

The Parke
at Ocean Pines



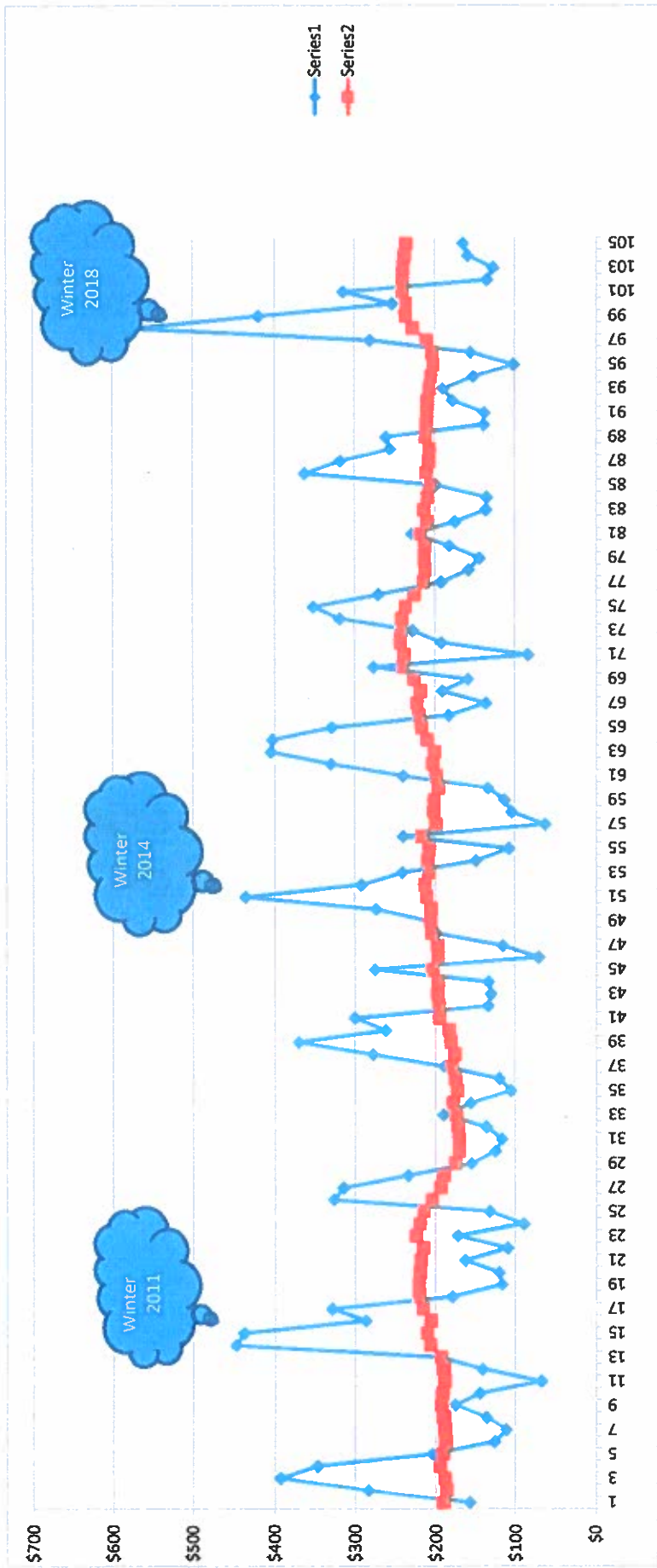
Handout for FYI event

Parke HVAC experiences

Additional resident's experiences are being added to the forum on The Parke website often. Visit the forum to read and add your thoughts and experiences.

October 5, 2018

Habeiger Home bills 2010-2013



HVAC SYSTEMS

We purchased our OSPREY model house at 6 MacAfee Court in August 2004. The house has an open loft and a sunroom. For the next 12 years, the house was heated and cooled with the original Lennox equipment (A/C compressor and air handler with gas furnace for downstairs; heat pump and air handler for upstairs). Appliances using gas are the furnace, hot water heater and the fireplace. All other appliances are electric.

In October 2016, we replaced the original system with TRANE equipment, done by MEGEE Heating of Georgetown, Delaware (800-772-3278). The downstairs unit is a 20 SEER (Seasonal Energy Efficiency Ratio) rated heat pump variable speed with a gas furnace backup (TRANE XV20i). Upstairs is an 18 SEER rated heat pump (XL18i).

Total cost for both systems was \$24,000.

ENERGY USAGE AND COST WITH DEGREE DAY ANALYSIS

The spreadsheet on the reverse side shows an analysis of energy usage, cost and degree days.

Degree Days measure the variance from 60 degrees F. Degree Days can be used on a monthly or annual basis to obtain the variance from 60 degrees, which can then be used to evaluate the relative heating and cooling usage of one month or year in comparison with another.

For the winter heating season Degree Days, I used the abbreviation HDD; for summer cooling season, CDD. I used Degree Days for Berlin, Maryland, ZIP 21811, obtained from weatherdatadepot.com

HOT WATER HEATER

Our original tank gas water heater (roaring like a jet at takeoff) was replaced in 2011/2012 with an ETERNAL tankless on-demand system in the garage at a cost of \$3200. This system lasted two years before developing a leak in the one gallon hot water storage tank. It was replaced under warranty in June 2014.

In March 2018, the system malfunctioned. By this time, the ETERNAL corporation had gone out of business and replacement parts were not available.

Ben Franklin Plumbing (410-629-0006) replaced the system with a NAVIEN Model NPE-240A tankless on-demand system, which is located in the garage. Total cost \$5200.

Larry and Jean Fry

6 MacAfee Court

Diane McGraw
7 Central Parke West
410-208-2569

From This:

August 31, 2001: Bob and Diane moved to their new home at 7 Central Parke West, a one floor Sandpiper model, 2,200 square feet with 10 foot ceilings, gas fireplace and gas hot water tank. Our contract included three upgrades for the HVAC system:

- \$950 – Lennox Heat pump with Gas Furnace Backup
- \$729 – Upgrade Standard System to 12 Seer AC
- \$556 – Humidifier Honeywell



Problems: Installation by Centex's contractor Arctic Heating and Air Conditioning was faulty which caused us problems: (1) carbon soot caused by a faulty furnace burning aperture, (2) insulation being pulled toward furnace because it was not sealed properly in the roof area, (3) rust flecks from indoor coil condenser came through ductwork (repair at the tune of \$1,400 in 2009), (4) humidifier was not installed properly as pipes were uninsulated in roof area so we were hesitant to use the humidifier (5) the indoor thermostat was a Carrier, not a Lennox thermostat, even though our system was a Lennox system.

Goodwill: Centex and Arctic worked with us to our satisfaction: System was finally fixed. The interior of the house was painted after second sooting, all ductwork was replaced, and one utility bill was paid. In 2013, a gas-fueled tankless hot water heater was installed. In 2015, the humidifier was removed.

Electric Bills (January-December 2014):

1/2014 - \$311.00; 2/2014 - \$222.00; 3/2014 - \$199.00; 4/2014 - \$147.00; 5/2014 - \$136.00; 6/2014 - \$187.00; 7/2014 - \$116.00; 8/2014 - \$132.00; 9/2014 - \$170.00; 10/2014 - \$246.00; 11/2017 - \$283.00; 12/2017 - \$401.00.

Electric Bills (January-December 2014):

1/2014 - \$306.42; 2/2014 - \$212.07; 3/2014 - \$79.59; 4/2014 - \$70.20; 5/2014 - \$60.84; 6/2014 - \$49.04; 7/2014 - \$49.04; 8/2014 - \$57.93; 9/2014 - \$67.94; 10/2014 - \$113.25; 11/2014 - \$95.12; 12/2014 - \$233.66.

To This:

February 6, 2015:

- Description of work performed:
 - ✚ Installation of a XP25-048-230 Variable Speed Electric Heat Pump.
 - ✚ Installation of a Lennox iComfort Wi-Fi Thermostat.
 - ✚ New precast pad.
 - ✚ Capped off gas pipe.
 - ✚ Removal of humidifier.
 - ✚ Retaped installation on band board in enclosed crawl space.


- Contractor who performed the work:
 - ✚ Arctic Heating and Air Conditioning
 - ✚ Scott's Electric

- Cost of the work: \$11,523.00 minus:
 - ✚ Received \$1,300 rebate.
 - ✚ Received a residential energy of \$200 on 2015 taxes. (Maximum \$500 - \$300 claimed for tankless hot water heater on 2013 taxes).
 - ✚ One year of Energy Savings Agreement (ESA) Plan provided by Arctic without charge; therefore, a savings of \$209.
 - ✚ Covered electrical costs of \$600 for Scott's Electric.

- Benefits or energy savings realized from the work:
 - ✚ Healthier breathing house.
 - ✚ A more comfortable house as heating and cooling are distributed across the house now.
 - ✚ A quieter house as the variable speed unit doesn't come with a whirling sound!
 - ✚ Smart technology of iComfort thermostat with a HD touchscreen, programmable and remotely controlled via WIFI.
 - ✚ AHRI Certificate of Product Ratings for newer technology - SEER Rating (cooling) of 20.50 and HSPF Rating (Heating) of 10.20.
 - ✚ 10 year manufacturer warranty on compressor, outdoor coil, indoor coil.

 - ✚ Cost savings on electric bills:
 10/2017 - \$98.00; 11/2017 - \$83.00; 12/2017 - \$118.00; 1/2018 - \$207.00; 2/2018 - \$463.00; 3/2018 - \$246.00;
 4/2018 - \$178.00; 5/2018 - \$195.00; 6/2018 - \$96.00; 7/2018 - \$96.00; 8/2018 - \$112.00; 9/2018 - \$121.00.

 - ✚ Cost savings on gas bills:
 10/2017 - \$48.45; 11/2017 - 65.58; 12/2017 - \$84.23; 1/2018 - \$66.47; 2/2018 - \$74.33; 3/2018 - \$59.35;
 4/2018 - \$65.10; 5/2018 - 54.23; 06/2018 - \$42.41; 7/2018 - \$51.03; 8/2018 - \$18.87; 9/2018 - \$24.04.

- Your satisfaction with the work:
 - ✚ Very VERY VERY 

- Any Lessons Learned to pass along to others?
 - ✚ Do comparisons with neighbors.
 - ✚ As part of the contract, I requested a quality control inspection by Tad.
 - ✚ I purchase three 20x25x5 Merv 16 hospital-quality filters (\$267) from Arctic or Filters USA to save money.
 - ✚ I maintain my investment through Arctic's ESA Plan for twice yearly precision tune-ups at a cost of \$209 annually.

Solar at 13 Freeport Lane

Submitted by Don Gold

How it works

Solar panels generate DC power. We have an inverter in our garage which converts the DC power to AC power. We use the power from our system first. If our instant demand exceeds what our system is producing, we buy power from Choptank. If our system generates more than we need, the excess is sold to Choptank. Our initial install had a meter that went backwards when we were selling power. Shortly after the install, Choptank replaced the meter with one that keeps track of what we buy and sell separately. We sell power at about two thirds of the cost of the power that we buy.

If Choptank power goes out, our system shuts down. We cannot isolate our generation from the grid. There is no battery storage system where we can 'warehouse' power. If the grid is down, we do not want to power the grid from our system. Someone could get hurt.

Our electric bill reflects the difference between what we buy from Choptank and what we sell to Choptank. If we use more than we sell, we pay the difference. If we sell more than we use, we pay nothing and have a credit balance for the difference. We generally carry a credit balance through the summer as we sell more than we use. In the winter, we draw down on the credit balance. If we have a credit balance in April, we get a check for the credit amount.

The system

When we installed the system in January 2012, as part of the approval process for a system, we executed a connection agreement with Choptank. As part of the approval process, prior year's energy usage was evaluated against the design capacity of our intended system. They required the system design performance to be no more than 90% of prior year's usage. After we obtained the interconnection approval, we put three feet of insulation (R60) in the ceiling, put domes in the attic over our can lights, replaced our gas furnace with the highest efficiency heat pump we could find, replaced our gas water heater with the highest efficiency electric heat pump water heater we could find and encapsulated our crawl space. Our crawl space looks like a NASA clean room. The only remaining gas appliance in the house is the fireplace and that is turned off. We had the gas company terminate our service and remove our meter.

We have meters where we can measure the converted power brought down from the roof (daily), the amount we buy from Choptank (daily), the amount we sell to Choptank (daily). The system also speaks to a web site where we can also monitor the performance data.

Our system consists of 36 panels and is rated at 8.28 kilowatts DC. The AC system design capacity is 6.38 kilowatts. The difference is conversion loss. We have a single inverter. There are designs where multiple 'mini-inverters' are incorporated. These are more efficient and offer some additional performance improvement for the array, but are also more expensive.

The Company

Our system was installed by Solar Energy World. They are located in Elkridge, Maryland. We are very pleased with their installation and continued service. We have a maintenance agreement with them and they come and service the system (including washing the pollen off the panels) once a year.

Warranty

- 10 years for parts and labor
- 25 years for 80% of the performance

Home Appraisal (FHA-Fannie Mae)

We did a home refinance in July 2012 and there was an appraisal. We received NO consideration of the solar installation. There were no homes with solar installations on which to base comparable value and there was very little guidance from the banking industry on appraisal evaluation. It is still something of a cloudy issue, but there is movement towards recognizing the increased value of a home with non-leased solar panels.

From Fannie Mae Selling Guide, Fannie Mae Single Family published December 16, 2014;

- Owned systems (the panels are owned by the homeowner) can be covered by FHA and Fannie Mae mortgages.
- Leased systems (the panels are leased by the homeowner) are subject to a long list of qualifications to qualify for coverage by FHA and Fannie Mae mortgages.
- "If the solar panels are leased...The solar panels may not be included in the appraised value of the property."

Cost

Our initial array was \$48,000 installed. In 2012 solar installation incentives were:

- Maryland rebate \$500 per kilowatt capacity, which was \$4,140 for our system. Currently the max value is \$1000.
- We received a 30% federal tax credit, which was \$14,400. Through 2019, the credit is still 30% of the cost, but is scheduled to decrease over time to 10% by 2022. After 2022 the credit will no longer be available.
- Solar Renewable Energy Certificates (SREC). Maryland has set a goal to produce 20 percent of its electricity from renewable resources by 2022. The energy you produce from solar resources contributes to realizing this goal. Under this program, you are granted one Maryland SREC for each megawatt-hour (MWh) of electricity your panels produce. You can then sell the SREC in the SREC market. In 2012, an SREC was worth about \$200. Today they are worth about \$10. The decrease is primarily due to the increase in sites qualifying for SRECs. We generate about 10 megawatts of power per year so we get 10 SRECs a year. We use a broker (SREC Trade) to sell the SRECs in an auction market. We pay a fee on the sale of each SREC, which is a percentage of

the sale price, with a minimum fee of \$2.50 or half the gross sales price of the SREC, whichever is smaller. We have received \$6,170 in SRECs since 2012.

Our maintenance contract is \$400 per year. We have had our inverter replaced once under the maintenance contract.

Savings

We save on average \$230 per month on total energy costs (both electric – about \$96/month - and gas – about \$134, based on pre-solar billing histories).

Bottom Line

Net cost of system, after Maryland rebate and Federal tax credit - \$29,460. We expect the system to finish paying for itself in 2022, including maintenance fee costs.

April 19, 2018
8:41 am



Steve Habegger-
Administrator

Admin

Forum Posts: 126

Member Since:
May 21, 2012



Online

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Delete



Edit

Quote

We have an Osprey with a loft.

About 10 years ago we made two major changes to our home HVAC systems; we installed two solar panels on our garage roof to heat water using the sun's energy and we removed the propane furnace and installed a heat pump (SEER 17) for heating and cooling the first floor. As an adjunct, we installed a unit (called an Aquacoil) which uses solar heated hot water to heat the house (when available).

We installed a steam humidifier to improve relative humidity in the house during the winter. When the humidifier is working, it's great but the unit is prone to breakdowns and parts are becoming difficult to find.

A small but pleasant side effect was to move the water heater into the garage thereby removing the noise of the exhaust fan and creating a small room which has become our pantry.

Before we installed the heat pump, the total energy costs (gas + electricity) for our home was \$3,000 annually. After the switch, our total costs were \$2,000 annually. Of course, our annual energy costs have crept upwards over time.

The systems we installed were very expensive but there were Federal tax credits and MD grant programs at that time that made the switch tolerable. Had those programs not been available, we would not have installed the solar system. Those programs are no longer available.

The solar system was installed by a Salisbury plumbing company which is no longer in business. The heat pump installation was performed by Arctic and Arctic has the annual maintenance contract for the entire HVAC system.

Overall, we remain pleased with our systems. The heat pump provides reliable and comfortable heating and the solar systems provides hot water when the sun shines.

May 22, 2018
8:10 pm



Ray and Linda
Olson

Member

Members

Forum Posts: 12

Member Since:
January 9, 2014

 Offline

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 Delete  Edit  Quote

We have always preferred electric over gas and when we moved to The Parke in 2013 we knew that it was just a matter of time before we would change our furnace and hot water heater to electric. Our stove was changed to electric before we bought the house and we do not have a fireplace. Our house model is a Dunlin with a sunroom.

In February of 2017 we replaced the hot water heater, installed a new hi-efficiency Lennox heat pump, replaced the gas backup with a Lennox furnace, and replaced the thermostat with a smart thermostat. We had to have our electrician do a lot of wiring in order to accommodate these new items that had previously been gas. The price of the whole update was \$10,730. We are now all electric and the gas meter has been removed and the gas lines sealed.

The electric work was done by J.T. Novak. He has done a lot of work for us and always does a good job. The plumber was a Mr. Hartley, recommended by J.T., and he and his son did a wonderful job. We would have them again for future plumbing work. Artic did all the furnace work and we are always happy with them. We hear people say that they are more expensive than some others but they come when you need them and every technician we have had seems to know what he is doing.

About our savings – it will be several years before we recoup our initial installation expense, but that is okay with us as it is a project we wanted to have done. Our history is as follows:

2014 gas and electric = \$2394

2015 gas and electric = \$2719

2016 gas and electric = \$2338

The last year electric only = \$1986

I'm sure if we were more conservative with our electrical usage we could lower our bills somewhat. Regardless, we love the new furnace/heat pump and hot water heater, which by the way, is very quiet. No fan noise! The t-stat has lots of features to keep us entertained and technically challenged. Call us if you have any questions as we are always willing to tell our story.

Karen,

In 2010, I replaced my water heater with a Rinnai tankless system. I did not convert to electric though, my Rinnai uses propane to heat. I cannot say the conversion saved me money. The initial cost for the unit and installation was \$2,680.00. I may be saving \$ using less propane, but what I did not see coming was the need for the unit to be serviced every other year at a cost of around \$150.00. Poof – there went the savings!

On a positive note, the Rinnai was mounted in the garage freeing up the area where the old unit was located and we now have a pantry there. We also do not have to listen to that annoying loud exhaust fan when the unit comes on. County code requires that pump on gas fired water heaters.

If I had it to do over again, I would replace the original 40 gallon propane unit with a 40 gallon electric unit. You have a 200 amp electric service to your home that can easily handle the load.

Pemberton Appliance Company in Salisbury sold and installed my Rinnai. 410-334-3992 They employ licensed gas fitters and electricians.

Here is some information to consider:

<http://www.waterheaterrescue.com/waterheaters.html>

Tom