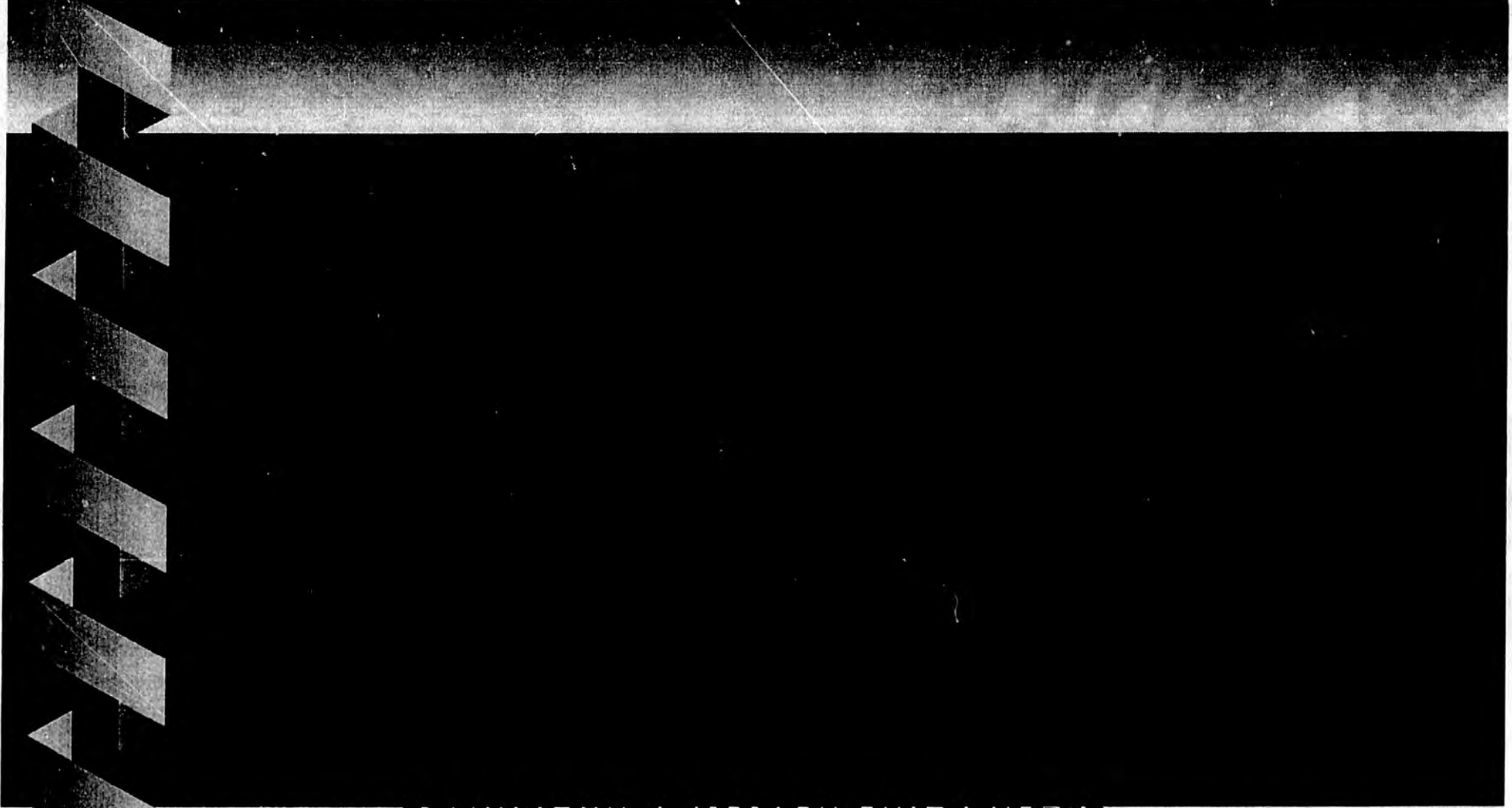


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SPECIAL COMMITTEE ON OIL AND GAS

MARCH 16, 2000

SEAGA Gas Project

**■ BRINGING GAS UTILITY SERVICE
TO SOUTHEAST AND GULF OF
ALASKA COMMUNITIES**

**BASED ON THE PRODUCTION,
TRANSPORTATION AND STORAGE
OF LIQUID NATURAL GAS (LNG)
AND LIQUID PETROLEUM GAS (LPG)**

Alaska Intrastate Gas Company

- ◆ **ALASKAN CORPORATION ORGANIZED IN 1992**
- ◆ **FILED APPLICATION TO OPERATE AS A GAS UTILITY IN AUGUST, 1995**
APPLICATION APPROVED BY THE ALASKA PUBLIC UTILITIES COMMISSION ON DECEMBER 31, 1998
ISSUED CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY TO PROVIDE GAS SERVICE TO 17 COMMUNITIES IN ALASKA JUNE 30, 1999

Major Business Interests

- APUC APPROVED GAS UTILITY FOR 17 ALASKAN COMMUNITIES**
- UTILITY GAS MARKETING AND RELATED SUPPORT SERVICES**
LONG TERM OPERATION AND MAINTENANCE OF LOCAL GAS DISTRIBUTION SYSTEMS
- CONTRACT FOR GAS SUPPLIES AND MARINE TRANSPORTATION TO COMMUNITIES**

Service Area Communities

■ GULF OF ALASKA

- KODIAK**
- VALDEZ**
- CORDOVA**
- YAKUTAT**

■ SOUTHEAST ALASKA

- SKAGWAY**
- KLUKWAN**
- HAINES**
- JUNEAU**
- ANGOON**
- KAKE**
- SITKA**
- PETERSBURG**
- WRANGELL**
- KLAWOCK**
- CRAIG**
- KETCHIKAN**
- METLAKATLA**

Glossary

LDC Local Distribution Company

LDCs operate natural gas distribution systems linking consumers & pipelines. LDCs may also provide gas storage & peaking services.

LNG Liquefied Natural Gas

When cooled to about -260 °F, methane becomes a liquid for storage or transport in insulated tanks, trucks and ships.

LPG Liquefied Petroleum Gas

LPG or LP-gas refers to several gas liquids, including propane and butane.

NG Natural Gas

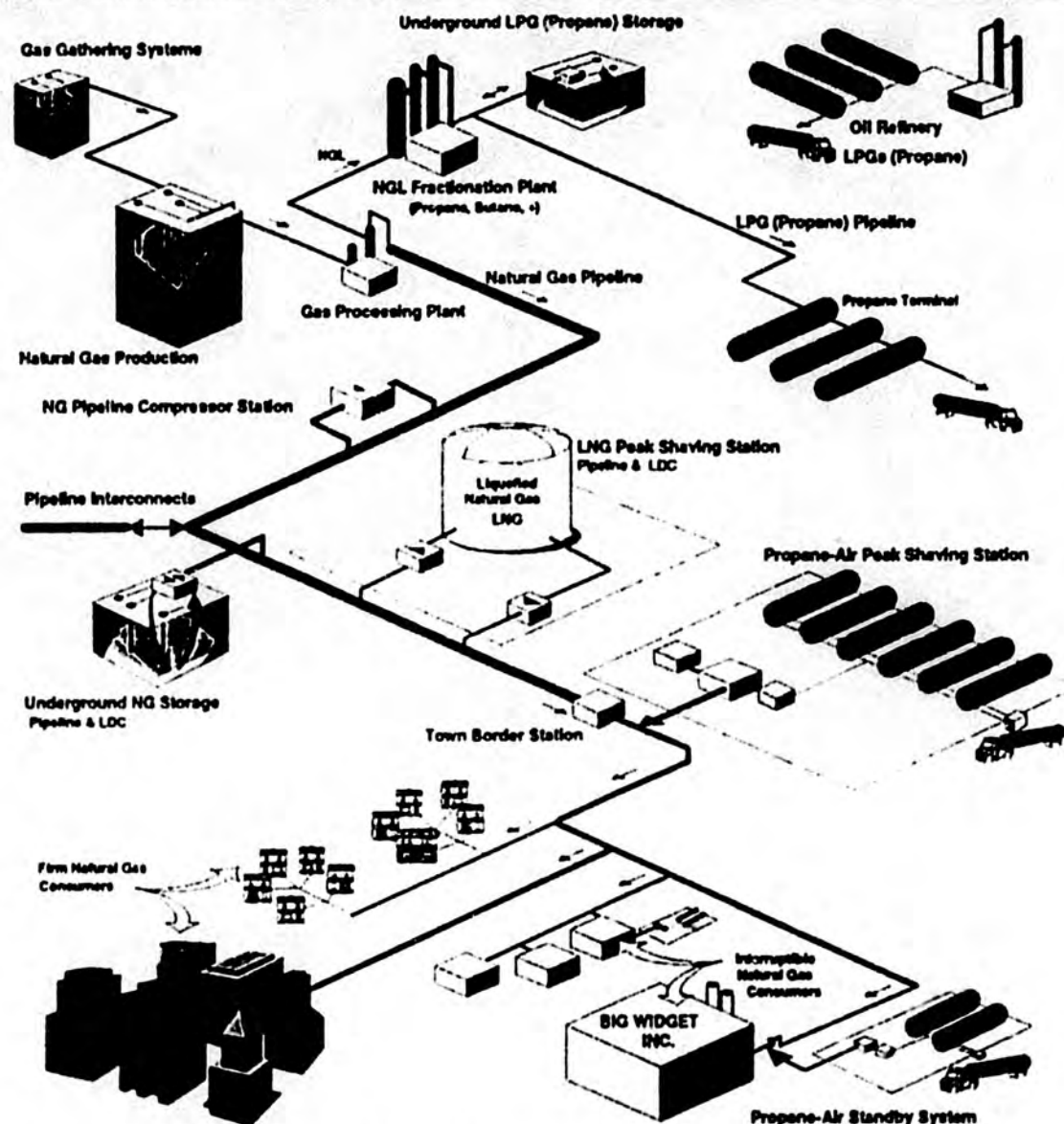
NG is a mixture of methane and various other hydrocarbons and inert gases.

NGL Natural Gas Liquids

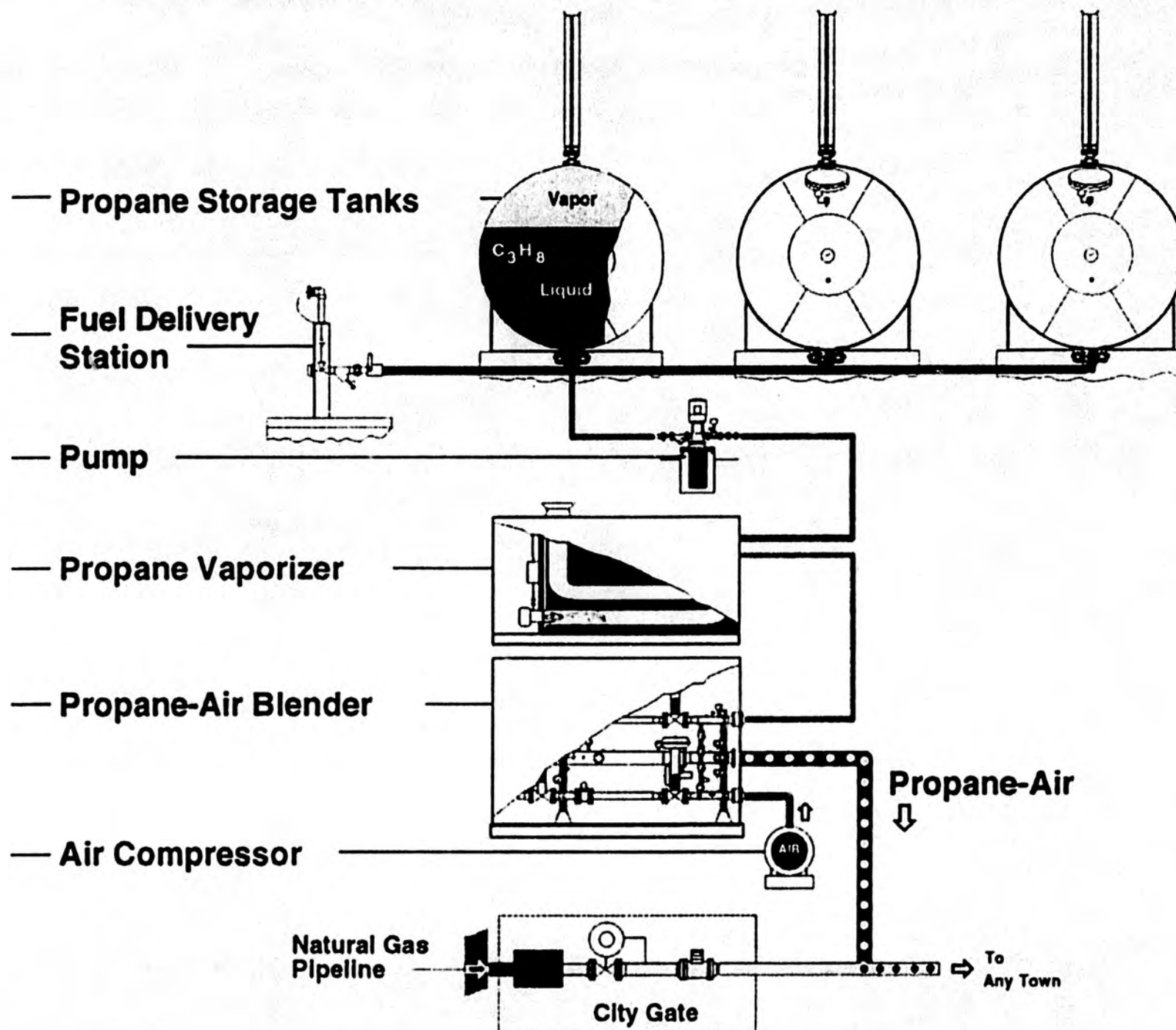
NGLs are hydrocarbon components of natural gas other than methane, including ethane, propane and butane.

Propane is one of several LPGs derived during both natural gas production and crude oil refining.

North American Gas Energy Grid



Commercial propane, under the trade names LPG, LP-gas and HD-5 Propane, is widely used as standby fuel. Stored as a liquid, a gallon of propane contains the energy in over 90 cubic feet of natural gas. 11 gallons of propane have about the same energy as 1 Mcf of natural gas, or about 1 million btu "MMBtu".



Major Project Components

- **ACQUISITION OF GAS SUPPLIES**
- **TRANSPORTATION OF GAS TO TIDEWATER**
 - **PIPELINE**
 - **RAILCAR**
- **GAS LIQUEFACTION (LNG)**
MARINE TRANSPORTATION OF GAS TO COMMUNITIES
 - **BULK BARGE**
 - **RAILCAR**
- **STORAGE AND VAPORIZATION OF GAS IN COMMUNITIES**
- **COMMUNITY DISTRIBUTION AND SALE OF GAS**

Potential Gas Market

■ **OVERALL MARKET MORE THAN 26 BCF**

MARKET LOAD COMPONENTS

- RESIDENTIAL – 34%**
- SMALL BUSINESS – 14%**
- LARGE COMMERCIAL – 10%**
- INDUSTRIAL – 14%**
- MINING – 7%**
- ELECTRICAL – 21%**

MARINE TRANSPORTATION

■ LNG/LPG BARGE

■ 300' X 63' X 19'

■ 11' DRAFT

■ PUSH-TUG CONFIGURATION

■ PRESSURIZED STORAGE TANKS

**■ NOMINAL CAPACITY 1,000,000
GALLONS**

RAILCAR HYDROTRAIN BARGE

– EXISTING 6 – 24 CAR BARGES

– 180 – 720,000 GALLONS

– NEW HYDROTRAIN BARGE (50 CAR)

– 1,500,000 GALLONS

Phased Development

■ PHASE I

- JUNEAU (30,000 pop.)**
- KETCHIKAN (14,000 pop.)**
- SITKA (9,000 pop.)**

TOTAL POPULATION OF 53,000
5 YR PROJECTED RESIDENTIAL
LOAD OF 4.6 BCF

■ 3.5 BCF INDUSTRIAL LOAD

Phased Development

■ PHASE II

- CORDOVA
- CRAIG
- KLAWOCK
- PETERSBURG
- VALDEZ
- WRANGELL

**TOTAL POP. -
16,000**

■ **5 YR PROJECTED
LOAD OF 3 BCF**

■ PHASE III

- ANGOON
- HAINES
- KAKE
- KLUKWAN
- METLAKATLA
- SKAGWAY
- YAKUTAT

■ **TOTAL POP. - 6,000**

■ **5 YR PROJECTED
LOAD OF 1.2 BCF**

Scheduled Service

◆ PHASE I COMMUNITIES

– FALL 2001 TO FALL 2002

PHASE II AND III COMMUNITIES

– YEARS 2003 - 2009

LNG Production Facility

◆ NOMINAL ANNUAL PRODUCTION

- MINIMUM**

10 MILLION GALLONS

- MAXIMUM**

36.5 MILLION GALLONS

MAXIMUM FEEDSTOCK RATE

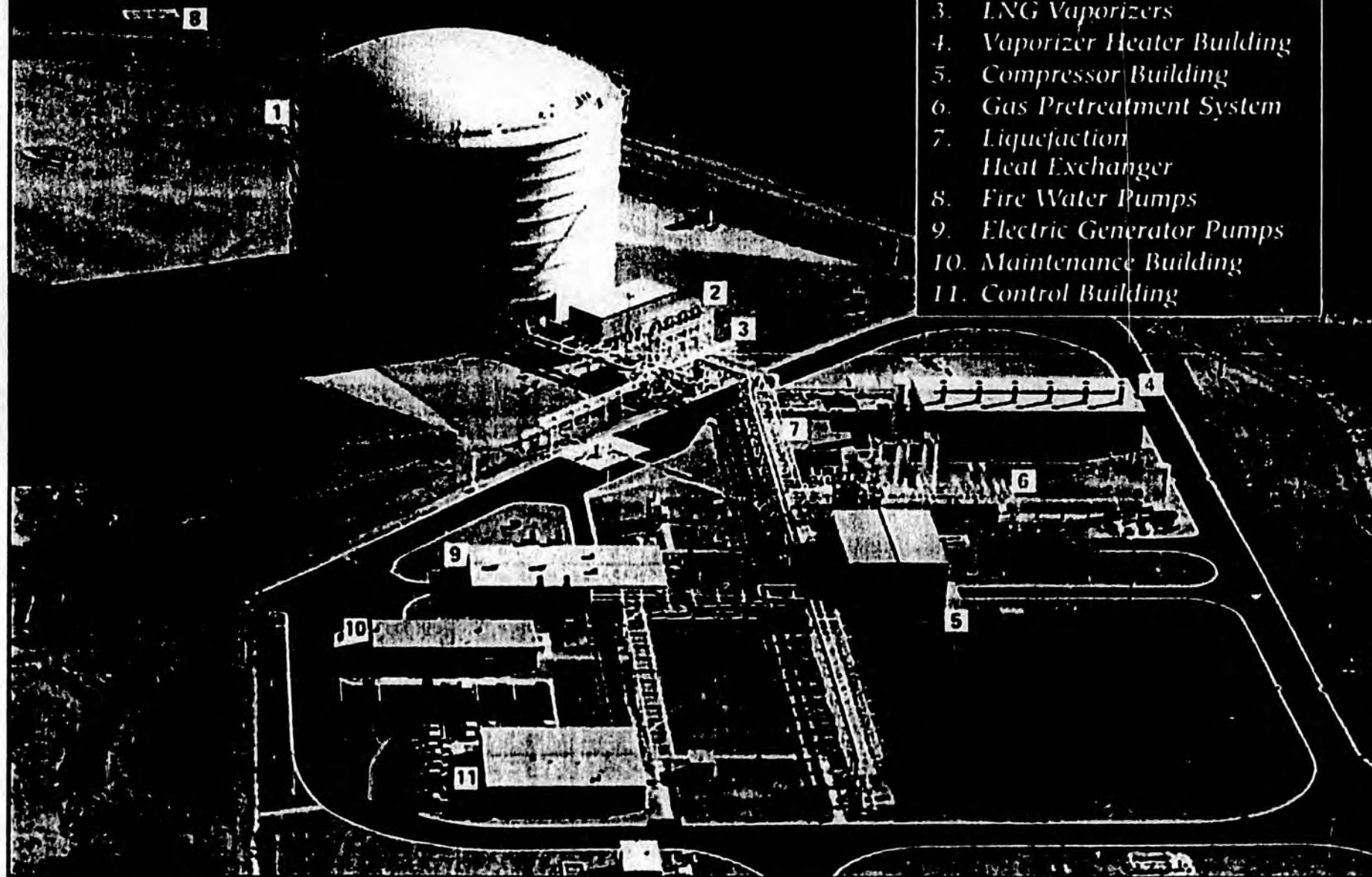
- 10 MMSCFD**

◆ FIRM PIPELINE CAPACITY IN PLACE

- 15+ MMSCFD**

LNG Facility

1. LNG Storage Tank
2. LNG Pumps
3. LNG Vaporizers
4. Vaporizer Heater Building
5. Compressor Building
6. Gas Pretreatment System
7. Liquefaction Heat Exchanger
8. Fire Water Pumps
9. Electric Generator Pumps
10. Maintenance Building
11. Control Building



Phase I

COMMUNITY INVESTMENT

LOCAL DISTRIBUTION CENTERS

- \$34 MILLION

PROPANE-AIR PLANTS/DOCKS

- \$11 MILLION

OTHER STARTUP COSTS

- \$8 MILLION

GROSS PLANT

- \$53 MILLION

Fuel Oil Versus Utility Gas Cost Comparison Per mmbtu

■ FUEL OIL

- RESIDENTIAL**
 - » \$8.60**
- SMALL COMMERCIAL**
 - » \$7.57**
- LARGE COMMERCIAL**
 - » \$6.81**

■ NATURAL GAS

- RESIDENTIAL**
 - » \$7.25**
- SMALL COMMERCIAL**
 - » \$6.89**
- LARGE COMMERCIAL**
 - » \$6.53**

Utility Gas Versus Propane Cost Comparison Per minbtu

■ BOTTLED PROPANE

- RESIDENTIAL- JUNEAU

» \$18.40

- RESIDENTIAL - KODIAK

» \$28.80

■ NATURAL GAS

» \$7.25

Utility Gas Versus Electric Cost Comparison Per mmbtu

■ **ELECTRIC (@ \$0.09/kWh)**

» **\$26.37**

■ **ELECTRIC (@ \$0.14/kWh)**

» **\$41.02**

■ **ELECTRIC (@\$0.20/kWh)**

» **\$58.60**

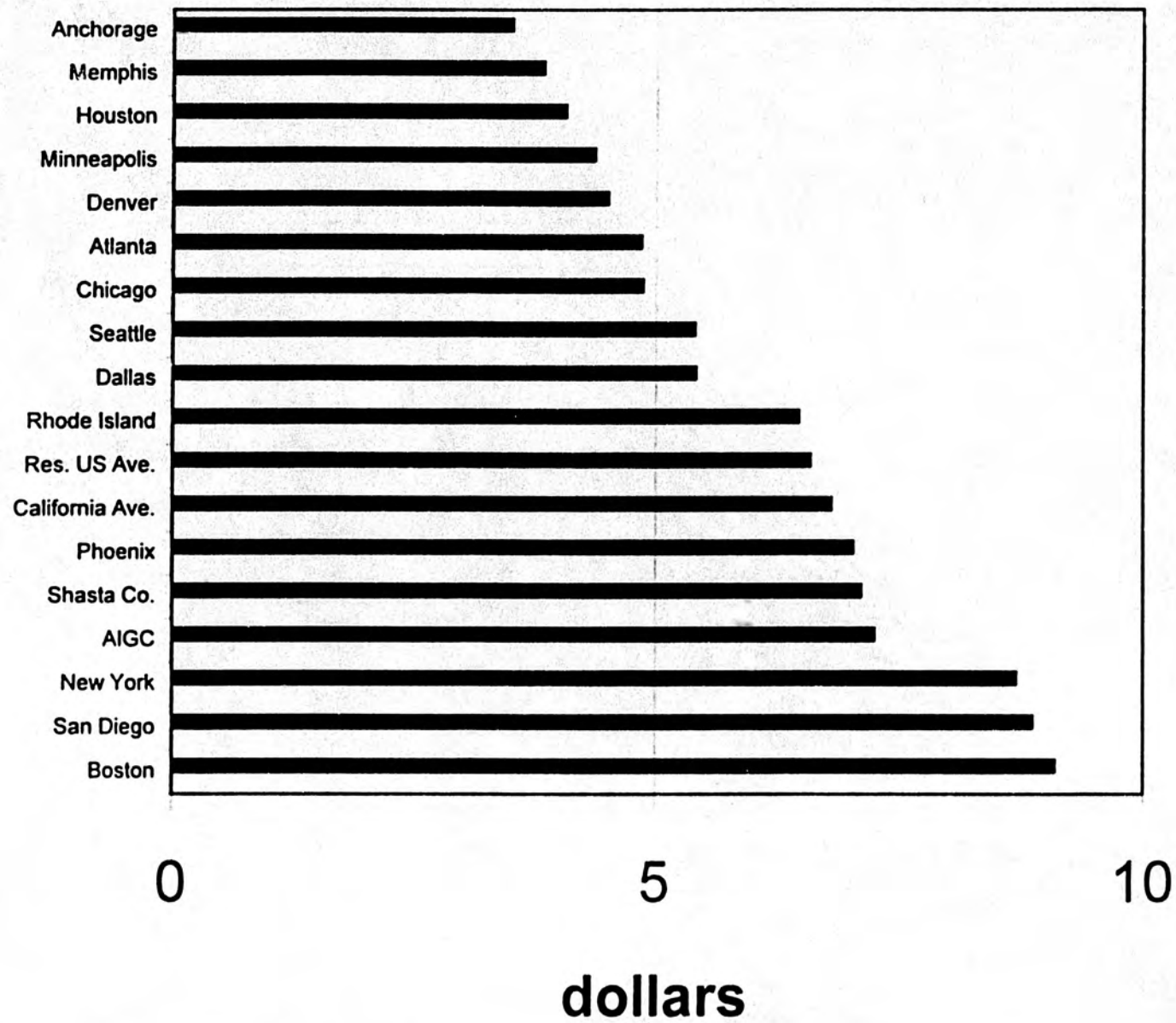
■ **NATURAL GAS**

» **\$7.25**

SEAGA Gas Project Summary

- ♦ **GAS UTILITY SERVICE IS COMPETITIVE WITH EXISTING FUEL OIL SERVICE IN RURAL ALASKAN COMMUNITIES**
- ♦ **GAS UTILITY SERVICE IS ENVIRONMENTALLY AND TECHNOLOGICALLY SUPERIOR TO FUEL OIL**
- ♦ **BULK FUEL BARGES SUPPORT GAS UTILITY SERVICE TO COMMUNITIES OVER DISTANCES OF >1,000 MILES FROM TIDEWATER PORT**
- ♦ **GAS UTILITY SERVICE CAN BE PROVIDED TO COMMUNITIES OF $\leq$ 500 RESIDENTS**
- ♦ **A MINIMUM ANNUAL SERVICE AREA LOAD OF 29 MILLION GALLONS(2.4 BCF) SUPPORTS PROJECT INFRASTRUCTURE FOR LNG BASED UTILITY OPERATIONS**

location



■ Series2
■ Series1

Figure 3.2 Summary of Various Fuel Costs within the Service Area.

<i>Fuel Type</i>	<i>\$/unit</i>	<i>\$/mmbtu</i>
Utility Gas	7.25/mcf	7.25
Fuel Oil	1.15 - 1.25/gal	8.50 - 9.00
Bottled Propane	1.68 - 2.65/gal	18.40 - 28.90
Electricity	0.09 - 0.339/kWh	26.38 - 99.35
Wood Pellets	210/ton	14.13
Firewood	150/cord	11.36

Table 4.1 Comparative Cost to Operate a Clothes Dryer

Electric Rate (\$/kWh)	Gas Rate (\$/mcf)	Cost/Load Electric (\$)	Cost/Load Gas (\$)	Annual Cost Electric (\$)	Annual Cost gas (\$)	Savings with Gas (\$)	Percent Savings (%)
0.09	3.5	0.2328	0.059	96.85	24.54	72.31	75
0.09	7.25	0.2328	0.1222	96.85	50.83	46.02	48
0.12	7.25	0.3097	0.1261	128.84	52.45	76.39	59
0.15	7.25	0.3871	0.1271	161.03	52.87	108.16	67
0.2	7.25	0.5162	0.1287	214.74	53.53	161.21	75
0.25	7.25	0.6452	0.1304	268.4	54.25	214.15	80

Table 4.2 Comparative Cost to Operate a Hot Water Heater

Electric Rate (\$/kWh)	Gas Rate (\$/mcf)	Cost/100 gal. Electric (\$)	Cost/100 gal. Gas (\$)	Annual Cost Electric (\$)	Annual Cost gas (\$)	Savings with Gas (\$)	Percent Savings (%)
0.09	3.5	2.31	0.5	575	124	451	78
0.09	7.25	2.31	1.04	575	259	316	55
0.12	7.25	3.07	1.04	764	259	505	66
0.15	7.25	3.84	1.04	956	259	697	73
0.2	7.25	5.12	1.04	1275	259	1016	80
0.25	7.25	6.4	1.04	1593	259	1334	84

Table 4.3 Comparative Cost for Home Heating and Hot Water

Gas Rate (\$/mcf)	Oil Rate (\$/gal)	Monthly Cost Gas	Monthly Cost Oil	Annual Cost Gas	Annual Cost Oil	Savings with Gas	Percent Savings
3.5	1	49	111	591	1331	739	56
7.25	1	102	111	1225	1331	106	8
7.25	1.1	102	122	1225	1464	239	16
7.25	1.2	102	133	1225	1597	372	23
7.25	1.3	102	144	1225	1730	505	29
7.25	1.4	102	155	1225	1863	638	34
7.25	1.5	102	166	1225	1996	771	39

House Special Committee on Oil and Gas
March 21, 2000
Presentation by the Alaska Intrastate Gas Company

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Senior V.P. of Southeast Operations

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Senior V.P. of Finance

Ms. Elisabeth H. Ross
General Counsel

Mr. Leonard F. Horst
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Mr. Tom LeNeau
General Manager