YOUR HOME GUIDE TO GOING ALL-ELECTRIC

This worksheet is designed to help you plan to retrofit and upgrade your home for an all-electric, zero emissions future. For resources, videos, and inspiration for an all-electric household go to www.cooldavis.org/HomeEnergy

MY HOME ADDRESS: _____

Year Built:	Number of Stories:
Square Footage:	# of Occupants:

Check all that apply:

- I have comfort issues in my home (rooms are too hot/cold/drafty)
- I want to lower my utility bills
- I want to lessen my environmental impact and/or use 100% renewable energy
- I plan to do a house remodel
- I have aging equipment or system with problems

If you checked any of the above, you have an opportunity to lower your energy usage and go all-electric!

Energy Usage and Current System Your first step is to understand your home and your current energy usage. Check out our companion document UNDERSTANDING MY HOME ENERGY SYSTEM.

Look for Opportunities to Cut Energy If you are remodeling your kitchen or bathroom, consider energy efficiency at the beginning of your planning process.

Be Prepared Add in more wall insulation or run electric lines for a future electric vehicle or heat pump water heater to go the extra mile!

Get a Home Energy Assessment A pro can tell you how leaky your home is and identify problem areas so you can lower your heating and cool loads!

Envelope and Air Sealing Smaller loads equal smaller HVAC equipment which results in money savings! Test and fix these first if you can:

- Get a Blower Door test: House leakage target 3 ACH50
- Duct leakage target < 6% New, <15% existing
- Attic insulation target > R49 (about 18 inches, go look!)
- Wall insulation target > R15
- Other problem areas. Think old fireplaces, recessed lighting, and cat doors. Can any of these be sealed?

Go on a Watt diet!
All-electric homes use lots more electricity! These resources and ideas can help you conserve:

- Home Energy Checklist
- Stay off peak (4pm to 9pm)
- Pre-cool your house
- Use windows at night
- Line-dry your laundry
- Change your filter
- Home Energy Checkup
  PG&E.com
- Energy Saver Guide
  Energy.gov
- Pool Pump upgrades
  EnergyStar.gov

For more ideas visit
CoolDavis.Org/HomeEnergy

Electric Systems

Heating and Cooling Systems (HVAC: Heating Ventilation and Air Conditioning)

- Equipment suggestions: Ductless mini split heat pump (or ducted heat pump)
- Ask for good, better, best quotes and lifecycle cost estimates
- "Right sized" for your loads. DON'T OVERSIZE! Bigger is not better.

Ventilation ERV or HRV for comfort and air quality, think smoke and allergy season.

Water Heater If you can move it closer to the highest use bathroom or the kitchen, do it! Equipment suggestions include:

- Tanked heat pump to avoid electric resistance and peak electric rates. It may take longer for the tank to get hot so consider a larger tank.
- Solar thermal with heat pump backup. Use the sun if you can.
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Washer/Dryer

- Equipment Suggestion: Heat pump dryer or all-in-one heat pump washer/dryer **(120V** saves physical space and panel space). Heat pump dryers save energy and are ventless.

Electric Panel: Do you need an upgrade? Maybe not, get creative!

- Use resources rather than Rules of Thumb
- ✓ Electrify Everything Course video on panel size
- ✓ Switches: Auto circuit sharing allows two appliances to share if you don't use them at the same time. Suggestions: Car+Cooking or Car+Dryer
- If you do upgrade the panel or wiring, do you have room to grow?
- ✓ Heat pump HVAC: may use existing AC condenser wiring
- ✓ Heat pump water heater: Different powered systems are available: 120V, 240V ½ power systems, or 240V full
- ✓ Heat pump dryer: washer/dryer combo systems can use 120V
- ✓ Electric cooking: Induction ranges use one circuit while induction cooktop+oven needs two
- ✓ Electric vehicle charging: Plan for 240V in garage (or smart switch with dryer outlet)
- ✓ Battery Backup system: Subpanel allows battery systems to serve your essential loads.

Traditional Specs

If you are transitioning to all-electric in stages, you may have some traditional natural gas systems. No worries, high efficiency systems can still help you drastically reduce your natural gas usage. Here are some recommendations.

Centralized HVAC: Condensing Gas Furnace & High EER AC with Modulating Fan or Multistage Fan

Test for:
Watt Draw <0.25 & **Cooling Airflow** >450 CFM/Ton

Cooling Size:
1 ton/1000ft^2

Heating Size
15kBtuh/1000ft^2

Water Heater: Condensing Tankless

Solar gets you to Zero Emissions: Size the system so it covers all! If you get solar before making these upgrades plan for them! Tell your solar contractor you are going all electric and you want to save space for your future need. High efficiency panels = more fit on the roof. Save space for your future need or just oversize your system now, nothing like excess PV to make an EV a no brainer. Don't forget your battery backup system for load shifting and power outages.

Working With Contractors

- Home Performance Contractor can do it all but you can get pretty far as an Owner-Builder. Use this worksheet and arm yourself with contractors willing to think outside the box.
- Get at least three bids. Work with the one that will answer your questions and trust your gut.
- Ask for the "Upsale"! Your all-electric house depends on efficient equipment!

Who is Cool Davis? *Cool Davis is a local non-profit organization dedicated to helping Davis residents and businesses adopt more sustainable practices and reduce their greenhouse emissions. Cool Davis has partnered with the city since 2010 to offer resources, host events, and provide outreach and educational experiences for Davis residents. To learn more about other Cool Davis projects related to energy, transportation, and consumption of goods and services, visit us at www.cooldavis.org*