

Reducing Energy Use at Home:

What pays you back most quickly?



MONROE COUNTY
ENERGYCHALLENGE

Competing for \$5 million and CHANGE!

<http://mocoenergychallenge.org/>

Knowing how much different actions will reduce your energy use, their cost and how long it will take to recoup that cost with savings can help you prioritize. Many high-impact actions cost nothing. Others cost more but can greatly reduce energy use. Use this checklist to help you plan what you'll do.

NOTE: These are *rough estimates* of how much a typical Indiana household would cut its energy use if it took these measures. Precise figures will depend on your current energy use and the size and features of your home.

High Impact, No or Low Cost, Immediate Savings	Estimated Energy Use Reduction	Approx. Cost	Estimated Payback Period
Don't heat or cool room(s) when they are not in use	5% - 15%	0	Immediate
Air dry clothes	4%	0	Immediate
Lower winter thermostat during day (<i>each</i> 2 degrees)	2%	0 ^{1, 10}	Immediate
Raise summer thermostat during the day (<i>each</i> 2 degrees)	2%	0 ^{1, 10}	Immediate
At night, set heat to 55° (winter)	2%	0	Immediate
When away, set heat to 55° (winter); turn off AC (summer)	1%	0	Immediate
Reduce hot shower time to 5 minutes or less	2%	0	Immediate
Lower water heater setting to 120 degrees	1%	0	Immediate
Wash laundry in full loads. Wash in cold water.	1%	Save \$50 ²	Immediate
Hand wash dishes 2x /week. ⁴ If using dishwasher, air dry.	1%	0	Immediate
Switch from incandescent to CFLs or LEDs (for <i>each</i> six)	1%	\$38 ^{3, 10}	Under 1.5 yrs
Turn off lights when not in use	1%	0	Immediate
Seal windows & doors with weather stripping and caulk	1%	\$50	1 year
Fly 1000 fewer miles (1000 = 1 round trip (RT) to DC; 2000 = 1 RT to MA; 3,000 = 1 RT to FLA; 4000 = 1 RT to CA)	1%	0	Immediate
Rarely/never eat beef, lamb, pork, turkey, farmed salmon	3%	0	Immediate
Seal and insulate warm air ducts if outside insulated space	1%	\$100 ¹⁰	about 2 years
Maintain furnace professionally	1%	\$135 ⁸	1 yr
High Impact, Medium Cost, Medium Payback			
Replace furnace with high-efficiency furnace or heat pump	5%	\$1,500 ^{5, 10}	Under 3 yrs
Replace AC unit with high-efficiency unit	5%	\$1,500 ^{5, 10}	Under 3 yrs
Replace pre-1993 fridge with efficient model	2%	\$700 ^{7, 10}	10 years
Seal & increase attic insulation to 14"(R60)	2%	\$1400 ^{6, 10}	about 7 years
Purchase and drive a hybrid car	5%	\$2,100 ⁹	5.5 years
Very High Impact, High Cost, Longer Payback			
Install 5 kW solar array (after federal tax credit)	50%	\$14,000 ¹⁰	15 years
Install geothermal heat pump (after federal tax credit)	40%	\$14,000 ¹⁰	12 years

**** See HOUSEHOLD CHECKLIST NOTES (next page) for suggestions, explanations and links ****

HOUSEHOLD CHECKLIST NOTES:

- ¹ Heat and cool people not spaces: When home during the day in winter the thermostat might comfortably be set at 62° by dressing appropriately, drinking hot drinks, and using a foot warmer, heated keyboard or heat lamp for a home workstation. In summer 78° can feel comfortable by using fans instead of AC and drinking cool liquids. Many people find that a programmable thermostat (\$30 if installed yourself) quickly pays for itself by helping them cut out unnecessary heating and cooling.
- ² Heating water accounts for 90% of a standard washer's energy use. A utility company might use 5 kW to treat & deliver 1 unit (1000 gallons) of water. So conserving water (wash full loads) and hot water is important. A water-efficient machine uses 35% to 50% less water than a standard top-load machine.
- ³ Many electric utilities offer free CFLs, lowering the cost and payback period to zero for the first six or more. LEDs vary greatly in price and quality; the cheaper ones may not be as efficient and/or last as long as advertised.
- ⁴ Older dishwashers heat the water to 130° or 140°, accounting for up to 80% of energy used. Look for an Energy Star® dishwasher where length of cycle, water heat boost and heat drying are options; they also use 1/3 less water. (Skipping the electric dry cycle can reduce electricity use by 10% or more.) Hand washing dishes is more efficient only if you use one tub of water for wash and one for rinse.
- ⁵ This is the difference, before rebates, between a current standard split system (80% furnace, 13.2 SEER 4-ton AC unit) and high-efficiency units (98%, 15.2 SEER). The latter can save \$75/year on utilities.
- ⁶ Insulation cost & payback depend on existing conditions. EPA recommends R49–R60 (12"–14") attic insulation in central and northern and R38–R60 (10"–14") in southern Indiana. Your utility company may rebate 40% of the cost to insulate attic, walls and ducts if done by an approved contractor. For details, see [http://web.ornl.gov/sci/roofs+walls/insulation/ins_02.html] and H-IPL's Quick Guide to Insulating Your Building Envelope.
- ⁷ Replace your old unit with a fridge that uses 350 kWh or less per year: they are smaller, do not have through-the-door water or automatic ice dispensers and have the freezer unit on top rather than on the side. Energy Star models are 20% more efficient than standard models, and CEE Tier 3 models are 30% more. But beware: An Energy Star fridge can be an energy hog. And don't keep a working fridge in your garage!
- ⁸ Good maintenance keeps equipment at peak efficiency and extends its expected life. Be sure to replace filters frequently as well.
- ⁹ This is the difference in cost between a hybrid & comparable car. Savings & payback assumptions:
 - Hybrid gets 20 MPG more than a standard car (40% better mileage, like driving 40% fewer miles);
 - Car is driven 20,000 miles/year & gas costs \$3.75/ gallon. So gas savings is \$1,000/year;
 - An estimated 1/3 of the average household carbon footprint comes from car travel.
 - Knowing that your car is more efficient doesn't lead you to drive more!
 - See: <http://www.fueleconomy.gov> to calculate payback for vehicles manufactured after 2012.
- ¹⁰ **REBATES AND TAX CREDITS:** (Reduced cost and lowered payback period of equipment, appliances and home improvements not included in figures except where noted.)
 - Solar & geothermal installations qualify for a 30% federal tax credit and may lower property taxes.
 - HVAC, water heaters, windows, doors & insulation material may also qualify for a 10% tax credit.

For Energy Star rebates in your area see: <http://tinyurl.com/IndianaRebates>

Duke Energy customers: be sure to see the new [Duke Energy Savings Store](#)