

ALASKA LEGISLATURE SPECIAL COMMITTEE / SUBJECT FILE 8672

1225 SCOMM 46: HOUSE SPEC. COMMITTEE ON OIL AND GAS 1985-86

residential gas bills of Enstar customers should rise less than one-half of 1 percent as a result of the state action.

And, this is not to say that Cook Inlet gas and electric rates will not continue to rise. Chugach and Enstar will eventually pay more for natural gas than they do today, regardless of this action by the state.

Enstar is already paying \$2.05 per mcf for about 30 percent of the gas it purchases for resale to the consumer. By about 1991, Enstar's cheap gas supplies will have been totally consumed.

Chugach will completely exhaust its cheap gas supplies by 1995. If, how and when Chugach blends in higher priced gas will determine consumer prices. But, we have no doubt that the new gas supplies will cost more and that consumer bills will reflect this additional expense.

I fully appreciate the desire to keep consumer gas and electric prices as low as possible statewide. However, if we embrace the notion of trying to maintain the status quo of currently low energy prices, then we are looking at a situation that is going to require an ever-increasing level of subsidy. The market value of gas is without doubt higher today than the long-term contract prices reflect.

If the status quo is desired, there are solutions other than not enforcing the leases. An in-kind, long-term sale of royalty gas could be considered, or the Legislature could include Anchorage in the current subsidy programs. Or, it possibly could authorize royalty reductions for gas or oil royalty shares devoted to domestic utility purposes.

The department stands ready to work with the Legislature in devising and implementing appropriate solutions. It appears to me that this question is best addressed in the context of the state's overall energy subsidy programs.

Several questions have arisen about on-going litigation over Cook Inlet gas values and about the impacts of the decision on rural areas of the state.

Briefly, there are three lawsuits presently pending that involve Cook Inlet gas issues. The first, Marathon v. U.S.A., Cook Inlet Region, Inc. and the State, is pending in U.S. District Court in Anchorage. The only issue in that suit is the value of gas that is sold as LNG in Japan. It does not involve gas sold under long-term contracts at below market rates, nor does it involve gas sold to local utilities. Further, the lawsuit does not involve state-owned leases. It has direct impact only on leases owned by the United States and CIRI.

However, the recent decision by Judge Fitzgerald in that suit is favorable to the state because the state receives 90 percent of federal royalties. Judge Fitzgerald recently held that Marathon must pay royalties based upon the price in Japan, less liquification and transportation cost. The state was named as a party to the Marathon lawsuit, but Judge Fitzgerald ruled that the royalty valuation issues for state leases should be determined by a state court. That suit, State v. Marathon, is pending in Alaska Superior Court in Juneau. This is a parallel case with the federal case I just mentioned and involves leases owned by the State. Again, no issue is involved relating to local utility contracts. The department is currently pursuing settlement negotiations with Marathon.

The final case is Union v. CIRI and United States, which is pending in U.S. District Court also before Judge Fitzgerald. This case involves only leases owned by CIRI and the United States. It involves all of Union's production, including production allocated to the so-called "APL-1" contract (Enstar's long-term 61¢ contract). The main issue is the valuation of gas committed to the urea ammonia plant at Nikiski.

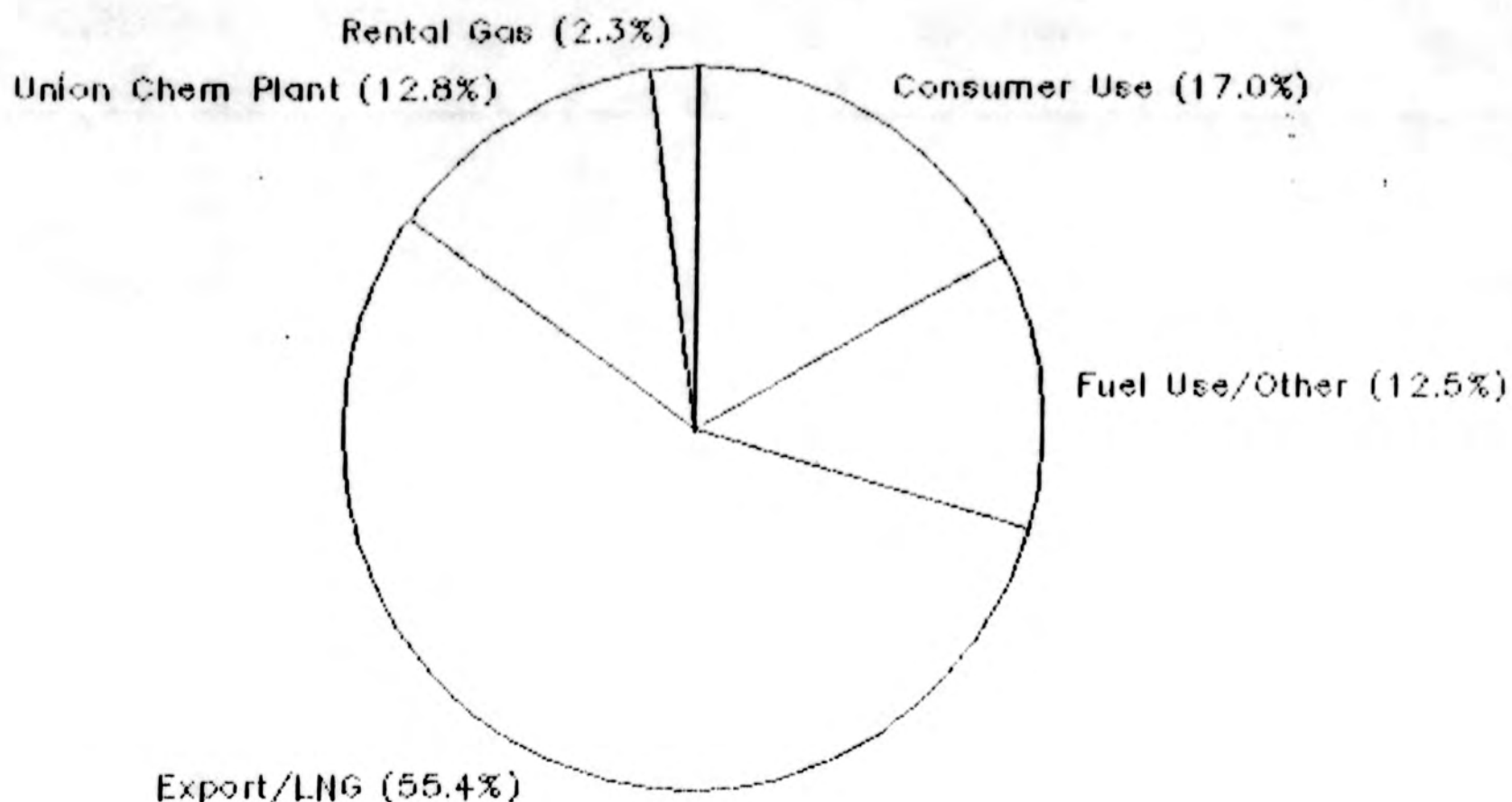
The position of the federal government and CIRI in that case parallels the notice issued by the state to Union this month. The federal government and CIRI are seeking a price

from Union of approximately \$2.05 per mcf for both the plant volumes and the APL-1 contract.

With respect to the question raised about the impacts of our decision on rural areas, it appears from our analysis there will be no impact. We assume this question arises due to the relationship between urban rates and rural rates under the power cost equalization program. Our analysis indicates that the marker for rural subsidies is set by statute at 8.5¢ per kilowatt hour, and that this rate is unaffected by changes that might occur in urban power rates.

Thank you for the opportunity to discuss these issues with you. Kay Brown and members of her staff are with me today to assist in answering any questions the caucus may have. I'd now like to ask Bill Van Dyke to give you an overview of Cook Inlet gas reserves.

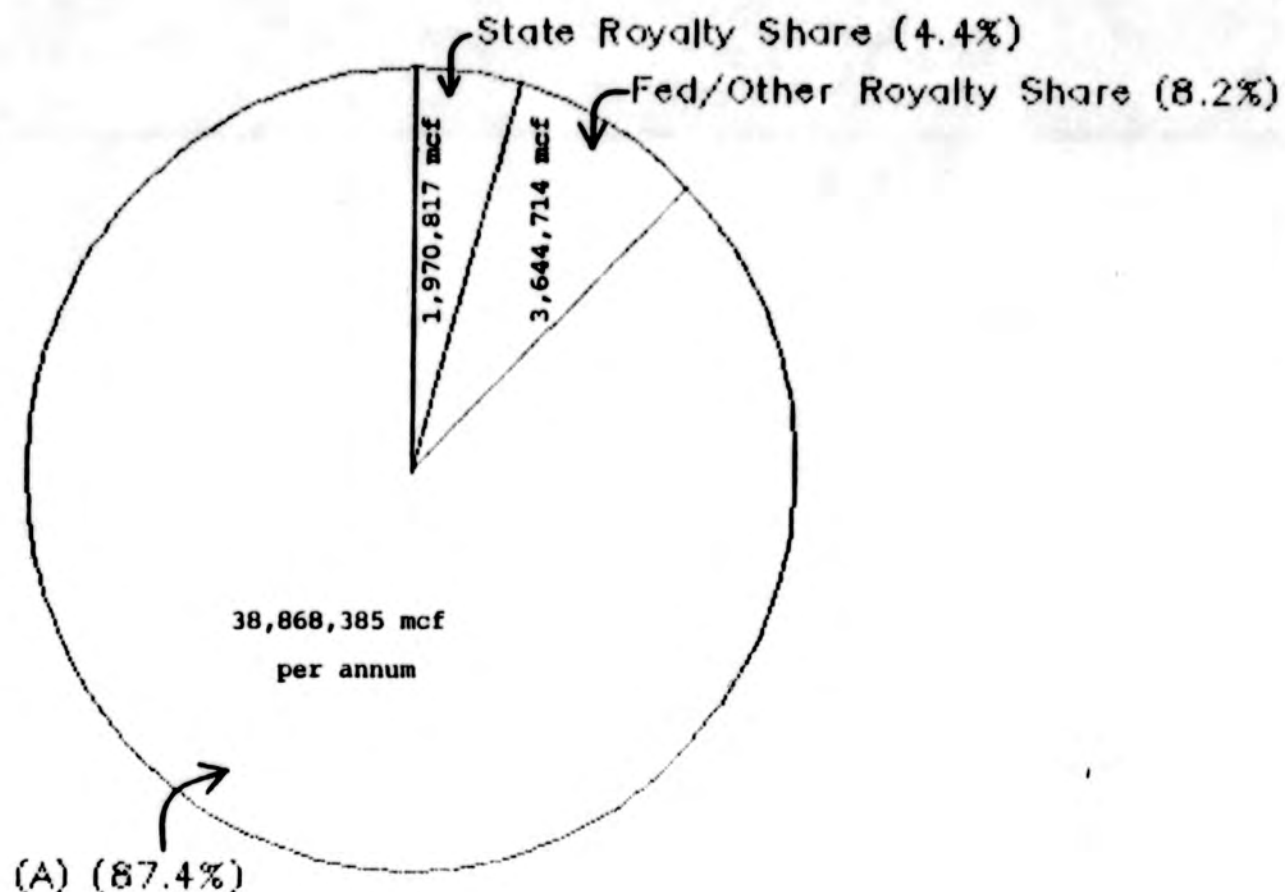
Uses of Cook Inlet State Royalty Gas



Note: See attached worksheet for an analysis of this chart.

Consumer Utility Use of Cook Inlet Gas

(Est. projections based on 1983 volume)



(A) Share of production by the working interest owners.

Estimated Total Annual Production allocated to consumer use = 44,483,916 mcf.

COOK INLET GAS DISTRIBUTION REPORT 1994

FIELD Producers (% of Working interest)	PURCHASER OF GAS FROM THE PRODUCER	% of FIELD on sale by sale basis	QUANTITY VOLUME TO: 50 sale by sale	PRODUCER/ PURCHASER CONTRACT SCALE	HIGHEST VALUE IN THE FIELD	DIFFERENCE BETWEEN REPORTED ROYALTIES/ HIGHEST FIELD VALUE	EFFECTIVE DATE	EXPIRATION DATE
NORTH COOK INLET								
Phillips (100%)	TORONTO UTILITIES	100.00%	555,702	2.343	2.343	0.00	6/1/87	1999 ***
DELTA RIVER								
Chevron, ARCB, Shell	ENSTAR	3.53%	7,001	2.055	2.055	0.00	10/04	10/1999
Chevron, ARCB, Shell	CHAGACH	96.47%	212,050	0.210	2.055	392,721.00	5/14/85	1992 *
TOTAL	TOTAL	100.00%	774,753			392,721.00		

NEWTOWN FIELD

UNION (50%)								
	APL - RICHMOND	6.75%	10,700	0.617	2.055	15,500.92	5/13/80	12/31/94 *
	APL - CHEV HIL	0.19%	200	0.617	2.055	413.40		
	UNION DEV	0.20%	305	0.617	2.055	430.10	2/5/81	INDEFINITE
	CITY OF NEWTOWN	0.31%	406	0.300	2.055	452.06	5/17/86	6/1986
	RENTAL GAS	5.91%	9,164	0.070	2.055	16,908.70	1/17/86	UNTIL
	ADDITIONAL RENTAL	2.52%	4,525	0.300	2.055	7,579.72		BLANKENHORN
	UNION CHEMICAL	37.11%	57,541	0.602	2.055	83,606.39	11/1/77	1990
TOTAL UNION SHARE		53.57%	83,009					
WABATHAN (50%)								
	APL - I	14.47%	22,436	0.617	2.055	32,262.46		1992 *
	APL - II	5.73%	8,009	2.055	2.055	0.00	12/16/82	12/1997 *
	APL - NINISIK	0.19%	200	0.617	2.055	413.40		
	CITY OF NEWTOWN	0.31%	406	0.300	2.055	452.06		
	RENTAL GAS	5.91%	9,164	0.210	2.055	16,908.74		
	ADDITIONAL RENTAL	2.52%	4,525	0.300	2.055	7,579.72		
	TORONTO UTILITIES	16.00%	26,167	2.343	2.343	45,159.01		
TOTAL WABATHAN SHARE		46.41%	71,355					
TOTAL		100.00%	155,044			220,476.36		

LEWIS RIVER

CITIES SERVICE (100%)	APL & PACIFIC	100.00%	30,420	1.930	1.930	0.00	5/1/84	1999 *
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NEARTON RIVER

UNION/WABATHAN (50% each)								
	RENTAL GAS	0.47%	221	0.000	0.000	0.00		
	UNION CHEMICAL	1.40%	697	0.210	2.055	1,432.05		
		87.56%	41,265	0.617	2.055	84,799.32		
		9.39%	4,427	0.000	0.000	0.00		
		1.10%	519	0.000	0.000	0.00		
TOTAL		100.00%	47,129			86,232.17		

GRAND TOTALS	1,000,903	707,431.53
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* QUANTITY TERM COULD OPERATE TO EXTEND AND/OR SHORTEN THE CONTRACT PERIOD.

** FIELD NOT EFFECTED BY THE NOTICE AS PRODUCER IS NOW PAYING AT THE HIGHEST PRICE IN THE FIELD

*** ROYALTY VALUATION DETERMINED BY SETTLEMENT AGREEMENT

State of Alaska
Department of Natural Resources
Royalty Accounting Section
Cash Label Gas Disposition - 1981
from DECC Production Figures
(MCF)

1981 PRODUCTION			Total			DISPOSITION OF MONETARY VALUE					
Field	Assigned Gas	Dry Gas	Total	State Share of Field	Production State Land	Royalty Volume	Owner Use Fuel	Over/Under	Export/Use	Share Other Field	Rental Gas
Barrow	10,001,916	10,001,916		60,448	10,062,364	1,361,740	1,361,740				
North Slope											
Sterling A	10,978,032	10,978,032									
Sterling B	24,300,438	24,300,438									
Sterling C	27,532,462	27,532,462									
Sterling D	24,300,438	24,300,438									
Sterling E	10,221,687	10,221,687									
Undeveloped	7,452,030	7,452,030									
Totals	111,538,279	111,538,279		16,606	10,302,823	2,362,853	604,517	27,717	416,198	1,843,557	264,004
North Slope											
Sterling A	4,436,824	4,436,824									
Sterling B	617,622	617,622									
Sterling C	201,661	201,661									
Sterling D	4,225,750	4,225,750									
Sterling E	1,675,363	1,675,363									
Undeveloped											
Totals	5,311,017	5,311,017		100,000	13,206,650	1,656,311	1,221,910			439,421	
North Slope Total	47,877,215	47,877,215		100,000	47,877,215	5,309,652			5,309,652		
Trading Buy											
Undeveloped	242,853	242,853									
Sterling A	7,302	7,302									
Sterling B	132,867	132,867									
Sterling C	100,010	100,010									
Sterling D	243,107	243,107									
Sterling E	132,730	132,730									
Undeveloped	28,048	28,048									
Totals	631,824	631,824									
Field Totals	882,993	631,824	1,524,817	100,000	1,524,817	170,582	170,582				
Totals	12,429,668	309,730,363	322,160,031		92,446,624	11,568,510	1,970,017	1,440,123	6,410,820	1,443,970	264,004

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C:\REVIEWS

STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES
Division of Lands

LEASE NO. A01 _____

Competitive Oil and Gas Lease

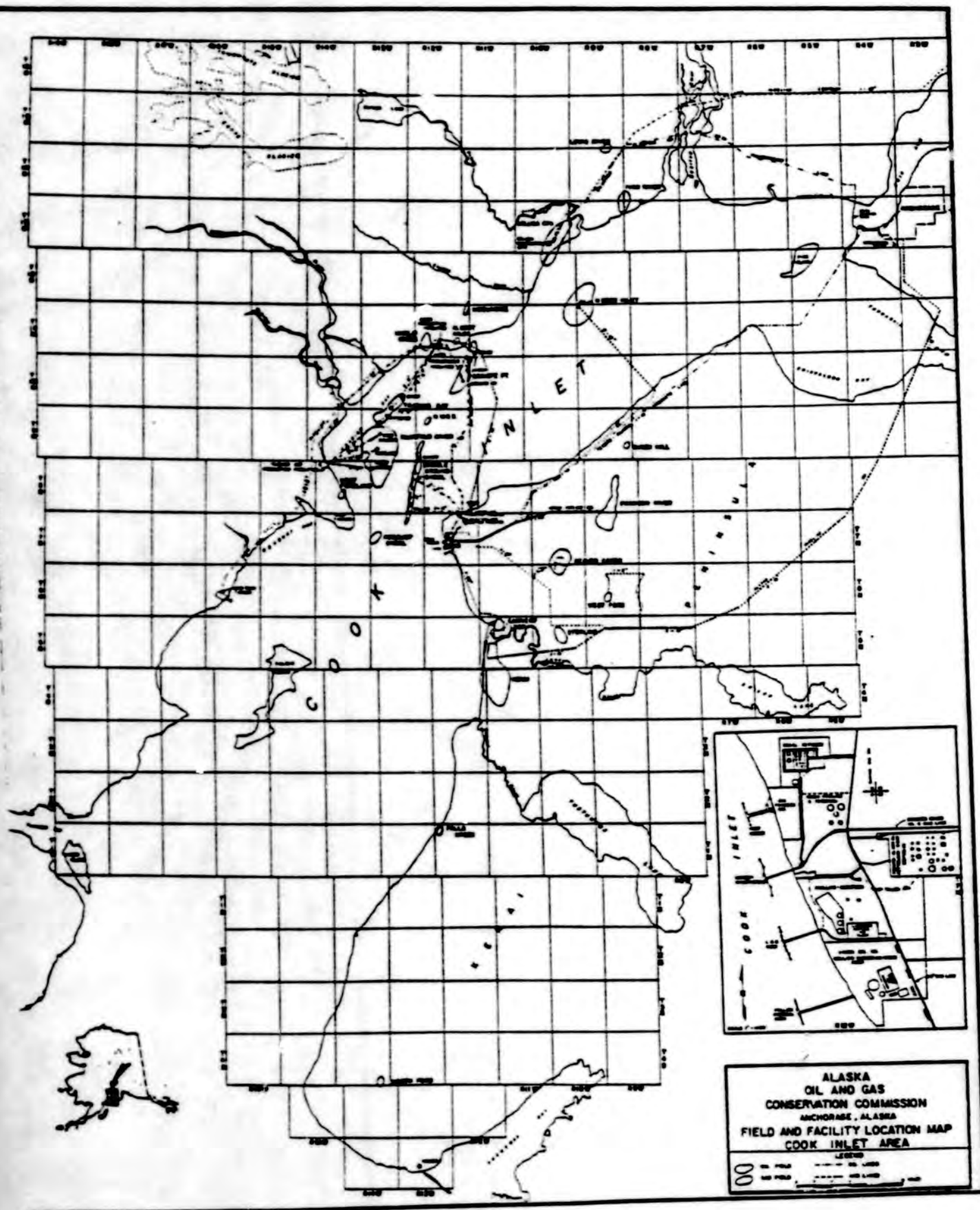
11. **ROYALTY ON PRODUCTION.** Except for oil and gas used on said land for development and production or unavoidably lost, Lessee shall pay Lessor as royalty the following:

- (a) On oil.....per cent in amount or value of the oil produced and saved and removed or sold from said land.
- (b) On gas.....per cent in amount or value of the gas produced and saved and sold or used off said land or used for the extraction of natural gasoline or other products therefrom.
- (c) On associated substances.....percent in amount or value of such substances produced and saved and

14. **ROYALTY IN KIND.** Whenever, at the option of Lessor, which may be exercised from time to time upon not less than six months notice to Lessee, Lessor elects to take its royalty in kind, Lessee shall deliver free of charge (on said land or at such place as Lessor and Lessee mutually agree upon) to Lessor or to such individual, firm, or corporation as Lessor may designate all royalty oil and/or gas produced and saved from said land. Such oil and/or gas shall be in good and merchantable condition. Lessee shall, if necessary, furnish storage for royalty oil free of charge for thirty days after the end of the calendar month in which the oil is produced from said land; provided, that Lessee shall not be held liable for loss or destruction of royalty oil and/or gas from causes beyond Lessee's reasonable control. Should Lessee dehydrate or clean the oil or gas produced from said land, Lessee shall be entitled to an allowance of the actual cost of dehydrating or cleaning said royalty oil or gas.

15. **ROYALTY IN VALUE.** At the option of Lessor, which may be exercised from time to time upon not less than six months' notice to Lessee, and in lieu of royalty in kind, Lessee shall pay to Lessor the field market price or value at the well of all royalty oil and/or gas. All royalty that may become payable in money to Lessor shall be paid on or before the last day of the calendar month following the month in which the oil or gas is produced. The payments shall be accompanied by copies of run tickets or other satisfactory evidence of sales, shipments, and amounts of gross production.

16. **PRICE.** The field market price or value of royalty oil or gas shall not be less than the highest of: (1) The price actually paid or agreed to be paid to Lessee at the well by the purchaser thereof, if any; or (2) The posted price of Lessee in the field for such oil or gas at the well, if any; or, (3) The prevailing price received by other producers in the field at the well for oil of like grade and gravity or gas of like kind and quality at the time such oil or gas is removed from said land or run into storage, or such gas is delivered to an extraction plant.



MEMORANDUM
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL AND GAS

State of Alaska

TO: Esther C. Wunnicke
Commissioner

DATE November 6, 1984

FILE NO

TELEPHONE NO 265-4241

FROM: *[Signature]*
Kay Brown, Director
Division of Oil and Gas

SUBJECT Decision Memo No. 25
Royalty Gas Valua-
tion -- Cook Inlet

Statement of the issue: Should the state accept long-term gas contract prices as being determinative of royalty value where those prices have become significantly below current market prices because of escalating gas values?

Background: As a general matter, producers have calculated and paid their royalty as to each volume of gas based upon the contract price applicable to that volume of gas. As gas prices have escalated, the issue has arisen here, as it has in other jurisdictions, whether an older long-term contract price may control the royalty amount for gas produced and sold under that contract, even after the market value has escalated well above the contract price. Depending upon the particular jurisdiction and the governing language of particular leases, court cases have split on the issue. The issue has not been addressed by any court in the State of Alaska.

Considerations:

- o Legal analysis. Although court cases interpreting various other lease forms have gone each way in other jurisdictions, the Department of Law advises us that the proper construction of state oil and gas lease form DL-1 is that a long-term contract price should not control royalty valuation when current market price or value is higher.
- o Impact on oil and gas companies. Oil and gas companies have an obligation to diligently produce and market oil and gas. The companies believe it is unfair to have their royalty payments based upon high current market price values where (they argue) the only available means of marketing the gas in the past was by means of long-term contracts with either a fixed price or a defined escalation clause. Apparently in recognition of the possibility that the royalty value might be construed to be higher than the long-term contract price, however, the producers have mitigated, in large part, the impacts of escalating

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DIVISION OF OIL & GAS
ANCHORAGE, ALASKA

values by means of pass-through provisions in their sales contracts. These provisions make the gas purchaser liable for any additional royalty. Also, producers increasingly are insisting upon price re-openers for their long-term contracts. Such price re-openers allow the producers to benefit from escalating values on their share of the gas, while also protecting the producers against an increased royalty burden. Thus, as a general matter, the producers can protect themselves against the possibility of higher royalty obligations. However, there are possible exceptions. For instance, Union Oil Company has committed a large volume of gas for use in its own major urea processing plant. Union's royalty obligation will be higher on the gas committed to that plant if long-term contracts are considered inappropriate references in the computation of market price or value. Union may not be able to pass any increased cost through to its urea customers. However, if the application of the royalty term as written becomes too onerous, the lease provides a mechanism for seeking royalty reduction. See DL-1, ¶ 13. Thus, even those producers which cannot pass higher royalty obligations on to their customers have a limited remedy under the lease.

- o Impacts on gas purchasers. The principal long-term gas contracts in Cook Inlet which would be affected by this decision are between Chugach Electric and Chevron, ARCO and Shell (Beluga River Field), and between Enstar/Alaska Pipeline Company and Marathon and Union (Kenai Field). The long-term Chugach contract price is 21c/Mcf, and the long-term Enstar/APC contract price is 61c/Mcf. By contrast, prevailing current prices exceed \$2.00/Mcf. For instance, the recent long-term contracts for Cook Inlet gas have fluctuated between a high of \$2.32/Mcf and the present \$2.055/Mcf. Although seven-eighths of the gas sold under the 21c/Mcf and 61c/Mcf contracts would continue to be bound by those contract prices, the governing contracts permit the producers to pass on through to Enstar/APC and Chugach the burden of higher royalty rates on the one-eighth of the flow attributable to the state's royalty. It is uncertain whether Enstar and Chugach could, in turn, legally pass the charges through to their customers if the state collects additional royalties retroactively. Moreover, even if the

royalties were collected at the higher valuation rate only prospectively, the ability of the companies to pass the costs through to their consumers would be subject to Alaska Public Utilities Commission rate proceedings. Thus, the imposition of royalty valuation based upon current market prices or values could have adverse impacts upon Anchorage area utility companies.

- o Impacts on consumers of gas and gas-generated electricity. Ultimately, it is anticipated that the brunt of higher valuation on royalties attributable to long-term contract volumes will be borne by consumers of gas and electricity in the Anchorage area. It is estimated that this impact would probably be an increase over current rates of more than 10 percent but less than 20 percent.
- o Impacts on state revenue. Obviously, the consequences of higher royalty valuation include increased royalty revenue to the state. It is estimated that eschewing long-term contract prices for current values would, under present conditions, result in additional royalty collections of approximately \$8.5 million per year from the state's Cook Inlet area leases. The impact upon North Slope gas royalty revenue is relatively insignificant at this time.
- o Uncertainty. The fluctuation of royalty value independently of the contract price under which gas is sold injects uncertainty into the long-term planning by oil companies and utilities. This uncertainty (and higher royalty rates) may reduce incentives to invest capital in oil and gas and utility enterprises, or affect the timing or structuring of such enterprises. For instance, the state's royalty treatment of long-term gas contracts might affect North Slope gas marketing.
- o Impacts on royalty collection by the United States and CIRI. The United States and CIRI are also lessors of oil and gas leases in the Cook Inlet area. The United States distributes 90 percent of the onshore royalties it collects to the state. CIRI shares its royalties with other ANCSA corporations under section 7(i) of ANCSA. Alaska has previously joined other states in encouraging the United States to ensure full royalty

collection through, among other things, using current prices or values in calculating the royalties due for gas sold under long-term sales contracts. By requiring royalty valuation according to current market values for state leases, the state would further its relations with the ANCSA corporations and other states, and would lend support to current federal royalty litigation, which, if successful, will result in greater distributions to the state under its 90 percent share.

Options:

(1) Accept long-term contract prices as determinative of market value for royalty purposes, even when those prices have been eclipsed by market transactions at higher values.

(2) Reject long-term contract prices as determinative of royalty valuation where they are below current market value. In implementing this option, the state could also:

(a) Give consideration to electing to take royalty gas attributable to long-term contracts in-kind, rather than in-value. A host of practical difficulties exist with this suboption. In particular, taking gas in-kind is difficult because of the limited and inflexible transportation and storage capacities for gas (the "deliverability" factor). Nonetheless, the state could explore the possibilities, including possible sales to Enstar, Chugach, and the proposed CIRC LNG plant; and

(b) Apply the decision only to prospective royalty valuations. This would ease a number of problems, including the difficulties attendant to retroactive pass-through charges to utility consumers.

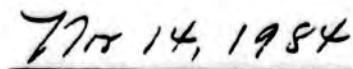
Recommendation:

Option 2, with suboptions 2(a) and 2(b).

Decision:

I concur with the recommendations:


Esther C. Wunnicke
Commissioner


Date

Esther C. Wunnicke
Commissioner

November 6, 1984
Page 5

Recommend Concurrence:

Wm D Arnold

Bob Arnold
Deputy Commissioner

11/15/84

Date

James K. Barnett
James K. Barnett
Deputy Commissioner

11-19-84

Date

May 21, 1984

To: Sharon Barton
Commissioner's Office

From: Jim Eason
Oil and Gas

Subject: Cook Inlet Gas Contracts

As you requested this morning, I have reviewed the division's files on the contracts for gas sales to Anchorage Municipal Light and Power and Chugach Electric Association. It is my understanding that your request for this review is related to a determination of whether the department has subsidized local energy costs through its past gas sales contracts. My review indicates that there was no subsidy of costs in the only contract which the department negotiated for the sale of royalty oil from the Kenai Field to ML&P. The sale of gas from the Beluga Field is controlled by the terms of a long term contract negotiated between the producers, Standard Oil, Richfield Oil and Shell, and Chugach Electric. The department was not a party to the negotiation of this contract. Specific comments on the two contracts follow.

— The ML&P contract was signed May 5, 1980. It provided for a sale of the state's royalty gas from the Kenai Field for a term of 20 years.

— The price which ML&P was obligated to pay was the in-value price which the state would have received, plus any costs incurred by the state attributable to preparation and transportation of the gas to the buyer, ML&P.

— On July 2, 1980, ML&P notified the state of its intent not to take delivery of any royalty gas under the terms of the contract because "of the uncertainty regarding the gas price."

— Consequently, no royalty gas was delivered to ML&P.

— The Chugach contract for purchase of gas from the Beluga Field was signed May 14, 1968.

— Term of the contract was for 20 contract years with the first contract year commencing on January 1st following the initial delivery of gas under the terms of the contract or January 1, 1968 whichever was earliest.

— Production from the Beluga Field comes from a mixture of lease ownership including the State of Alaska, the federal government and C.I.R.I.

— Approximately 60% of the royalty production belongs to the State of Alaska with the remaining 40% split between the federal government and C.I.R.I.

— The producers sold the state's royalty gas to Chugach and pay the state its royalty in-value, as determined by the terms of the contract.

— The price received by the producers for Beluga gas was

established by the negotiated contract. The price for the first through the fifth contract year was 15.2 cents per Mcf. The price for the sixth through the tenth year was 16.2 cents per Mcf. For the eleventh through the fifteenth year, the price was 17.2 cents per Mcf, and the price for the final five years of the contract was established at 18.2 cents per Mcf. However, the contract also provided for an adjustment of the price depending upon the gross heating value of the gas. As a result of this adjustment, the price received currently by the producers is approximately 21 cents per Mcf.

— This price represents what all parties to the contract agreed to be the "fair market value" of the gas in 1965.

If you have any additional questions, please call.

STATEMENT OF ENSTAR NATURAL GAS COMPANY
BEFORE LEGISLATIVE OIL AND GAS COMMITTEE

April 11, 1985

We appreciate your invitation to ENSTAR to comment on the State's recently proposed change in the method of determining royalty values of gas subject to long-term contracts. Our knowledge of information previously provided the legislature is limited to press reports and a statement by Commissioner Wunnicke dated April 2, 1985.

ENSTAR provides gas service to approximately 70,000 businesses, households and electric utilities. An increase in royalty price will affect over half the State's population, both through our gas bills and the electric bills of utilities we serve.

We readily admit our bias in this matter and we do not suggest that the legislature should accept our analysis of the issues without independent confirmation. On the other hand, we believe the Administration has presented an extremely biased analysis and it should be subjected to equally critical scrutiny.

DNR has made a number of representations to members of the Legislature, apparently to explain the Administration's hasty action, that we believe to be misleading. Our comments will address certain of those representations.

DNR STATES THIS IS A LEASE ENFORCEMENT ACTION
AND IS NOT OPTIONAL

The validity of this statement is based on a presumption that the term "value", as used in the lease, is intended to be a determination made on the date the gas is produced rather than on the date the gas is committed to an arms-length long-term contract.

ENSTAR believes the prevailing and equitable view contradicts DNR. It is a complex legal question and we believe this committee should obtain a legal analysis independent of the Administration.

DNR POSTPONED THE EFFECTIVE DATE TWO WEEKS
FOR RESPONSE BY INTERESTED PARTIES

What's the rush? These contracts have been in effect for years. Why is a major change being undertaken without the usual procedural safeguards we expect. Why have there not been proposed regulations defining the terms of the leases? Why have there been no public hearings in the Anchorage area? Whose interests are served by acting in haste?

ENSTAR doesn't know the answers to these questions. ENSTAR believes the Administration does know them. ENSTAR believes the Legislature should know them.

DNR REPRESENTS THIS ACTION IS NECESSARY
TO PROTECT THE STATE'S POSITION
IN NORTH SLOPE ROYALTY LITIGATION

Legal counsel advises ENSTAR that this is simply incorrect. It is common to accept arms-length negotiated contract prices as a basis for royalty valuation of the production subject to the contract. Where no

arms-length contract is involved, it is necessary to develop alternate methods. The issues are simply not the same.

We urge the Legislature to obtain independent legal analysis of this issue.

DNR REPRESENTS THIS ACTION HAS
MINIMAL IMPACT ON ENSTAR'S CUSTOMERS

In an internal memorandum dated November 6, 1984, DNR asserts that this action "would lend support to current federal royalty litigation". In the April 2 memo to the Anchorage caucus DNR does not mention the impact that Federal repricing may have on consumers.

Without regulations defining value, the State in the future will be free to assert values based on delivery prices in Japan, prices paid under small industrial contracts (both positions are asserted in the Federal legislation referred to), or perhaps on the prices of alternative fuels.

We urge the Legislature to seek independent advice regarding the potential impact of the Administration's action, in the absence of protective regulations.

DNR ALLEGES THE PRESENT CONTRACT PRICES
REPRESENT A "SUBSIDY" TO OUR CUSTOMERS

When we enter into a long-term contract for gas, at determinable pricing, and with take-or-pay provisions, we (our customers) are guaranteeing the State protection against market declines. Our customers pay a high price for the security of a known supply with known

pricing terms. Our customers, having paid for the risk taken, have seen the value of gas increase and now the State proposes to confiscate that value.

To add insult to injury, the State maintains the "value" of its gas is equal to the price we pay for a secure 15 year contract with known pricing terms. Yet the State reserves its right not to sell us the royalty gas and to reprice it at will on an undefined "value" basis.

UNDER THE ADMINISTRATION'S PROPOSAL
OUR CUSTOMERS WOULD SUBSIDIZE THE STATE

The State is purchasing about as much gas from us in Anchorage as the amount of State royalty coming to us under the contract to be repriced. The prices we charge to the State are fully reduced by its "share" of the low priced gas. The State now proposes to reprice its share of production and pass the extra cost on to all our consumers, but to continue to share the benefits of the low priced gas. This would be a subsidy to the State.

If the State really believes it is not receiving fair value for its gas, why doesn't it elect to take it in kind and sell it to the highest bidder (like North Slope oil)? If that price is still considered inadequate, then we can probably arrange through the regulatory process to deliver the State's own gas to it in Anchorage. What could be more fair?

OUR CUSTOMERS ARE NOT TREATED EQUALLY
WITH OTHER PURCHASERS OF STATE RESOURCES

Using hindsight, DNR says we paid less than "value" for gas in the Kenai field. They say they can maximize values to the State by collecting an additional \$8 million per year. Using the same hindsight, couldn't DNR also say that its failure to negotiate long-term contracts with the North Slope producers five years ago has cost the State billions?

The State is entitled to receive the maximum value the market will allow for Slope oil because the State, not the producers, has elected to assume the risk of value declines. A very expensive decision.

On the other hand, we and our customers have assumed those risks as to our gas purchases. It is absolutely unfair for the State to present the consumers this "heads-I-win, tails-you-lose" proposal.

THE STATE IS USING MONOPOLY POWER
TO EXACT AN EXCESSIVE PRICE FROM THE CONSUMERS

Alaska is unique in that the Federal and State governments control substantially all royalty. The governments have a monopoly and it is not possible to negotiate royalty valuation terms of lease agreements. Terms are dictated, not negotiated. This is effectively a monopoly action at work, not a free market. DNR admitted in an internal memorandum that its present pricing proposal would "further its relations with the ANCSA corporations... and lend support to current federal royalty litigation...". If business corporations made pricing deci-

sions in concert with or to accommodate other suppliers, they probably would be subject to prosecution.

When we, as purchasers, enter into a long-term contract with a producer, we are not assured of the royalty share since the State retains the right to take its gas in kind. Yet we cannot refuse to take the royalty share, no matter what price may be exacted. Obviously, if a free market prevailed, we simply would not purchase State royalty on such terms. The concept of the State receiving fair value for its resources does not mean using its monopoly power to squeeze the last bit of revenue from the consumer. It does mean receiving the value that would be arrived at in a free market system. That is exactly what arms-length negotiations do.

We believe the Administration is misleading the legislators and the public when it alleges that a subsidy to our customers has resulted from our arms-length gas contracts. We believe that since we do not have the option not to accept royalty gas, while the State has the option not to deliver it to us, arbitrary pricing of the royalty by the State at any price higher than we negotiated, on the working interest gas which produces the royalty gas, is confiscatory to our customers.

The Administration knows full well that where we have had an option to buy royalty gas, we have done our utmost to avoid unreasonable pricing of that gas and in fact have refused to accept it. I refer to the North Cook Inlet gas produced by Phillips. We paid, under protest, as much as \$3.74 per Mcf; we stopped taking this gas; and we

replaced that supply with gas from the Lewis River field priced at only \$1.80 in a contract negotiated in 1984. This contract is for our peaking purposes only, with essentially no take or pay. Royalty gas from any source is truly not worth as much to us as working interest gas from that same source, in our opinion, because the State is free to take the royalty gas in kind and we have to be prepared to do without it. In a free market we would never pay more for royalty gas than for the working interest gas except if we could take it at our own option. We have demonstrated this fact to DNR, on the North Cook Inlet royalty.

We regard the repricing of royalty gas, as proposed by the State, to be in effect a discriminatory and unlawful tax, which a majority of Alaskans would reject if given the awareness and opportunity to do so.

CONCLUSION

Royalty pricing as it relates to arms-length negotiated contracts involves complex economic, social and legal issues. These have not been addressed in the information we have seen. We urge the Legislature obtain the appropriate information from experts independent of the Administration and the utility industry. We expect it will take more than two weeks.

A grace period

THE RAW DEAL in natural gas prices is scheduled to hit Anchorage and the rest of Southcentral Alaska on April 15, a week from Monday. Only special action by the governor or the legislature can stave it off.

The change in price is necessary to bring it in line with the price on the open market. A discrepancy came about because the price remained stationary as market conditions changed. The boost was to become effective April 1, but the governor ordered a 15-day delay.

In discussing this official action that discriminates against Southcentral Alaska, an editorial in this newspaper appeared to blame the Department of Natural Resources. It should be noted that the department is complying with the law in ordering the higher prices. It cannot change the law.

If the governor has the power to order a 15-day delay, he should be able to order another delay to allow time for the legislature to consider changing the law.

THE CHANGE COULD be a simple amendment to an existing law that provides exceptions in pricing. It allows the sale of coal to non-profit utility cooperatives. The amendment could authorize the same treatment for natural gas destined for the generators of Chugach Electric and the Municipality of Anchorage.

In all other areas Alaskans are subsidized by the state so as to enjoy lower power and fuel costs. If the proposed higher prices become effective here, the state will be discriminating against Southcentral Alaska.

That's a raw deal.

ANC TIMES 4/6/85

A raw deal

THE PROPOSAL by the state to raise the price of natural gas in Southcentral Alaska deserves unanimous disapproval.

It would, in effect, penalize Alaskans here while the state is helping Alaskans almost everywhere else. This would be in the form of higher electric power and fuel bills for Southcentral. The extra money would go into the general fund.

At this moment, the state is using general fund money to subsidize cities and rural areas in Southeastern, Western and some areas of Southcentral Alaska. These subsidies include more than \$21 million for Interior villages and more than \$200 million for certain Southeastern and Southwestern cities and villages.

It is astonishing that the same state officials who administer those special favors to selected villages and cities propose to raise the cost of natural gas to residents of Anchorage and Southcentral Alaska. They would raise the price of the state's natural gas in the Cook Inlet area so as to take \$8 million extra away from local residents each year. This money would go into the fund that helps the other areas.

EVEN THOUGH the basis for the proposed raise may be legal, it is not justified. The state's oil and gas leases provide for the prevailing market price to be paid and that is higher than the price actually being collected.

But by applying that clause blindly and without consideration of other circumstances, the state would be grossly unfair. It would penalize the Alaskans who have done well for themselves through their business contracts signed years ago with the natural gas suppliers.

The Anchorage area has low power and fuel costs because its utility agencies

have done well. It was because of the favored position here that the state officials sought to subsidize others to bring their costs down.

The governor went so far as to propose a power-cost equalization program that inevitably would have raised power rates here. His scheme ran into such opposition that he dropped it like a hot potato.

Since then, the Department of Natural Resources took the initiative to enforce the fine print in the oil and gas leases looking toward an extra \$8 million for the general fund. It hasn't dropped the idea yet, but it ought to.

THANKS TO the Anchorage caucus in the legislature, this inequitable position has been brought to the attention of all in Juneau. The chiefs of the Natural Resource Department have had to explain the terms of the oil leases and why the higher costs are proposed.

But there is no hint that there has been any satisfactory explanation. Nobody has said why Anchorage residents should have to pay more while the state is helping others to pay less.

Instead, the state should continue to honor the long-term contracts that have a stated price. The market value of the gas may have increased since those contracts were signed, but that doesn't justify inflicting punishment on the Alaskans here.

Gov. Sheffield ordered a postponement of the department's first announcement of the higher prices in order for the legislature, the public and the producers to have time to consider their responses.

The response should be immediate and it should be without equivocation. It won't be fair to Southcentral Alaska unless and until other Alaskans are paying their own power and fuel costs without state subsidy.

Anchorage Times
4/4/35

ANCHORAGE TIMES 4/3/85

Utility Bills Will Increase Only 4 Percent

ANCHORAGE — Utility bills will increase about 4 percent — not 10 to 20 percent — if the state boosts the price for Cook Inlet royalty gas, a Chugach Electric Association official said Tuesday.

When the Department of Natural Resources last month announced its decision to increase the price of state royalty gas, it estimated utility bills would go up by 10 to 20 percent. This brought criticism from legislators and the introduction of a House resolution last week for the administration to rescind its decision.

However, Larry Markley, director of governmental and environmental affairs for Chugach Electric, told the Anchorage caucus Tuesday that any increase in consumer bills would average about 4 percent.

He said Chugach retail customers' bills would increase slightly under 4 percent, while wholesale customers, including Matanuska Electric Association, Homer Electric Association and the city of Seward, would find their bills going up slightly higher than 4 percent.

Markley said Chugach Electric, the largest electric utility in the state, had delayed releasing any possible rate figures until it had time to review the state's actions and its effect on the utility's gas bills.

"Virtually all of our power comes from gas," he said.

"We don't know yet whether we will legally oppose it," Markley said of the state's action to boost Cook Inlet royalty gas prices.

The utility could not pass along the higher gas prices to its customers without approval by the Alaska Public Utilities Commission, Markley said, adding that any protest, either by the utility or by the oil and gas companies involved in Cook Inlet production, could delay any cost increase to consumers, he added.

Enstar Natural Gas Co., which serves 70,000 customers in the Southcentral area, has said the proposed price increase would mean a 2 percent increase to its retail customers.

Department of Natural Resources Commissioner Esther Wunnicke said a state statute requires the department to get current market value for state royalty gas, which results in higher prices.

The price increase, projected to earn an additional \$8 million a year in state revenue, was to take effect Monday. But Gov. Bill Sheffield delayed the increase for two weeks.

Anchorage Times

4/3/85

Sheffield delays gas price increase

By Larry Pinsky
Times Staff Writer

ANCHORAGE — The Sheffield administration has postponed for five weeks an increase in the royalty price of Cook Inlet natural gas, smiling — but not laughing — to move that will raise area electric rates.

The gas price hike's new effective date of April 15 will cost the state \$200,000 in lost royalty revenue, according to Department of Natural Resources Commissioner Esther Wunniche. The commissioner discussed royalty price increases Monday before the Senate Resources Committee.

Wunniche had said March 19

that the state would boost its royalty gas price from current rates based on long-term contracts between oil companies and utilities to higher rates based on market value. The increase was to have become effective Monday.

"This is a lease enforcement action," Wunniche told the committee. "It is not optional."

Gov. Bill Sheffield Sunday requested that Wunniche delay the gas price increase "to give us a chance to explain it to the residents who will be impacted by the decision," said Molly McCammon, the governor's deputy press secretary.

"It's still going into effect," McCammon said, and the two-week reprieve is intended only to allow time to explain the price increase to the public.

The increase in the price the state charges for its share of Cook Inlet natural gas is expected to produce an additional \$6 million a year for the state treasury, Wunniche told the Senate committee.

In making the decision to boost the gas prices, she explained, the department moved "to obtain the maximum benefit for the people of Alaska." She added, "Though it may be an unpopular decision," the price increase "merely involves the state's rights to set royalty payments equal to the value of the gas."

An increase in the state royalty gas price will drive Southcentral gas and electricity rates higher, though Wunniche said, "I do believe the press accounts have overstated some of these impacts."

In a letter to Wunniche, Sen. Artine Sturgiswold, R-Anchorage and chair of the resources committee, stated, "Anchorage consumers are faced with the possibility of sudden and dramatic increases in their utility bills due to recent decisions regarding rates charged for Cook Inlet royalty natural gas."

Enstar Natural Gas Co. spokesman Don Dieckgraef said Monday the state's decision would mean about a 2 percent price increase to its 70,000 customers in Southcentral Alaska.

"The effect of the state increase to us is not that substantial," he said, because most of Enstar's gas is covered by long-term contract prices unaffected by the state's action.

Dieckgraef did note that Enstar is having its attorneys review the state's action.

Lana Johnson, spokesperson for Chugach Electric Association, said state royalty gas provides a small portion of its supply for natural gas-generated electricity.

Though Chugach has yet to figure exactly how much the state's decision would cost its customers, Johnson said reports of a 20 percent boost in electric bills probably are too high.

The Department of Natural Resources estimates that electric utility rates will increase between 10 and 20 percent.

Anchorage Times
4/2/85

Local gas bills could increase

by John Knewton
Times Business Writer

Nearly 100,000 businesses and residences in Southcentral Alaska could see their natural gas bills rise by up to 20 percent, as the result of a decision by the state to raise the price of royalty gas it sells five oil companies operating in Cook Inlet.

The state on Thursday announced that effective April 1, it will value Cook Inlet gas at current market rates instead of at long-term contracted rates.

Current market value of Cook Inlet gas is about \$2.05 per thousand cubic feet (mcf) while contracted rates range from

21 cents to 65 cents per mcf, officials said Thursday. The market value was \$2.32 per mcf but fluctuates depending on demand.

The oil companies, which purchase the gas from five Cook Inlet fields, will pass on the increase in gas price to Enstar Natural Gas Company and Chugach Electric Association, officials said. Enstar and CEA will pass those costs on to consumers if permitted to by the Alaska Public Utilities Commission.

Larry Markley of CEA today said the price increase could mean consumers would pay up to 20 percent more for natural gas but he stressed that no firm figures

have yet been arrived at. CEA serves about 100,000 homes and businesses in the southcentral part of the state.

Chugach gets most of its natural gas from Beluga, paying 21 cents per mcf under terms of a 1973 state contract. The state owns 98 percent of the Beluga gas field with Cook Inlet Region Inc. owning the rest.

Bill Hickman, executive vice president of Enstar Natural Gas, said its residential customers initially will see rates rise only about 2 percent because the state owns a small portion of the Kenai gas field, where Enstar gets most of its gas.

But rates will rise significantly if Enstar's suppliers, Marathon Oil Company and Union Oil Company, pass on gas price increases being sought by CIRI and the federal government, which own most of the Kenai gas field, Hickman said. Enstar is paying about 65 cents per mcf for the 26 million mcf of natural gas it buys annually from the Kenai field. It is already paying the \$2.05 price for 4 to 5 million mcf of Beluga gas it will purchase this year.

Even though the higher price charged the oil companies goes into effect April 1, it's unknown when any rate increases might be passed on to consumers.

In a release issued this morning, Enstar called the state's action "fundamentally unfair" and said their attorneys are looking into the matter.

Kay Brown, head of the

state's division of oil and gas, said the state was basing royalty payments on current market value because it "has an obligation to get the maximum value of its resources for all the people."

But she acknowledged that the state could have asked for back royalty payments totalling millions of dollars from the oil companies. That "policy decision" not to ask for back payments was made by Department of Natural Resources Commissioner Esther Wunnicke, Brown said. Wunnicke was unavailable for comment. The state expects to collect \$8 million a year in additional income as a result of the higher prices.

Brown said one of the reasons back royalty payments weren't sought was because the oil companies could pass those costs on to utilities, but utilities wouldn't be allowed to recoup those costs from consumers. The oil companies involved include Marathon Oil Company, Union Oil Company of California, Atlantic Richfield Company, Shell Oil Company and Chevron U.S.A.

The state's action comes after a federal court last month ruled that the federal government acted properly when it raised to current market rates the price it charges Marathon for natural gas it collects from federal lands the Kenai gas field. That ruling could cost Marathon \$20 million in back royalty payments. Union Oil, which also sued the federal government over the issue, may have to pay up to \$40 million in back royalties if it loses its lawsuit, officials said.

ANC TIMES 3/22/85

Cook Inlet royalty plan defended

By ANN CONY
Daily News reporter

JUNEAU — The Sheffield administration Monday defended its plan to collect higher royalty payments from Cook Inlet natural gas producers, a move that could spark rate increases of 10 to 20 percent for 100,000 Chugach Electric Association customers.

But Natural Resources Commissioner Esther Wunnicke told the Senate Resources Committee that her department has postponed the plan, which was supposed to begin Monday, until April 15. However, it will not be postponed further, she said.

She said the state has subsidized Southcentral Alaska utility rates for nearly two decades by allowing natural gas producers to calculate the state's one-eighth royalty share on the basis of long-term contract prices that have fallen far below real market value.

If the legislature wants to continue to subsidize Anchorage electric rates, which are the lowest in the state, it can do so directly. But the state has an obligation to enforce its land leases and collect the full market value of its royalty gas, which would increase revenues by more than \$8 million a year, Wunnicke said.

"We feel that accepting less than current value for royalty gas is not an appropriate mechanism for providing energy subsidies to Southcentral Alaska. This would require the department — whose obligation is to all Alaskans — to relax our lease enforcement prac-

tices solely in order to benefit some Alaskans at the expense of the general treasury."

The state has to be consistent, Wunnicke said.

"It would be improper to have one standard of enforcement where oil companies bear the burden and a different, more lenient standard where some of that burden is passed on to Alaska consumers."

Wunnicke said she decided in November, after consultations with Sheffield, to press for higher payments on state royalty gas. The decision was announced two weeks ago.

Sen. Joe Josephson, D-Anchorage, said low natural gas prices in Southcentral Alaska figured into his vote last year for higher electric rate subsidies in the Bush.

He also said he wondered how collection of the maximum value of the state's royalty gas, to the detriment of local utility customers, squares with state subsidy of the proposed Susitna River hydroelectric project.

"It might be better to make the subsidy here (on Cook Inlet gas) instead of in the form of a much larger subsidy," he said.

Wunnicke said lawmakers could choose to subsidize electric rates in Southcentral Alaska by:

- Authorizing reduced royalty payments on state oil and gas devoted to in-state utilities.
- Including the Anchorage area in existing subsidy programs.
- Selling state royalty gas to utili-

ties under long-term contracts.

"It appears to me that this question is best addressed in the context of the state's overall energy subsidy programs," Wunnicke said.

The Department of Natural Resources has estimated that Chugach Electric customers may face rate increases of 10 to 20 percent. Chugach uses natural gas to generate power, which it distributes to customers in the Anchorage area and to other utilities serving the Matanuska-Susitna Valley and Homer.

The impact on Enstar Natural Gas rates will be negligible, according to DNR calculations.

Wunnicke said the new policy on royalty gas payments will increase rates for Enstar customers by less than one-half of 1 percent, because Enstar consumes far less state royalty gas than Chugach.

Enstar supplies gas for heating to 70,000 customers in the Anchorage area, the Matanuska-Susitna Valley and Kenai.

Three House members from Anchorage introduced a resolution on Friday calling for Gov. Bill Sheffield to suspend the decision on state royalty gas.

Kay Brown, director of the department's Division of Oil and Gas, is scheduled to meet with the Anchorage caucus today to answer more questions about the new policy and its effect on utility customers.

ADN 4/2/85

Days of cheap natural gas may be running low

Toodbye cheap gas. Hello higher energy bills.

That's the meaning of the state's decision to raise the price of state-owned Cook Inlet natural gas. The days of cheap natural gas for northern residential and business consumers are all but over.

On Thursday, the state announced it will charge oil companies the going market rate for quality natural gas they buy from five Cook Inlet fields. The action affects Marathon Oil, Union Oil, Chevron U.S.A., Atlantic Richfield and Shell Oil Co.

The action will increase by nearly tenfold the price Chugach Electric Association pays for most of its gas. Prices of the Beluga River gas will rise from 21 cents per thousand cubic feet (mcf) to \$2.05 per mcf.

Though Chugach doesn't have firm figures yet, a price increase of its feedstock could raise local utility bills to consumers by 20 percent or more. Enstar Natural Gas Co. customers likewise will see their rates increase but not as quickly as Chugach. Eventually, though, the price increase



Alaska's Business

John Knowlton

will cost Enstar, which gets most of its gas from the Kenai fields, millions of dollars as well.

The price increase was anything but a surprise to Enstar or Chugach. Officials with those utilities have known for two years that the days of cheap gas are running out.

That prospect became abundantly clear in 1983 when the federal government and the native regional corporation, Cook Inlet Region Inc., which combined own 83.5 percent of the Kenai gas field, raised to current market rates the price it charged Marathon Oil and Union Oil for royalty gas. In August of that year, Marathon sued the federal

government and CIRI, charging they didn't have authority to raise the value of their gas. The state, which owns 16.5 percent of the Kenai gas field, joined CIRI and the federal government in defense.

Ever since then, Enstar and Chugach officials knew the cost of the gas they buy could go up dramatically if the courts ruled in favor of CIRI and the federal and state governments, and against Marathon. That's just what U.S. District Court Judge James Fitzgerald did recently. His ruling also calls for Marathon to pay \$20 million in royalties to the gas owners dating back to when the 1983 lawsuit was filed. No judge's order has been filed in that suit yet but when it is, Marathon likely will have only 10 days to make the \$20 million payment, officials said last week.

Union Oil, meanwhile, faces potential liability of up to \$40 million in back royalties if it loses its lawsuit against CIRI and the state and federal governments, those same officials said.

All of that raises an interesting question about the state action raising its price for Cook Inlet natural gas. Why didn't the state insist that the oil

companies pay retroactive royalties? The market value of Cook Inlet gas has been well above the long-term rates contracted 10 and 12 years ago.

It is curious to me why the state, which is preaching austerity through paring its budget and restricting travel, would pass up the opportunity to collect millions of dollars in back royalties from oil companies.

Kay Brown, head of the division of oil and gas, said not asking for back royalties was a "policy decision" made by her supervisor, Esther Wunnicke, commissioner of the Department of Natural Resources. Wunnicke was unavailable for comment.

If the state had sought back royalties from oil companies, those costs would have been passed on to Enstar and Chugach. Even though the utilities knew an increase in price was coming, they didn't get hit as hard as they might have, the state went easy on them and easy on the oil companies as well.

John Knowlton is The Times business editor

TIMES 3/24/85



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Original sponsors: Shultz and Boucher

1 IN THE HOUSE

BY THE HOUSE SPECIAL
COMMITTEE ON OIL AND GAS

2 CS FOR HOUSE CONCURRENT RESOLUTION NO. 8 (Oil and Gas)

3 IN THE LEGISLATURE OF THE STATE OF ALASKA

4 FOURTEENTH LEGISLATURE - FIRST SESSION

5 Relating to a natural gas pipeline.

6 BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

7 WHEREAS the strength and well being of the state's economy will depend
8 on long-term energy sources; and

9 WHEREAS declining revenue is requiring that the state execute its
10 long-term energy planning with a minimum amount of speculation and
11 preconstruction expenditures; and

12 WHEREAS in-state uses of the state's resources will directly benefit
13 citizens with increased employment and lower energy costs; and

14 WHEREAS in-state use of resources will decrease dependence on products
15 and pricing of domestic and foreign suppliers, thus helping to end vulner-
16 ability to world resource market depressions; and

17 WHEREAS one of the state's most abundant, usable, long-term, environ-
18 mentally efficient energy sources is natural gas; and

19 WHEREAS the residents of the Interior and Railbelt need an energy
20 source for home heating and electrical generation; and

21 WHEREAS a major generating source is needed at each end of the
22 Fairbanks - Anchorage intertie; and

23 WHEREAS a natural gas pipeline will eventually pass near Fairbanks when
24 North Slope gas is transported either to tidewater or through Canada to the
25 continental United States; and

26 WHEREAS both in-state uses and foreign ^{and domestic} marketing will depend on the
27 construction of such a line;

28 BE IT RESOLVED that the Alaska State Legislature encourages the Gover-
29 nor to consider, as an alternative to other energy proposals, the long-term

benefits to residents of the state from a natural gas pipeline from the North Slope to Fairbanks, with spurs to other Interior communities; and be it

FURTHER RESOLVED that the legislature will cooperate with the administration to remove any barriers that may have delayed progress in building a natural gas pipeline.

STATE OF ALASKA



POUCH V
JUNEAU, ALASKA 99811
(907) 465-4941

HOUSE SPECIAL COMMITTEE ON OIL AND GAS

To: Rep. Dick Shultz
Co-Chairman, Resources Committee

From: Rep. Mike Davis *Mike Davis*
Chairman, House Special Committee on Oil and Gas

Date: March 5, 1985

Re: HCR 8

House Concurrent Resolution No. 8 was recently heard in the House Special Committee on Oil and Gas, and this legislation will again be heard tomorrow. I am writing to you at this time in regard to a committee substitute for HCR 8 that will be brought before the committee at tomorrow's meeting.

As shown in the attached draft committee substitute, the one major substantive change is that reference is now made to the ANGTS gas line as well as to the TAGS gas line. The purpose of HCR 8 is not to promote one gas line alternative over another, but rather to encourage the use of alternative energy sources for the benefit of Interior consumers. I support this measure, but I believe it would be inappropriate to use this resolution as a means of expressing favor with the TAGS gas line or, by omission, expressing disfavor with the Congressionally-approved ANGTS gas line.

Alaska State Legislature

COMMITTEES

Co-Chairman — House Resources
Committee
Member — House Transportation
Committee



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Dick Shultz

HCR 8 SUMMARY

TO: Rep. Mike Davis / Chairman, Special Committee on Oil and Gas
FROM: Rep. Dick Shultz / Co-Chairman, Resources
DATE: February 21, 1985
RE: House Concurrent Resolution #8

The purpose of this resolution is twofold.

The first and most obvious purpose is to encourage the Governor to pursue a more active course in bringing natural gas to Fairbanks and the Interior with an eye toward eventual completion of a line to tidewater.

The second purpose is to stimulate members of the Legislature and the Governor to consider a new approach in developing our non-renewable resources, and bringing the benefits to Alaskan residents on a more direct basis.

It seems that whenever we, in the legislature, discuss the highest and best use of our gas reserves the idea of getting the highest price possible dominates the conversation. That being the goal, Pacific Rim markets and the various "economic windows of opportunity" are considered to be the key elements in developing our gas reserves. The one "Catch 22" that continues to impede our progress is the time frame and costs involved in building the pipeline, and risks involved in committing the necessary money to start a project that if delayed may miss a "market window" critical to the payback.

I encourage members to take the time to review the Booze, Allen, Hamilton 1983 Summary Report on Gasline Alternatives. Within that document there are possibilities for building a gas line that may have been overlooked. I

believe that it will become clear after careful review that it is not absolutely necessary to build a pipeline from the North Slope to tidewater initially.

We need to also consider the multiple benefits of using our gas in state to the greatest degree possible and factor all the socio-economic effects into a complete model before deciding what constitutes highest and best use. I base that suggestion on the premise that the number of dollars coming into state government on a per capita basis greatly exceeds the returns in benefits received by the average Alaskan resident via the present system of wealth dispersal. Consider for instance that gas to heat ones home may be more beneficial to an interior resident than a new reservoir in devils canyon on which to sail his dinghy.

This new approach may not be a popular with those in government who prefer to exercise control of the distribution of our state's resources wealth. I would ask that we consider the argument that residents of the state could more efficiently benefit from gas heat in their homes, low cost, long term electrical generation for their communities, and hundreds of permanent jobs than from dollars in the general fund. It may simply be a matter of where we want to stimulate growth as a result of gasline development; in government as it absorbs dollars in an effort to provide benefits or within our Alaskan communities.

Gas to our local communities would provide stimulation to the private sector as low cost energy is distributed from a gas fired electrical generation source in Fairbanks along the Intertie and through other future power networks to outlying areas. The Booze, Allen, Hamilton report also suggests the production of methanol in the Fairbanks area with transportation to tide water being provided via the Alaska Railroad as a source of additional economic stimulation.

As markets develop on the Pacific Rim, demands in the short term could possibly be handled by rail transported gas while the rest of the gas line to tidewater is completed. Another advantage is that the critical problem of construction time vs. the proper Pacific Rim "economic window" is easier to solve with half the gasline already constructed. The economic logic suggested by Susitna proponents to build half of that project can be applied to an intra-state pipeline as well.

There is one critical question, which in light of the economic projections we are receiving should not be ignored. Will we as a state be able to afford the support necessary for a gasline in the future if we continue to commit our revenue to mega-energy projects such as Susitna? The other key question is what will the Susitna project provide that the gasline wouldn't also provide? The fact is that the gasline spin offs in terms of permanent jobs and a stable growing interior economy far exceeds those available as a result of Susitna. Finally we need not be reminded that it appears the Federal Government may be reluctant to provide the necessary FERC licensing to eventually build the Susitna project.

Prioritizing our resource development dollars will be the most difficult task that we and future legislators face over the next few decades. I believe that diversified economic projects may be found to be in many

instances cost prohibitive when the plan dictates that resources be converted to dollars which in turn are filtered through the government digestive system. The bottom line is that what goes in rarely resembles what comes out in either quantity or quality.

Lets take the time to look at a wider variety of solutions as we make our resource development decisions on behalf of our constituents. I have faith in Alaska's economic potential, not because we have a multitude of raw resources to develop, but because we have people with ambition, pride, and skill who could give government a lesson when it comes to making things happen. It may, heaven forbid, be necessary to change state policy on some of these issues to give our people the chance to more directly benefit from our resources, and if thats what it takes, then lets get after it.

I urge your support on this resolution and offer it as a opportunity to explore a new direction as we consider policy decisions affecting development of our resources for the maximum benefit of our citizens.



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Opinion

Monday, June 3, 1985

It's time to develop state energy policy

By MIKE DAVIS

Local hire and use of the state's royalty share of oil and gas are major policy issues that were dealt with during the last legislative session, and that will continue to be a point of focus during the interim and the next session as well.

The state of Alaska receives one-eighth of the oil and gas produced on state-owned lands and waters as its royalty share of the resources. About half of the state's oil and gas revenues, \$1 billion annually, are earned as royalties. This figure will drop sharply, though, as the volume of royalty oil begins to decline. Ten years from now, the state's royalty share will be less than half of what it is today. In 20 years, the royalty share will be only 15 percent of today's volume.

Another effect of having less royalty oil and gas is that there is increased competition for these resources. Forty percent of the Prudhoe Bay and Kuparuk royalty oil is already committed through long-term contracts with MAPCO, GVEA, Tesoro, and Chevron, and demand for the remaining royalty oil far exceeds available supply.

Recognizing both the relative scarcity of these commodities and

Guest opinion

the state's role as resource manager and owner, the state has three options for utilizing its oil and gas. These options include selling these resources by competitive bid, through long-term negotiated contracts, or allowing the oil and gas producers to sell the state's royalty share for them.

The purpose of negotiated contracts, through which the state receives less than the maximum value of the oil and gas, is to benefit Alaskan residents through lower fuel costs or other consumer benefits. Unfortunately, the latest long-term royalty oil contract awarded to GVEA will result in marginal consumer benefits, while also resulting in less state revenue than possible.

With almost half of the North Slope oil reserves already depleted, the Legislature is belatedly beginning to recognize the need for a statewide fiscal policy. It is time we develop a statewide energy policy as well.

We have been made painfully

aware in recent months of the state's dependence on energy-based revenues, and of the pivotal nature of energy prices on Alaska's economy. A statewide energy policy would be invaluable in lending direction toward using energy resources and energy-program expenditures for the best interest of the people of the state.

Alaska has an extensive array of energy programs, though these programs are often in conflict with one another due to lack of an overriding energy policy. This lack of policy has resulted in regional disputes toward energy costs and the development of energy projects, disincentives toward energy conservation, conflicting direction being given to the administration, and cutbacks in programs providing subsidies on a needs, rather than community, basis.

For this reason, I introduced HCR 29 during the last session, which directs the administration to develop an energy policy and reevaluate existing energy programs in the state.

I am also evaluating the possibility of making North Slope natural gas available to Alaskan consum-



REP. MIKE DAVIS
Energy policy needed

ers, and drafting criteria regarding the disposition of royalty oil and gas. These criteria, which will be introduced as legislation in January, will provide direction to the legislature so that future long-term negotiated sales will result in greater consumer benefits than will be

received under the most recent GVEA contract.

A related policy issue is that of local hire. One of the greatest benefits of resource development should be employment for local residents. As long as many of these jobs continue to go to people from out of state, though, we will continue to lose many of the gains associated with development.

Legislation was recently signed by the governor that strengthens the local hire statutes relating to public works construction, though much still needs to be done for Alaska to have an effective local hire law. Among these needs are funding for additional enforcement officers, and provisions written into all projects involving state lands, grants, or loans that all work done on state projects utilize the local work force.

Without a comprehensive effort being made to maximize revenues, increase consumer benefits, and provide jobs for Alaskans, we risk losing many of the gains realized from the one-time development of our non-renewable resources.

Democrat Mike Davis is serving his second term in the state House of Representatives, representing District 19.

STATE OF ALASKA



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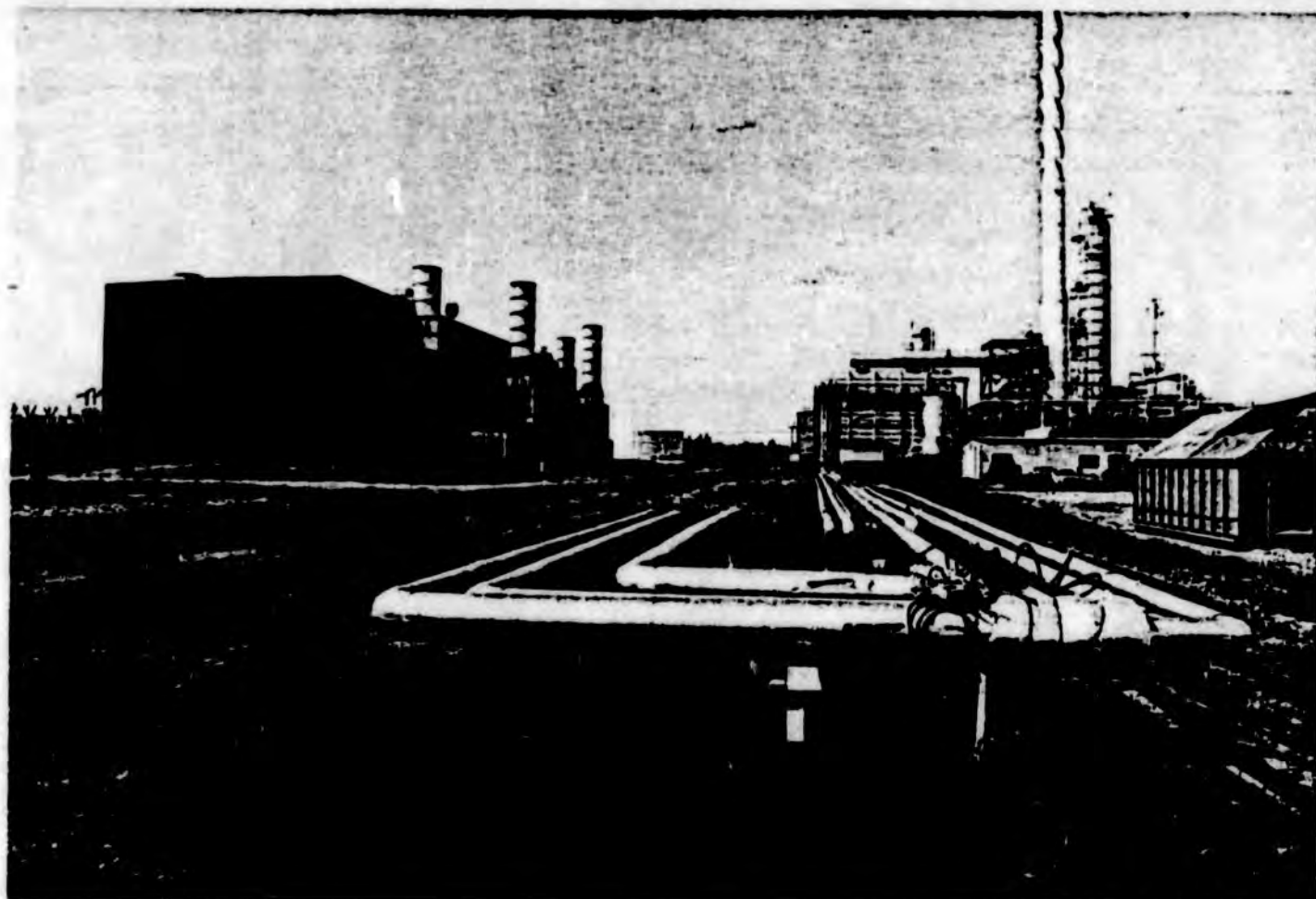
HOUSE SPECIAL COMMITTEE ON OIL AND GAS

HCR 29

Alaska has an extensive array of energy programs, though these programs are often in conflict with one another due to lack of an overriding energy policy. This lack of policy has resulted in regional disputes toward energy costs and the development of energy projects, disincentives toward energy conservation, conflicting direction being given to the administration, and cutbacks in programs providing subsidies on a needs basis.

Recognizing that the implementation of specific energy programs is not a substitute for an energy policy, HCR 29 is designed to provide for the development of a policy that will address energy issues on a broad, statewide basis. Only through such a policy will it be possible for the state to maximize development of its thermal resources, maximize revenues based on these resources, promote lower energy costs to individuals and the state, and allow for the proper planning of major energy projects.

HCR 29 is not directed toward the expansion or curtailment of specific energy programs, but toward development of a policy that will allow all present and proposed programs to be viewed within an overall context. We have been made painfully aware in recent months of the state's dependence on energy-based revenues, and of the pivotal nature of energy prices on Alaska's economy. HCR 29 would lend direction toward utilizing energy resources and energy-program expenditures for the best interests of the people of the state of Alaska.



Refinery at North Pole, Alaska.

Alaska's Energy Policy: Power to the People at Any Cost

by Neil Davis

INTRODUCTION

The State of Alaska is in the energy business in a big way. More than 90 percent of state government's income is from petroleum resources—possessions owned collectively by the people of Alaska. This income is large, especially for a state having a population of only half a million

people, and it allows the state government to spend heavily. The fiscal year 1985 state budget plans for an expenditure of \$3.89 billion, the equivalent of \$18,600 per average Alaskan household.¹

In 1985 Alaska will spend roughly \$600 million for transportation and public facilities and another \$550 million for education. The next largest expenditure—ranking above government administration itself and above health and social services—is for providing energy and energy subsidies to Alaskans. Alaska will spend approximately \$480 million on energy-related matters in fiscal year 1985. This is because Alaska's state government has es-

tablished itself as the key provider for the state's energy needs.

An examination of the FY 1985 budget indicates a planned expenditure for the state's energy business as shown in Table 1. Striking features of this table are the high expenditure for hydropower and the low expenditure for research. No for-profit enterprise with operating and capital budgets the size of Alaska's would consider spending such a small portion of its total outlay for research. Exxon, for example, spent 6 percent of its total \$11 billion budget in 1981 for research, and a tenth of that was for "basic" research.² Yet, in 1985 Alaska will spend only about two-

Neil Davis, Professor Emeritus of Geophysics at the University of Alaska-Fairbanks, received B.S. and Ph.D. degrees in geophysics from the UAF and an M.S. degree from the California Institute of Technology. His latest book is Energy/Alaska (University of Alaska Press, 1984) from which the above photo is taken.

One important component of the energy policy . . . is the concept that all Alaskans should share equally in the cost of energy and that all should have plenty of energy to use.

tenths of a percent of its energy-related outlay on what might be considered research.

Even if one includes the entire budget allocated to the Alaska Department of Natural Resources for "resource inventory/geological investigations"¹ as if it were intended for research on energy resources—which of course it is not—then the portion for research is still less than 1.5 percent. Alaska's energy policy does not include more than token investment for research directed toward developing the state's vast energy resources² or toward analyzing state government's self-chosen role of providing energy to the people of the state.

ALASKA'S ENERGY POLICY

If Alaska's energy policy has little room for the generation of new knowledge and for technical innovation, what is the

policy, and what does it include? Does Alaska even have an explicit energy policy? The evidence is that it does have an *evolving* energy policy, although one might not be able to locate a statement of what that policy consists of at any moment in its evolution.

Something that sounds like the makings of a policy is the legislation that requires the Alaska Department of Commerce and Economic Development, with the assistance of the Alaska Power Authority, to prepare annually a new report on the "Long Term Energy Plan for Alaska."⁴ The various authors of the reports on the Long Term Energy Plan do not claim that the plan is a statement of policy or that it is even a tool for developing policy.⁵ Yet the reports contain statements giving implicit indications of the state's energy policy. Such statements, in addition to the body of enacted law, do suggest what the state's energy policy is.

The record of legislative actions over the past six years, as outlined in Table 2, hints at the nature of Alaska's energy policy and its fast evolution. The state's actions over the years do express an evolving policy, even if that policy is not explicitly stated.

The starting point for development of Alaska's energy policy was the major increase in worldwide petroleum costs that occurred during the 1970s. High petroleum prices and Alaska's status as a major petroleum exporter together gave the state money to spend. Those high prices also caused the state's political leaders to have genuine concern over the cost of energy to Alaskans, particularly those in rural areas.

The flurry of energy legislation in 1978 established a policy that said, in essence: Alaska will use its energy resources and the money derived from them to attempt to hold down or even reduce energy costs for urban Alaskans, and also to elevate rural standards of living by providing lower-cost energy there. The policy included components based upon a faith in the concept of increasingly greater petroleum prices in the future, faith in technology (i.e., creation of the Division of Energy and Power Development and the Alaska Council on Science and Technology), and faith in the idea that anything can be accomplished by showering it with money (establishment of the Alaska Gas Pipeline Authority).

Most important, the policy stated that it shall be the role of Alaska's state government to enter the business of providing electrical energy to the state's citizens (establishment of the Alaska Power Authority). Why not? The federal government did the same thing many years ago with its Rural Electrification Administration and Tennessee Valley Authority.

An element of the state leadership rec-

Table 1. Alaska FY 1985 Budget for Energy

Item	Amount (in millions of dollars)
Hydropower	396.621
Energy Subsidies	25.653
Interties: Anchorage - Fairbanks plus Seward	25.082
Rural Electrification	14.295
Administration	13.766
Energy Conservation	2.434
Alternative Energy	1.195
Research (0.2%)	
Fisheries impacts of hydropower	0.415
Coal resources	0.400
Geothermal resources	0.100
(University of Alaska Coal Lab: 0.180)	
Total	\$480 million (12.3% of state budget)

Alaska's energy policy does not include more than token investment for research directed toward developing the state's vast energy resources. . . .

ognized that perhaps the centralization represented by the major role awarded to the Alaska Power Authority might not be a satisfactory answer for everyone. One result was legislation forming the Alaska Energy Center, a public corporation intended to do everything for everyone, but which resulted—because of its quick termination—only in an embarrassing waste of time and money.

The years 1979 through 1983 saw changes that honed Alaska's energy policy

into its present form. The recognizable forces affecting the evolution of policy include one that politicians find difficult to resist: the demand for jobs that large energy projects promise.⁵

Another strong force is the persistent faith in rising energy costs, an almost blind trust that inflated costs of fossil fuels will level all apparent fiscal mountains into highly negotiable foothills that future Alaskans can tread across with ease. Best to put out of mind the possibility that petro-

leum prices may stay constant or even decline further. If that happens, a typical Alaskan fall sets in: the money tree sheds its fruit and leaves quickly; a hard winter follows soon behind.

Another strong, growing force is state government itself. The fiscal year 1985 budget adds 1772 new positions to augment the approximately 17,000 people already employed by the state.¹ Even if they are not employed by the state, most Alaskans expect the state to provide benefits that go beyond the basic services government had provided a few decades ago. Alaskans now expect state government to provide jobs, housing loans, welfare payments, economic assistance to farmers and businessmen, and subsidies of all sorts. That state government should also provide energy only seems natural in an era when the public expects so much of government.

These and other forces influenced the refinements of Alaska's energy policy from 1979 to 1983. If one thinks that state government's actions during this period indicate an evolving policy rather than merely a battling between different political elements of the leadership, then the nature of the evolution is clear.

The elimination of such bodies as the Division of Energy and Power Development and the Alaska Council on Science and Technology indicates a trend toward centralization of authority and decision making and also a move away from the belief that technical innovation and the development of new knowledge should be important components of Alaska's energy policy.

Along with a trend toward centralization, the evolving policy has focussed on the development of large power projects, primarily hydropower. The policy looks away from small, local energy projects that collectively might depend upon a variety of energy sources and that might

Table 2. Energy Legislation Implying an Energy Policy

-
- 1978 — *Alaska Power Authority* established.
 - *Division of Energy and Power Development* created.
 - *Alaska Gas Pipeline Authority* established.
 - *Alaska Council on Science and Technology* established.
 - 1980 — *Alaska Energy Center* established.
 - 1981 — *Alaska Energy Center* abolished.
 - *Energy Program for Alaska* enacted.
 - 1982 — *Alaska Power Authority* powers broadened.
 - 1983 — *Alaska Council on Science and Technology* abolished.
 - *Division of Energy and Power Development* abolished.
 - *Susitna blackmail clause* (consumer balloon payments) postponed until July 1991.
 - 1984 — *Susitna blackmail clause* repealed.
 - Fiscal restraints removed from Alaska Power Authority, so that its projects no longer need be economical or return full investment to the state.*
 - Power Development Revolving Fund* established in the Department of Commerce and Economic Development to pay differences between actual costs and income from Alaska Power Authority projects.
 - *Intertie appropriations* made for \$25 million (Seward; Anchorage-Fairbanks).
 - *Lake Tyee, Swan Lake, Solomon Gulch, and Terror Lake* hydro projects combined for purpose of rate determinations.
 - *Bradley Lake* hydro project authorized for construction at a cost of \$300 million in July 1983 dollars.
 - *Susitna-Watana* hydro project authorized for construction at a cost of \$3.75 billion in January 1983 dollars.
 - *Unconstitutional forward appropriations for*
 1. "power cost equalization" — \$21.7 million annually,
 2. *Bradley Lake* "rate stabilization," etc. — \$50 million annually, and
 3. *Susitna-Watana* "rate stabilization," etc. — \$200 million annually.
-

require application of new or improved technologies.

One important component of the energy policy that has not changed is the concept that all Alaskans should share equally in the cost of energy and that all should have plenty of energy to use. The Energy Program for Alaska is accomplishing these goals by means of direct subsidies to consumers outside the Anchorage and Fairbanks areas and by means of the required sharing of power project costs expressed in the "Susitna blackmail clause"—primarily intended to force future legislatures to invest in large power projects. The repeal of this clause in 1984 and its replacement legislation actually did not signal a change in the policy that all Alaskans should share equally in the costs of power projects administered by the Alaska Power Authority. However, the new legislation did remove from the power authority the previous requirement that its projects should pay for themselves.

Prior to 1984, the Alaska Statutes required the Alaska Power Authority to set rate structures that would return the state's investment in total. But now, if the authority builds a project that produces power at a cost higher than an alternative source of energy, the authority is allowed to set rates equal to that dictated by the cheaper alternate source. All Alaskans will share equally in the cost of the resulting shortfalls through the Power Development Revolving Fund—which is to be filled with money owned equally by all citizens.

SUMMARY

In summary, Alaska certainly does have an energy policy. It has some fixed elements and some that are evolving. Based upon the actions that express it, Alaska's energy policy seems to be composed of the following elements:

- Derive all possible income from export of energy. Foster, if necessary, new exports by providing financial assistance using money owned by the state's citizens. Assume an increase in fossil fuel prices of a few percent each year.
- Provide electrical and thermal energy to the state's citizens, since it is assumed that such a task is a proper function of state government. Also, subsidize fossil fuel costs in rural areas.

- Centralize decision making within state government and emphasize large power projects together with an interconnected intertie network. Use power projects to promote employment and regional growth. Assume that all technical problems can be solved during construction phases, using a base of pre-existing knowledge.

- Do not require that power projects in themselves be the cheapest means of power generation in each area of the state.



Use a common pool of money owned by the state's citizens, now and in the future, to make up cost differences.

- Do not emphasize use of the variety of energy resources available in Alaska or of technical innovation and development of new knowledge—to do so has no current fiscal advantage.

I submit that the state's current energy policy is not in the long-term best interests of Alaska. Regardless of whether one approves of rapid growth, the policy probably is quite successful in promoting growth

—as long as excess funds are available from energy exports. However, the policy makes too much use of subsidy and minimizes technological development that will be needed in future years. We are, in fact, already wasting money that would be better spent trying to diversify our use of Alaska's copious energy resources.

Our policy places too much emphasis on centralization, both in energy supply and decision-making authority. The issues are complex and difficult to comprehend, at best. Partly for that reason, and partly because of the centralization within government, Alaska's energy policy can be conducted by too few people with too little scrutiny.

Perhaps the most serious defect is the lack of fiscal restraint in the policy that now exists in 1984. Previously, the Alaska statutes required that energy sold from projects be priced to match their costs, year by year. The removal of that stringent requirement decreases the pressure on planners to make energy projects cost-effective—as long as the oil money holds out, we have no immediate sanction to punish poor planning or costly mistakes. We are, in effect, putting our problems off to the future. As rich as Alaska is now, one would think that we ought to be able to solve our problems as we encounter them, instead of foisting them off on our children.

REFERENCES

- ¹Fiscal Year 1985 Operating and Capital Budget, Summary of Appropriations, Legislative Finance Division, Pouch WF, Juneau, AK 99811.
- ²David, E. E., Jr. 1981. Overview, Proceedings of the Exxon Energy Research and Development Symposium, held May 19, 1981, in San Francisco, California. Exxon Research and Engineering Company, Florham Park, NJ, p. 5.
- ³Davis, Neil. 1984. Energy/Alaska. University of Alaska Press, Fairbanks, AK, 530 pp.
- ⁴Alaska Statutes. 1980. Alaska Statute Sec. 20, ch. 156, SLA 1978; am. Sec. 25, ch. 83, SLA 1980.
- ⁵State of Alaska Long Term Energy Plan, annual reports for 1982, 1983, and 1984. Department of Commerce and Economic Development, Juneau, AK. (See, in particular, the 1982 report.)
- ⁶Tussing, A. R. 1984. Alaska's energy policy in a global context. *The Northern Engineer* 16(2):27-33. ♦



NAKNEK ELECTRIC ASSOCIATION, INC.

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April 8, 1985

Rep. Davis
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Juneau, AK 99811

RE: ENERGY EQUALIZATION PERPETUATION CONCERNS

Everyone reads, listens, observes and interprets differently. The best of intentions can be construed to make "black white."

This I may be doing by the following comments. However, I should like to set forth and offer comments and suggestions relating to "power cost equalization."

Recognition of high electric energy costs in given areas of Alaska is acknowledged and should be addressed.

Too, it is realized people "by and large" live where they do, because of a willingness and awareness that it may cost more, and accept such as a way of life.

Consequently, considerable disparity exists, but Alaskans do have a good buy in their base electrical requirements with the application of energy equalization. As an example, from the March 25 addition of U.S. News and World Report (copy attached), average residential cost per KWH in New York City was listed as 16.174¢. Here in Naknek, Alaska our average residential consumption is 454 KWH per month at a tariff rate of \$120.59, or 26.56¢ per KWH, and a credit for power cost equalization of 15.73¢ per KWH, or net of 10.83¢ per KWH "~~out-of-pocket expense~~" a lesser cost than New York City by 5.34¢ and near the same as Chicago costs per KWH. My chief concern of equalization is three-fold; the state of Alaska capital budget, perpetuation of the fund, and placing equalization in the hands of legislative intent.

The seeding of the fund will dwindle, and at some point in time exhaust itself. This will cause considerable unrest among rural people that have become accustomed to the stipend, thereby causing hardship in some cases, questions of the utilities, legislators and Board of Directors. It will be hard to explain the removal and decline of the equalization fund, once established for their benefit.

The following observations might well serve as thought for revision possibilities of PCE legislation and law.

At 1984's year end, the Alaska Power Authority disbursed in excess of 8.5 million dollars for some 77.5 million KWH at an average 11.15c per KWH. After scanning the rural electric borrowers national statistical report of Alaskan systems, a ratio of 50% appears reasonable for distribution of residential against all consumer classifications. It appears assumable that fifty percent of equalization could be eliminated by making only residential consumers eligible for energy equalization.

I do not know the capital budget for PCE, however, it appears that about five million dollars will be required to satisfy only residential consumers while the inclusion of all other classes could possibly bring the figure to ten million dollars. Therefore, let us assume the program would be funded with ten million dollars each year as long as possible; thus leaving a surplus of five million after satisfying the residential requirements to be trusted until such time the trust would generate in earnings that amount needed for PCE payments of the future, and require no further funding.

Taking the position that only residential consumers be eligible for PCE is based upon the nature of business today. Take the commercial account for example. Each are entitled to take from their income the expense of doing business; therefore, in reality, electrical costs are a deduction for the commercial account. Too, the commercial account will add the cost of electrical costs to the retail item or items for sale; or in the case of a service, it will be included in the service fee indirectly. Therefore, no need is truly generated for PCE in the commercial class of consumer. Let us look now upon the governmental usage of electricity. By funding such accounts, it is merely pushing funds from one tax pocket to the other, and providing a budget surplus for the agency, whether it be federal, state or local governmental entities.

Only the residential consumer has no means of regaining excessive energy costs and truly should be the only recipients of PCE funding.

It probably is not politically wise to remove commercial accounts from PCE, however, every justification necessary lies in the fact that expense is a tax deductible item, and therefore, should be eliminated from allocation.]

These thoughts have been in mind for sometime, and I hope might light the spark for some revision of PCE.

Thank you for your time and considerations.

Sincerely,



C. E. Franke
General Manager

As an Ex-President Prunes His Parks—

Richard Nixon's plan to give up his Secret Service bodyguards lent impetus to a drive in Congress to trim the costly perks enjoyed by former Presidents.

Senator Lawton Chiles (D-Fla.) announced that he would introduce a bill to rein in what some critics call the "imperial ex-Presidency," curtailing the 28 million dollars spent each year to commemorate, protect and otherwise take care of former Chief Executives.

With that tab exceeding the 24.9 million dollars it costs to run the White House itself, critics protest that something is amiss.

Nixon, who became in mid-March the first ex-President to decide to give up lifetime protection, would save the government more than 2 million dollars a year by hiring his own guards. Others shielded by the Secret Service: Gerald Ford and his wife Betty, Jimmy Carter and his wife Rosalynn and Lyndon Johnson's widow Lady Bird. Jacqueline Kennedy lost her protection when she remarried in 1968.

The agents accompany the former First Families on their travels and camp on their doorsteps when at home, operating out of nearby lease quarters.

The Secret Service last year stopped providing protection for Nixon's wife



Nixon and his Secret Service agents.

Pat in her request. After Secret Service announcement, Ford said he would keep his Secret Service detail for now but gradually eliminate it later. Carter declined to comment.

Before Dwight Eisenhower, retiring Presidents had to fend for themselves. Then, in 1955, Congress voted to spend \$84,000 for the upkeep of presidential libraries. Personnel and other expenses were added in 1958 and Secret Service protection in 1965.

By this year, outlays had exploded to 15.5 million dollars for two libraries, 11.2 million for Secret Service protection, 1.2 million for office allowances and \$278,600 for pension.

Chiles's bill would limit outlays for presidential libraries to \$1 million annually and require annual reviews of the need for protection after one year.

Current Quotes

"The first thing one has to remember is that you don't get to the head of the Politburo by being a choirboy."

Former Secretary of State Henry Kissinger, stressing the need for caution in sizing up new Soviet leader Mikhail Gorbachev.

"If the United States wants to continue to play a role in the Third World, it must attack terrorism at its source."

Former President Richard Nixon, calling for tough action against terrorists in a newly released book *No More Vietnams*.

The IRS has sunk so low in public opinion that a responsible accountant honestly believes he needs a hood to protect himself from IRS retaliation."

Ronald Noll of the Pennsylvania Society of Public Accountants, telling a House subcommittee that accountants fear the IRS so much they have discussed hiding their identity for future appearances.

"The fact is we might be handing out psychological thalidomide."

Dr. Edward Zigler of Yale, warning that Americans who put very young infants in day-care centers may traumatize them, and do serious psychological harm.

"We should not have let him out of there alive."

Former Israeli Defense Minister Ariel Sharon, saying his government "committed an error" when it allowed PLO leader Yasser Arafat to escape from Lebanon in 1985.

"We have drawn a very fine line in the sand against raising taxes."

Budget Director David Stockman, describing the Reagan administration's position against tax increases by a group of magazine editors and publishers.

"Go ahead—make my day."

President Ronald Reagan, replying to a line from Clint Eastwood's movie *Death Wish* to send a message to Congress that he can have the president of the United States.

Electricity's Surging Cost

Worst residential electric bills climbed 7.9 percent in 1984, nearly twice as fast as the 4.0 percent inflation rate.

A national survey by utility regulators found power costs varied widely, with consumers in the Northeast paying the most and those in the Northwest the least. New York City's rate was the highest in the nation.

The 25 most expensive and 25 least expensive cities by kilowatt hour in 1984:

25 Most Expensive

	Average KWH Cost	1-Year Change
New York City	16.17¢	+4.1%
Kahului, Hawaii	14.30¢	+8.3%
Naticket, Mass.	14.31¢	+7.6%
Hilo, Hawaii	13.82¢	+10.7%
Madison, N.J.	13.78¢	+0.3%
Long Beach, Calif.	13.05¢	+10.5%
Boston, Mass.	12.77¢	+30.8%
Long Beach, Calif.	12.14¢	+11.5%
San Francisco, Calif.	12.01¢	+5.8%
San Diego, Calif.	11.79¢	+6.1%
Flint, Mich.	11.52¢	+20.1%
Bergen County, N.J.	11.41¢	+14.6%
Newark, N.J.	11.21¢	+1.1%
Honolulu	11.01¢	+9.4%
Evansville, Ind.	11.28¢	+1.5%
San Jose, Calif.	11.20¢	+22.3%
Bridgeport, Conn.	11.14¢	+11.6%
San Jose, Calif.	11.07¢	+2.0%
Chicago, Ill.	10.80¢	+4.6%
Philadelphia, Pa.	10.80¢	+20.9%
Pawtucket, R.I.	10.78¢	+21.8%
Wilmington, Del.	10.78¢	+2.8%
Boston, Mass.	10.85¢	+21.0%
Fall River, Mass.	10.80¢	+12.2%
Davenport, Iowa	10.57¢	—

25 Least Expensive

	Average KWH Cost	1-Year Change
Billings, Mont.	3.55¢	+15.5%
Spokane, Wash.	3.61¢	+23.0%
Boise, Idaho	3.85¢	+8.6%
Ontario, Calif.	3.85¢	+11.0%
Portland, Ore.	3.71¢	+10.8%
La Grande, Ore.	4.37¢	+21.1%
Casper, Wyo.	4.92¢	+7.4%
Bullhead City, Wash.	4.96¢	+35.2%
Albany, Ky.	5.20¢	+1.6%
Durham, N.C.	5.45¢	+1.5%
Franklin, N.C.	5.48¢	+35.5%
Marion, Ohio	5.48¢	+0.1%
Cheyenne, Wyo.	5.55¢	+21.7%
Washington, D.C.	5.56¢	+3.3%
Las Vegas, Nev.	5.67¢	+27.4%
Butler, Pa.	5.74¢	+5.7%
Kingsport, Tenn.	5.75¢	+2.2%
Fort, Mich.	5.80¢	+2.4%
Juneau, Alaska	5.85¢	+3.2%
Lexington, Ky.	5.85¢	0%
La Crosse, Wis.	5.94¢	+7.5%
South Bend, Ind.	5.91¢	+1.1%
Portland, Ore.	5.97¢	+3.6%
Portland, Me.	5.98¢	+4.6%
Portland, W.Va.	5.98¢	+1.8%

Chugach Electric Association
1984 Annual Report

How our rates compare

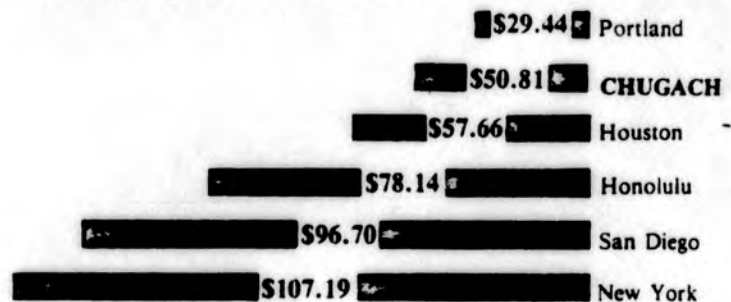
Chugach consumers enjoy some of the lowest electric rates in the nation, thanks in part to a long-term supply of inexpensive natural gas used to generate power.

Statistics compiled by the National Association of Regulatory Utility Commissioners show that consumers in New York City pay \$107.19 for 750 kilowatt hours (kWh) of electricity, more than double the \$50.81 charged by Chugach.

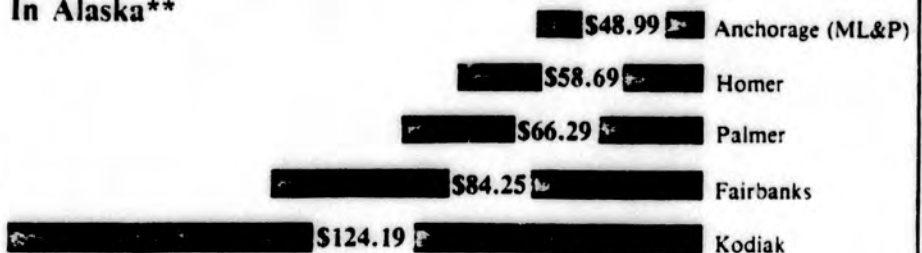
Residents of Tampa Fla., pay \$60.74 for 750 kilowatt hours while those who live in Philadelphia pay \$73.08.

Chugach's rates have remained surprisingly constant over the past 30 years, although electrical usage has soared. The average residential usage in 1984 was 805.4 kWh per month.

Outside: Residential electric bills at 750 KWH*



In Alaska**



*As of Feb. 1, 1984 Source: National Association of Regulatory Utility Commissioners

**As of March 1, 1985 Source: Alaska Public Utilities Commission

Alaska's Energy Policy in a Global Context

An Informal Tour of a Modern Maze

by Arlon Tussing



WORLD ENERGY FUTURES

How one looks at Alaska's energy policy choices depends mainly on one's perceptions of what world energy markets will look like over the next 10 to 20 years. Some of the perceptions that stood behind the State's policies during the late 1970s and the early 1980s now need to be reassessed. Specifically, we should look again at the notion that we face a long-term tightening of energy markets worldwide, and that oil prices (and, hence, the value of Alaska's fossil fuel resources) will continue to increase without letup. It is time to reexamine the belief that Alaska can look forward to brightening prospects for energy-related export ventures which could, in turn, sustain economic growth in the state.

Arlon R. Tussing is professor of economics at the University of Alaska's Institute of Social and Economic Research, Anchorage, and president of ARTA, Inc., Seattle. Tussing is well known for his impressive record in the past few years for controversial but accurate forecasts in the energy pricing market. He is co-author of "The Natural Gas Industry: Evolution, Structure, and Economics."

This belief rests on a fundamentally flawed picture of the world energy outlook and Alaska's energy-related opportunities. It reflects, at best, a myopic view of the events of the 1970s. The last few years showed that lasting and worsening energy traumas are not inevitable, at least in the short term. And a look at the cycles and trends of energy prices over the preceding hundred years calls into question doomsday rhetoric for the long term, as well.

History shows us that oil prices, in particular, are violently cyclical, at least without an overwhelming regulatory presence like that of the Texas Railroad Commission between 1935 and 1972. Oil is a commodity and, like soybeans or copper, its price fluctuates annually and over longer periods. If we look at 130 years of crude-oil prices in the United States, we find no long-term trend; that is, the overall pattern is pretty flat — with an average somewhere on the order of \$14 a barrel in today's prices. But we also find dramatic short-term fluctuations: prices have moved up or down an average of about 20 percent per year.

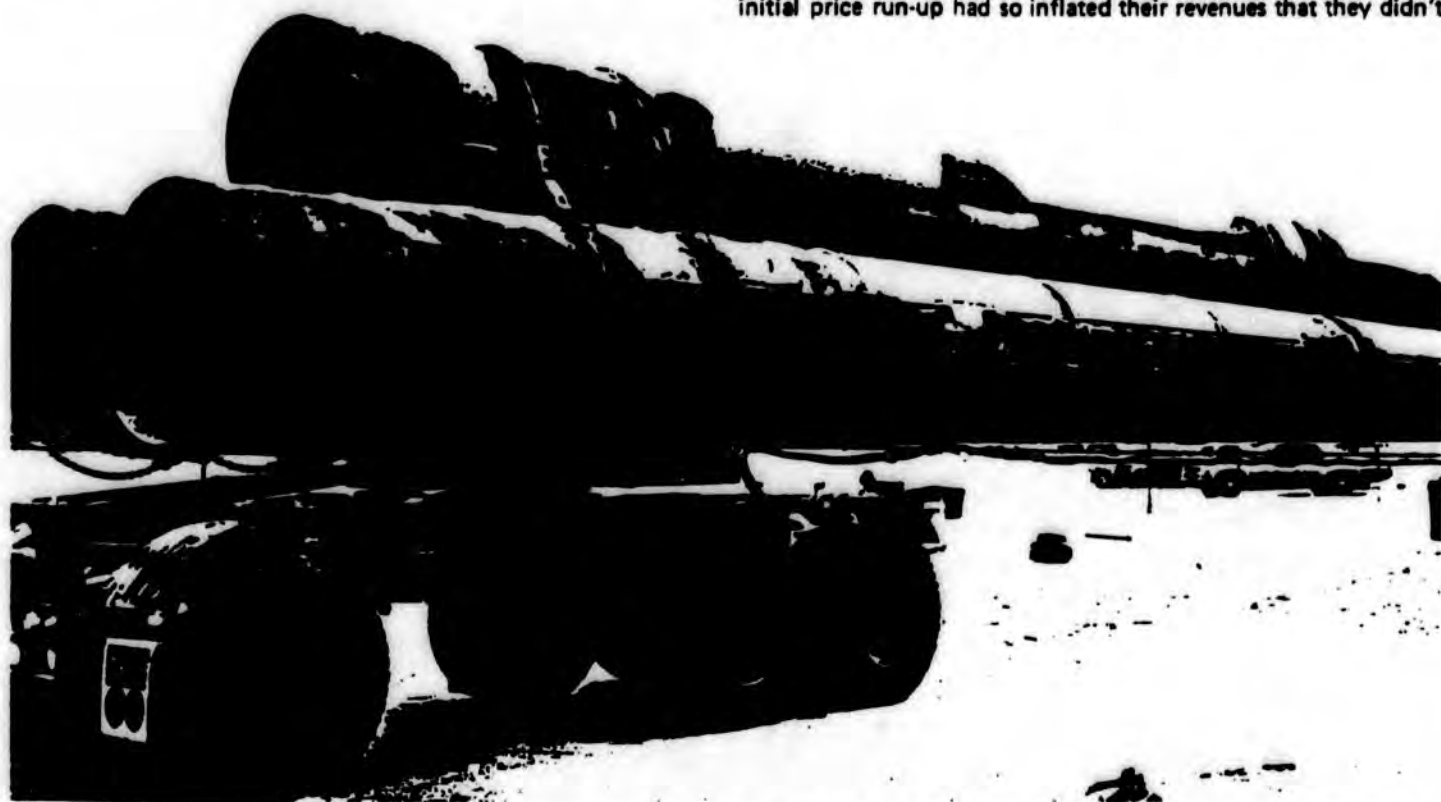
Perhaps the most important lesson to be gleaned from these historical statistics is that there is no confident basis upon which to forecast oil prices in the year 1990, 1995, or 2000. It is not inconceivable that prices will again reach down to the levels prevailing before 1972 — less than \$10 per barrel in today's dollars — or that spot prices could for a nonce reach \$50 or more. The important point is that even if, as I suspect, \$15 is about the "right" price for the long run, \$15 is not a stable "equilibrium" that provides a basis for long-term business or public planning.

In the years before 1973, the energy establishment assumed, perhaps unconsciously, that there was such an equilibrium be-

cause the Texas Railroad Commission had been stabilizing domestic (and, with the help of the Seven Sisters, global) oil prices for decades. From 1935 to 1972, the average annual change, up or down, in U.S. constant-dollar crude-oil prices was only about 4 percent. The Commission wielded such power because Texas producers controlled and contained the bulk of the world's discretionary oil-producing capacity. Texas authorities could increase production enough to cover any surge in demand resulting from a world-wide economic boom; they could also slow down production to prevent a petroleum glut and consequent price crashes.

As a result, we were blessed with 35 to 40 years of stable oil prices. In a sense, it was a fool's paradise that gave rise to the conviction that there was indeed a long-term equilibrium price of oil. Stability led to complacency, and the world shifted almost totally to dependence on oil for its industrial, electrical-generation, and transportation fuels. During the 1960s, for example, Japan's oil consumption expanded at a compound rate of 18 percent per year. Even in Europe, a 7 percent compound growth rate prevailed.

Reality obtruded in the early 1970s, however, when Texas (and Louisiana) ran out of the spare producing capacity that allowed state conservation authorities to use their power over production rates to prevent the Middle Eastern crises of 1954, 1957, and 1967 from causing more than a ripple in prices. The disturbances of 1973-74 touched off a consumer panic, which produced a run-up of spot-market prices. The oil-producing nations of the Middle East then voluntarily and individually reduced their production (without any urging or direction from OPEC) and reduced their exports to a degree that sustained prices at the spot-market levels reached at the peak of the panic. The initial price run-up had so inflated their revenues that they didn't



These sections of pipe were being moved from storage yards at Fairbanks, Valdez and Prudhoe Bay to intermediate storage sites

along the 800-mile trans-Alaska pipeline route. (All pipeline photographs courtesy of Alyeska Pipeline Service Company.)

know what to do with it all. During this period, even Alaska's government leaders suspected that the era of rising oil prices meant that oil left in the ground would yield a higher and more secure return than any conceivable investment founded on today's cash proceeds from oil production.

A similar progression of events unfolded in 1979. This time, however, the market panic that arose from the Iranian Revolution was not even a response to an actual cutoff in supplies. The supply shrinkage happened only *after* prices went up, and the cutback was engineered in Saudi Arabia — not in Iran. This second oil-price shock pushed prices to a level that was self-defeating. The oil states had now largely priced oil out of the world's industrial fuel markets.

At any price above \$20 in today's dollars, there is no market for oil as an industrial bulk fuel or for the generation of electricity, wherever coal or natural gas is available. Coal from new mines in North America shipped through new terminals in new ships can be burned in new plants with scrubbers or other technology sufficient to meet the tightest environmental standards, at any tidewater site in the world, and still undercut \$20 oil. The nearly unlimited availability of coal in the long run therefore ultimately sets a price cap on oil somewhere below \$20 a barrel.

By the same token, as long as oil is priced anywhere above \$20 per barrel, industries throughout the world will continue to reduce their consumption of oil in favor of coal (or natural gas, or other energy resources with favorable local economics). The world, after all, has no need for any *specific* energy commodity. All that civilization requires are the calories for light, heat, and motive power, and simple hydrocarbon molecules to serve as the building blocks for making more complex organic chemicals. For each of these used, established technology offers several candidates, and liquid petroleum will remain the fuel or feedstock of choice in each one of them only where and for so long as it is the cheapest.

The price run-ups of the 1970s were thus not the product of terminal resource depletion, but only artifacts of a too-long suppressed commodity cycle. Such cycles are inevitable, however, because fuel-use decisions are incorporated in long-lived capital goods, like transportation equipment, buildings, industrial processes, and appliances. Periods of short supply give way to buyers' markets and *vice versa* because neither production nor demand can react instantaneously to changed circumstances, but they do unfailingly react and, because of the delay and uncertainty of the reaction, they tend to overreact.

The reactions and overreactions to the market conditions of the 1970s still have plenty of momentum. Even today's economic recovery does not bode well for oil producers and other energy purveyors struggling with a glutted market. Revival carries with it some short-term consumption gains, but it means mainly a more rapid replacement of fuel-inefficient vehicles, buildings, industrial machinery, and appliances by durables designed in a high-price, energy-conscious environment.

WPPSS AND OTHER PUBLIC ENERGY PROBLEMS

A number of public power agencies that made long-term investments based on the faulty wisdom of the immediate past now find themselves in deep trouble. The public power agencies of

western North America, for example, embarked on a very large construction program because they anticipated higher and higher alternative fuel prices and because they assumed that electricity demand was largely insensitive to price. The Washington Public Power Supply System (WPPSS) invested in a nuclear future. Private utilities and public power agencies in several Western states invested in expensive coal-fired plants, while British Columbia's public power agency pushed forward a massive scheme for hydro-power development.

These agencies are now finding, however, that the power simply is not needed in their own districts. Worse yet, nobody else needs it either, at least at prices proportional to the debt service they incurred in construction. High prices have depressed demand, and even higher prices for incomplete and abandoned plants could provoke a dangerous "death spiral," in which utilities attempt to charge higher per-unit prices as demand falls, which exacerbates their sales losses.

A nuclear plant, for example, has an enormous embedded fixed cost. But once it is built, its operating costs are trivial. What this means is that in a supply surplus, the utility and its regular consumers benefit from sales to marginal and off-system customers, so long as they pay anything at all in excess of variable operating costs. The same is true — even more so — with a hydro project like Susitna whose fixed costs per kilowatt of capacity are greater, and its operating costs per kilowatt-hour of sales even less, than is the case for nuclear generating stations.

Consider these events: British Columbia Hydro, facing a huge surplus of power it cannot sell within the province at a price that will recover its costs, has executed a long-term sales contract with the Los Angeles Department of Water and Power. The city will use the imported power to displace oil- or gas-fired generation. Meanwhile, Bonneville Power Administration has been offering its surplus hydropower to California utilities for what it perceives to be their "avoided cost" for fossil-fuel generation — about 4.5 cents per kilowatt-hour — even though fixed-cost amortization for the WPPSS plants may run about 12 cents. BC Hydro offers its hydro surplus for less than 3 cents, however, whereupon the administrator of Bonneville (sounding like one of the villainous private-power magnates of yore) says: "Our transmission lines are not common carriers and we have no obligation to carry power for others to the detriment of our own marketing program."

Now what does BC Hydro do? It goes shopping around the State of Washington, reminding those utilities who are tied to the Bonneville system that Bonneville is going to jack up their rates to cover the costs of the recently completed and soon-to-be abandoned nuclear plants. BC Hydro then offers to sell power to these utilities in the future for a substantial discount off whatever price Bonneville charges. Ironically, BC could sell to some of Bonneville's regular customers in the Northwest without obtaining access to Bonneville's lines. Seattle City Light, for example, has transmission lines extending to the Canadian border; this utility would probably be delighted, moreover, to "wheel" British Columbia Power for the Snohomish PUD, various aluminum companies, and other customers that are now captives of Bonneville. Bonneville's latest attempt to avoid a cutthroat battle over the California market has been to propose itself as leader of a cartel of potential suppliers.

This situation arises because Northwest utilities and public power agencies are all troubled by excess capacity bearing high fixed costs. But at least they do have options for wooing export sales. Susitna wouldn't even have this safety valve.

The parable of today's Northwest power surplus also illustrates the general state of world energy markets. Everywhere we turn, inter- and intra-fuel competition is more intense than at any other time in living memory, and the potential for price-cutting wars exists in many quarters. Oil markets have yet to succumb to panic and disorder on the way down (as they twice did during the 1970s on the way up), but every OPEC country without exception has a growing budget deficit. Some of them are very poor, and their leaders have to cope with tremendous domestic problems and unrest. Once a price war breaks out, they will exhibit little discipline in cleaving to the production and price mandates that OPEC may issue.

OUTLOOK FOR THE YUKON-PACIFIC PLAN

The present and continuing surplus in world oil markets has implications for Alaska's export energy dreams. The Yukon-Pacific plan for exporting North Slope gas is based on the notion that the Japanese and Koreans will surely wish to purchase Alaska's gas (transported through a high-cost pipeline) even though utilities in the Lower 48 do not. Project promoters point to the quest in the Orient for energy diversity and for reduced dependence on Middle Eastern energy sources. Even if this remains a major goal, Japan and Korea are still looking for diversity at the lowest possible price relative to Persian Gulf oil.

And therein lies the glitch. Future oil prices are wholly uncertain and, as I mentioned earlier, a price rout is not inconceivable sometime in the near future. Investors today, whether they be North American or East Asian, will not touch any new oil-displacement project that could not survive a continued downward drift in oil prices for maybe another ten years. *No one* is going to risk \$20 to \$30 billion on an LNG export project whose cost recovery demands stable or even upward-trending oil prices.

Worse yet, Middle Eastern oil is no longer the strategic competitor to international LNG schemes. Huge surpluses of flared or shut-in gas are available to Pacific Rim markets from tidewater locations that do not need an all-Alaska pipeline, or its counterpart in Canada. It is gas-to-gas competition that will henceforward determine the export value of North American LNG. The value to Japan of a new LNG supply may in some sense be worth the price of the crude-oil imports it displaces, but the huge global inventory of undeveloped gas reserves means that a Japanese company would be foolish to promise that much. Is it reasonable, in other words, to expect Japanese or Koreans to offer a price for Alaska gas sufficient to cover a \$30 billion pipeline when gas is still being flared in the *coastal* oil fields of Mexico, Saudi Arabia, and Indonesia, and while the USSR, Malaysia, China, and a host of other countries have discovered but unexploited *coastal* reserves of "non-associated" gas?

CHOICES FOR ALASKA

What is going on outside of Alaska does indeed affect energy choices in this state. Anyone who thinks that a very expensive,



capital-intensive hydropower project is justified by the expectation of further increases in the price of fossil fuels, and that Alaska's natural gas and coal are more valuable as exports than as domestic fuels, is taking the risk of replacing the lowest-price thermal energy in North America with about the highest-cost large-scale electrical generation anywhere in the world.

Alaska's economic prospects are already shaky because of the state's utter dependence on its oil exports. There is risk of further crippling the state with huge capital investments, like Susitna, that may not be able to pay for themselves. Repeating on a larger scale the hydro project problems in southeast Alaska is really asking for trouble. If oil prices five years from now are inherently unpredictable, however, and long-lived megaprojects like Susitna unacceptably risky, how can a community plan its own energy future?

Foremost, the choice of energy alternatives must be tied to the life cycle of the equipment in question. Diesel generators and combustion turbines have an advantage over highly capital-intensive projects like most hydro or nuclear power plants because a utility can write off the equipment in a relatively short time. The bulk of the cost of power generation with such initially low-priced installations is fuel. Thus, if demand is less than anticipated, the utility can shut down the generators (thereby saving fuel costs) without suffering high recurring fixed costs for debt service. If oil proves to be an unattractive fuel source in some future year, diesel generators or turbines can be mothballed or even retired with comparatively little financial trauma. Conversely, if power demand grows faster than expected, the utility can buy such oil- or gas-fired equipment practically "off the shelf" and have it installed in a matter of months.

The argument for many high-cost energy-supply ventures rests on the proposition that they will pay for themselves in 20, 30, or 50 years, even if they are uneconomic at the beginning. It should be obvious, however, that projections of energy "needs," fuel costs, and technical options extending more than 20 years are merely convenient fictions, and they should have little credibility as the basis for today's investment decisions. A utility or a public entity considering laying out a lot of money on a big central-station generating plant on the basis of a 20 to 50 year cost-benefit calculus should, at minimum, look at the "downside" risks. It should not, for example, launch big hydro or nuclear programs unless facility construction is justified by the *lowest* reasonable power-demand and oil-price forecasts. One element continually missing from the Power Authority's Susitna assessments is, however, a clear explanation of the consequences for Railbelt ratepayers, the State's fiscal position, and Alaska's economy if the demand and fuel-price projections of its carefully selected forecasters turn out to be wrong.

One effective way around the dangers of backing the wrong horse in power generation is to have a variety of generating technologies. Ideally, utilities should use a different technology for their base-load generation from the ones they use for peaking or reserve capacity. Small communities, obviously, have fewer opportunities for diversification. In the Railbelt, nevertheless, a mix of technologies is certainly attainable — although the likely price and availability of natural gas in the region may well argue for a concentration in gas power over the planning horizon.



NATURAL GAS AND ALASKA ENERGY DEMAND

Not everybody agrees with the Acres, Battelle, and Kentco reports that rejected natural gas as a fuel for the Railbelt on the theory that its price in Alaska will be tied to a rising oil-import price in Japan. The export market is probably not the decisive element, whether or not that market for gas grows. Right now, the proved reserves of gas in Cook Inlet are equal to something on the order of 70 years of Anchorage-based demand at today's level, and at least 20 years if the gas-consuming industrial plants on the Kenai and the present LNG export facility are included. That's a lot of energy security by anyone's standards. Nevertheless, there is little likelihood that today's proved reserves contain all that will ever become accessible to Southcentral Alaska. As long as reserves represent more than 10 or 15 years of future production, it just doesn't pay the oil companies to search for gas or

to drill up known prospects that are not yet considered proved reserves.

In any case, enough gas has already been discovered to serve Anchorage basin gas-utility demand and Railbelt electrical demand at lower cost than Susitna power, at least through the rest of the century. In a sense, this outlook enables Railbelt citizens and their utilities to put off the need to choose among high-capital cost options. Cook Inlet gas will be there at an acceptable cost for as long as it's worth thinking about.

Years ahead, when and if Cook Inlet gas is truly nearing depletion, there will be plenty of time to look at alternatives, including coal, medium-size hydro projects like Bradley Lake and perhaps even megaprojects like Susitna, Cook Inlet tidal power or a new, less troublesome generation of nuclear plants. But now is not the time to consider them as realistic planning alternatives or to spend tens of millions of dollars each year in the engineering, promotional, or research and development efforts on options that may not even be in the running when something new is really needed. When the gas begins to run short, the Railbelt will have plenty of warning, and you can bet that technological options are going to be a lot more varied and sophisticated 10 or 15 years in the future than they are today.

COST OVERRUNS

In addition to the danger of long-lasting supply and price commitments attendant to high-cost, capital-intensive energy projects, these ventures pose notorious dangers of cost overruns during the construction period. Cost overruns can triple or quadruple project costs. They are, of course, a management problem and they are subject to the swings of inflation and interest rates. But there is a far more insidious problem; the forces and rationales within the community that press for these megaprojects are indifferent to costs. More precisely, the demand within Southeastern Alaska for state-funded hydro projects was based more on the short-term payroll effects than on future energy needs. And because of this, there is a tendency for the boomer factions in Alaska's public life to act as if the bigger and more expensive the project, the better it will be for the state.

The big thrust for Susitna indeed arises not so much because there is a respectable case for it as an investment in Alaska's distant future, but rather because it involves enormous spending in the near term. The more costly it is, the more jobs it would "create," and the more popular it becomes with everyone who perceives it will be built with somebody else's money. Susitna is the most popular project in the neighborhood precisely because it is the biggest. In this context, the forces that select these projects can be expected to undermine any will on the part of a community's political system to control costs. It would be inconceivable, in light of the principal motivation for building the project, that the Power Authority would be allowed to hold costs down by hiring Korean construction firms to build Susitna with Pakistani (or even non-union American) labor.

Consider the Four-Dam Power Pool in Southeast Alaska. Every stupid disaster connected with that project was warned against by outside consultants, by skeptical legislators, and even by Power Authority staff. The projects were too big, they were goldplated, they were incompetently managed, and they were built without power-sales commitments or long-term financing.



Aerial view of Devil Canyon. (Photograph by Eric Yould.)

Even those legislators from the affected communities, who understood the problems, nevertheless voted to approve them, because it was clear that the communities to be served by the dams would bear none of the costs of overbuilding. Anyone who looked thoughtfully at those programs (and there were many) knew that they were overbuilt and that the cost of power, if it was marketable, would exceed what a smaller project could have yielded, and would in fact exceed the costs of diesel alternatives. The Power Authority went ahead anyway with the explicit or tacit consent of both branches of state government because the true thrust of the program was to spend construction dollars. The Power Authority thus let itself get into the position of trying to do well what shouldn't have been done in the first place.

Alaskans will naturally regard construction as a "basic" industry as long as it is sustained largely by federal appropriations, big oil companies, or a seemingly bottomless state treasury, and wherever the members of the impacted community are not clearly responsible (through taxes, utility rates, or bonded indebtedness) for the costs of overcapacity, gold plating or pyramid building. In Alaska's present political mood, checks and balances are both weak and unpopular. It would be too bad, however, if the only effective check on construction boondoggles turns out to be a deep economic slump, accompanied by a wave of defaults on state-sponsored ventures.

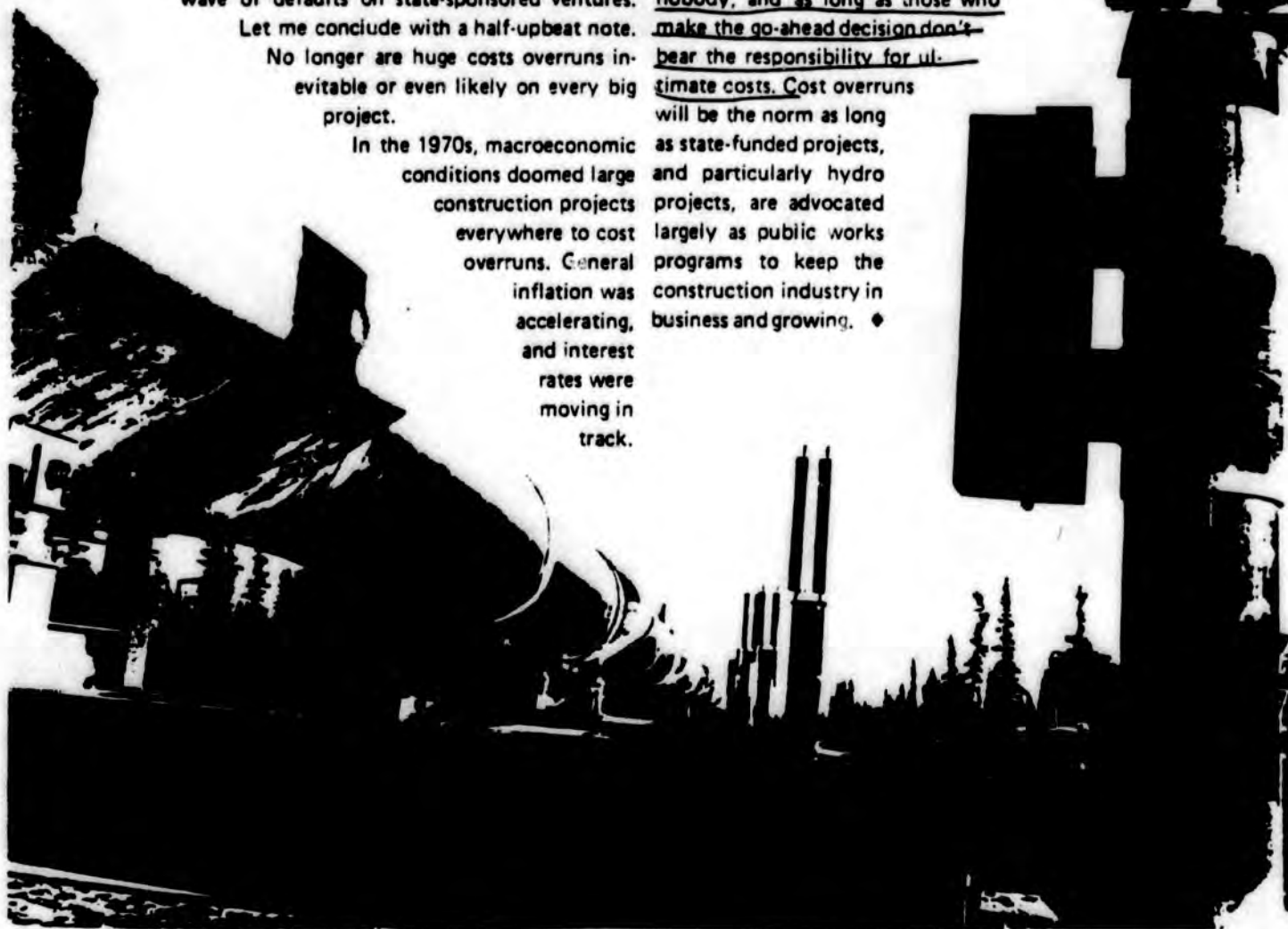
Let me conclude with a half-upbeat note.

No longer are huge costs overruns inevitable or even likely on every big project.

In the 1970s, macroeconomic conditions doomed large construction projects everywhere to cost overruns. General inflation was accelerating, and interest rates were moving in track.

During that period, labor rates for construction ran ahead of inflation. Environmental, safety, and other technical regulation was becoming more complex and demanding. Everybody, therefore, chronically underestimated "as-built" costs, construction times, and interim financing costs.

Now, tight money, surplus capacity, and the collapse of unrealistic expectations about future energy prices have given us a global and national construction-services market (outside Alaska anyway), bids are coming in under the owner's engineering estimates and projects are coming in under budget and on time. The era of inevitable massive cost overruns and delays is over, along with the energy crisis and the boom and shortage periods of the 1970s. But this outlook may not carry much hope for unneeded or ill-timed projects. Cost overruns can be expected to continue for public projects in Alaska as long as there is no will to control costs, as long as state funds are treated as if they belong to nobody, and as long as those who make the go-ahead decision don't bear the responsibility for ultimate costs. Cost overruns will be the norm as long as state-funded projects, and particularly hydro projects, are advocated largely as public works programs to keep the construction industry in business and growing. ♦



**THE VOICE OF THE CONFERENCE:
A REPORT FROM ENERGY OPTIONS 85**

from

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INTRODUCTION

Energy Options 85 was a three day conference held on March 8-11, 1985 at the Egan Convention Center in Anchorage. The conference consisted of a two day general conference for the public, followed by a single professional day. Its energy trade show received 2000 visitors over the three day period to the substantial satisfaction of 40 exhibitors. Over 400 participants attended 94 sessions on the technical, program and policy aspects of conservation and renewable energy. Sixty speakers from Alaska, Canada, and the lower 48 shed light on the major accomplishments in this field that can contribute to Alaska's energy picture.

For example, Jan Hamrin of the Independent Power Producers Association reported that California now has 1,050 MW of independently produced energy on line and generating electricity in the California grid. That's a 525% increase since 1981. A total of 6,000 MW are on contract, with 60% of these in co-generation, waste-to-energy and biomass.

Canada and Scandinavia have demonstrated that climatically appropriate research and development have produced impressive results in arctic energy technologies. The Swedes have produced quality housing that typically consumes 50% of the energy of Alaskan homes. Our neighbors, the Canadians, have researched, demonstrated and commercialized superinsulated homes in a period of 7 years. Confidence in this technology is so high that the Canadian government now offers a \$3,000 rebate toward the construction of a superinsulated home. As a result of these research efforts, superinsulation is now being demonstrated in Montana and in an aggressive 500 unit program by Bonneville Power Authority. Denmark, at the same latitude as Ketchikan, has invested profitably in producing the best marine quality wind generator in the world.

By identifying conservation and energy management as a supply option, utilities nationwide have moderated growth, reduced load or stabilized rates as needed. The City of Tacoma has recently adopted a stringent building code for their climate, (R 19 walls, R 38 ceilings and triple pane windows) because its cost at 1.9c per kWh is substantially less than the cost to produce new electrical resources. Pacific Gas and Electric (PGE) has a better buy in its residential audit program at 3.1c per kWh, commercial energy investment rebates at .7c per kWh and appliance efficiency rebates at 2.5c per kWh, than their marginal cost of electricity at 8.7c per kWh. Fully 40% of PGE's 10 year load forecast is projected to be met through conservation and load management. Closer to home, a recent reevaluation of Chugach Electric Association's

residential load forecast found that a 30% shortfall in projected demand could be largely attributed to increases in appliance efficiency.

Energy management has emerged as a important economic development strategy. The California Energy Commission reports that the corporate energy tax credit in that state is responsible for creating 21,000 jobs and \$1.1 billion in economic development. The cost to the state was \$120 million in reduced taxes. Private sector interest in Alaskan energy production was clearly in evidence at Energy Options 85.

THE ECONOMIC CLIMATE FOR CONSERVATION AND RENEWABLES

Conference participants recognized that the advances in Northern technology achieved by Sweden, Denmark, Canada, and California can be equalled in Alaska. They noted that in spite of high energy costs and abundant energy resources, the positive atmosphere that has made for significant development of those technologies in other countries seems to be absent in Alaska. Three examples illustrate the point:

- * It is ironic that the Railbelt, which has the largest load center in the state, has not explored load management, cogeneration, conservation or supply alternatives similar to the California experience. The costs for investing in these technologies is typically less than Southcentral marginal energy costs.
- * The longest term benefit to Southcentral Alaska would be in managing Cook Inlet gas reserves to achieve its maximum fuel potential, yet combustion efficiency for Southcentral electric utilities is commonly under 30%.
- * Investment tax credits, energy tax credits, and other state incentives could attract investors to take an interest in bush waste heat recovery, yet the state has assumed virtually 100% of the funding of this activity.

Several elements must be present to foster a positive atmosphere for a diversified energy supply based on local resources. They are:

- * positive government programs that focus on resource assessment, research and development and financial incentives for investment.
- * certainty in the economic climate based on stable, positive regulatory and administrative environment.

- a highly competitive and technically competent and diversified energy industry.
- a utility system or grid that has not overbuilt its electrical generation capacity.

The majority of participants at Energy Options 85 support a realignment of state energy policy that would attempt to balance equity with long term sustainability. This integrated approach to energy programming would be based on restoration of incentives for energy investment, well-planned research and development, and efficient housing. Rural Alaskans still face high energy costs and the larger context of the cash poor rural economy. They can best be served by an effort to move conservation and renewable technologies into the market place or supply system while the state still has money to bridge high costs with subsidies. The following sections outline program elements to achieve this goal.

THE ENERGY PROGRAM FOR ALASKA: A REALIGNMENT

Energy Efficient Housing

Building construction efficiency was a major focus of Energy Options 85. Emphasis continued on presenting to over 2000 builders and homeowners current and available energy efficient technology. In a panel discussion on efficient construction, builders noted that although the heating season in Alaska is two to four times as severe as the lower 48, the majority of homes built in Alaska are built to lower 48 standards. The consensus among builders was that the general public still is unaware of the cost benefit of energy conservation in comfort and dollar savings. Although most people are familiar with conservation techniques, they do not have the tools to quantify the costs of installation and the benefits of reduced fuel bills. Scores of privately built energy efficient Alaskan houses have not been monitored for performance.

Documentation of household energy use reveals that the cost of home heating exceeds electrical cost in rural Alaska by as much as a factor of five. The quality of new construction is largely dependent upon HUD, an agency that has difficulty in responding to local priorities. While funding seriously curtails the possible investment by HUD in energy efficiency, the shortfall is often paid many times over in Low Income Energy Assistance payments. Furthermore, rural homes are renowned for cold floors and drafts that jeopardize the health of children and elders. Sweden, on the other hand, has defined energy as a housing

problem and initiated a series of incentives that have achieved a comfortable housing stock that is fully 50% more efficient than its Alaskan counterpart. It is in housing that the most significant gains in energy savings and health benefits can be made. Two promising new developments within the housing industry took shape this year.

- The Energy Mortgage Valuation Program, gives an energy rating to homes to inform the purchaser of the energy efficiency of the structure. Home buyers are able to qualify at a higher debt to income ratio to purchase energy efficient homes because their higher monthly mortgage payment will be offset by lower fuel bills. This program, developed by the Western Resources Institute, has been approved by both Fannie Mae and the Freddie Mac. The Mortgage Valuation program can stimulate the market for energy efficient homes by increasing the number of income qualified homebuyers and by covering the higher cost needed for many energy efficient features. An Ad Hoc committee of the building industry, partially funded by DCRA Office of Energy Programs, has gained support from the building and financial communities. The support expressed by Governor Sheffield for Mortgage Valuation during Energy Options 85 will strengthen the program and help to secure the capital necessary to implement the program.
- Lighting and Thermal Efficiency Standards: after a four year delay, the DCRA has and made notable progress toward developing Lighting and Thermal Standards for Alaska. A 17 member statewide advisory board has met to review existing standards from other states. It has developed up-to-date costs for the construction of energy measures and fuel for 15 regions of the state. The committee expects to have regional residential standards in place by the end of 1985.. The quality of the Efficiency Standards effort has left the conference participants optimistic about its outcome.

To compliment these two initiatives, additional actions are suggested:

- evaluate existing Alaskan energy efficient housing for thermal performance, air quality, construction techniques, cost of construction, ect.
- set up a committee like the Lighting and Thermal Standards Committee to specifically investigate the real costs and benefits of superinsulation and energy efficient design. Benefits go beyond simple fuel savings to include comfort, daylighting, etc.. One large commercial facility reported a 15% decline in absenteeism upon moving its employees into a structure designed for energy efficiency and daylighting.

The increase in productivity more than compensated for the increased cost for the energy features.

- incorporate the findings of the Superinsulation Committee into a carefully planned research and development program. (see below)
- Disseminate findings to lay and professional communities.

Restoring the Economic Climate for Conservation and Renewal Energy

In session after session conference participants stressed that the continuing energy subsidies in Alaska provide no long range solution to high energy costs; and that our current energy technology is inappropriate to the arctic and sub-arctic climate. They noted that state projects and budgets are electricity centered, sidestepping the larger problems and opportunities of space heating and transportation. Energy businessmen and women substantiated that the current subsidies have dramatically depressed the market for conservation and renewable energy technologies. Rural utilities, who have found their most reliable customer in the State of Alaska, have no incentive to reduce operating costs. Rather, there are indications that subsidies are actually encouraging consumption, increasing dependence, and, therefore, the requirement for state subsidies.

Beyond these fundamental problems is the recognition that the system of subsidies probably cannot survive the reality of declining revenues and will have to change. The result of the change is unknown and somewhat secondary to the reality that private investors can not responsibly consider business ventures in a climate of such economic uncertainty.

With these parameters in mind, Alaska's Energy Program could be realigned in the following ways:

- Develop a standard for evaluating the cumulative costs and benefits of energy subsidies. Set up long term strategies to achieve increased efficiency and the lowest cost, unsubsidized energy option. (The 1985 Energy Plan takes a first step in this direction, but even this accomplishment becomes valueless, unless the Plan becomes the basis for state energy budgeting.)
- Give greater funding and planning authority to regions and

communities to achieve a better match for climate and program delivery. Concentrate on communities and regions that are motivated and have demonstrated sufficient planning and administrative support to succeed. Let these first efforts serve as a demonstration for communities and regions currently dealing with non-energy priorities. Build success!

- * Require that utilities participating in the power cost equalization program maintain or increase operating efficiency. Assist PCE utilities to accurately record costs and improve plant efficiency.
- * Provide incentives for utilities to reduce production costs and for consumers to increase end-use efficiency.
- * Encourage utilities to provide information and load management programs for their ratepayers.
- * Establish a corporate energy tax credit for private sector investments in wind, geothermal, coal, solar, biomass, waste-heat recovery and building energy management.

Research and Development

Equally important to a positive economic climate is confidence in the technology and resource evaluation. Past State efforts in renewable energy have typically been demonstration projects that had never undergone applied research or modification for Alaska. Siting was sometimes based more on political reasons than on the quality of the energy resource. Compounded by understaffed project management and a systematic lack of monitoring, many projects have yielded disappointing results. Consequently, the value of renewable energy technologies has come into question.

As a young state, much of the available energy resource data is too tentative for resource development. Alaska needs to assess and perform a production quality inventory on all its energy resources from high efficiency housing to completion of the peat inventory. A production quality inventory would allow communities and private investors to evaluate their energy options with greater confidence.

The resource assessment should be complemented with a planned, systematic research and development program to determine the best energy technologies for Alaska. Projects should build on one another and rigorously promote only successful technologies. In 1985, the State of

Alaska will spend \$480 million on energy related matters, ranking above state administration and health and social services in expenditures. This makes Alaska the sixth largest energy corporation in the U.S. Exxon and other energy corporations allocate 6% of their budgets for research and development. Yet Alaska's 1985 energy R and D budget was .2% of the total. Moreover, the state can better utilize research talent on hand. The energy expertise that the university and in private industry is substantial.

Energy costs continue to undermine Alaska's competitive position in producing goods and services, thereby effecting the strength and diversity of the Alaska economy. Political leadership and vision is required to develop viable options. By improving its energy and investment efficiency, Alaska stands to benefit from innovations that increase the value of its royalty resources, or diminish the demand for General Fund transfers. Therefore, the State should embark on an incentive research program which addresses real problems directed toward controlling and conserving energy use. Such a program would:

- * adequately fund the Division of Geological and Geophysical Survey, and other agencies as appropriate, to assess and inventory energy resources to include wind, geothermal, peat, biomass, and coal.
- * plan an integrated and targeted R and D program. Standardize reporting procedures for data from research.
- * Track research activities in other Northern countries. Where possible cooperate on research projects to maximize funding and reduce redundancy. Coordinate with the federal Arctic Research program.
- * Target a allocation of 2% of energy related funds to research and development.

Information Dissemination

A problem that is voiced year after year at the energy conference is the lack of specific technical information on Alaskan applications of energy technologies. This year builders and designers agreed that the general public is still unaware of what energy conservation can mean to them in terms of comfort and dollar savings. Utilities can provide for the information needs of many of their ratepayers. Professional groups, community leaders, and industry associations need well organized, targeted energy information to perform their jobs. The energy resource

and demand issue is easily as complex as the land issue has been for Alaska. Substantial progress was made in land issues only after a determined effort was made to coordinate the players and comprehensively record and disseminate information. Therefore:

- * Make a primary objective of disseminating information in the most usable and consistent forms possible.
- * Coordinate with utilities, professional organizations, and local governments for dissemination.

SOURCEBOOK

The Energy Options 85 Sourcebook and Proceedings chronicals in depth the technical accomplishments and policy perspectives presented at this year's conference. Copies can be ordered from CARE, Inc., P.O. Box 4-1464, Anchorage, AK 99509 for \$ 15.

COMPASS NORTH

Five Challenges For Alaska

**AN ACTION REPORT
BY
COMMONWEALTH NORTH**

**Edited by
Judith M. Brady
Executive Director**

February, 1985

EXECUTIVE SUMMARY

COMPASS NORTH: Setting a direction for the future

Alaska is "unique" in so many ways that Alaskans take the word for granted. In this state "unique" is a cliché; unique in size, unique in beauty, unique in resources.

What is only beginning to be understood is that Alaska is also unique in its economic structure. It is this uniqueness that will decide its future.

Alaska is an "owner state". It owns 28% of its land base, which includes the largest discovered oil field in North America. The revenues from this field give the state government control over the largest pool of capital in the economy.

Land and capital are ingredients of ownership. They are the basis of power. The State of Alaska, as the owner of more than 100 million acres of land and billions of dollars in resource wealth, has power.

In a democratic society, all governments have obligations to the people. In Alaska the government has an obligation of ownership that is above and beyond that of a traditional state government. It has an obligation as an owner to help sustain the economy - to use its land and capital to preserve and enhance the private enterprise system.

This is a new frontier in public obligation. Never before has a state government been so wealthy in relation to its citizens. Never before has a state government controlled so much of its land and capital assets.

This new frontier means Alaskans must pioneer a new concept of state government, a government that uses its power in partnership with the private sector to create new opportunity and new wealth.

Alaska's obligation of ownership is more than an interesting hypothesis: the state is on a time line. Every available public and private forecast depicts a rapid decline in Prudhoe Bay oil revenues in the 1990's. The state's economy is almost totally dependent on these revenues.

If Alaska is not a responsible owner, if the state government does not stop dissipating its capital base on current operations, the result may be similar to that of a failed company: unemployment, bankruptcy, and social hardship.

There will be many Alaskans who do not believe the state has any obligations as an owner. They will believe that all state revenues should be treated alike and "spent" on public services. They will believe that all state land should be preserved from further development.

The irony and tragedy for Alaska, should this thinking prevail, is that without a strong, growing economy, the government will not be able to provide public services or protect the environment. The private sector will not be able to generate jobs and income.

What must be done to meet the obligations of ownership?

Alaskans and our leaders must begin to think like owners - to make our ownership work for us.

Alaskans must begin to think about revenue as owners:

Traditional government leaders ask: How much do we have to spend?

Leaders of Alaska as an owner state must ask: What is our income? What are our assets? Can we sustain the current level of spending into the future? Where should we invest to get the greatest return on our money?

- THE STATE'S OWNERSHIP REVENUES ARE CAPITAL ASSETS THAT MUST BE MANAGED TO CREATE NEW WEALTH.

As an owner the state receives revenues that are separate from taxes. These are royalties, rentals, and bonuses from the lease and sale of its resources. This capital should be treated as a powerful renewable resource, a means of creating new wealth.

EXECUTIVE SUMMARY

But right now only 25% of these ownership revenues must be invested in the Permanent Fund. The rest are being spent on the current operation of government. The state must stop dissipating this capital base.

- ALASKA'S OWNERSHIP REVENUES SHOULD BE DIVIDED EQUALLY BETWEEN THE PERMANENT FUND AND A NEW CAPITAL INVESTMENT FUND.

It is likely that the Permanent Fund will be a "safety net", a means of sustaining government service as Prudhoe Bay revenues decline. The Capital Investment Fund would be the means of encouraging new development. It could finance revenue producing, regionally important projects that add to the long term economic health of the state.

- THE FUTURE OF THE PERMANENT FUND IS TOO IMPORTANT AN ASSET TO BE LEFT TO "DECISION BY DEFAULT". THE LEGISLATURE SHOULD ENACT LEGISLATION WHICH ESTABLISHES LONG TERM GOALS FOR THE FUND.
- TO ENSURE A "SOFT LANDING" FROM THE DECLINE OF PRUDHOE BAY REVENUES, CURRENT SPENDING MUST BE REDUCED TO LEVELS THAT CAN BE SUSTAINED IN THE FUTURE.
- MISUSE OF WEALTH IS A GREAT DANGER IN AN OWNER STATE. THE STATE GOVERNMENT MUST REFRAIN FROM USING ITS WEALTH TO USURP LOCAL DECISIONS OR DISPLACE LOCAL RESPONSIBILITY.

The legislature has taken over the role of local government by direct appropriation and other political distribution practices that bypass or dictate to local communities.

Revenue sharing must follow the Constitutional mandate of "maximum local self government".

State revenue sharing should be accomplished through a single formula based on equitable distribution. Except for emergencies, no funds should be allocated outside such formula. The emphasis must be on local decision making and local responsibility.

Alaskans must begin to think about land as owners:

Traditional government leaders ask: Are we doing a balanced job regulating between private land owners?

Leaders of an owner state must ask: What are our resource assets worth? Is there enough development underway to maintain our economy and continue growth? Are we helping the private sector promote responsible development?

- ALASKA'S STATEHOOD LANDS AND RESOURCES SHOULD BE MANAGED AS CAPITAL ASSETS. PUBLIC POLICY MUST BE REFOCUSED, AS A MATTER OF HIGHEST PRIORITY, TO REFLECT THE STATE'S DEPENDENCE ON NATURAL RESOURCE DEVELOPMENT.

Resource development is Alaska's only option for a continued economic base.

The plain fact is, if there is no further natural resource development, the state will be bankrupt.

Public leadership must distinguish between ritualistic environmentalism and areas of true ecological concern. After years of government decisions weighted in favor of "no development" today's leadership must redirect public policy toward action consistent with the mandate of Alaska's Constitution: "to encourage the settlement of its land and the development of its resources by making them available for maximum use consistent with the public interest."

- THE LEGISLATURE, AS CUSTODIAN FOR STATE LANDS, SHOULD DEVELOP A COMPREHENSIVE POLICY THAT RECOGNIZES THE STATE'S RELIANCE ON RESOURCE DEVELOPMENT AND DIRECTS MANAGEMENT OF THESE RESOURCES AS CAPITAL ASSETS.
- THE GOVERNOR SHOULD FORGE THE RESOURCE DEVELOPMENT STRATEGY NECESSARY TO ENACT LEGISLATIVE POLICY.

The leadership must work together to meld Alaska's need for development with concern for the environment by formulating an overall state resource development strategy. The

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emphasis should be on technically sound, efficient permitting; stable tax policies; and balanced multiple use management by state agencies.

- THE OBLIGATION OF OWNERSHIP INCLUDES ENCOURAGING NEW REVENUE SOURCES. THE STATE SHOULD DETERMINE ITS ROLE AS AN INVESTOR IN THE DEVELOPMENT OF ALASKA'S RESOURCES.

It can be good public policy to invest state funds in resource development projects, but the state must decide the limits and goals of its investment role. At a minimum, project investment should be economically feasible and be able to return to the state a cash flow having a present value greater than the state's investment.

To meet these obligations of ownership Alaska's elected leaders must use the full power of their Constitutional authority and responsibility.

Public policy will decide the future of the owner state, and it is Alaska's elected leaders who decide public policy. Alaska needs decisive leadership now, leadership that understands the obligations of ownership and has the courage to make the politically hard decisions necessary to meet that obligation.

No other state constitution grants more authority to the governor than does Alaska's. No other state constitution implies more public trust in its legislative representatives than does Alaska's.

It is these elected leaders who must meet the obligation of ownership by preserving Alaska's capital assets.

It is these elected leaders who must meet the obligation of ownership by advocating responsible resource development.

If our leadership fails in this pioneering effort we could well end up with socialism - a government that uses its land and capital to feed its own growth.

The challenge for Alaskans is to develop economic and social strategies that use public ownership as a catalyst to develop a strong free enterprise system.

Executive Summary

Alaska's Energy Plan 1985

Governor Bill Sheffield



Prepared by:

State of Alaska

Department of Commerce
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Office of Energy

Loren Lounsbury
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Director

February 15, 1985

Energy Assessment

Alaska's production of energy far exceeds in-State needs due to the massive crude oil and natural gas resources available in the State. Limited refinery capacity necessitates the import of some refined petroleum products despite the excess production. Alaskans have the nation's largest average energy consumption level and this consumption occurs through a variety of commercially proven and alternative energy technologies. (How consumption and production balance in Alaska is the subject of this section.)

Consumption

Alaskans consumed 411 trillion Btu's of energy in 1982, continuing an increasing consumption trend that has prevailed since statehood in 1959. In 1982, Alaska consumed 1.15 billion gallons of petroleum, 238 billion cubic feet of natural gas, 672 million pounds of coal, 2.3 billion kilowatt hours of electricity. In total, Alaska ranked first in consumption compared to all other states in the nation, and per capita consumption of 926 million Btu's was three times the national per capita average of 305 million Btu's. Alaska's increasing consumption of 5 percent per year since statehood closely parallels the overall economic growth of 3 to 5 percent.

Fossil fuels are the main source of energy in Alaska today. Diesel engines are the principal source of electric generation for most of Alaska's rural villages and many of its smaller cities, having a nameplate capacity of 265.5 MW. Alaskan coal-fired steam plants have a nameplate capacity of 87.0 MW with all of this capacity located in the Fairbanks area. Combustion turbines using natural gas are another source of power in Alaska, with total nameplate capacity of 901.6 MW. Peat, also considered a fossil fuel, has potential as a heat source.

Renewable energy resources are gaining greater usage in Alaska. Both utility sized and smaller privately owned microhydroelectric projects are on line. (Combined with fossil fuel production, a total of 2.4 billion kilowatt hours of electricity was produced for consumption in 1982.) Wind generators are becoming more popular and there are presently more than 150 wind generators statewide. Photovoltaic systems are being used in low wattage, remote uses such as fish-counting equipment, communication equipment and railroad crossings as well as to supplement other sources of intermittent power such as wind generators. Wood consumption and the use of biomass products to supplement heat and power sources are also used. Biomass consumption is unquantified for Alaska, but wood consumption for heating exceeds 50,000 cords annually. Geothermal energy generation is becoming more important, but like biomass, is not clearly documented in Alaska.

Production

Alaskan energy production continued to expand in 1984. On a daily basis, in-State refineries produced approximately 4.4 million gallons of refined liquid petroleum products and over 1.6 million barrels of crude oil flowed from the North Slope to Valdez. On the Kenai Peninsula, 1984 saw 1.0 million tons of ammonia and urea and 1.0 million tons of liquified natural gas produced from Cook Inlet natural gas. Coal production from the railbelt was 800,000 short tons. Renewable energy sources also provided power for Alaska in 1984, as hydroelectric capacity reached 217 MW and alternative energy projects in the form of wind and geothermal began approaching a point of commercialization at select Alaskan sites.

Consumption of Energy by Sector and Fuel Type for Alaska

		(Trillions of Btu's)			
		Statehood 1960	1982	1981	1980
Residential	Total	8.1	34.3	33.1	38.8
Coal		0.4	0.0	0.0	0.0
Natural Gas		0.2	8.1	8.1	10.8
Petroleum ²		5.2	7.0	5.4	6.8
Electricity ³		2.3	19.2	19.6	21.2
Commercial	Total	7.5	34.5	31.9	41.2
Coal		0.8	0.0	0.0	0.0
Natural Gas		0.0	16.9	16.6	24.9
Petroleum ²		5.2	4.8	4.4	4.8
Electricity ³		1.5	12.8	10.9	11.5
Industrial	Total	17.2	138.7	109.2	266.9
Coal		5.0	0.0	0.0	5.9
Natural Gas		1.9	102.4	70.1	208.4
Petroleum ²		9.5	22.9	23.2	36.3
Electricity ³		0.8	13.4	15.9	16.3
Transportation	Total	27.6	89.4	101.1	102.4
Coal		0.1	0.0	0.0	0.0
Natural Gas		*	0.1	0.3	0.3
Petroleum ²		27.5	89.3	100.7	102.0
Electricity ³		*	*	0.1	0.1
All Sectors Combined	Total	60.3	297.1	275.2	411.4
Coal		6.3	4.7	5.6	5.9
Natural Gas		2.0	157.3	125.1	244.4
Petroleum ²		47.4	129.4	138.4	155.2
Electricity ³		4.6	5.7	6.1	5.9

¹ Information from U.S. Department of Energy, State Energy Data Report, Consumption Estimates 1960-1982.

² Includes Distillate Fuel, Kerosene, and LPG.

³ Electric sales and electric energy losses due to transmission generation.

* Less than 0.1

Chart 5

Alaska's 23 Energy Regions



Oil & Gas

Oil and gas are Alaska's primary energy resources. Total petroleum production in Alaska since the turn of the century has been over 4.3 billion barrels of oil (one barrel equals approximately 42 gallons), and over 7.9 trillion cubic feet of natural gas. Estimated reserves of 9 billion barrels of oil and 39.9 trillion cubic feet of natural gas are known.

Competitive leasing is the method used to provide temporary access to below-ground petroleum reserves, with leased tracts spread from the Gulf of Alaska to the Beaufort Sea on federal and State lands. The story of oil exploration and subsequent leasing have formed Alaska's present oil and gas picture.

The State has held 43 competitive lease sales since 1959, leasing 7.7 million acres of State-owned land. A total of 1,479 leases covering 4.6 million acres are currently active. The State of Alaska plans to hold an additional 16 sales through the year 1989. In addition, the Federal Government will conduct 11 lease sales on the Outer Continental Shelf (OCS) through 1987, including areas in Cook Inlet, the Gulf of Alaska, St. George Basin, the Diapir Field (Beaufort Sea), areas near Kodiak Island and in areas near the Shumagin Islands.

Exploratory activities are occurring in Cook Inlet, the Beaufort Sea, St. George Basin, Navarin Basin and on the North Slope. Marginally economic fields, such as the Kuparuk and Lisburne formations, are beginning to be produced due to their close proximity to the super-giant field,

Prudhoe Bay. Additionally, development plans are being formulated for the Endicott formation located east of Prudhoe Bay, and a at Seal Island in the Beaufort Sea west of Prudhoe Bay.

Alaskan petroleum supplies come largely from oil flowing through the Trans-Alaska pipeline (TAPS) from Prudhoe Bay and from oil and gas production in Cook Inlet. Crude oil and natural gas are refined for in-State consumption and export. TAPS provides 1.6 million barrels of crude oil per day. Alaskan refineries process 124,100 barrels of refined petroleum products and 230 million cubic feet of natural gas per day. Annually, 1.1 million tons of ammonia and 1.0 million tons of urea are also produced from natural gas.

Chart 6

Alaska's Known Oil and Gas Provinces



Coal

Alaska's coal resources are plentiful and widespread, providing long-term development potential for export and in-State use. Coal deposits range from Cook Inlet to the North Slope and offer a vast exploitable resource. Alaska produced 336,000 short tons of coal in 1982. Alaska's measured coal reserves are approximately 6.3 billion short tons (one short ton equals 2,000 pounds) with hypothetical reserves of 5.6 billion short tons. (See Chart 7 for location of Alaska's known coal resources.)

Only one coal mine was active in 1983-84 and there was a low level of exploratory drilling. In 1985, this activity will increase. Potentially, Diamond Shamrock will develop a 12-million-ton per year coal production facility in the Beluga area, the Usibelli mine at Healy will increase production, Usibelli coal will be shipped via the Alaska railroad to Seward for export to South Korea. Recently

Chart 7

Alaska's Known Coal and Peat Resources



leased acreage in the Matanuska area will be developed, and a \$2 million appropriation by the Alaska State Legislature will fund a feasibility study of a Cape Beaufort coal mining facility.

Peat

Alaska has only a small portion of the known world supplies of usable peat. Peatlands with fuel grade potential cover 4.4 million acres of Alaska. With a minimum deposit thickness of five feet, these peat deposits will yield approximately 880 million tons of moisture-free, fuel grade peat.

Peat assessment is now focused at Dillingham as part of the Bristol Bay Native Association Peat Harvesting Project at Roger's Creek and Houston areas in the Susitna Valley and on the Kenai Peninsula. Horticultural peat is mined from four pits in the Fairbanks area and at two locations in Willow. Production during 1983 is estimated at 15,000 cubic yards (See Chart 7 for location of Alaska's known peat resources.)

Hydroelectric Power

Alaska has more undeveloped hydroelectric potential than any other state in the U.S. In the 1960's, the U.S. Bureau of Reclamation investigated thousands of potential hydroelectric sites throughout Alaska; 252 sites have been identified with a potential for a hydroelectric project of 2,500 KW or more. Alaskan hydroelectric projects on line today have a nameplate capacity of 197.7 MW, with an additional 20.0 MW just coming on line with the completion of the Terror Lake project. These projects will generate 1.04 million MWh of electricity annually (See Chart 8 for Alaska's Major Hydro Installations.)

The State of Alaska has conducted three geothermal drilling programs since 1979. These were at Pilgrim Hot Springs on the Seward Peninsula, Summer Bay on Unalaska Island, and Makushin Volcano on Unalaska Island. These each had reservoir temperatures ranging from 122° to 380°F.

In addition to the State projects, the U.S. Department of Navy has been investigating the possibility of developing geothermal resources for electrical generation on Adak Island. The Navy is planning a geothermal exploration program for 1985. (See Chart 8 for Geothermal Resources of Alaska.)

Solar

Solar energy has good potential for use as an additional source of energy in Alaska. Varying levels of daylight experienced in Alaska actually permit 230 hours more sunlight in Alaska than at the equator each year. Solar energy can be used in one of four forms: passive heating, active heating, photovoltaics, and daylighting; and although the actual experience with solar energy in Alaska is limited, solar may be a valuable energy resource. The amount of solar use is not well documented.

Tidal

The ebb and flow of the tide produces kinetic energy which can be harnessed to produce electricity if there is sufficient tidal range. The principal tidal resource in Alaska is Cook Inlet which has the second highest tides in the world. Cook Inlet is a major tidal estuary which is approximately 180 miles long and ranges in width from approximately 80 miles near its mouth to approximately 20 miles at the confluence of the Knik and Turnagain Arms. Some 16 sites have potential for a tidal power plant. However, the density of the kinetic energy in tidal currents is relatively low and harnessing this energy source is capital intensive. To date, no substantial contribution to power generation has come from this resource.

Biomass - Wood

Alaska has tremendous biomass potential, particularly from forestry product waste material. In 1983, 262 million board feet of logs were harvested, resulting in production of 146 million board feet of lumber, 240,000 short tons of pulp, and 7,000 short tons of chips. (Additionally, Native corporations exported 233 million board feet of logs.) This production of lumber and pulp comes from Alaska's 240 sawmills which have a total production capacity of 532 million board feet. This production could provide a sizable amount of biomass for power generation.

Wood is used for space heating in many parts of Alaska. Firewood removal from National Forest Service lands in Alaska from October 1982 to September 1983 totalled 11,226 cords of wood and State lands provided an additional 38,890 cords of wood; for a total energy equivalent of 860 billion Btu's. About 40 percent of that consumption was in Fairbanks, 40 percent in all Southeast, and the balance spread statewide (see Chart 9 for Alaska's Timber Resources).

Conservation

Energy saved through conservation is one method to provide more energy service from a given level of power, and represents one of the more accessible energy resources available in Alaska. Conservation includes improvements brought about through increasing thermal efficiencies in buildings, power generation efficiencies for electrical production, increased miles per gallon in transportation, and changes in consumer attitudes on energy use. Thus, conservation offers potential benefits through more comfortable living accommodations with lower life-cycle costs and reduced levels of energy spending. Like many energy resources used in the home or extracted for personal consumption, the exact levels of energy saved are not quantified.

In Alaska, conservation reaches all aspects of the consuming public. Building insulation leads the list in providing maximum energy savings for minimum investment. Other simple forms include insulation of hot water heaters, installation of flow restrictors in hot water faucets, and elimination

Wind

Wind power, suitable for generation of energy in the form of electricity, heat or mechanical power, occurs mainly in Alaskan coastal areas and mountain passes. Favorable wind conditions tend to prevail in the winter months when most communities experience their peak electrical demand and, of course, peak heating demand.

There are over 150 wind generators erected in Alaska today. They are distributed across all regions of Alaska, and have peak power capacities ranging in size from less than 0.5 kW to over 10 kW. Several potential sites with expected good wind potential are being monitored today in select Alaskan locations.

Geothermal

Alaska's geothermal resources occur in over 100 surface manifestations including hot springs, fumaroles, mud pots and wells. Over 11 million acres in the State have significant geologic evidence for geothermal energy development. To date, the quantity of power produced from geothermal has been limited.

The use of hot springs in Alaska for health and recreational purposes is well documented in the historic record. Commercial baths and spas have been developed at numerous sites in southeast and northcentral Alaska. At least six of these establishments have also used low-temperature geothermal fluids for other direct uses such as space heating in lodges, cabins, and greenhouses.

Chart 8

Alaska's Major Hydroelectric Installations and Geothermal Resources

