

POWER

BRIEFING

2-9-81



Official Business

# Alaska State Legislature

## Senate

RESOURCES COMMITTEE

MEMORANDUM

Pouch V  
State Capitol  
Juneau, Alaska 99811

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TO: SENATE RESOURCES COMMITTEE

FROM: SENATE RESOURCES COMMITTEE STAFF

9:45am. ✓ DATE: February 6, 1981

RE: Briefing - Monday - February 9, 1981 - 1:30 p.m.  
Senate Finance Room  
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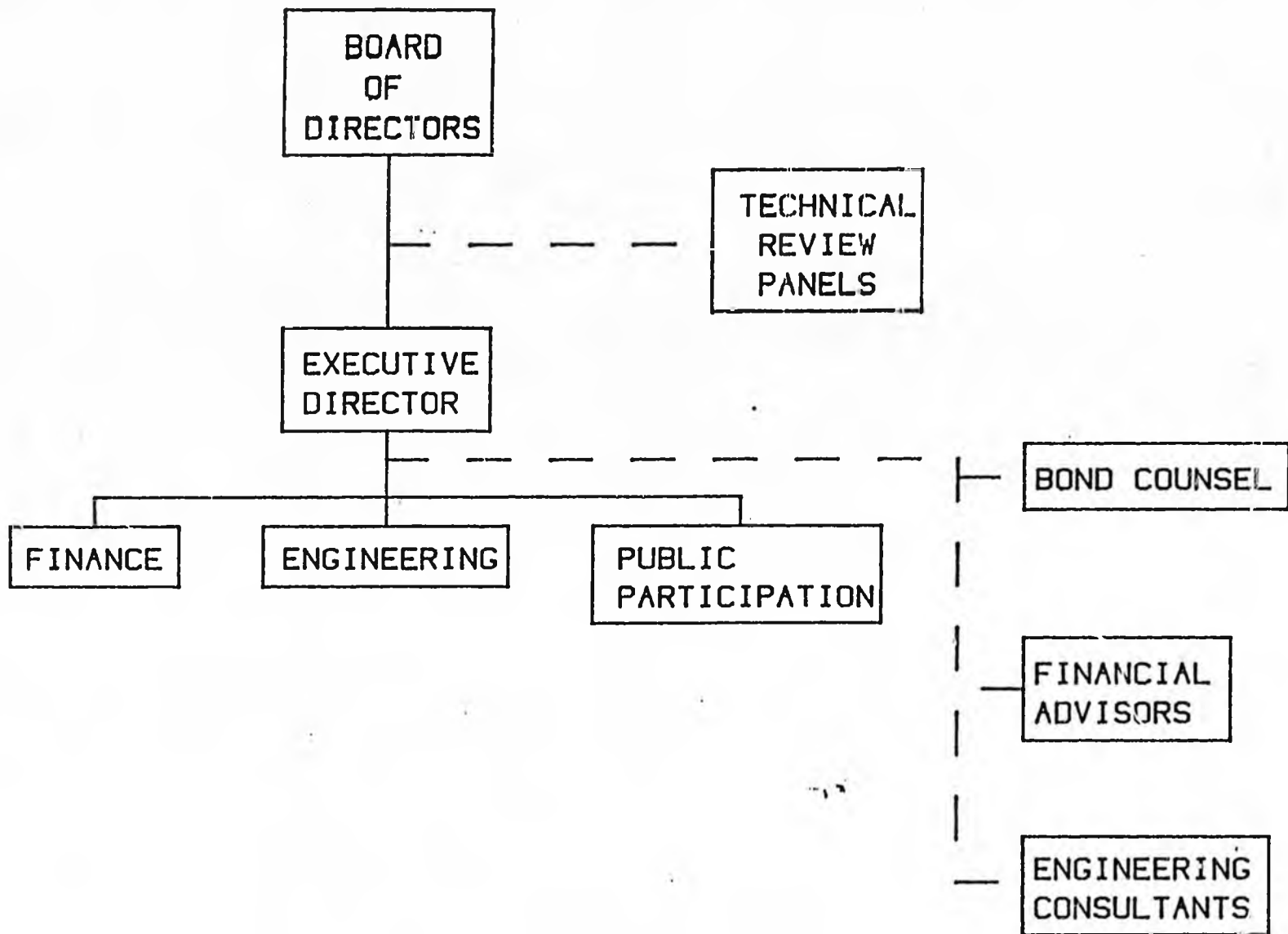
Attached please find a copy of the Alaska Power Authority's Brochure. Eric Yould, Executive Director of the Authority will be briefing the Committee Monday.

**ALASKA POWER AUTHORITY**

## PURPOSE

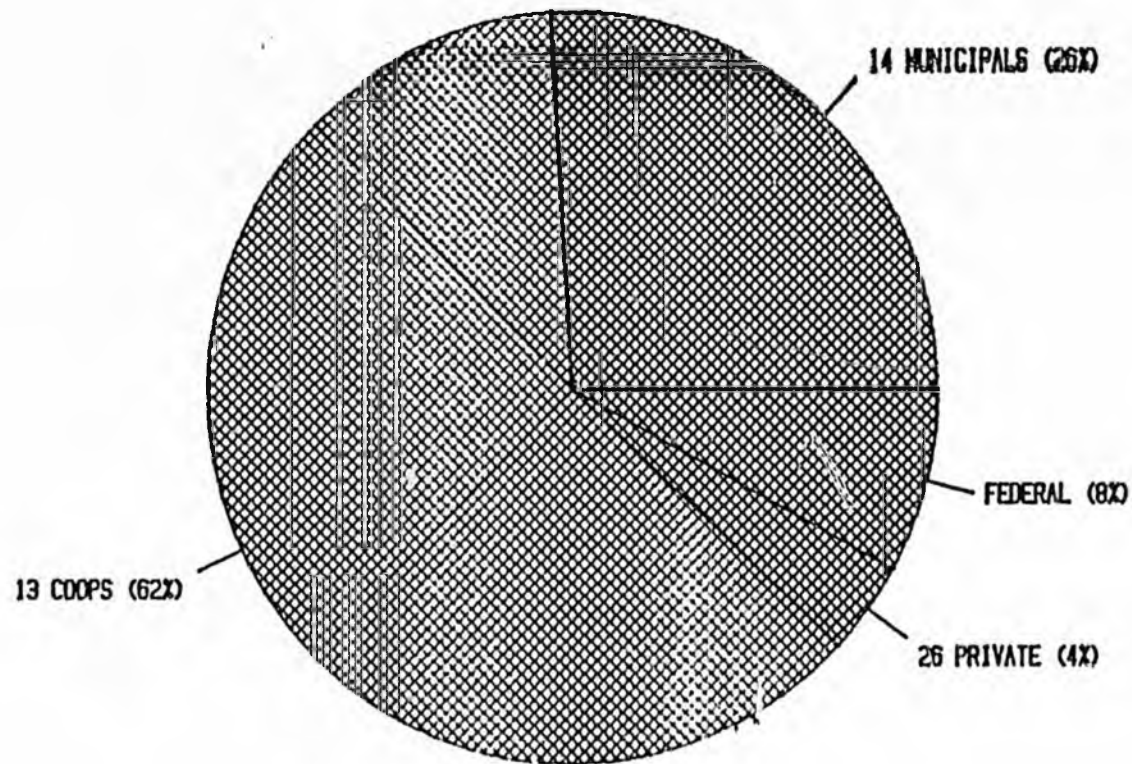
Promote, develop and advance the general prosperity and economic welfare of the people of Alaska by providing a means of constructing, acquiring, financing and operating power production facilities limited to fossil fuel, wind power, tidal, geothermal, hydroelectric, or solar energy production and waste energy conservation facilities.

- o Financing
- o Feasibility Study Funding
- o Develop, Own and Lease
- o Develop, Own, Operate and Wholesale



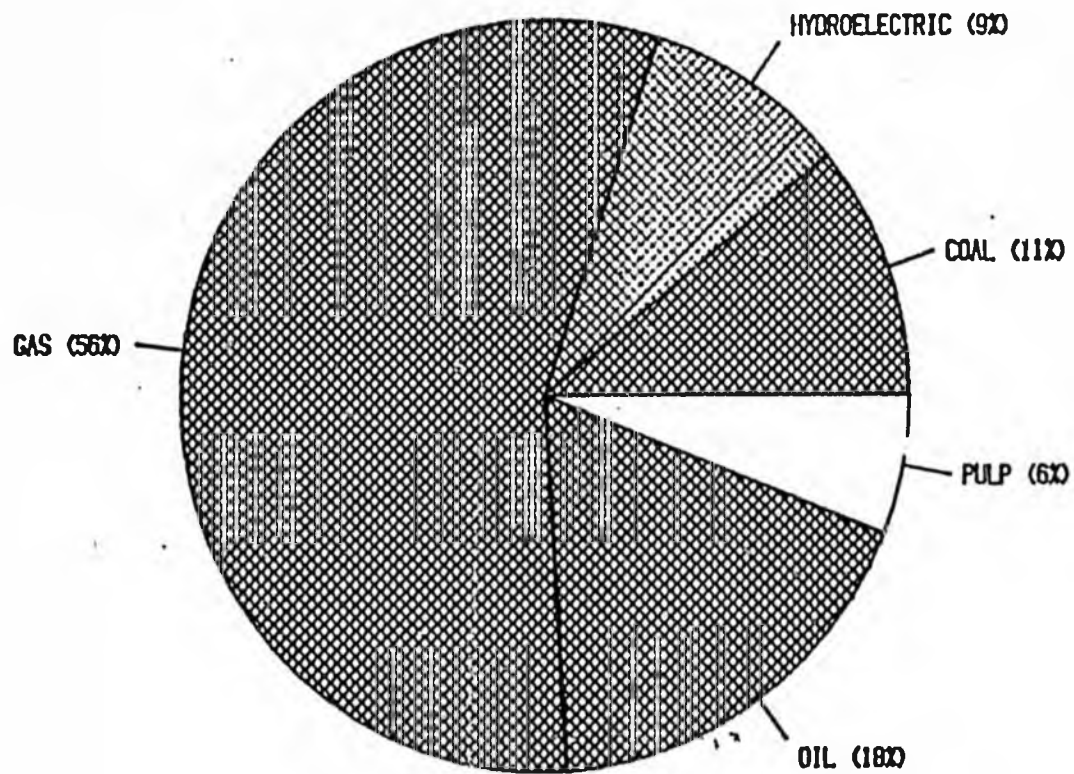
# GENERATION BY TYPE OF UTILITY

1979 UTILITY GENERATION - 3,866 GWH



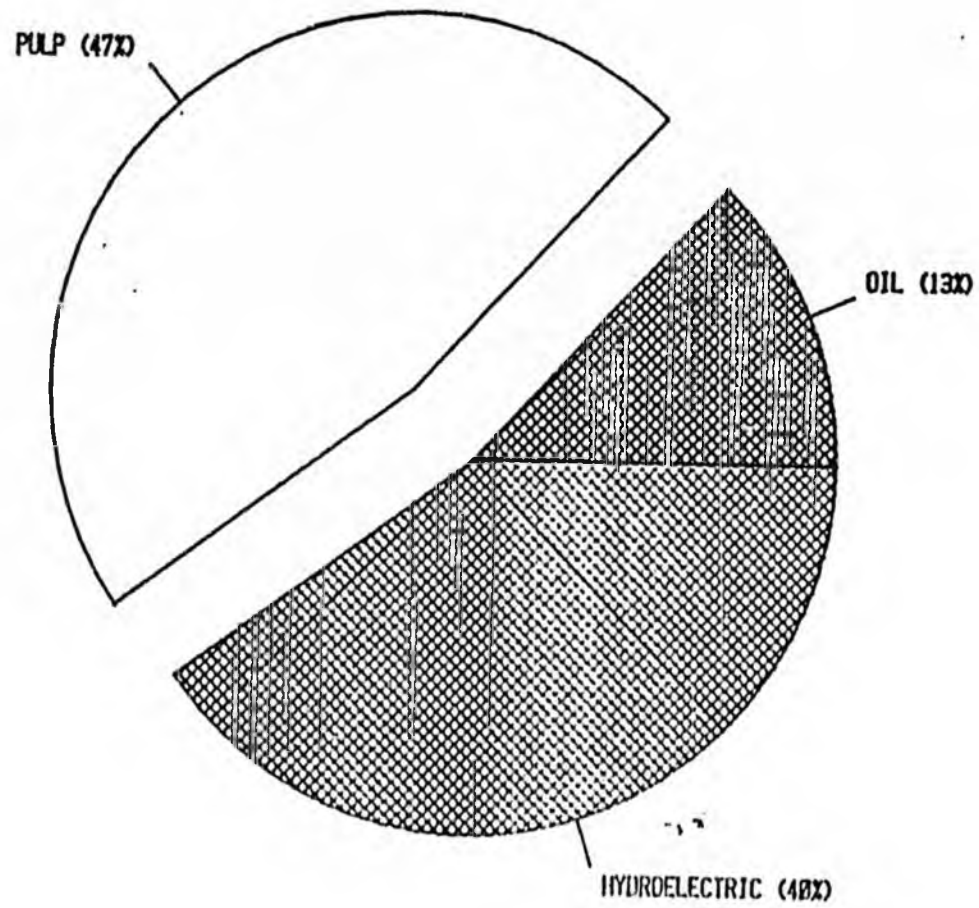
# STATEWIDE GENERATION BY ENERGY SOURCE

1979 STATEWIDE GENERATION - 4,836 GWH



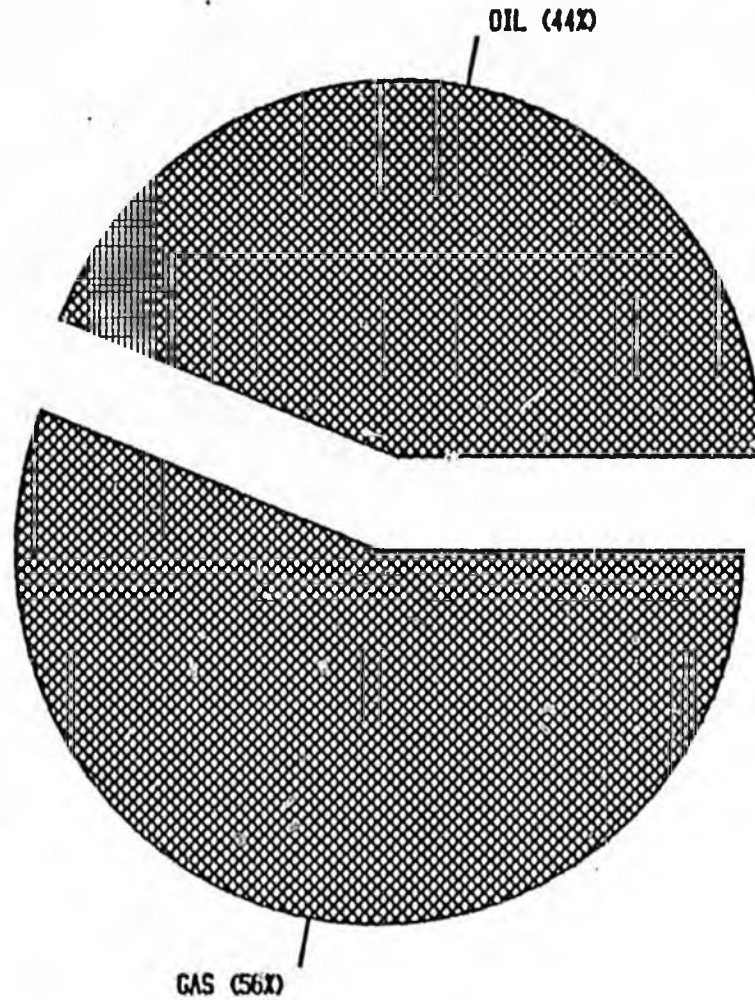
# SOUTHEAST GENERATION BY ENERGY SOURCE

1979 SOUTHEAST GENERATION - 657 GWH



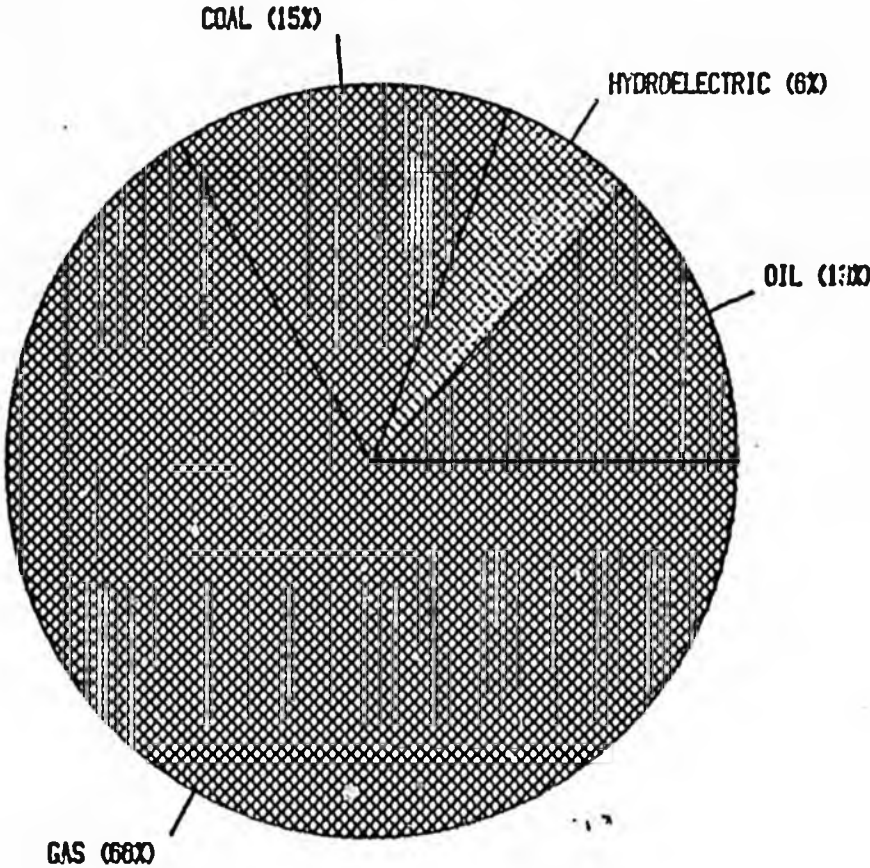
# RURAL GENERATION BY ENERGY SOURCE

1979 RURAL GENERATION - 782 GWH



# RAILBELT GENERATION BY ENERGY SOURCE

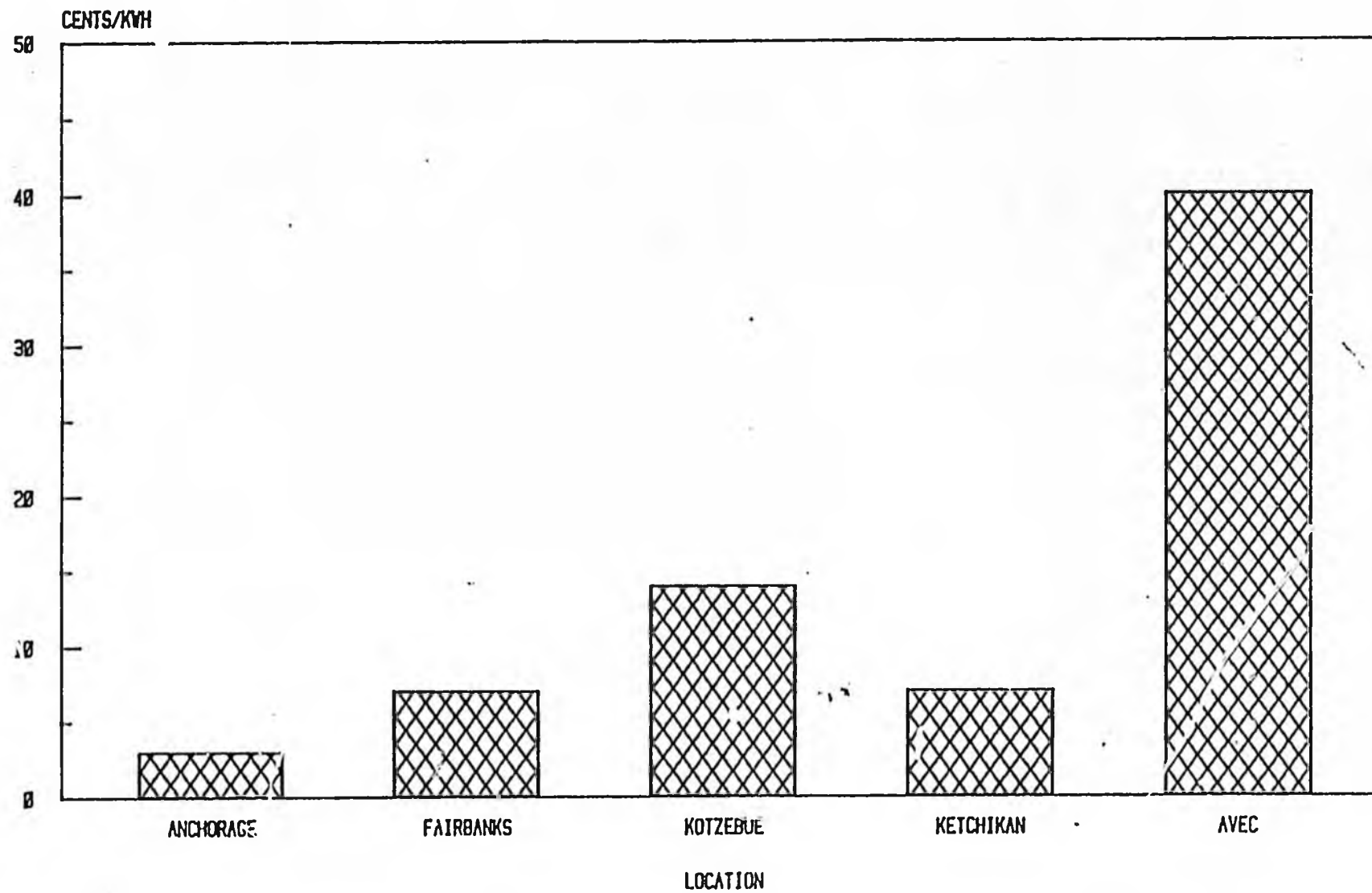
1979 RAILBELT GENERATION - 3,397 GWH



## ALASKA FUEL COST TRENDS

	<u>PREVIOUS COST (YEAR)</u>	<u>CURRENT COST (YEAR)</u>	<u>ANNUAL RATE OF INCREASE</u>
HEALY COAL	\$4.50/ton (1967)	\$14.50/ton (1979)	10%
AVEC DIESEL OIL	\$0.35/gal (1973)	\$1.40/gal (1980)	22%
COOK INLET GAS	\$0.15/mcf (1971)	\$1.50/mcf (1980)	29%

# COST OF POWER, 1980



ALASKA



• FAIRBANKS

• ANCHORAGE

• VALDEZ

• Solomon Gulch

■ Lake Elvo

• DILLINGHAM

• HOMER

• Bradley Lake

• KODIAK

• Terror Lake

• JUNE AU

• SITKA

• PETERSBURG

• WRANGEL

• Tyee Lake

• Swan Lake

• KLAWOCK

• Black Bear Lake

• KETCHIKAN

NEAR TERM PROJECTS

# SOLOMON GULCH HYDROELECTRIC PROJECT

LOCATION: Adjacent to the Alyeska Pipeline  
Terminal at Valdez

MARKET: Valdez and Glennallen, population  
approximately 6,000

TYPE: Rockfill dam at outlet of Solomon Lake,  
auxiliary dam and spillway, penstock,  
powerhouse, and 104 mile 115 KV trans-  
mission line.

OUTPUT: 12 MW installed capacity  
56,000,000 Kwh average annual energy.

CAPITAL REQUIREMENTS: \$20,000,000 remaining

# TERROR LAKE HYDROELECTRIC PROJECT

LOCATION: Kodiak Island

MARKET: Kodiak and the USCG station, service area population approximately 8,000

TYPE: Rockfill dam at outlet of Terror Lake, four small diversion dams, diversion channels and shafts, power tunnel, powerhouse, 17 miles of 69 KV transmission line.

OUTPUT: 20 MW installed capacity  
132,000,000 Kwh firm annual energy

CAPITAL REQUIREMENTS: \$110,000,000

1984-3% -48  
9 - 95m  
1.5% 151m

## SWAN LAKE HYDROELECTRIC PROJECT

LOCATION: 22 miles northeast of Ketchikan near  
Carroll Inlet.

MARKET: Ketchikan, service area population 12,600

TYPE: 190 foot high thin arch concrete dam raising  
the level of Swan Lake, with a power tunnel,  
powerhouse, port facility, switchyard and 31  
miles of 115 KV wood pole transmission lines.

OUTPUT: 22 MW installed capacity  
67,000,000 Kwh of firm annual energy

CAPITAL REQUIREMENTS: \$110,000,000 with a State  
contribution of \$18,000,000

# TYEE LAKE HYDROELECTRIC PROJECT

LOCATION: 40 miles southeast of Wrangell near  
Bradfield Canal

MARKET: Petersburg and Wrangell, service area  
population 6,400

TYPE: Lake tap of 1,370-foot elevation Lake Tyee,  
power tunnel, surge tank, powerhouse, and 83  
miles of 115 KV transmission lines.

OUTPUT: 30 MW installed capacity  
133,000,000 Kwh of firm annual energy

CAPITAL REQUIREMENTS: \$60,000,000 with a State  
contribution of \$15,000,000

# GREEN LAKE HYDROELECTRIC PROJECT

LOCATION: 10 miles southeast of Sitka on the  
Vodopad River.

MARKET: Sitka, service area population 8,800.

TYPE: 280-foot-high double-curvature, concrete-  
arched dam at the outlet of existing  
Green Lake, with a 1,910-foot-long power  
tunnel, powerhouse, access roads,  
substation and 8 miles of 69-KV wood pole  
transmission lines.

OUTPUT: 16.5 MW installed capacity  
64,900,000 KWh average annual energy

CAPITAL REQUIREMENTS Total \$62,000,000 with a  
State contribution of  
\$8,200,000. Remaining  
requirements of \$5,000,000.

## SNETTISHAM HYDROELECTRIC PROJECT

LOCATION: 28 miles southeast of Juneau on the  
Speel Arm of Port Snettisham

MARKET: Juneau and Douglas, service area  
population 23,000.

TYPE: The Crater Lake phase will include a  
lake tap, 7,800-foot-long power tunnel  
and penstock, access road and third  
generator in the existing powerhouse.

OUTPUT: 27 MW installed capacity

CAPITAL REQUIREMENTS: \$70,000,000

# POWER CREEK HYDROELECTRIC PROJECT

LOCATION: 7 miles northeast of Cordova

MARKET: Cordova, population approx. 2,500.

TYPE: 80-foot-high concrete dam, intake, 8,000 foot-long penstock, powerhouse, and 6 miles of transmission line. Run-of-river project.

OUTPUT: 5 MW installed capacity  
32,000,000 KWh average annual energy

CAPITAL REQUIREMENTS: \$51,000,000

# SCAMMON BAY HYDROELECTRIC PROJECT

LOCATION: Spring-fed stream at Scammon Bay.

MARKET: Scammon Bay, population 200.

TYPE: 8-foot rock-filled gabion dam, intake structure 3,500-foot-long penstock, and powerhouse. Run-of-river project.

OUTPUT: 150 KW installed capacity  
529,000 KWH average annual energy

CAPITAL REQUIREMENTS: \$2,100,000

## SMALL HYDROELECTRIC PROJECTS

**LOCATION:** Streams located near population centers and in areas of relatively high precipitation and topographical relief. Regional studies of small-scale hydroelectric potential have been completed for Southeast Alaska, Kodiak Island, Alaska Peninsula, Aleutian Islands, Southwest Alaska, and AVEC villages.

**TYPE:** Generally run-of-river projects providing replacement energy as available.

**OUTPUT:** Typically 100 KW to 1 MW installed capacity

**COST:** Typically \$5,000-15,000 per installed KW

# PORT LIONS HYDROELECTRIC PROJECT

LOCATION: On Port Lions River at Kizhuyak Bay  
on Kodiak Island

MARKET: Port Lions, population 250.

TYPE: 7-foot-high sheet pile forebay dam,  
upstream storage dam, 2,100 feet of  
st~~eam~~ penstock, and powerhouse.  
Run-of-river project.

OUTPUT: 180 KW installed capacity  
715,000 KWh average annual energy

CAPITAL REQUIREMENTS: \$1,500,000

Communities that exhibit the potential for economic small-scale hydroelectric development:

Chignik Bay	Atka	Ouzinkie	Kaltag
Chignik Lagoon	Nikolski	Port Lion	Kiana
Chignik Lake	False Pass	Larsen Bay	Shungnak
Perryville	Unalaska	Ambler	Togiak
Ivanoff Bay	Akhiok	Elim	Angoon
Cold Bay	Karluk	Goodnews Bay	Tenekee Springs
King Cove	Old Harbor	Grayling	Gustavus

# BLACK BEAR LAKE HYDROELECTRIC PROJECT

LOCATION: 8 miles east of Klawock on Prince of  
Wales Island

MARKET: Klawock, Craig, and Hydaburg, service  
area population 1,200 year-round.

TYPE: 28-foot bin wall and rockfill dam at outlet  
of Black Bear Lake, penstock, powerhouse,  
and 52 miles of 23 KV transmission line.

OUTPUT: 5 MW installed capacity  
22,000,000 Kwh firm annual energy

CAPITAL REQUIREMENTS: \$30,000,000

## BRADLEY LAKE HYDROELECTRIC PROJECT

LOCATION: At the head of Kachemak Bay near Homer  
on the Kenai Peninsula

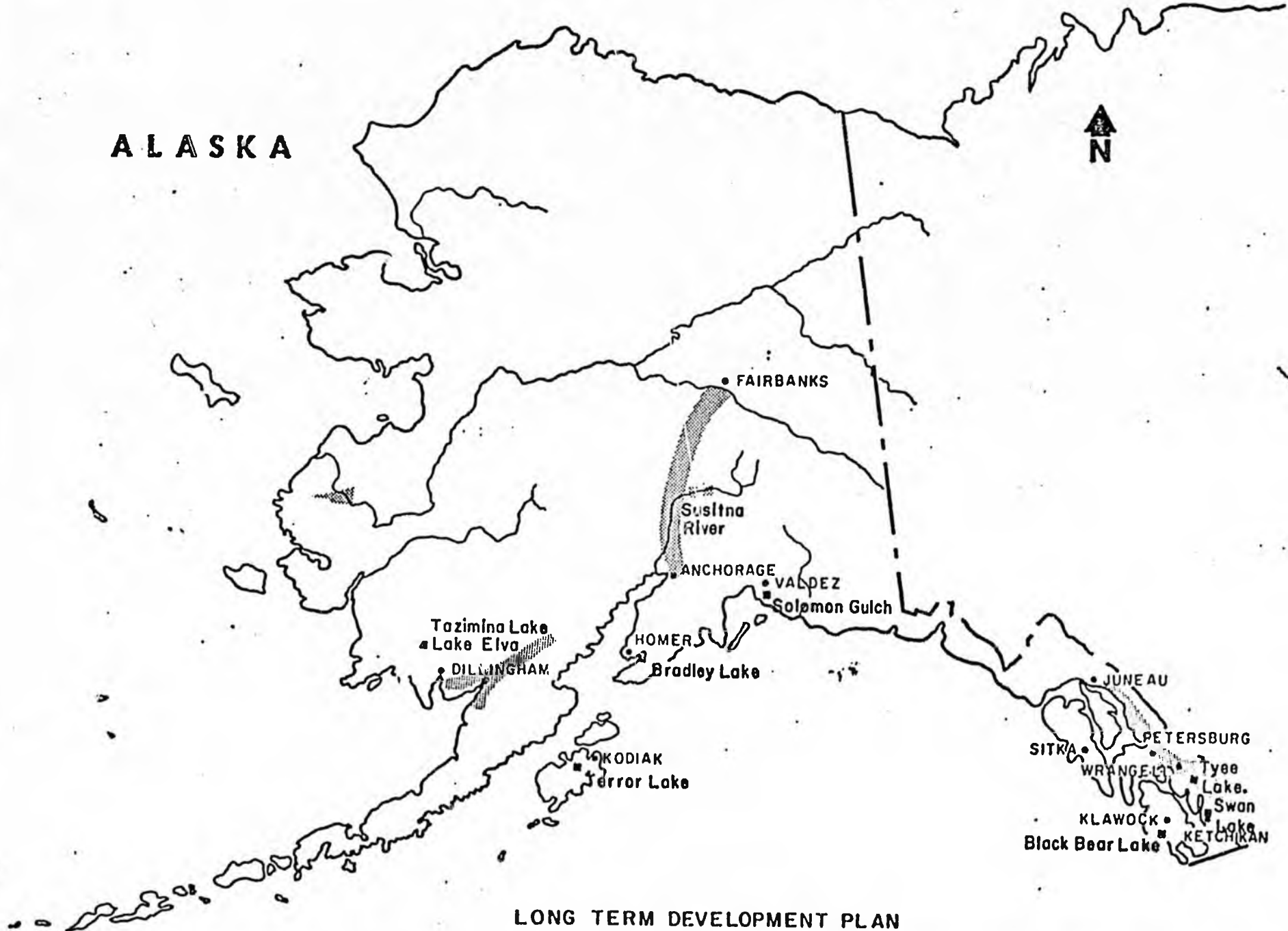
MARKET: Kenai Peninsula and perhaps Anchorage.  
Kenai Peninsula population 22,000.

TYPE: 100-foot concrete gravity dam at the outlet  
of Bradley Lake, diversion channels, lake  
tap, power tunnel, underground powerhouse,  
switchyard, and 10 miles of 115 KV wood pole  
transmission line.

OUTPUT: 70 MW installed capacity  
306,000,000 Kwh firm annual energy

CAPITAL REQUIREMENTS: \$200,000,000

# ALASKA



LONG TERM DEVELOPMENT PLAN

# TAZIMINA HYDROELECTRIC PROJECT AND INTERTIE

LOCATION: North of Lake Iliamna on the west side  
of Cook Inlet

MARKET: Fifteen communities in the Bristol Bay  
Region

TYPE: Earthfill 38-foot forebay dam, earthfill  
45-foot storage dam, penstock, powerhouse,  
access road and 181 miles of 138 KV trans-  
mission line.

OUTPUT: 18 MW installed capacity (first stage)  
79,000,000 Kwh firm annual energy

CAPITAL REQUIREMENTS: \$80,000,000

# WEST CREEK HYDROELECTRIC PROJECT

LOCATION: West Creek in the vicinity of Skagway

MARKET: Skagway and Haines, market area  
population 2,400.

TYPE: 107-foot-high concrete dam, 11,000-foot-  
long power tunnel, surge tank, powerhouse  
and transmission facilities.

OUTPUT: 5.4 MW installed capacity  
27,000,000 KWh average annual energy

CAPITAL REQUIREMENTS: \$55,000,000

## SOUTHEAST INTERTIE

LOCATION: Southeast Alaska

MARKET: Juneau, Petersburg, Wrangell, Ketchikan  
and intermediate communities

TYPE: Interconnection of major hydroelectric  
facilities (Snettisham, Tyee and Swan)  
and adjacent load centers.

PURPOSE: Reliability and exchange of economy  
energy.

# RAILBELT INTERTIE

LOCATION: Southcentral Alaska

MARKET: Anchorage and Fairbanks

TYPE: Interconnection of existing systems at  
138 KV

PURPOSE: Reserve sharing and economy energy  
exchange

CAPITAL REQUIREMENTS: \$55,000,000

# SUSITNA HYDROELECTRIC PROJECT

LOCATION: Upper Susitna River NE of Talkeetna between Anchorage and Fairbanks

MARKET: Fairbanks, Anchorage, Matanuska Valley, Kenai Peninsula

TYPE: 810-foot rockfill dam and powerhouse at Watana (first stage)

635-foot concrete gravity dam and powerhouse at Devil Canyon (second stage)

364 miles 345 KV transmission line

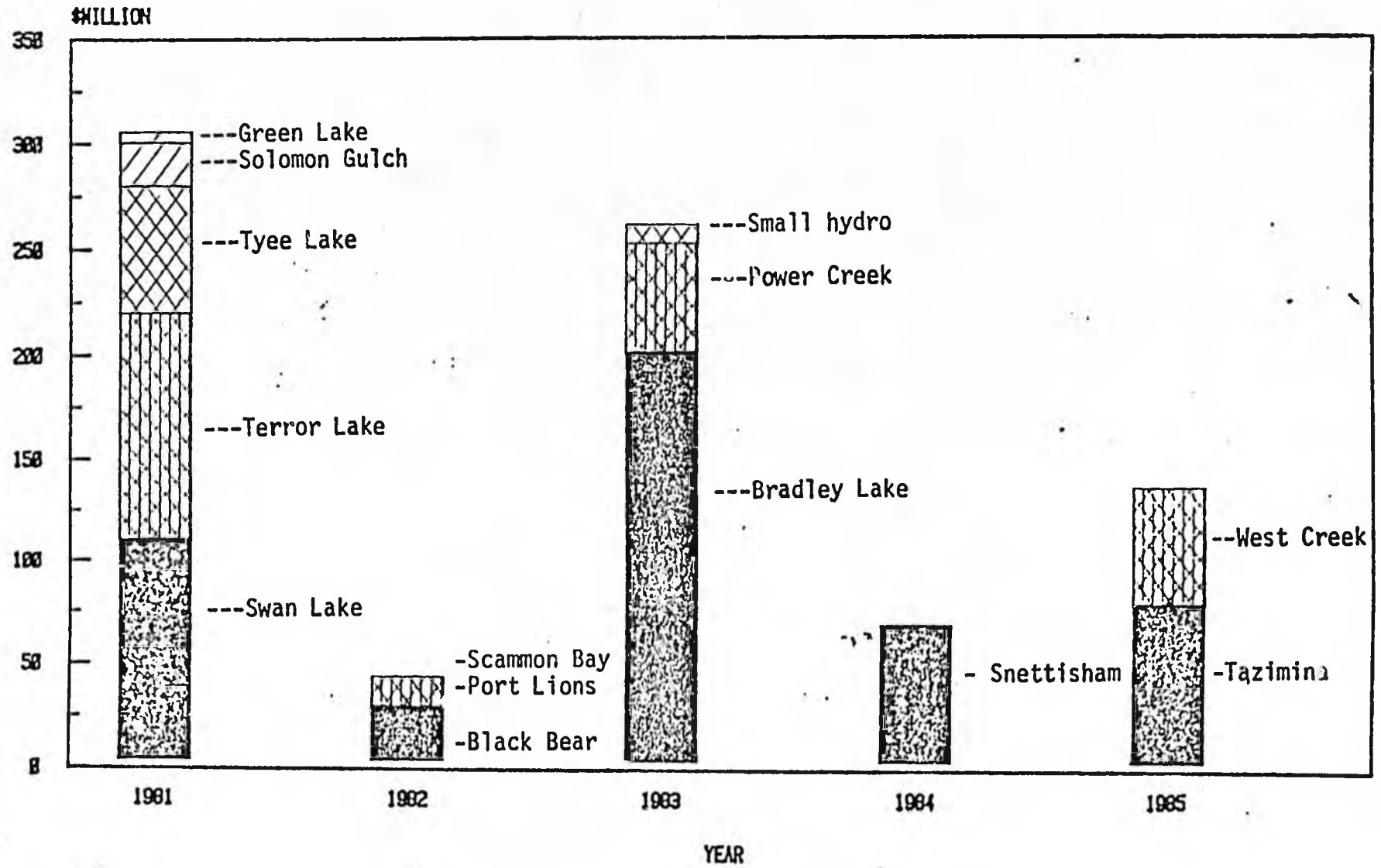
FIRST STAGE OUTPUT: 700 MW installed capacity  
3,100,000,000 Kwh firm annual energy

ULTIMATE OUTPUT: 1,392 MW installed capacity  
6,100,000,000 Kwh firm annual energy

COST ESTIMATE (October 1978): \$ 2.5 billion

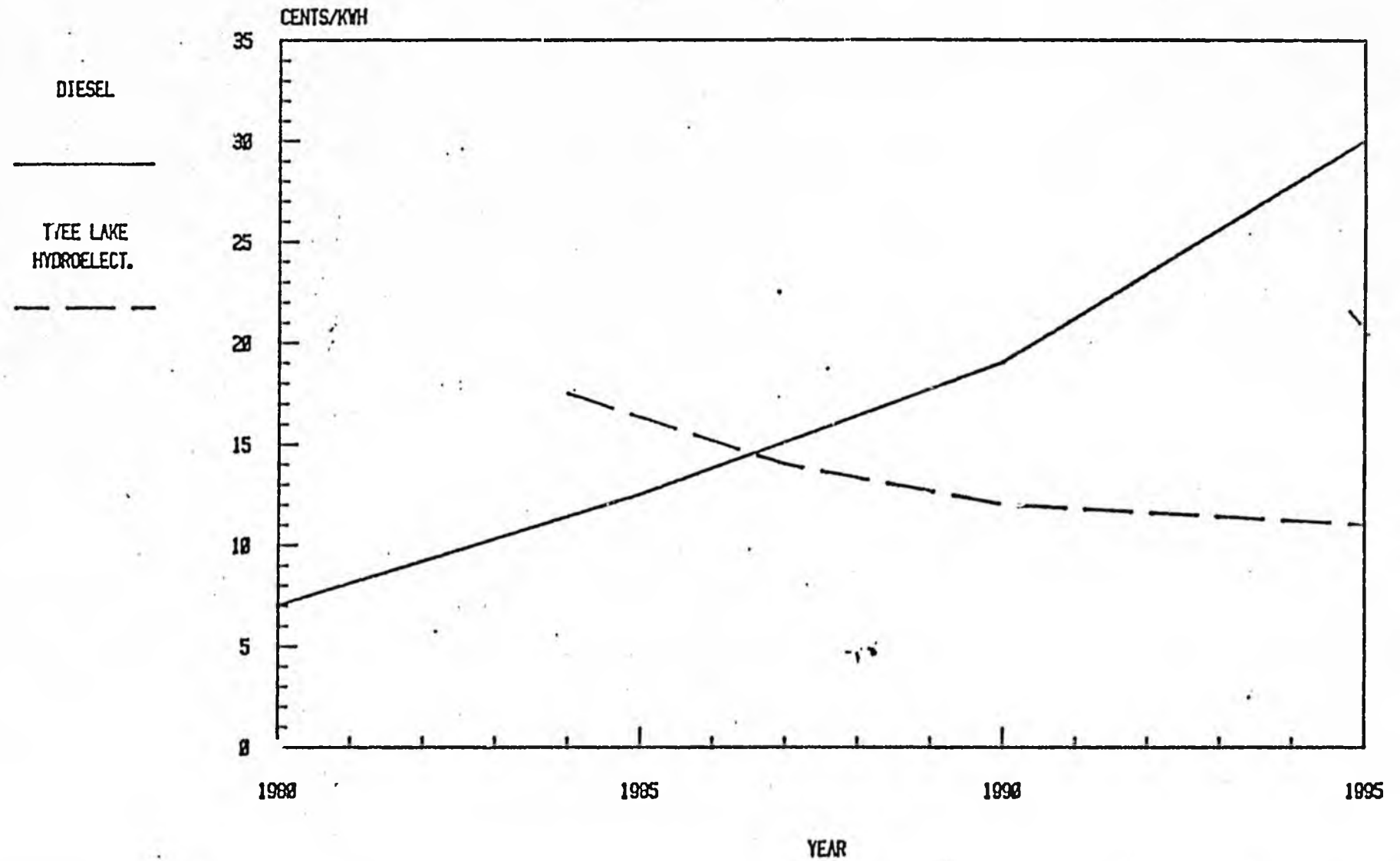
# ESTIMATE OF CAPITAL REQUIREMENTS

(EXCLUDING SUSITNA)



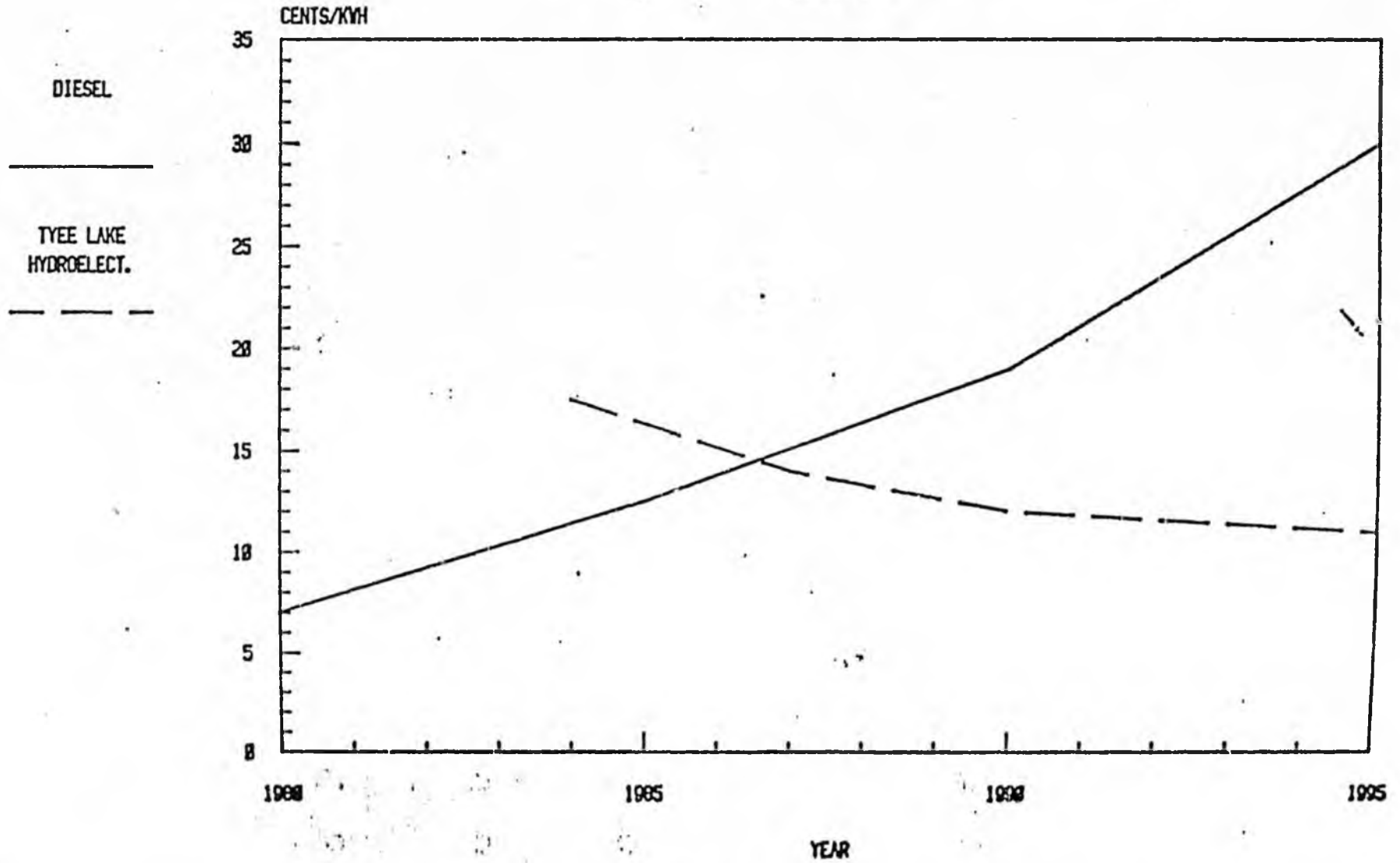
# TYPICAL COST OF POWER OUTLOOK

BUSBAR COST



# TYPICAL COST OF POWER OUTLOOK

BUSBAR COST



## FINANCING ALTERNATIVES

- POWER AUTHORITY REVENUE BONDS
- STATE GENERAL OBLIGATION BONDS
- REVENUE BONDS WITH STATE GUARANTEES
- STATE GENERAL FUND LOAN  
(EQUITY INVESTMENT)
- STATE GENERAL FUND APPROPRIATION
  - debt service payment
  - reduction of bondable costs
- NON-STATE ASSISTANCE
  - Federal (REA & FFB)
  - CFC

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Minutes copy

ALASKA POWER AUTHORITY

# ALASKA POWER AUTHORITY

## 1980 YEAR-END STATUS REPORT

About the Power Authority

The Power Project Loan Fund

The Power Production Cost Assistance Program

The Planning and Development Process

The Overall Power Development Situation

Sources of Generation

Economic and Financial Feasibility

Project Status Summary

# ALASKA POWER AUTHORITY

## ALASKA POWER AUTHORITY

### 1980 YEAR-END STATUS REPORT

#### About the Power Authority

The Power Authority is a public corporation made up of a five member Board of Directors who are appointed by the Governor and approved by the Legislature. Its offices are in Anchorage where a staff of ~~seventeen~~ conduct the day-to-day business of the Authority. The Power Authority was initially staffed in January 1978. The present members of the Board of Directors are Mr. Charles Conway, Chairman; Mr. Arnold Espe, Vice Chairman; Mr. Robert Weeden; Mr. Thomas Kelly; and Commissioner Charles Webber, an ex officio member.

*low cost* The role of the Power Authority is to identify, evaluate and develop electrical power production facilities utilizing the most appropriate technology from among those that are commercially available (except nuclear power generation). The Power Authority's degree of involvement varies depending upon local desires and capabilities. While power project facilities recommended for development can be financed, constructed, owned and operated by the Authority, in many cases involvement is confined to financing alone, or just to the early phases of project evaluation and development.

By its nature as a public corporation, the Power Authority is eligible subject to IRS regulations to sell bonds whose interest to bondholders is tax free. This status lowers the cost of debt capital.

Complimenting the Authority's power development role are two specific programs that it administers, the Power Project Loan Fund and the Power Production Cost Assistance Program.

#### The Power Project Loan Fund

The Legislature has appropriated to the Power Authority \$33,805,000 specifically for loans for power project development since 1978. Loans to individual utilities approved to date include:

1. Alaska Electric Light & Power Company in Juneau for Salmon Creek and distribution system improvements - \$1,500,000.
2. Ketchikan Public Utilities for the Swan Lake Project - \$21,850,000.
3. Thomas Bay Power Commission for the Lake Tye Project - \$180,000.
4. Kodiak Electric Association for the Terror Lake Project - \$3,150,000.
5. Kodiak Electric Association for the Port Lions Project \$250,000.

## ALASKA POWER AUTHORITY

6. Iliamna/Newhalen Electric Cooperative for diesel generation and system development - \$300,000.
7. City of Wrangell for diesel generator overhaul - \$45,000.
8. City of King Cove for diesel generator purchase - \$200,000.
9. City of Akutan for purchase of a 200 KW hydro turbine generator - \$125,641.

### The Power Production Cost Assistance Program

The Legislature in 1980 created a separate fund from which to pay a portion of the power production costs of eligible electric utilities. Assistance is provided to a utility if its actual power production costs exceed a certain threshold level established by a legislatively mandated formula.

The program funding was reduced by Governor Hammond from \$2.851 million to \$1.451 million. The Alaska Public Utilities Commission determines utility eligibility and power production costs, and it determines state assistance per kilowatt-hour of sales for individual utilities. The Power Authority makes disbursements of assistance funds to eligible utilities based upon power production assistance determined by the Commission and statements of sales to eligible customers submitted by the eligible utilities. The program became operational in late October of 1980. The reduced funding of the program is currently estimated to be sufficient to provide full assistance to eligible utility customers until April of 1981. Unless supplemental funding of the program is provided by April 1981, the level of assistance will be reduced. The program will be terminated unless FY'82 funding is appropriated. To date nine utilities, serving over 60 communities, have applied for assistance.

### The Planning and Development Process

For certain projects, legislation dictates a multi-step process leading to power facility construction. The Authority first performs a reconnaissance study to assess the electrical energy needs of a community or region and to identify the power production alternatives available to satisfy those needs. The reconnaissance study serves as the basis for recommending more detailed data collection activities, resource assessments or detailed feasibility studies of one or more specific power project alternatives. Reconnaissance study results are used to guide Power Authority budget requests and reports are provided to the Legislature, the Administration and to the communities involved.

As a subsequent step, the Authority performs feasibility studies to obtain detailed information and analyze the technical, economic and environmental aspects of a particular project or program previously recommended in a reconnaissance study. In identifying the preferred project or program for a community or region, the Authority considers all available energy alternatives in terms

## ALASKA POWER AUTHORITY

of cost, technical suitability, environmental impact, and local preferences. Feasibility studies are accomplished at a level of detail comparable to that required for license applications submitted to the Federal Energy Regulatory Commission.

Accompanying the feasibility report is a plan of finance that compares project financing alternatives and recommends the most appropriate means to insure project financing while minimizing state assistance. When state financial assistance is recommended, the plan of finance identifies the estimated value of the state assistance, whether it comes in the form of a subordinated loan, loan guarantees, equity contribution or other means.

The Power Authority submits feasibility reports and accompanying plans of finance to the Legislature. Concurrently the reports are reviewed by the Division of Budget and Management, and this review is also submitted to the Legislature. The Authority cannot proceed with advanced engineering or design of a proposed new project until the Legislature enacts law authorizing the project. This sequential development process of reconnaissance study, feasibility study, finance plan, Division of Budget and Management review and legislative authorization is required for new projects that will generate more than 1.5 megawatts of power and that either (1) require a state appropriation or (2) is based on a plan of finance that requires the issuance of general obligation bonds or other pledge of the credit of the state. Specifically excepted from this criterion are certain projects which the Legislature has already acted upon and which are identified in Section 48 of HCS CSSB 438.

### The Overall Power Development Situation

#### Sources of Generation

In 1979, the last year for which data has been compiled, statewide electrical generation totalled 4.8 billion kilowatt hours. There were five sources of that energy: gas (56%), oil (18%), coal (11%), hydroelectric (9%) and wood pulp (6%). The state is fortunate to have its own ample supplies of each of these energy sources. While all are present, however, some are more vulnerable than others to cost escalation and federal regulation. It has been the general recommendation of the Power Authority for Alaska to gradually move away from energy sources over which the state has relatively little control with respect to supply and/or price. This equates to a preference for those energy sources that are relatively insulated from inflation, from extreme competition, and from price pressure in lower 48 or international markets. Specifically, these are hydroelectric, coal, and perhaps wind and wood depending on technological advances. The actual preferred energy source varies among localities and over time, being a function of the extent of energy demand, transportation and fuel costs, local expertise and the proximity to energy sources.

#### Economic and Financial Feasibility

The Authority has found that while life cycle economic cost analyses often identify one generation alternative as the most preferred, financing constraints often argue against the most cost effective project. This is unfortunate because the project selected on the basis of short-term financing considerations often will result in greater costs over the long run.

## ALASKA POWER AUTHORITY

Despite the financing problem, the longer term perspective of a life cycle economic analysis often shows the hydroelectric project to be clearly superior to the diesel generator or oil or gas turbine. This situation suggests an important and timely role for state intervention. From the perspective of insuring long-term, stable priced and secure electrical power, the state can provide a mechanism to alleviate the immediate financing problem and thereby encourage development of the most cost effective long term solutions. The means for this state intervention include the issuance of revenue bonds of the Power Authority which may be guaranteed or partially guaranteed by the state; the issuance of general obligation bonds of the state; leveraged leasing; appropriations from the general fund for loans, equity investment, or debt service payment; and any combination of the above financing arrangements.

The purpose of the state assistance in whichever form is to lower the cost of borrowed capital for construction of projects and the cost of energy to consumers in the critical first years of project operation. It will also assist development of renewable energy projects and permit stable economic development.

### Project Status Summary

Following is a summary of current Power Authority activities and the status of various power projects. Included is information on the location of the project or study, current status, size of project (if applicable), and the Power Authority's role. This role varies among several functions:

- \* Grant and loan administration
- \* Program management of reconnaissance level studies
- \* Revenue bond or other financing
- \* Project management where a specific project is in planning and development
- \* Technical assistance

# ALASKA POWER AUTHORITY

Project/Study	Location	Status	Size	Power Authority Role
AEL&P Transmission Improvements	<i>elect. heat via heat pumps</i> Juneau	Completed	N/A	Power Project Loan
Akutan Hydro <i>Twimail assist, loans</i>	Akutan	Feasibility Study and Preliminary Design Complete	190 KW	Power Project Loan and Technical Assistance
Port Lions Hydro ‡	Kodiak Island	Design Underway	200 KW	Power Project Loan
Swan Lake Hydro ‡	Ketchikan	Under Construction	22 MW	Power Project Loan and Construction Financing
Tye Lake Hydro	Petersburg, Wrangell, and Kake	Final Design, License Pending	20 MW	<u>Project Management</u>
Diesel Generators	Iliamna/ Newhalen Wrangell King Cove		N/A	Power Project Loan Power Project Loan Power Project Loan
Salmon Creek Hydro Rehabilitation	Juneau		N/A	Power Project Loan
Black Bear Lake Hydro	Klawock, Craig, and Hydaburg	Detailed Feasibility Studies Underway	5 MW	<u>Project Management</u>
Wood Waste Generation	Hoonah	Feasibility Assessment Underway	2.7 MW	Program Management
Haines Hydropower	Haines, Skagway	Feasibility Assessment Complete	2.5 - 5.4 MW	Program Management
Susitna Hydro	Fairbanks, Anchorage, Kenai Peninsula, Glennallen, and Valdez	Detailed Feasibility Studies Underway	1,500 MW	Project Management

## ALASKA POWER AUTHORITY

Project/Study	Location	Status	Size	Power Authority Role
Railbelt Intertie	Fairbanks, Anchorage	Detailed Feasibility Studies and Route Selection Underway	N/A	Project Management
Terror Lake Hydro	Kodiak	Final Design, License Pending	20 MW	Power Project Loan and Construction Financing
Lake Elva Hydro	Dillingham	Detailed Feasibility Studies Underway	1.5 MW	Project Management
Brevig Mission Distribution System	Brevig Mission	Work in Progress	N/A	Grant Administration
District Heating System	Fairbanks	Feasibility Study Underway	N/A	Grant Administration
Nushagak Waste Heat Study	Dillingham	Design Pending	N/A	Grant Administration
Wood-Fired Heating System	Noatak	Design Underway	N/A	Grant Administration
Geothermal Development	Kotzebue	Site Investigations Underway	N/A	Program Management (RSA to DEPD)
Geothermal Development	Unalaska	Site Investigations Underway	N/A	Program Management (RSA to DEPD)
<u>Reconnaissance Studies</u>	Tanana, Cordova, Sitka, Angoon, Shungnak, Kiana, Ambler, Scammon Bay, King Cove, Goodnews Bay, Togiak, Grayling, Kaltag, Savoonga, White Mountain, Elim, Sand Point, Akhiok, Larsen Bay, Old Harbor, Ouzinkie, Russian	Studies Underway	N/A	Program Management

## ALASKA POWER AUTHORITY

Project/Study	Location	Status	Size	Power Authority Role
Reconnaissance Studies (continued)	Mission, Sheldon Point, Hughes, Buckland, Koyukuk, Crooked Creek, Chuathbaluk, Stony River, Sleetmute, Red Devil, Takotna, Telida, and Nikolai			
Waste Heat Demonstration	Rural Villages	Site Selection	N/A	Project Management
Northwest Alaska Coal Assessment	Kobuk River Valley, Seward Peninsula, Norton Sound Coast, Point Hope, and Point Lay	Feasibility Assessment Underway	N/A	Program Management
Wind Power Demon- stration	Unalakleet	Pre-construc- tion Activities Underway	N/A	Program Management (RSA to DEPD)
Wind Power Demon- stration	Skagway	Pre-construc- tion Activities Underway	N/A	Program Management (RSA to DEPD)
Power Production Cost Assistance	AVEC, THREA, other Villages	Program Underway	N/A	Program Administration
Tazimina River Hydro	Bristol Bay	Stream Gauging	18 MW	Project Management
Reconnaissance Studies	Nome, Kotze- bue, Bethel, Dillingham, Kake, Angoon, Hoonah, Klawock Haines, and Skagway	Studies Com- plete	N/A	Program Management
Solomon Gulch Hydro	Valdez, Glennallen	Under Construction	12 MW	Construction Financing

# Alaska State Legislature

BETTYE FAHRENKAMP, CHAIRMAN  
VIC FISCHER, VICE-CHAIRMAN  
BRAD BRADLEY  
DICK ELIASON  
DON GILMAN  
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## Senate

### Committee on Resources

February 9, 1981  
1:30 p.m.

Senate Finance  
5th Floor - Capitol

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#### MEMBERS PRESENT

SENATOR FAHRENKAMP  
SENATOR BRADLEY  
SENATOR ELIASON  
SENATOR GILMAN  
SENATOR MULCAHY  
SENATOR FISCHER

#### HOUSE MEMBERS PRESENT

REPRESENTATIVE ZHAROFF  
REPRESENTATIVE HAUGEN  
REPRESENTATIVE BETTISWORTH  
REPRESENTATIVE BARNES  
REPRESENTATIVE VASKA  
REPRESENTATIVE SUTCLIFFE

#### OTHER PRESENT

SENATOR DANKWORTH

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The Committee was briefed by Eric Yould, Executive Director, Alaska Power Authority and Dave Hutchens, Executive Director, Alaska Rural Electric Cooperative Association.

Eric Yould, stated that the purpose of the Power Authority is to promote, develop and advance the general prosperity and economic welfare of the people of Alaska by providing a means of constructing, acquiring, financing and operating power production facilities. The role of the Authority is to identify, evaluate and develop electrical power production facilities utilizing the most appropriate technology (except for nuclear power). The Authority defers as much control as possible to local communities in order to respond to local desires and capabilities. Power facilities recommended for development can be financed, constructed, owned and operated by the Authority. In many cases involvement is confined to financing, project evaluation or development.

Mr. Yould further stated that the Authority administers two programs. The Power Projects Loan Fund issues loans to individual utilities for power project development. The Power Production Assistance Program, pays a portion of the power production cost of eligible electric utilities if their actual power production costs exceeds a certain threshold level. The Assistance Program became operational in late

October of 1980 and to date nine utilities servicing over 60 communities have applied for assistance.

Mr. Yould stated that in 1979 statewide electrical generation totalled 4.8 billion kilowatt hours. There were five sources of that energy: gas (56%), oil (1%), coal (11%), hydroelectric (9%) and wood pulp (6%). It has been the recommendation of the Authority that Alaska gradually move away from energy sources which the state has relatively little control over supply and/or price. This is one of the reasons the Authority has been pursuing hydroelectric. Although in the early years the cost is high, over the long term it is less expensive because it is relatively insulated from inflation.

Dave Hutchens stated that the question often asked is why build Susitna? why not a series of smaller hydroelectric projects in the area? The reason for Susitna is that in Central Alaska other resources are not available. The streams that could be used are heavily populated with fish and small projects are more expensive. The purpose of Susitna is not for new capacity to handle population growth but to replace capacity now fired by fossil fuels. He stated that the average price of gas is 35¢ per mcf and predicted that it would reach \$4.50 per mcf in the relatively near future. He quoted Dr. Wm Wood: "Susitna is not for development it is for survival." He indicated that his Association is in favor of Susitna but their main function is to provide the electric service needs of the State.

In response to the question, what type of controls are on the Authority? Mr. Yould stated that the legislature maintains control through oversight of projects because legislation has to be enacted prior to initiating a project.

In response to the question, what is the time-table for Susitna? Mr. Yould, stated a contract was let January 1, 1980 for the field studies. In March 1981, a preliminary report will be issued to the legislature with their recommendation to go forward with further field studies. In March 1982, a report will be issued to the legislature of findings from field studies. If approved by the legislature, the Authority will then make application to FERC. Once the license is received from FERC, it will take 7 years to construct the Watana portion of the project.

In response to the question, are alternative energy sources to Susitna being considered? Mr. Yould, stated that under FERC regulations they are required to look at all of the alternatives. Under SB 25 there is an escrow account set up for a number of projects around the state. If a project is not feasible, the funds are available for alternative energy sources in that particular area.

In response to the question, is the Power Authority required

to have back-up diesel generation for hydro projects?  
Mr. Yould stated it is required to have back-up diesel  
generation capabilities.

The Committee adjourned at 3:25 p.m.

# Where Energy Costs Hit Hardest

**E**NERGY COSTS, after outpacing overall inflation in 1980, will continue escalating in 1981 as a result of President Reagan's decision to end controls on oil and fuel prices.

That's bad news for consumers, because a study by *USN&WR's* Economic Unit shows that energy costs shot up

18.1 percent in 1980, adding 1.9 to the overall 12.4 percent rate of inflation.

Hardest hit were homeowners and businesses that used heating oil. The Economic Unit study found that heating-oil prices jumped 20.2 percent to an average of \$1.07 a gallon.

Gasoline prices rose 18.3 percent to an average of \$1.23 a gallon. Electricity was 17.4 percent more expensive, increasing to \$30.97 per 500 kilowatts. Natural gas had the smallest rise—14.6 percent.

The impact of higher energy costs varied widely across the country. The average price of a gallon of gasoline ranged from a low of \$1.16 in Houston

and Kansas City to a high of \$1.41 in Honolulu.

The price of 500 kilowatts of electricity ranged from \$9.79 in Seattle, which gets much of its power from cheap hydroelectric plants, to \$52.07 in New York City, which is more dependent on oil-fired power plants.

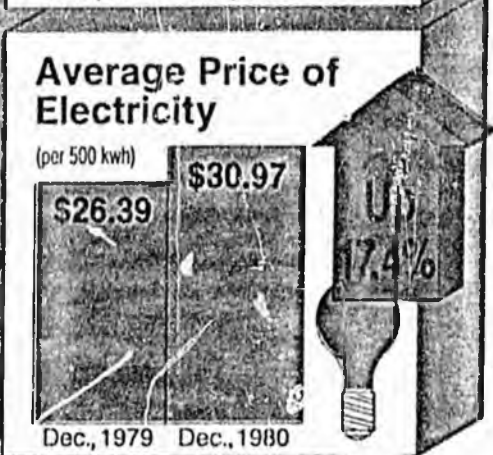
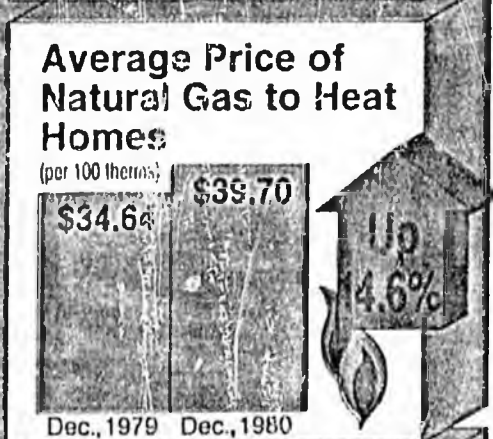
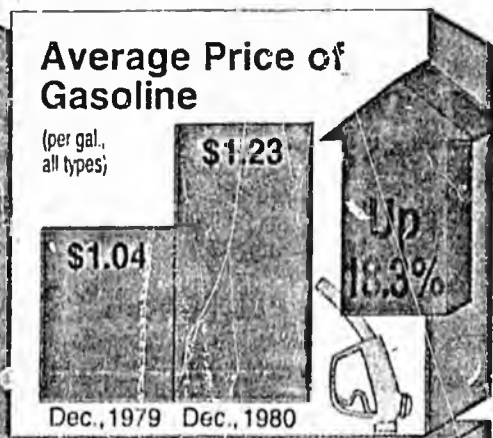
Higher gasoline and heating-oil prices stemming from President Reagan's decontrol action may not be the only government-related jolt to consumers in 1981. The President is under pressure to ask Congress for approval to end price ceilings on natural gas, a move that would mean higher utility bills for those who heat with gas. □

## What's Happened to Prices in 27 Areas

Metropolitan Area	Gasoline		Natural Gas		Electricity	
	(per gal.) Dec., 1980	Change in Past Year	(per 100 therms) Dec., 1980	Change in Past Year	(per 500 kwh) Dec., 1980	Change in Past Year
Anchorage	\$1.31	+18.0%	\$ 19.62	+ 2.7%	\$21.44	- 1.8%
Atlanta	\$1.25	+19.0%	\$ 35.52	+ 4.2%	\$25.26	+11.1%
Baltimore	\$1.24	+18.1%	\$ 43.36	+11.8%	\$31.81	+13.3%
Boston	\$1.23	+19.4%	\$ 56.00	+16.3%	\$38.93	+26.6%
Buffalo	\$1.25	+14.7%	\$ 42.03	+ 9.5%	\$26.56	+ 9.1%
Chicago	\$1.28	+15.3%	\$ 38.47	+ 9.9%	\$35.13	+31.2%
Cincinnati	\$1.20	+17.6%	\$ 37.07	+16.8%	\$23.47	+ 5.9%
Cleveland	\$1.20	+17.6%	\$ 35.72	+ 6.9%	\$32.46	+ 6.9%
Dallas— Fort Worth	\$1.17	+20.6%	\$ 35.48	+31.0%	\$24.77	+ 4.7%
Denver	\$1.17	+15.8%	\$ 49.23	+54.7%	\$35.14	+28.2%
Detroit	\$1.28	+17.4%	\$ 39.60	+16.5%	\$33.16	+17.0%
Honolulu	\$1.41	+2.6%	\$139.72	+19.7%	\$44.88	+45.5%
Houston	\$1.16	+13.6%	\$ 38.93	+16.6%	\$26.88	+ 3.6%
Kansas City	\$1.16	+13.7%	\$ 30.11	+28.8%	\$28.20	+ 5.9%
Los Angeles	\$1.26	+16.7%	\$ 31.23	+15.4%	\$34.17	+21.3%
Miami	\$1.22	+17.3%	\$ 45.43	No change	\$29.35	+11.0%
Milwaukee	\$1.17	+15.8%	\$ 43.02	+19.0%	\$23.25	+12.0%
Minneapolis— St. Paul	\$1.20	+14.3%	\$ 37.58	+21.5%	\$27.19	+14.5%
New York	\$1.27	+17.6%	\$ 61.08	+15.2%	\$52.07	+21.5%
Philadelphia	\$1.23	+17.1%	\$ 54.07	+32.9%	\$35.02	+12.7%
Pittsburgh	\$1.25	+20.2%	\$ 35.47	+13.5%	\$28.96	+ 5.8%
Portland, Oreg.	\$1.23	+17.1%	\$ 53.42	+ 7.7%	\$19.26	+11.5%
San Diego	\$1.26	+17.8%	\$ 31.49	+ 1.8%	\$49.02	+70.0%
San Francisco— Oakland	\$1.20	+18.3%	\$ 30.98	+23.3%	\$26.78	+37.8%
Seattle	\$1.25	+16.8%	\$ 54.02	+12.1%	\$ 9.79	+ 5.5%
St. Louis	\$1.17	+13.6%	\$ 40.81	+ 6.2%	\$23.23	- 4.4%
Washington, D.C.	\$1.27	+24.5%	\$ 47.53	+10.5%	\$30.80	+10.1%

Note: Propane instead of natural gas used in Honolulu.

USN&WR chart—Based on U.S. Dept. of Labor



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