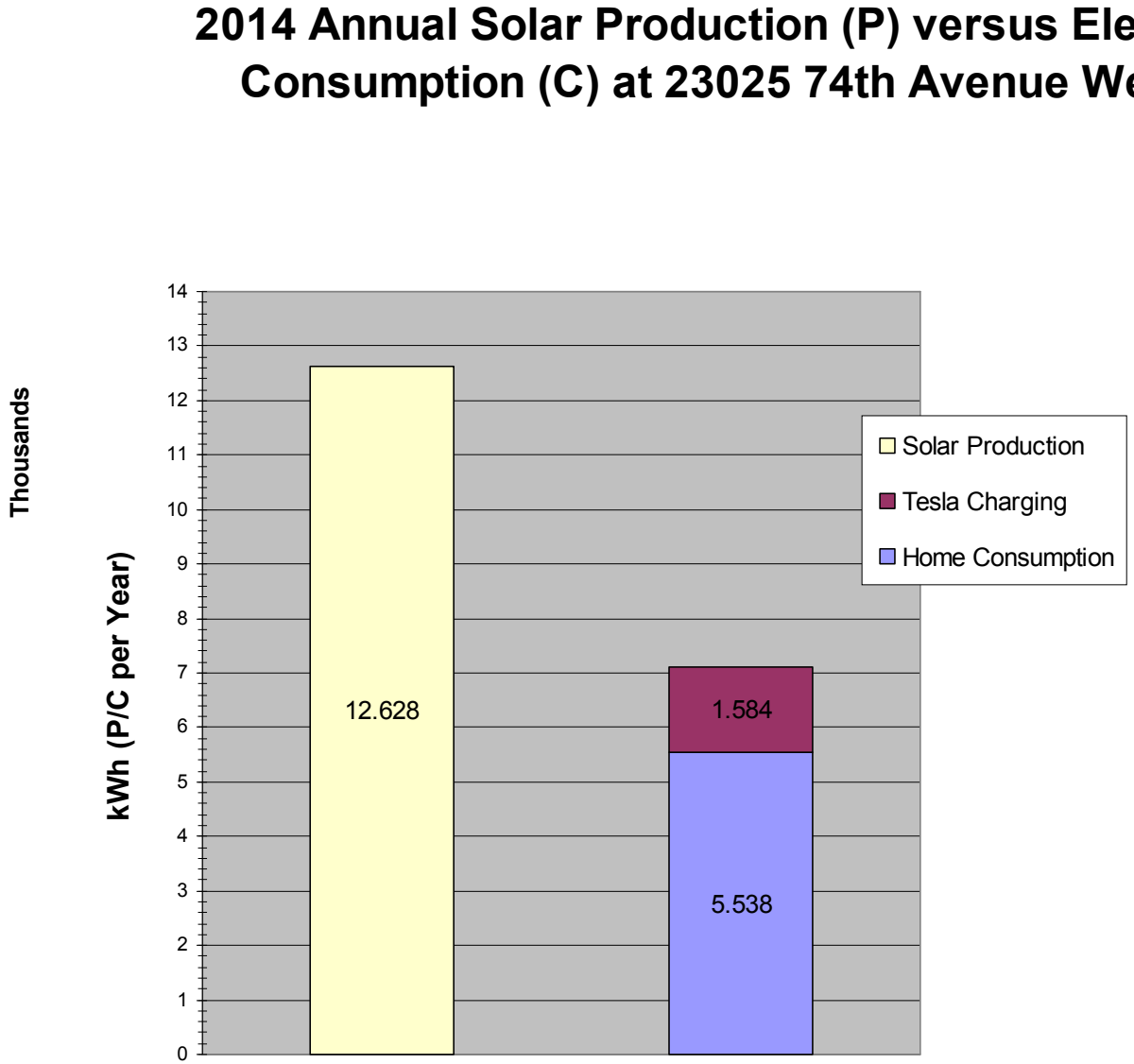
Electric Use Summary



Comparative solar production/electric use

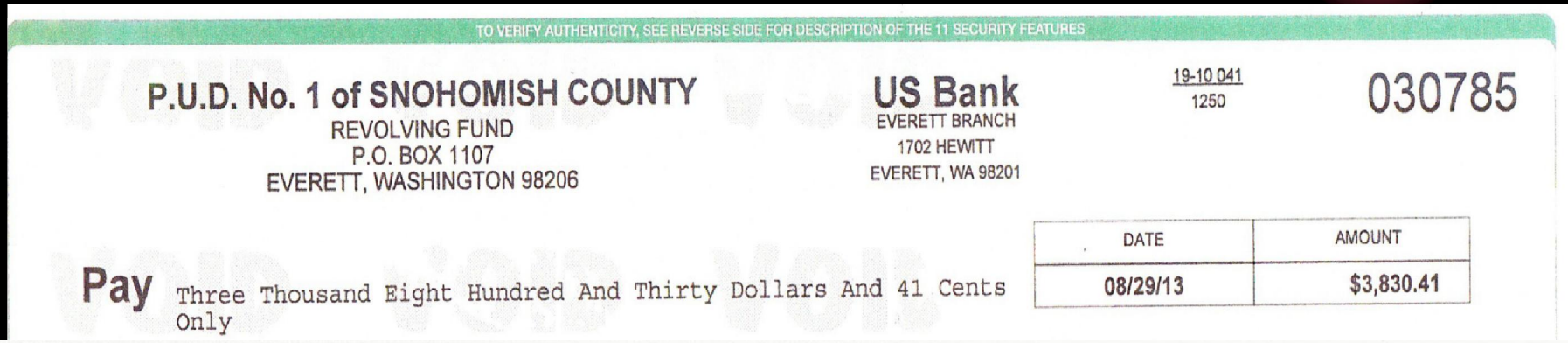


2014 Summary (P/C = 177%)



The net result of our Solar sustainability efforts:

* check for $2,500 for net metering signup
* 30% federal tax credit rebate on solar system
* NO ELECTRIC BILL for past two+ years
* check for $3,830 for excess production for 1st year
* check for $4,829 for 2nd year
* anticipate $5,000 for 3rd year production
* solar system will be paid off in 6.5 years



TO VERIFY AUTHENTICITY, SEE REVERSE SIDE FOR DESCRIPTION OF THE 11 SECURITY FEATURES

P.U.D. No. 1 of SNOHOMISH COUNTY
REVOLVING FUND
P.O. BOX 1107
EVERETT, WASHINGTON 98206

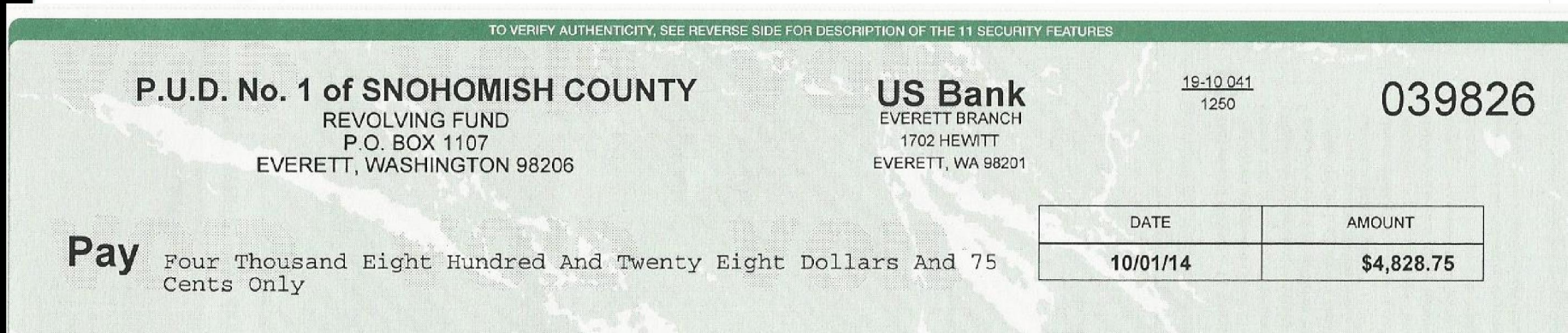
US Bank
EVERETT BRANCH
1702 HEWITT
EVERETT, WA 98201

19-10 041
1250

030785

DATE	AMOUNT
08/29/13	$3,830.41

Pay Three Thousand Eight Hundred And Thirty Dollars And 41 Cents Only



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EVERETT, WA 98201

19-10 041
1250

039826

DATE	AMOUNT
10/01/14	$4,828.75

Pay Four Thousand Eight Hundred And Twenty Eight Dollars And 75 Cents Only

Cistern Installation (4,590 gallons)

- 3 – 530 gallon (above ground)
- 2 – 1500 gallon (below ground)

Cistern Hose bib south-west corner

Cistern Hose bib north-east corner

Vegetable Gardens added

South side

Front yard

Conclusion

1) Our **Sustainability Dream** has paid off and greatly exceeded our expectations!
2) We achieved our sustainability goal of achieving net energy production over electric use over the past two+ years.
3) We installed Cisterns: Total = 4,590 gallons at our home to conserve water for garden and yard use, and to eliminate stormwater runnoff.
4) Vegetable gardens added to grow our own veggies

Questions?