The Half Plan

Our families plan to cut our energy use and greenhouse gas emissions by half.
All the details: www.BuildItSolar.com

So far:

Energy Reduction: 49,000 KWH per year (53% reduction)
CO2 Reduction: 32,000 lbs per year (49% reduction)
Total Cost: $7,500
Dollar saving: $4,000 per years

Project	Initial Cost $'s	Reduction KWH/yr	Cost Saving $'s/yr	10yr Saving $/10 yrs(1)	Return %	Reduction(2) GHG lb/yr
Completed Projects:						
More Attic Insulation	$256	1,593	$126	$2,007	49%	812
Crawl Space Insulation	$210	1,094	$86	$1,370	41%	558
Infiltration Sealing	$50	1,980	$156	$2,485	312%	1009
Duct Sealing	$20	940	$75	$1,195	375%	479
Efficient Lights	$50	1,168	$117	$1,864	234%	2,336
Phantom Loads	$70	569	$57	$908	81%	1,137
PC's	$20	1,779	$178	$2,836	890%	3,557
Washer	$400	350	$35	$558	9%	700
Efficient Fridge	$800	720	$72	$1,147	9%	1,441
Strom Windows	$450	2,700	$220	$3,505	49%	1,100
Bubble Wrap Windows	$38	955	$75	$1,195	197%	487
Storm Door	$200	216	$17	$271	9%	100
Thermal Shades	$1,086	3,159	$258	$4,110	24%	1,525
Dryer Venting (3)	$20	630	$63	$1,002	315%	286
Electric Mattress Pad	$125	1,270	$103	$1,641	82%	510
Turn Off	$0	438	$44	$701	0%	876
Solar Shop Collector	$350	2,527	$206	$3,282	59%	1,323
Direct Gain Collector	$380	2,912	$238	$3,785	63%	1,525
Prius	$3,000	23,890	$1,881	$29,964	63%	11,907
Total Completed	**$7,525**	**48,890**	**$4,007**	**$63,824**	**53%**	**31,668**
In Work Projects:						
"Solar Shed" Home Heater	$4,000	6,970	$568	$9,048	14%	3,360
Solar Water Heater	$400	2,200	$179	$2,851	45%	900
Total In Work	$4,400	9,170	$747	$11,900	17%	4,260
Future Projects:						
Sunspace	$4,000	3,000	$240	$3,823	6%	1,530
PV	$9,000	1,708	$171	$2,721	2%	3,416
Total Future	$13,000	4,708	$411	$6,544	3%	4,946

(1) The 10 year savings include a 10% per year energy price increase.
(2) For electricity savings, it is assumed that power was generated in a coal plant – true for more than half the power in the US.
(3) Important! – 1) NOT for gas dryers, 2) for dry climates only – details.

The Plan

1. Make a **BIG** list of project ideas
2. Estimate energy, CO2, and cost savings for each project
3. Prioritize Projects – select the ones that pay well in energy, CO2, and dollars.
4. Do the selected projects

Some good sources of Project ideas:

- Build It Solar www.BuildItSolar
  My site -- Look at the Projects page and the Half Plan pages.
- Utility audit program – these can be quite good, and some even include blower door tests to check your house for infiltration.
- Rocky Mountain Institute www.rmi.org
  The "Energy Briefs" papers are very good.
- Energy Star www.energystar.gov/
  Lots of good information on Energy Star rated appliances as well as a wide variety of other energy efficiency subjects.
- "The Carbon Buster's Home Energy Handbook", Stoyke, 2007
- The EERE site www.EERE.Energy.gov/Consumer
- Home Power Magazine, Mother Earth Magazine,

Tools to Evaluate Projects:

- Insulation Upgrade Calculator
  www.builditsolar.com/References/Calculators/InsulUpgrd/InsulUpgrade.htm
  This simple calculator can be used to evaluate insulation upgrades, window improvements, storm windows.
- The "Half Plan" Examples
  http://www.builditsolar.com/References/Half/Projects.htm
  These example projects each include details the details on how the energy saving was calculated.
- "The Carbon Buster's Home Energy Handbook", Godo Stoyke, 2007
  Many concrete examples of energy reduction projects.
- Carbon emissions calculator --Infinite Power
  http://www.infinitepower.org/calculators.htm
- Car Carbon emissions -- Hybrid Cars dot Com
  http://www.hybridcars.com/calculator/
- If you get stuck – contact me gary@BuildItSolar.com
  I'll do my best to help or find someone who can.