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**Department of Energy  
Washington, D.C. 20585**

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MEMORANDUM

TO: Members of the SIG on East-West Economic Relations  
FROM: Acting Assistant Secretary for International Affairs  
SUBJECT: Energy Alternatives to the Northwest Siberian Pipeline

The attached paper was approved for distribution by Deputy Secretary of Energy Ken Davis as a basis for discussion at the SIG meeting next week.

The options outlined in the paper are directed either at actually increasing energy supplies to Western Europe or at strengthening the Europeans' perception that additional energy supplies will be available.

You will see that some of the options would be difficult to implement for domestic political or budgetary reasons. Some represent energy policy objectives the Administration is already working towards. On the other hand, at least one option, government supported dredging of ports, has already been rejected on budgetary and energy policy grounds; it is included here only because it addresses the problem of European perceptions.

I welcome your comments in advance of the SIG meeting.

*George J. Bradley Jr.*  
Peter Borre

Attachment

DOE review completed.

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**CONFIDENTIAL****ENERGY ALTERNATIVES TO THE NORTHWEST SIBERIAN PIPELINE**Introduction

This paper reviews possible energy alternatives to the use of increased levels of Soviet natural gas in 6 Western European countries: Germany, France, Italy, Belgium, the Netherlands and Austria. The initial gas deliveries from the prospective Northwest Siberian pipeline are estimated at 0.9-1.1 tcf/year beginning in 1986-87. (Present Soviet gas deliveries to Western Europe are about 0.8 tcf/year, the equivalent of 400,000 b/d oil.) Negotiations over the exact volumes to be delivered are not completed. Over the past 6 months, the overall prospective delivery schedules have been curtailed to the currently estimated levels. (A CIA paper on the status of negotiations is attached at Tab A.)

West Germany and France are likely to be the largest importers under a 1 tcf pipeline scenario. These countries are each likely to import 0.25 tcf/year with Austria, Belgium, Italy and the Netherlands sharing the remaining 0.5 tcf/year. Under this scenario, German and French dependence on Soviet gas could reach 25-30 percent of total gas consumption by 1990, while Italian and Belgian market dependence may exceed 20 percent. Dutch dependence is likely to be about 10 percent while Soviet gas will continue to account for over 50 percent of the Austrian gas supply.

Some countries such as West Germany and Austria are more committed to the Soviet project than others. Although it is desirable to develop a program which could displace the entire prospective volume of the pipeline, it may not be necessary to accomplish this goal in order to succeed in halting the project. Options which appeal specifically to the less committed countries may be sufficiently compelling to detach them from the Soviet negotiations. The other countries may feel over-exposed and, therefore, unable to justify proceeding alone.

Differences in dollar/ruble exchange rates and the cost of Soviet labor make it difficult to place a dollar value on the project from a purely commercial perspective. We can reasonably estimate, however, that a 1 tcf large diameter Siberian gas pipeline will cost at least \$15-20 billion. The Soviet perspective is that expensive ruble investments are secondary to obtaining Western financing and technology and earning hard currency from gas exports.

The energy alternatives discussed in this paper can be categorized as follows:

- means to increase available energy supplies on the world market or to a specific country by indirect means available to the U.S.; and

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2

- ° steps that the U.S. could take directly to either increase the level of or reduce the barriers to U.S. exports of energy supplies to Europe or Japan.

### ALTERNATIVE ENERGY OPTIONS

No single alternative hydrocarbon option could replace the total volume that would flow through the Northwest Siberian pipeline. However, a combination of alternatives could displace this Soviet gas during the relevant time frame.

#### I. MEASURES TO INCREASE ENERGY SUPPLIES ON WORLD MARKET:

##### A. Deregulation of U.S. Natural Gas Prices

Immediate deregulation of natural gas prices in the U.S. will increase domestic natural gas production and reduce our total petroleum consumption. These adjustments could lower U.S. oil imports by 100 to 200 thousand barrels per day. Such a move would increase the attractiveness of oil vis-a-vis natural gas in Europe.

In addition, natural gas deregulation may reduce private interest in imports of Liquefied Natural Gas (LNG) to the U.S. due to increased domestic supplies thereby improving Europe's access to these supplies. This decision would respond to European urgings and would be particularly welcomed by France.

##### B. U.S. Policy Statements on LNG Imports

A clear and unambiguous Administration statement on future LNG imports to the U.S. would increase the attractiveness of increasing LNG imports for several European governments, particularly France, Belgium and Italy. It should be noted, however, that European governments are generally cautious over increasing dependence on OPEC LNG supplies for political and technical reasons. Also, pipeline gas can generally be delivered at less cost than LNG, so the Soviets could undercut LNG competitors.

The Administration could announce two policy statements:

##### a) High Level Reiteration of Our Competitive Fuels Price Test for LNG Imports:

The Secretary of Energy could make a forceful public statement of our present policy--to allow LNG to be imported only if it is priced competitively with a 25 percent/75 percent mix of No. 2 and No. 6 residual oil and is compatible with Canadian and Mexican pipeline gas imports. This test is sufficiently stringent to deny most long-haul (non-Western Hemisphere) LNG. We have informed the Europeans

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3

of this policy and have pointed out that this would mean that African and Asian LNG would be marketed in Europe and Japan rather than the U.S. The French and others, however, are still not convinced that they can rely on the U.S. sticking to this policy. A clear, high level, public statement would be very helpful in this regard.

b) Imposition of More Stringent Competitive Fuels Test for LNG Imports:

The U.S. could insist that new LNG imports be priced competitively with high sulfur residual fuel oil. Such a test would likely exclude LNG from the Western Hemisphere (e.g., Trinidad). We could justify such a stringent test on the basis that complete deregulation of domestic natural gas prices, by increasing production and reducing demand, would mean that gas would have to compete at the margin with residual fuel oil.

The following table contains an estimate of the amount of LNG that the Europeans could assume would be made available to them as a result of options A and B.

Replacing Soviet Gas from Yamal Pipeline

	<u>Volume</u> (tcf/year)	<u>Possible Timeframe</u>
Northwest Siberian Pipeline	.9 -1.1	1986-87
<u>Alternatives:*</u>		
U.S. Gas Deregulation**	.2 -.4	1982
Algeria***	.55	1985-86
Nigeria	.3	1988-90
Cameroon	.2	1990
Trinidad	.2	1988-90
Qatar****	<u>.2</u>	1990
TOTAL	1.6-1.9	

\* These volumes do not include possible expanded deliveries from Norway, Saudi Arabia or other non-oil/gas displacement options.

\*\* Estimate of reduction in U.S. oil imports based upon immediate natural gas deregulation.

\*\*\* U.S. imports of LNG from Algeria are under contract, but deliveries from only one of three contracts are functioning.

\*\*\*\* The U.S. even now is not considered to be a likely market for gas from Qatar.

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4

European access to 0.55 tcf/year of Algerian LNG under contract to U.S. firms poses certain regulatory and policy problems. While Algeria has suspended deliveries indefinitely for the former El Paso Project (0.36 tcf/year for resale to Columbia, Consolidated and Southern), the U.S. Government would face lawsuits and political problems if it tried to discontinue through regulatory process (under Section 3 of the Natural Gas Act of 1938) the Distrigas (0.04 tcf/year) and Trunkline (0.15 tcf/year) projects. The U.S. has invested approximately \$3 billion in facilities to transport and regasify Algerian LNG. Moreover, regulatory discontinuation of these projects would cause serious diplomatic problems with Algeria.

The maintenance of our existing competitive fuels gas import policy, however, may result in the ultimate failure of the remaining Algerian LNG projects -- Trunkline and Distrigas. Algerian demands for crude oil parity LNG prices which violate our competitive fuels test will yield gas which is unmarketable in the U.S. unless it is subsidized through price-averaging with regulated domestic gas. Algerian demands to renegotiate these contracts prices, which exceed our competitive fuels test, may result in project failure without the U.S. having to repudiate these contracts and incur lawsuits and political problems.

The Algerian contracts account for about half of prospective Northwest Siberian gas deliveries under a one pipeline -- 75 atmospheres scenario. All of this LNG may be diverted to Western Europe before the Siberian pipeline could be completed. Europe also enjoys a \$1 per million Btu transportation advantage over the U.S. in terms of the price it can pay for Algerian LNG.

### Nigeria

A West European consortium of 8 natural gas utilities has concluded contracts for 0.3 tcf/year and has an option to purchase the U.S. volumes (also 0.3 tcf/year) if U.S. companies cannot or decide not to consummate the transaction. It is highly unlikely that Nigerian gas could meet even a lenient competitive fuels pricing test. Unlike Algerian gas, which is available now, the Bonny project could not be completed before the late 1980's, (i.e., about the time the Northwest Siberian pipeline is due to be completed).

The combination of Nigerian and Algerian supplies contracted for by U.S. companies would replace virtually all of the prospective Northwest Siberian pipeline deliveries under the one strand -- 75 atmosphere scenario. However, European access to this LNG is not without problems. Chronic technical problems at the Algerian facilities result in reduced

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**CONFIDENTIAL**

5

load factors and gas availability. The Europeans have serious doubts about the ability of the Nigerians to implement their project in a timely and cost-effective manner; some companies think this project will never get off the ground. Finally, a number of European gas companies and officials believe the Soviet Union to be a more reliable supplier than Algeria or Nigeria."

### Cameroon

Accelerated development of Cameroon's reserves leading to production of about 0.2 tcf/year could be accomplished by the late 1980's or early 1990's. The Government of Cameroon is favorably disposed toward negotiation with foreign companies for the development and export of gas. There has been little consideration, so far, of the U.S. as a market for Cameroon gas. Although European companies are aware of the prospects, gas from Cameroon may not be needed in Western Europe if the Northwest Siberian pipeline is completed. It will almost certainly not be needed if both strands of the pipeline are constructed.

### Trinidad

In 1978, the Government allocated over 4 tcf of natural gas to an LNG project, presuming export to the U.S. The allocation was appropriate for the planned facility with a nominal capacity of 0.2 tcf/year to which an additional 0.1 tcf/year could be added if local gas reserves and market potential could support increased capacity. The plant could be completed by the late 1980's.

Although the U.S. is the logical export market for this gas due to logistical considerations, it is questionable whether we will need it. The French have informally expressed an interest in purchasing Trinidadian gas and have suggested that it might be an incentive for them to reconsider participation in the Northwest Siberian pipeline. Although gas from Trinidad would likely be more expensive than Soviet imports, further discussions with the French on this matter may be worth pursuing.

French purchases of Trinidadian gas could displace the total amount of their prospective imports from the Northwest Siberian pipeline.

### Middle East Gas/LNG

The development of Qatar's huge offshore North Dome field (100-200 tcf of recoverable reserves) can provide Europe and Japan with LNG supplies by the late 1980's. The Government of Qatar is currently evaluating competitive bids for the development of an 0.4 tcf/year LNG export project which would be shared equally between European and Japanese markets.

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**CONFIDENTIAL**

6

**C. Accelerated Development of Norwegian Natural Gas**

Norway has the potential to become an increasingly important gas supplier to Continental Europe in the 1990's, but the prospects for accelerated development in the 1980's are more tenuous.

Norway's recent decision to go ahead with development of Statfjord and other gas fields will help offset premature production declines from the Ekofisk gas field and will increase current exports from 0.9 to 1.1 tcf by 1985-86. However, the development of the giant Bloc 31/2 field (1-2 tcf/year) involves further delineation of adjacent unleased Blocs, production of liquids before the gas is developed, a lead time of 10 years, and probable development/transmission costs of \$5-7 per million Btu in current dollars.

On balance, Norway's Bloc 31/2 as well as other undeveloped fields offer Western Europe the post-1995 potential to offset the phasing out of 1.8 tcf/year of Dutch gas, and thereby contribute to reducing dependence on Soviet gas. Translating Norwegian resource potential into market reality, however, requires: (1) accelerated development of structures such as Bloc 31/2, and (2) Norwegian Government preference to expand gas rather than oil output within the present 1.8 million b/d hydrocarbon production ceiling.

Even if the Norwegian Government were willing to accelerate production from Bloc 31/2, production from this field would be insufficient by itself to offset Soviet gas supplies in light of the Dutch decision to reduce exports. However, an acceleration of the production schedule would have important psychological benefits.

**D. U.S. Energy Security Tariff or Fee**

If a tariff or fee of \$5.00/barrel were imposed on oil imported into the U.S., domestic consumption of imported oil would be expected to decline by 220,000 b/d in 1982, with the decrease growing to 440,000 b/d by 1985. Assuming that this reduction in world oil demand does not induce a reduction in OPEC output, an additional 106,000 b/d of oil could become available to Western Europe in 1982 as a result of the tariff. The increment to European oil supplies could reach 212,000 b/d by 1985, representing the energy equivalent of 40 percent of the capacity of the proposed pipeline. This figure represents the upper bound on the amount of energy that would become available to the Europeans as a result of the tariff, since some OPEC supply response would be likely.

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7

**E. Increased Saudi Deliveries**

Saudi Arabia has the resource base to increase oil production significantly by the mid-1980's. Although the Saudis have been committed to limiting their maximum sustainable capacity to 10.0-10.5 mmb/d, it is conceivable that Saudi Arabia could be persuaded to marginally shift its position if a strong anti-Communist political argument were made and possibly other benefits given the Saudis.

It can be argued to the Saudis that increased Soviet/West European energy and economic ties could serve to dissuade many Western countries from resisting Soviet proxy or direct actions in the Near East. A clear signal of Saudi willingness to increase oil sales to the West in return for cancellation of the pipeline could be helpful. Indeed, the Saudis need not offer to displace the entire Btu equivalent of the pipeline. A specific offer of an additional 150,000 b/d to selected European countries (such as Italy, which has asked our help in establishing a long-term supply relationship with the Saudis) could be sufficiently compelling to dissuade some countries from participating.

Many Europeans may not favor this approach because they are seeking to reduce reliance on Persian Gulf oil. The Saudis may also insist upon a shift in U.S. policy toward Israel as a prerequisite for cooperation; also, the AWACS issue may drain our bargaining power.

**II. MEASURES TO IMPROVE THE PROSPECTS FOR INCREASED U.S. ENERGY EXPORTS:****F. Nuclear Energy**

With respect to the Northwest Siberian pipeline issue, there are steps that the U.S. can propose to help revitalize the development of nuclear power in Europe. To the extent that nuclear energy can displace gas in the generation of electricity, these options could be of use in our campaign against the Northwest Siberian pipeline. In general, however, these options should be considered more for potential favorable psycho-political impact on the prospects for nuclear power in Europe rather than as a means for displacing large quantities of Soviet gas in the late 1980's.

(1) A strong public statement on the U.S. commitment to nuclear power. The Administration has already announced our commitment to reestablish the U.S. as a reliable nuclear trade partner. A similar statement by the President on our intentions to revitalize the nuclear option in the United States would support European government efforts in mobilizing public opinion in favor of nuclear power.

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**CONFIDENTIAL**

8

(2) We could agree to support reactivation of the Barnwell, NFS and/or Morris reprocessing plants. We could also respond positively to the interest of German utilities to buy shares of the Barnwell Nuclear Fuel Plant. It would serve to remove one of the major obstacles to the growth of nuclear power in West Germany since German utilities are required to demonstrate a solution to problems of the back end of the fuel cycle--either through spent fuel storage (following the procedures of Section 131 of the Atomic Energy Act) or a reprocessing commitment--before they will be permitted to initiate new nuclear power plants. These steps may have only a marginal impact on increasing energy supplies in Europe. However, a decision to allow German participation in the Barnwell plant would have political benefits and a U.S. statement on nuclear power would have a direct effect on European domestic political attitudes.

#### G. Expanded U.S. Steam Coal Exports

The Europeans are concerned that infrastructure problems in the U.S. will limit our ability to expand steam coal exports. Furthermore, they still harbor doubts about security of supply. The U.S. has already adopted a policy which we believe will result in as rapid an expansion of coal exports as is economically feasible. However, we could take additional steps, even some we have previously discarded as ineffective, to deal with the Europeans' perceptions of the U.S. as a coal exporter.

#### Dredging

Return to the previous policy of Federal budgetary support for harbor dredging. The Administration is currently seeking legislation requiring local authorities, not the Federal Government, to pay for the dredging and to seek reimbursement through user fees. Dredging the harbors at Baltimore, Norfolk and New Orleans to 50-55 feet, will greatly improve the competitiveness of U.S. steam coal by reducing the daily cost per ton of coal from \$0.527 for 60,000 DWT vessels to \$0.318 for 150,000 DWT vessels. Since advanced engineering and design (AE&D) for dredging Baltimore harbor was completed in 1970, only financing and perhaps environmental challenges remain as obstacles. Once begun, dredging could be completed in 3 years. For Norfolk and New Orleans, AE&D will require 3 years, followed by 3 or more years of dredging. The dredging would be welcomed by the

Europeans who are, rightly or wrongly, extremely concerned about this problem; however, a decision to return to Federal support for dredging would be costly. The cost for three harbors would be as follows: Baltimore, \$302 million; Norfolk, \$322 million; and New Orleans, \$550 million.

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9

### Slurry Pipelines

Coal slurry pipelines appear technologically and economically feasible. They could contribute to the competitiveness of U.S. coal by reducing the need and cost of some harbor improvements. The major impediments to the development of coal slurry pipelines that the Government can affect directly are resolving disputes over: (1) eminent domain and railroad right-of-ways, and (2) water resources. The Administration is currently reviewing the eminent domain issue. One drawback, however, is that coal exports transported by slurry pipeline are 20 percent water when loaded. However a 10 million ton capacity system could yield costs 18 to 27 percent lower than dry bulk system loading over the life of the project.

### Supply Security

One of the most important concerns of European foreign coal purchasers is security of supply. This concern stems in part from their perception of a prior willingness by the USG to resort to restrictions (e.g., oil and soybeans) as instruments of economic or security policy. In order to help allay this concern, we could impose a broader policy commitment, approved by Congress, not to interrupt supplies under any circumstances unless there is no alternative. We have currently issued an executive statement that we would not interrupt exports except in case of a national emergency.

### Removing Restrictions on Alaskan Oil Exports

Removing all restrictions on the export of Alaskan oil could result in roughly 500-600 mb/d of exports to Asian markets. Presently, Alaskan oil not consumed on the U.S. West Coast must be shipped to the U.S. Gulf Coast. If exports were permitted, this oil could be shipped to Japan instead. (Japan is not particularly interested in this oil in the current soft market, but would like long-term access.)

Lifting the Alaskan exports ban would not directly increase the total amount of world oil production. However, permitting exports would demonstrate U.S. willingness to increase the flexibility of the world oil market, and readiness to rely on it to distribute oil supplies. This issue, however, has proven controversial on the Hill.

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