



You Can Read Your Bill- Now What? - Natural Gas

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- Don't forget to fill out and drop off your session evaluations.



Goal

Gain an understanding of what the information and data (from your bill) means and what you can do with it to help you manage your usage and ~~possibly~~ realize savings.

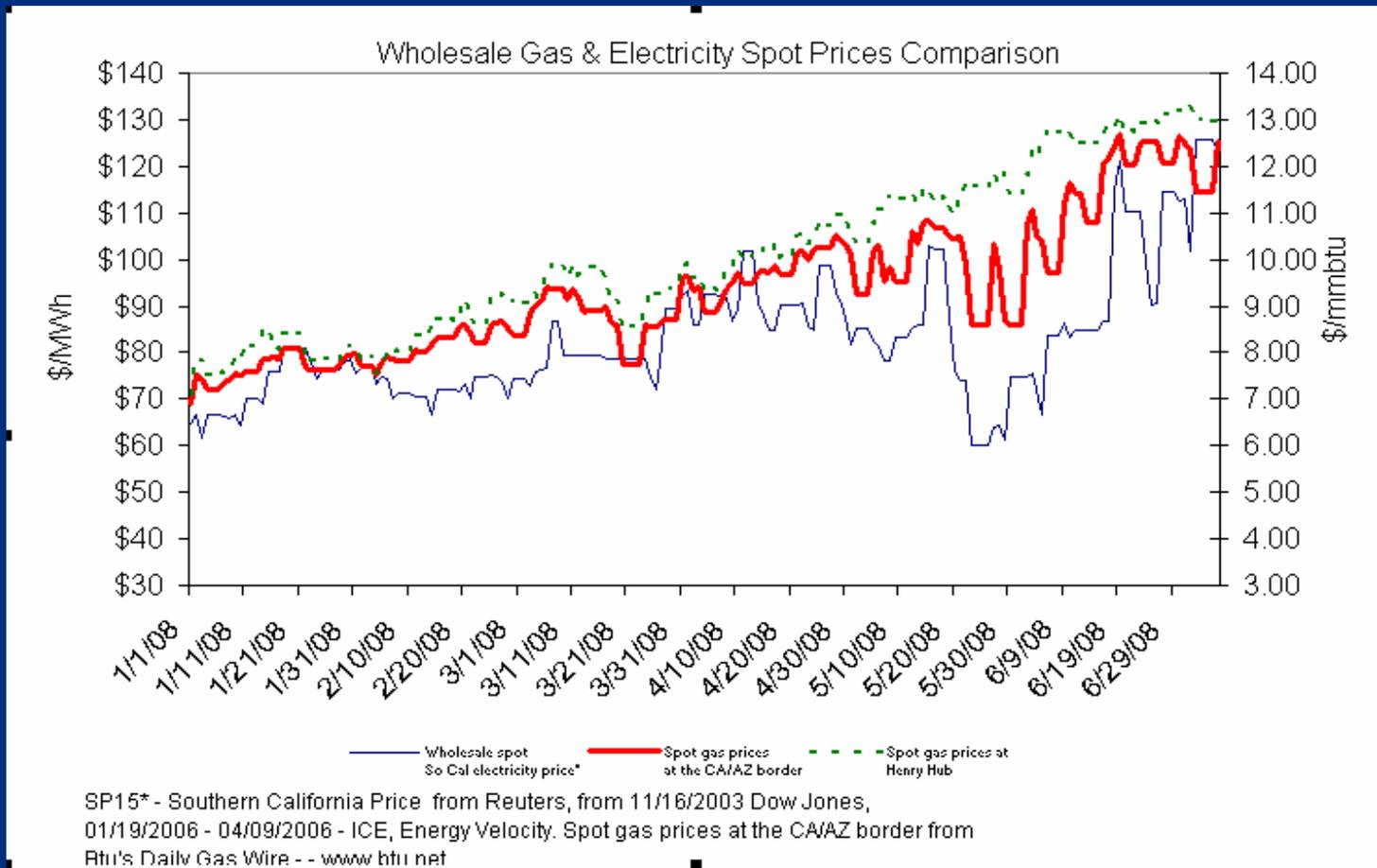




Agenda

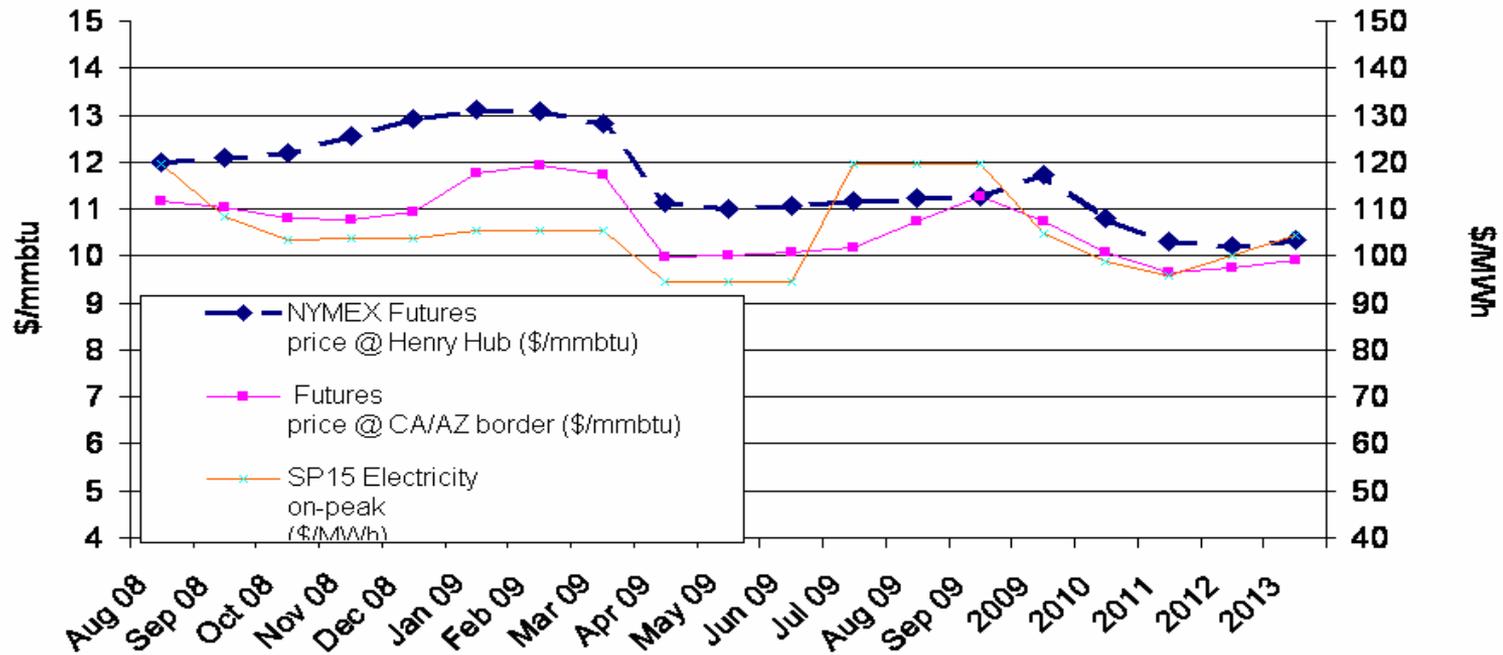
- Why should you read your bill?
- Understanding your Bill- review (brief)
- Using your knowledge to manage your usage and realize savings:
 - Billing Errors
 - Correct Rate/Rate Options
 - Energy Conservation
 - Energy Efficiency
 - True Numbers for Gas Equipment
 - Resources

Why should you read your bill?



Gas Futures

Natural gas and electricity future price outlook



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Source: NYMEX, Ventyz, Velocity Suite and Prebon Energy, approximation of trades

Understanding Your Bill Review – Bundled Bill

072 725 2600 0



24-Hour Service and Info:

(800) 427-2000 (English)
(800) 427-6029 (Español)

K

Date Paid: Feb 21, 2007						
Rate GN-10	Climate zone 1					
Cycle 13	The Gas Company's Gas Commodity \$0.69862/Therm					
Billing Period From To	Meter Number	Readings Prev Pres	Diff. =CCF	Pres. Factor	BTU Factor=	Therms
01/18/07 02/20/07	05289198	564321 580546	16225		X 1.019=	16533
Next Meter Reading Date on or about: Mar 21 2007						

Summary of Charges				Amount
Customer Charge	33 Days	X 0.49315=	\$	16.27
Commodity Tier 1	250 Therms	X 1.09592=		273.98
Commodity Tier 2	3917 Therms	X 0.87469=		3,426.16
Commodity Tier 3	12366 Therms	X 0.69864=		8,639.38
Gas Charges				12,355.79
State Regulatory Fee	16533 Therms	X 0.00076=		12.57
Taxes & Fees on Gas Charges				12.57
Total Gas Charges Including Taxes and Fees				12,368.36

Last Payment Due 2007	9,902.02	Total Current Gas Charges	12,368.36
		Total Amount Due	12,368.36
.7% Late Payment Charge Due if Paid After Mar 16, 2007			

Understanding Your Bill Review- Unbundled



Customer Name			Last Payment	
Service Address			Date	Amount
Account Number Old Account Number			2/23/2007	\$18,873.27
		D26		
Billing Period:	From	To	Therms Used	
	2/1/2007	3/1/2007		175,110

SUMMARY OF BILLING CHARGES:

Description Of Charges	Amount
Customer Charge	350.00
Transmission Charge	12,415.95
Take Or Pay / Use Or Pay Charge	1,447.58
State Mandated Charges	1,985.74
TOTAL CURRENT CHARGE	Past Due If Not Paid By 03/26/07
	\$16,199.27
PREVIOUS BALANCE	\$0.00
TOTAL AMOUNT DUE	0.7% Late Payment Charge Due If Paid After 03/29/07
	\$16,199.27

Understanding Your Bill Review- Unbundled

BILLING SCHEDULE:

Tariff	Contract Allocations		Therms	Monthly Use or Pay
	%	Therms/month		
GTF3D		330,960	175,110	73,110
GTI3D		1	0	0

CUSTOMER CHARGE:

Tariff	Amount
GCS3D/GTF3D/GTI3D	350.00
Total Customer Charge	\$350.00

TRANSMISSION CHARGE:

Tariff	Eff. Date	Therms	X	Rate	=	Amount
GTF3D	2/1/2007	20,833		0.13829		2,881.00
GTF3D	2/1/2007	62,500		0.08414		5,258.75
GTF3D	2/1/2007	83,334		0.04950		4,125.03
GTF3D	2/1/2007	8,443		0.02475		208.96
		Total Volumetric Charge				\$12,473.74
GTF3D	2/1/2007	175,110		(0.00033)		(57.79)
		Total Interstate Transition Cost Surcharge				(\$57.79)
		Total Transmission Charge				\$12,415.95

Billing Errors



- Estimated Meter Reads
- Billing Corrections
- Taxes- 
- Public Goods Charges
- Changes in Operations-right meter?
- Misreads
- Deduct Meters/Sub-meters
- Utility Rules



Correct Rate/Rate Options

COMMERCIAL & INDUSTRIAL Rate Comparison Federal Customer

Rates currently in effect May, 2007

All Gas commodity prices (core procurement & NGL) are the last 12 months actual prices.

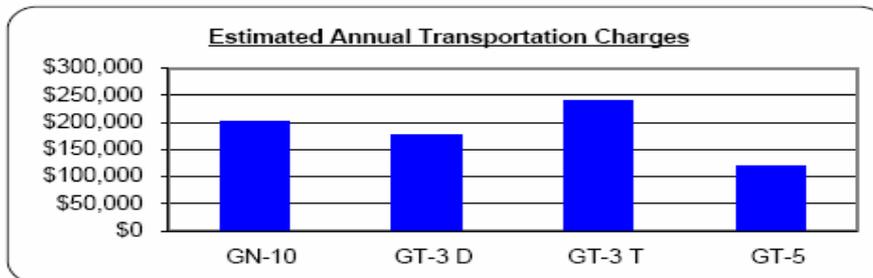
DISCLAIMER

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Monthly Consumption Used for Analysis (therms):

Jan	392,406
Feb	316,052
Mar	299,496
Apr	273,589
May	239,368
Jun	135,771
Jul	159,658
Aug	173,442
Sep	182,193
Oct	243,481
Nov	275,247
Dec	354,650

Annual Usage = 3,045,353



Correct Rate/Rate Options

	GN-10	GT-3 D	GT-3 T	GT-5
Customer Charge	\$180	\$4,200	\$8,400	
Transport Charge	\$198,166	\$172,112	\$229,422	\$118,525
State Regulatory Fee G-SRF	\$2,314	\$2,314	\$2,314	\$2,314
Public Purpose Surcharge G-PPPS	\$171,727	\$83,199	\$83,199	
Municipal Surcharge G-MSUR				
Interstate Transition Cost Surcharge ITCS		(\$1,005)	(\$1,005)	(\$1,005)
Assigned Interstate Capacity Charge				
Utility User Tax (on non-gas charges)				
Est. Annual Transportation Charges	\$372,000	\$261,000	\$322,000	\$120,000
Average Trans. Cost: Cents per Therm	12.2	8.6	10.6	3.9
Estimated Cost of Gas (based on 12-month historical prices):				
Core Procurement	\$2,209,830			
Utility User Tax				
12-month Historical NGI Index		\$2,125,656	\$2,125,656	\$2,125,656
Utility User Tax (on gas charges)				
Los Angeles Municipal Transport Tax				
Fees Paid on NGI Index				
Estimated Annual Gas Costs	\$2,209,830	\$2,125,656	\$2,125,656	\$2,125,656
Average Gas Cost: Cents per Therm	72.6	69.8	69.8	69.8
Estimated Annual Total Cost	\$2,582,000	\$2,387,000	\$2,448,000	\$2,246,000
Average Total Cost: Cents per Therm	84.8	78.4	80.4	73.8



Energy Conservation

- What is the financial impact of reducing the hours of operations or lowering the temperature of my boiler?
- What is the rating of my boiler?
- What is my fully loaded cost/therm?
- What is the efficiency of my boiler?
- What is my load factor?
- For every hour I reduce, I save how many therms?



Energy Conservation

Existing Equipment

Burner size	5000 MBTU, PARKER Boiler
Measured Combustion Eff.	80.0% (see Atmospheric Boiler Worksheet)
Oper hrs	3,120 per year
Load Factor	40%
Total Therm Usage/yr	62,400 total boiler usage

New Equipment

Burner size	5000 MBTU, PARKER
Average Combustion Eff.	80.0%
Load Factor	30.0%
Oper hrs	2,860 per year
Total Therm Usage/yr	42,900 total boiler usage

Annual Therm Savings **19,500**



Energy Efficiency

- Energy Efficiency Project
- Replace Boiler – 5 mmbtu/hour w/ 2 higher efficiency 2 mmbtu/hr boilers that are staged for production.
- Factors- Input, Load Factors, Efficiency, Operational Hours
- 24,960 annual therms savings x Avg. cost per therm of gas - \$1.00 = \$24,960 annual savings. Cost of Project - \$70,000, Simple Payback – 2.8 years

Energy Efficiency

Existing Equipment

Burner size	5000 MBTU, PARKER Boiler
Measured Combustion Eff.	76.0% (see Atmospheric Boiler Worksheet)
Oper hrs	3,120 per year
Load Factor	40%
Total Therm Usage/yr	62,400 total boiler usage

New Equipment

Burner size (2 @ 2000)	4000 MBTU, PARKER
Average Combustion Eff.	85.0%
Load Factor	30.0%
Oper hrs	3,120 per year
Total Therm Usage/yr	37,440 total boiler usage

Annual Therm Savings **24,960**

True Numbers for Gas Equipment





Cogen Example

Confidential

Electric Generation Economic Feasibility Analysis version 4.26 DRAFT

for



Power Plant Size (kW)	4600 kW
Technology	Large Gas Turbine
Annual Power Generated (kWh)	15,900,656 kWh
Equivalent Full Load Hours	3,564 hours/year
Percent of Full Capacity Utilized	41%

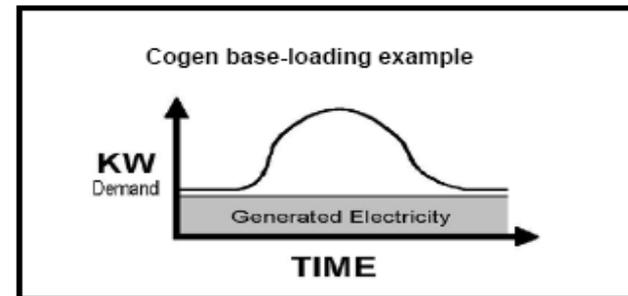
Annual Savings		per kWh
Electricity Bill Savings	\$1,470,313	\$0.092
Value of Waste Heat Recovered	\$733,922	\$0.046
Cogeneration Natural Gas Cost	(\$1,195,627)	(\$0.075)
Maintenance & Permit Fees	(\$130,705)	(\$0.008)
Standby Charges	(\$78,384)	(\$0.005)
Exit Fees (PPPC, NDC, DWR Charges)	(\$139,497)	(\$0.00877)
Annual Savings	\$660,022	4.2 ¢ / kWh

Project Economics	
Estimated Project Cost	\$13,507,200
Self Generation Incentive Program	\$0
Rule 38 or OPT Funding	\$0
Other Offsets	\$0
Net Project Cost	\$13,507,200
Simple Payback (years)	20.5 years

Electric Utility Costs		\$/kWh
Facilities & Customer Charge		\$0.008
Summer	on-peak	\$0.267
	mid-peak	\$0.113
	off-peak	\$0.048
Winter	mid-peak	\$0.072
	off-peak	\$0.050
Overall Weighted Average		8.3 ¢ / kWh

Cost to Generate	5.1 ¢ / kWh
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Total Delivered Cost of Natural Gas	75.2 ¢ / therm
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*HHV or LHV

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Cogen Example

Natural Gas and Maintenance Costs for Power Generation

Natural Gas Costs					
Month	GT-F5 Therms	Cost for GT-F5	Customer Charge	Utility User's Tax	Total
January	129,104	\$95,892	\$50	\$0	\$95,942
February	116,610	\$96,815	\$50	\$0	\$96,865
March	129,104	\$118,614	\$50	\$0	\$118,664
April	124,939	\$118,536	\$50	\$0	\$118,586
May	129,104	\$99,119	\$50	\$0	\$99,169
June	144,161	\$113,995	\$50	\$0	\$114,045
July	148,966	\$108,410	\$50	\$0	\$108,460
August	148,966	\$92,173	\$50	\$0	\$92,223
September	144,161	\$82,135	\$50	\$0	\$82,185
October	129,104	\$81,045	\$50	\$0	\$81,095
November	124,939	\$89,238	\$50	\$0	\$89,288
December	129,104	\$99,055	\$50	\$0	\$99,105
Total	1,598,262	\$1,195,027	\$600	\$0	\$1,195,627



Final Thought

Understanding your bill is the key
to help you manage your energy
usage and realize savings at your
facility!



Resources

- FEMP, www1.eere.energy.gov/femp/services/uma.html
- GSA Energy Center of Expertise
www.gsa.gov/Portal/gsa/ep/channelView.do?pageTypeId=8195&channelPage=%252Fep%252Fchannel%252FgsaOverview.jsp&channelId=-13908
- EIA
www.eia.doe.gov/oil_gas/natural_gas/info_glance/natural_gas.html
- Natural Gas Intelligence (NGI), <http://intelligencepress.com/>
- Enerfax, www.enerfaxgold.com/
- Association of Energy Engineers, www.aeecenter.org/index.html



Would you like to know more about this session?

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