

ALASKA NATURAL RESOURCES TO LIQUIDS (ANRTL)

PLAN B A NORTH SLOPE GTL PROGRAM



North Slope GTL

PLAN C ASAP + AN ANCHORAGE AREA GTL PROGRAM



Anchorage Gas Pipeline & GTL



AN ALTERNATIVE TO THE AK LNG?

PLAN B

Possibly the Best Chance of
Success for Alaska

WHY GTL's ?

THINK VALUE ADDED

August 2016 Wood Mackenzie Alaska LNG Competitiveness Study said:

Conclusion(s) *From page 24 of the WM Study*

Currently the Alaska LNG project is one of the least competitive on a cost of supply basis compared with other pre-FID LNG developments (including LNG projects across the world?)

from page 15 of the WM report and statements of WM at the Public presentation

- The effect on competitiveness by including a conventional non-recourse debt structure in a tolling plant structure (without the State of Alaska Guaranteeing the \$45 billion Loan?)
- Restructuring the project to increase the Alaska State's share (of this uneconomic project)
- Relief from federal or state taxes (public presentation discussed waiving Federal and State taxes)

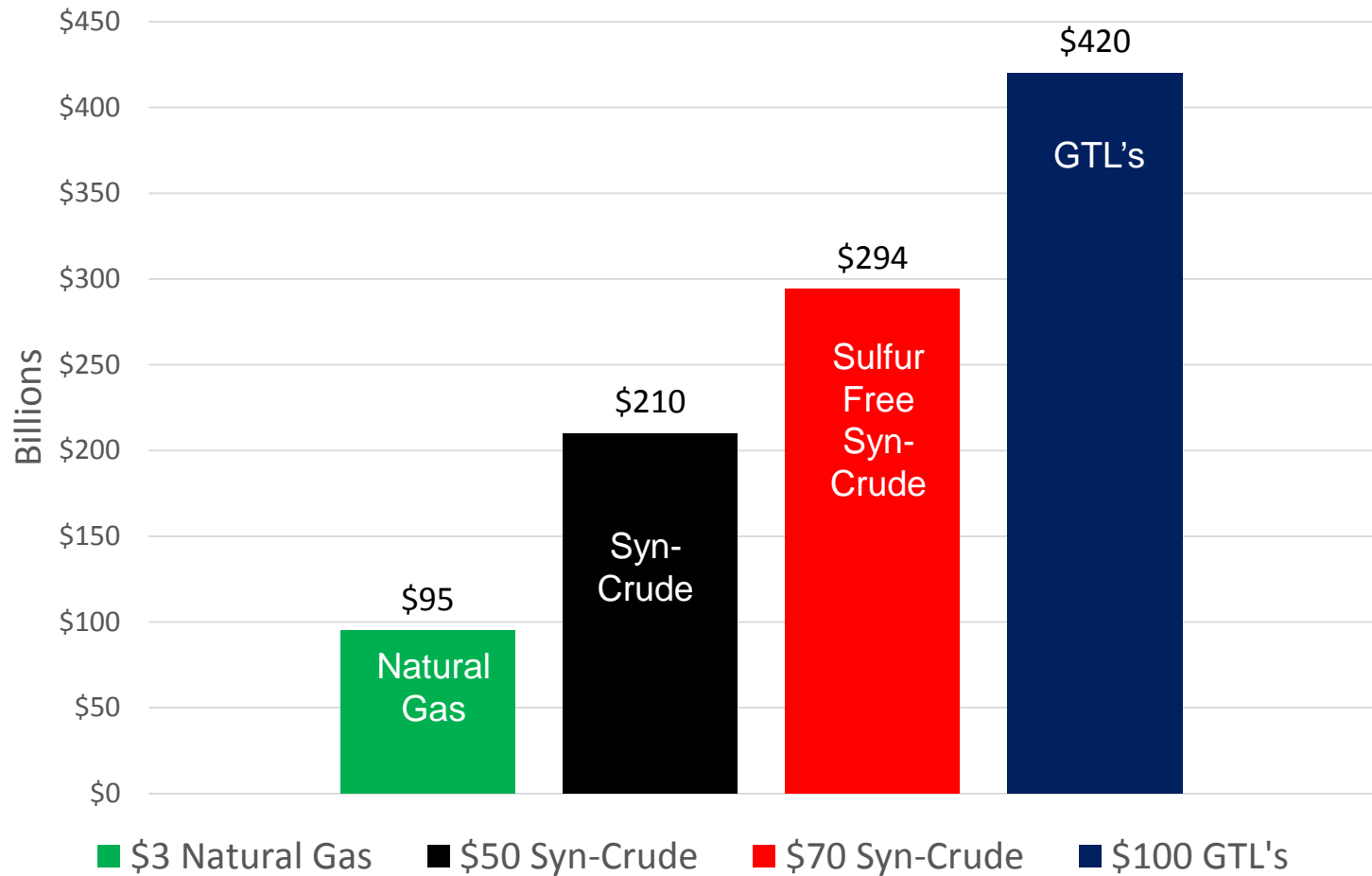
AN ALTERNATIVE TO THE AK LNG?

PLAN B

**DOESN'T BUILD A GAS LINE
BUT GENERATES FAR MORE
REVENUE FOR THE STATE OF
ALASKA**

Value of 35 Tcf of North Slope Natural Gas if Sold as:

Revenue in \$ Billions for Sale of Natural Gas & Liquids



\$3/mmbtu wellhead natural gas - 35 Tcf of natural gas will make 4.2 billion barrels of liquids sold at a crude value of \$50/bbl or zero sulfur crude at \$70/bbl or as GTL's (diesel, gasoline or jet fuel) at \$100/bbl

PLAN B TO THE AK LNG PROJECT

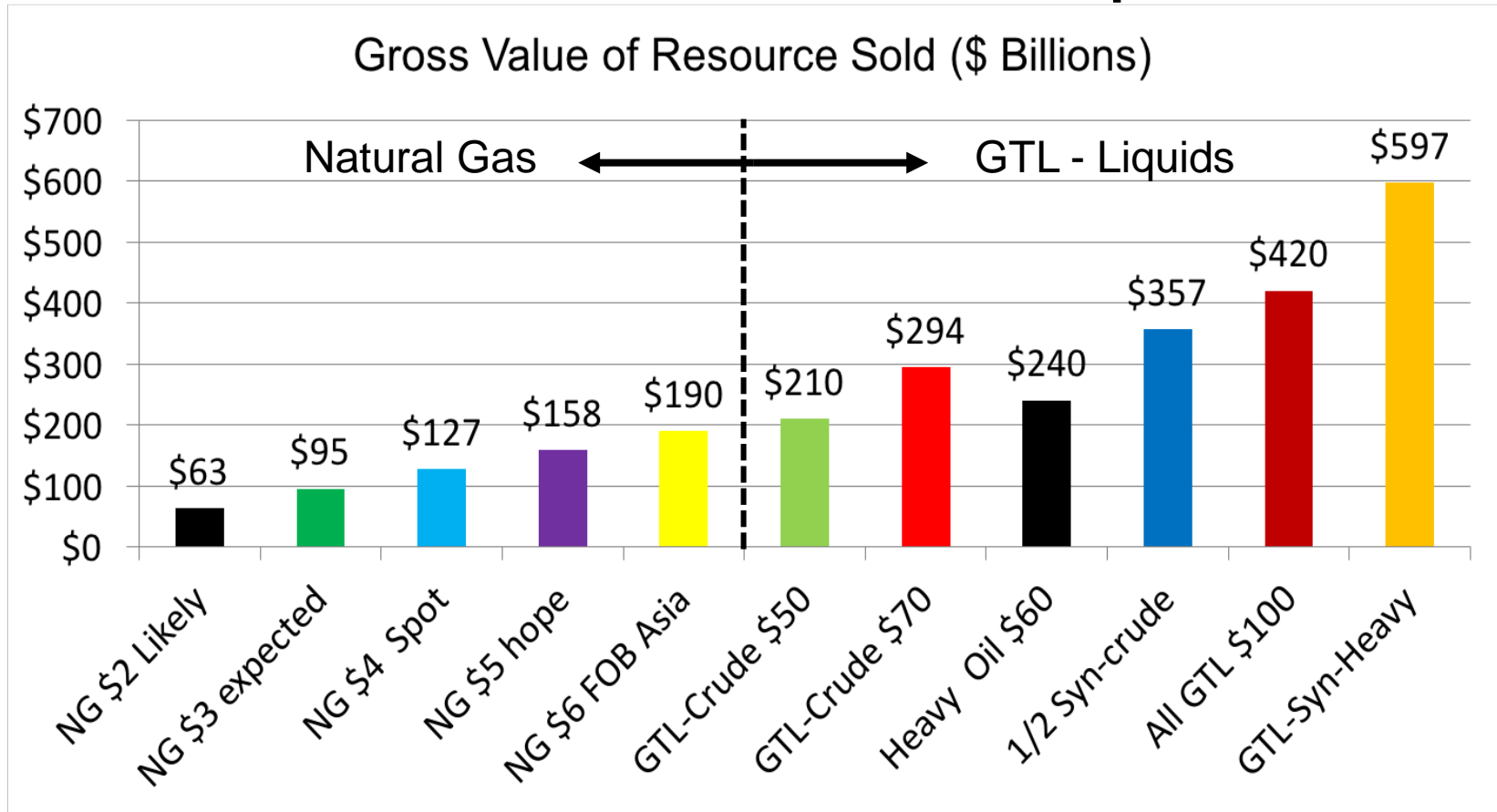
IS THERE A BETTER OPTION FOR THE NORTH SLOPE NATURAL GAS RESERVES?

WE THINK SO:

1. WHILE A GTL PLANT IS NOT CHEAP, RECENTLY BUILT SHELL AND SASOL GTL PLANTS COST FAR LESS THAN THE AK GAS LINE AND LNG PROGRAM EVEN ADJUSTED FOR THE HIGHER COSTS OF AN ALASKA NORTH SLOPE LOCATION;
2. EVEN IF YOU ASSUME THE SAME CAPEX AND OPEX COSTS;
3. GROSS GAS SALES OF \$95 BILLION AT \$3/MMBTU VS SYN-CRUDE SALES FROM \$210 TO \$294 BILLION AT \$50 TO \$70/BBL CRUDE;
4. ADD IN THE FACT THAT PART OF THE GTL STREAM CAN HELP EXTRACT BILLIONS OF BARRELS OF NORTH SLOPE HEAVY CRUDE THE ECONOMICS IMPROVE BY CLOSE TO ANOTHER \$200 BILLION;
5. 4 BILLION BBLs OF GTLs + 4 BILLION BBLs OF NEW HEAVY CRUDE!

NORTH SLOPE NATURAL GAS MARKET OPTIONS

Value of 35 Tcf of North Slope Natural Gas if Sold as Gas (@ \$/mmbtu) or as Liquid's (@ \$/bbl)



2005-2009

Sasol – 35,000 bbl/d ORYX GTL Plant Qatar



SPACE LEFT FOR TWO ADDITIONAL 35,000 BBL/D MODULES

2008-2012

Shell Oil 140,000 bbl/d PEARL GTL Plant Qatar



SHELL PEARL FACILITY – 140,000 BBL/D GTL, 120,000 BBL/D NGL, 240,000 BL/D WATER, SULFUR RECOVERY, 2-OFFSHORE PRODUCTION PLATFORMS AND GAS WELLS, 2 -30" DIA 60 KM PIPELINES, A MEGA POWER PLANT, AN EXPORT PORT AND VILLAGE FOR OVER 1,400 WORKERS / OPERATORS AND THEIR FAMILIES

PLAN B TO THE AK LNG PROJECT

STICK BUILDING IN ALASKA ESPECIALLY ON
THE NORTH SLOPE DOESN'T WORK

MODULAR BUILDING IS THE ONLY WAY TO
BUILD MEGA PROJECTS

VIRTUALLY ALL OF THE FACILITIES ON THE
NORTH SLOPE WERE BUILT AS MODULES
AND TOWED TO THE NORTH SLOPE.

THE BP 600,000 BARREL PER DAY SALTWATER
TREATING PLANT (STP) IS A PERFECT EXAMPLE
FOR A MEGA GTL PLANT PROGRAM

PLAN B TO THE AK LNG PROJECT

ECONOMIC ANSWER - BARGE MOUNTED GTL
PLANTS IN PRUDHOE BAY SAME AS BP STP
125' WIDE X 600' LONG BUT ON LARGER BARGES



PLAN B TO THE AK LNG PROJECT

**SHELL LED THE WAY WITH A 1600' x 250'
SHIP LNG PLANT PRELUDE FLNG**



AN ALTERNATIVE TO ASAP

PLAN C

Possibly the Best Chance of
Political Success for Alaska

WHY GTL's ?

THINK VALUE ADDED
AND LOCAL DEMAND

PLAN C TO AID ASAP

“ASAP WAS ORIGINALLY DESIGNED TO FAIL SO THAT THE ONLY OPTION ON THE TABLE WAS THE AGIA 48” LINE TO CANADA OR TO THE TIDEWATER FOR LNG EXPORT”

One of the most important programs in the State of Alaska is a gas line down the rail belt. So much political capital has been expended to make a gas line happen not to mention close to \$1 billion in actual cash including the Oil Majors investment in the different proposals.

That said, we can't imagine the Alaska Legislature or the **people** agreeing to fund the AK Gasline LNG program for one more penny unless there is a reasonable chance of an actual AK LNG Project happening.

PLAN C TO AID ASAP

The Obama Days: ANRTL had spent tens of millions evaluating a coal to liquids project for the Tyonek area. We were meeting with Sasol, Shell, Chinese Petroleum and the financing people in February 2008, when then candidate Obama said he would bankrupt any coal based project with a carbon tax. When Obama ultimately won the election in November 2008, he repeated that energy charge and effectively killed our CTL program and many other carbon based energy projects across the U.S.

Trump Days: Trump says similar things but in the opposite direction.

1. He supports U.S. pipelines to efficiently bring energy (we assume he means U.S. energy) to U.S. markets;
2. He supports the U.S. reducing its dependence on imported energy;
3. *More than 50% of Jet fuel in Anchorage is imported; and*
4. He wants a new \$1 trillion infrastructure spending stimulus program.

Could this be the “anti-Obama” answer to Alaska’s rail belt gas line?

A WAY FORWARD UNDER PRESIDENT TRUMP

A MODIFIED 36" ASAP TO ANCHORAGE

IN 2004 AND 2007 ALASKA SENATORS TED STEVENS AND LISA MURKOWSKI OBTAINED FEDERAL SUPPORT FOR AN ALASKA GAS LINE FROM THE NORTH SLOPE TO A MARKET IN AN ENERGY BILL.

THIS SUPPORT WAS IN THE FORM OF A FEDERAL LOAN GUARANTEE IN THE RANGE OF \$16 TO \$20 BILLION DOLLARS.

MANY KNEW THAT THE GAS LINE TO CANADA WOULD NOT WORK BUT A GAS LINE WITH NO COMPRESSION DOWN THE RAILBELT SUPPORTED BY A GTL PLANT IN ANCHORAGE SUPPLYING LOCAL AND MILITARY DIESEL PLUS JET FUEL DEMAND COULD WORK IF THE LOAN GUARANTEE COULD BE USED TO REDUCE THE EQUITY INVESTMENT FROM 50% DOWN TO 20%.

ASAP DID NOT CONSIDER THIS OPTION AS THEN ALASKA LEADERS WANTED A MEGA GAS LINE AND NOTHING ELSE.

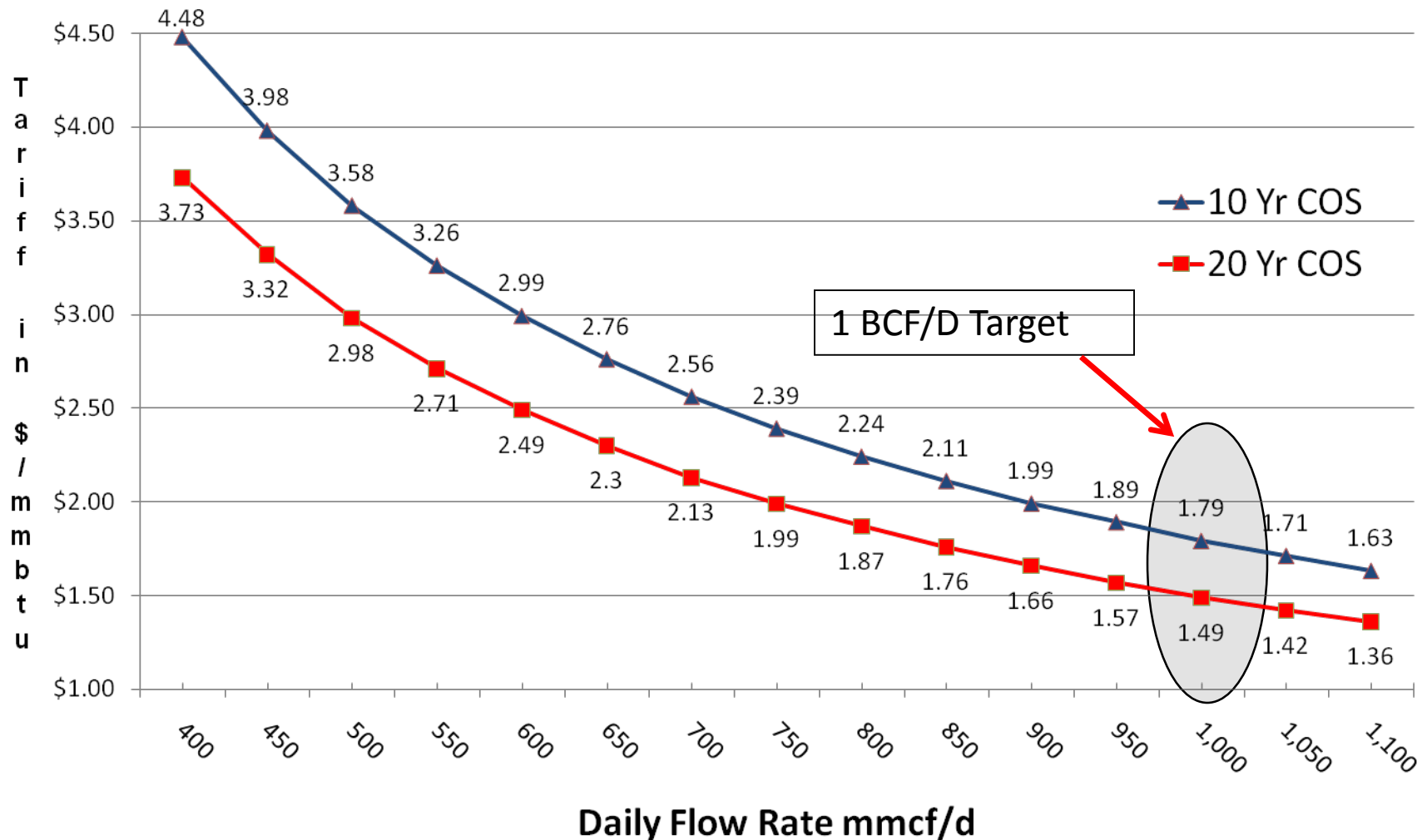
ORIGINAL FEDERAL LOAN GUARANTEE

THE 2004 ALASKA GAS LINE ACT PROVIDED A FEDERAL LOAN GUARANTEE FOR UP 80% OF THE PROJECT CAPITAL FOR A 20 YEAR PERIOD NOT TO EXCEED \$16 BILLION - WITH INFLATION NOW OVER \$20 BILLION

1. PROVIDED ALASKA NORTH SLOPE NATURAL GAS IS DELIVERED TO THE LOWER 48 THROUGH A GAS PIPELINE; AND
2. IT REDUCES U.S. NATURAL GAS IMPORTS.

WOULD A GAS PIPELINE FROM THE NORTH SLOPE TO SOUTH-CENTRAL DELIVERING NORTH SLOPE NATURAL GAS TO A SOUTHCENTRAL GTL PLANT SUPPLYING F-T TRANSPORT FUELS TO ALASKA, THE U.S. WEST COAST AND PACIFIC RIM MILITARY DEMAND QUALIFY?

Alaska Bullet Line Service Tariffs



Data supplied by Enstar with a 800 + Mile distance Prudhoe Bay to MP 39 Parks Highway with a 24" Pipeline

PLAN C TO AID ASAP

Senator Murkowski's Energy Bill will be voted on in 2017 – add a revision.

A Federal Loan guarantee not to exceed \$20 billion or 80% of the CAPEX for an in-state gas line supplying an Anchorage area GTL plant would make this program move forward. But to work, the project has to commit to only supplying jet and diesel to U.S. markets. A 42" line with no compression (even a 36") could do the job.

If down the road new markets could be found then the pipeline could be expanded with compression, the segment across the Cook Inlet added along with increased gas conditioning on the North Slope.

1. Wouldn't the \$1 trillion stimulus bill (supporting the loan guarantee) be just what the doctor ordered for Alaska with the benefit that:
 - a) You hopefully would never actually need the money, i.e. loan guarantee;
 - b) The funds to make the project happen would not come from Alaska;
2. Wouldn't it be ironic if the package paid for the bridge to connect Anchorage to the lower Mat-Su & finished the rail line where the GTL plant would actually be located?
3. The Federal Loan Guarantee may get around the need for an Alaska Constitutional amendment for fiscal certainty.

BENEFITS OF A PLAN “C”

1. THE STATE OF ALASKA GETS A GAS PIPELINE DOWN THE RAILBELT;
2. WHILE A GTL PLANT IS NOT CHEAP, RECENTLY BUILT GTL PLANTS COST FAR LESS THAN THE AK GASLINE AND LNG PROGRAM EVEN ADJUSTED FOR THE HIGHER COSTS OF AN ALASKA LOCATION;
3. THE PLAN C ASAP LINE HAS OVER 1 BCF/D OF VOLUME SO THE PIPELINE TARIFF IS REASONABLE;
4. A GTL PLANT IN ANCHORAGE BASE LOADING A GAS PIPELINE FROM THE NORTH SLOPE WILL NOT DESTROY COOK INLET NATURAL GAS EXPLORATION AND DEVELOPMENT OPPORTUNITY;
5. INCREMENTAL GAS SUPPLY TO SUPPORT A GTL PLANT EXPANSION CAN COME FROM EITHER THE COOK INLET OR THE NORTH SLOPE;
6. A REASONABLE TARIFF ON THE ASAP LINE WILL ALLOW FOR INDUSTRY ALONG ASAP TO COMPETE IN THE WORLD MARKET; AND
7. THE FINANCIAL SUPPORT ALASKA NEEDS TO BUILD A GAS LINE WILL COME FROM THE FEDERAL GOVERNMENT NOT ALASKA.

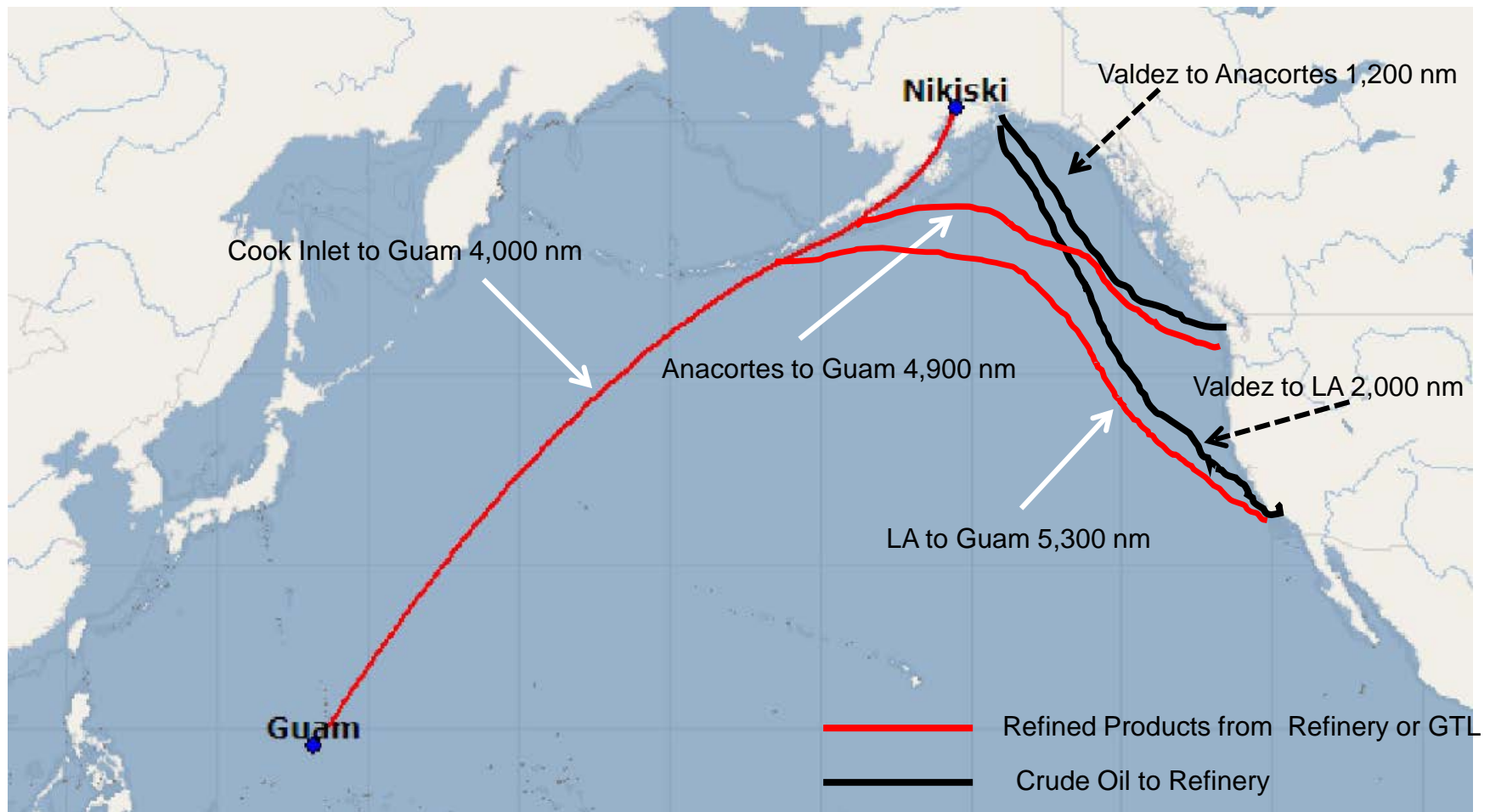
F-T FUELS FOR U.S. MILITARY

DOD Has Chosen F-T As Fuel of Future

Closest Supply Points for Pacific Rim
Bases is Alaska

Better National Security With Alaska
As Domestic Supply Source

A Cook Inlet GTL Plant is the Closest Supply Point for the Pacific Rim Military

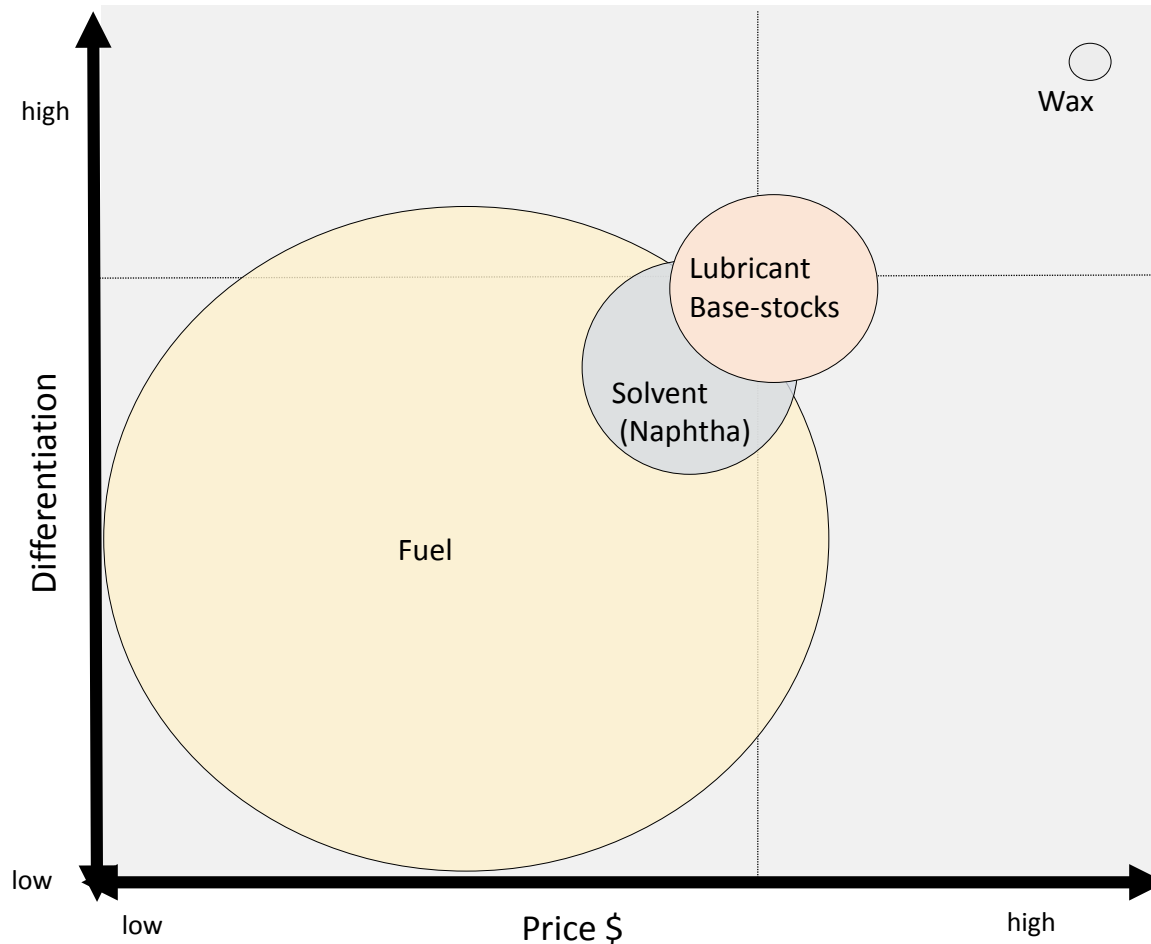


GOAL – VALUE ADDED PRODUCTS

ANRTL'S GOAL IS TO MAXIMIZE
PLANT OUTPUT BY PRODUCING A
RANGE OF PRODUCTS MOSTLY FOR
CONSUMPTION IN SOUTHCENTRAL
AREA BUT SOME MAY BE AVAILABLE
FOR TRANSPORT TO OTHER
HIGH VALUE MARKETS

F-T PRODUCTS

opportunity to add value through differentiated products



- FT products are of the highest quality and command premium prices in most applications
- FT syn-crude offers many product options to add value depending on market need
- Specialty products are sold on performance at higher prices
 - E.g. wax pricing is up to 100% higher than diesel
- Specialty products pricing is less volatile and can add sustainable value to the total FT product mix

F-T WAX



BUILDING BLOCK FOR HIGH VALUE SYNTHETIC LUBE OILS

HIGH VALUE SYNTHETIC LUBE OILS

PENNZOIL –
Owned by Shell
The base oils
needed to make
this ultra pure
synthetic lube oil
come from Shell's
worldwide GTL
plants.



New Car
Manufacturers
specify these new
synthetic lube oils
to achieve better
mileage



THANK YOU

FOR ADDITIONAL INFORMATION ON AN ALASKA GAS LINE & GTL PROGRAM
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