

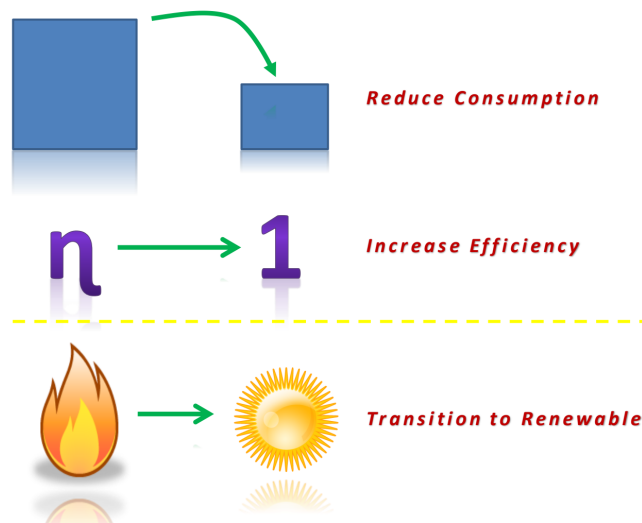
Home Energy

Residential buildings use about 20% of total energy generated¹.

Here's what you can do to reduce the environmental impact:

- Take 3 "simple" steps at home AND
- Vote for the right people to support the necessary steps everywhere

3 steps at home:



Simple!

No, not really.

Because I am continually being told to consume more, not less;

- I don't want to turn the thermostat down in winter and up in summer - quite the opposite
- I don't want shorter showers - I want a long time in one of those full-pressure, full-body units
- I don't want smaller rooms - I want bigger
- I don't want a cold, dark basement - I want a fully finished, fully furnished, fully conditioned basement (and a wet bar, and...)
- I don't want an induction cooktop - wait - I do want one of those and a fancy gas stove and a place for a wok as well
- I don't want less - I want more

¹ <https://rpsc.energy.gov/energy-data-facts> - is the analysis for the USA. At a cursory look similar percentages apply to other developed countries.

Don't you care about the biosphere?

Of course I do! I'll get one of those state sponsored energy assessments and do what they tell me. With rebates and a low interest loan I'll be able to swing it².

OK then.

Done! I have:

- Air-sealed, weather stripped and insulated.
- Got a smart thermostat, set at very reasonable temperatures
- LED lights everywhere
- High efficiency boiler and hot water unit
- Low flow shower heads (I really miss that full-body shower)

That takes care of step 1 and 2.

Now with solar panels to the roof (with a battery backup!) and a hybrid car in the garage - I've gone renewable. All 3 steps completed.

I've done my bit.

Really?

Did you consider that spray foam? Likely 100% petroleum based. Even the "green foam" is 70% petroleum based, at best. And those plastic bags of cut-back overspray going to the landfill?

What about those batteries in your hybrid and the one connected to the solar PV system? Extracting the Lithium, Nickel, Cobalt and so on caused environmental damage somewhere in the world³. How will they be recycled?

That shiny new boiler and hot water unit are gas, right? 95% efficient? And the gas comes from a pipe, connected to a bigger pipe, connected to a well... leaking methane from any fault along the way. And the flame still puts CO₂ into the air. Your boiler and the thousands of miles of pipe will stay there for at least another 20 to 25 years.

And where does the electricity come from? Everything, even the hot water unit, relies on having electricity. You've got a short backup interval from the battery, but for anything longer you need the grid. (See diagram below)

² What about the people who can't "swing it"? See the ["Why people don't pay attention"](#) story

³ "In Chile's Salar de Atacama, a major centre of lithium production, 65% of the region's water is consumed by mining activities" -

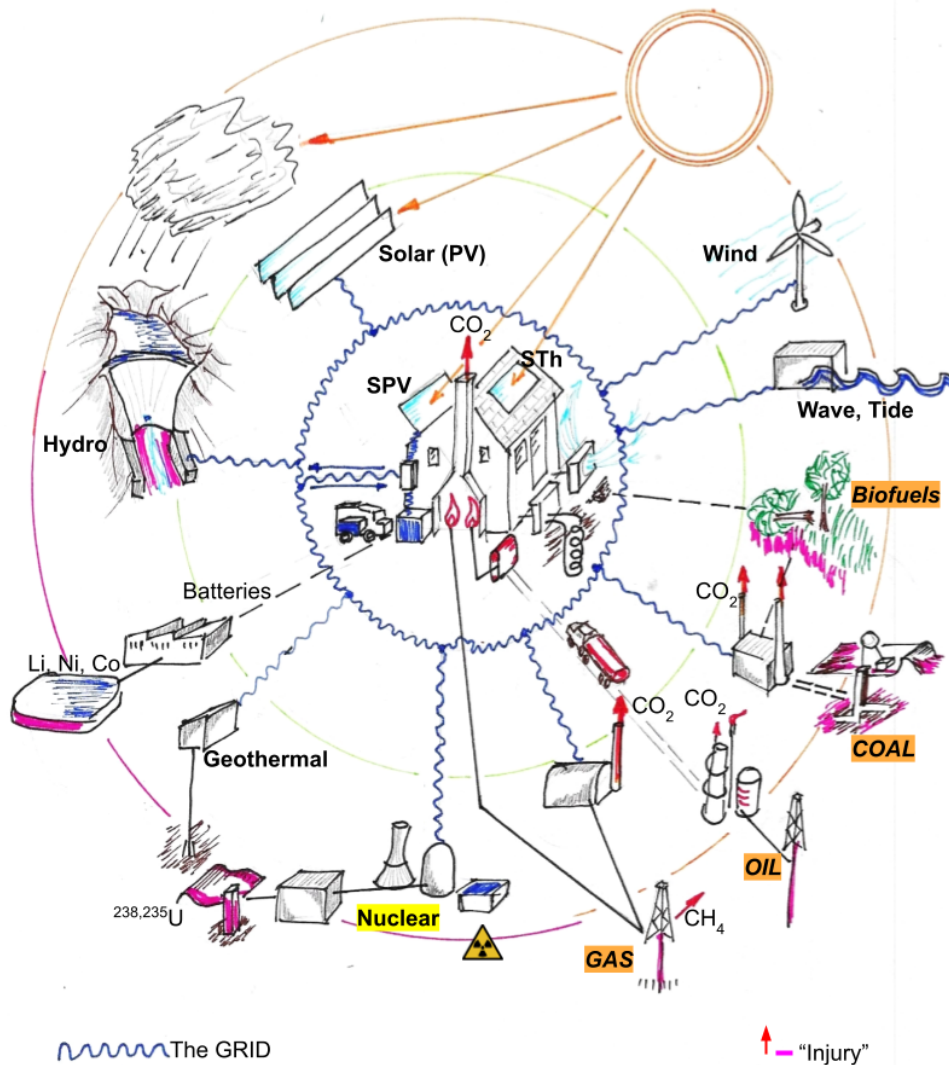
From: [Recycling lithium-ion batteries from electric vehicles](#)

Recycling of solar PV modules generally gets better marks - if done properly

OK, those are problems - way above my paygrade - nothing I can do about them.

Sure you can! -

- *Be aware - every kilowatt you use is likely to injure the biosphere somewhere.*
- **Vote for politicians who are equally aware - and willing to take action**
- *Be ready to pay more for your energy.*



- *Be aware of all the losses in the grid, in extraction and transportation*
- *Be aware of the waste products⁴*
- *Take some further steps; look at heat pumps (Air-source or “reverse cycle” AC. Better still ground-source if it’s possible - site and dollars). Look at **Solar Thermal** for general heating and hot water.*

⁴ [See story on Nuclear Energy](#)

Whoa. Hold on. Go back to “pay more”.

I thought I could lightly step over that little item.... But:

- *Someone has to pay for the mess we've made so far*
- *Not paying now will mean paying a lot more later - think climate related warfare, refugees, international aid, health care costs, mitigation, prevention, insurance rates.....*
- *You need to vote for someone who is willing to tackle this issue and make sure everybody shares equally in the solution*

Bottom line:

- Be aware of what can be done in your house and do it if it's possible for you
- Be aware of the wider impact
- **Vote** to equitably repair damage to the biosphere and build a sustainable future

Some additional Home Energy anecdotes:

Energy savings not guaranteed

I was selling a high efficiency water heater to a homeowner with his teenage daughter sitting in the background, busy on her phone.

BTW: many home energy assessors (or “auditors”) are also sales people.

That's a conflict of interest. The assessor should give independent advice to the owner.

The owner can then decide what to buy, who from and get the best price.

The assessor can come back as a quality control.

If the work is supported by some government program then the rebates, loans etc. should be for the assessment (and quality control) and separately for the supplies, installation and equipment.

Anyhow, teenage daughter texting, totally ignoring me. Father listening to my high efficiency, low cost, never run out of hot water spiel.

Suddenly daughter raises her head and says: “We won't run out of hot water?”, smiles, returns to texting.

Sale made. Energy savings? Doubtful.

Build well, save

A family I know built an addition onto an old farmhouse. State of the art; ground-source (“geothermal” in common US usage) heat pump, under floor radiant distribution, energy recovery ventilation, lots of insulation and south facing windows (northern hemisphere).

They moved in during early winter and around January they felt something was wrong with the heating system. Early in the morning it got uncomfortably cold inside. Nothing drastic, no freezing pipes or anything like that, the heating system just didn’t come up to the set temperature until almost lunchtime. It was a cold spell, overnight minimums hit -20°C (-4°F).

The installers came to check the ground-source system. After a few minutes they apologized profusely: “We didn’t install it properly. It never worked. Zero output.”

The point being; with careful orientation and very careful construction you can have heat at minimal cost. In this case the addition was kept warm by lights, bodies, cooking and, of course, solar gain.

Stay aware

A friend of mine has a couple of “silly” things around the house:

- A manual doorbell, instead of electric
- A clock that runs off variations in atmospheric pressure

He knows these things make not a bit of difference to his energy use.

They are there to remind him, every day, that energy is precious and needs to be saved.

He was well ahead of the curve in using low intensity, focused lighting and timer switches in bathrooms, closets etc. And of course he goes nuts about all the plastic packaging, cardboard, water bottles and everything else that modern commerce throws at us to use once, and once only.

Energy Auditors - just for laughs

This is from an actual 2020 Wisconsin job ad - \$21 per hour

“... Work Environment:

... Housing conditions may include insect or vermin infestations, unpleasant odors or allergens, pet feces, raw sewage and unsanitary living conditions.

During site inspection may be exposed to possible cuts, scrapes, bumps, bruises, sprains, slivers or eye injury. Potential exposure to traffic accidents, animal bites, falls, overhead hazards or hostile environments. Other potential health exposures to carbon monoxide, natural gas leaks or mold and moisture issues.”

(not to mention lying on your back in mud with moldy fiberglass inches from your face in a damp crawl space, or breathing cellulose dust in a boiling hot attic, etc.....

...and the insulation crews who work under worse conditions and get paid just a bit above minimum wage.)

My point being that unless we respect the workers in these professions (i.e. we give them decent wages, with benefits and proper training) we will make slow progress in residential energy retrofits