

**Seeing Is Believing:
How Monitoring
Solar PV Systems
Enhance the
Customer Experience**



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CEO



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Once Installed, Solar PV Systems Quietly Go To Work Saving Money, Cutting Emissions



- Designed to be maintenance-free
- Virtually all systems fixed on a the roof, or the ground
- No moving parts, if desired



More Data We Have, the Smarter We Become About Energy



Account Number: 11-223345-9012 Page 2 of 4
 Best World Hotel Summary of charges as of January 10, 2008
 Accounting
 1111 Park Place
 Seattle, WA 98000-000

Service Address: 1111 Park Place

Electric Service for 12/12/2007 - 01/10/2008

Detailed Billing Information

Meter #	Season	Service Category	Peak	KWh Usage	Unit Charge	Amount
213313	WINTER	Power Factor Rate				
		KVARH General		312688	0.0014	\$437.76
		Large General Service - Network				
		KW ON PK		1034	1.68	\$1,737.12
		OFF PK		0	0.21	\$0.00
		Maximum Demand for Billing Period		1034		\$1,737.12
		KWH ON PK		334970	0.0594	\$19,897.22
		OFF PK		250103	0.0396	\$9,904.08
		Total KWH Consumption		585073		\$29,801.30
		Total Electric Charges				\$31,976.18

Gas Service for 12/12/2007 - 01/10/2008

Detailed Billing Information

Meter #	Season	Service Category	Therms Used	Unit Charge	Amount
12345	WINTER	Customer Charge			\$150.72
		Current Gas Charges	40,000	0.92838	\$37,135.20
		Total Gas Charges			\$37,285.92

- Until recently, only data came from the monthly utility bill
- Needed to call for details, e.g. printout of past 12-months usage
- Change is here and more is coming to help us all become smarter energy consumers



Residential Customers Enjoy Seeing and Bragging About Their Data

- They used to see their meter spinning backward when supplying power to the grid
- In the digital world, the positive numbers turn negative
- Some months, customers have a credit amount on their bill



Solar PV Data Can Be Monitored Several Different Ways



1. On the inverter
2. Wireless or plug-in monitor
3. Fed into your PC
4. Remotely via a smart cell phone

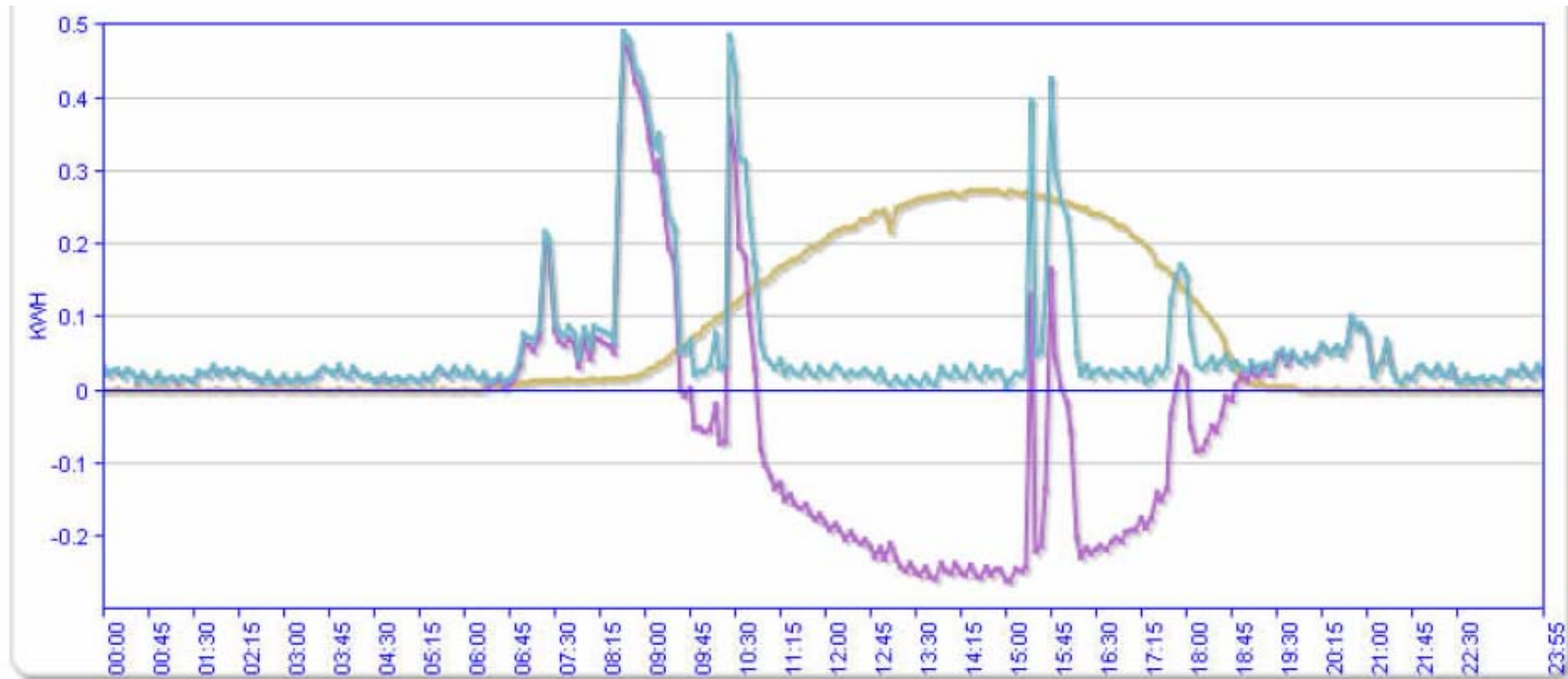


4.5 kW Maryland Residence on May 10

PV system generation = 23 kilowatt hours

Meter = -6 kilowatt hours

Demand = 17 kilowatt hours

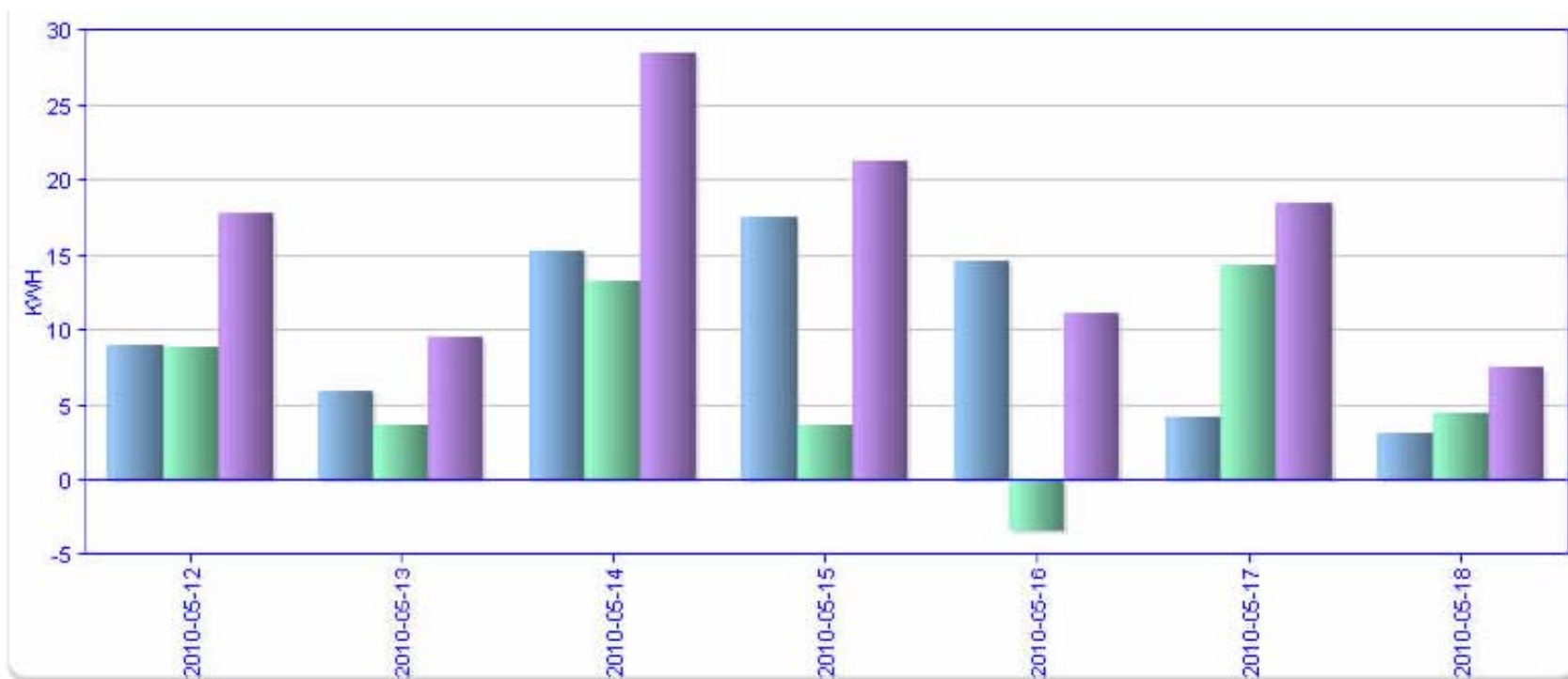


4.5 kW Maryland Residence For the Week: May 10 - 17

PV system generation = 70 kilowatt hours

Meter = 45 kilowatt hours

Demand = 114 kilowatt hours

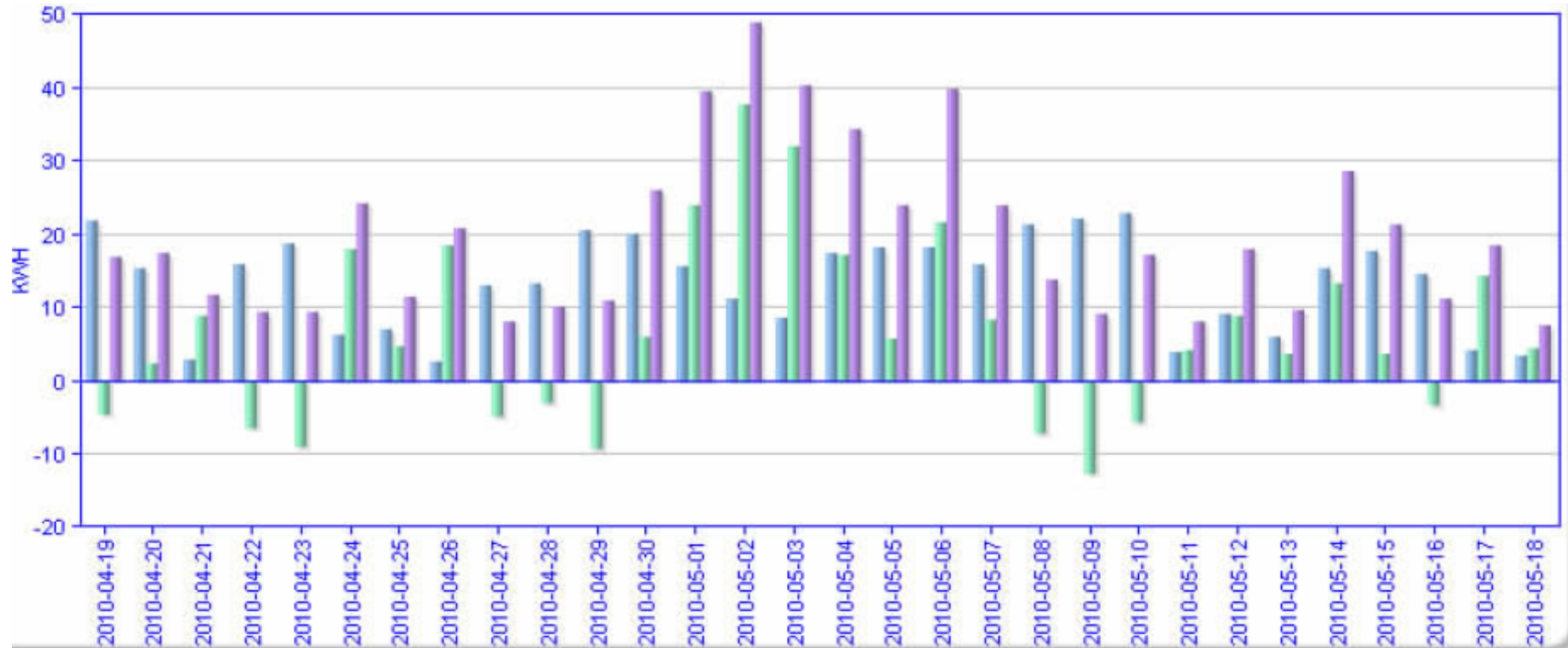


4.5 kW Maryland Residence For 30 Days: April 19 – May 18

Generation = 400 kilowatt hours

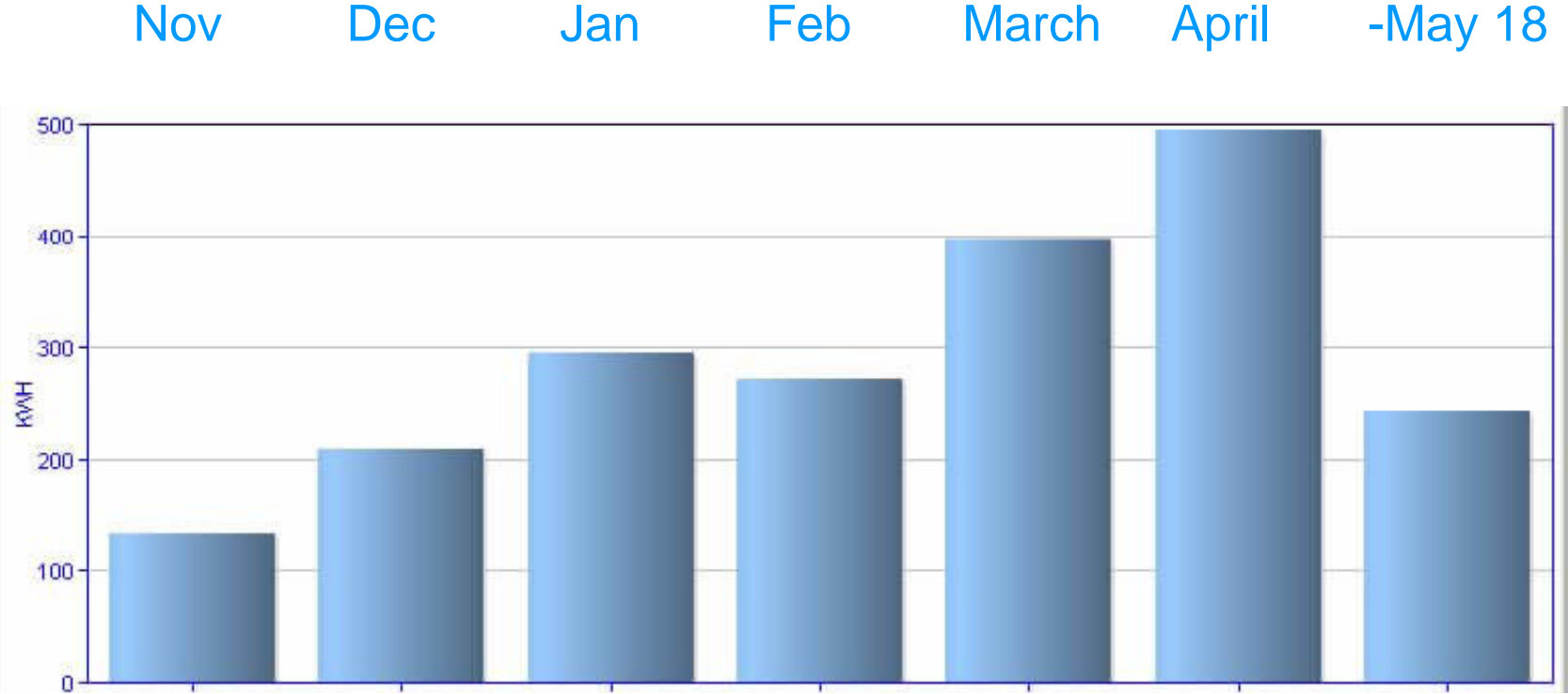
Meter = 188 kilowatt hours

Demand = 588 kilowatt hours



4.5 kW Maryland Residence Since November 1

Generation = 2,049 kilowatt hours

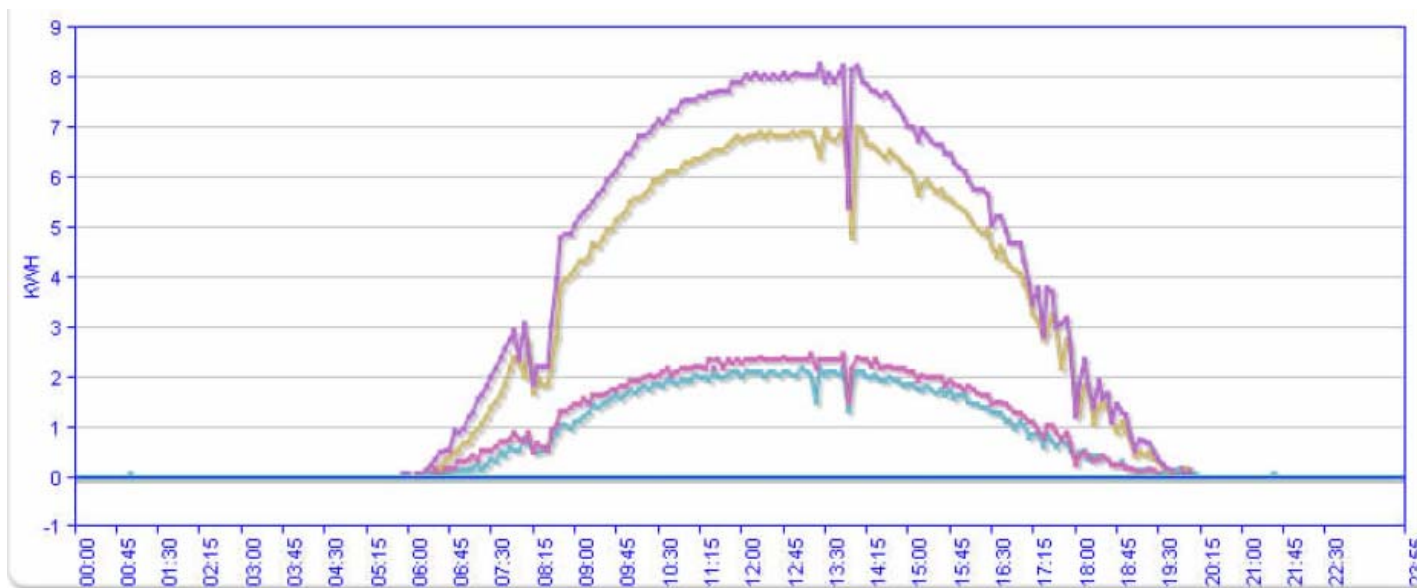


294 kW System at Catholic University, *Owner: Washington Gas Energy Systems*

Wednesday, May 26, 2010 Generation Data:

Dufour Athletic Ctr. = 805 kWh; Aquinas Classroom Bldg.= 677 kWh

Flather Hall = 230 kWh; Gibbons Hall = 200 kWh



Information Is Power

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