HB

206

FAX #907-349-6438

TELECOPY TRANSMITTAL COVER SHEET

DATE: 19 MARCH 1991

TO: HOUSE LABOR AND COMMERCE COMMITTEE

FAX # 907-465-2294

ATTN: REPRESENTATIVE DAVE CHOQUETTE

FROM: BILL DUDLEY- ASBC (Alaska Small Business Conference)

NUMBER OF PAGES TO FOLLOW: ONE

MESSAGE: REVIEW COMMENTS REQUESTED ON HB #206

HOUSE BILL NO. 206

ALL ASPECTS OF THIS BILL APPEAR TO IMPROVE AIDEA'S AUTHORITY TO ASSIST ALASKAN SMALL BUSINESSES.

HOWEVER, TO MY KNOWLEDGE AIDEA HAS NOT BEEN AN ACTIVE SUPPORTER OF ALASKAN SMALL BUSINESS FIRMS. IT WOULD BE INTERESTING TO KNOW JUST HOW MANY LOANS AIDEA HAS MADE TO ALASKA SMALL BUSINESS FIRMS IN AMOUNTS OF #100,000 OR LESS IN THE PAST FIVE YEARS. I BELIEVE NONE.

SUGGESTED IMPROVEMENT TO HB 206 WOULD BE TO INCREASE THE $50,000 to $100,000 UNDER THE 80% LOAN GUARANTEE.

110 Willow St., Suite 108 • Kenai, Alaska 99611 • (907) 283-3335 FAX (907) 283-3913

KENAI PENINSULA BOROUGH
ECONOMIC
DEVELOPMENT
DISTRICT, INC.

March 19, 1991

To: House Labor and Commerce Committee

From: Mike Tagliavento, Executive Director, Kenai Peninsula Borough Economic Development District

RE: HB 206, Act Revising Loan Authority of AIDEA

Our organization is working very closely with local entrepreneurs to create employment through the retention, expansion and creation of small businesses. I applaud the efforts of this bill's sponsors to find creative ways to overcome the problems small businesses are having in accessing capital.

AIDEA has the potential of contributing tc the capital needs of small businesses to a greater extent than it has in the past. HB 206 provides new options for AIDEA in this regard, and I would urge your support.

MBT/ss

STATE OF ALASKA

WALTER J. HICKEL, GOVERNOR

DEPARTMENT OF COMMERCE & ECONOMIC DEVELOPMENT

OFFICE OF THE COMMISSIONER

P.O. BOX D
JUNEAU, ALASKA 99811-0800
PHONE: (907) 465-2500

Rod.
bill file
HB 206

April 15, 1991

Mr. Bruce Kendall
Legislative Liaison
Office of the Governor
P.O. Box A
Juneau, AK 99811-0101

Dear Bruce,

Regarding our meeting today concerning Hydrocarb, I believe we have firmed up everything as follows:

(1) We will be supportive of the legislative action to extend the cap for AIDEA to $15 million.

(2) It is our understanding that the request is for a loan, not a grant, and that all of the funding is in place for an appropriate assessment of a good faith capability on the part of AIDEA when the proposal comes before them on whose board I serve.

(3) We are agreed that we will have consultation before any final agreement regarding the possibility of some share in whatever profits might come from the technology and the demonstration development here in Alaska to the state for its early support and initiative.

(4) We are agreed that this should not be conceived narrowly as a pure research indoor demonstration project but should be linked to a wider service function even in the early stages of its development.

I hope very much that this will go well, as the prospect of cleaning up coal and rendering it more comprehensively relevant without environmental pollution is one of the critical tasks of our world and our time.

Cordially,

Glenn

Glenn A. Olds
Commissioner

GAO/sh9232M
041591a

STATE OF ALASKA

DEPARTMENT OF REVENUE

OFFICE OF THE COMMISSIONER

WALTER J. HICKEL, GOVERNOR

P.O. BOX S
JUNEAU, ALASKA 99811-0400
PHONE: (907) 465-2300
TELEFAX: (907) 465-2389

April 12, 1991

Mr. Don Kubley, President
Alaska International Marketing
12280 Mendenhall Loop Road, Suite 4
Juneau, AK 99801

Dear Mr. Kubley:

I have reviewed the materials you recently furnished pertaining to the Hydrocarb process. You appreciate that I am technically unqualified to evaluate the process, so the following comments rely on the assumption that the developers perform as stated.

A pilot project of the magnitude envisioned by Hydrocarb would bring positive attention to development of Alaska's enormous (untapped) coal reserves. It would appear feasible for the Governor to consider supporting state investment in this project through legislative grants, issuance of bonds, loans from AIDEA, or any blending of the preceding sources.

The combination of revenues from mining license taxes and corporate income taxes on estimated annual production of almost 22 million tons of coal per year would be material to Alaska's treasury. */

Please keep me informed of the progress of this exciting project. You can, of course, count on the resources of the Department of Revenue to assist in any way possible to bring this technology to production and success.

Very truly yours,

Lee E. Fisher
Commissioner

LEF:

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*/ If a ten percent net income is assumed, the combined taxes would approximate $39 million per year.

Alaska State Legislature

Chair, Resources Committee
Vice-chair, Transportation Committee
Member, Rules Committee
Member, Committee on Committees

District A
Ketchikan, Wrangell, Petersburg,
Hyder, Myers Chuck, Kupreanof

Senator Lloyd Jones

352 Front Street
Ketchikan, AK 99901
907 225-9082
Fax: 907 225-8546

P.O. Box V
Juneau, AK 99811
907 465-3743
Fax: 907 465-3922

April 3, 1991

Mr. Don Kubley, President
Alaska International Marketing
12280 Mendenhall Loop Road Suite 4
Juneau, Alaska 99801

Dear Don:

Thank you for Keeping me abreast of the ongoing development of the Hydrocarb project in Alaska. As chairman of the Senate Natural Resources Committee I am committed to the prudent development of Alaska's resource base. The technology available through the Hydrocarb process is intriguing in its potential application to the Alaskan coal market.

As a state that holds over 70% of the coal reserves of the North American continent, I believe we have an obligation to further investigate a technology that can add value to such an abundant resource. The fact that the Hydrocarb process can produce marketable fuels such as "carbon black", and ultimately, even diesel and jet fuel, from the type of coal we have in Alaska, is staggering in its implications.

The construction of a demonstration plant in Alaska seems to be the next step toward the full application of this technology in our state. The potential job creation and inflow of dollars for a value-added product is reason enough for us to look seriously at funding this project. That the money will be repaid to the state is another plus.

Again Don, I want to be kept informed on the development of this project, and I want to know what I can do to help bring a new industry to our state.

Sincerely,

Lloyd

Lloyd Jones
Alaska State Senate

FYI
From Don

ALASKA STATE LEGISLATURE

ELECTIVE DISTRICT 1
HYDER
KETCHIKAN
KUPREANOF
MEYERS CHUCK
PETERSBURG
SAXMAN
WRANGELL

IN KETCHIKAN
352 FRONT ST
KETCHIKAN, AK 99901
PHONE 225-9447

DURING SESSION
PO BOX V
STATE CAPITOL BUILDING
JUNEAU AK 99811
PHONE 465-3421

Representative Cheri L. Davis

March 20, 1991

Mr. Don Kubley, President
Alaska International Marketing
12280 Mendenhall Loop Road, Suite 4
Juneau, AK 99801

Dear Don:

I appreciated you stopping by my office yesterday and briefing me on the Hydrocarb Project. It would be easy to support a project that would help diversify the economy of Alaska and reduce our dependency on oil.

I was amazed to find out that Alaska has 80% of North Americas' and 6% of the Earths' coal reserves. Furthermore, I was excited to hear that with the amount of coal we have, it could put Alaska at the top of energy technology and production.

Additionally, I was pleased to find out that the administration has been very receptive of this project and to exploring possible financing for the start-up of this operation. While I understand that development and start-up costs for a project of this magnitude can be enormous, we do have the perfect funding mechanism in place for this, the Alaska Industrial Development Authority.

Please keep me informed as to the status of this project and if I can be of any help, please do not hesitate to contact me.

Sincerely,

Cheri Davis

Cheri L. Davis
Alaska House of Representatives

Alaska State Legislature

Senator Paul Fischer, Chairman
Senator Al Adams, Vice-Chair
Senator Rick Uehling
Senator Arliss Sturgulewski
Senator Fred Zharoff

Post Office Box V
Juneau, Alaska 99811
(907) 465-3791
(907) 465-3883 FAX

Senate Special Committee on International Trade and Tourism

March 14, 1991

Don Kubley, President
Alaska International Marketing
12280 Mendenhall Loop Road Suite 4
Juneau, Alaska 99801

Dear Don,

Thank you for stopping by my office yesterday and updating me on the Hydrocarb Project. As I had previously indicated, I have wondered why Alaska has not tried to compete in the world "carbon black" markets.

It is interesting that the Hydrocarb process not only produces "carbon black", but also methanol and a wide range of particulate "clean carbon", "carbon slurry" and fuel products. This coal processing could produce: a fuel replacing diesel and heating oils for turbines, utilities, stationary engines, and locomotives; a fuel, either methanol or gasoline that can fit present auto fleets or modified ones; and of course, pure carbon. If I understand correctly, this process could also be used for treatment and transformation of solid municipal wastes. I would like to know more about this option.

It is also interesting that even the relatively small, 100 tons per day, coal-to-fuel demonstration plant here could match the total output of the world's largest supplier of thermal black. This could put Alaska in a first rank position, world wide, in energy-to-fuel technology and production. In particular, as it relates to an absolutely pollution free, low cost high revenue use of coal.

This may possibly be the technology that we have been looking for that will enable us to tap our vast resources of coal. It is also timely with the current international socioeconomic situation, and the need to find long term alternative energy sources. The Persian Gulf War has made crystal clear the need to decrease the nation's dependence on imported energy.

As Chairman of the Senate Special Committee on International Trade and Tourism, I am impressed with the international nature of this project. The fact that Imperial Chemical Industries and Asea Brown Boveri are interested in working with the State of Alaska on the Demonstration Plant is encouraging, as is having Bechtel, and Stone and Webster expressing their support for the project.

The other interesting international aspect of this project is the finance plan for the three commercial facilities. Working with the Japanese, Taiwanese, and Korean Energy and Finance communities seems like a good way to go. With the P.I.K. or payment in kind bonds, the construction costs of the first three commercial facilities would be paid back in product. This gives an existing market for the product as soon as the plants are up and producing.

Since the State is being asked for help only in the demonstration phase and that the loan would be paid back seems reasonable. When considering this might attract an over $4 billion construction project that would start a 50 year plus industry which could employ over 1000 Alaskans, I would like to know more about it.

I would like to schedule a meeting of the Senate Special Committee on International Trade and Tourism and invite representatives of the energy and finance communities of Japan, the Republic of China, and the Republic of Korea to attend. I would also like to extend an invitation to the corporate leaders of Bechtel, Asea Brown Boveri, and Imperial Chemical Industries to address my committee and the Senate Leadership about their potential involvement in the Hydrocarb Project. Please let me know when it would be possible for us to set this up.

There are several possibilities that might be used to encourage participation by these various parties, such as a loan from the Alaska Industrial Development Authority for the Demonstration Plan or a possible tax incentive for the investors in the commercial facilities.

Again, thank you for the material and information on this project. Please keep me informed of any new developments and let me know when we will be able to set up this informational meeting.

Cordially,

Carl Fischer

Senator Paul Fischer

PF/ls

ALASKA INTERNATIONAL MARKETING
YOUR KEY TO THE CAPITAL

12280 MENDENHALL LOOP ROAD
SUITE # 4
JUNEAU, ALASKA 99801
(907) 789-9273

March 18, 1991

Ms. Ho-Ching Lee
Program Director
Division of International Affairs
National Science Council
Taipei, Taiwan

Dear Ho-Ching:

I would like to take this opportunity to update you on the fast moving Hydrocarb project here in Alaska. I am sorry we haven't been able to get our lines of communication wide open yet, but I guess we are rather far apart in miles and time zones. I am sure after we are able to talk directly with each other we will be able to figure out our schedules so that we may communicate more easily.

On Friday, March 15, 1991 I met with the State's Commissioner of Commerce and Economic Development. He has given the project an enthusiastic endorsement and will assist us in funding the Demonstration Plant with a loan from the Alaska Industrial Development Authority. This Legislatively funded economic development organization has over $300. million available for projects such as ours, and answers to the Commissioner of Commerce and Economic Development.

As you can see from the Letter dated March 14, 1991, authored by Senator Paul Fischer Chairman of the Alaska State Senate International Trade Committee, this new technology has a lot of people very excited here in Alaska. Alaska's corporate and governmental leaders have been looking for a way to tap our vast resources of coal for decades. Because of the wet dirty nature of our deposits we have not been able to compete in the world coal markets, until now! The Hydrocarb process, developed at the Brookhaven National Laboratory and funded by the

U.S. Department of Energy, has given us the process that will make our 4 to 5 trillion tons of coal a readily available clean burning alternative energy supply for America and our neighbors in the Pacific Rim.

Accordingly, I would like to extend a cordial invitation to you and whatever governmental and corporate leaders from your energy and finance communities you feel are appropriate, to open up dialog on a potential working relationship between Taiwan, The State of Alaska and Hydrocarb Corp.. We feel that such a relationship could be a long lasting very rewarding one for all involved.

I look forward to talking with you personally, as soon as possible, at your convenience. At Senator Fischer's request, I would like to arrange for you to meet and discuss this, or other projects, with our State's leaders. Considering Our Legislative Session is nearly half over this year, I would appreciate a prompt reply.

If you would like any further back-up or support material please don't hesitate to ask. Best regards!

Most respectfully yours

Don Kubley
President
Alaska International Marketing

DWK/td
c.c
Dr. Edward Grohse, C.E.O. & President Hydrocarb Corp.

The Honorable Glen Olds, Commissioner of
Commerce and Economic Development

The Honorable Jack Coghill
Lt. Governor of Alaska

The Honorable Senator Paul Fischer
Chairman, The Senate Special Committee
on International Trade

The Honorable Senator Lloyd Jones
Chairman, Senate Natural
Resources Committee

DRAFT
12/31/90

BIOMASS AND FOSSIL FUEL TO METHANOL AND CARBON VIA THE HYDROCARB PROCESS

A Potential New Source of Transportation and Utility Fuels

Robert H. Borgwardt
Air and Energy Engineering Research Laboratory
U.S. Environmental Protection Agency
Research Triangle Park, NC 27711
Meyer Steinberg
Department of Applied Science
Brookhaven National Laboratory
Uton, New York 11973
Edward W. Grohse, Ph.D., and Yuanki Tung, Ph.D.
Hydrocarb Corporation
New York, New York

ABSTRACT

There is a need for new supplies of liquid fuels, especially from domestic sources, for the transportation sector. This fact, together with major concerns about health effects of urban ozone pollution--which now exceeds EPA standards in more than 100 U.S. cities--argue for increased production of methanol for use in vehicles. The current routes to methanol involve catalytic formation from synthesis gas produced by reforming of natural gas, oil or coal. The cost of methanol produced from natural gas may become more expensive if that resource is allocated in large measure to transportation fuels. The Hydrocarb process has the potential to increase the yield of methanol from a given supply of natural gas or replace gas with biomass and coal or other carbonaceous feedstocks by means of an energy-efficient, three-step process. An equally important product of this process is a carbon that is free of ash, sulfur and nitrogen. This carbon can be used as a clean utility fuel in power plants and in heat engines (turbines and diesels) to eliminate the pollution associated with the use of coal and reduce the cost of emission controls. In addition to carbon and methanol, methane and hydrogen can be alternate coproducts. A comparative analysis of the conversion of alternate feedstocks to methanol fuel will be presented. The possibility of global climate change implies that CO_2 emissions should be taken into account when assessing options for producing future alternative fuels. From this, as well as the other environmental standpoints, Hydrocarb offers advantages.

BIOMASS AND FOSSIL FUEL TO METHANOL AND CARBON VIA THE HYDROCARB PROCESS

A Potential New Source of Transportation and Utility Fuels

by

Robert H. Borgwardt
Air and Energy Engineering Research Laboratory
U.S. Environmental Protection Agency
Research Triangle Park, NC 27711

Meyer Steinberg
Department of Applied Science
Brookhaven National Laboratory
Uton, New York 11973

Edward W. Grohse, Ph.D., and Yuanki Tung, Ph.D.
Hydrocarb Corporation
New York, New York

Prepared for presentation at:

Institute of Gas Technology Conference on
Energy from Biomass and Wastes XV
Washington, DC
March 25-29, 1991

BIOMASS AND FOSSIL FUEL TO METHANOL AND CARBON VIA THE HYDROCARB PROCESS

A Potential New Source of Transportation and Utility Fuels

INTRODUCTION

Our dependence on petroleum fuels for the transportation sector involves expenses and risks that have been made dramatically clear by recent events. Sudden disruptions of supply or rapid increases in price have immediate adverse effects on inflation, employment, and productivity. Such negative impacts of petroleum dependence have already lead many to conclude that the time has arrived to begin an orderly transition to alternative fuels. That conclusion finds considerable support when one reckons the cost of petroleum not as dollars per barrel, but in terms of the above economic effects and other penalties, such as environmental impacts, associated with the use of gasoline and diesel fuels. These costs are real even though not included in the market price of those fuels; they are "external costs," hidden and difficult to quantify, but paid by society in one way or another and certain to increase each year. The external costs of petroleum use in the U.S., for the year 1985, are estimated to be $32 - $317 billion (6).

A large part of the external cost is attributed directly or indirectly to the effects of air pollution, the most urgent manifestation of which is the urban ozone problem. Hydrocarbons and nitrogen oxides generated by vehicles using petroleum fuels react photochemically in the air to produce ozone. Half the U.S. population is now exposed to ozone concentrations exceeding the standards established by the Environmental Protection Agency. Because alternative fuels such as alcohols or natural gas are cleaner burning and have much lower photochemical reactivity, their substitution for petroleum fuels is considered the most effective method of reducing ozone exposure. A modeling study by Russell et al. (9) indicates that conversion to methanol could decrease ozone exposure in Los Angeles 88 percent by the year 2000, relative to the reduction that could be achieved from the elimination of motor vehicle emissions.

Additonal health risks associated with the combustion products of petroleum fuels, such as benzene and other aromatic carcinogens (added to fuels to replace lead as octane boosters), peroxyacetylnitrate (a smog component), carbon monoxide, and sulfur oxides can also be reduced by conversion to alternative fuels. The use of methanol in diesel engines equipped with the proper exhaust catalyst is especially effective in reducing emissions of all major pollutants from diesel buses (20). Because of its low flame temperature, methanol has an additional potential for reducing nitrogen oxides emissions from utility and industrial boilers and turbines. These stationary sources are

important contributors to the acid rain problem and Clean Air Act of 1990 will require future reduction of those emissions. Weir et al., (23) show that NOx emissions from a natural-gas-fired utillity boiler can be reduced as much as 80 percent by cofiring methanol above tne gas burners.

The Alternatives

Three principal substitutes for petroleum are being developed for use in the transportation sector: ethanol, methanol, and compressed natural gas. Ethanol, as a 10 percent blend with gasoline, is already a component of 9 percent of the motor fuel used in the U.S. and the blend has reached a market share as high as 30 percent in some states (1). Fuel ethanol is produced almost entirely from corn by the fermentation process at a current U.S. output of 1.1 billion gal/yr. It is feasible to double or triple this production (22), but a 3-billion gallon output would still account for less than 2 percent of the current energy requirements of the U.S. transportation sector. Furthermore, the economics of the fermentation process are such that the use of ethanol is entirely dependent on government incentives in the form of a tax credit, currently $0.60 for each gallon of ethanol used for fuel blending. Even with this incentive, higher corn prices, due to increased demand, will be an impediment to expansion. Attempts are therefore being made to develop new processes based on the hydrolysis of cheaper feedstocks such as woody biomass.

For replacement of gasoline on a large scale, the most practical choices appear to be compressed natural gas or methanol (2, 21). When considered strictly on its merits as a transportation fuel, natural gas has some environmental advantages that are superior to methanol (6) and will be utilized as such in large amounts in spite of a general preference for liquid fuels. Methanol has the advantage, especially during the period of transition from petroleum to alternative fuels, of greater compatibility with the existing distribution and refueling network. More importantly, if methanol were widely available in sufficient quantities and reasonable cost, it could provide an effective means of reducing NOx emissions from large stationary sources, as indicated above, with a desirable impact on acid rain and other environmental problems. It is also apparent, as will be shown, that a suitable choice of the process for producing methanol can help eliminate the other component of acid rain, SOx, and perhaps reduce the cost of electric power production by transferring the task of pollution control from a power plant to a fuel processing plant.

The recoverable U.S. natural gas supply is estimated to be the equivalent of 2126 quads, of which 1150 is in unconventional deposits (sand formations, coal seams, and geopressurized brines) that are recoverable at higher cost. This supply is currently being drawn down at an annual rate of 18 quads equivalent. Natural gas could therefore replace about half the fuel

requirements of the U.S. transportation sector over the mid term of 20-50 years if its price rose to the level of $9-11/10^6$ Btu that would make unconventional sources economic (6). If one considers the longer term, or fuel requirements exceeding 50 percent of the transportation sector, the gas supply must be substantially extended by supplementing it with fuels derived from renewable sources or coal if those requirements are to be met with domestic resources.

Finally, the question of CO_2 emissions must be taken into account when planning for future production and use of alternative fuels. The fact that alcohols can be produced wholly or in part from renewable biomass is perhaps their greatest advantage relative to natural gas: the combustion and regeneration of biomass through photosynthesis contributes no net CO_2 to the atmosphere. One purpose of this paper is to examine the prospect of producing and utilizing methanol with minimum CO_2 emission. Another purpose is to examine the possibility of extending the supply of domestic natural gas by utilizing biomass or coal as co-feedstocks for the production of liquid fuel. In so doing, these domestic fossil fuels might be utilized without increasing the ecological risks associated with global warming and climate change.

For these reasons, the Air and Energy Engineering Research Laboratory of the U.S. EPA is supporting an evaluation of the Hydrocarb process, as conceived by Steinberg and Grohse (14), and a feasibility study of a process configuration by which biomass and natural gas feedstocks are converted to methanol and pure carbon (17). We expect this analysis to be followed in the future by evaluations of other configurations based on feedstocks of biomass plus coal, and coal alone. Our reasons for initial emphasis of the biomass/natural gas option are: (1) it is less complex than the process configurations that utilize coal feedstock, (2) it is expected to have the lowest plant capital cost, (3) the desulfurization problem is minimized, (4) a greater yield of methanol can be obtained from a given supply of natural gas than by conventional methanol processes, and (5) ash production and disposal are minimized.

In the following, we will (a) outline the process concept, (b) discuss its options for producing the different fuels which may be required for particular industrial sectors or environmental objectives, and (c) make preliminary estimates of the cost, energy utilization efficiency, and CO_2 emissions associated with those options and compare them with other processes for alcohol production.

Potential Advantages

Several aspects of the process are important from the environmental standpoint. First, the material and energy balances show that 1.88 mols of methanol can be produced from each mol of natural gas consumed, or 88 percent more than the amount that could be produced by conventional steam reforming of that gas. The potential yield of useful fuel from a given gas resource is thereby significantly extended.

Second, the by-product carbon that is extracted from the biomass by hydrogasification is free of sulfur, ash, and nitrogen. It can therefore be utilized as a premium clean fuel in the industrial sector to eliminate SO_2 and particulate emissions. The absence of nitrogen in this fuel should reduce NOx emissions about 50 percent compared to coal. Slurries of carbon black in fuel oil, methanol, and water (15) are currently being evaluated by EPA for possible use as boiler fuels. Such slurries could also be advantageously used in turbines and diesels with little modification of these conventional heat engines.

Third, the feedstock is not limited to biomass/natural gas. Virtually any carbonaceous material can, in concept, replace biomass--including municipal solid waste (16). Natural gas can be replaced by coal, or the process can be operated with coal substituting for both biomass and natural gas. These options widen the resource base and increase the potential supply of transportation fuel that might be produced from domestic resources. They also, however, increase the complexity of the process with respect to desulfurization and ash handling.

Natural gas is an excellent alternative fuel. Why then, convert it to methanol? As indicated above, the conversion would increase the amount of fuel that can be produced from a given supply of gas, yielding about 48 percent more fuel energy. Another reason has to do with the specter of global warming attributed primarily to CO_2 and other emissions from the combution of fossil fuels.

Direct use of methane as an alternative fuel is complicated by the fact that it is an important greenhouse gas--much more potent than CO_2--and is accumulating in the atmosphere at nearly twice the rate of the CO_2 accumulation. Although

methane leakage from motor vehicles and the fuel distribution network will not contribute to the urban ozone problem, that CH_4 will ultimately undergo the same ozone-forming reactions in higher altitudes of the troposphere where ozone contributes significantly to the greenhouse effect. There is increasing concern about the effects of tropospheric ozone on the overall global warming problem. A large expansion of the distribution network for natural gas that would be required for vehicle refueling on a major scale will inevitably lead to leakage of methane to the atmosphere and contribute to global warming both as methane and as ozone.

DISCUSSION

CO2 Stabilization

CO_2 emissions from the combustion of fossil fuels such as petroleum or natural gas add directly to the atmospheric CO_2 budget. Emissions from biomass combustion do not affect that budget because an equal amount of carbon is removed from the atmosphere when the biomass is regenerated by photosynthesis.

The transportation sector is currently responsible for about 24 percent of total U.S. anthropogenic CO_2 emissions. A recent report prepared by the Science Advisory Board (11) for the EPA recommends that a high priority be given to ecological risks, equal to the emphasis currently given to human health risks. The risk of climate change was cited as one of the most important ecological concerns. The best approach for dealing with climate change is a contentious issue, but there is general agreement that a number of actions can, and should, be undertaken that are justified for their own positive effects whether or not CO_2 stabilization of the atmosphere develops as a necessary objective (10). Energy conservation and improved energy utilization efficiency are examples. From the discussion above, the multiple environmental advantages of the Hydrocarb process would be consistent with that approach, especially if it is also shown to be capable of reducing CO_2 emissions. This section addresses that aspect of the process.

Complete combustion of methanol yields 160 lb $CO_2/10^6$ Btu(LHV). Similarly, the complete combustion of gasoline and ethanol would yield 173 and 167 lb CO_2, respectively. Because of the lower C/H ratio of methanol and its higher combustion and thermal efficiencies, the CO_2 emissions from methanol fueled vehicles should be about 20 percent less than those fueled by gasoline (6). Second, the thermal efficiency of methanol production by Hydrocarb is expected to be substantially greater than other processes for producing alternative alcohol fuels; i.e., the ratio of the energy content of the product alcohol to

the potential energy of the feedstocks (if those feedstocks were used directly as fuels) is generally higher for the Hydrocarb process. Thus, more useful energy can be derived for a given CO_2 emission.

Most importantly, the amount of CO_2 released by the utilization of methanol and carbon fuels that are produced by Hydrocarb from biomass and methane can be controlled over a broad range. At the sacrifice of thermal efficiency and increased production cost of the fuel, this range of CO_2 emissions can vary from a net positive value to a negative value. These options are demonstrated by the following sample calculations based on data from Hydrocarb mass and energy balances.

Feeds: Biomass consumed = 4.382 mol
Natural gas consumed = 1.109 mol

Products: Total carbon produced = 3.28 mol
--of which 1.14 mol is burned for energy balance
--of which 2.14 mol is available for use
Methanol product = 2.086 mol
0.492 mol gas purge, burned in reheater, containing 3.9% CO, 0.3% CO_2, 18.8% CH_4, 76.1% H_2 and 0.9% CH_3OH

Biomass energy content (HHV) = 113 kcal/g mol

The products can be utilized in three ways: (1) both carbon and methanol are used as fuels--methanol in the transportaion sector and carbon or carbon/methanol slurry in the utility sector, (2) the methanol is used as a transportation fuel and part of the carbon is sequestered in an amount that yields no net CO_2 emission when the remaining carbon is used as fuel, or (3) only the methanol is used as fuel, with all of the carbon sequestered to obtain maximum atmospheric CO_2 stabilization potential.

Using the first case as example, the CO_2 emission and thermal efficiency can be calculated (Steinberg, 1990) as:

$$CO_2\ Emission = \frac{(-4.382+2.086+3.28+0.177)x44x2.2x10^6}{(2.086x173600+2.14x94100)x3.97} = 47.7\frac{lbCO_2}{10^6Btu}$$

$$Thermal\ Efficiency = \frac{(2.14x94100)+(2.086x173600)}{(4.382x113000)+(1.109x212000)} = 0.77$$

Using the same procedure to evaluate the other Hydrocarb options yields the following results:

Methanol used as fuel, %	Carbon used as fuel, %	Net CO_2 emission, lb/10^6 Btu (all fuels)	Thermal efficiency, %
100	100	47.7	77
100	31.7	0	63
100	0	-69.8	50

Projected Cost of Methanol Production

The cost of producing methanol by the Hydrocarb process was estimated for each of the three basic options shown above, based on the following assumptions:

Methanol production, gal/day	6,026,000
Capital cost of plant	$\$2.1 \times 10^9$
Biomass requirement, tons/day	30,000
Conversion efficiency, %	90
Annual utilization factor, %	90
Delivered cost of biomass, per dry ton	$42.00
Capital charge rate, less ROI	0.059
Other costs, per ton biomass	$4.50
Carbon sequestering cost, per ton	$21.00
Ash disposal cost, per ton	$11.00
Value of fuel carbon, per ton	$70.00
Natural gas cost, per MSCF	$4.00
Return on investment, %	15

From the above data, the following production costs were obtained;

Process option	Plant-gate cost of methanol, $/gal	$/$10^6$ Btu (LHV)
All carbon black used as fuel	0.52	9.2
No net CO_2 emission	0.58	10.3
All carbon black sequestered	0.64	11.2

The capital cost for the Hydrocarb plant is based on 88 percent of an equivalent Texaco plant, for which the most detailed engineering design and cost estimates are available. We believe it reasonable to expect that the actual Hydrocarb plant (using biomass and natural gas feedstocks) may cost as little as half that of Texaco process since it will contain no oxygen plant, steam plant, or shift plant, and will have much simpler acid-gas removal requirements.

Alternative Technologies for Alcohol Production

The cost of domestic natural gas assumed for the estimates summarized in the above table are based on the price elasticity data reported by DeLuchi et al. (7) for a total demand equivalent to 2/3 of the 15 quads of energy required by the U.S. transportation sector. If the production of methanol were to be undertaken on such a large scale using conventional technology it is generally agreed that the process of choice would be the reforming of natural gas obtained from remote sources--from which it could be produced and delivered to the U.S. at a slightly lower cost than methanol made from domestic natural gas. In that case, one of the principal advantages of instituting the use of alternatve fuels--reduction of economic and security risks--could not be realized.

Table 2 compares the estimated cost of Hydrocarb methanol with that produced by conventional processes when the total demand is equivalent to 10 quads. The comparison is made for three configurations of Hydrocarb corresponding to different levels of CO_2 emission according to the amount of by-product carbon that is sequestered. The comparison shows that Hydrocarb should produce methanol at a cost less than that made from remote gas and do so with less CO_2 emission. It therefore could generate a large part of the fuel required for the transportation sector from domestic resources entirely. In so doing, it could also extract the energy of a major fossil fuel while avoiding the CO_2 emission that would otherwise result from its use.

Table 2 also compares Hydrocarb with other alcohol production technologies that are under development. In those cases, the costs available for comparison do not account for price elasticity of the raw feedstocks that can be expected if the alcohol is produced on a large scale. Nevertheless, it is clear that the cost of ethanol produced by either the standard fermentation process (8) or the newer acid-hydrolysis (24) or enzymatic-hydrolysis (25) processes will probably be significantly greater than the cost of methanol.

The lowest projected cost of methanol is $\$9.0/10^6$ Btu(LHV), produced from coal by a dedicated Texaco oxygen-gasification plant (4). This process emits 349 lb of CO_2 per 10^6Btu of alcohol energy produced. Hydrocarb, in the biomass/natural gas configuration, can operate with zero net CO_2 emission, at an

estimated methanol cost of $\$10.3/10^6$ Btu. (As pointed out above, we believe this cost represents a maximum since it is based on a conservative estimate of capital investment.) Compared to the Texaco process the methanol cost differential corresponds to \$7.45/ton of CO_2 emission reduction. This value is about half the cost of collecting and disposing of 90 percent of the CO_2 from coal-fired power plants after combustion (5).

Included in Table 2 is a Hydrocarb option that uses coal instead of natural gas as the co-feedstock with biomass. This estimate is the most speculative, but might yield methanol at about $\$7.6/10^6$Btu if both the carbon and the methanol products are utilized as fuels. In this case, the CO_2 emission would be 163 lb/10^6Btu or 53 percent less that the Texaco process. The principal problem with the use of coal is desulfurization which must be accomplished efficiently during hydrogasification. Waste disposal also increases the complexity of this option. On the other hand, the use of coal as well as natural gas greatly increases the quantities of methanol that could be produced from domestic resources, especially if industrial and utility sectors, as well as the transportation sector, are to be considered as recipients of the clean fuels.

The production of clean carbon (or carbon-methanol slurries) for fueling power plants would eliminate the problems of SO_2 and particulate control at the utilities (and reduce the NOx control problem) transfing those tasks to the Hydrocarb plant, where they might be handled more efficiently and remotely. Although the capital cost of a Hydrocarb plant using coal would be greater than one using natural gas, the cost of industrial boilers utilizing the clean fuels could be reduced substantially if pollution controls were unnecessary. If such a credit were applied to a coal-based Hydrocarb system, its capital cost would be much less than that assumed for this analysis.

The other comparisons made in Table 2 are the amount of biomass farm area required for the various renewable-feedstock processes and the overall energy-utilization efficiencies of each process. In both of these categories Hydrocarb is expected to be capable of large improvement over other methods of alcohol production from biomass. Both of these factors become very important when large scale production of alcohol is contmplated. The size of a singe biomass farm would have to extend for tens of miles surrounding the plant site. Since Hydrocarb substitutes fossil fuel for part of the biomass required by the other processes, it can significantly reduce the farm area.

Finally, it must be noted that the cost of producing gasoline is about \$0.60/gal, or $\$5.26/10^6$Btu. Although there is some possibility that Hydrocarb methanol might be able to compete with this cost (19) it is still likely that some form of Government intervention, either in the form of tax credit, carbon emission tax, or other regulation, will be required if any alternative fuel is to replace petroleum on a large scale. The

amount of tax cedit required for methanol should, however, be as much as 42 percent less than that required for ethanol. Private enterprise cannot be expected to develop alternative fuel supplies from domestic sources or to address the issues of ecological risks without such incentives. The nation is approaching the point, however, where the question of incentives goes far beyond the issue of federal farm supports. The issue of increasing importance is the internalization of the social costs of using fossil fuels in terms of their health, environmental and ecological impacts.

As pointed out at the beginning of this article, the use of petroleum fuels involves external costs that are not reflected in the market price. The total of those external annual costs, which do not include the enormous potential impact of future climate change, are estimated to be in the range of $32-317 billion. One can, on that basis, evaluate the cost of Hydrocarb methanol in much more realistic terms by comparing its cost, at $10.3/10^{6}Btu (for zero net CO_2 emission), with the $5.26/10^{6}Btu cost of gasoline. The difference, prorated for the 15 quads of energy consumed in the transportation sector, is $76 billion--well within the range of external costs already being paid and much less than the higher estimate of those costs of petroleum dependence. It is important to note that this comparison does include an accounting of the cost of CO_2 mitigation from the transportation sector and therefore incorportates insurance against large future costs that might accrue from global warming.

SUMMARY AND CONCLUSIONS

The price of petroleum fuels is much less than the cost that society must ultimately pay for their use. The real costs include economic disruptions, increase of national debt, health risks associated with air pollution, and ecological risks resulting from greenhouse gas emissions. When the external costs of petroleum are accounted for, methanol becomes a realistic alternative liquid fuel for the transportation sector. It can be produced from domestic resources by the Texaco process using coal, or by the Hydrocarb process using biomass and natural gas. In the latter case, it should be possible to produce and utilize methanol without a net CO_2 emission to the atmosphere at a cost of about $10.3/10^{6}Btu, at least 35 percent less than the cost of ethanol. A substantial transition to methanol or any other alternative transportation fuel would require large increase in the amount of feedstocks from which it can be produced. The diverse feedstocks that can be used in Hydrocarb, which include biomass, coal, natural gas, and municipal solid waste, is a crucial advantage that can make methanol a practical long-term option. Its potential for effecting reductions in other areas of environmental concern, such as SO_2, particulate, and NOx emissions from stationary sources, is another important advantage. Unique, perhaps, among the alternative options is the

possibility that this process might utilize the abundant domestic fossil fuels in a manner that will minimize their environmental impacts and will not contribute to the problem of global warming.

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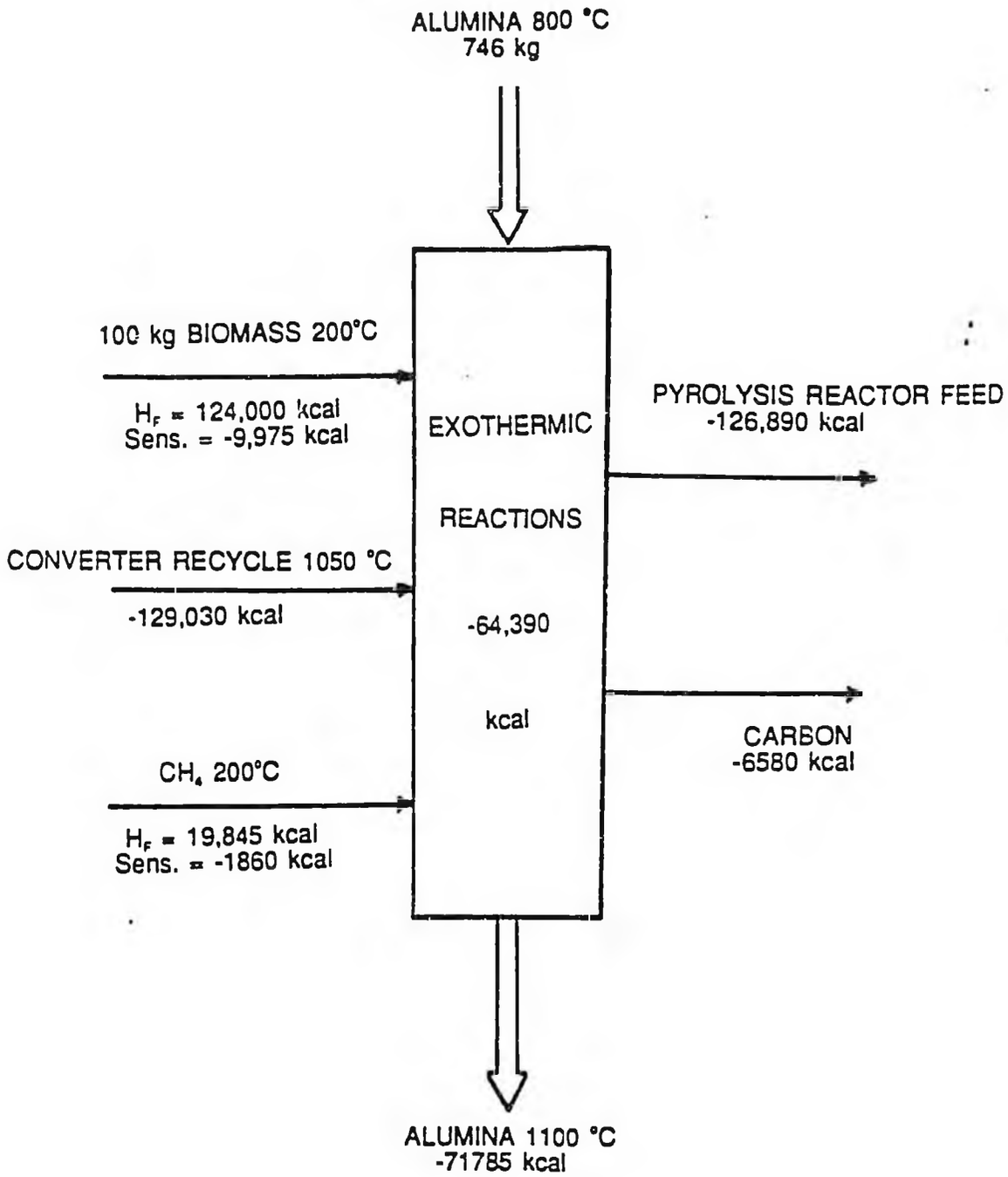

Figure 2. ENERGY BALANCE ON HYDROGASIFICATION REACTOR

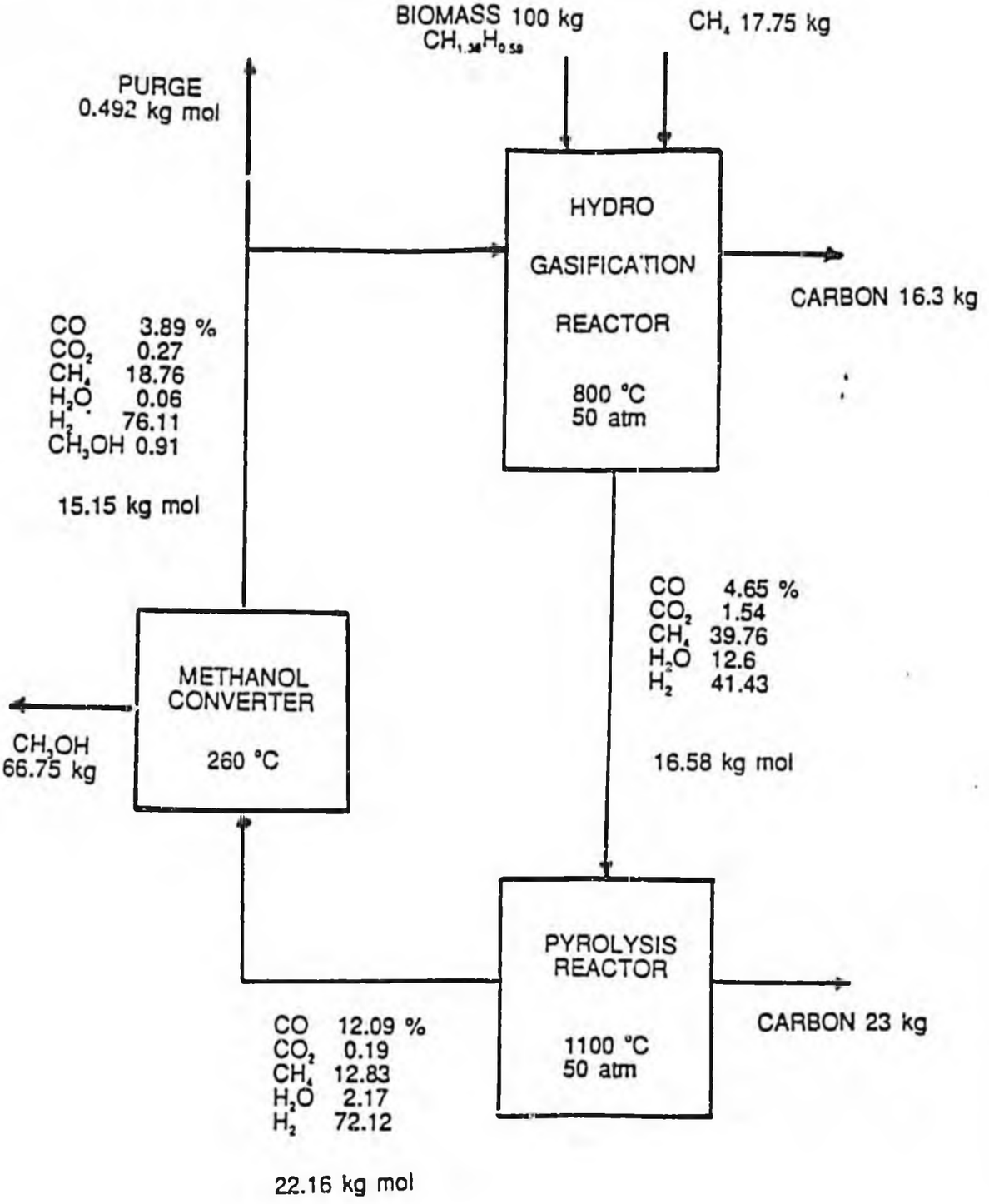

Figure 1. EQUILIBRIUM COMPOSITIONS AND MATERIAL BALANCE

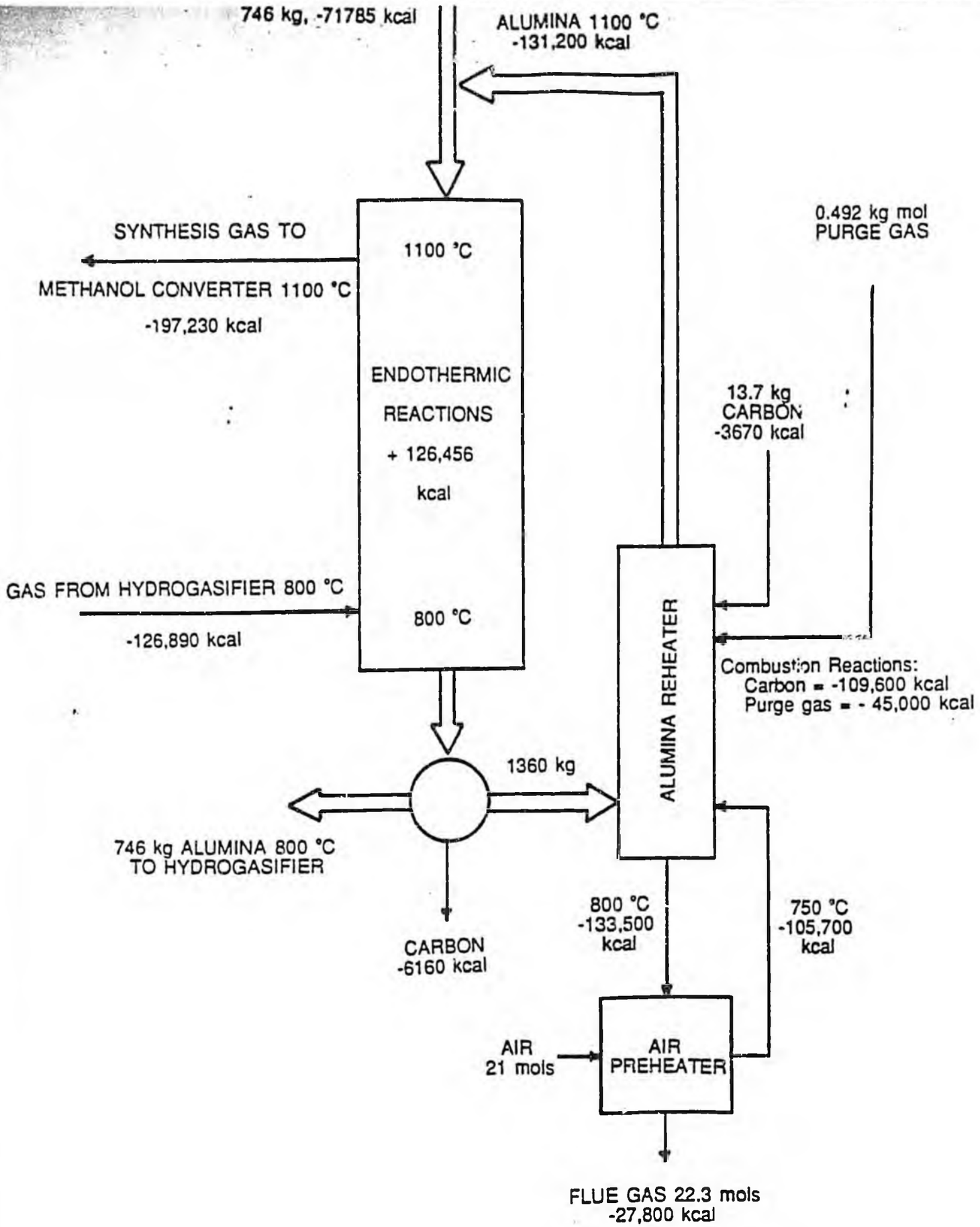

Figure 3. ENERGY BALANCE ON PYROLYSIS REACTOR

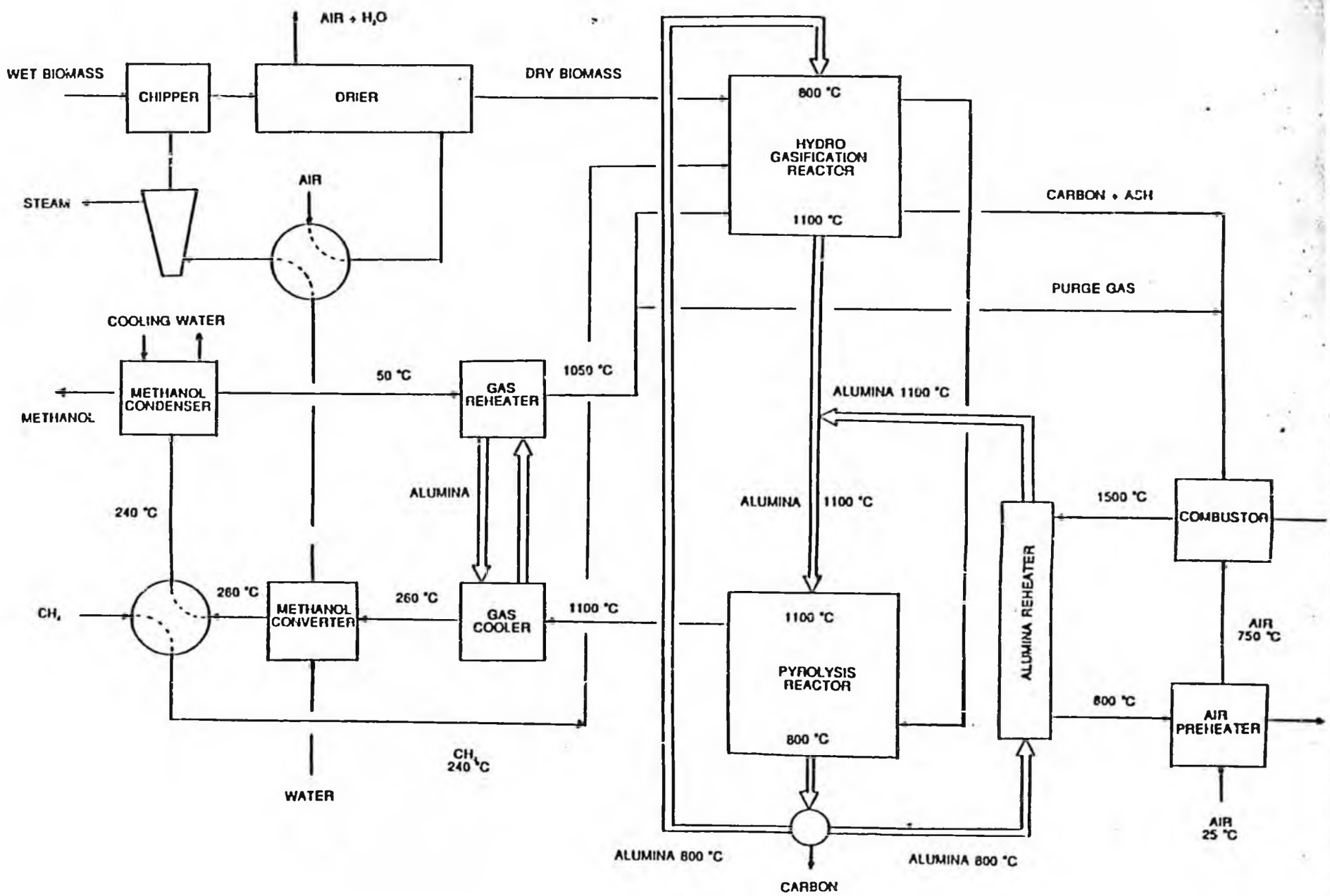

Figure 4. HYDROCARB FLOW SHEET FOR BIOMASS/NATURAL GAS FEEDSTOCKS

STATE OF ALASKA

DEPARTMENT OF COMMERCE & ECONOMIC DEVELOPMENT

OFFICE OF THE COMMISSIONER

WALTER J. HICKEL, GOVERNOR

P. O. BOX D
JUNEAU, ALASKA 99811-0800
PHONE: (907) 465-2500

May 2, 1991

The Honorable Dave Chouquette
House of Representatives
State Of Alaska
PO Box V
Juneau, Alaska 99811

Dear Representative Chouquette:

I am most grateful for your leadership in sponsoring House Bill 206 as now amended to accommodate our concerns for rendering AIDEA more response to Alaska's needs for economic development.

Raising the cap to $15,000,000 will permit two important initiatives in the pipeline essential to our development in the energy field. Permitting latitude in collaboration with lending banks re: lending time frames, and their important role in private intiatives will strengthen our support leverage for larger private sector involvement in development loans.

I trust this legislation will move forward smoothly. I fully expect AIDEA to play an increasingly important role in the development of Alaska's diversified economy. This effort legislatively should help. Thanks.

Cordially,

Glenn

Glenn A. Olds
Commissioner
Department of Economic Development

08-H2LH

FISCAL NOTE

STATE OF ALASKA
1991 LEGISLATIVE SESSION

BILL NO. CSSB 206 (L&C)

Revision Date: April 15, 1991
Department Affected: Commerce & Economic Dev.
Title: An Act revising the loan authority of the AK Industrial Dev. & Export Authority
BRU: AK Industrial Dev. & Export Authority
Component:
Sponsor: Choquette, Baker
Requestor:
COMPONENT SERIAL NO. 1 | 2 | 3 | 4

Expenditures/Revenues: (Thousands of Dollars)

OPERATING	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	0	0	0	0	0	0
CAPITAL	25,000	25,000	25,000	25,000	25,000	25,000
REVENUE	25,000	25,000	25,000	25,000	25,000	25,000

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER	25,000	25,000	25,000	25,000	25,000	25,000
TOTAL						

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

Estimate of current year impact:

ANALYSIS: (Attach a separate page if necessary.)

SEE ATTACHED

Prepared By: Bertram L. Wagnon, Executive Director
Phone: (907) 561-8050
Division: AK Industrial Dev. & Export Authority
Date: April 15, 1991

Approved by Commissioner: Glenn A. Olds
Agency: Department of Commerce & Economic Development
Date: 4/30/91

Distribution (by preparer): Legislative Finance, Legislative Sponsor, Requestor, OMB, & Impacted Agency(ies).

Rev 10/90
BLW/SS/dg19489D/043091a

FISCAL NOTE - CSSB 206 (L&C)

ANALYSIS:

Raising the loan limits from $10 to $15 million will tend to increase the amounts loaned and, in conjunction with shorter amortization on the originators' (banks) part, increase the number of loans. The new language restricting the program to "new business ventures" will tend to decrease usage of the program. The preparer's best estimate is that the net effect will result in the $25 million range subject, of course, to external economic factors which impact lending.

Note: All funds are available for these purposes and require no appropriation from the Legislature.

9489D/043091a

SENATE COMMITTEE REPORT

DATE: 5/8/91 FURTHER:

DATE TURNED INTO OFFICE: _____

L&C Committee considered CS FOR HOUSE BILL NO. 206 (FINANCE) am

"An Act revising the loan authority of the Alaska Industrial Development and Export Authority, and relating to the authority's loan guarantees under its business assistance program; and providing for an effective date."

and recommended:

[ ] replace with _____ CS _____ [ ] same title
[ ] or adopt _____ CS _____ [ ] new title
[ ] technical title change (HB only)

[ ] attached amendment(s)
[ ] _____ ____ letter of intent adopted

[ ] do pass

[ ] do not pass

[ ] no recommendation

[✓] individual recommendations

[ ] further referral to _____

ATTACHES NEW FISCAL NOTE(S):	Dept/Date:	APPROVES PREVIOUS:	Dept/Date:
[ ] fiscal note(s)	_____	[✓] fiscal note(s)	CDHH 4-30-91
[ ] zero fiscal note(s)	_____	[ ] zero fiscal note(s)	_____
[ ] appropriation-no fiscal note		[ ] Governor's bill w/fiscal note	

SIGNING DO PASS:

Kim Colles

Rick Halford

OTHER RECOMMENDATIONS: no rec.

Ada Elson needs amend.

Chair: Signature and Recommendation

Alaska State Legislature
House of Representatives

INTERIM
3111 C Street
Anchorage, Alaska 99503
(907) 561-2032

SESSION
P.O. Box V
Juneau, Alaska 99811
(907) 465-2995

Representative Dave Choquette

May 13, 1991

To: Senator Drue Pearce
Chair, Senate Labor and Commerce Committee

From: Representative Dave Choquette

Re: CSHB206 (Finance), An Act relating to the Authority of the Alaska Industrial Development and Export Authority providing requirements relating to the authority's loan guarantees under the Business Assistance Program, and providing for an effective date.

Thank you for hearing CSHB206 (Finance).

HB206 was introduced for two reasons. First, to increase bank participation in AIDEA programs, and, second, to foster a small business loan guarantee program better suited to meet the needs of this sector of the economy.

CSHB 206 has four components.

a. It provides authority for AIDEA to allow a differential amortization schedule in order to induce bank participation in the commercial loan program.

b. It increases the size of loans that may be made under the commercial loan program from $10 million to $15 million.

c. It provides that AIDEA may increase the loan guarantee from 60% to 80% for loans of $50,000 or less.

d. It provides that AIDEA may waive on a case by case basis the collateral requirement for loan guarantees of $50,000 or less provided for commercially worthwhile business ventures.

Thank you for your attention to this matter. CSHB206 (Finance) will go a long way to to further AIDEA's resolve to advance the economic prosperity of this state.

Alaska State Legislature
House of Representatives

INTERIM
3111 C Street
Anchorage, Alaska 99503
(907) 561-2032

SESSION
P.O. Box V
Juneau, Alaska 99811
(907) 465-2995

Representative Dave Choquette

OVERVIEW OF CSHB206 (FINANCE)

AIDEA BACKGROUND

The Alaska Industrial Development and Export Authority (AIDEA) is a public corporation of the State of Alaska, and a political subdivision within the Department of Commerce and Economic Development (DCED). It maintains a separate and independent legal existence from DCED. AIDEA's objective is to promote, develop, and advance the general prosperity of Alaskans. It serves this end by financing industrial, manufacturing, and other business enterprises located within the state, and by developing projects that will provide employment and economic development opportunities.

AIDEA activities are funded through the revolving fund established in the authority. The fund consists of legislative appropriations, money or assets transferred to the revolving fund by the authority, and unrestricted payments on loans made or purchased by the authority.

The activities of the AIDEA revolving fund are accounted for in the Enterprise Development Account and the Economic Development Account. Both accounts were established by the Legislature for separate and distinct purposes. The Enterprise Development Account is a trust fund established to finance industrial, manufacturing, and business enterprises not owned or operated by AIDEA.[1] The

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[1] According to AIDEA's 1990 Annual Report, since July 1, 1980, this account consists of:

a. $32,212,300 in appropriations

b. all rights, title, and interest in loans, with principal balances totalling approximately $166,000,000 at the date of transfer, previously held by the Department of Revenue and the Department of Commerce and Economic Development.

c. assets and liabilities of the Alaska State Development Corporation, the Small Business Development Corporation, and the

Economic Development Account is used only to finance, acquire, manage, and operate development projects that AIDEA intends to own or operate.

A. The commercial loan program

The commercial loan program is funded within the Enterprise Development Account. At present, money within the account may be used to purchase loans or to secure bonds issued to finance the purchase of loans for commercial projects. At present, a loan may be secured by bond or purchased so long as it:

1. does not exceed, $10,000,000:

2. does not exceed the cost of the project or 75% of the appraised value of the project, whichever is less, unless the amount in excess of this limit is federally insured or guaranteed or insured by a qualified mortgage insurance company;

3. is not for a term longer than 3/4 of the authority's estimate of the life of the project, or for 25 years from the date of the loan, whichever is earlier;

4. contains complete amortization provisions, these provisions set the schedule for liquidation of a debt by installment payments; and

5. contains provisions with respect to insurance, repairs, alterations, payment of taxes and assessments, etc.

Additionally:

repayment is to be secured by mortgage, or another security instrument;

at least 20% of the principal amount of the loan is required to be retained by the originator of the loan, or 100% of the principal is to be guaranteed by the United States;

and the loan should be financed or expected to be financed from the proceeds of bonds.

Alaska Toll Bridge Authority, with a fund balance of $2,554,055.

Proposed Amendments to the Commercial Loan Program

The commercial loan guarantee program has not been a resounding success. Banks are reticent to participate in it. According to the Alaska Banker's Association, the loan program could better fulfill its purpose of providing capital to small and medium sized businesses by allowing banks participating in the AIDEA program to be paid back on a faster amortization schedule than AIDEA.

As it presently stands, the requirement that a bank retain at least 20% of the principal amount of the loan for as much as 25 years works against the capital structure under which banks operate. Banks do not have a lot of capital available for long term lending because virtually all their cash, in the form of customer deposits, is short term. To tie up a disproportionate share of assets in long term loans would be detrimental to the banks, and would subject them to a high degree of scrutiny by bank examiners. AIDEA, on the other hand, is an instrument capable of maintaining long term loans.

The amendments proffered in Section 1 of the bill address this needed change. First, they allow AIDEA to provide for a differential amortization schedule. AIDEA may exercise this authority when doing so will induce the banks to participate in the commercial loan program, and when, in the authority's opinion, it appears, the project financed can support the increased debt service. Second, they remove the requirement that at least 20% of the principal amount of the loan be retained by the bank for as long as the loan is outstanding.

Section One also increases the size of loans that AIDEA may purchase or finance from $10 million to $15 million. This increase will allow AIDEA to provide additional support to commercially sound projects. Funds within the Enterprise Development Account are quite sufficient to handle this increase.

Lastly, as a security to protect the financial well-being of the Enterprise Development Account, Section One requires that AIDEA may not guarantee a loan if the project applicant is currently in default on another loan made by the state or a public corporation of the state.

B. Business Assistance Program

AIDEA also operates a business assistance fund, commonly known as a loan guarantee program. The purpose of the loan guarantee program is to furnish up to an 80% guarantee of the principal balance to the financial institution making the loan. This added degree of support is intended to make project financing, refinancing, and working capital loans, available to borrowers that might not otherwise be financed.

The fund is established in the authority from money within the authority's reserves. By statute as much as $50,000,000 may be

reserved for the program, with at least $25,000,000 of this amount reserved for loans of $500,000 or less. At present, the authority only has $3.6 million within the fund, and has only lent out $500,000. The program is not filling the financing void it was created to alleviate.

Amendments to the Business Assistance Program

The business assistance program can be more successful if incentives can be created to make private banks more willing participants in the program. Just as importantly, it can be an effective vehicle for financing the programs and needs of Alaska's small business community. These amendments are an attempt to meet these ends. Additionally, they respond to the recommendations of the 1989 Governor's Conference on Small Business on this matter.

Sections 2 through 5 of the bill lay out the amendments.

Section 2 addresses the conditions by which the authority may guarantee a loan under the business assistance program. At present, the authority may guarantee a loan made to a business with a majority interest held by state residents so long as that loan is: commercially reasonable; contains satisfactory amortization provisions; is secured by adequate collateral; so long as the net cash flow of the borrower provides adequate coverage for debt service; and so long as the borrower's credit check is satisfactory.

Section 2 amends the framework by providing that the authority may waive on a case by case basis the collateral requirement for loan guarantees of $50,000 or less when the loan amortizes within five years. Currently, AIDEA regulations place a difficult burden on Alaskan businesses attempting to get small loans. Namely, they provide that a bank will only get a guarantee on a loan if the business provides collateral for up to 125% of the requested amount. Despite the fact that the borrower's loan request may be commercially sound, that he or she may have adequate cash flow to service the debt, and that their credit history is satisfactory, many Alaskan small business owners simply cannot fulfill this collateral requirement. Resultingly, many cannot get an AIDEA guaranteed loan from the bank.

This amendment will allow AIDEA to more accurately weigh the security requirement for worthy loans of $50,000 or less. With input from the banks, they may waive the collateral requirement or provide a collateral requirement that is less onerous than than 75% loan to value ratio presently practiced.

Section 3 amends existent statute and provides that the authority may guarantee 80% of a loan of $50,000 or less. By regulation, the authority guarantees only 60% of loans of this total.

Often banks finds that a small loan is not worth the time and

expense of administering it. As a matter of practice, many small loans made to businesses for inventory, accounts receivable, or working capital do not exceed one year in duration. A bank manager generating this type of credit might turn down marginally qualifying loans due to time considerations and administrative costs.

Increasing the guarantee to 80% is intended to offset this difficulty and to offer opportunities for credit to new businesses and marginally capitalized businesses that otherwise would have a difficult time obtaining credit. A 20% risk factor for most bankers would be sufficient for a bank to maintain quality standards. The collection of excess bad debts by a bank is a drain on profitability which they are not willing to undertake.

Section 4 provides that the authority may not increase its guarantee of loan of $50,000 or less for loans made before the effective date of these amendments.

Lastly, section 5 provides an immediate effective date.

C. Conclusion

House Bill 206 is an attempt to further AIDEA's resolve to advance the economic prosperity of the State. This is completed by increasing bank participation within the AIDEA framework and by responding to the call of Alaskan small businesses unable to secure loans of $50,000 or less. We look forward to achieving both these ends.