
LEAC and Oil Prices Update

Guam Power Authority
Consolidated Commission on Utilities

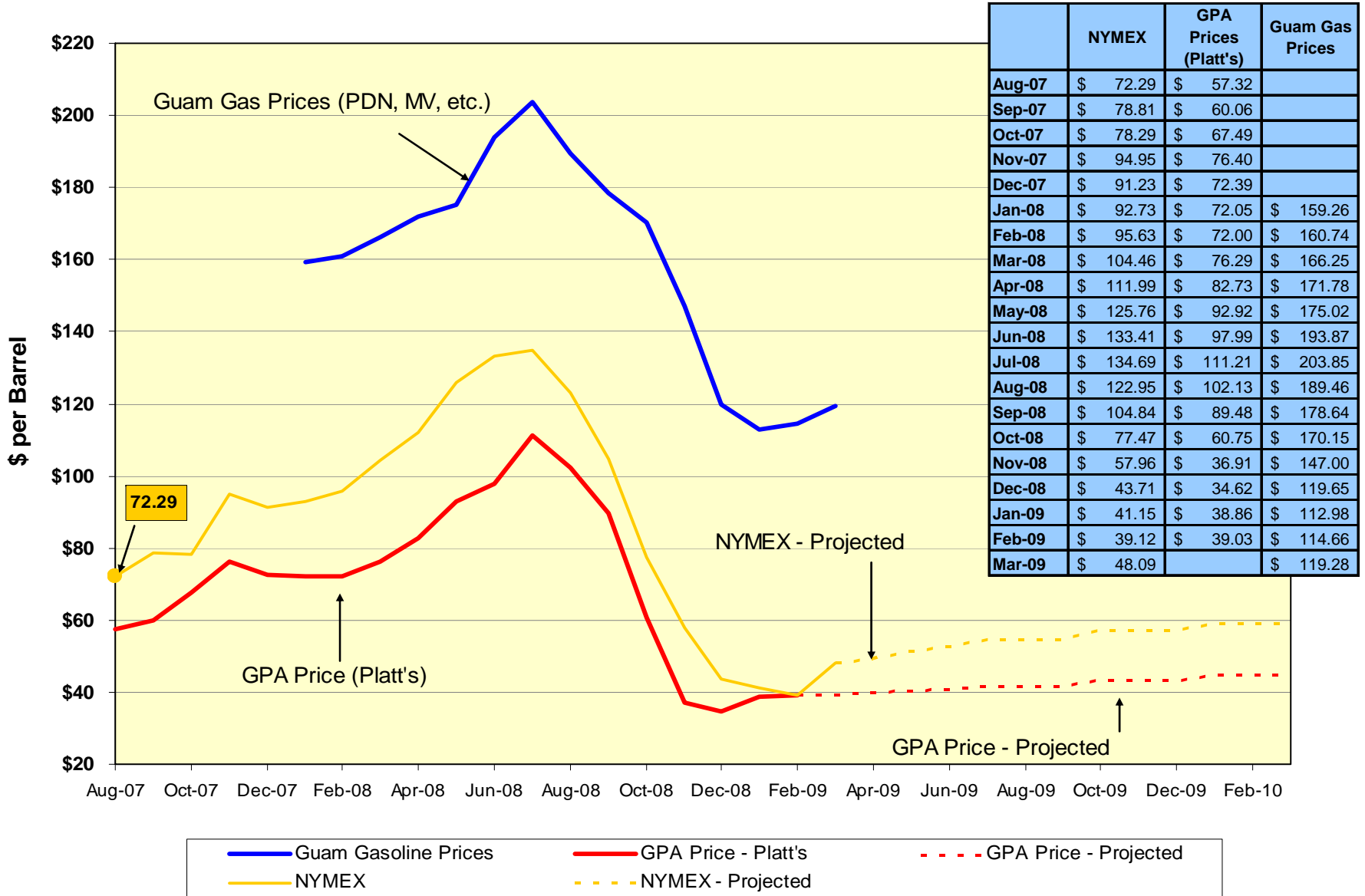
April 7, 2009

Historical Fuel Prices

We all have endured the worst energy crisis since the 70s

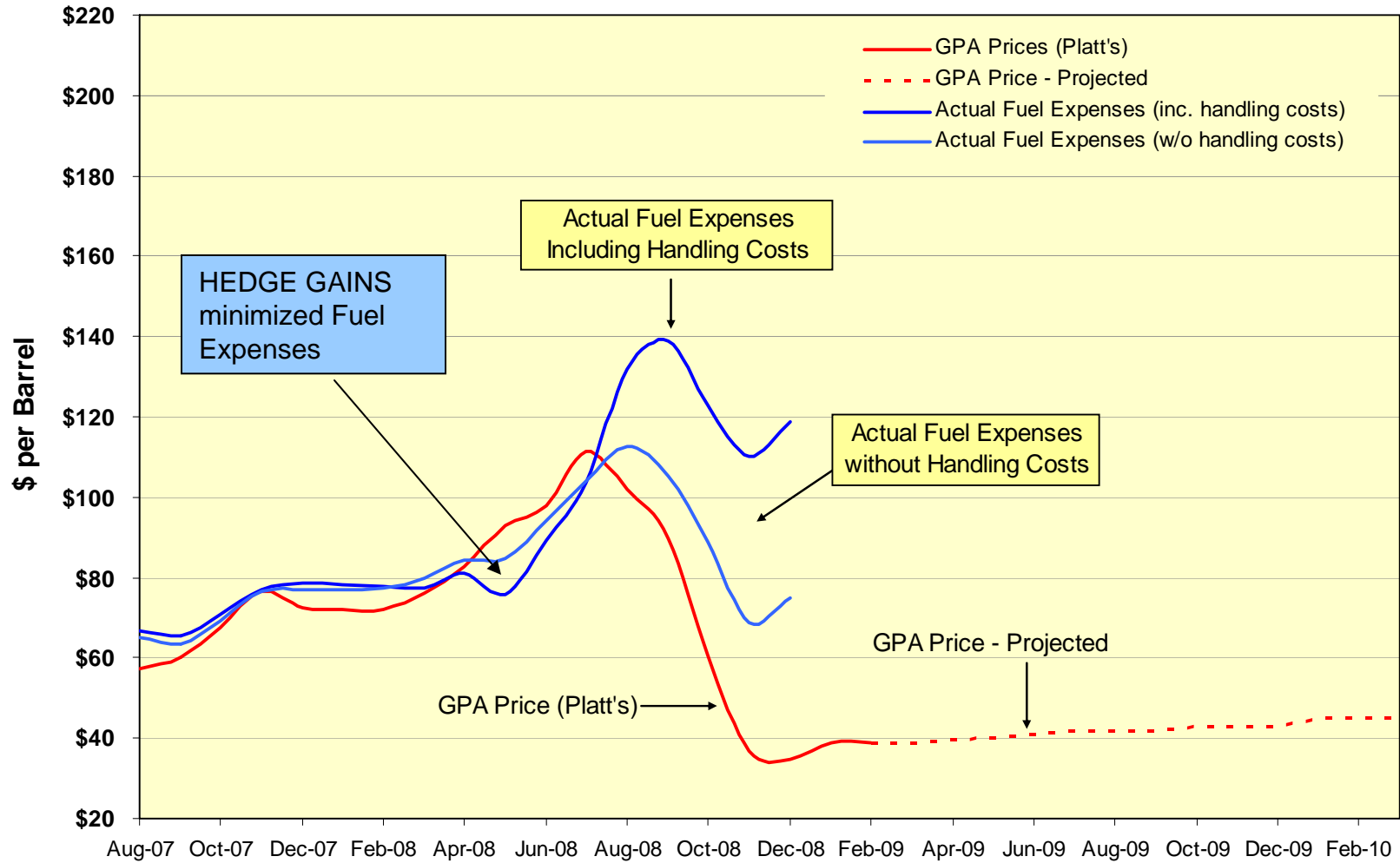
- 448 % Fuel Price Increase from Aug 2002 to July 2008
- Fuel Price decrease starting October 2008
 - \$ 26 / bbl in Aug 2002
 - \$ 145 / bbl in July 2008
 - \$ 114.08 / bbl in Aug 2008
 - \$ 104.82 / bbl in Sept 2008
 - \$ 60 / bbl in Oct 2008
 - \$ 38 / bbl in Jan 2009
 - \$ 48 / bbl in March 2009

Fuel Prices

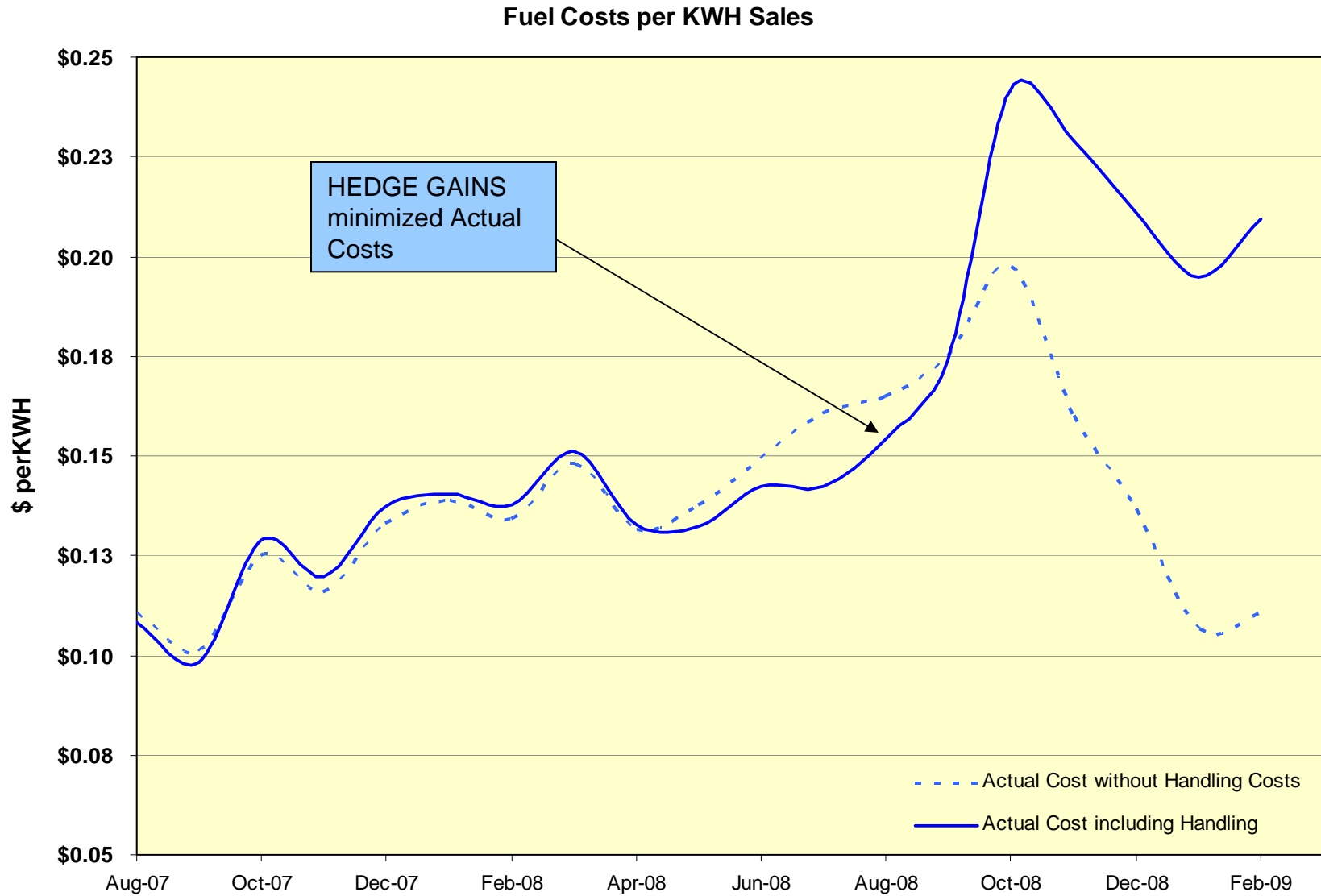


Fuel Prices – RFO in \$/bbl

Fuel Expenses



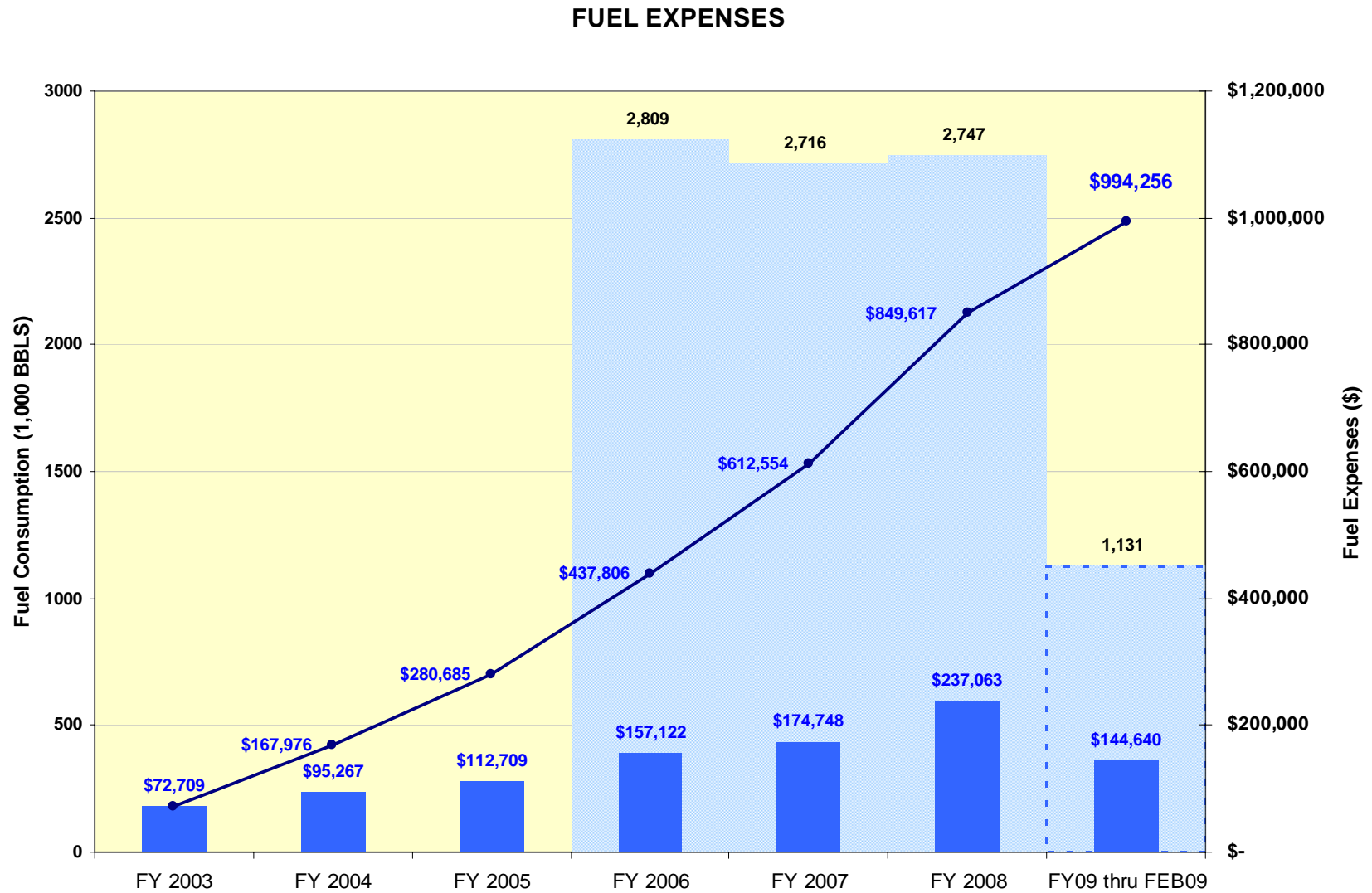
Fuel Prices – RFO in \$/kwh



Historical Fuel Expenses

- GPA has spent \$ 970 M for Fuel (Cumulative) since FY 2003
- GPA Fuel Expenses in FY 2008 more than tripled compared to FY 2003, even though Guam's energy demand remained flat
 - FY 2003: Fuel Expenses = \$72.7 M
 - FY 2008: Fuel Expenses = \$237 M
- As of Feb 2009, FY 2009 Fuel Expenses = \$144 M
- The biggest factor in the increase in Power Bills is the **RISING COST OF OIL**

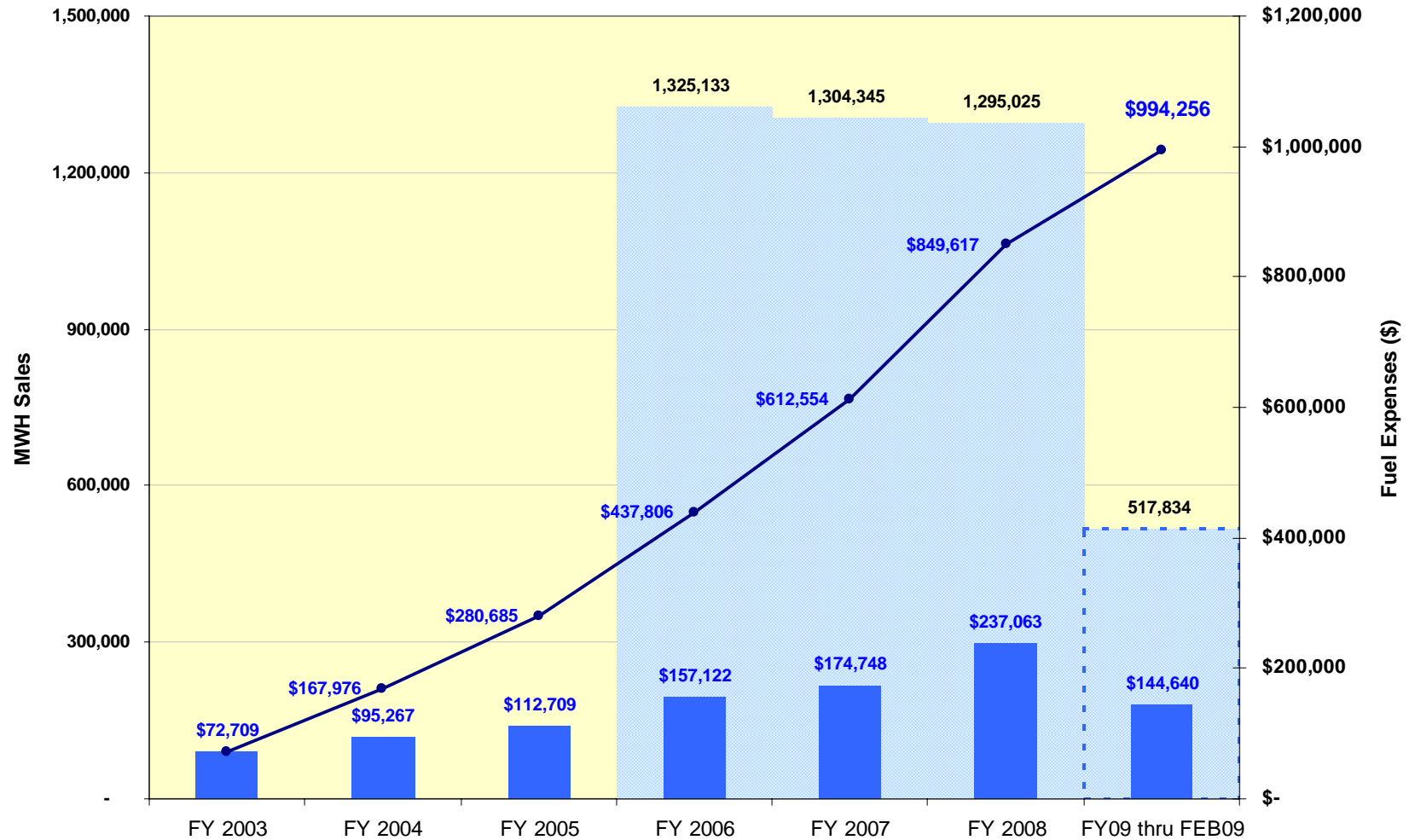
Fuel Expenses – Costs and BBL Consumption



Fuel Expenses inclusive of all costs (Fuel Handling, Hedge Gains/Loss, etc.)

Fuel Expenses – Costs and KWH Sales

FUEL EXPENSES and MWH SALES

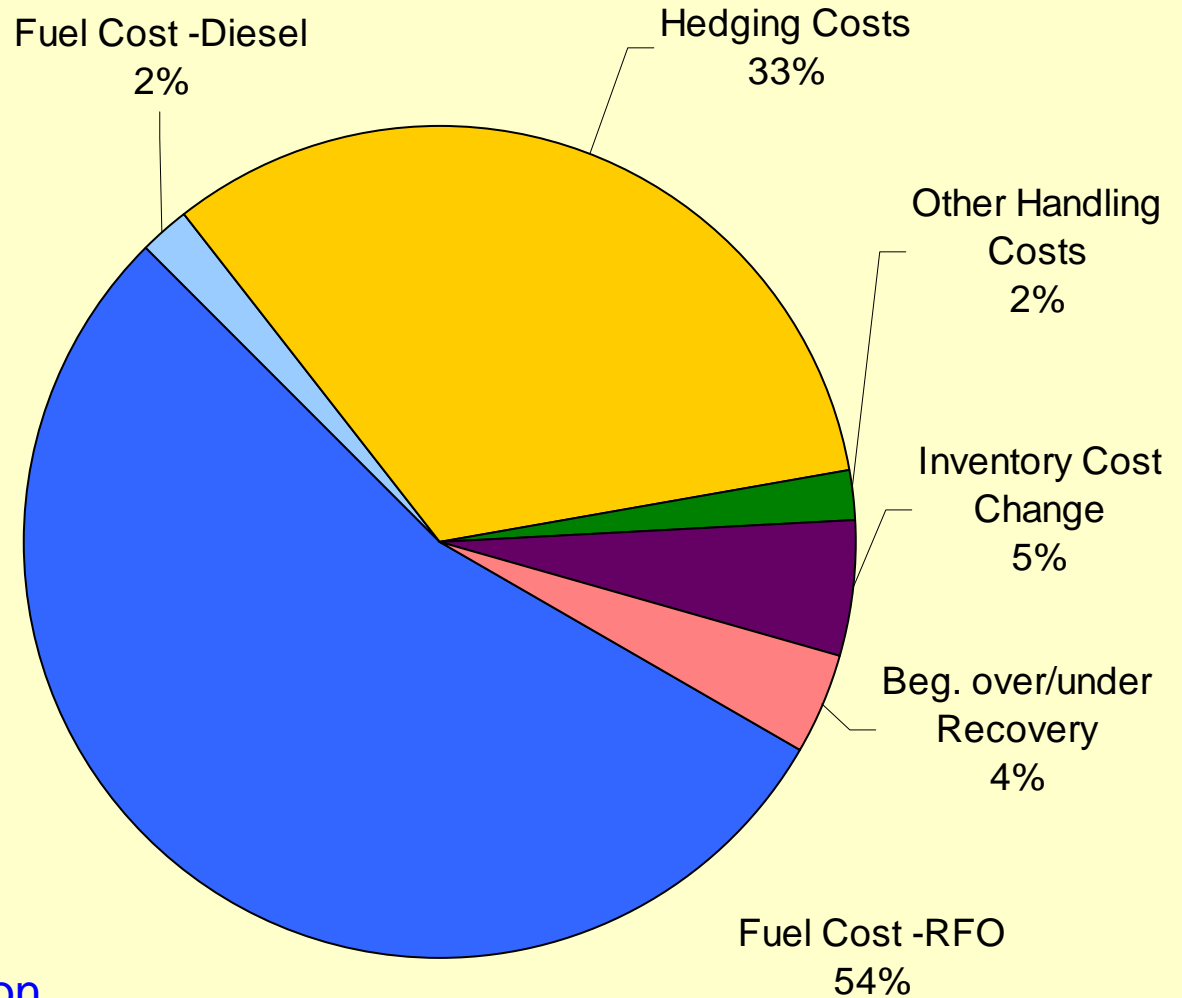


Fuel Expenses inclusive of all costs (Fuel Handling, Hedge Gains/Loss, etc.)

LEAC Cost Components

For period: February 2009 – July 2009

BREAKDOWN OF COSTS:	
	Feb09 thru Jul09
Fuel Cost - RFO	\$ 58,389,778.75
Fuel Cost - Diesel	\$ 2,222,227.35
Hedging Costs	\$ 35,495,082.30
Other Handling Costs	\$ 2,025,857.30
Inventory Cost Change	\$ 5,551,652.43
Beg. over/under Recovery	\$ 4,332,637.00
Total	\$ 108,017,235.12

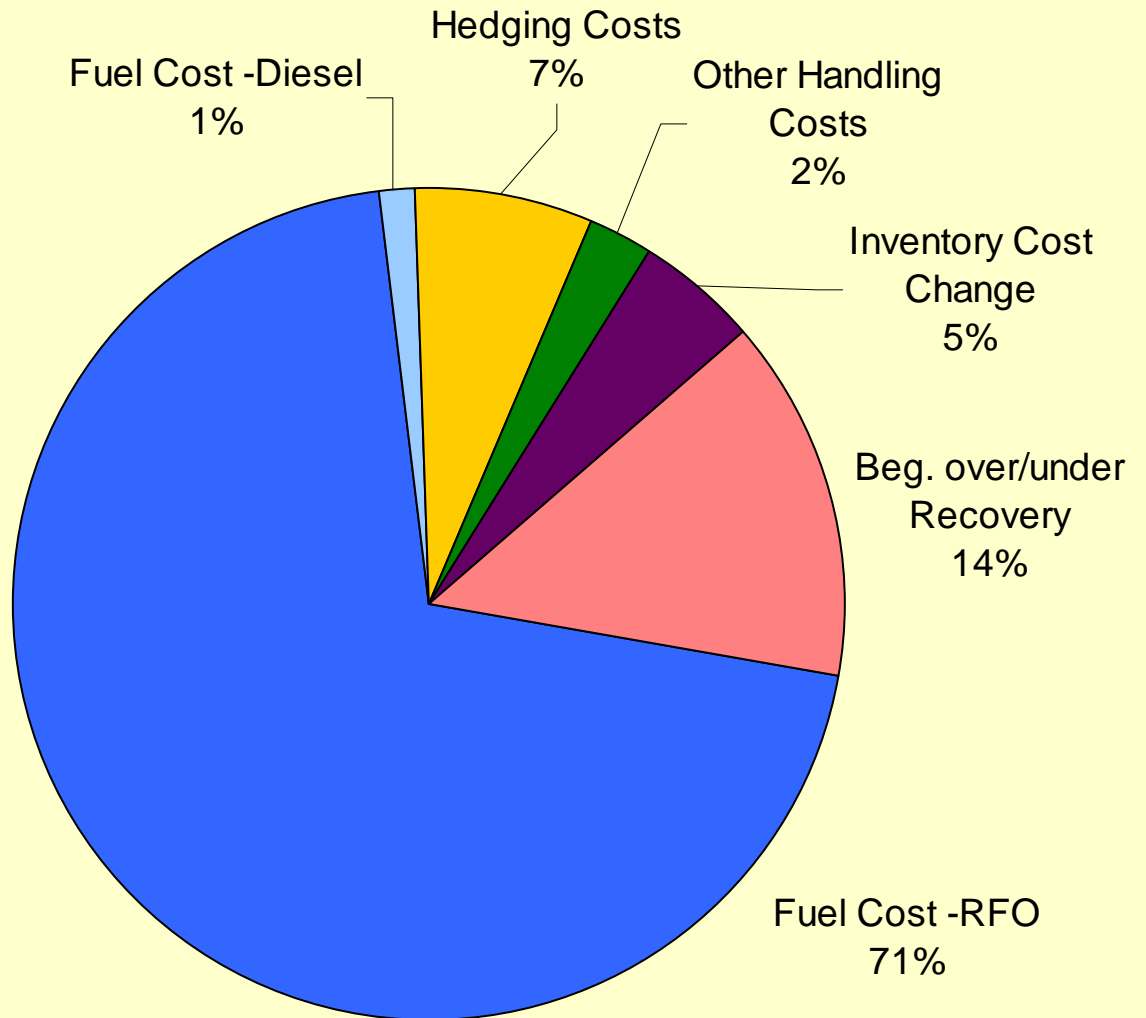


- Under-recovery is \$ 4.3 Million for this period, adding to the Fuel Costs.

LEAC Cost Components

For period August 2009 – January 2010

BREAKDOWN OF COSTS:	
	Aug09 thru Jan10
Fuel Cost - RFO	\$ 56,984,968.50
Fuel Cost - Diesel	\$ 1,076,782.63
Hedging Costs	\$ 5,730,109.90
Other Handling Costs	\$ 2,007,537.57
Inventory Cost Change	\$ 3,876,286.26
Beg. over/under Recovery	\$ 11,478,775.00
Total	\$ 81,154,459.85



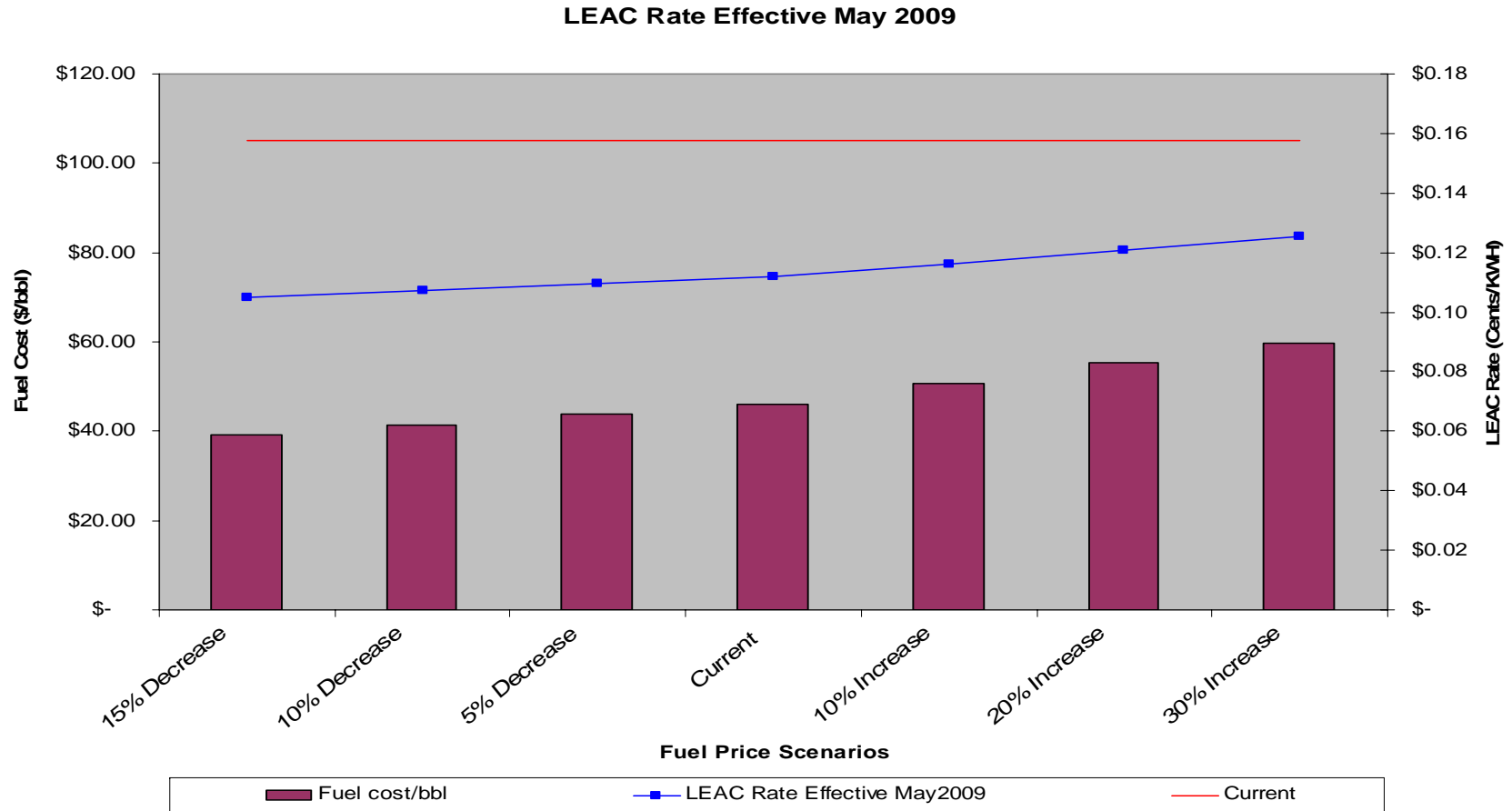
Under-recovery is \$ 11.5 Million for this period, adding to the Fuel Costs.

Hedging

- Hedging is for insurance on fuel price increases
 - not an attempt to game the market
- Hedging provides rate stability
 - + : When prices are above the price ceiling, GPA customers do not see that portion of the price increase
 - - : When fuel price falls below the price floor, GPA customers do not see a portion of price decreases

LEAC Rates

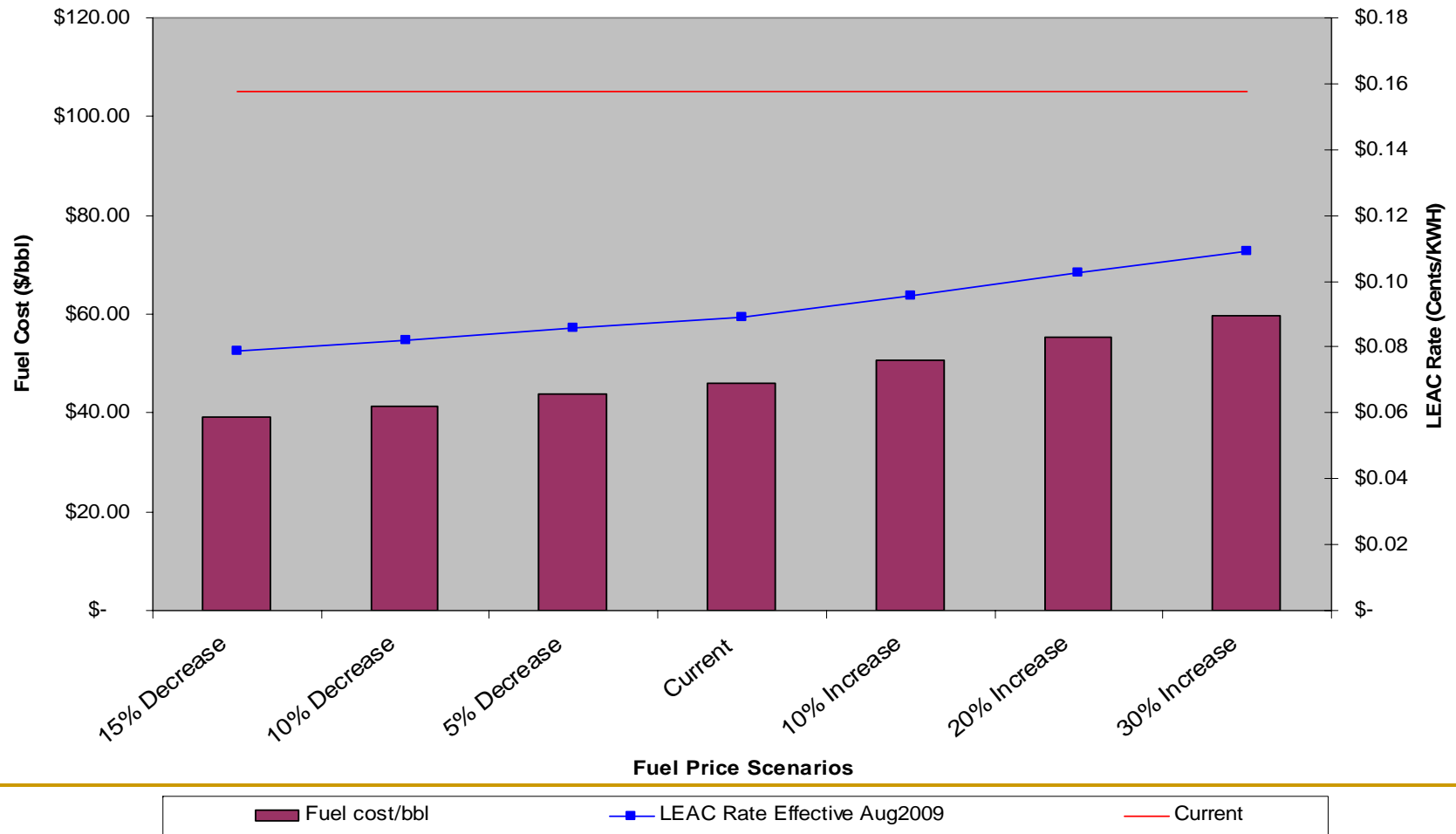
Current Rate = \$0.15763



LEAC Rates

Current Rate = \$0.15763

LEAC Rate Effective August 2009



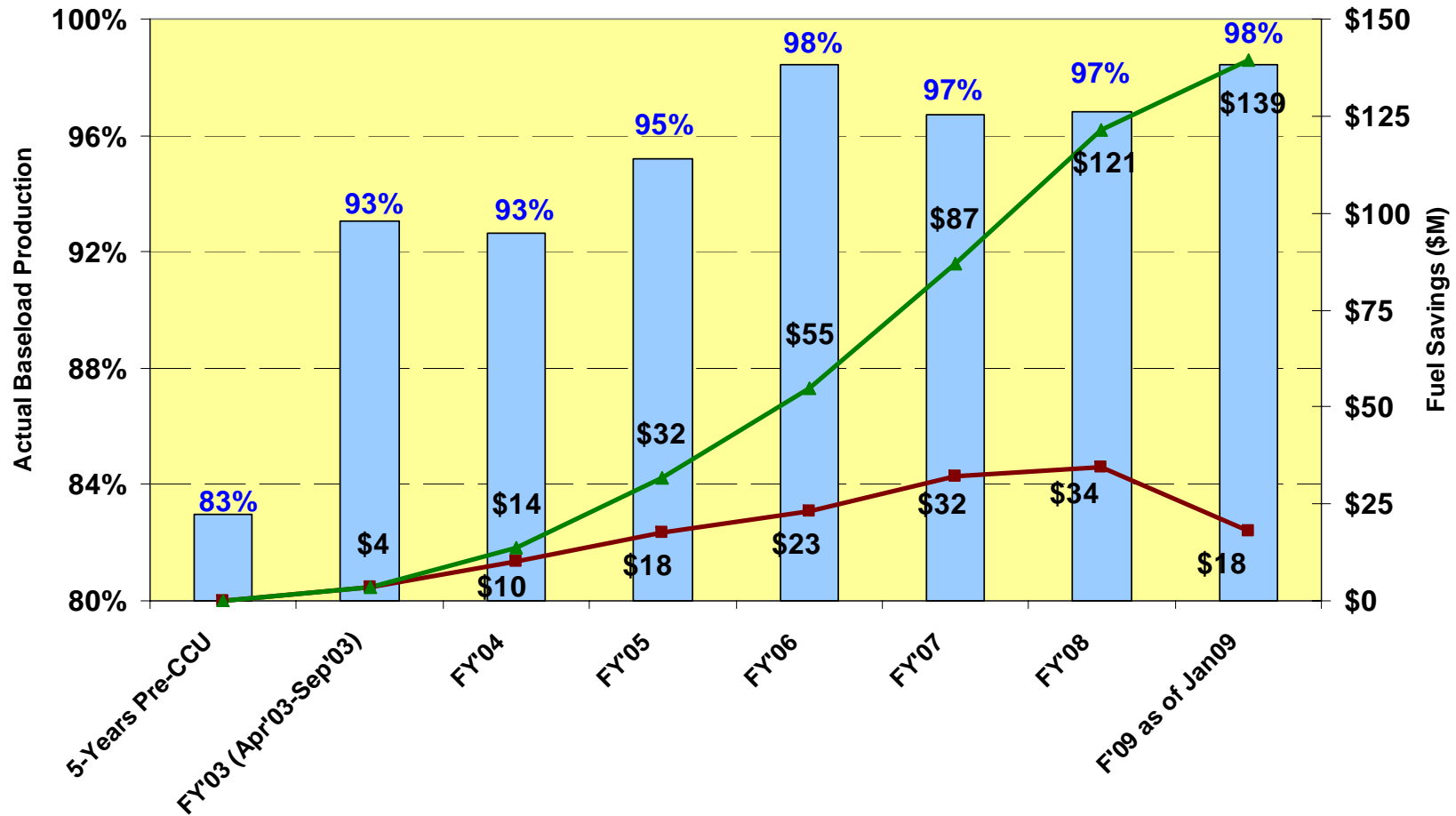
How has GPA Reduced Rates to Ratepayers?

- Increased Baseload Efficiencies from 83% to 98% (Jan 2009)
 - About \$134 M in Fuel Purchase Savings
- Reduced Unaccounted for Energy, or “Line Losses” by 30% (from 10 to 7%)
- Collected \$ 34.2 M of the \$ 50.8 M previously owed by GovGuam for unpaid power bills to pay for fuel and other expenses that would have otherwise required higher rate increases
- Absorbed over \$15 million in Unrecovered Fuel Expenses on behalf of ratepayers. GPA will never ask for this cost back from ratepayers.

**GPA can only focus on processes and costs it can control.
GPA cannot control oil prices.**

Fuel Savings from Increased Baseload Use

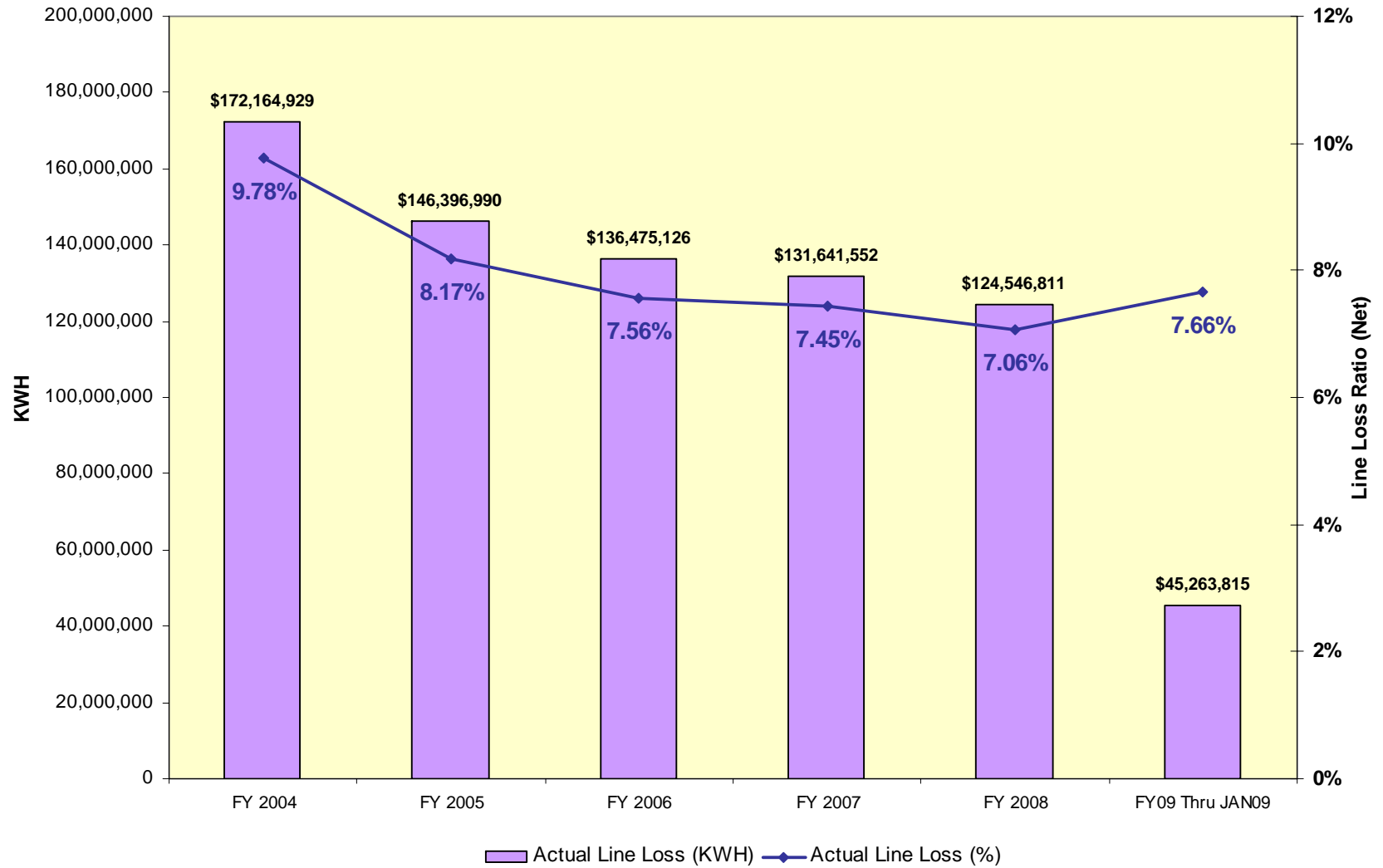
Fuel Savings Relative to 83% Baseload Use



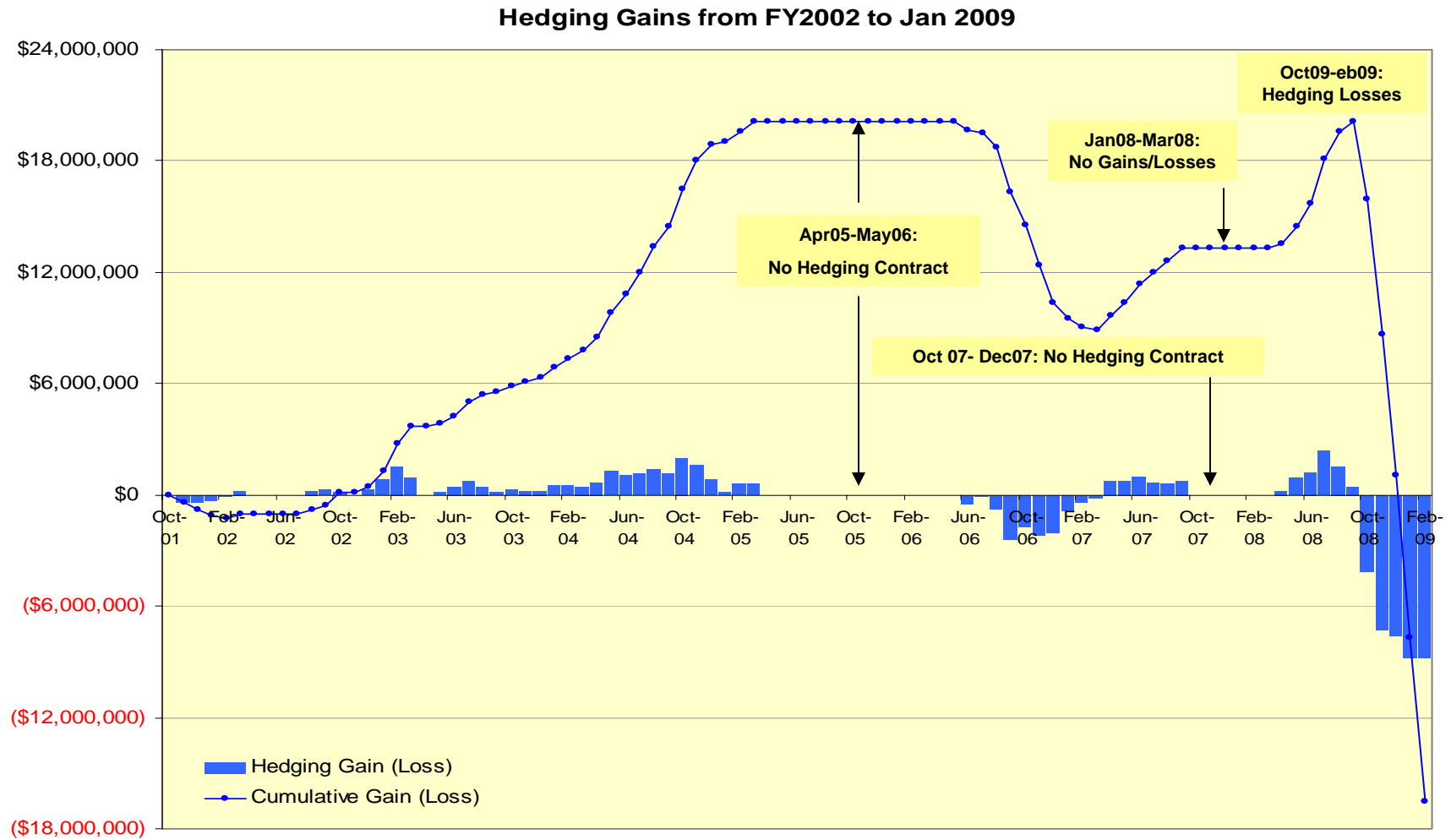
■ Actual Baseload Production (%)
 ■ Fuel Savings (\$M)
 ▲ Cumulative Fuel Savings (\$M)

Line Loss Reductions

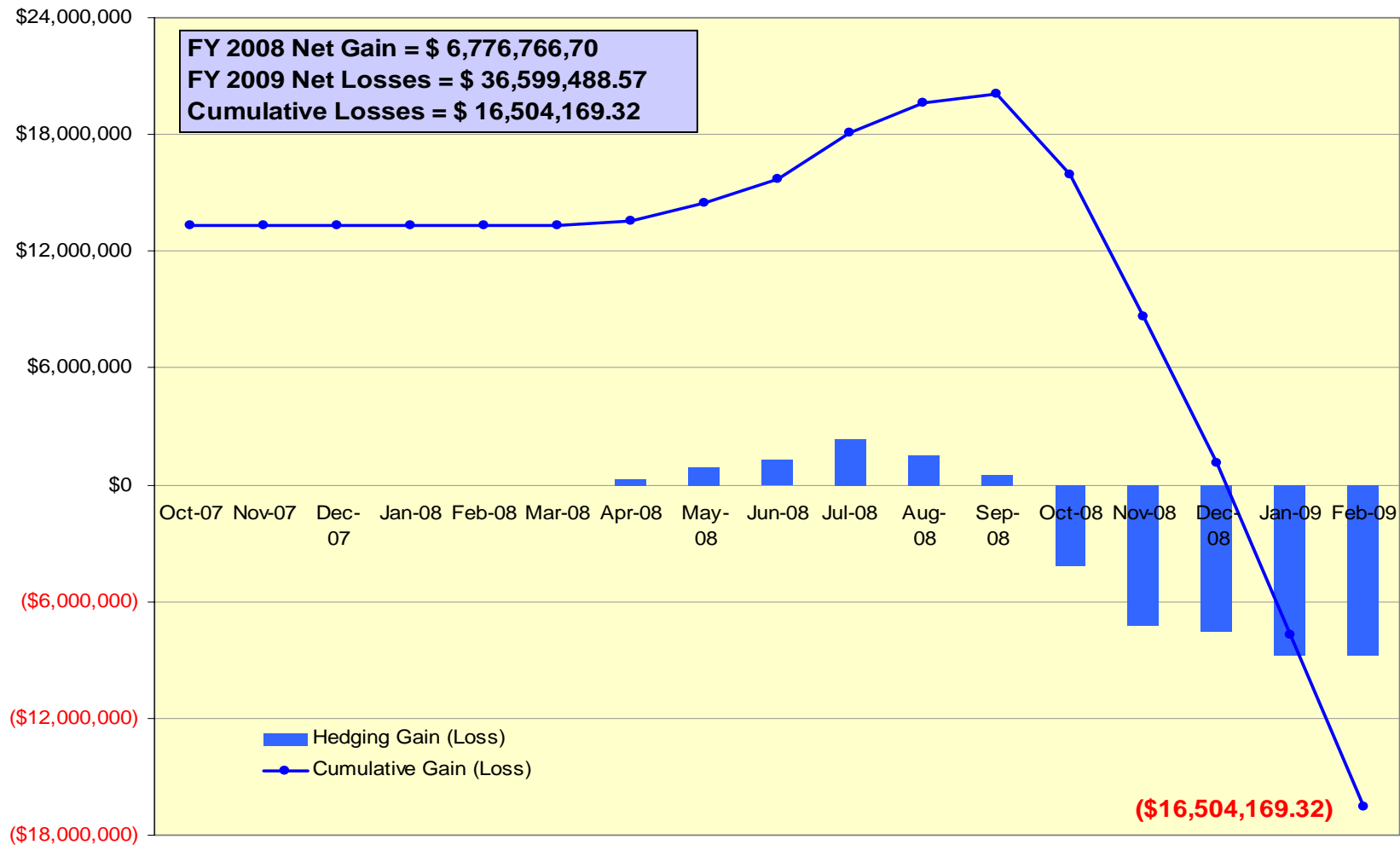
Summary of Unaccounted For Energy Reductions



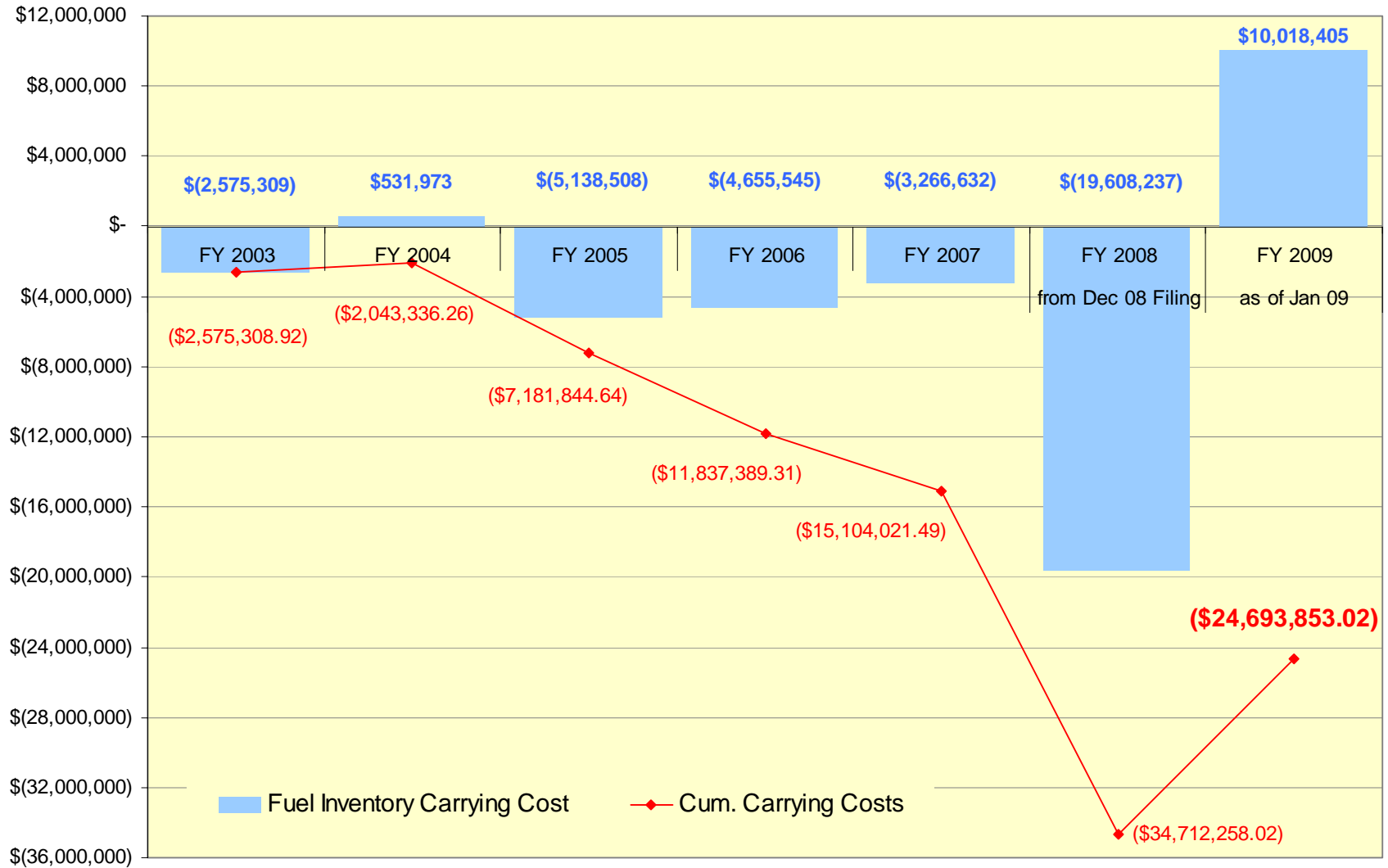
Historical Hedging Costs (Base: Oct 2001)



Historical Hedging Costs (FY 2008- FY 2009)

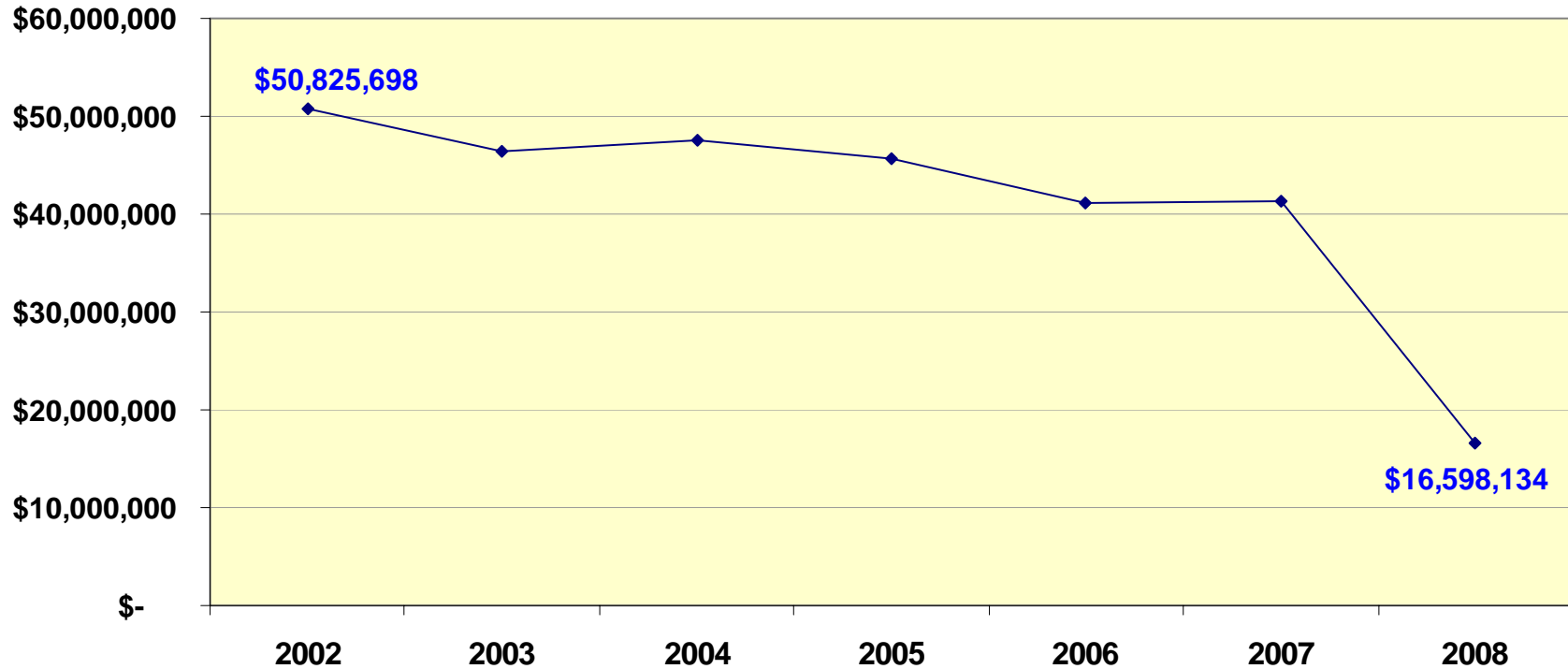


Unrecovered Fuel Expenses – Inventory Carrying Costs



Historical GovGuam Balances

Past Due GovGuam Balances



GPA has collected \$34.2 M from Past Due GovGuam Balances, which was used to defer rate increases and absorb part of the unrecovered fuel expenses

GPA's Total Savings per KWH of Sales:

Period	a	b	c	d	e	f = a+b+c+d	g	h = f / g
	Hedging Gain/Loss	GPA's Absorbed Fuel Expenses	Diesel Use Reductions	Line Loss Reductions	Collections from GovGuam	Total Savings Amount	KWH Sales	Savings per KWH Sales
FY 2003	\$ 5,567,435	\$ 2,575,309	\$ 3,628,390	\$ -	\$ 4,424,875	\$ 16,196,009	1,455,114,763	\$ 0.011
FY 2004	\$ 8,926,064	\$ (531,973)	\$ 10,271,696	\$ -	\$ (1,087,797)	\$ 17,577,991	1,588,850,672	\$ 0.011
FY 2005	\$ 5,653,595	\$ 5,138,508	\$ 17,684,024	\$1,568,598	\$ 1,881,811	\$ 31,926,535	1,644,540,440	\$ 0.019
FY 2006	\$ (3,844,730)	\$ 4,655,545	\$ 23,156,345	\$879,070	\$ 4,544,365	\$ 29,390,595	1,669,000,669	\$ 0.018
FY 2007	\$ (2,983,811)	\$ 3,266,632	\$ 32,119,718	\$350,004	\$ (281,812)	\$ 32,470,731	1,635,731,895	\$ 0.020
FY 2008	\$ 6,776,767		\$ 22,732,356	\$1,026,554	\$ 24,746,122	\$ 55,281,799	1,636,790,942	\$ 0.034
FY 2009	\$ (27,815,065)		\$ 18,024,606	\$78,866		\$ (9,711,593)	544,625,508	\$ (0.018)
Total	\$ (7,719,746)	\$ 15,104,021	\$127,617,135	\$ 3,903,092	\$ 34,227,564	\$ 173,132,067	10,174,654,889	\$ 0.017

** GPA's Absorbed Fuel Expenses up to FY07 only - FY08 Absorbed Fuel Expenses included in LEAC Recovery*

***Fuel Savings from Diesel Use Reductions and Line Loss Reductions up to January 2009*

LEAC Facts:

- LEAC has been used for ten years to ensure that GPA recovers from ratepayers what they consume in energy.
- LEAC is adjusted twice a year to provide rate stability for 6 months at a time.
 - Only once in ten years---this past June when oil prices soared to record levels--- has LEAC been adjusted more than twice per year
 - Gasoline prices this year alone have increased 10 times and decreased 7 times.
 - Gas prices remain higher than a year ago.

Would you want your power bill to act like that? Or would you want your bill to average-out the peaks and valleys to keep bills more stable?

If we change to “Monthly True-up” as some have suggested, GPA could never advance oil costs for ratepayers. Ratepayers would have to pay any “under-recovery” in the next month instead of averaging it out over 6 months or more.

LEAC Facts:

LEAC is calculated by doing TWO things simultaneously:

1) GPA and the independent PUC:

Compare what ratepayers consumed & were charged for oil **vs.** what GPA actually paid for in oil to provide the energy actually consumed during the last 6 months LEAC Period

2) GPA, Morgan Stanley and the PUC:

- Project Fuel Costs for the next 6 months
- Project how much energy will be used & how much it will cost to produce this amount of energy
- Uses these projections to **calculate the rate (LEAC rate) necessary to ensure GPA has collected enough from customer fuel rates to buy projected fuel needed and generate projected energy demand**

Accomplishing these two steps require looking back and forward to make sure GPA always has the money needed to order enough oil to meet customer demand.

LEAC Facts:

LEAC always benefits ratepayers, especially during periods of rising prices

- Averages out impact of rising fuel prices by spreading the impact over 6 months, or even longer

LEAC protected ratepayers from soaring oil prices during the last 12 months

- Delayed rate increases (LEAC is fixed over a period)
- Spreading out payback

Without LEAC, ratepayers would see power bills go up & down like gas prices

- Price increases to ratepayers would be immediate, instead of spread out
- Any under-recovery would need to be recovered in one month; the **\$15.7M** would have to be recovered in a month

Dropping oil prices will help GPA recover balances faster, allowing GPA to reduce its LEAC rate sooner.

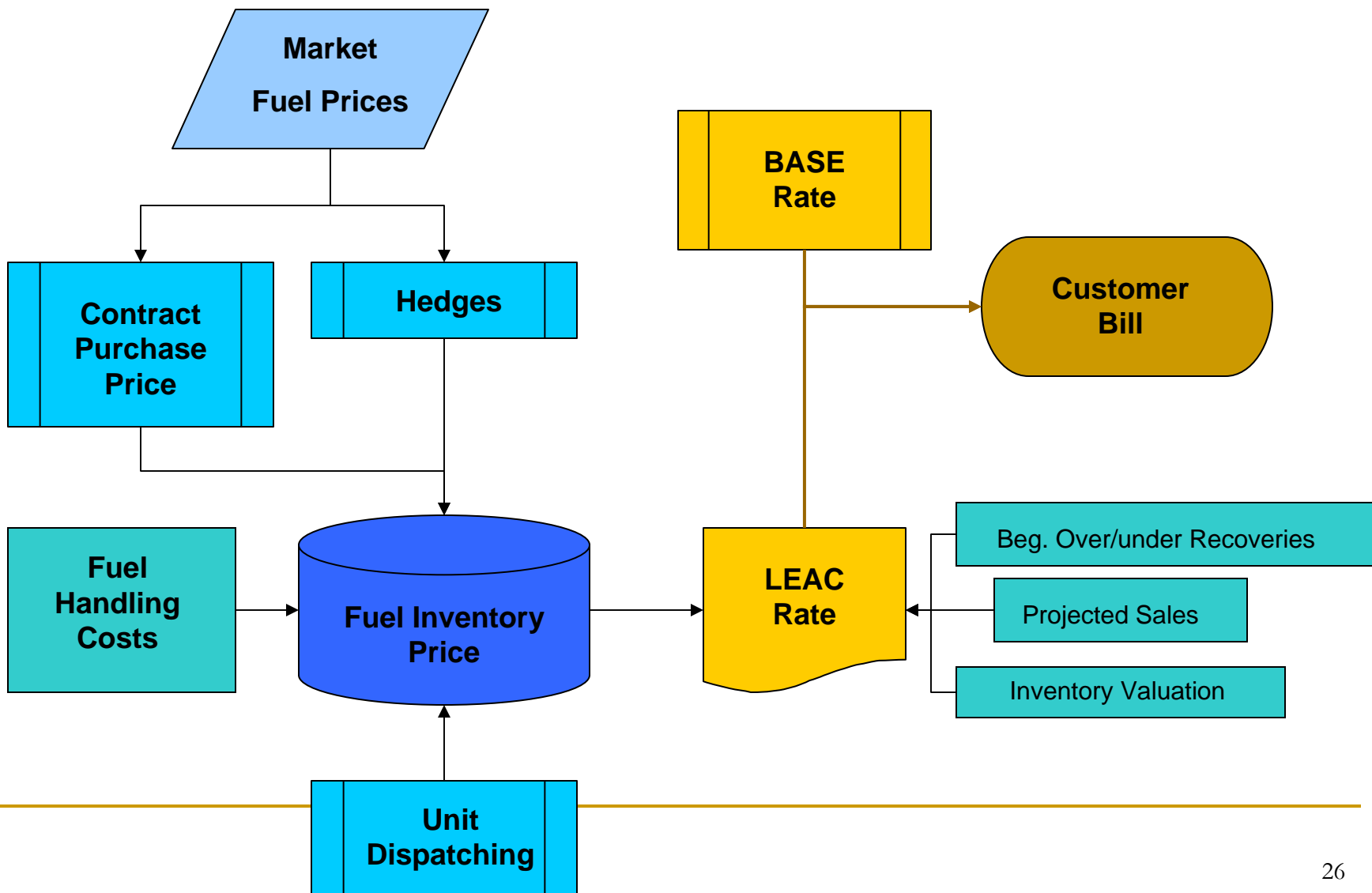
LEAC Facts:

- 33 States use processes similar to LEAC, or ECAC*
- Reasons for no ECAC/LEAC Process:
 - Deregulated Market – typically deregulated utilities distribute, but do not generate electricity; therefore, they just pass on their cost of power to customers

*Source: National Economic Research Associates (NERA)

Fuel Price Flowchart

(Market Price to Customer Bill)



Billing Illustration: Residential Customer

	RATE SCHEDULE R					
	Effective 12/1/08		Effective 2/1/09		Effective 3/1/09	
KWH		1,000		1,000		1,000
Monthly Charge	5.21	\$ 5.21	5.21	5.21	5.53	5.53
Non-Fuel Energy Charge						
First 500 KWH	0.03354	\$ 16.77	0.03354	16.77	0.03354	16.77
Over 500 KWH	0.0795	\$ 39.75	0.0795	39.75	0.08439	42.19
Emergency Water-well charge	0.00242	\$ 1.21	0.00242	1.21	0.00257	1.28
Insurance Charge	0.00290	\$ 2.90	0.00290	2.90	0.00290	2.90
Total Electric Charge before Fuel Recovery Charges		\$ 65.84		65.84		68.68
Fuel Recovery Charge	0.17105	\$ 171.05	0.15763	157.63	0.15763	157.63
Total Electric Charge		\$ 236.89		\$223.47		\$226.31
Increase in Total Bill		<u>(\$16.70)</u>		<u>(\$13.42)</u>		<u>\$2.84</u>
% Increase		-6.59%		-5.67%		1.27%
Cents/kWh		\$ 0.237		\$ 0.223		\$ 0.226

Decrease in LEAC Rate = Decrease from previous period's rate

Total Decrease = cumulative decrease from DEC 2008

Billing Illustration: Residential Customer

	Effective 5/1/09		Effective 8/1/09		Effective 2/1/10	
KWH		1,000		1,000		1,000
Monthly Charge	5.53	5.53	5.53	5.53	5.53	5.53
Non-Fuel Energy Charge						
First 500 KWH	0.03354	16.77	0.03354	16.77	0.03354	16.77
Over 500 KWH	0.08439	42.19	0.08439	42.19	0.08439	42.19
Emergency Water-well charge	0.00257	1.28	0.00257	1.28	0.00257	1.28
Insurance Charge	0.00290	2.90	0.00290	2.90	0.00290	2.90
Total Electric Charge before Fuel Recovery Charges		68.68		68.68		68.68
Fuel Recovery Charge	0.13645	136.45	0.11527	115.27	0.0941	94.10
Total Electric Charge		\$205.13		\$183.95		\$162.78
Increase in Total Bill		<u>(\$21.18)</u>		<u>(\$21.18)</u>		<u>(\$21.17)</u>
% Increase		-9.36%		-10.33%		-11.51%
Cents/kWh		\$ 0.205		\$ 0.184		\$ 0.163

Decrease in LEAC Rate = Decrease from previous period's rate

Total Decrease = cumulative decrease from DEC 2008

Billing Illustration: Large Customer

	Effective 12/1/08		Effective 2/1/09		Effective 3/1/09	
THREE PHASE						
KWH		1,000,000		1,000,000		1,000,000
MINIMUM 200		400,000		400,000		400,000
Monthly Charge	19.43	19.43	19.43	19.43	20.62	20.62
Demand Energy charge						
First 200 KWH per KW Billing Demand	0.15847	633.88	0.15847	633.88	0.16821	672.84
Next 200 KWH per KW Billing Demand	0.10967	43,429.32	0.10967	43,429.32	0.11641	46,098.31
Over 400 KWH per KW Billing Demand	0.06750	27,000.00	0.06750	27,000.00	0.07165	28,659.31
Emergency Water-well charge	0.04420	8,840.00	0.04420	8,840.00	0.04692	9,383.27
Insurance Charge	0.00242	2,420.00	0.00242	2,420.00	0.00257	2,568.72
	0.00290	2,900.00	0.00290	2,900.00	0.00290	2,900.00
Total Electric Charge before Fuel Recovery Charges		85,242.63		85,242.63		90,303.08
Fuel Recovery Charge	0.171050	171,050.00	0.157630	157,630.00	0.157630	157,630.00
Total Electric Charge		<u>\$256,292.63</u>		<u>\$242,872.63</u>		<u>\$247,933.08</u>
Increase(Decrease) in Total Bill		(\$16,700.00)		(\$13,420.00)		\$5,060.45
% Increase (Decrease)		-6.1%		-5.2%		2.08%
Cents/kWh		\$ 0.256		\$ 0.243		\$ 0.248

Increase(Decrease) in LEAC Rate	-8.9%	-7.8%	0.0%
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Total Decrease in LEAC Rate

-16.7%

Decrease in LEAC Rate = Decrease from previous period's rate

Total Decrease = cumulative decrease from DEC 2008

Billing Illustration: Large Customer

	Proposed LEAC Rates					
	Effective 5/1/09		Effective 8/1/09		Effective 2/1/10	
THREE PHASE						
KWH		1,000,000		1,000,000		1,000,000
MINIMUM 200		400,000		400,000		400,000
Monthly Charge	20.62	20.62	20.62	20.62	20.62	20.62
Demand Energy charge						
First 200 KWH per KW Billing Demand	0.16821	672.84	0.16821	672.84	0.16821	672.84
Next 200 KWH per KW Billing Demand	0.11641	46,098.31	0.11641	46,098.31	0.11641	46,098.31
Over 400 KWH per KW Billing Demand	0.07165	28,659.31	0.07165	28,659.31	0.07165	28,659.31
Emergency Water-well charge	0.04692	9,383.27	0.04692	9,383.27	0.04692	9,383.27
Insurance Charge	0.00257	2,568.72	0.00257	2,568.72	0.00257	2,568.72
	0.00290	2,900.00	0.00290	2,900.00	0.00290	2,900.00
Total Electric Charge before Fuel Recovery Charges		90,303.08		90,303.08		90,303.08
Fuel Recovery Charge	0.136450	136,450.00	0.115270	115,270.00	0.094100	94,100.00
Total Electric Charge		<u>\$226,753.08</u>		<u>\$205,573.08</u>		<u>\$184,403.08</u>
Increase(Decrease) in Total Bill		(\$21,180.00)		(\$21,180.00)		(\$21,170.00)
% Increase (Decrease)		-8.54%		-9.34%		-10.30%
Cents/kWh		\$ 0.227		\$ 0.206		\$ 0.184

Increase(Decrease) in LEAC Rate	-13.4%	-15.5%	-18.4%
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Total Decrease in LEAC Rate	-30.2%	-45.7%	-64.1%
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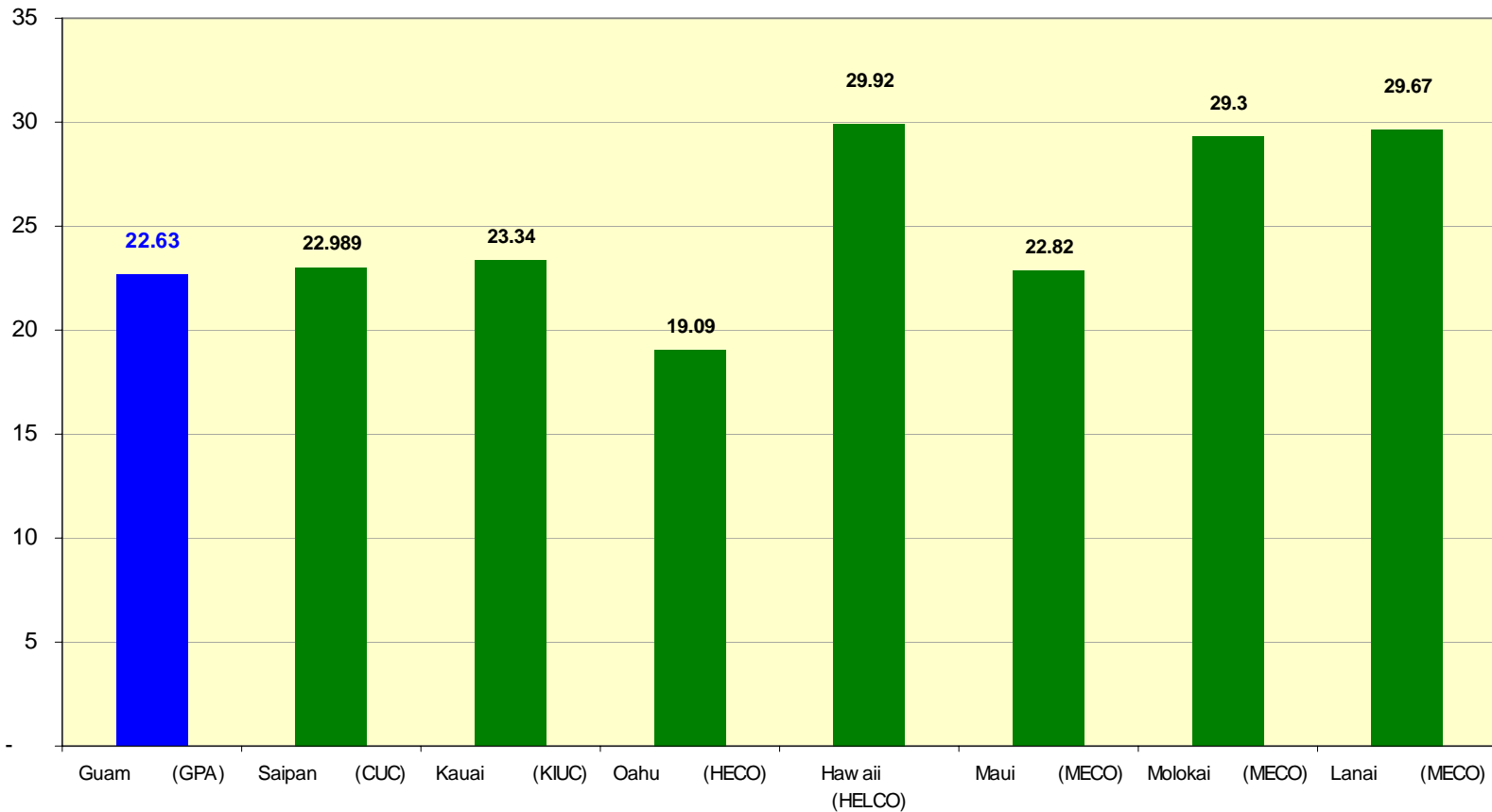
Decrease in LEAC Rate = Decrease from previous period's rate

Total Decrease = cumulative decrease from DEC 2008

Rate Comparison

GPA has one of the lowest rates in the Region (22.63 cents/kwh)

RATE COMPARISON



Sources:

<http://www.heco.com/vcmcontent/StaticFiles/FileScan/PDF/EnergyServices/Tariffs/HECO/FFRATESAPR09.pdf>

http://www.kiuc.coop/pdf/ratedata_2009.pdf

<http://www.saipantribune.com/newsstory.aspx?cat=1&newsID=88918>

Moving Forward

GPA created an Integrated Resource Plan (IRP) which addresses Fuel Diversification and Renewable Energy Requirements (PL 29-62) by Recommending:

- Acquisition of renewable resources to offset the high price of fuel, and
- Conversion of existing plants to use Liquefied Natural Gas as an additional measure to lower impact of petroleum volatility and lower fuel expenses.

GPA intends to initiate acquisition for renewable resources in the next couple of months (Wind, Solar, Hydro, Biomass, Geothermal, OTEC, Wave).

Over the next few years, GPA will implement these alternatives and change the way power is produced – to get rates lower and keep them there

Phase I – Renewable Acquisition

- Procurement Document Development:
 - Multi-Step Bid for Purchase Power of Renewable Energy
- Technical Criteria:
 - Renewable Energy Technologies as defined by NREL (National Renewable Energy Laboratory)
 - Projects > 5MW and up to 40 MW (for Phase I)
 - Commissioning Period within 36 Months
 - Commercially viable with min. 1 year of performance data
- PUC reviewing documents (Procurement Protocol)
- **Renewable Energy Contract to be awarded in 2009**

Phase II Renewable

- Pending Wind Study progress & completion of Phase I
 - In OCT 2008, GPA completed a site assessment for siting of wind monitoring towers
 - Procurement for Wind Towers and Data Collection/Analysis is dependent on land acquisition – still in progress

- **GPA intends to issue Phase II Renewable bid late 2009**

Engineering Division

- **Construction Projects for FY 2008**

- **Major Activities for FY 2009**

CONSTRUCTION FY 2008



**Harmon to Tumon 34.5 kV UG -
COMPLETED**



**Tamuning to Tumon 34.5 kV UG -
COMPLETED**



**Harmon to Tanguisson – 34.5
KV UG - CONSTRUCTION**



**San Vitores to Macheche 34.5 kV UG -
CONSTRUCTION**

CONSTRUCTION FY 2008



**Macheche – GAA 34.5 kV UG -
CONSTRUCTION**



**Harmon to GIAT Reconductoring -
COMPLETED**



Fire Protection Upgrade at Dededo CT - CONSTRUCTION

FY 2009 MAJOR ACTIVITIES

Substation/Transmission Engineering

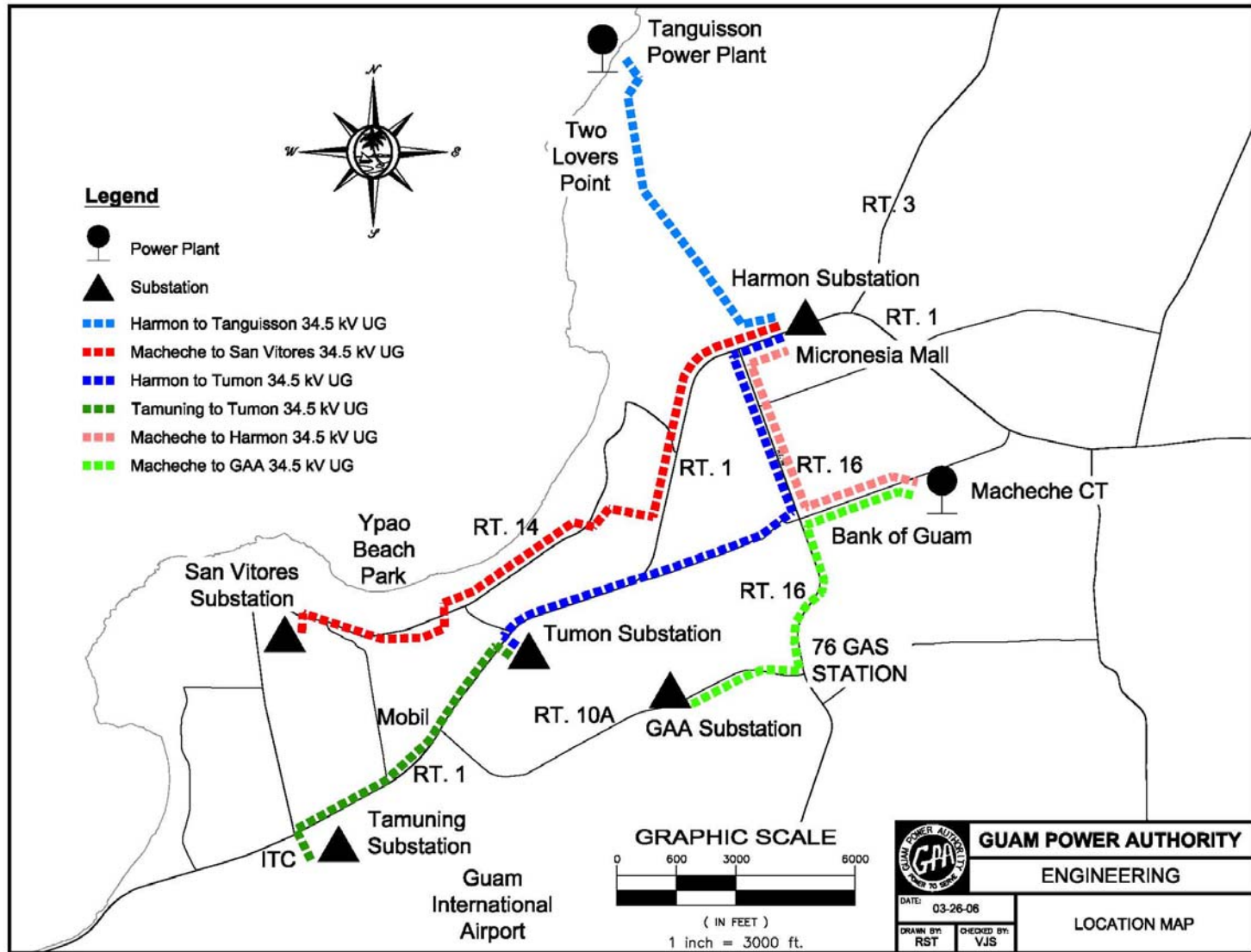
- HARMON – TANGUISSION 34.5 KV UNDERGROUND LINES
 - Line #1 (X93/X103) Energized January 29, 2009
 - Line #2 (X86/X101) Energized on February 12, 2009
 - Pending: Fiber installation, removal of conductors & poles

- MACHECHE TO SAN VITORES 34.5 KV UNDERGROUND LINE
 - 55% Complete – Construction

- MACHECHE TO GAA 34.5 KV UNDERGROUND LINE
 - 56% Complete - Construction

- AGANA 115/34.5 KV BREAKER REFURBISHMENT
 - Ordering Breakers
 - Establishing Interconnection Drawings
- SYSTEM PROTECTION UPGRADE - Ongoing
- MARBO – PAGAT TRANSMISSION LINE - Design
- ROUTE 2A TRANSMISSION LINE - Design
- OROTE/COLD STORAGE/SRF UPGRADE - Design

Northern Underground Projects Linking The Macheche CT And Tanguisson Power Plants



Distribution Engineering

- P-27
- P-330 Reconductoring & Upgrade
- P-321 New Feeder
- Distribution System Medium Range Planning & Performance Analysis
- Large Customers – In Progress
 - Talo Verde Estates
 - Paradise Estates Phase II
 - Paradise Estates Phase III
 - Ironwood Glenn
 - Pago Bay
 - Outrigger Expansion
 - Adacao Elementary

Project Management Engineering

- Fuel Oil Pipeline Underground Conversion (From Barrigada Post Office to Airport Access Road)
 - Design
- GPA Upgrade Fire Protection & Smoke Alarm at the Dededo CT Power Plant
 - Construction in Progress – 60% Completed
- GPA Upgrade Fire Protection & Smoke Alarm at the Macheche CT Power Plant - Bid
- MET Tower Structural Repair - Bid
- 8-Inch USN Pipeline Cathodic Protection - Bid

Other Major Ongoing Projects

- GIS Implementation Plan
- Net Metering Program Implementation
- Pre Paid Metering Program Implementation
- Automated Generation Control Implementation - RFP

Questions and Comments

The presentation can be accessed and downloaded from the GPA website:
www.guampowerauthority.com