
Cough!! AHHGH !!! Cough!! Wheeze
I'm Alright!!!
It's only a Flesh Wound
ICANHASCHEEZBURGER.COM

Sustainable Mobile Hospital

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Overview

- Our Problem
  - The Need
  - The Existing Solutions
  - The Policies
- Our Solution
  - The Engineering
  - The Economics

Resources

- Jeff and Mike
- http://www.expatfocus.com/expatriate-costa-rica-healthcare-medical?gclid=CKqt3pnh8bACFQUEnQodSX7yww
- http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=US43F&re=1&ee=1
- http://www.tanklesswaterheaters.com/under-sink-water-heaters/waiwela-mini-tank-2-5-gallon-water-heater.html
- http://www.sustainablelivingcostarica.com/

Our Problem: The Need

- Costa Rica's basic hospitals
- Best health care in Latin America
- Health insurance tax
  - Employees: 9%
  - Employers: additional 18%
- Farmacias
  - 8am – 8pm

Our Problem: The Need

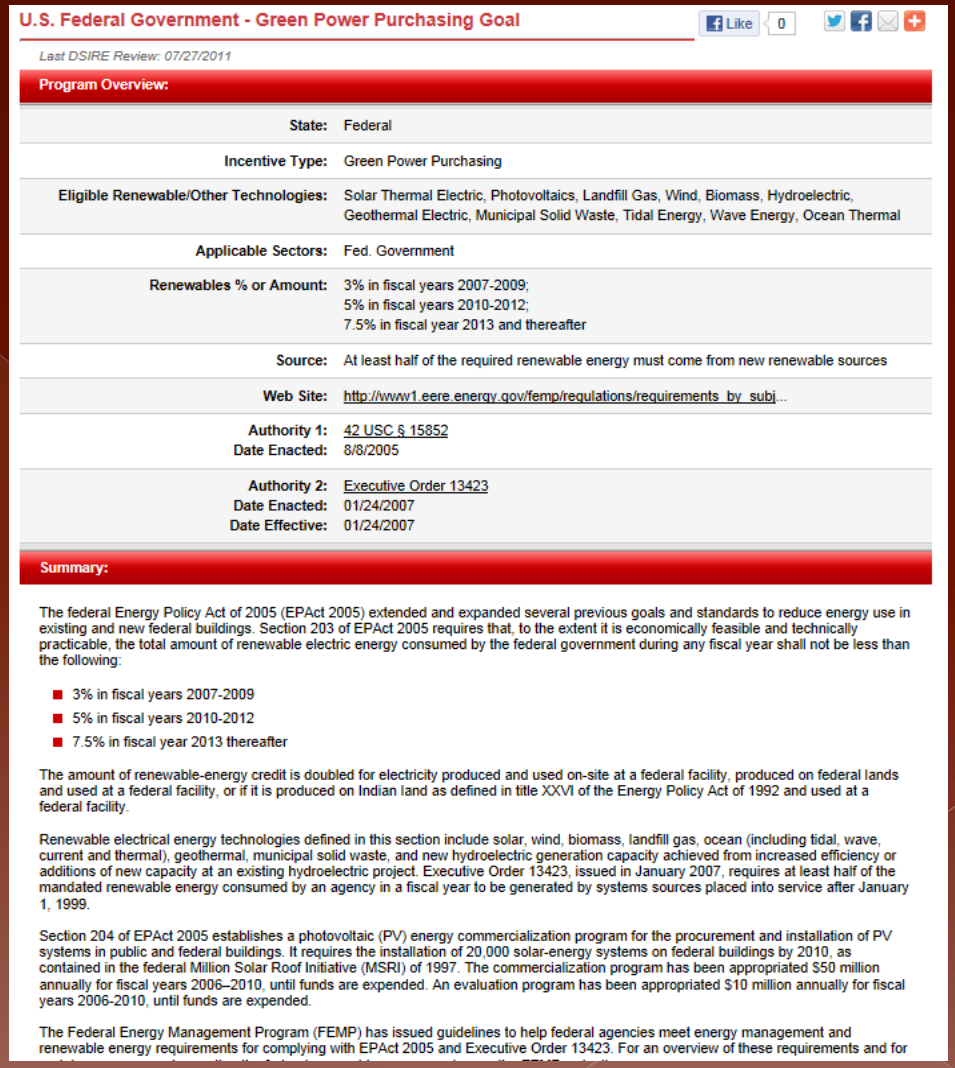
- Cons
  - Red Tape
  - Unreliable Power
  - Not pristine conditions
  - Distance
    - 50% reside more than 1 km away from an outpatient care outlet and 5 km away from a hospital
    - 12–14% of population are underserved according to three indicators
      - an outpatient outlet within 4 km
      - a hospital within 25 km
      - less than 0.2 MD yearly hours per person

Our Problem: The Existing Solutions

- C2C: Containers 2 Clinics
  - Cons
    - Connected to a grid or use generators
    - Only for emergencies
    - No electricity or running water

Our Problem: The Policies

- Incentives
  - Up to $300 tax credit for electric water heaters



U.S. Federal Government - Green Power Purchasing Goal

Like 0

Last DSIRE Review: 07/27/2011

Program Overview:

State:	Federal
Incentive Type:	Green Power Purchasing
Eligible Renewable/Other Technologies:	Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Geothermal Electric, Municipal Solid Waste, Tidal Energy, Wave Energy, Ocean Thermal
Applicable Sectors:	Fed. Government
Renewables % or Amount:	3% in fiscal years 2007-2009; 5% in fiscal years 2010-2012; 7.5% in fiscal year 2013 and thereafter
Source:	At least half of the required renewable energy must come from new renewable sources
Web Site:	http://www1.eere.energy.gov/femp/regulations/requirements_by_subj...
Authority 1: **Date Enacted:**	42 USC § 15852 8/8/2005
Authority 2: **Date Enacted:** **Date Effective:**	Executive Order 13423 01/24/2007 01/24/2007

Summary:

The federal Energy Policy Act of 2005 (EPAct 2005) extended and expanded several previous goals and standards to reduce energy use in existing and new federal buildings. Section 203 of EPAct 2005 requires that, to the extent it is economically feasible and technically practicable, the total amount of renewable electric energy consumed by the federal government during any fiscal year shall not be less than the following:

- 3% in fiscal years 2007-2009
- 5% in fiscal years 2010-2012
- 7.5% in fiscal year 2013 thereafter

The amount of renewable-energy credit is doubled for electricity produced and used on-site at a federal facility, produced on federal lands and used at a federal facility, or if it is produced on Indian land as defined in title XXVI of the Energy Policy Act of 1992 and used at a federal facility.

Renewable electrical energy technologies defined in this section include solar, wind, biomass, landfill gas, ocean (including tidal, wave, current and thermal), geothermal, municipal solid waste, and new hydroelectric generation capacity achieved from increased efficiency or additions of new capacity at an existing hydroelectric project. Executive Order 13423, issued in January 2007, requires at least half of the mandated renewable energy consumed by an agency in a fiscal year to be generated by systems sources placed into service after January 1, 1999.

Section 204 of EPAct 2005 establishes a photovoltaic (PV) energy commercialization program for the procurement and installation of PV systems in public and federal buildings. It requires the installation of 20,000 solar-energy systems on federal buildings by 2010, as contained in the federal Million Solar Roof Initiative (MSRI) of 1997. The commercialization program has been appropriated $50 million annually for fiscal years 2006–2010, until funds are expended. An evaluation program has been appropriated $10 million annually for fiscal years 2006-2010, until funds are expended.

The Federal Energy Management Program (FEMP) has issued guidelines to help federal agencies meet energy management and renewable energy requirements for complying with EPAct 2005 and Executive Order 13423. For an overview of these requirements and for

Our Solution: The Engineering

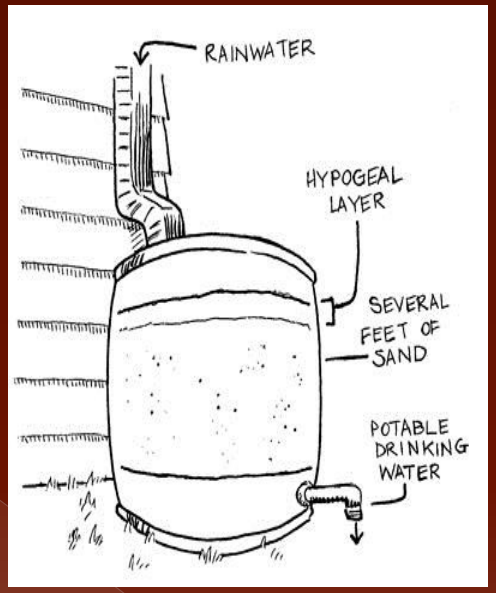
- Includes:
  - Computer
  - Hand sanitizing unit
  - Sink
  - Shelves/storage
  - Cabinets
  - Ophthalmoscope
  - Defribrillator
  - Medical Supplies
  - Locking Pharmaceutical Cabinet

Our Solution: The Engineering

- Solar panels
- Rain water collection system
- Cooling: fan run by solar panels
- Lighting
  - LED lights inside
  - 2 LED floodlights outside for safety

Our Solution: The Engineering

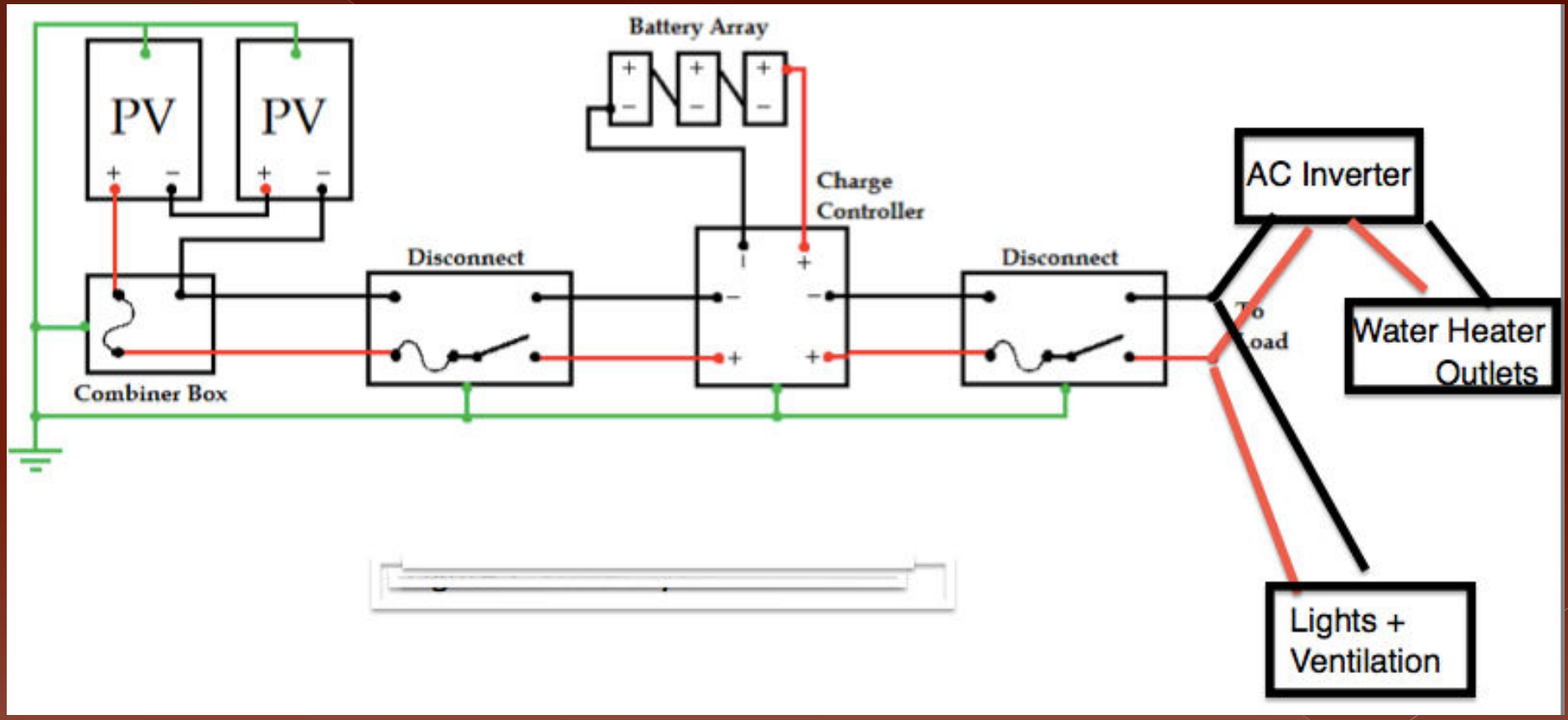
- Water Collection
  - Gutter system
  - Filter
- Water Heating
  - In-line Hot Water Heater



Our Solution: The Engineering

- Solar Array Components
  - Combiner Box
  - Disconnects for safety
  - Charge Controller
  - AC Inverter
  - DC Components
    - Lighting
    - Ventilation
  - AC Components
  - In line Water Heater
  - Outlet for Laptop and other medical necessities

Our Solution: The Engineering



Our Solution: The Economics

		Price	Watts		
2	Ophthalmoscope	$89.00	(Battery)		http://www.amazon.com/Pro
3	Computer Cart	$49.00	-		http://www.amazon.com/Tec
4	PURELL Touch Free Hand Sanitizer	$9.99	-		http://www.amazon.com/PUR
5	Exam Table	$849.99	-		http://www.amazon.com/CLI
6	Exam Table Paper (12 Rolls)	$44.99	-		http://www.amazon.com/Me
7	Water Heater	$154.00	1400		http://www.tanklesswaterhea
8	Debridement tray (50)	$132.00	-		http://www.nationalscrubs.co
9	Laptop	$349.99	45		http://www.amazon.com/A53
10	Defibrillator (AED)	$1,109.00	-		http://www.amazon.com/Phi
11	Sink & Vanity	$552.00	-		http://www.amazon.com/Eleg
12	Rain collection gutter	$10.46	-		http://www.homedepot.com/
13					
14	Electrical				
15	Hubbell HBL503SS Bulkhead (1)	$133.72			
16	Leviton 001-9880 Lamp Holder (15)	$44.85			
17	12V Ultra Bright 7 SMT LED DC (30)	$599.70	105		
18	1-1/4" Deep 4" Junction Box (15)	$29.85			
19	Square D 15A DC Circuit Breaker (5)	$150.00			
20	Square D Breaker Enclosure (2)	$378.00			
21	Circuit Square D QO Load Center (1)	$85.00			
22	12/3 MC Cable (100 ft.)	$80.00			
23	12/3 SJ Cord (25 ft.)	$32.25			
24	¾ MC Connectors (30)	$30.00			
25	½" EMT Electrical Pipe (20 ft.)	$10.00			
26	#8 Bare Copper (20 ft.)	$20.00			
27	Solar Xtendar Batteries (4)	$756.00			
28	Grape Solar 250W panel (4)	$1,596.00			http://www.amazon.com/Gra

29	Unirac Mid Clamp F (2)	$7.30			
30	Unirac End Clamp F (4)	$8.28			
31	Unirac Rail with L Bracket (156 ft.)	$171.60			
32	Unirac Grounding Lug (2)	$6.60			
33	Steca Tarom 245 Charge Controller (1)	$265.00			
34	Combiner Box (1)	$200.00			
35	DC Fans A-F12 (1)	$185.00	12		
36	Miscellaneous	$100.00			
37	3500 Watt DC to AC inverter	$323.17			http://www.amazon.com
38					
39		**$8,562.74**			

Our Solution: The Economics

- Open 8am- 8pm
- Staff on call for emergencies 24/7

- Sources of Revenue
  - Prescriptions
  - Consultation Fee
  - Vaccinations
  - Assorted Medical Aide

Our Solution: The Economics

- Safer Instruments
  - Mercury-free thermometers
  - Battery-operated
- Waste reducing
  - Smaller instrument packets
- Disposal of Waste
  - Standard Medical Waste Procedures

Our Solution: The Economics