2023-Oct 19 Building Electrification Webinar "CHAT" - organized by topic

**SOLAR**

Gerald: When you installed your solar, did you put a screen around the panels to keep the squirrels from getting under the panel? They'll dig a hole in your roof.

Gabriel: [We] DEFINITELY installed Critter Guard to prevent squirrels and critters making nests and chewing the wires.

Irene: We did it as well.

Tim: I did. it collects leaves

John: Squirrels ate most of the insulation off the solar panels wiring at my house, screen around the panels

Geneva&Royston: Did you consider Sunrun for solarpanels? We are in Essex County and that's the company we predominately see advertised.

Philip: I live in Union County. I went with Trinity solar. The system has worked perfectly for close to 4 years

Stephen: I keep hearing that my roof would be replaced when I get solar panels. That sounds different than your experience.

Steve: Roof should first be evaluated (replace if any question) before solar installation. For simplicity, dont combine roof and solar contracts. Most profitable for homeowner: it is VERY LUCRATIVE to own the solar system and receive all tax credits and rebates. On the other hand, vendors desire: all tax credits/rebates to the solar installer/owner (themselves); solar installed on a leased portion of the homeowner's roof; home owner signs a purchase power agreement to buy electricity from the solar owner (electricity may be initially priced low, but increases with time, and eventually exceeds electricity price from the grid). A no-strings alternative for homeowners: subscribe to community solar with permanent 20% discount from current electric bill.

**DEVELOP AN OVERALL PLAN**

Steve: consider Matt Kavanagh's energy consultation company: www.greeninsight.green 973-397-0992 (call M-F; 6PM to 9PM). Helps you develop plans for weatherization/energy/decarbonization, and provides contract reviews. Register for the [November 16, 2023 7PM webinar](https://bit.ly/3tmyd1g) for complete explanation of Green Insight.

Gabriel: We started with CIEL Energy Audit

[ideally: then asked for multiple bids for the recommended work described in the subsequent audit report]

 We installed MAXIMUM blown insulation in our attic (R60) as well as in the "overhangs" and garage ceiling (floor to the 2nd floor house addition) and all around our basement.

We also replaced our 40year roof and relocated all our vents and fans to the edges for MAX flat roof space.

In the basement we installed dehumidifier and 80gallon Heat Pump Water Heater, replacing our 50gal old natural gas water heater.

THEN we [went to bid for solar] rcvd 3 quotes and selected GREEN POWER ENERGY

Installed 40 solar Qcell panels each of 400 watts for total solar production capacity of 16 KW and

DEFINITELY installed Critter Guard to prevent squirrels and critters making nests and chewing the wires.

We have minimized the use of our existing central Heat and AC by using 3 Mitsubishi Split Heat pump units.

RESULT: Our electric & natural gas bills have been 25% of what we used to spend, because of our R30-R60 insulation [and efficient heat pumps].

 The Heat Pumps also help cut monthly cost and we export solar power for SREC $$.

**INSULATION/SEALING**

Caroline: Yes, thank you for generously sharing your experiences with this process! (I used Ciel Energy for audit and insulation in 2016)

Tim: it seems like you recommend getting estimates from multiple insulation installers. did you get different answers on what was required from the different installers? did you get significantly different estimates?

Steve: people report up to 3:1 difference in high:low bids. I recommend:

1. Use the utility list of authorized contractors to receive low cost energy audit.

2. DO NOT automatically accept the bid from the auditing company. Instead, use the audit recommendations to get multiple bids to do the recommended weatherization.

3. Once your house is weatherized and energy efficient, THEN go out for bids for HVAC (your house will be energy efficient, and you should aim to RETIRE fossil-fuel heaters/appliances, and RELY ON STAND-ALONE cold climate HEAT PUMPS (as required for your climate zone)

Stephen: What has R60 insulation? That was recommended in one slide. That seems like overkill.

John: R60 is recommended for attic,add r30 unfaced at 90⁰ to what is there

John: If you have high humidity in crawl space, cover the earth floor with vapor barrier

Betsy: "If you have high humidity..." We have a sump pump so some vapor comes from there.

We also put a trench outside that diverts water coming downhill around the house instead of up against it.

The floor is not earth but old concrete.

Steve: concrete is porous; you can easily do a test: lay plastic over several square feet of concrete during a rainy interval. Wait a few days, and look for moisture under the plastic. It is easy to lay heavy black construction plastic over the entire crawl space.

**HEAT PUMPS:**

Philip I've also installed a 3 room Fujitsu minisplit. It handles A/C and heating for the whole 1st floor of my house. My electric bill is $0

Pat: Maybe use new multiple head heat pumps as primary heating (running off solar) and gas combi only as backup?

**INDEPENDENT EVALUATION OF CONTRACTS:**

Tim: I am in discussion with Ciel about insulation/sealing and heatpumps coming from oil hot water/baseboard.

Is it something I could send details to Steve for feedback on the proposed solution?

Steve: Current heat pumps might work with lower temperature water baseboard heat.

Hot water (170 F radiator heatpumps will be arriving from Europe in 2024 and later.

Steve: contract review and energy efficiency planning service is provided by Matt Kavanagh www.greeninsight.green 973-397-0992 (M-F 6 to 9PM)

**MISCELLANEOUS**

Maryrose: does a heat pump dryer need to be drained?

Steve: Yes (some appliances have built-in pumps to the wall drain used by the washer)

Michael: Pat and Steve you should remind folks that the IRA incentives and tax credits are in addition to the incentives available through the NJBPU Clean Energy Program (including the Utility EE programs) and the DEP EV charging incentives and not instead of - the new improved second Triennium Utility EE rebates should be available around July 2024

Steve: Most incentives are "stackable" with other incentives. You and others are invited to expand the table to include the additional related incentives. (you might "copy" the table into your own editable file)

Shoshana: Do the rebates from the electricity providers count even if you already have solar and have an electric bill less than $10?

Steve:

1. Building Electrification Appliance REBATES from utilities are independent of whether or not you have solar. See my table of Building Electrification rebates: https://docs.google.com/document/d/10vSXEtbjYZ3fBYhZbBahOLVxXrn82QKHkJGHGTRnvyg/edit

2. When your solar was initially installed, NJ provided a contract (currently 15 years) agreeing to buy SRECs/TRECs (this contract specified you would be paid $ per megawatt-hour of your solar production). During and beyond your SREC/TREC contract period, you are likely to be receiving net metering (this could explain your current low electric bills). "Netmetering" means your utility automatically credits for all electricity inserted into the grid (meter spins backwards during day, and spins normally forward at night)

 Michael: very cool chart I have not seen this from anyone including the State (link to the chart is above, and in REFERENCES, at end) - I know you all are the BET but it would be even cooler with solar, battery storage, EV and EV chargers incentives state and federal - more than happy to help you put all the clean energy rebate in one chart

I vote Pat and Steve Miller Mr and Mrs Clean Energy of NJ

Steve: I created an editable version of this Google table you are welcome to enhance

**RECOMMENDED VENDORS AND CONSULTANTS:**

Tim: what is ICS? Answer: Integrate Comfort Systems; Chris Wisniewski, chris@icshvac.com ,

SELLS BOTH HVAC AND SOLAR (covers North of Route I78, and covers Metro NYC);

See 8/20/2022 Recording and slides https://climate.smiller.org/50x30/building-electrification/All-heat-pump-webinars.html

Steve: Matt Kavanagh's energy consultation company: www.greeninsight.green 973-397-0992 (M-F 6 to 9PM)

Matt helps develop plans for weatherization/energy/decarbonization, and provides contract reviews

**REFERENCES/DOCUMENTS**

Betsy: ClimateFriendlyLifestyle.substack.com "Help Us Invent a Greener LifeStyle"

Steve: ALL PAT/STEVE IRA SLIDES:

 - https://climate.smiller.org/50x30/building-electrification/2023-10-1-UUCMC-DIALOG/2023-10-1-IRA.pptx

- 400 REFERENCES TO ANSWER ALL QUESTIONS ON “Building Electrification”, “Building Decarbonization”, and “Heat Pumps”:

 https://climate.smiller.org/REF/

- link to a table of all building electrification rebates and tax credits

 https://docs.google.com/document/d/10vSXEtbjYZ3fBYhZbBahOLVxXrn82QKHkJGHGTRnvyg/edit