DOCKET
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DATE SEP 18 2009
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CEC STAFF WORKSHOP
AB 118 2010/2011 INVESTMENT PLAN
NATURAL GAS FACILITIES/VEHICLES

FUEL INFRASTRUCTURE PANEL

LONG BEACH, CA

September 18, 2009

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BURNETT AND BURNETTE

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PRESENTATION OUTLINE

1. MARKET STATUS

   -CNG VEHICLE GROWTH IN US AND CA

   -CNG INFRASTRUCTURE GROWTH IN US AND CA

   -CNG THRUPUT GROWTH IN US AND CA

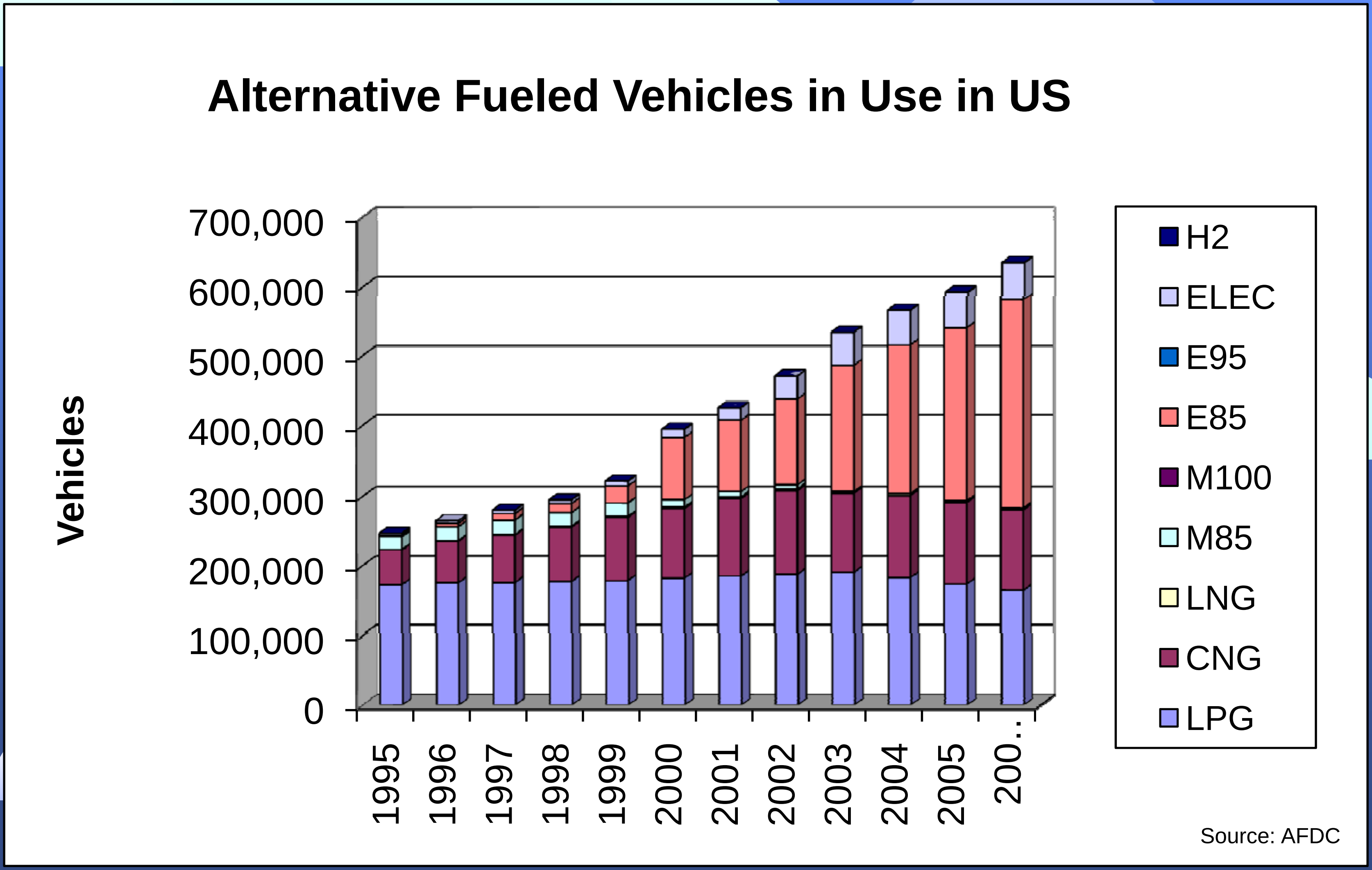
   -LEARN FROM MISTAKES VIA AUDITS/SURVEYS

2. POTENTIAL BARRIERS

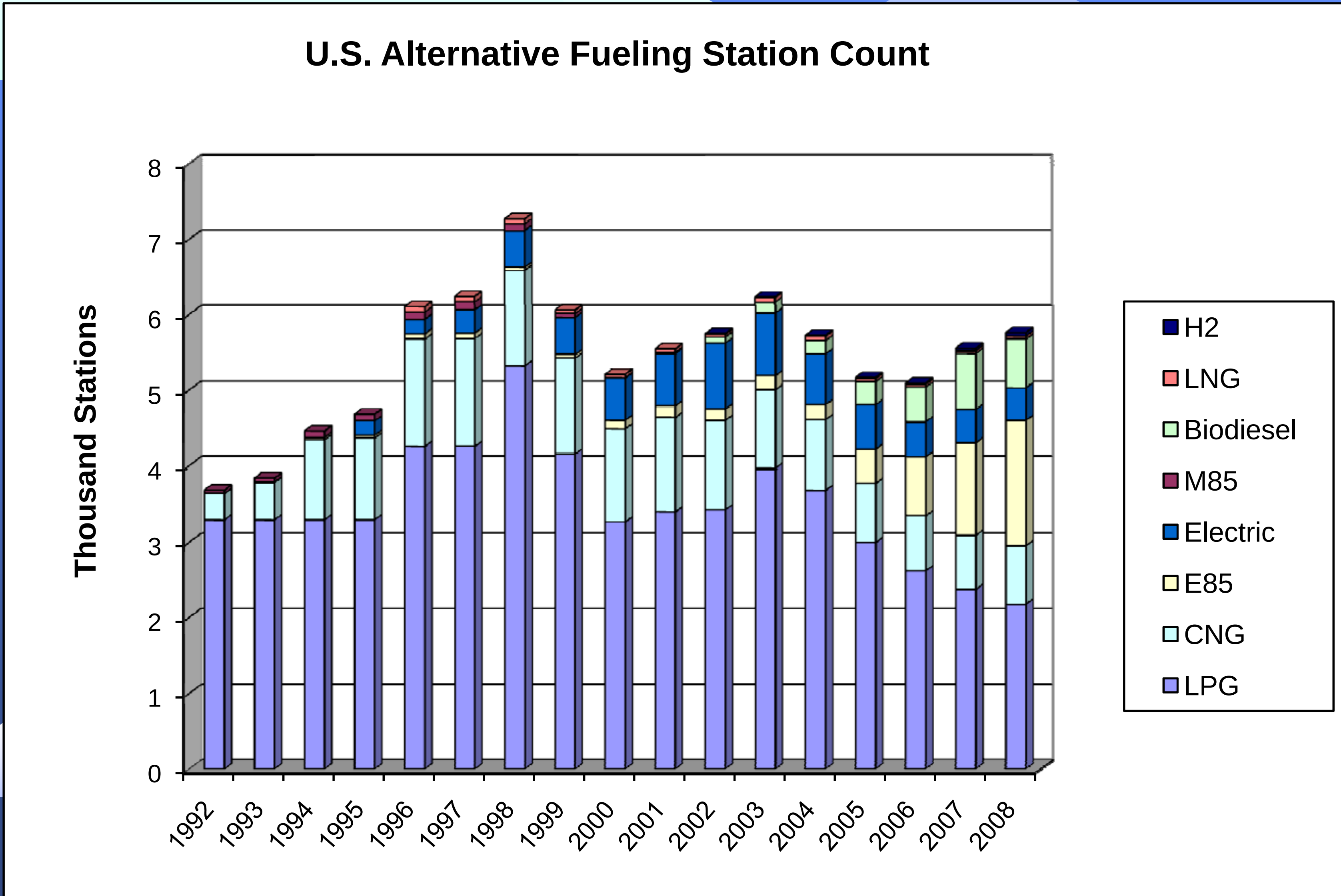
3. MARKET FUTURE- FLEET TARGET AREAS FOR FUTURE GROWTH;INVESTMENT STRATEGIES

4. INFRASTRUCTURE COSTS- CNG AND LNG

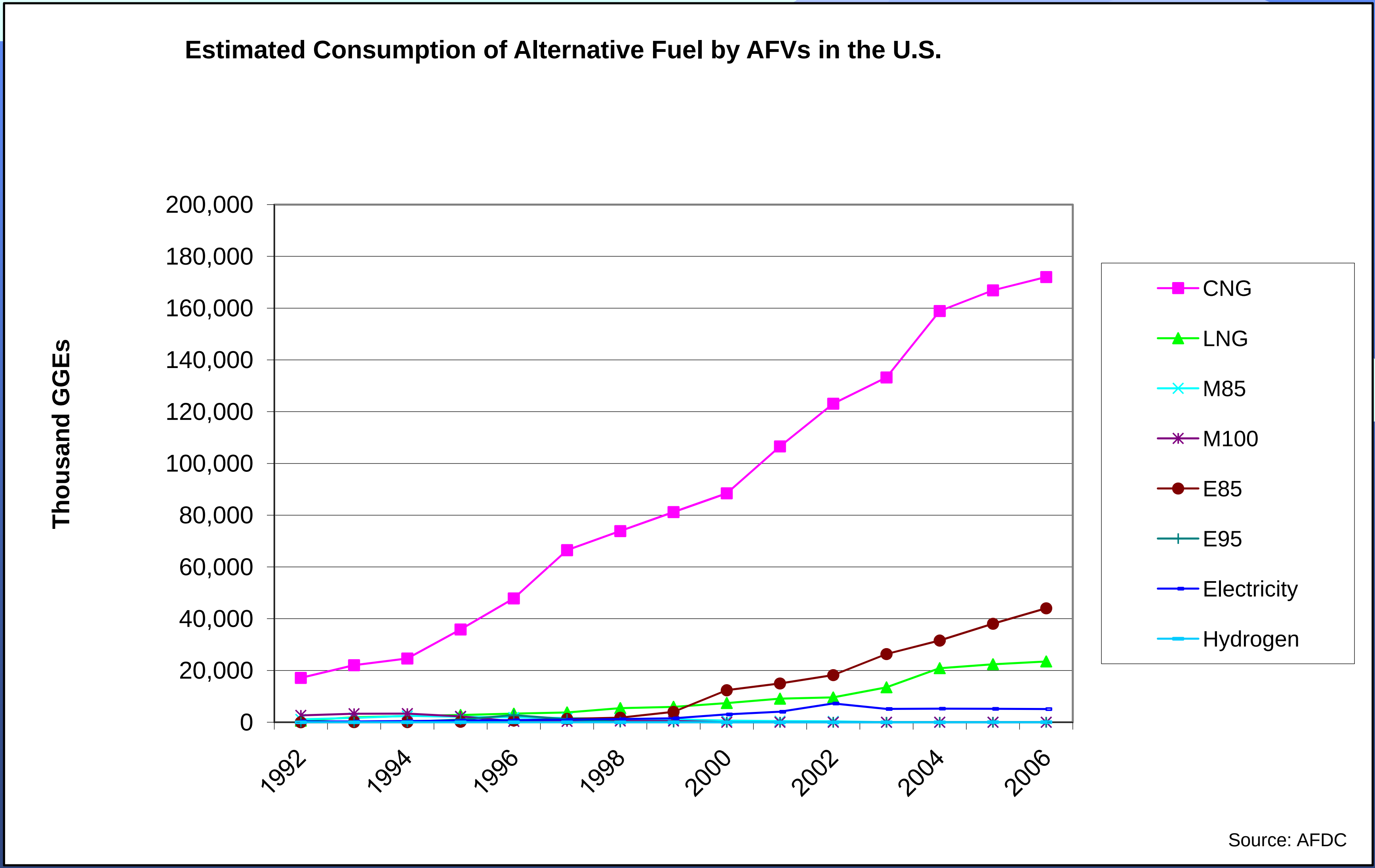
1. MARKET STATUS-VEHICLES



1. MARKET STATUS-FUELING STATIONS



1. MARKET STATUS-FUEL CONSUMPTION



1. MARKET STATUS-

CALIFORNIA CNG/LNG VEHICLE GROWTH

- CNG- US GROWING ABOUT 4%/YR @ 150,000 VEHICLES
- CNG – CA GROWING ABOUT 5%/YR @ 27,000 VEHICLES
- LNG- 6,000 WORLDWIDE; 4,500 IN USA; 3,000 IN CA

1. MARKET STATUS-

CALIFORNIA FUELING STATIONS

AFDC 2008 Alternative Fuel Stations For California

CNG	E85	LPG	ELE	CLNG	BD	H2	ALL
183	10	199	370	28	37	25	852

1. MARKET STATUS-

CALIFORNIA FUELING STATIONS- CNG/LNG

	CNG	LNG
PUBLIC	121	
PRIVATE	72	
TOTAL	193	50*

*** FROM CHART INDUSTRIES**

1. MARKET STATUS-

CALIFORNIA CNG FUEL CONSUMPTION

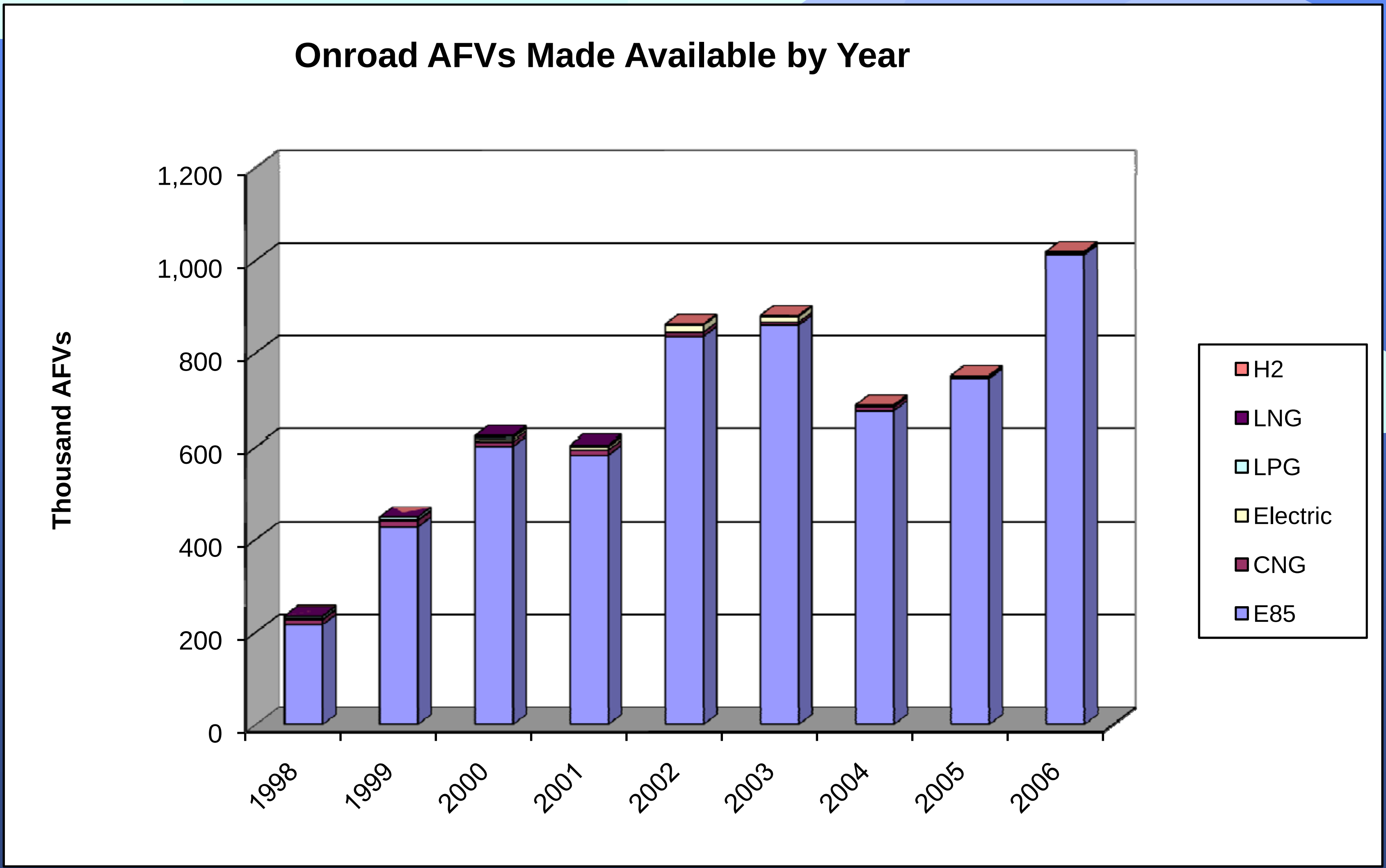
CNG - 2008

SCG/SDG&E	**80 MILLION GGE**
PG&E	**17 MILLION GGE**
TOTAL	**97 MILLION GGE***

GROWTH AVERAGED ± 8%/YEAR FOR THE LAST 10 YEARS

* FROM 2009 UTILITY SOURCES AND THEIR INTERNET WEBSITES; 80% THRUPUT IS TRANSIT

2. MARKET- POTENTIAL BARRIERS
LACK OF CNG/LNG VEHICLE PRODUCT



2. MARKET- POTENTIAL BARRIERS
LACK OF CNG/LNG VEHICLE PRODUCT

LACK OF COMMERCIALLY AVIALABLE CNG/LNG ENGINES

- **ONLY ONE MEDIUM POWER ENGINE FROM CUMMINS**
- **ONLY ONE HEAVY DUTY ENGINE AVIALABLE FROM WESTPORT**
- **NO ENGINE FOR CLASS C OR D CNG SCHOOL BUS**
- **1 LIGHT DUTY OEM PRODUCT/HIGH $ FOR UPFIT**

2. MARKET- POTENTIAL BARRIERS- EXCESSIVE COST AND FACILITY SCHEDULES

A. COST OF VEHICLES/FUELING STATIONS/GARAGE MODIFICATIONS

B. TIME TO IMPLEMENT AFV PROGRAM

- CUP/CEQA DESIGNATION/NEED CATEGORICAL EXEMPT INSTEAD OF NEGATIVE DECLARATION AND PUBLIC HEARING

- DELIVERY TIME FOR VESSELS AND LARGE COMPRESSORS

C. WILL LOSE ADDITIONAL FUEL PRICE MARGIN IF FEDERAL HIGHWAY/ENERGY BILLS NOT EXTENDED

D. MUST VALIDATE THAT AF ARE ECONOMICALLY COMPETITIVE WITH CONVENTIONAL FUELS BASED ON LIFECYCLE COSTS

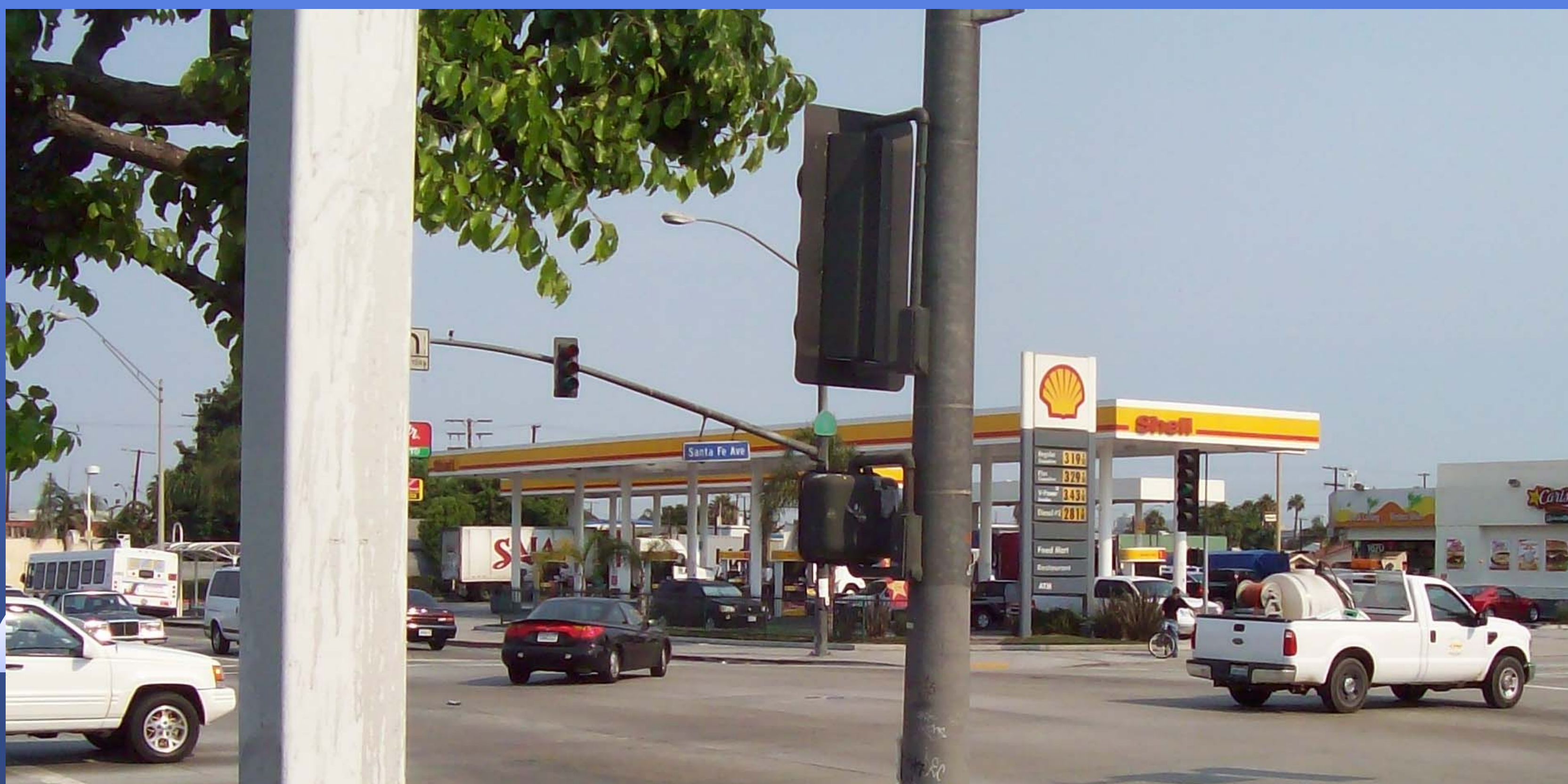
3. MARKET FUTURE
TARGET LOCATIONS FOR INVESTMENT

1. EXISTING STATIONS: (ELIMINATES 30% SITE COSTS)
   - AFTER AUDIT OF EXISTING PROFITABLE CNG /LNG STATIONS -UPGRADE TO MEET PEAK DEMAND
   - REPLACE COMPRESSORS AND DISPENSERS AT EXISTING HIGH THRUPUT CNG STATIONS > 8 YEARS OLD
   - ADD OTHER ALTERNATIVE FUELS AT HIGH THRUPUT SINGLE ALT FUEL 24 HOUR STATIONS W/GOOD ACCESS
   - ADD CNG TO EXISTING GASOLINE/DIESEL SERVICE STATIONS

2. NEW AF STATIONS- (HEAVY DUTY VEHICLES ONLY)
   - FUEL ACCESS MUST BE TANSPARENT~GASOLINE/DIESEL
   - LOCATE AT EXISTING TRUCK STOPS AND CARD LOCKS
   - FOCUS ON HIGH VOLUME FLEETS SUCH AS STREET SWEEPERS,SHORT HAUL TRUCKING, REFUSE AND PORT
   - NEW STATIONS MUST HAVE MULTIPLE ALTERNATIVE FUELS

3. MARKET FUTURE
TARGET LOCATIONS FOR INVESTMENT
"LNG AT EXISTING REFUSE FACILITY"

3. MARKET FUTURE
TARGET LOCATIONS FOR INVESTMENT- ADD CNG & LNG AT EXISTING PORT AREA TRUCK STOPS



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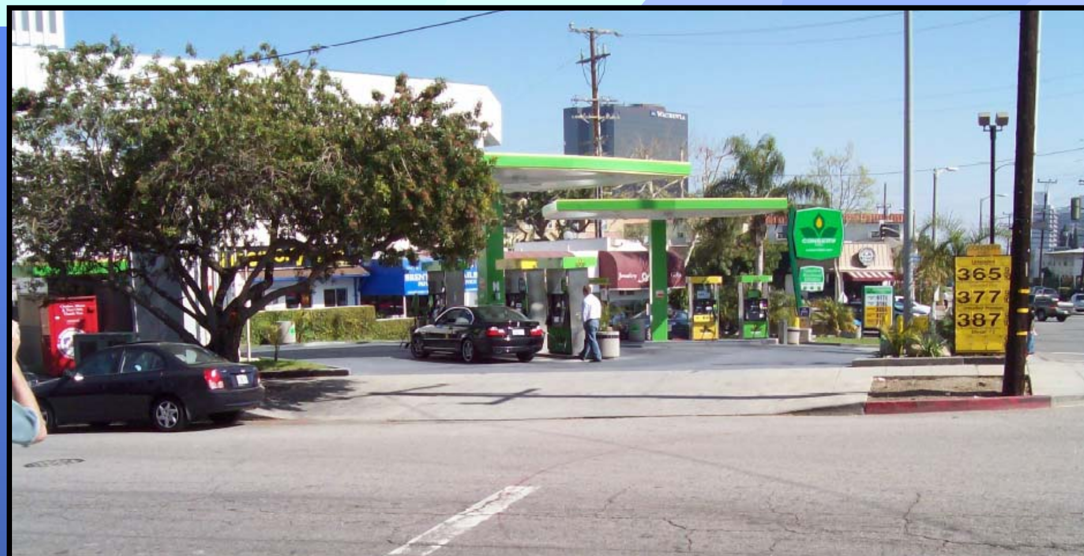
TARGET LOCATIONS FOR INVESTMENT- ADD CNG & LNG AT EXISTING PORT AREA TRUCK STOPS

3. MARKET FUTURE
TARGET LOCATIONS FOR INVESTMENT-UPGRADE EXISTING QUALITY MUNICIPAL SITES

3. MARKET FUTURE
TARGET LOCATIONS FOR INVESTMENT- UPGRADE EXISTING GREEN FUELS SITES

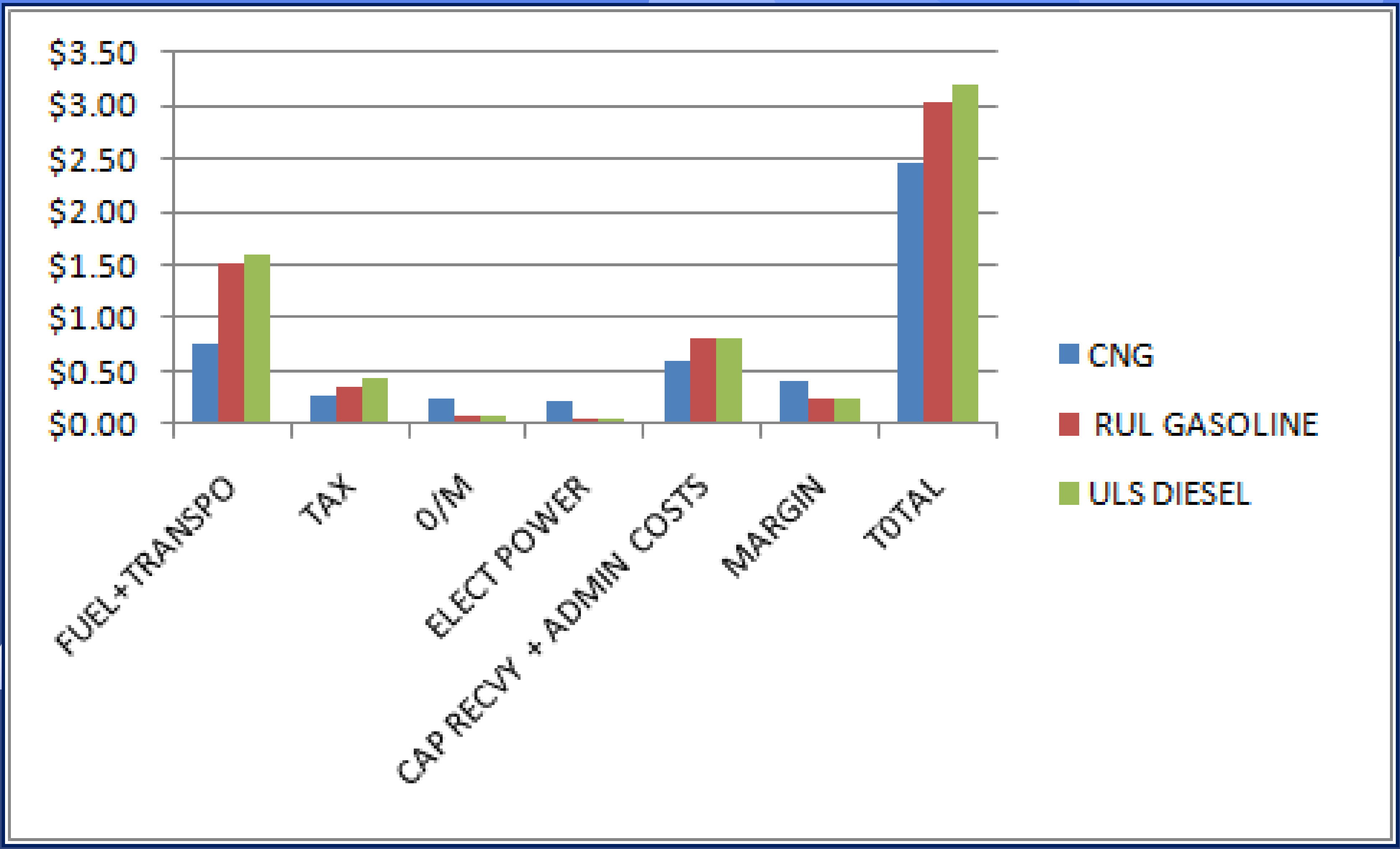
CONSERV
FUELS IN
WEST LA

E-85 +
BIO DIESEL



4. RETAIL FUEL COST COMPARISON AND INFRASTRUCTURE COSTS

CA CNG RETAIL COST COMPARISON



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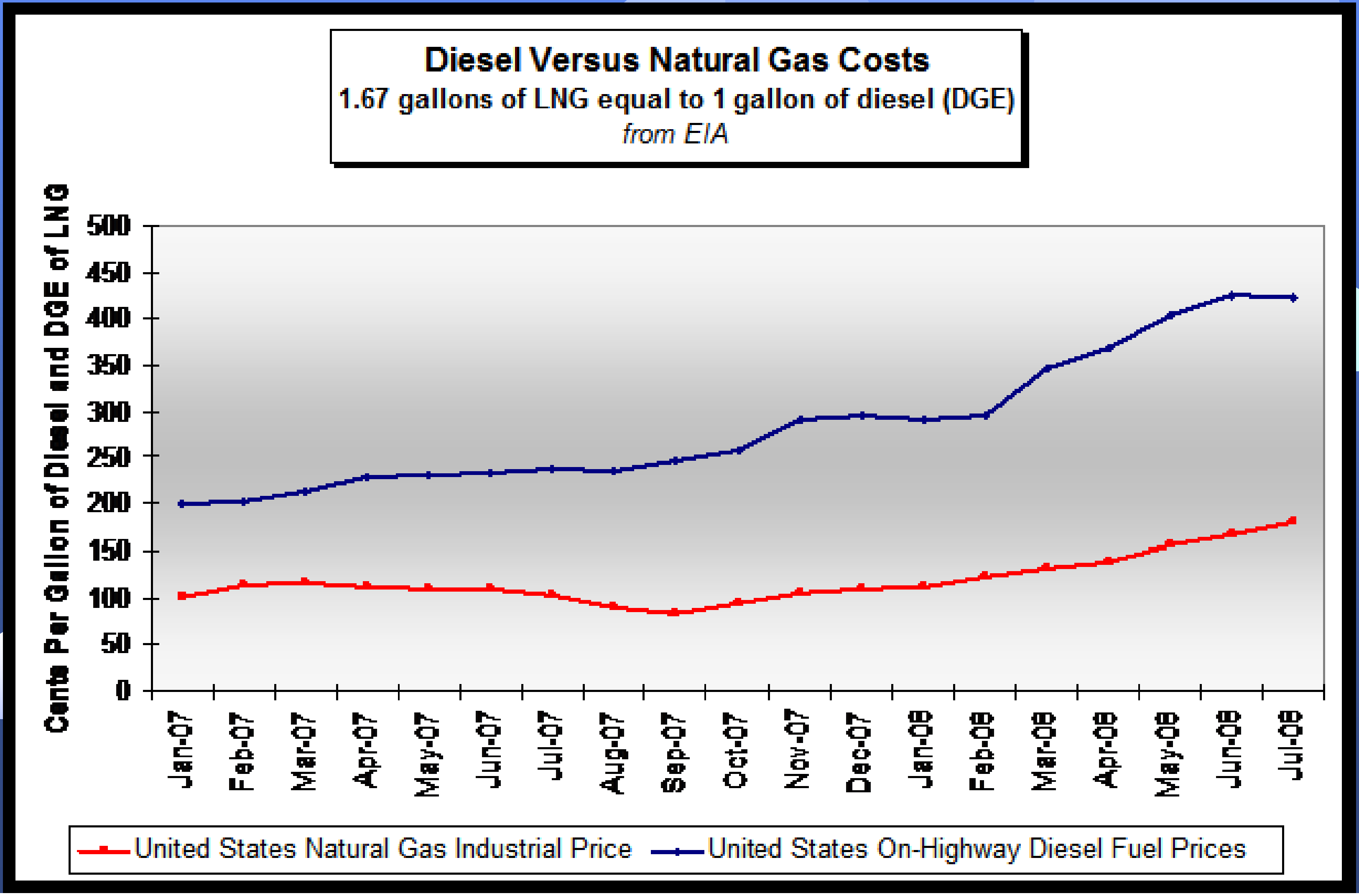

4. RETAIL FUEL COST COMPARISON AND INFRASTRUCTURE COSTS

TYPICAL STATIONS, $$ IN MILLIONS

	CNG	LNG
1. SCHOOL DISTRICT + GARAGE	0.6	-
2. HEAVY DUTY FACILITY (2 M DEG/YR)	2.5	2.0
3. MEGA HEAVY DUTY (6 M DEG/YR)	6.0	7.5
4. MUNICIPAL W/PUBLIC	1.5	1.2
5. UTILITY FLEET W/PUBLIC	1.3	-

COSTS RISING ABOUT 10%/YEAR OVER THE LAST 5 YEARS

BURNETT CONCLUSIONS AND RECOMMENDATIONS

1. FOCUS ON HEAVY DUTY MARKET

2. ALLOCATE MINIMUM 25% OF 1 ST YEAR AB 118 FUNDING TO ENGINE DEVELOPMENT

3. AUDIT/SURVEY EXISTING STATIONS/LOAD UNDERUTILIZED

4. UPGRADE EXISTING PROFITABLE CNG/LNG STATIONS TO MEET PEAK LOADS /ADD OTHER ALTERNATIVE FUELS TO SITE

5. MINIMIZE FUNDING PRIVATE ACCESS STATIONS UNLESS THRUPUT MEET SOME SPECIFIC INVESTMENT AND ENVIRONMENTAL CRITERIA

6. MINIMIZE FUNDING GRASSROOTS STATION INSTALLATIONS WHERE SITE DEVELOPMENT COST > 30% OF THE TOTAL COST