



AllEarth Renewables designs and manufactures complete grid-connected renewable energy systems that harness the power of the sun for homes, farms, businesses, and non-profits.

REWIRE

Renewables & Efficiency: a Workplace Initiative to Reduce Emissions

- Original **Green Benefits** program:
 - \$300 Energy Efficiency Benefit (insulation, light bulbs, Energy Star appliances, furnace servicing, etc...)
 - \$300 Transportation Benefit to encourage employees and their families to use public transit, at home and when traveling
 - \$1,000 x 2 Clean Energy Benefit (Prius, Solar PV, Solar HW) until paid off
- Program prescribed what employees could do
- Realized what was important was each employee reducing carbon use (less driving, moving closer to work, carpool, etc...)



REWIRE

Renewables & Efficiency: a Workplace Initiative to Reduce Emissions

... In 2011 we explored revamping our program with the goals of:

- Achieving *actual* carbon reductions
- Incentivizing *best* practices
- Protecting *employees* financially from rising fossil fuel prices



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REWIRE

Renewables & Efficiency: a Workplace Initiative to Reduce Emissions

In 2012, began a carbon tax program on employees

- Tax of \$0.15/kWh (the stick)
- REWIRE benefit of \$6,000 - employees keep what they don't use (the carrot)

Focused on 3 areas with the largest impact on fossil fuel:

- The amount of fuel used for vehicles
- The amount of fossil fuels used for home heating
- The amount of electricity use at home

All energy use converted to kWh/unit of fossil fuel



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Implementation...

For the *first year* of implementation, employees submitted info on:

- **Vehicle use:** Odometer reading for all household vehicles and estimate of annual miles driven
- **Home Heating:** Estimate of annual home heating fuel usage
- **Home Electric:** Estimate of annual electricity from utility
- Calculated expected tax & benefit and paid ½ in April
- End of year true-up for *actual* usage and paid benefit balance
- If \$6,000 is used up, benefit = \$0 (nobody pays the company)
- **Involved significant employee feedback and design**



REWIRE Benefit Program

Enrollment Form

Initial Launch Form with a March 2012 Partial Payout

Date:

Employee Name:

Address:

Check one: Homeowner Renter ↓
Other

Total number of adults in your rental unit: _____

Home Heating Information

How do you heat your home or apartment?

Oil Natural Gas Propane Other

Estimate how many gallons / pounds / etc you will use during 2012:

(Attach an account summary from the end of 2011 or something that will help calculate this)

Electricity from Utility:

What is your estimated annual kWh purchased from your utility?

Meter reading on 1/1/2012

(Attach something to verify estimate)

Driving Habits:

How many miles do you live from work? _____

How many adult drivers in your family or domestic partnership?

How many total miles do you think your household will put on all vehicles during 2012: _____

Describe the vehicles:

Year

Make

Model

Main Driver

12-31-2011 Odometer Reading

Est. annual miles for this vehicle

(Attach a dated snapshot of each with odometer reading)

I will will not participate in this Carbon Reduction benefit.

Signature of Employee
Date

Comparison of two families:

- Both have young families & multiple vehicles
- One has a van, motorcycle and small car / One has a small truck and an SUV
- One lives 30 min. from work / One lives 60 min. away
- One produces their own electricity and heats with wood /
One has no renewables and uses fuel oil to heat



Your name

Vehicle-driving adults

Vehicle year, make, model Fuel type Miles driven MPG (combined miles per gallon)

2008 Toyota Sienna	Gasoline	9000	19
	Diesel		
1997 Toyota Tacoma	Gasoline	4000	18
	Diesel		
2009 Kawasaki Eliminator	Gasoline	2000	95
	Diesel		
1999 SAAB 9-3	Gasoline	4000	21
	Diesel		
Vehicle 5	Gasoline	0	30
	Diesel		

Electricity kwh

Natural gas CCF

Heating oil Gallons

Propane Gallons

Calculate

Your name

Vehicle-driving adults

Vehicle year, make, model Fuel type Miles driven MPG (combined miles per gallon)

06 Chevy Equinox	Gasoline	15000	18
	Diesel		
01 Toyato Tacoma	Gasoline	20000	18
	Diesel		
	Gasoline		
	Diesel		
	Gasoline		
	Diesel		

Electricity kwh

Natural gas CCF

Heating oil Gallons

Propane Gallons

Calculate

Results for Employee A

Adults	2				
2008 Toyota Sienna	8057.37 kwh	9000 miles	19 mpg	473.68 gallons of gasoline	34.02 kwh per gallon
1997 Toyota Tacoma	3780.00 kwh	4000 miles	18 mpg	222.22 gallons of gasoline	34.02 kwh per gallon
2009 Kawasaki Eliminator	358.11 kwh	2000 miles	95 mpg	21.05 gallons of gasoline	34.02 kwh per gallon
1999 SAAB 9-3	3240.00 kwh	4000 miles	21 mpg	190.48 gallons of gasoline	34.02 kwh per gallon
Vehicle 5	0.00 kwh	0 miles	30 mpg	0.00 gallons of gasoline	34.02 kwh per gallon
Electricity	0 kwh				
Natural gas	0.00 kwh	0 CCF	28.81 kwh per CCF		
Heating oil	0.00 kwh	0 gallons	37.95 kwh per gallon		
Propane	0.00 kwh	0 gallons	24.9 kwh per gallon		
Total	15435.48 kwh	\$0.15 per kwh	\$2315.32	tax	
Payment	\$3684.68	\$6000 - \$2315.32			

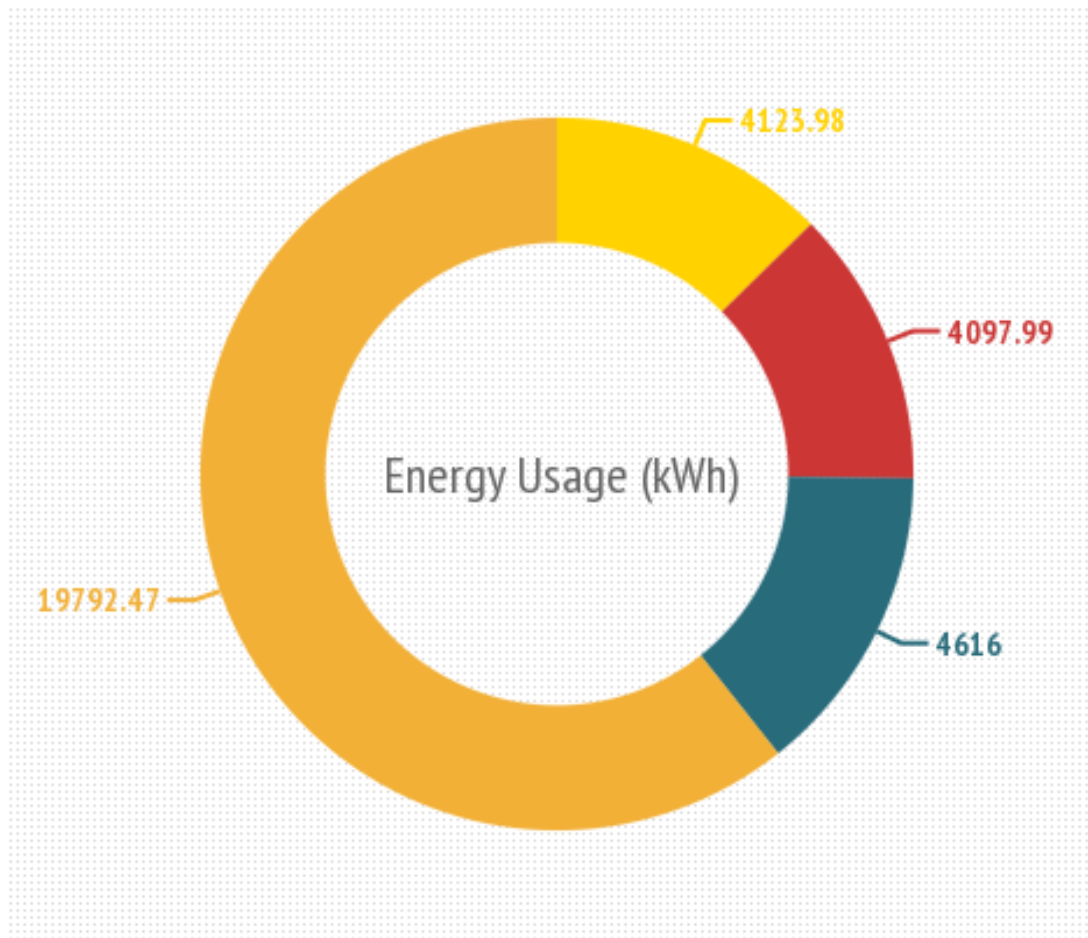
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Family 1

Results for Employee B

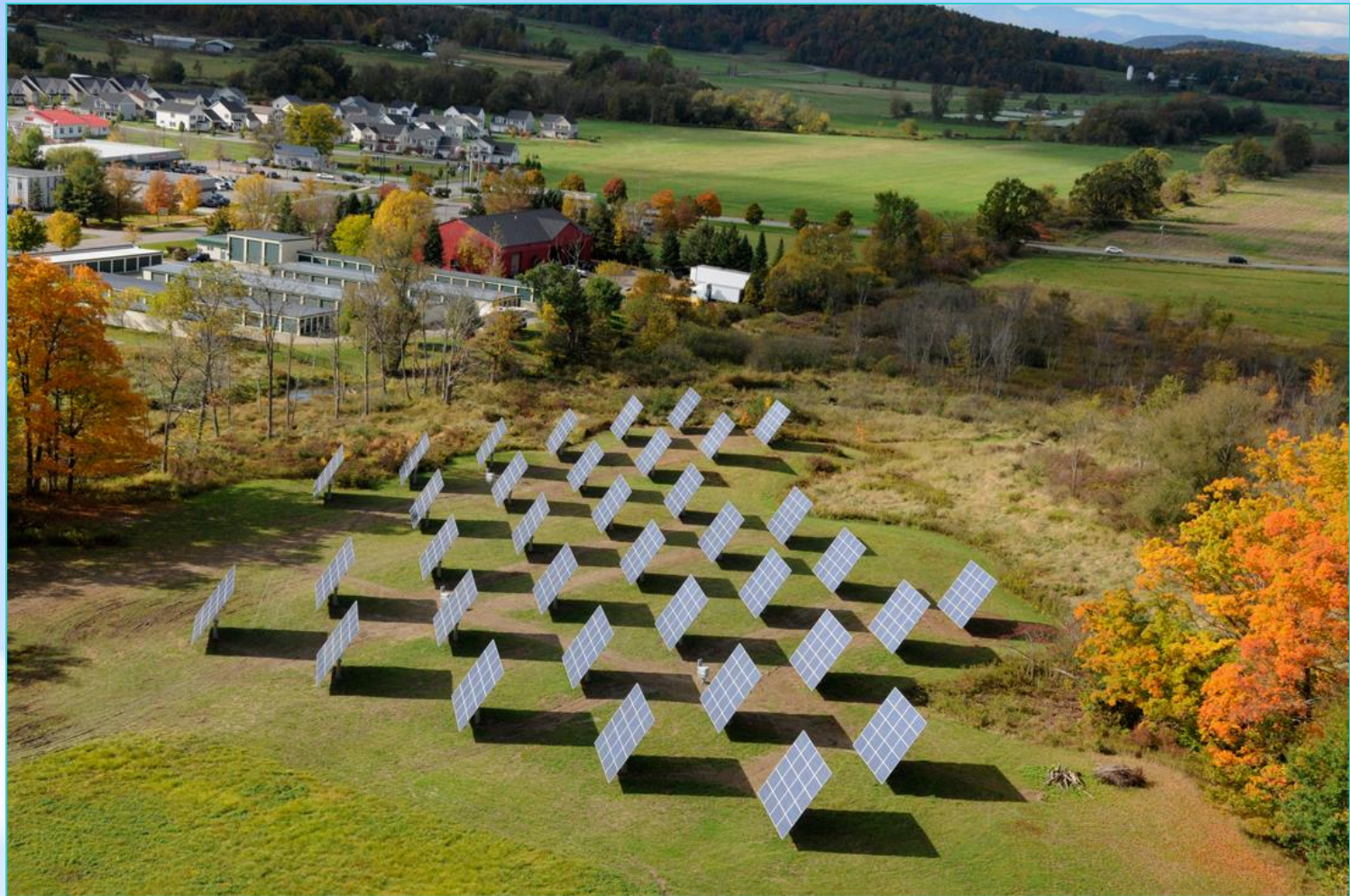
Adults	2				
06 Chevy Equinox	14175.00 kwh	15000 miles	18 mpg	833.33 gallons of gasoline	34.02 kwh per gallon
01 Toyato Tacoma	18900.00 kwh	20000 miles	18 mpg	1111.11 gallons of gasoline	34.02 kwh per gallon
	0.00 kwh	0 miles	1 mpg	0.00 gallons of gasoline	34.02 kwh per gallon
	0.00 kwh	0 miles	1 mpg	0.00 gallons of gasoline	34.02 kwh per gallon
	0.00 kwh	0 miles	1 mpg	0.00 gallons of gasoline	34.02 kwh per gallon
Electricity	4000 kwh				
Natural gas	0.00 kwh	0 CCF	28.81 kwh per CCF		
Heating oil	18975.00 kwh	500 gallons	37.95 kwh per gallon		
Propane	0.00 kwh	0 gallons	24.9 kwh per gallon		
Total	50050 kwh	\$0.15 per kwh	\$8407.50	tax	
Payment	\$-2407.5	\$6000 - \$8407.50			

↑
Family 2

Andrew's REWIRE Results



Car #1 Car #2 Electricity Natural gas



Green Acres 150kW Tracker Farm, Hinesburg



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A few program details...

- Calculation of total gallons of fuel used by vehicles (based on miles driven and EPA mpg data) and dividing by total number of adults in family.
- Single renters count only vehicles they own – split electricity and heat in unit by total number of adult renters in unit.
- Renters in a multi-unit building where heat and/or electricity is not billed directly take total heat and/or electricity (provided by landlord) and divide by sq. ft. size of your unit on pro-rata basis.
- Electricity is the amount purchased from the utility.
- Tax on heat is only from fossil fuels, not wood
- If the calculated benefit is negative, benefit = \$0.

**The employee doesn't owe the company money!*

