

**ALASKA STATE LEGISLATURE
HOUSE RESOURCES STANDING COMMITTEE**

April 10, 2009

1:05 p.m.

MEMBERS PRESENT

Representative Craig Johnson, Co-Chair
Representative Mark Neuman, Co-Chair
Representative Kurt Olson
Representative Paul Seaton
Representative Peggy Wilson
Representative David Guttenberg
Representative Chris Tuck

MEMBERS ABSENT

Representative Bryce Edgmon
Representative Scott Kawasaki

COMMITTEE CALENDAR

PRESENTATION: ALASKA FISCHER-TROPSCH SYNTHETIC FUELS PILOT PROGRAM

PREVIOUS COMMITTEE ACTION

No previous action to report.

WITNESS REGISTER

MARK IDEN, Deputy Director of Plans & Operations
Defense Logistics Agency
Defense Energy Support Center
U.S. Department of Defense
Fort Belvoir, VA

POSITION STATEMENT: Provided a presentation on the Alaska Fischer-Tropsch Synthetic Fuels Pilot Program.

JOHN MARTIN, Major
Commander, Defense Energy Support Center, Alaska
Elmendorf Air Force Base, Alaska

POSITION STATEMENT: Answered questions regarding the Alaska Fischer-Tropsch Synthetic Fuels Pilot Program.

KEVIN BANKS, Director
Division of Oil & Gas

Department of Natural Resources
Anchorage, Alaska

POSITION STATEMENT: Answered questions regarding the permitting process that would be required for the Alaska Fischer-Tropsch Synthetic Fuels Pilot Program.

ACTION NARRATIVE

[1:05:55 PM](#)

CO-CHAIR MARK NEUMAN called the House Resources Standing Committee meeting to order at 1:05 p.m. Representatives Olson, Guttenberg, Tuck, Wilson, Johnson, and Neuman were present at the call to order. Representative Seaton arrived as the meeting was in progress.

PRESENTATION: ALASKA FISCHER-TROPSCH SYNTHETIC FUELS PILOT PROGRAM

[1:06:16 PM](#)

CO-CHAIR NEUMAN announced that the only order of business is a presentation on the Alaska Fischer-Tropsch Synthetic Fuels Pilot Program.

[1:06:43 PM](#)

MARK IDEN, Deputy Director of Plans & Operations, Defense Logistics Agency, Defense Energy Support Center, U.S. Department of Defense, said he will be giving an overview of the synthetic fuel initiative that his agency is looking to pursue in the state of Alaska. He explained that he works for the Defense Energy Support Center (DESC) [slide 1] which is under the Defense Logistics Agency (DLA), a defense agency under the U.S. Department of Defense (DOD).

MR. IDEN noted that his agency used to be called the Defense Fuel Supply Center and during that time the agency's business was to provide liquid fuels to its customers - the military services and federal civilian agencies like the U.S. Department of Agriculture, U.S. Department of the Interior, and the U.S. Bureau of Indian Affairs. In the last dozen years, however, he said his agency has taken a larger emphasis into energy products by buying natural gas and electricity, and in Alaska the agency is also buying coal [slide 2]. In addition, DESC is involved in many energy initiatives, cost-savings initiatives, energy-

savings performance contracts, and so forth. The agency's goal is to be the energy provider of choice to its customers.

1:09:35 PM

MR. IDEN explained that DESC is predominantly fuel [slide 3]. It maintains 60 million barrels of fuel storage worldwide through 630 storage terminals located on bases and intermediary distribution systems. The DESC sells about 130 million barrels of product a year which equates to about 5 billion gallons of fuel on an annual basis throughout the world. As a result of fuel price increases, the amount of DESC's sales has gone as high as nearly \$18 billion a year and is targeting about \$15 billion for this year. Sales are to customers such as the U.S. Army, Navy, Air Force, and federal civilian agencies.

MR. IDEN said DESC does roughly \$1 billion a year in business in natural gas [slide 3]; for example, it buys natural gas in Alaska for the Elmendorf and Fort Richardson bases. The center also competitively buys electricity and coal and there is now a new area of focus on solar, wind, photovoltaic, and other renewable power. He said DESC privatized utility systems in Alaska at Fort Richardson, Fort Greely, and Fort Wainwright by selling the utility systems to a supplier - Doyon, Limited - and that is now buying back the service from Doyon. The award for this 50-year utility privatization contract was for over \$1 billion, he added.

1:12:15 PM

MR. IDEN, in response to Representative Tuck, explained that DESC does both electricity and natural gas in the Lower 48, but only natural gas in Alaska. In the 1990s the natural gas industry was de-regulated in the Lower 48 and DESC could buy wellhead gas and move it cheaper than could each installation individually. The DESC also started buying electricity competitively when it was deregulated, but this has not been done in Alaska. Under a department-wide initiative, DESC began privatizing the utility systems in the late 1990s, although some of the services do it themselves. As a consolidator of requirements, DESC can talk to industry in only one voice and get a better competitive process than could each of the branches of the armed forces individually.

MR. IDEN, in further response to Representative Tuck, explained that privatization is a bill of sale to a new provider which then owns the system and gets an easement and rights to get on

the base to do the work there. In turn, DESC puts a long-term contract in place for the utility services of gas, electric, water, and wastewater. He explained that DOD was having trouble maintaining the infrastructure due to lack of funds and ability, so the decision was made to sell those systems and buy the service back from people who know how to run utility systems.

[1:14:42 PM](#)

MR. IDEN, in response to Representative Wilson, said the main presence for coal in Alaska is Usibelli Coal Mine, and this coal is put to Eielson Air Force Base.

JOHN MARTIN, Major, Commander, Defense Energy Support Center, Alaska, added that the coal is also put to Clear Air Force Station. In further response, he said he is not sure which energy source [gas, electricity, or other] is cheapest, but that Doyon will supply the utility at its discretion and right now the utility is set up for coal.

MR. IDEN offered his belief that the coal power plant has not been privatized, rather it is the rest of the distribution system - the power lines on the base and utilidor - that has been privatized. He said that if at some point the lifespan of the coal plant is determined to be too short and not worth operating or maintaining, then conversion to another source of energy can be considered. He added that he is unsure whether it would be Doyon, the base, or both that would make the call in this regard.

[1:17:06 PM](#)

MR. IDEN commenced with his presentation about the Alaska Fischer-Tropsch Synthetic Fuels Pilot Program [slide 4]. Fischer-Tropsch refers to a specific process of converting gas or coal fuels to liquid, he explained. It is named after the two Germans who developed the process during World War II when Germany lost access to petroleum and began using coal to create liquid fuels. South Africa currently uses the Fischer-Tropsch process, he added. The DOD has made a concerted decision to get the U.S. away from its reliance on foreign oil and to begin developing capabilities within the U.S. Military services identified the desire to move from petroleum to synthetic fuels, which are now in the process of being tested and certified in various aircraft and ground-fuels equipment to prove that they are reliable and have no detrimental impacts. There are no synthetic fuel plants working in operational capacity in the

U.S., continued Mr. Iden, and it takes about three to four years to build a plant. The DESC recognized that it needed to jumpstart this process and identified Alaska as the location to do so.

CO-CHAIR NEUMAN commented that playing host to the first gas-to-liquids plant in the Northern Hemisphere would be a huge opportunity for the state of Alaska.

[1:19:48 PM](#)

MR. IDEN reviewed the agenda for the March 11-12, 2009, summit that was held in Anchorage [slide 5]. Discussions at the summit included how current fuel support is being provided to customers and how it would occur if a synthetic fuel plant is successfully built in Alaska. A number of subject-matter experts from the DESC attended the summit and talked to industry members about contracting issues, including how to structure contracts and proposals, how industry would provide its offers to DESC, how DESC would evaluate the offers, pricing and financial matters, and quality and environmental considerations. He said about 100 people attended the first session of the summit, including military customers, industry, and legislators. On the second day, one-on-one sessions were held so industry could talk privately with DESC staff. A level of interest is being developed, he continued, and the goal of the summit was to publicize this and get feedback to make sure that DESC has a reasonable process ahead of it.

[1:21:32 PM](#)

MR. IDEN stated that Alaska was chosen as the location because it is rich in the traditional feedstocks of coal and natural gas. Also, he needed a location where he could get all of his customers onboard with this approach and this concept (slide 6). He said the fuel being looked at is JP8, the military's equivalent to commercial jet A1 which is the international commercial jet fuel. In addition to aviation, JP8 is used for ground diesel requirements, making JP8 the single fuel on the battle field. As part of the package, DESC is also looking at some other ground programs in Alaska that do not normally use JP8.

MR. IDEN explained that DESC typically does business on an annual basis, but that one-year contracts will not do for developing this particular industry given that a plant costs several billion dollars. The DESC can do a minimum of five

years with its current authority, and add five one-year options on to that, for a quasi ten-year commitment. However, industry would like to see more than that and DESC has proposals floating through "the legislative side" to go up to a twenty-year contract.

[1:24:32 PM](#)

MR. IDEN stated that DESC is looking to go operational with the Fischer-Tropsch Process because it cannot tinker around with new concepts and ideas. The Fischer-Tropsch Process is proven, he said; there just are not yet any plants in the U.S. Industry will decide whether the feedstock is coal or natural gas, and whether to have a biomass component if the feedstock is coal. A straight synthetic fuel will not be used; rather, it will be a 50:50 blend of traditional petroleum-based product and synthetic product. Weapon systems are currently being tested on this 50:50 blend and commercial industry is also testing its aviation platforms on this blend; therefore everyone is looking to initially start with a 50:50 blend fuel. He pointed out that DESC cannot receive only the synthetic product at its installations because it is not in the business of blending fuel, instead the supplier will have to provide the 50:50 blend.

MR. IDEN, in response to Co-Chair Johnson about DESC being feedstock neutral, confirmed that DESC will not dictate which type of feedstock must be because they all will do the job. He said DESC will also not tell industry where to build the plant.

[1:26:37 PM](#)

MR. IDEN, in response to Co-Chair Neuman, explained that synthetically-derived fuels are ultra clean, which can have the unintended consequence of impacting the seals of weapons systems. When a straight-run synthetic product is used the seals do not swell like they normally do with traditional fuel and this results in leaks. The tests are therefore being done on a 50:50 blend to make sure these problems do not occur.

REPRESENTATIVE SEATON recounted his own experience with problems when he used ultra-clean fuel in two heating stoves.

MR. IDEN, in response to Co-Chair Neuman, stated that the military services are testing their aviation systems right now, including all fighter jets and helicopters. In addition, tests are being done on all of the ground equipment. He noted that

there were problems with the JP8 when it was first used; thus, it is necessary to do all of the testing carefully.

1:29:49 PM

MR. IDEN pointed out the importance of the replacement fuel being competitively priced with what it is replacing. He related that DOD has said the fuel must be "competitively" priced, which means that it can be slightly more in cost as long as it remains within the competitive range. With crude prices currently at \$40-\$50 per barrel, industry is feeling that it can get there because the synthetic product is right on the border of being competitive. A rise in crude prices to \$70-\$80 per barrel is expected in the relative near future, which is a competitive range. He said DESC therefore thinks this is a viable project from the economic point of view.

1:31:14 PM

MR. IDEN related that Section 526 of the Energy Independence and Security Act of 2007 says that when the Department of Defense - which means the DESC - buys fuel for operational requirements, a synthetic-based fuel cannot have a larger lifecycle greenhouse gas emissions footprint than a normal, straight run petroleum product. However, he continued, the DESC receives a waiver from this requirement when the fuel is purchased for testing and certification processes; thus, DESC can buy any fuel to meet testing needs. He went on to explain that natural gas has a lower greenhouse gas emission footprint than traditional petroleum products and is therefore in a net positive position. Coal, on the other hand, generally starts out in a negative posture. Mixing coal with biomass brings down the carbon dioxide emission footprint. The whole lifecycle of the system must be looked at to determine the greenhouse gas footprint - where the feedstock product is produced, getting it to the refining plant, the refining process, getting it to the end-use customer, and checking the emissions from the equipment tailpipes. Since this product burns cleaner, DESC is looking at the feedstocks and not worrying about the emissions.

1:33:34 PM

MR. IDEN said this is a DOD-level program focusing on alternative and renewable fuels [slide 7]. Emission standards for commercial and military aviation are coming down the pike that current fuels will not meet, he continued. The 50:50 blends are much cleaner than current fuels and will help in

meeting these emission standards, so going this way is a good thing right up front. The DESC and the military services are coordinating on this program in Alaska. The U.S. Air Force is by far DESC's biggest customer and it has taken the lead as a military service and expects to have all of its weapon platforms certified by 2011. The U.S. Air Force's goal is to have 50 percent of the domestic aviation requirement using this 50:50 blend by 2016. The process to meet this goal must be started now, Mr. Iden stressed, given there are currently no plants in the U.S. producing at this level and it takes three to four years to build a plant.

[1:35:17 PM](#)

MR. IDEN stated that DESC conducted a Request for Information (RFI) for this initiative back in 2006, to which 28 people responded and 27 indicated the Fischer-Tropsch was the most viable process to use. Information received from this initial RFI identified the desire for long-term contracts and floor pricing. A second RFI in 2007 requested industry to let DESC know if it could provide a blended fuel without a 20-year contract. This RFI is what led DESC to pick Alaska for the operational-sized pilot program, he said, and success in Alaska will be replicated in the Lower 48.

MR. IDEN, in response to Co-Chair Johnson, explained that DESC buys locally at each of its worldwide locations. There are synthetic fuel plants overseas, he said, but right now the focus is on the domestic side. About 60 percent of DESC's requirements are CONUS [contiguous Lower 48 states], and 40 percent are "OCONUS".

[1:37:40 PM](#)

MR. IDEN resumed his presentation, pointing out that DESC recognized it needed to take both a short-term acquisition strategy and a long-term acquisition strategy [slide 8]. The short-term strategy focuses on the certification and testing of weapons systems and DESC has conducted three buys of synthetic fuels in this regard. One purchase was a gas-to-liquid fuel from Shell Malaysia and two purchases were coal-to-liquid fuel from Sasol, the South African state oil company.

MR. IDEN, in response to Representative Wilson pointing out that South Africa is a very hot climate, explained that the military takes all weather conditions into consideration during the testing and certification process. He acknowledged that there

are some problems with JP8 in Alaska because of the cold weather, so JP4 is used in some locations because of its cold-start properties. He expressed his confidence that when the military says the synthetic fuels are safe to use, they will be safe to use worldwide.

[1:40:00 PM](#)

MR. IDEN, in response to Representative Tuck, clarified that JP8 is a straight, non-blended fuel. In further response, he explained that JP4 is the aviation fuel that was used during the Vietnam War and is a gasoline-type jet fuel that is very volatile; for example, many planes were brought down in Vietnam by small arms fire. He said JP8 is a much safer fuel and is the primary fuel used today.

CO-CHAIR NEUMAN commented that Shell Malaysia and Sasol recouped their investments in the construction of their plants within 4 years, which indicates the demand and value for this synthetic fuel.

MR. IDEN pointed out that South Africa had no other choice as it could not get fuel because of apartheid and therefore it had a big demand and customer base to justify building the plant. He said he is unsure why Malaysia has gone to synthetic fuels, but that a lot of times the extraction of crude oil produces lots of excess natural gas.

[1:41:56 PM](#)

MR. IDEN returned to his presentation, explaining that DESC is now beginning its long-term strategy [slide 8], which is the sustainment, or operational, phase. While the pilot program is in the state of Alaska, the ultimate goal is expansion to the Lower 48 and domestic production from plants located within the U.S.

MR. IDEN, in response to Representative Seaton regarding the production of synthetic fuel and running it through the Trans-Alaska Pipeline System, stated that this issue came up at the Alaska summit. He said that the "BP plant" in Nikiski is providing another refinery with synthetic crude that is blended with that refinery's traditional crude stocks to produce a blended crude. However, he continued, DESC wants a finished synthetic product and a finished petroleum-derived product to be blended together. The issue is how to ensure that the blend is the targeted ratio. He said he has a handout detailing some of

the specifications for the synthetic product and the blended fuel, as well as a handout summarizing the over 80 questions that were brought up at the summit.

CO-CHAIR NEUMAN added that an increase in the economies of scale might allow Flint Hills Refinery to act as the blending facility.

[1:46:24 PM](#)

MR. IDEN commenced his presentation with a review of some of the questions that have been asked [slide 9]. In answer to the question "Why do this?" he said one reason is energy security, especially given that 70 percent of the crude used in the U.S. is from non-domestic sources. Another reason is that conventional fuels will have problems meeting the tailpipe emission standards that are coming down the pike. The blended fuel has the environmental benefit of being a lot cleaner. In addition, DESC customers want this product in about six years, and since there are no plants in the U.S., DESC must start this process now in order to meet its requirements. In answer to the question "Who could do this?" Mr. Iden said both traditional, existing suppliers and new synthetic fuel production suppliers could do this. He offered his belief that a partnership arrangement will need to occur because of the 50:50 blend requirement.

[1:48:44 PM](#)

MR. IDEN specified that DESC's annual fuel requirement in Alaska is approximately 70 million gallons [slide 10]. He noted that a separate initiative for building a coal-to-liquid plant on Eielson Air Force Base is being worked at the federal level. Therefore, DESC must be very sensitive to this separate, distinct initiative while moving forward with its own initiative as it does not want to crush or take over that initiative. As a comparison to DESC's 70 million gallons, Mr. Iden said that the Ted Stevens Anchorage International Airport requires about 800 million gallons per year, and Fairbanks International Airport requires 100-200 million gallons a year. Thus, the commercial aviation requirements in the state of Alaska far outrank the DOD, and a supplier should look into supplying these commercial requirements as well as DESC's requirements. In addition to the aviation fuels, he continued, there are the ground requirements such as the state's ferry, rail, and trucking systems.

[1:51:36 PM](#)

MR. IDEN, in response to Co-Chair Johnson regarding clean diesel for trucks, said he is unsure whether the blended fuel would qualify for trucks and he will get an answer back to members.

MR. IDEN said he is mentioning commercial requirements because industry looked at DESC's requirements during the summit and pointed out that the agency's requirements would only be about one-tenth of what a typical plant would produce. Therefore, he continued, it is therefore critical that industry be involved with the commercial side as well as the DOD side in order to go forward.

[1:52:50 PM](#)

CO-CHAIR NEUMAN related that Alaska Airlines has spoken about its needs and wish for this initiative to go forward because carbon emissions at 35,000 feet have 10 times the negative effect on greenhouse gases than at ground level.

MR. IDEN, in response to Representative Wilson, confirmed her statement that Eielson, Fort Richardson, and Fort Wainwright will be requiring both JP8 and JP4 fuels and the only ones outside of that will be Fort Greeley and the U.S. Coast Guard at Kodiak. In further response, he stated that the DOD will only be testing and certifying the weapons system and it is doubtful that testing will be conducted on snowmobiles and things of that nature. He added that DESC is working with CAAFI, the Commercial Aviation Alternative Fuels Initiative, on testing for the commercial aviation side. He said the U.S. Army is testing different ground engines, such as the Cummins engine and others, and he assumes that this would apply to the commercial industry for trucking requirements, so there will need to be a parallel commitment for this to occur on the commercial side.

[1:56:30 PM](#)

MR. IDEN resumed his presentation, explaining that the next steps after the summit include refining DESC's acquisition strategy, issuing Requests for Proposals (RFPs), evaluating offers, awarding a contract, and establishing a timeline for building the plants and product delivery [slide 11]. He said the timeline for the five- or ten-year contract will not start until the first drop of fuel is provided so that four years of the contract is not eaten up by construction of the plant with only one year for delivering fuel.

MR. IDEN reviewed the notional timeline [slide 12]: a solicitation will be issued [June 1, 2009] and closed in 45-60 days [July 30, 2009], initial evaluations will occur [August 1-August 30, 2009], negotiations will occur [September 15-October 30, 2009], final evaluations will be completed by [November 30, 2009], a contract will be awarded by December 30, 2009, and first delivery will occur in five years [December 2014]. He said DESC recognizes that this is a big, complex investment for which it will take time to develop a proposal. Since DESC has already issued two RFIs and told industry at the summit what it wants to do in Alaska, the process may be started in early summer with a more generic proposal so that a "down select" to two or three companies can be done. Then, later in the year, DESC would ask for the specifics from the two or three companies.

[1:59:42 PM](#)

MR. IDEN, in response to Co-Chair Johnson about regulations and permitting, acknowledged that there was a little bit of concern expressed at the summit about this and he will be addressing this topic later in his presentation when he discusses how the state can assist.

MR. IDEN commenced his presentation, saying he thinks the industry summit was a success [slide 13]. Follow-on sessions with the Alaska State Legislature will continue, he said, as will follow-on coordination between DESC and the U.S. Air Force so that the acquisition strategy can be refined and the course ahead plotted.

[2:01:20 PM](#)

MR. IDEN pointed out that this cannot be a DOD-only solution; the commercial industry must be brought into the mix in order to make the plants efficient in size, scope, and benefits [slide 14]. He said DESC has only one restriction - the feedstock must be produced in the U.S. By default, it must be done in Alaska for the Alaska pilot program. In structuring the RFP for success, DESC must develop a model as to how the lifecycle of carbon emissions will be measured. Teams from the Environmental Protection Agency (EPA) and the U.S. Air Force DESC are ironing out the quality and technical criteria, as well as the contract length and contract pricing structure.

MR. IDEN stated that in regard to pricing, DESC had thought it would price the synthetic fuel like it prices JP8. However, he

related, the folks at the summit who are looking at a natural gas feedstock said the 50:50 blend should be priced according to natural gas prices and the folks looking at coal feedstocks said the coal portion of the synthetic should be priced according to coal prices. He went on to note that this can be argued both ways: when crude is at \$150 per barrel he would prefer to price it at the cheaper natural gas prices, but if the price situation reverses he does not want to be paying more than he would for a conventional product. Therefore, DESC is looking at this issue, but the real issue is how to evaluate a gas provider versus a coal provider versus a traditional provider.

[2:04:35 PM](#)

MR. IDEN, in response to Representative Wilson, said it is not DESC's intent [to have several different feedstocks in the Alaska pilot program so it has the ability to switch to whichever feedstock is cheapest]. He said he does not think DESC will award more than one plant, although other plants could be built by other suppliers. He explained that when DESC buys JP8 for Alaska, it pays the market price by taking an average of three West Coast market indexes - Los Angeles, San Francisco, and Seattle. For the 50:50 blend, the petroleum component will likely be escalated this same way, he advised, and the gas- and coal-derived fuels may be tied to the price of natural gas and coal in Alaska. He assured members that it is not DESC's goal to award multiple contracts and then play one off the other.

[2:07:32 PM](#)

MR. IDEN addressed areas where the state could possibly provide assistance [slide 15]. He suggested that one such area could be financial incentives to industry to participate, such as tax credits or incentives and loan guarantees. He said he does not believe any federal stimulus money has been identified for this type of initiative. Another area could be encouragement to the commercial aviation industry through incentives for participation, given that fuel costs are the largest component of this industry's cost structure. A third area for state assistance, he continued, could be streamlining regulatory requirements for permitting, easements, and environmental standards.

[2:09:42 PM](#)

REPRESENTATIVE SEATON offered his belief that a lot of legislators would be opposed to converting Alaska's renewable

energy credits into alternative credits so that coal could be used, but that these folks would not be opposed to something like an alternative energy credit program that would incentivize coal.

CO-CHAIR JOHNSON responded that there may not be the opposition that Representative Seaton thinks.

[2:11:45 PM](#)

MR. IDEN, in response to Representative Tuck about the RFP requirements shown on slide 10, stated that the requirements are likely to be more than shown because the map only depicts DESC's annual requirements for bulk fuel. He said DESC has requirements for other programs such as the ground fuel program. In further response, Mr. Iden clarified that JP8 is the current fuel product and the 50:50 blend would be 50 percent traditional JP8 and 50 percent synthetic fuel. He further clarified that DFSP is the acronym for Defense Fuel Supply Point.

MAJOR MARTIN added, "Chevron's terminal is our DFSP for the Anchorage area and it feeds Elmendorf through pipeline."

[2:14:03 PM](#)

MR. IDEN, in response to further questions from Representative Tuck, confirmed that [JP8 will be the product in the 50:50 blend] and JP4 will probably remain in use [in the locations depicted on slide 10] because of some unique issues with the equipment, such as the cold-fuel starting capability that the JP8 does not provide right now. He stated that that equipment will eventually be taken out of inventory. In regard to who would supply the JP4, Mr. Iden said the JP4 will not necessarily [be supplied by the 50:50 blend supplier] and that there could even be multiple suppliers for this fuel.

[2:15:02 PM](#)

MR. IDEN, in response to Representative Seaton, said he does not know what the capacities are of [Alaska's] traditional petroleum refineries [as compared to DESC's 70 million gallon annual fuel requirement]. He related that industry has said the nominal size for a synthetic fuel plant is about 25,000 barrels per day in output capacity. Since DESC's daily requirement is about 2,500 barrels a day, it can be seen why inclusion of commercial airport requirements makes this a more economically attractive package.

CO-CHAIR NEUMAN pointed out that converting Alaska's methane gas to liquid fuel in an in-state plant could be done through payments of royalty-in-kind methane to supply carbon neutral, sulfur-free fuels for the state's ferry system and everything else that the Department of Transportation & Public Facilities operates.

[2:17:26 PM](#)

MR. IDEN returned to his presentation and reviewed how DESC purchases its bulk petroleum in the U.S. and worldwide through its four major programs [slide 17]: the Inland/East/Gulf Coast Program, the Rocky Mountain/West Program, the Western Pacific Program, and the Atlantic/European/Mediterranean Program. He said all of the programs are through one-year contracts that are staggered on a quarterly basis around the world. Alaska's requirements are embedded in the Rocky Mountain/West Program, he said, and while there is always the potential that the synthetic product could be delivered to the other programs, he said he is not sure the economics are there to support that.

MR. IDEN explained that the vast majority of U.S. refining capacity is located in the Gulf Coast and the West Coast [slide 18]. The vast majority of fuel in the U.S. is moved by pipeline, he said. He pointed out DESC's storage systems shown on the map and said the DESC moves its product comingled with commercial product in the pipeline systems, although the fuel is isolated because it is JP8 and not commercial jet fuel. He added that DESC's fuel is occasionally transported by tanker.

[2:19:57 PM](#)

MR. IDEN read from Section 526 of the Energy Independence and Security Act [original punctuation from slide 19 provided]:

No Federal agency shall enter into a contract for procurement of an alternative or synthetic fuel, including a fuel produced from nonconventional petroleum sources, for any mobility-related use, other than for research or testing, unless the contract specifies that the lifecycle greenhouse gas emissions associated with the production and combustion of the fuel supplied under the contract must, on an ongoing basis, be less than or equal to such emissions from the equivalent conventional fuel produced from conventional petroleum sources.

MR. IDEN reiterated that DESC was able to purchase fuel from Shell Malaysia and Sasol because that fuel was for research and testing; but once this goes operational, the portion of Section 526 related to lifecycle greenhouse gas emissions associated with the production and combustion of the fuel will go into effect.

[2:21:13 PM](#)

MAJOR MARTIN, in response to Representative Tuck about the sources of the fuel used by DESC in Alaska, said it is all supplied in Alaska.

CO-CHAIR NEUMAN noted that at "\$2 per MMBtu" the synthetic fuel would be competitive because synthetic fuel made from Prudhoe Bay gas could be produced for \$48-\$52 per barrel, which equates to about \$1.20-\$1.50 per gallon

[2:22:12 PM](#)

MR. IDEN, in response to Co-Chair Johnson about whether a plant can switch feedstocks, said he believes that if a plant is a gas plant it will be gas driven, and if a plant is a coal plant it may have the ability to accommodate biomass into the equation, but he does not know if there is an easy way for a plant to switch between the two feedstocks without substantial investment.

MR. IDEN, in response to further questions from Co-Chair Johnson, explained that the nature of coal itself makes it very high in carbon and the process of converting the coal to a liquid produces a tremendous amount of carbon dioxide. When looking at the whole lifecycle greenhouse gas emission, one must look at the extraction of the coal, the conversion process, the distribution process for blending, and passing the product on to the end-use customer. It then dovetails with the petroleum industry for what comes out of the tailpipe for emissions. He confirmed Co-Chair Johnson's statement that the lifecycle would include emissions from the tractor digging the coal up, the train delivering the coal to the plant, and the electricity for the conveyer belt taking the coal to the plant, and therefore the lifecycle is not just the actual conversion of the coal into liquid fuel. He added that folks are currently working on a model that will quantify all of these things.

CO-CHAIR NEUMAN pointed out that there are numerous processes that are used for Fischer-Tropsch. He offered to provide further information to members if they stop by his office.

[2:25:37 PM](#)

MR. IDEN, in response to Representative Wilson, explained that the DOD would never get the patents for the Fischer-Tropsch processes because they are commercial processes that have been used around the world since World War II. Just as in refining petroleum, he continued, there are different patents, techniques, and capabilities. In further response, Mr. Iden reiterated that some companies already have access to the technology, patents, and capabilities for doing this. Pilot plants in the U.S. have been producing this fuel, but unlike the plants in Malaysia and South Africa, the volumes have been very small. It is a viable, proven technology in which people are interested, he stressed, with plants currently being considered for location in Ohio and Mississippi.

CO-CHAIR NEUMAN added that even Tyson Foods, Inc. is looking at a Fischer-Tropsch plant as a way to use the oils produced from its processing.

[2:30:20 PM](#)

CO-CHAIR JOHNSON, in regard to what can be done by the Alaska State Legislature, surmised that siting is key because transportation distance will impact the carbon footprint.

MR. IDEN agreed. He pointed out that DESC does not want to dictate to industry and the commercial sector where to build a plant, what feedstock to use, or what size to build the plant. Rather, DESC is stating its desire for a finished product and where the locations are for that finished product and industry can then determine where to site the plant.

[2:32:00 PM](#)

KEVIN BANKS, Director, Division of Oil & Gas, Department of Natural Resources, in response to Co-Chair Johnson about the scale of the permitting process, said it would depend upon where the facility is located. For example, it would be easier to manage if the plant is located at Prudhoe Bay because there are potential lease sites that could be afforded to a company. He said he believes the facility would look similar to a small refinery like the Flint Hills Refinery. Locating a plant

elsewhere may involve more permitting, depending on the location, he advised. In further response, Mr. Banks said that while this would be a new manufacturing facility, he does not think it would be of the scale or controversy as something like Pebble Mine. If the plant was built in a place zoned for manufacturing, it would require certain air quality permits as well as permits for water use and disposal. As far as how extensive the permitting process would be, he said he would put it on the same level as expansions in Prudhoe Bay.

CO-CHAIR JOHNSON commented that he does not want the state to be behind the curve on this, and does not want the legislature or the state's permitting departments to be the reason this does not happen.

[2:35:25 PM](#)

MR. BANKS, in response to Representative Seaton, agreed that a synthetic fuel plant would be about the same scale as the coal-to-gas project that was proposed by Agrium, Inc., especially if the plant was built in a part of the state where no other development was going on.

CO-CHAIR JOHNSON requested Mr. Banks to send someone to his office to explain all of the aforementioned in more detail.

CO-CHAIR NEUMAN understood it would take about 250 million cubic feet a day of gas to produce 25,000 barrels of a Fischer-Tropsch blend. He said that as a spinoff the plant could also produce up to 50,000 gallons of clean purified water and another 50-100 megawatts of electricity.

[2:37:25 PM](#)

MR. IDEN, in response to Representative Wilson about whether using an older pipeline would create problems, said he does not believe there would be any negative impact because this is being looked at as a complete drop-in replacement fuel.

ADJOURNMENT

There being no further business before the committee, the House Resources Standing Committee meeting was adjourned at 2:39 p.m.