

Renewable Power Tools

Dan Ingold



The Trusted Integrator for Sustainable Solutions

Toolbox Needs

Know your usage

Define your renewable resources

**Find out what incentives and other help
is available**

**Try some economic models to determine
output and savings**



USCG Utility Bill Access

BSU Alameda – One Month's Natural Gas Bill



Utility Bill Access Made Easier

The screenshot shows a Microsoft Internet Explorer browser window displaying the Coast Guard Energy Program website. The address bar shows the URL: <https://cgportal.uscg.mil/lotus/myquickr/coast-guard-energy-program>. The browser's title bar reads "Home - Coast Guard Energy Program - CG Portal - Microsoft Internet Explorer provided by USCG".

The website header includes a search bar with the text "Coast Guard Energy Program" and a "SEARCH" button. Below the header is a navigation menu with the following items: Home, Efficiency & Renewables, Fuel Logistics and Fuel Cards, Tracking and Performance, Organization, Announcements, Energy Library, and Energy Links.

The main content area features a large banner for the "OFFICE OF ENERGY PROGRAMS" with the United States Coast Guard logo. To the left of the banner is a sidebar menu with the following categories: HOME, EFFICIENCY & RENEWABLES (Energy Sustainability), FUEL LOGISTICS & FUEL CARDS (Energy Reliability), TRACKING & PERFORMANCE (Resource Accountability), ORGANIZATION, ANNOUNCEMENTS, ENERGY LIBRARY, and LINKS.

Below the sidebar menu is a "DO YOU KNOW YOUR ENERGY CONSUMPTION?" section with a "CLICK HERE TO FIND OUT" button and an image of a glowing lightbulb.

The main content area contains a section titled "IN THE NEWS" with a list of recent news items:

- *10/18/10 - Coast Guard Operational Sustainability Performance Plan (OSPP) Available for Download (Click for details)
- *09/21/10 - Energy Awareness Month Outreach Materials Available for Download (Click for details)
- *09/10/10 - FINCEN Utility WebApps available to track energy consumption (Click for details)
- *09/03/10 - Fuel Card Portal Goes Live! (Click for details)
- *08/06/10 - Pam Komer receives Federal 2010 Energy Mgmt. Award (Click for details)
- *08/06/10 - CG Yard Landfill Gas team receives Federal 2010 Energy Mgmt. Award (Click for details)
- *05/17/10 - DESC Worldwide Conference '10 Presentations Available for Download (Click for details)
- *05/11/10 - BSU Honolulu Sustainability Featured in TME (Click for details)
- *05/04/10 - Vice Commandant Unveils Energy Mgmt. Strategy (Click for details)
- *04/22/10 - USCG Sustainability Highlighted in White House Blog (Click for details)
- *04/12/10 - USCG Sustainability Poster Available for Download (Click for details)
- *04/09/10 - Petaluma Solar Array Featured in iCommandant's Blog (Click for details)
- *04/02/10 - TRACEN Petaluma 875 kW Solar PV Array Goes Live! (Click for details)

Below the news items is a "WELCOME!" section:

WELCOME!
Welcome to the CG-4 Energy Program new Portal Site. This site is continuously being updated with additional information and content. From here, you will be able to access the latest topics, announcements, initiatives and emerging requirements within the Coast Guard Energy Program and find links to other energy related sites throughout the Coast Guard.

At the bottom of the main content area, it states: "You will note that the Energy Program has three major components,"

On the right side of the main content area, there is a large blue banner for the "COAST GUARD ENERGY MANAGEMENT PROGRAM" with the text: "FIND OUT MORE ABOUT THE COAST GUARD ENERGY MANAGEMENT PROGRAM. VISIT US AT BOOTHS 630 & 729 AT THE COAST GUARD INNOVATION EXPO." The banner also features the Coast Guard logo and three circular icons.

The browser's taskbar at the bottom shows the Start button, several icons, and the text "Inbox - Microsoft Outlook" and "Home - Coast Guard E...". The system tray on the right shows "Local Intranet" and several icons.

FINCEN Utility Portal - Windows Internet Explorer provided by URS Denver

https://cgweb.fincen.uscg.mil/shoreenergy/

File Edit View Favorites Tools Help

Google Search Share Sidewiki Bookmarks Check Translate AutoFill

FINCEN Utility Portal

U.S. Coast Guard
Finance Center Intranet
...Providing business solutions to enhance mission execution now and into the future.

U.S. DEPARTMENT OF HOMELAND SECURITY

Home Apps/Reports Publications User Tools Site Map About FINCEN Search Go

USCG FINCEN Utility Portal



Consumption Data Search



Detailed Data Query



Submit a Problem Report

USCG Home DHS.gov Privacy & Security Disclaimer Accessibility Coordinator Contact Us Download Plug-ins

https://cgweb.fincen.uscg.mil/shoreenergy/



USCG FINCEN Utility Portal ~ Consumption Data Search

Use this query to pull utility consumption data and view invoice images in either HTML or MS Excel format by Utility Type, Account Number, OPFAC, Cost Center and Date Range. The Utility Type and Date Range fields are mandatory. To increase query performance, please enter as many variables as possible.

*Utility Type:	<input type="text"/>
Account No.:	<input type="text"/>
OPFAC:	<input type="text"/>
Cost Center:	<input type="text"/>
*Date Range:	From Date: <input type="text"/> To Date: <input type="text"/>

HTML Excel

* Required field

Browser address bar: <https://cgweb.fincen.uscg.mil/shoreenergy/cons1.cfm>

Navigation: File Edit View Favorites Tools Help

Search:

U.S. Coast Guard Finance Center Intranet (cgweb.fin...)

U.S. Coast Guard Finance Center Intranet
 ...Providing business solutions to enhance mission execution now and into the future.

Home Apps/Reports Publications User Tools Site Map About FINCEN



USCG FINCEN Utility Portal ~ Consumption Data Search

Util Type	Invoice Date	Account No.	OPFAC	CostCtr	Vendor Name	Service Location Address	Unit Name	City	State	Usage	Units	Amount	ViewDoc
NatGas	10/26/09	0010948332	47500	52145	PACIFIC GAS AND ELECTRIC COMPANY	EAGLE & HUDSON	USCG INTEGRATED SUPPORT COMMAND ALAMEDA	ALAMEDA	CA	6310.27933	TD - THERMS	5507.47	
NatGas	11/24/09	0010948332	47500	52145	PACIFIC GAS AND ELECTRIC COMPANY	EAGLE & HUDSON	USCG INTEGRATED SUPPORT COMMAND ALAMEDA	ALAMEDA	CA	15304.22460	TD - THERMS	14409.41	
NatGas	12/28/09	0010948332	47500	52145	PACIFIC GAS AND ELECTRIC COMPANY	EAGLE & HUDSON	USCG INTEGRATED SUPPORT COMMAND ALAMEDA	ALAMEDA	CA	33117.41791	TD - THERMS	28297.28	
NatGas	01/26/10	0010948332	47500	52145	PACIFIC GAS AND ELECTRIC COMPANY	EAGLE & HUDSON	USCG INTEGRATED SUPPORT COMMAND ALAMEDA	ALAMEDA	CA	34569.34468	TD - THERMS	31284.66	
NatGas	02/25/10	0010948332	47500	52145	PACIFIC GAS AND ELECTRIC COMPANY	EAGLE & HUDSON	USCG INTEGRATED SUPPORT COMMAND ALAMEDA	ALAMEDA	CA	27757.13716	TD - THERMS	27064.06	
NatGas	03/30/10	0010948332	47500	52145	PACIFIC GAS AND ELECTRIC COMPANY	EAGLE & HUDSON	USCG INTEGRATED SUPPORT COMMAND ALAMEDA	ALAMEDA	CA	26495.18538	TD - THERMS	19854.34	
NatGas	04/28/10	0010948332	47500	52145	PACIFIC GAS AND ELECTRIC COMPANY	EAGLE & HUDSON	USCG INTEGRATED SUPPORT COMMAND ALAMEDA	ALAMEDA	CA	21891.29707	TD - THERMS	18568.26	
NatGas	05/26/10	0010948332	47500	52145	PACIFIC GAS AND ELECTRIC COMPANY	EAGLE & HUDSON	USCG INTEGRATED SUPPORT COMMAND ALAMEDA	ALAMEDA	CA	3.45860	TD - THERMS	13065.86	
NatGas	06/27/10	0010948332	47500	52145	PACIFIC GAS AND ELECTRIC COMPANY	EAGLE & HUDSON	USCG INTEGRATED SUPPORT COMMAND ALAMEDA	ALAMEDA	CA	11175.75952	TD - THERMS	9368.00	
NatGas	07/27/10	0010948332	47500	52145	PACIFIC GAS AND ELECTRIC COMPANY	EAGLE & HUDSON	USCG INTEGRATED SUPPORT COMMAND ALAMEDA	ALAMEDA	CA	6747.99283	TD - THERMS	5996.42	
NatGas	08/27/10	0010948332	47500	52145	PACIFIC GAS AND ELECTRIC COMPANY	EAGLE & HUDSON	USCG INTEGRATED SUPPORT COMMAND ALAMEDA	ALAMEDA	CA	7154.78356	TD - THERMS	6580.32	
NatGas	09/27/10	0010948332	47500	52145	PACIFIC GAS AND ELECTRIC COMPANY	EAGLE & HUDSON	USCG INTEGRATED SUPPORT COMMAND ALAMEDA	ALAMEDA	CA	5925.52501	TD - THERMS	5506.76	
NatGas	10/26/09	9885947700	47500	52145	PACIFIC GAS AND ELECTRIC COMPANY	GOVT ISLAND TRAINING CENTER	USCG INTEGRATED SUPPORT COMMAND ALAMEDA	ALAMEDA	CA	39.23694	TD - THERMS	38.61	
NatGas	11/24/09	9885947700	47500	52145	PACIFIC GAS AND ELECTRIC COMPANY	GOVT ISLAND TRAINING CENTER	USCG INTEGRATED SUPPORT COMMAND ALAMEDA	ALAMEDA	CA	38.14985	TD - THERMS	42.23	
NatGas	12/28/09	9885947700	47500	52145	PACIFIC GAS AND ELECTRIC COMPANY	GOVT ISLAND TRAINING CENTER	USCG INTEGRATED SUPPORT COMMAND ALAMEDA	ALAMEDA	CA	41.37520	TD - THERMS	43.96	
NatGas	01/26/10	9885947700	47500	52145	PACIFIC GAS AND ELECTRIC COMPANY	GOVT ISLAND TRAINING CENTER	USCG INTEGRATED SUPPORT COMMAND ALAMEDA	ALAMEDA	CA	48.64448	TD - THERMS	54.13	
NatGas	02/25/10	9885947700	47500	52145	PACIFIC GAS AND ELECTRIC COMPANY	GOVT ISLAND TRAINING CENTER	USCG INTEGRATED SUPPORT COMMAND ALAMEDA	ALAMEDA	CA	41.40568	TD - THERMS	48.14	

**Department of Homeland Security
Renewable Energy Resource
Assessment**

**Prepared for Paul Fennewald
Energy Manager
Department of Homeland Security**

*Prepared by Robi Robichaud
Federal Energy Management Program at the
National Renewable Energy Laboratory*

December 28, 2005

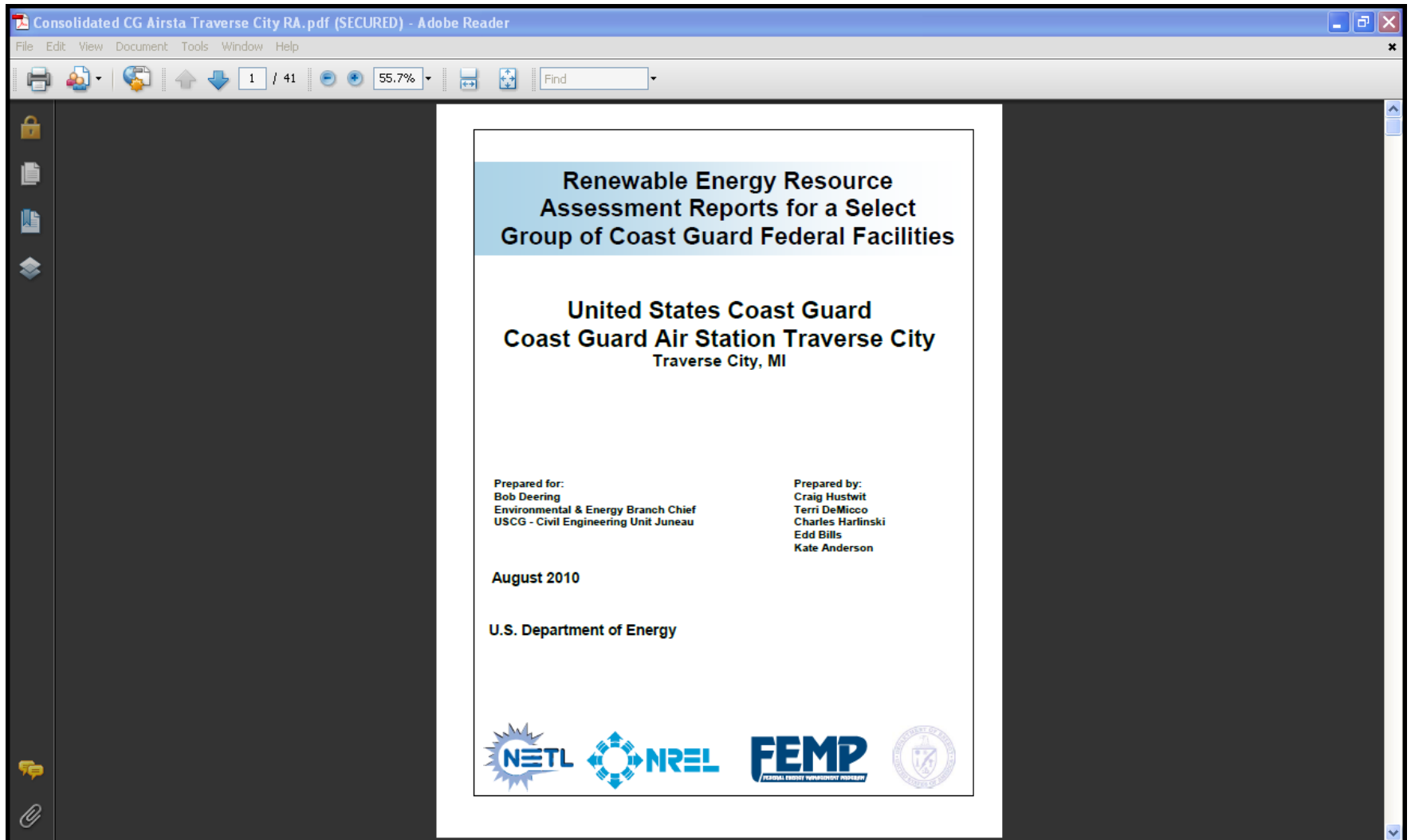
**Ranking of
Solar, Wind,
Biomass, and
Geothermal
Resources**

Table 1 Compilation of USCG renewable energy resources

Active USCG sites ranked for overall renewable energy resource availability

ATU OFFAC	NREL Recno	Active Station	NAME	Latitude	Longitude	City	State	Wind	Solar fixed tilt	Solar horizontal	Solar vertical	Biomass	Geothermal	Total Renewable Resource Assessment
14-30143	3759	Y	CG STA MAUI	20.8	-156.5	WAILUKU	HI	20	16	16	0	0	8	60
08-40115	2442	Y	CG LORSTA LAS CRUCES	32.1	-106.7	LA MESA	NM	0	20	16	8	0	16	60
11-40137	2468	Y	CG LORSTA SEARCHLIGHT	35.5	-114.9	SEARCHLIGHT	NV	0	20	16	12	0	12	60
46-68160	2917	Y	CG RUITOFF ALBUQUERQUE	35.1	-106.6	ALBUQUERQUE	NM	0	20	16	12	0	12	60
46-68174	3065	Y	CG RUITOFF PHOENIX	33.5	-112.1	PHOENIX	AZ	0	20	16	12	0	12	60
08-40115	2428	Y	CG LORSTA BOISE CITY	36.6	-102.8	FELT	OK	4	16	12	8	0	12	52
11-30670	3752	Y	CG STA LAKE TAHOE	39.2	-120.1	TAHOE CITY	CA	0	16	12	8	0	16	52
11-40139	2434	Y	CG LORSTA FALLON	39.5	-118.8	FALLON	NV	0	16	12	8	0	16	52
11-40141	2445	Y	CG LORSTA MIDDLETOWN	38.8	-122.6	MIDDLETOWN	CA	0	16	12	8	0	16	52
21-32460	524	Y	CG CAMSPAC SAN FRAN	38.1	-122.8	PT REYES STA	CA	0	16	12	8	0	16	52
33-51252	2819	Y	378 WHEC MAT-ALAMEDA	37.8	-122.3	ALAMEDA	CA	0	16	12	8	0	16	52
33-53740	1326	Y	CG ESD PETALUMA	38.2	-122.7	PETALUMA	CA	0	16	12	8	0	16	52
58-34360	3919	Y	CG PACIFIC STRIKE TEAM	38.1	-122.5	NOVATO	CA	0	16	12	8	0	16	52
01-33130	2521	Y	CG MID NEW YORK	40.7	-74.0	NEW YORK	NY	4	8	4	4	20	8	48
01-36222	1462	Y	CG GROUP NEW YORK	40.7	-74.0	NEW YORK	NY	4	8	4	4	20	8	48
01-41855	4378	Y	CG VTR NEW YORK	40.7	-74.0	GOVERNORS ISL	NY	4	8	4	4	20	8	48
32-45000	4037	Y	CPRO GOVERNORS ISLAND	40.7	-74.0	NEW YORK	NY	4	8	4	4	20	8	48
44-68129	3044	Y	CG RUITOFF NEW YORK	40.7	-74.0	NEW YORK	NY	4	8	4	4	20	8	48
47-77103	692	Y	CGIS DET NEW YORK	40.7	-74.0	NEW YORK	NY	4	8	4	4	20	8	48
11-30462	3705	Y	CG STA BODEGA BAY	38.3	-123.1	BODEGA BAY	CA	8	12	8	4	0	16	48
14-31250	497	Y	CG BASE HONOLULU	21.3	-157.9	HONOLULU	HI	8	16	16	0	0	8	48
14-37340	3305	Y	SEC HONO ADMIN PERS DIV	21.3	-157.9	HONOLULU	HI	8	16	16	0	0	8	48
14-40301	2865	Y	CG CMSTA HAWAII	21.5	-157.9	KANEHOHE	HI	8	16	16	0	0	8	48
14-41990	213	Y	CG ANT HONOLULU	21.3	-157.9	HONOLULU	HI	8	16	16	0	0	8	48
21-34268	2791	Y	MSST 91107 HONOLULU	21.3	-157.9	HONOLULU	HI	8	16	16	0	0	8	48
33-47810	2102	Y	CG ISC HONOLULU	21.3	-157.9	HONOLULU	HI	8	16	16	0	0	8	48
33-51238	1369	Y	CG EMD ALAMEDA	37.8	-122.3	ALAMEDA	CA	0	12	12	8	0	16	48
33-51230	1370	Y	CG EMD HONOLULU	21.3	-157.9	HONOLULU	HI	8	16	16	0	0	8	48
33-51254	2820	Y	378 WHEC MAT-HONOLULU	21.3	-157.9	HONOLULU	HI	8	16	16	0	0	8	48
33-53600	1411	Y	ESU Honolulu	21.3	-157.9	HONOLULU	HI	8	16	16	0	0	8	48
47-77100	693	Y	CGIS DET PETALUMA	38.2	-122.7	PETALUMA	CA	0	16	12	4	0	16	48
11-20170	140	Y	AIRSTA SAN DIEG PERSRU	32.7	-117.2	SAN DIEGO	CA	0	16	12	8	0	12	48
11-20253	160	Y	CG AIRSTA LOS ANGELES	33.9	-118.4	LOS ANGELES	CA	0	16	12	8	0	12	48
11-30888	3792	Y	CG STA SAN DIEGO	32.7	-117.2	SAN DIEGO	CA	0	16	12	8	0	12	48
11-33255	2710	Y	CG MRO SAN DIEGO	32.7	-117.2	SAN DIEGO	CA	0	16	12	8	0	12	48
11-36261	1557	Y	Group San Diego	32.7	-117.2	SAN DIEGO	CA	0	16	12	8	0	12	48
11-37250	3545	Y	SEC SAN DIEGO ADMIN PERS DIV	32.7	-117.2	SAN DIEGO	CA	0	16	12	8	0	12	48
11-41982	241	Y	CG ANT SAN DIEGO	32.7	-117.2	SAN DIEGO	CA	0	16	12	8	0	12	48
11-73135	112	Y	CG ACTIVITIES SAN DIEGO	32.7	-117.2	SAN DIEGO	CA	0	16	12	8	0	12	48
21-34269	2793	Y	MSST 91109 SAN DIEGO	32.7	-117.2	SAN DIEGO	CA	0	16	12	8	0	12	48
21-34301	4100	Y	CG PACARPA TABLET	32.7	-117.2	SAN DIEGO	CA	0	16	12	8	0	12	48
21-34404	520	Y	CG UNIT C31 CTR WEST	33.9	-117.3	MARCH AFB	CA	0	16	12	8	0	12	48
21-83101	1600	Y	NCWGRU ONE	32.7	-117.2	SAN DIEGO	CA	0	16	12	8	0	12	48
21-83110	1590	Y	CGBU HCU 110	32.7	-117.2	SAN DIEGO	CA	0	16	12	8	0	12	48
33-53720	1360	Y	ESD SAN DIEGO	32.7	-117.2	SAN DIEGO	CA	0	16	12	8	0	12	48
46-68175	3097	Y	CG RUITOFF SAN DIEGO	32.8	-117.2	SAN DIEGO	CA	0	16	12	8	0	12	48
46-68176	3081	Y	CG RUITOFF RIVERSIDE	34.1	-117.3	COLTON	CA	0	16	12	8	0	12	48
47-77100	687	Y	CGIS DET LAJL	33.7	-118.3	SAN PEDRO	CA	0	16	12	8	0	12	48
47-77100	693	Y	CGIS DET HONOLULU	21.3	-157.9	HONOLULU	HI	0	16	16	8	0	8	48

Renewable Energy Assessment 20 Great Lakes USCG Facilities

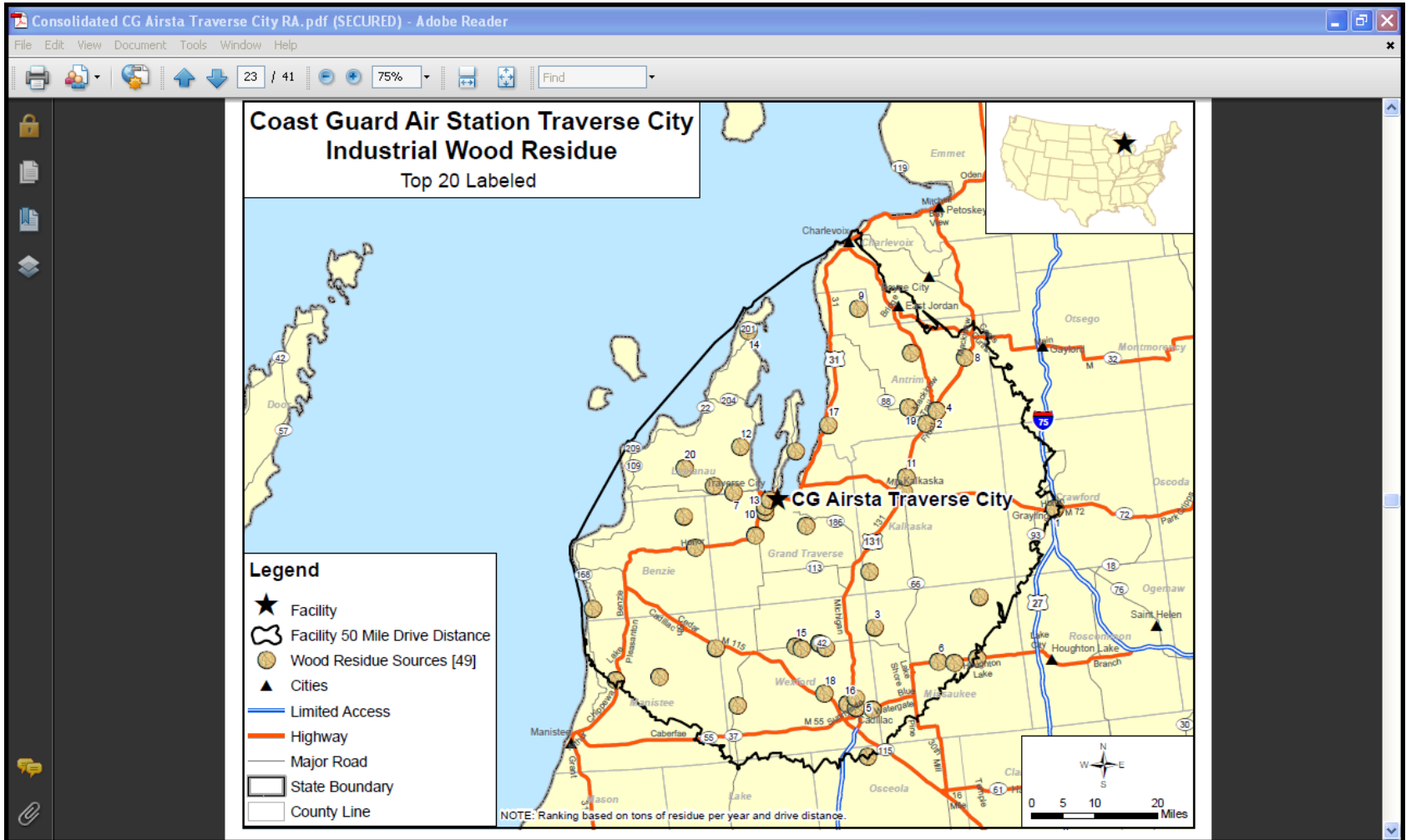


Ranking of Renewable Energy Resources

	Sources	Estimated MMBTU	Sources	Estimated MMBTU	Sources	Estimated MMBTU	Estimated Wood Residue (Green Tons / Year)		kWh/m ² /day
Coast Guard Air Station Traverse City	2	23,924	1	7,878	49	303,615	112,450	Marginal / Fair	4.00 - 4.25
Coast Guard Base Sault Ste Marie	0	n/a	2	61,167	4	28,431	10,530	Marginal	4.00 - 4.25
Coast Guard Marine Safety Office Detroit	15	Unknown	2	283,595	128	687,960	254,800	Marginal	4.00 - 4.25
Coast Guard Station Calumet Harbor	6	1,734,140	6	1,559,530	243	2,585,115	957,450	Marginal	4.25 - 4.50
Coast Guard Station Charlevoix	1	9,944	0	n/a	32	251,667	93,210	Fair	4.00 - 4.25
Coast Guard Station Erie	1	232,525	1	63,577	55	398,034	147,420	Fair / Good	4.00 - 4.25
Coast Guard Station Fairport	1	124,331	3	27,525	102	572,130	211,900	Good	4.00 - 4.25
Coast Guard Station Frankfort	0	n/a	0	n/a	25	77,220	28,600	Good / Excellent	4.00 - 4.25
Coast Guard Station Grand Haven	2	132,872	1	6,182	91	951,210	352,300	Good / Excellent	4.00 - 4.25
Coast Guard Station Harbor Beach	0	n/a	3	53,623	8	15,795	5,850	Fair	4.00 - 4.25
Coast Guard Station Ludington	0	n/a	2	21,779	17	55,809	20,670	Good / Excellent	4.00 - 4.25
Coast Guard Station Manistee	1	30,295	0	n/a	26	96,876	35,880	Good	4.00 - 4.25
Coast Guard Station Marquette	2	27,481	1	5,746	20	209,898	77,740	Fair	<4.00
Coast Guard Station Michigan City	3	508,161	2	17,609	99	1,025,973	379,990	Fair	4.00 - 4.25
Coast Guard Station Port Huron	1	33,882	1	18,536	35	195,858	72,540	Marginal	4.00 - 4.25
Coast Guard Station Portage	0	n/a	5	262,093	30	113,022	41,860	Marginal	4.00 - 4.25
Coast Guard Station Rochester	1	23,178	4	166,357	39	131,978	48,880	Marginal	4.00 - 4.25
Coast Guard Station Sheboygan	2	341	1	17,043	48	365,391	135,330	Marginal	4.25 - 4.50
Coast Guard Station St Ignace	0	n/a	1	12,836	16	162,864	60,320	Fair	<4.00
Coast Guard Station St Joseph	1	35,053	2	23,448	67	651,456	241,280	Good	4.00 - 4.25

Traverse City

Local Industrial Wood Residue





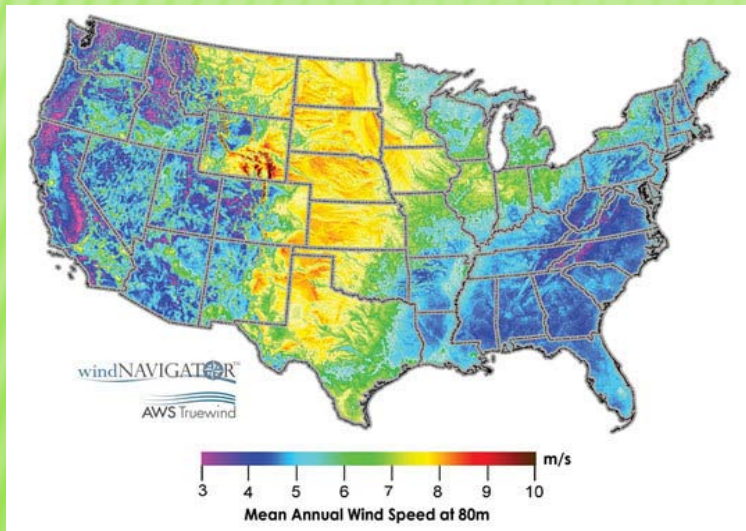
Green Guardian

Effect culture and policy change for a greener Coast Guard

A: Implement sustainable electricity generation

Wind

Identify locations throughout CG with fastest payback
Complete design, initiate permitting, advocate for funding





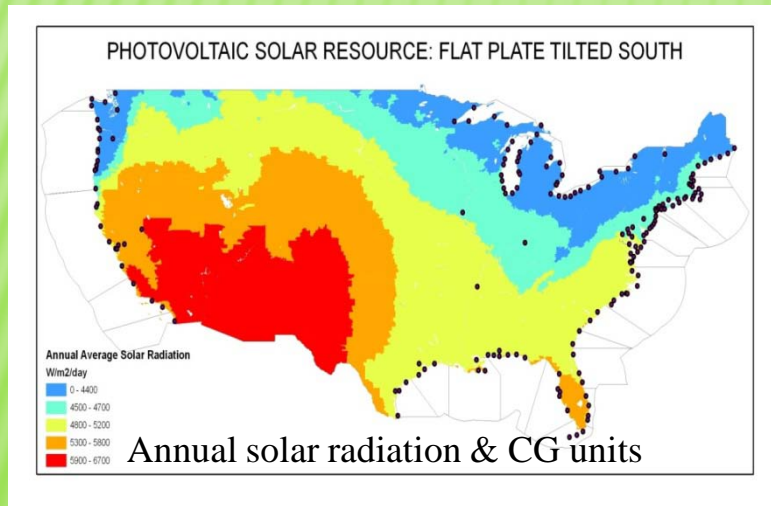
Green Guardian

Effect culture and policy change for a greener Coast Guard

A: Implement sustainable electricity generation

Solar

Identify locations throughout CG with fastest payback
Complete design, advocate for funding





Green Guardian

Effect culture and policy change for a greener Coast Guard

B: Save \$ and reduce energy use through healthy competition

Energy policy recommendations:

- Send units their energy bills
- Meter cutters separately
- Send comparative energy reports
- Reward reduced energy usage

District	Station	City/State
1	Southwest Harbor	Southwest Harbor, ME

2008 Consumption (kWh)	580760
2009 Consumption (kWh)	614340
Square Footage	25000
Avg. kWh/sqft/Year	23.9

Electricity Consumption Comparative Scale





Green Guardian

Effect culture and policy change for a greener Coast Guard

B: Save \$ and reduce energy use through healthy competition

Energy policy issues:

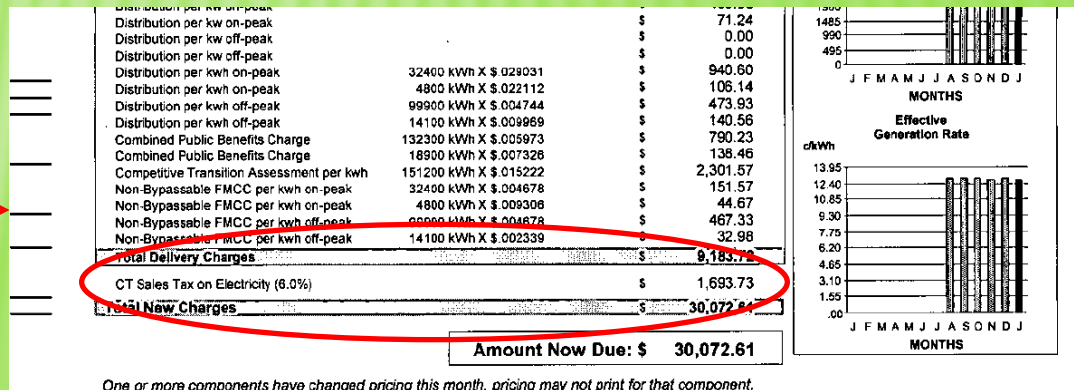
Only about half of energy bills are available

Lower some utility rates simply by asking!

CG pays sales tax on about 5% of energy bills

SEC Long Island Sound Electric bill, FEB09

\$18k in sales tax/year



WIND POWER SITING, INCENTIVES, AND WILDLIFE GUIDELINES IN THE UNITED STATES



Wind Farm – Sherman County, OR



[http://www.fishwildlife.org/Science_research/AFWA Wind Power Final Report.PDF](http://www.fishwildlife.org/Science_research/AFWA_Wind_Power_Final_Report.PDF)

FLORIDA

BACKGROUND

Contact: Julie Rowland, Legislative Affairs Office, Florida Fish & Wildlife Conservation Commission, 850-487-3795, julie.rowland@MyFWC.com, 620 South Meridian Street, Tallahassee, FL 32399-1600

Installed Utility Scale Wind Power: None

INCENTIVES FOR WIND DEVELOPMENT

Renewable Portfolio Standard: Florida does not have an RPS standard in place, but in July, 2007 Florida Governor Charlie Crist signed Executive Order 07-127, entitled "Immediate Actions to Reduce Greenhouse Gas Emissions within Florida". The executive order establishes reduction targets for Greenhouse Gas emissions and requests that the Florida Public Service Commission initiate rulemaking by September 1, 2007 to require that utilities produce at least 20% of their electricity from renewable sources with a strong focus on solar and wind energy.

Incentives for Industrial or "Big Wind" Production:

Florida Renewable Energy Production Tax Credit is a corporate tax credit of \$.01/kWh for production of renewable energy (including wind) that is sold to an unrelated buyer.

Incentives for Residential and "Small Wind" Production:

The Renewable Energy Technologies Grants Program provides renewable energy matching grants for demonstration, commercialization, research, and development projects relating to renewable energy technologies. Eligible recipients (must be in-state) include municipalities and county governments; businesses; universities and colleges; utilities; not-for-profit organizations; and other qualified entities; ranking criteria for grant awards includes availability of matching funds, economic development potential, technical feasibility, innovation, long-term production potential, and public visibility, among others.

Interconnection and Net Metering Standards:

Current interconnection and net-metering only applies to photovoltaic systems.

ENERGY SITING PROCESS

Power Siting Authority: There is not significant wind power potential at this time, so no current regulations and local governments would most likely have jurisdiction for small scale projects. Florida DEP, Siting Coordination Office has broad authorities for certification of power plants - these are currently defined as traditional as well as solar power plants 75 MW or greater. Should utility scale wind power opportunities increase, this would be the most likely authority.

**Reviews
incentives as
well as any
state wildlife
regulations for
siting wind
turbines**

Database of State Incentives for Renewables and Efficiency

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DSIRETM
Database of State Incentives for Renewables & Efficiency

U.S. DEPARTMENT OF ENERGY Energy Efficiency & Renewable Energy
North Carolina Solar Center
IREC

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DSIRE SOLAR
solar policy information

DSIRE is a comprehensive source of information on state, local, utility and federal incentives and policies that promote renewable energy and energy efficiency. Established in 1995 and funded by the U.S. Department of Energy, DSIRE is an ongoing project of the N.C. Solar Center and the Interstate Renewable Energy Council.

Choose one or both databases:
 Renewable Energy Energy Efficiency

Federal Incentives

Resources

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DSIRE.ORG

DSIRE: Incentives/Policies by State: Florida: Incentives/Policies for Renewables & Efficiency - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.dsireusa.org/incentives/index.cfm?re=1&ee=1&spv=0&st=0&srp=1&state=FL

Google

Most Visited Getting Started Latest Headlines

DSIRE: Incentives/Policies by State: ...



DSIRETM

Database of State Incentives for Renewables & Efficiency

ENERGY Energy Efficiency & Renewable Energy
North Carolina Solar Center
IREC

Home | Glossary | Links | FAQs | Contacts | About Us

FLORIDA
Incentives/Policies for Renewables & Efficiency

[Printable Version](#)

DSIRE SOLAR
solar policy information

Resources

- Summary Maps
- Summary Tables
- Library
- Search
- What's New?

myDSIRE
customize DSIRE for your organization

Financial Incentives

Green Building Incentive

- [Miami-Dade County - Green Buildings Expedite Process](#)
- [Volusia County - Green Building Program](#)

Industry Recruitment/Support

- [Capital Investment Tax Credit for Clean Energy](#)
- [Miami-Dade County - Targeted Jobs Incentive Fund](#)

Local Loan Program

- [Sarasota County - Get Energy Smart Retrofit Loan Program](#)

Local Rebate Program

- [Orange County - OCHEEP!](#)
- [Sarasota County - Get Energy Smart Retrofit Program](#)

Other Incentive

- [Lake Land Electric - Solar Water Heating Program](#)

PACE Financing

- [Local Option - Special District](#)

Performance-Based Incentive

- [Gainesville Regional Utilities - Solar Feed-In Tariff](#)
- [Orlando Utilities Commission - Pilot Solar Programs](#)

Sales Tax Incentive

- [Solar Energy Systems Equipment Sales Tax Exemption](#)

Utility Grant Program

- [City of Tallahassee Utilities - Low-Income Energy Efficiency Grant Programs](#)
- [Orlando Utilities Commission - Home Energy Efficiency Fix-Up Program](#)

Utility Loan Program

- [City of Tallahassee Utilities - Efficiency Loans](#)
- [City of Tallahassee Utilities - Solar Loans](#)
- [City Electric Cooperative, Inc - Energy Conservation Loans](#)
- [City Electric Cooperative, Inc - Solar Thermal Loans](#)
- [Gainesville Regional Utilities - Low-Income Energy Efficiency Loan Program](#)
- [Orlando Utilities Commission - Residential Solar Loan Program](#)

Net Metering Example

Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=FL19R&re=1&ee=1

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DSIRE™

Database of State Incentives for Renewables & Efficiency

U.S. DEPARTMENT OF ENERGY Energy Efficiency & Renewable Energy
North Carolina Solar Center
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FLORIDA

Incentives/Policies for Renewables & Efficiency

Printable Version

Florida - Net Metering

Last DSIRE Review: 02/01/2010

Program Overview:

State:	Florida
Incentive Type:	Net Metering
Eligible Renewable/Other Technologies:	Solar Thermal Electric, Photovoltaics, Wind, Biomass, Hydroelectric, Geothermal Electric, CHP, Cogeneration, Hydrogen, Small Hydroelectric, Tidal Energy, Wave Energy, Ocean Thermal
Applicable Sectors:	Commercial, Industrial, Residential, Nonprofit, Schools, Local Government, State Government, Tribal Government, Fed. Government, Agricultural, Institutional
Applicable Utilities:	Investor-owned utilities
System Capacity Limit:	2 MW
Aggregate Capacity Limit:	No limit specified
Net Excess Generation:	Credited to customer's next bill at retail rate; excess reconciled annually at avoided-cost rate
REC Ownership:	Customer owns RECs
Meter Aggregation:	Not allowed
Authority 1:	25-6.065, F.A.C.
Date Enacted:	3/19/2008
Date Effective:	4/7/2008
Authority 2:	Fla. Stat. § 366.91
Date Enacted:	6/25/2008
Date Effective:	07/01/2008

Summary:

PV Watts (NREL)

PVWATTS v. 1 - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://redc.nrel.gov/solar/calculators/PVWATTS/version1/

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PVWATTS v. 1

PV Watts

A Performance Calculator
for
Grid-Connected PV Systems

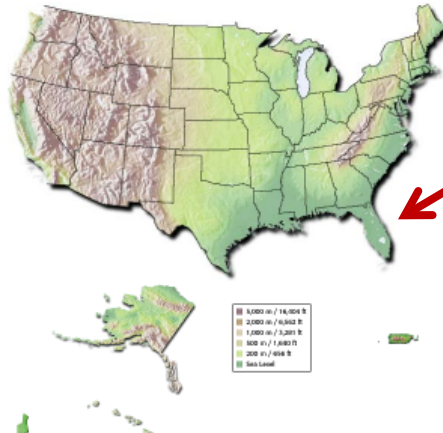
Version 1

PVWATTS v. 1 can be used for locations accessible through links on the [map](#) below, or through a [text list](#) for U.S. sites, or for sites outside the US, through text lists by region. Researchers at the National Renewable Energy Laboratory developed PVWATTS to permit non-experts to quickly obtain performance estimates for grid-connected PV systems.

Also available is an option to output [hourly performance data](#). This option can be run after the initial calculation, and outputs the data in a separate browser window. Instructions for saving the output to a text file can be accessed through the "Help" link at the top of the hourly output page.

The US & Its Territories

To start the calculator, click on a state, or choose a state from the [list of States and Territories](#).



Legend:
15,000 h / 18,000 h
12,000 h / 15,000 h
9,000 h / 12,000 h
6,000 h / 9,000 h
3,000 h / 6,000 h
Sea Level

Regions Outside the US

To start the calculator, select the appropriate region, choose a country-city pair from the region drop-down menu, and click

Name PVWATTS For International Site

For a list of country/province abbreviations click [here](#).

- Africa
EGY Aswan
- Asia
ARE Abu Dhabi
- Canada
AL Calgary
- Central America & Caribbean
BLZ Belize Intl Airport
- Europe
AUT Graz
- South America
ARG Buenos Aires

Pick the State and click on it

Pick the closest location

PVWATTS: Florida - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://nrel.gov/solar/calculators/PVWATTS/version1/US/Florida/

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PVWATTS: Florida

PVWatts

Click on the site where you want to use PVWATTS to calculate the electrical energy produced. Choose the site nearest to your location that has similar topography. If near a site border, you may wish to choose a site location in the adjacent state.

Florida

Adjacent States:
[Alabama](#) [Georgia](#)

Tampa

Return to NREL Home Page (<http://www.nrel.gov/>)

Done

PV Mounting



Input the type and size of PV System

The screenshot shows the PVWATTS calculator interface in a Mozilla Firefox browser window. The URL is <http://redc.nrel.gov/solar/calculators/PVWATTS/version1/US/Florida/Tampa.html>. The page title is "PVWATTS: Florida - Tampa".

The form is divided into several sections:

- Station Identification:** WEBA Number: 1184, City: Tampa, State: Florida.
- PV System Specifications:**
 - DC Rating (kW): 4.0 (with a red arrow pointing to it from the label "DC Rating").
 - DC to AC Derate Factor: 0.77 (with a red arrow pointing to it from the label "DC to AC Conversion").
 - Array Type: Fixed Tilt (with a red arrow pointing to it from the label "PV Mounting Type").
 - Fixed Tilt or 1-Axis Tracking System:
 - Array Tilt (degrees): 28.0 (Default = Latitude) (with a red arrow pointing to it from the label "Default PV Panel Tilt Angles").
 - Array Azimuth (degrees): 180.0 (Default = South).
- Energy Data:** Cost of Electricity (cents/kWh): Default = State Average (with a red arrow pointing to it from the label "Cost per kWh").

Buttons for "Calculate", "HELP", and "Reset Form" are located at the bottom of the form.

Output- Monthly Estimate of Power and Value




PVWATTS: AC Energy and Cost Savings - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://rredc.nrel.gov/solar/calculators/PVWATTS/version1/US/code/pvwattsv1.cgi

Most Visited Getting Started Latest Headlines

PVWATTS: AC Energy and Cost Savings

(Type comments here to appear on printout; maximum 1 row of 80 characters.)

Station Identification	
City:	Tampa
State:	Florida
Latitude:	27.97° N
Longitude:	82.53° W
Elevation:	3 m

PV System Specifications	
DC Rating:	4.0 kW
DC to AC Inverter Ratio:	0.770
AC Rating:	3.1 kW
Array Type:	Fixed Tilt
Array Tilt:	28.0°
Array Azimuth:	180.0°

Energy Specifications	
Cost of Electricity:	9.0 ¢/kWh


Results			
Month	%hr Radiation (kWh/m ² /day)	AC Energy (kWh)	Energy Value (\$)
1	4.54	411	34.99
2	5.21	430	37.80
3	5.72	503	45.27
4	4.52	543	48.87
5	5.92	504	45.34
6	5.54	451	40.59
7	5.44	455	40.95
8	5.70	481	43.29
9	5.32	435	39.15
10	5.41	444	41.74
11	4.83	411	34.99
12	4.24	379	34.11
Year	5.37	5455	490.95

[Output Hourly Performance Data](#) [Output Results as Text](#)
[About the Hourly Performance Data](#) [Saving Text from a Browser](#)

Run PVWATTS v.1 for another US location or an international location
 Run PVWATTS v.2 (US only)

Please send questions and comments regarding PVWATTS to [Webmaster](#)

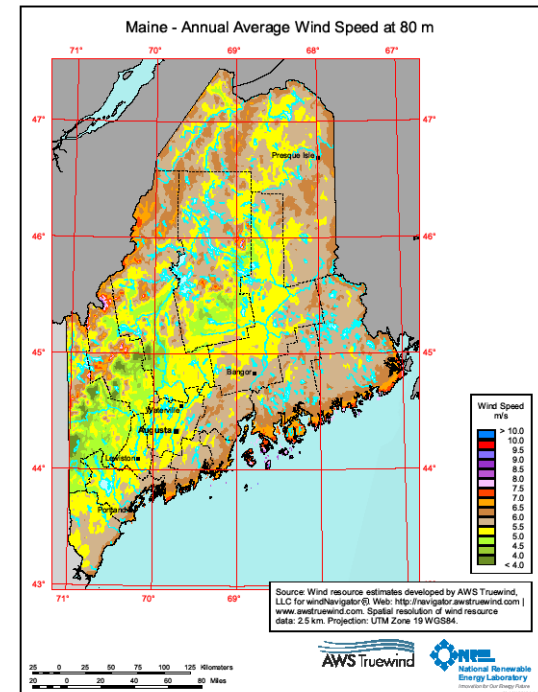
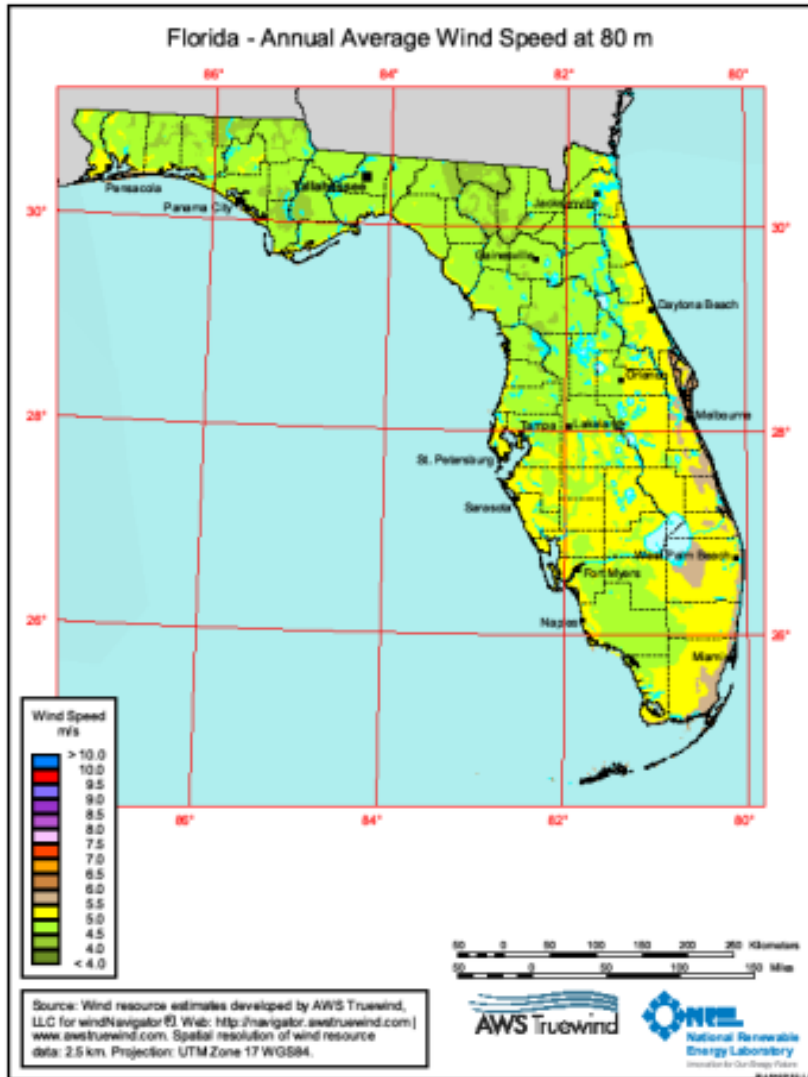
[Disclaimer and copyright notice](#)


[Return to NRELDC home page \(http://rredc.nrel.gov\)](http://rredc.nrel.gov)

Done

Wind Maps

WindPoweringAmerica.gov



Solar Advisor Model (SAM)

Welcome to SAM 2010

Start from a sample template

- Sample Files
 - Combined Multiple PV Systems Example
 - Custom HTF Example
 - Excel Sample
 - PV Battery Storage Sample
 - PV Shading Example
 - Sample Dish Stirling Systems
 - Sample PV Systems
 - Sample Parabolic Trough Systems
 - Sample Power Tower Systems
 - Sample Solar Water Heating
 - Scripting With SamUI Example
 - Statistical Analysis Sample

Start a new project

Case Name:

Reminder:

The default input values are intended to illustrate Solar Advisor's use. The data are meant to be realistic, but not to represent values for a specific project. Input values will vary depending on the market, technology and geographic location. New developments, policy changes, and price volatility mean that default values may be out of date or inappropriate. Before using results, be sure to review all inputs and determine whether they are appropriate for your analysis.

Open a recent file

<https://www.nrel.gov/analysis/sam/>

SAM Input Parameters

The screenshot displays the SAM 2010.4.12 software interface. The title bar reads "SAM 2010.4.12: untitled1". The menu bar includes "File", "Case", "Results", "Developer", and "Help". The main window shows a project named "Tampa" with a sub-tab for "Solar Hot Water, Commercial Cash".

System Summary

- Climate:** Location: TAMPA, FL; Lat: 28.0; Long: -82.5
- Utility Rate:** (Icon)
- Financing:** Analysis: 30 years; (Icon)
- Tax Credit Incentives:** Fed. ITC; (Icon)
- Payment Incentives:** (Icon)
- Annual Performance:** Degradation: 1%; Availability: 100%; (Icon)
- SWH System Costs:** Installed Cost: \$ 6017.52; (Icon)
- SWH System:** Area: 3.716 m²; (Icon)
- User Variables:** (Icon)

Choose Climate/Location

Location: [SAM]FL Tampa.tn2

Solar Advisor reads weather files in TMY2, TMY3, and EPW format. The default weather file library includes a complete set of TMY2 files for U.S. locations. To add files for other locations, use the web links below to find and download the files, and then click Add/Remove above to help SAM locate them on your computer.

Buttons: Add/Remove..., Refresh list, Copy to project, Remove from project, Create TMY3 file, Location Lookup...

Notes:
SAM looks for weather files in the specified folders. To change the search folders, click "Add/Remove". The prefix "SAM/" indicates a location from the standard SAM library, and those preceded by "USER/" are stored in your project file to facilitate sharing with other people.

Location Information

City: TAMPA Timezone: GMT -5 Latitude: 27.9667 deg
State: FL Elevation: 3 m Longitude: -82.5333 deg

Weather Data Information (Annual Averages)

Direct Normal: 191.4 Wh/m² Dry-bulb Temp: 21.9 °C
Diffuse Horizontal: 81.9 Wh/m² Wind Speed: 3.6 m/s

View hourly data...

Web Links

Solar Advisor reads weather files in TMY2, TMY3, and EPW format. The default weather file library includes a complete set of TMY2 files for U.S. locations. You can use the web links below to find weather data for other locations. After you have downloaded the desired weather files, click Add/Remove above to help SAM locate the downloaded weather files on your computer.

[Best weather data for the U.S. \(1200+ locations in TMY3 format\)](#)
[Best weather data for international locations \(in EPW format\)](#)
[U.S. satellite-derived weather data \(10 km grid cells in TMY2 format\)](#)

At the bottom of the interface, there is a row of icons for navigation and a "Print" button.

Has many locations already in pull down database

Both PV and Thermal

SAM 2010.4.12: untitled1

File Case Results Developer Help

Tampa

Select Technology and Market... [Solar Hot Water, Commercial Cash]

System Summary

Climate
Location: TAMPA, FL
Lat: 28.0 Long: -82.5

Utility Rate

Financing
Analysis: 30 years

Tax Credit Incentives
Fed. ITC

Payment Incentives

Annual Performance
Degradation: 1 %
Availability: 100 %

SWH System Costs
Installed Cost: \$ 6,017.52

SWH System
Area: 3.716 m2

User Variables

Direct Capital Costs

Collector Cost	220.00	\$/m2	\$ 817.52
Storage Cost	1,500.00	\$/unit	\$ 1,500.00
Balance of System			\$ 1,500.00
Installation Cost			\$ 2,200.00
Contingency	0 %		\$ 0.00
Total Direct Cost			\$ 6,017.52

Indirect Capital Costs

	% of Direct Cost	Non-fixed Cost	Fixed Cost	Total
Engineer, Procure, Construct	0 %	\$ 0.00	\$ 0.00	\$ 0.00
Project, Land, Miscellaneous	0 %	\$ 0.00	\$ 0.00	\$ 0.00
Sales Tax of	0 %	applies to	100 % of Direct Cost	\$ 0.00
Total Indirect Cost				\$ 0.00

Total Installed Costs

Total Installed Cost	\$ 6,017.52
Total Installed Cost per Capacity (\$/W)	\$ 2.55

Operation and Maintenance Costs

	First Year Cost	Escalation Rate (above inflation)
Fixed Annual Cost	0.00 \$/yr	0 %
Fixed Cost by Capacity	50.00 \$/KW-yr	0 %
Variable Cost by Generation	0.00 \$/MWh	0 %
Fossil Fuel Cost	0.00 \$/MMBTU	0 %

Notes

- Escalation rates do not apply to O&M annual schedules, only first year values.
- Fossil fuel cost is not applicable to PV or Dish Stirling systems. Set to zero for these systems.

May you all have fair
winds and a following sea



Thanks!



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Dan@Powersmith.US

