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# Soviet Hydrocarbon Development in the Third World

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An Intelligence Assessment

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*GI 85-10130*
*May 1985*

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# Soviet Hydrocarbon Development in the Third World [redacted]

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**An Intelligence Assessment**

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This paper was prepared by [redacted] [redacted] Office of Global Issues, and [redacted] [redacted] Office of Soviet Analysis, with a contribution from [redacted] Office of Soviet Analysis. Comments and queries are welcome and may be directed to the Chief, Instability and Insurgency Center, OGI, [redacted]

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# Soviet Hydrocarbon Development in the Third World 25X1

## Key Judgments

*Information available as of 16 April 1985 was used in this report.*

The USSR has been the major source of development aid for hydrocarbon industries in the Third World with nearly $3.4 billion in credits and grants to non-Communist LDCs since the mid-1950s. Nearly $1.5 billion of this has been provided in the past five years. During this period the USSR has added Angola, Jordan, Mozambique, and Nicaragua to its list of recipients.[1] We estimate that aid to Cuba and Vietnam probably has amounted to about $1 billion more. Although Soviet aid cannot begin to match the capital flows from Western oil companies, it has been crucial to the development of oil and gas resources in some producing countries. Soviet aid has underwritten the development of all crude output in Cuba, Vietnam, and Syria, about half of production in India, and about 10 percent of production in Iraq. Afghanistan and Iran also owe their natural gas industries to Soviet aid. 25X1

The USSR benefits economically from its hydrocarbon programs. For an expenditure averaging about $70 million a year over the past 20 years, Moscow has assured itself of a $150 million annual LDC market for oil and gas equipment, earns $200-300 million annually for associated technical services, has guaranteed repayment of long-term debt from several recipients, and has secured stable long-term supplies in one of the world's most volatile raw materials markets. 25X1

Moscow has scored other gains through its hydrocarbon program:

- It has placed more than 5,000 advisers in petroleum industries in 15 non-Communist LDCs and has become the major foreign presence in the industries of Afghanistan, Ethiopia, Iraq, South Yemen, and Syria.
- It provides training in Moscow for hundreds of geologists and engineers. As the graduates of this training achieve prominence in their own industries, Moscow's access to these industries may increase.
- It has used hydrocarbon assistance to further its relationships with significant regional powers in South Asia and the Middle East—specifically, India, Iraq, and Syria. 25X1

[1] In some cases, contracts signed in the past five years have been financed under earlier credit agreements. 25X1

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We believe the USSR will be able to maintain its presence in oil industries where it is already established: burgeoning investment needs in other major producing countries—such as Angola, Libya, and Iran—could provide further opportunities over the next several years. Moscow also may find opportunities in countries such as Jordan, Morocco, Nicaragua, and Peru where reserves are sufficient only for domestic consumption, and where Western firms are reluctant to become involved in exploration and development. 25X1

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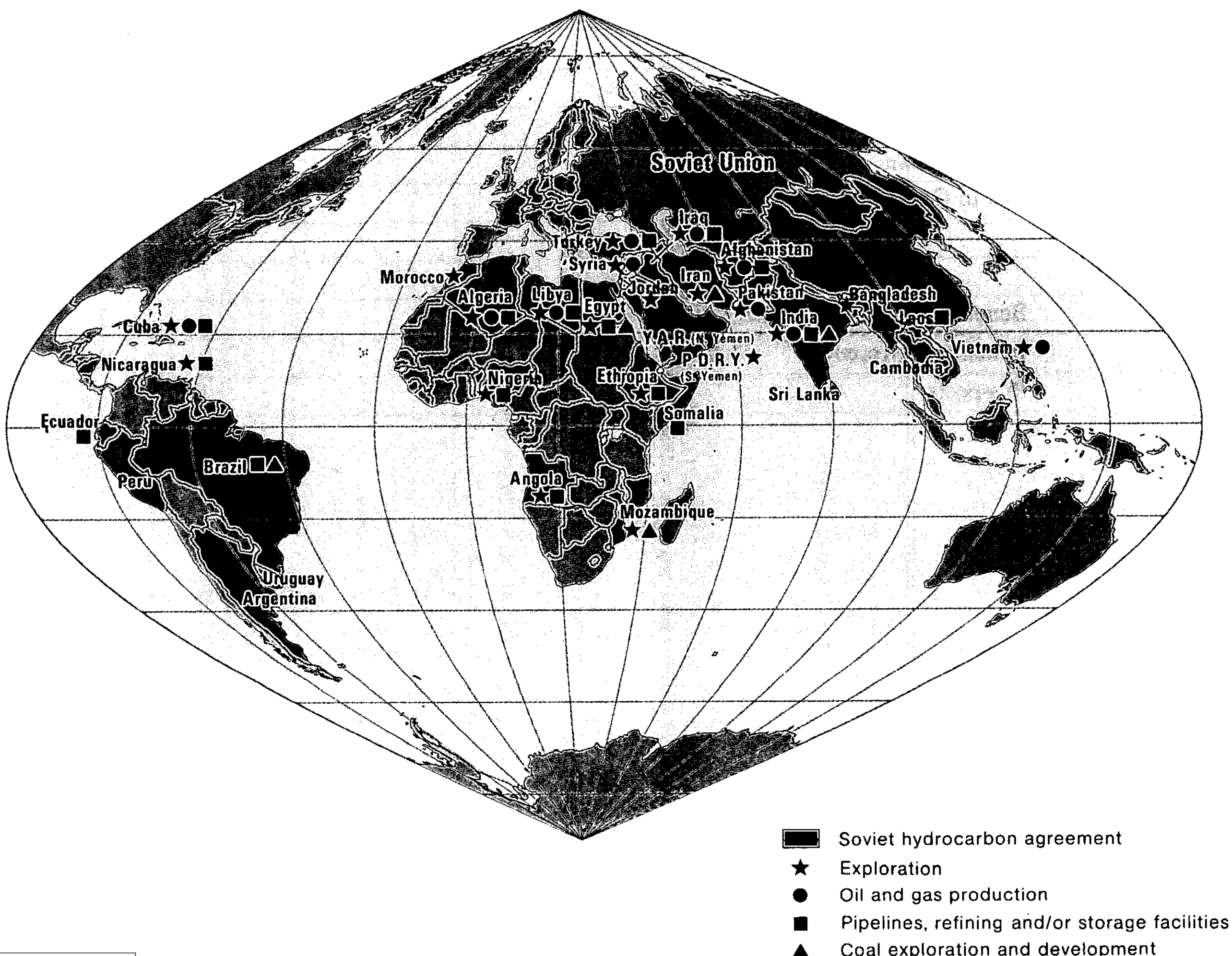
**Figure 1**
**Soviet Hydrocarbon Development Agreements With the Third World**

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# Soviet Hydrocarbon Development in the Third World



## Introduction

We estimate that, since Moscow provided its first credit to India for oil exploration equipment in 1956, it has pledged nearly $3.4 billion to hydrocarbon development in 25 non-Communist world developing nations. Assistance to Communist LDCs, notably Cuba and Vietnam, probably has amounted to about $1 billion more. A little over $275 million has gone for coal development; the remainder has financed oil and gas exploration, production, and transport. Representing only 10 percent of Moscow's economic pledges to the Third World, this program has carried economic and political benefits that far exceed its size. Moscow has used it to: (1) increase its equipment sales, (2) establish an extensive presence in the oil industries of some key producers, such as Iraq, (3) help assure repayments in oil and gas on LDC economic and military debt, and (4) in the case of Communist LDCs, limit oil export obligations.

## The Size and Scope of the Program

The USSR's aid to hydrocarbon industries in non-Communist LDCs has been heavily concentrated on oil and gas development in a few key recipient countries. A few traditional large Middle Eastern and South Asian recipients—Afghanistan, India, Iraq, and Syria—have taken up nearly three-fourths of Moscow's $3.1 billion in oil and gas assistance since the mid-1950s. Moscow's estimated $1 billion of aid to developing CEMA [2] LDCs has gone entirely to Cuba and Vietnam.

The recent growth in the Soviet oil program has been sustained by ties established two decades ago to major LDC producers. In the 1950s and early 1960s, Soviet initiatives were concentrated on marginal producers (such as India and Syria) whose aspirations to create national oil industries were ignored by the multinationals. Oil projects generally were negotiated as part of large credit packages designed mainly to promote Moscow's equipment exports in the vast, lucrative Third World market. In the first 10 years, the USSR gained access to the oil industries of 11 LDCs who were unable to attract Western investment. By the mid-1960s, Moscow also began to politicize its program, representing it to newly independent countries as an effective alternative to "plundering" by Western oil companies. 

During the 1970s, Moscow perceived new uses for oil industry aid in some recipient countries. A number of Moscow's traditional clients—Afghanistan, Iran, Iraq, and Syria—had run up huge debts to the USSR for military hardware and (to a lesser extent) economic aid. Developing oil and gas resources in these countries could help service these growing obligations. The USSR agreed to accept payment in oil from Soviet-developed fields from Iraq and Syria for their economic and military debts; similar agreements with Afghanistan and Iran called for reimbursement in natural gas. As its own production has stagnated, the USSR also has used oil from LDC suppliers to help meet export contracts with Western customers and Yugoslavia. We estimate that in 1984 the USSR obtained about 295,000 barrels per day (b/d) of crude oil on barter from LDCs (mainly Iraq and Libya), and sold at least half to hard currency countries.



In the 1970s, Moscow also exploited longstanding oil ties by concluding equipment sales and contracting arrangements in the newly affluent LDCs willing to pay cash. While commercial business probably has not developed as rapidly as the Soviets would like, Moscow has made a respectable showing on roughly a billion dollars worth of outstanding contracts, including:

- A $138 million contract to build oil pipelines in Nigeria.
- A $200-300 million gas pipeline contract in Libya.



[2] Council for Mutual Economic Cooperation, the Communist multilateral economic organization.





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**Table 1**
**USSR: Credits and Grants to Non-Communist LDCs for Hydrocarbon Development, 1956-84**

*Million US $*

| | Agreements | | | Disbursements | | |
|---|---|---|---|---|---|---|
| | Total | Oil/Gas | Coal | Total | Oil/Gas | Coal |
| **Total** | **3,391.1** | **3,113.8** | **277.3** | **1,566.5** | **1,477.2** | **89.3** |
| North Africa | 75.9 | 75.9 | .. | 63.4 | 63.4 | .. |
| Algeria [a] | 70.4 | 70.4 | .. | 57.9 | 57.9 | .. |
| Morocco | 5.5 | 5.5 | .. | 5.5 | 5.5 | |
| Sub-Saharan Africa | 179.2 | 169.2 | 10.0 | 117.4 | 115.4 | 2.0 |
| Angola [a] | 15.0 | 15.0 | .. | 15.0 | 15.0 | .. |
| Ethiopia | 140.3 | 140.3 | .. | 88.0 | 88.0 | .. |
| Mozambique [a] | 13.0 | 3.0 | 10.0 | 3.5 | 1.5 | 2.0 |
| Nigeria | 1.9 | 1.9 | .. | 1.9 | 1.9 | .. |
| Somalia | 9.0 | 9.0 | .. | 9.0 | 9.0 | .. |
| Latin America | 94.0 | 94.0 | .. | 59.0 | 59.0 | .. |
| Argentina | 43.3 | 43.3 | .. | 43.3 | 43.3 | .. |
| Brazil | 5.0 | 5.0 | .. | 5.0 | 5.0 | .. |
| Ecuador | 35.0 | 35.0 | .. | .. | .. | .. |
| Nicaragua | NA [b] | NA [b] | .. | .. | .. | .. |
| Peru | 9.5 | 9.5 | .. | 9.5 | 9.5 | .. |
| Uruguay | 1.2 | 1.2 | .. | 1.2 | 1.2 | .. |
| Middle East | 1,963.6 | 1,953.7 | 9.9 | 604.7 | 594.8 | 9.9 |
| Egypt | 94.2 | 84.3 | 9.9 | 94.2 | 84.3 | 9.9 |
| Iran | 77.0 | 77.0 | .. | 77.0 | 77.0 | .. |
| Iraq [a] | 1,202.6 | 1,202.6 | .. | 170.7 | 170.7 | .. |
| Jordan | 4.5 | 4.5 | .. | 4.5 | 4.5 | .. |
| North Yemen | 3.5 | 3.5 | .. | 3.5 | 3.5 | .. |
| South Yemen [a] | 92.5 | 92.5 | .. | 37.6 | 37.6 | .. |
| Syria | 345.1 | 345.1 | .. | 98.0 | 98.0 | .. |
| Turkey [a] | 144.2 | 144.2 | .. | 119.2 | 119.2 | .. |
| South Asia | 1,078.4 | 821.0 | 257.4 | 722.0 | 644.6 | 77.4 |
| Afghanistan | 420.0 | 420.0 | .. | 363.6 | 363.6 | .. |
| Bangladesh | 24.2 | 24.2 | NA [b] | 24.2 | 24.2 | .. |
| India | 586.0 | 328.6 | 257.4 | 286.0 | 208.6 | 77.4 |
| Pakistan | 44.4 | 44.4 | .. | 44.4 | 44.4 | .. |
| Sri Lanka | 3.8 | 3.8 | .. | 3.8 | 3.8 | .. |

Note: A leader entry (..) indicates that no aid is known to have been extended.

[a] The amount of aid extended is estimated.
[b] The amount of aid extended is not known.

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**Table 2**
**USSR: Agreements To Develop LDC Oil and Gas Industries, by Year**

*Million US $*

| | |
|---|---|
| **Total** | **3,113.8** |
| 1956-60 | 253.1 |
| 1961-64 | 251.3 |
| 1965-69 | 437.6 |
| 1970-75 | 264.3 |
| 1976 | 106.7 |
| 1977 | .. |
| 1978 | 125.0 |
| 1979 | 184.8 |
| 1980 | 113.0 |
| 1981 | 85.0 |
| 1982 | .. |
| 1983 | 1,173.0 |
| 1984 | 120.0 |

[redacted]

- A $250 million gas pipeline in Algeria that is being partially financed.
- Coal development in Iran that could be valued at several hundred million dollars.

The commercial effort has been limited to countries where returns are assured—hard currency in cash. Moscow also has offered licenses for Soviet refining and utilization processes. Two Western-oriented LDCs—Jordan and Morocco—recently commissioned Soviet studies of shale oil exploitation using Soviet on-site burning techniques, and, according to US Embassy sources, Brazil has bought several Soviet coal gasification processes. [redacted]

Moscow has provided nearly 85 percent of its oil development funding to exploration and production in non-Communist LDCs, drawing on its huge cadre of trained geologists (figure 2). Only Ethiopia, Egypt, India, and Turkey have Soviet-built refineries. [redacted]

The heavy focus on oilfield development has required large contingents of Soviet petroleum technicians to operate and maintain equipment abroad. In 1984, more than 5,000 technicians were employed on Soviet oil and gas projects in the Third World. [redacted] because of narrow specialization and inefficient equipment, up to 45 Soviet technicians are required for each drilling rig. [redacted]

In fact, providing these oilfield services has become a lucrative part of the Soviet program abroad. Originally provided under credit at nominal rates, technical services have become an expensive element of Soviet oil development contracts. We estimate that the USSR now receives about $200-300 million annually from oil and gas industry services to LDCs. [redacted] 25X1

## The Big Five

Even though the USSR has participated in oil projects in 25 countries, Iraq has been by far the largest recipient. Moscow's entry into major LDC oil production projects was helped in the 1960s by the increasingly radical politics of Baghdad, which began to press Western companies for more favorable participation and financial arrangements. The USSR was on hand with financing, production and marketing expertise, and training when Baghdad began nationalizing 25X1 Western-owned assets. It also offered a market for Iraqi crude when traditional outlets were threatened by Western embargoes in retaliation for Iraq's expropriation. Moscow's first big break into a major industry came when Iraq accepted $120 million in credits to its state oil company (INOC) in 1969, after years of protracted negotiations with Western partners over compensation issues. [redacted] 25X1

Iraq has remained the centerpiece of Moscow's oil development program, accounting for 40 percent of funding provided for this purpose. The $1.2 billion Iraqi contract in 1983 (which we estimate carries $1 billion in credits) to develop the West Qurnah oilfield in southern Iraq was the largest of its type that the USSR has ever secured. It culminates more than 20 25X1 years of Soviet effort to establish itself as the primary supplier for a major oil producer. The contract represents a major achievement for Moscow in an area where competition from the West is stiff, and where the growth potential in the Soviet program until recently seemed severely limited by its outmoded 25X1 technology as well as the conservative politics of many potential clients. According to the press, the project involves drilling 100 production wells in Qurnah field to eventually increase Iraqi production by 300,000 25X1 b/d, bringing the Soviet contribution to about 25 percent of total Iraqi oil production. [redacted]

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***Gas Industry Development: Afghanistan and Iran***

*In connection with its search for fuel supplies, the USSR has provided nearly $340 million to develop natural gas industries in Afghanistan and Iran. Gas supplies from these two countries have been consumed in the Soviet southern republics, helping defer costly new investments in the south and supporting some Soviet gas deliveries to Western hard currency customers. Afghanistan received aid in 1963 to exploit a Soviet find of more than 8.8 trillion cubic feet of gas and to build a pipeline from the fields to the Soviet border. With gas deliveries that began in 1970, the USSR has been assured of timely repayment for a 30-year $4 billion economic and military development program that made the USSR the most important foreign partner for Afghanistan by the early 1970s. These deliveries, valued at about $300 million in 1983, are still helping to underwrite the Soviet presence in Afghanistan's economy.* [redacted]

*Soviet development of Afghanistan's gas resources has not been easy. The inaccessibility of the fields and the general lack of maintenance facilities have forced the Soviets to concentrate their efforts in the northern part of the country, close to the Soviet border. Since the Soviet invasion in 1979, developments have been hampered by repeated attacks on gas pipelines and other facilities by Afghan resistance fighters (see figure 3). Damage to pipelines has constricted the supply of natural gas to the USSR. Last year Afghan gas exports to the Soviet Union amounted to about 2 billion cubic meters, less than in 1975, and only about half of the amount originally targeted for sale in 1981.* [redacted] 25X1

*Iran's credits for oil and gas development, extended in 1966, financed a 690-mile pipeline from Iran's southern fields to the Soviet border, permitting Tehran to export gas that previously had been flared. In its heyday, this relationship brought over 350 billion cubic feet of gas annually to the USSR, and represented an important source of energy for border areas. The Shah used gas as repayment for Soviet economic and military debts, to finance technical services, and to settle trade accounts. The Khomeini regime discontinued gas deliveries to the Soviets in 1980.* [redacted] 25X1

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Other large recipients include:
- India, with $330 million in assistance for oil production and refining that provided the impetus for a state-owned oil industry.
- Syria, whose $345 million in Soviet aid for oil exploration and exploitation is totally responsible for its oil industry (backed up by East European refining facilities).
- Afghanistan, which received $420 million in Soviet assistance before the invasion to develop a state oil and gas industry.
- Ethiopia, with $140 million in aid to oil refining, transport, and exploration. [redacted]

Moscow's exploration in Ethiopia is one of its newest programs. The Soviets have had little success, although early in the program Ethiopia optimistically predicted that large amounts of oil would be found after traces were found in one of the Soviet drill holes in the Ogaden basin. Numerous structures still are likely to be discovered, but far more drilling will be required. Two Soviet teams are currently working at Ogaden sites, [redacted] training Ethiopian personnel to take over future drilling operations, and conducting seismic and related exploration. 25X1

[redacted] 25X1

**Aid to Communist LDCs**

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Soviet aid programs in less developed CEMA member countries have followed roughly the same patterns as in other areas. We believe, [redacted] that the Soviets have provided about $1 billion in aid to Cuba and Vietnam. [redacted] 25X1 25X1 25X1

Moscow's aid to Cuba and Vietnam, while strategically and politically motivated, also makes good economic sense. [redacted] the cost to the 25X1

**Figure 2**
**USSR: 1956-83 Aid to Hydrocarbon Development in Non-Communist LDCs, by Use**

Percent

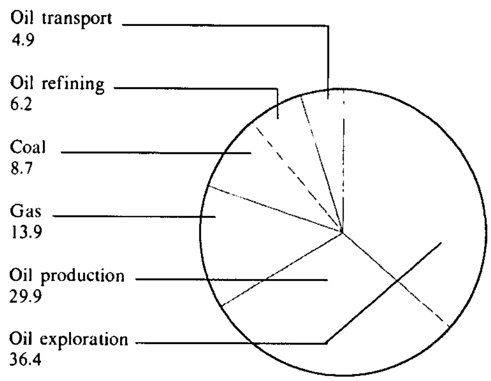


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**Table 3**
**USSR: Oil and Gas Industry Technicians in Non-Communist LDCs, 1984**

| | Number |
|---|---|
| **Total** | **5,015** |
| North Africa | 905 |
| Algeria | 800 |
| Libya | 80 |
| Morocco | 25 |
| Sub-Saharan Africa | 315 |
| Angola | 75 |
| Ethiopia | 200 |
| Nigeria | 40 |
| Latin America | 15 |
| Nicaragua | 15 |
| Middle East | 3,325 |
| Iraq | 3,000 |
| South Yemen | 100 |
| Syria | 200 |
| Turkey | 25 |
| South Asia | 455 |
| Afghanistan | 200 |
| Bangladesh | 5 |
| India | 200 |
| Pakistan | 50 |

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USSR of supporting Communist LDCs runs into billions of dollars each year: helping its allies develop oil and gas reserves for domestic use helps reduce Moscow's support burden. The Soviets are the largest oil supplier to these countries: crude oil and products exports to Cuba and Vietnam reached about 275,000 b/d in 1984. Had this quantity been available for export to hard currency nations, it would have added about $3 billion to Soviet coffers last year.

### Cuba

The Soviets have been active in the development of the Cuban oil industry for about 20 years. With Soviet assistance, Cuban output increased steadily from about 500 b/d in 1961 to some 14,000 b/d in 1984. Current Soviet-Cuban exploration drilling is concentrated along the north coast between Varadero and Cardenas and in Santa Cruz del Norte near Havana. Drilling is being carried out with Soviet rigs and turbodrills operated by Soviet technicians. During 1981-82 alone, the Soviets shipped nearly $46 million worth of rigs and other exploration equipment to Cuba.

Our analysis of the geological data indicates that the fields discovered are quite small and have little long-term potential because high initial flow rates are short lived and usually decline rapidly. Nevertheless, the prospects for additional oil discoveries (perhaps substantial ones) are good because the north Cuban basin is large, between 60 and 90 miles wide and extending for more than 620 miles along the coast; only a small portion of this basin has yet been drilled.

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Increasing Cuban oil production provides some direct economic benefit to the USSR. In 1984, Cuba imported about 240,000 b/d of crude oil and products, all of it from the USSR or purchased by the Soviets in switch deals with third countries for delivery to Cuba. At 1984 prices, Soviet oil exports to Cuba could have brought in about $2.5 billion had they been sold in the West.

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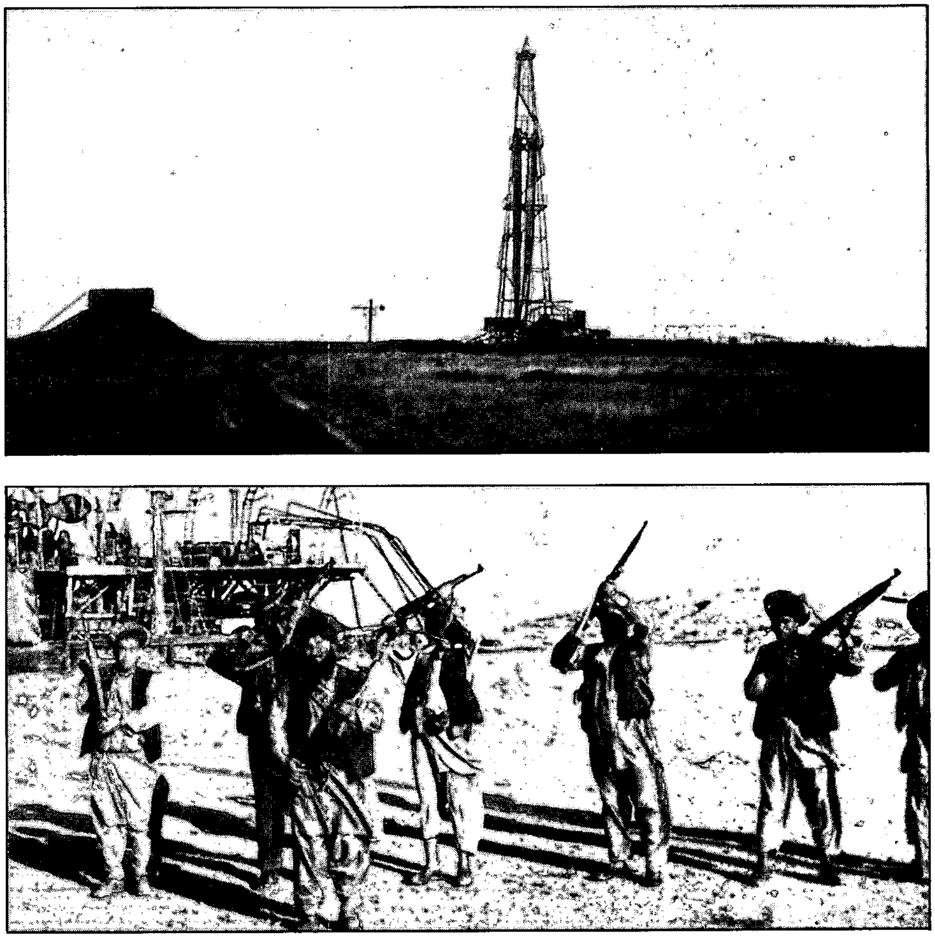

*Figure 3. Soviet drilling rig in northern Afghanistan captured by Afghan insurgents in early 1984.* [redacted] 25X1

**Vietnam**

The Soviets and Vietnamese are jointly involved in petroleum exploration through Vietsovpetro, a cooperative venture formed in 1981 after the withdrawal of the last Western firm from the country. Since then the Soviets have invested almost $130 million, earmarked for drilling programs in the Mekong and Song-Koi deltas and construction of six offshore and two onshore production platforms. As part of this effort, the Soviets have accelerated construction of oil and gas facilities in Vung Tau (figure 4). About 2,000 Soviet engineers, geologists, and technicians are working on petroleum exploration and developments in Vietnam—one of the largest groups of Soviet oil technicians serving abroad. [redacted] 25X1

The Soviets recently announced an oil and gas discovery at an offshore well 90 miles southeast of Vung Tau. We have no information on the geological conditions in this region and cannot estimate the possible recoverable oil reserves in this area. We believe that crude oil of commercial value has been discovered by the Soviets, although [redacted] part of the oil is high in sulfur and may be unsuitable for export. If plans to build an oil refinery at Nha Trang are completed, however, the oil could be suitable for domestic consumption. [redacted] 25X1 25X1 25X1

Any increase in Vietnam's oil production would lessen the export burden on the USSR. Vietnam imports



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***Soviet Geologists Abroad***

*Soviet geologists working in the LDCs are usually highly qualified and experienced. Because the Soviet system does not encourage mobility or crossover work, Soviet geologists tend to become highly expert in narrow specialties. Indeed, it is not unusual for Soviet geologists to spend their entire careers working on one particular oil basin or mineral deposit. As a result, the number required to complete a task is invariably far greater than with more broadly based Western counterparts. The Soviets compensate for this deficiency by training large numbers of geologists. The USSR has the world's largest cadre of trained geologists, who number at least five times more than those in the United States. Soviet geological science is at least on a par with the West, and, in some areas such as geochemistry, Soviet scientific knowledge is far ahead, according to knowledgeable observers.*

*Soviet geologists use a wide variety of petroleum exploration techniques such as remote sensing, regional and local geophysical surveys, geochemical mapping, and well logging. Soviet technology to support these efforts generally lags behind the West, especially in remote sensing and data processing. The Soviets, however, are making steady progress in these areas and their efforts have been helped by large infusions of Western equipment and know-how. Moreover, most of the LDCs are now only in the early stages of petroleum exploration and Soviet technology is quite adequate in the early phase, when the search for oil tends to be easiest.* 25X1

*We estimate that 850 students from LDCs are being trained in petroleum geology and engineering practices by the Soviets and their East European allies. Soviet training programs involve formal academic or technical training either in the USSR or in the home country. Many students go to Moscow because of no opportunity to train in the West. The USSR also trains several hundred LDC nationals annually in the LDCs. Soviet programs equip graduates for careers in exploration, drilling, and oil and gas refining, as well as in industry equipment and petroleum economics. Soviet-educated LDC graduates acquire the basic professional and technical skills that often enable them to qualify for key positions in the petroleum industry of their own countries; this gives Moscow access to decisionmakers in the petroleum industry of a number of LDCs such as Afghanistan, Iraq, and Syria. This access, however, probably limits the USSR's influence in these countries to technical issues concerning energy development.* 25X1

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about 90 percent of its petroleum requirements from the Soviets—nearly 35,000 b/d of refined products in 1983—worth about $440 million, according to Soviet statistics.

**Benefits to LDCs**

The USSR's record on completing projects promised under oil development agreements has been far better than for its aid program as a whole. The USSR has delivered $1.5 billion to oil and gas projects, more than three-fourths of commitments made through 1982, compared to about 50 percent of other pledges. Work is just beginning under agreements signed in 1983 and 1984, and we expect them to move rapidly as well. Soviet aid has been crucial to the development of oil industries in some countries with limited output potential and has provided a useful alternative to some major producers in shedding their dependence on Western companies. 25X1

- In Syria, now a net oil exporter, the USSR has been entirely responsible for installed crude capacity. According to the Syrian press, Damascus expects oil earnings of $1.5 billion for 1984, half of its total export earnings.

- In India, production from Soviet-developed fields accounts for half of Indian oil output, and Soviet-built refineries (including India's largest at

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Mathura) satisfy more than one-third of Indian product needs. Joint Soviet-Indian exploration has resulted in the discovery of billions of barrels of oil in the Bay of Bengal, although the USSR has not participated in their exploitation.

- In Iraq, Soviet-developed production accounts for about 10 percent of Baghdad's crude output, a proportion that should more than double when production from the massive West Qurnah fields comes on stream.

- In Afghanistan and Iran, the USSR enabled these countries to use gas that would not otherwise have been recovered for internal consumption and to purchase civilian and military equipment. 25X1

According to the Soviet press, LDC production from Soviet-developed fields totals about 1.2 million b/d, while Soviet-installed refinery capacity in LDCs has reached about 400,000 b/d. 25X1

For many LDCs, Soviet development aid came when Western oil companies were unwilling for political or economic reasons to invest in these countries. For some, such as Iraq and Libya, the USSR provided markets for oil boycotted by the West. Oil produced with Soviet help is wholly owned by the LDC, in contrast to Western arrangements. Finally, according to the Syrian petroleum minister, Soviet technical services are highly price competitive. Rumors in the late 1970s that Iraq and Syria would replace Soviet oil personnel and technology have proved unfounded. In fact, the Iraqis have provided hard currency to the USSR to purchase Western equipment for Soviet-built petroleum projects to overcome technology lags, and Moscow seems more entrenched than ever in the oil industry of this important producer.

### Benefits to Moscow

From the Soviet perspective, the oil and gas development program appears to be an unqualified success. For an average expenditure estimated at about $70 million annually over the past 20 years (often repayable in oil), the USSR has:

- Placed more than 5,000 advisers in petroleum industries in 15 non-Communist LDCs and became the major foreign presence in the industries of Afghanistan, Ethiopia, Iraq, South Yemen, and Syria.
- Secured access to a sizable and stable source of oil: in 1984 the USSR received about 295,000 b/d of oil from Libya, Iran, Iraq, and Syria, all of it shipped to Soviet customers abroad.
- Earned more than $2 billion annually in hard currency from reexporting LDC oil and direct sales to LDCs.
- Helped to insulate itself from supply disruptions that plagued Western consumers in 1973 and 1978/79 as major producers used the oil weapon to extract higher prices and other concessions from the West.
- Guaranteed repayments on long-term debts from such impoverished clients as Afghanistan and Syria, whose financial positions might otherwise invite default.
- Increased annual sales of oil and gas equipment to LDCs to $150 million annually.

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***Soviet Exports of Hydrocarbon Industry Equipment***

*The LDCs are the primary non-Communist market for Soviet energy-related machinery and equipment, taking at least 80 percent of these exports. These deliveries also include small amounts of equipment and materials purchased abroad that are reexported to the LDCs to supplement Soviet-made equipment. The incorporation of Western equipment into Soviet-assisted projects enables Moscow to meet LDC specifications for late-model technology and to secure lucrative contracts for its own equipment and technical services.*

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***USSR: Estimated Exports of Hydrocarbon Industry Equipment to LDCs*** *Million US $*

| | *1979* | *1980* | *1981* | *1982* | *1983* |
|---|---|---|---|---|---|
| ***Total*** | ***129*** | ***147*** | ***107*** | ***140*** | ***157*** |
| *Geological survey and extraction equipment* | *95* | *101* | *95* | *75* | *66* |
| *Pipelines* | *32* | *40* | *8* | *59* | *81* |
| *Other* | *2* | *6* | *4* | *6* | *10* |

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As with most of its other economic programs in LDCs, Moscow has placed returns to its own economy high on the list of major criteria for providing assistance to hydrocarbon development. Moscow has restricted its energy programs to what it can provide quickly, easily, and profitably. The USSR has stayed out of the mainstream of international efforts to help LDCs plan conservation programs and to develop alternative renewable energy sources to reduce dependence on oil.

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**Prospects**

We expect Moscow to continue to try to exert its influence in LDC hydrocarbon industries through offers of aid and commercial development assistance to existing recipients. The USSR has drawn up oil and gas resource use plans for Iraq, Libya, and Syria through the end of this century. Soviet organizations will work hard to obtain development contracts in these countries as new projects are developed. Other initiatives that could enhance Moscow's presence in LDC hydrocarbon industries include:

- Oil exploration in Nicaragua.
- Gas pipelines in Greece and Turkey.
- Feasibility studies for coal mine construction in Peru.
- Shale oil development in Jordan and Morocco.
- A petroleum refinery in Angola.
- Offers to support Iranian drilling in the Caspian Sea.

Many of these projects are still on the drawing board, but we expect Moscow to make competitive offers to finalize contracts. The USSR seems determined to exploit opportunities in countries that cannot obtain investment funds elsewhere, and appears willing to offer concessionary terms to close new deals. For example, Moscow provided its first credits to Iraq in nearly a decade to obtain the West Qurnah contract, even though it prefers wealthier LDCs to pay cash for development services. Moscow may also get involved in more turnkey projects, where it supplies consulting, planning, production, and refining assistance in one comprehensive package. The Iraqi contract provides for Soviet aid to all phases of the oil industry.

We expect LDCs will continue to accept Soviet aid when proffered, as they have in the past. With investment needs in LDC oil and gas industries projected at $45 billion for the 1980s, most countries are not in a position to refuse legitimate offers of assistance. Only Angola, among all the LDCs that we know have received Soviet offers of oil development assistance, has refused Moscow's help in production and marketing, fearing disruption in the only industry that still is performing at prerevolutionary levels. However, even Luanda is considering the USSR's refinery offer.

If world oil prices remain sluggish during the balance of the 1980s, Western oil companies will be increasingly reluctant to embark on expensive oil programs in the Third World, even if prospects for discoveries are favorable. This could provide Moscow with greater opportunities to increase its presence in LDCs that plan to continue oil development programs. Countries such as Iran, India, and Pakistan seem likely candidates for increased Soviet penetration. 25X1

Further, when Moscow perceives that its strategic and foreign policy interests are served, it is willing to accept a far lower economic payoff than Western firms. For example, the Indian state-owned oil and gas commission last summer canceled bidding on part of a 1,700-kilometer gas pipeline. This unexpected action was based on the receipt (outside the tender process) of a Soviet offer to build the pipeline at giveaway terms and conditions. 25X1

25X1

The Soviets could, if necessary, present a strong case to the LDCs arguing that, largely as a result of their own technology, they have become the world's largest oil producer with proved reserves that rank among the largest in the world. While Soviet technology lags that of the West, in some cases less sophisticated Soviet hardware could actually be well suited for some Third World countries, especially if the objective is to transfer ultimate control of the project to local technicians as is the case in Ethiopia. Finally, the fact that some types of Soviet equipment—drilling rigs, seismic gear—require more manpower to operate than Western gear, could well be a plus in many LDCs already burdened with large labor surpluses. 25X1

25X1

25X1

## *Soviet Oil Trade With Non-Communist LDCs*

*The USSR both sells and buys petroleum and products in its Third World trade, a business that had risen dramatically to almost $6 billion by 1983. Although much of the increase reflects rapidly rising world prices, Moscow has nearly doubled the volume of its oil trade with the LDCs over the last decade. All of the Soviet-purchased crude oil is resold to third countries, allowing Moscow to reduce shipping costs and increase its oil exports beyond domestic production.* [redacted] 25X1

*Some of this oil finds it way to other LDCs such as Greece, India, Morocco, and Turkey, while petroleum product exports come from Soviet domestic supplies.* [redacted] 25X1

*The growth in oil exports largely reflects Moscow's efforts to balance trade with a few countries. Since the mid-1970s, exports of petroleum to India have been used to stimulate bilateral trade, as India was unwilling to accept more Soviet machinery and equipment. Brazil also agreed to buy Soviet oil after finding other Soviet products unattractive. Moscow also uses its oil exports to support client states: about 12 percent of Soviet oil to LDCs in 1983 went to Ethiopia and Afghanistan, and in late 1983 the USSR began shipping oil to Nicaragua.* [redacted] 25X1

*Before 1982, a large proportion of Moscow's oil imports from LDCs were taken in repayment for Soviet economic and military aid to Iraq and Syria.*

***USSR: Oil Trade With Non-Communist LDCs*** [a]

| | *1,000 b/d* | | *Million US $* | |
|---|---|---|---|---|
| | *Exports* | *Imports* | *Exports* | *Imports* |
| *1970* | *185* | *50* | *80* | *25* |
| *1975* | *185* | *150* | *805* | *550* |
| *1980* | *215* | *80* | *2,635* | *830* |
| *1981* | *225* | *100* | *3,005* | *1,105* |
| *1982* | *245* | *195* | *2,840* | *1,780* |
| *1983* | *295* | *255* | *3,145* | *2,570* |

[a] *Numbers are rounded to the nearest 5.*

25X1

[redacted] 25X1

*Imports rose sharply in 1982 when the USSR agreed to accept Libyan oil for arms. New purchases from Iran and Iraq, together with liftings from Saudi Arabia on Iraq's behalf, also have contributed to higher import levels. The Saudi oil helps Iraq meet payments due to Moscow for arms purchases.* [redacted] 25X1

*Oil from LDCs has allowed Moscow to increase its deliveries to Western and other customers without drawing on its own domestic supplies. Access to this oil has helped the USSR to boost its hard currency export earnings from oil even though world oil prices are depressed.* [redacted] 25X1

# Appendix

## USSR: Credits and Grants for Hydrocarbon Development in Non-Communist LDCs, 1956-84

| | Date Extended | Projects | Extended (million US $) | Drawn (million US $) | Status [a] |
|---|---|---|---|---|---|
| **North Africa** | | | | | |
| Algeria | | | | | |
| USSR | 1963 Oct | Credit—Petroleum exploration | 10.0 | 10.0 | C |
| | 1964 Jul | Grant—Petroleum and gas institute | 2.0 | 2.0 | C |
| | 1966 Aug | Trade Credit—Hydrocarbon research | 3.4 | 3.4 | C |
| | 1980 Apr | Trade Credit—Expansion of petroleum and gas institute | 5.0 [b] | 2.5 | UC |
| | 1981 Mar | Trade Credit—Gas pipeline | 50.0 [b] | 40.0 | UC |
| | | Total | 70.4 | 57.9 | |
| Morocco | | | | | |
| USSR | 1966 Oct | Credit—Petroleum and gas exploration | 5.5 | 5.5 | C |
| | | Total | 5.5 | 5.5 | |
| **Sub-Saharan Africa** | | | | | |
| Angola | | | | | |
| USSR | 1976 May | Credit | 15.0 [b] | 15.0 | |
| | | Oil depots, Dondo, Malanje, Port Amboin | | | C |
| | | Oil products, pipelines, and storage tanks | | | |
| | | Technical assistance to the oil industry | | | |
| | | Total | 15.0 | 15.0 | |
| Ethiopia | | | | | |
| USSR | 1959 Jul | Line of Credit | 45.4 | 45.4 | C |
| | | Oil refinery, Assab (*$15.3 million*) | | | C |
| | | Reconstruction of oil refinery, Assab (*$5.0 million*) | | | C |
| | | Expansion of oil refinery, Assab (*$14.5 million*) | | | C |
| | | Oil pipeline, Assab-Mojo (*$3.6 million*) | | | C |
| | | Oil processing plant, Mojo (*$2.0 million*) | | | C |
| | | Five storage tanks (*$5.0 million*) | | | C |
| | 1979 Apr | Credit—Added to 1959 credit | 5.0 | 5.0 | C |
| | | 10 petroleum distribution centers | | | C |
| | 1979 Sep | Credit—Reconstruction and expansion of Assab oil refinery | 15.3 | | |
| | | Credit—Oil and gas exploration | 30.6 | 30.6 | C |
| | 1983 Jul | Credit—Oil exploration in the Ogaden | 44.0 | 7.0 | UC |
| | | Total | 140.3 | 88.0 | |

**USSR: Credits and Grants for Hydrocarbon Development in Non-Communist LDCs, 1956-84 (continued)**

| | Date Extended | Projects | Extended *(million US $)* | Drawn *(million US $)* | Status [a] |
|---|---|---|---|---|---|
| Mozambique | | | | | |
| USSR | 1980 Nov | Credit | 13.0 [b] | 3.5 | |
| | | Three coal mines, Moatize (*$10.0 million*) | | | UC |
| | | Oil and gas exploration (*$3.0 million*) | | | UC |
| | | Total | 13.0 | 3.5 | |
| Nigeria | | | | | |
| USSR | 1970 Nov | Credit—Oil technical training center, Warri | 1.9 | 1.9 | C |
| | | Total | 1.9 | 1.9 | |
| Somalia | | | | | |
| USSR | 1961 Jun | Credit | 8.5 | 8.5 | |
| | | Bottled gas plant, Berbera (*$0.5 million*) | | | C |
| | | 33 petroleum storage tanks (*$8.0 million*) | | | C |
| | 1971 Feb | Credit—Oil storage study | 0.5 | 0.5 | C |
| | | Total | 9.0 | 9.0 | |
| **Latin America** | | | | | |
| Argentina | | | | | |
| USSR | 1958 Oct | Credit—Petroleum equipment | 28.0 | 28.0 | C |
| | 1965 Sep | Credit—Equipment for oil industry | 15.3 | 15.3 | C |
| | | Total | 43.3 | 43.3 | |
| Brazil | | | | | |
| USSR | 1966 | Credit—Shale oil pilot plant | 5.0 | 5.0 | C |
| | | Total | 5.0 | 5.0 | |
| Ecuador | | | | | |
| USSR | 1981 Feb | Trade Credit—Oil storage tanks | 35.0 | | |
| | | Total | 35.0 | | |
| Nicaragua | | | | | |
| USSR | 1982 May | Credit—Added to 1981 credit | [c] | | |
| | | Oil prospecting | | | |
| | | Oil storage tank, Puerto Sandino | | | |
| | | Total | [b] | | |
| Peru | | | | | |
| USSR | 1970 Aug | Credit—Oil storage tanks | 9.5 | 9.5 | C |
| | | Total | 9.5 | 9.5 | |
| Uruguay | | | | | |
| USSR | 1969 Feb | Credit—Oil storage tanks | 1.2 | 1.2 | C |
| | | Total | 1.2 | 1.2 | |

**USSR: Credits and Grants for Hydrocarbon Development in Non-Communist LDCs, 1956-84 (continued)**

| | Date Extended | Projects | Extended *(million US $)* | Drawn *(million US $)* | Status [a] |
|---|---|---|---|---|---|
| **Middle East** | | | | | |
| Egypt | | | | | |
| USSR | 1957 Jul | Credit—Oil drilling equipment | 8.6 | 8.6 | C |
| | 1958 Jan | Line of Credit | 36.1 | 36.1 | |
| | | Coal tar distillation plant (*$1.0 million*) | | | C |
| | | Expansion of coke chemical plant, Hulwan (*$8.9 million*) | | | C |
| | | Lubricating oil plant, Suez (*$4.3 million*) | | | C |
| | | Gasoline plant, Suez (*$1.0 million*) | | | C |
| | | Oil refineries, Suez and Alexandria (*$3.0 million*) | | | C |
| | | Oil desalination plant, Suez (*$1.0 million*) | | | C |
| | | Shale oil plant (*$0.9 million*) | | | C |
| | | Drilling equipment (*$9.0 million*) | | | C |
| | | Oil purification plant, Suez (*$2.0 million*) | | | C |
| | | Geophysical and exploration work (*$5.0 million*) | | | C |
| | 1964 Sep | Trade credit | 23.5 | 23.5 | |
| | | Oil exploration equipment (*$18.5 million*) | | | C |
| | | Second lube oil plant, Alexandria (*$5.0 million*) | | | C |
| | | Credit—Oil exploration | 26.0 | 26.0 | C |
| | | Total | 94.2 | 94.1 | |
| Iran | | | | | |
| USSR | 1966 Jan | Credit—Gas pipeline and technical services | 77.0 | 77.0 | C |
| Total | | | 77.0 | 77.0 | |
| Iraq | | | | | |
| USSR | 1969 Jun | Trade Credit | 54.0 | 45.0 | |
| | | Petroleum development, Halfayah | | | UC |
| | | Petroleum exploration (*$17.9 million*) | | | UC |
| | 1969 Jul | Trade Credit—Petroleum development | 66.7 | 66.7 | |
| | | North Rumaylah (*$42.6 million*) | | | C |
| | | Ratawi and Umar | | | C |
| | | Al Luhais (*$7.0 million*) | | | C |
| | | Pipeline, Rumaylah to Fao | | | C |
| | 1971 Apr | Line of Credit | 41.9 | 11.1 | |
| | | Oil refinery, Mosul (*$30.8 million*) | | | |
| | | Pipeline, Northern Iraq | | | |
| | | Pipeline, Baghdad-Basra (*$11.1 million*) | | | C |
| | 1976 May | Credit—Petroleum development, Rumaylah | 40.0 | 37.9 | |
| | | Water injection equipment | | | UC |
| | 1983 Nov | Credit—Development of West Qurnah Oilfield | 1,000.0 [b] | 10.0 | S |
| | | Total | 1,202.6 | 170.7 | |

**USSR: Credits and Grants for Hydrocarbon Development in Non-Communist LDCs, 1956-84 (continued)**

| | Date Extended | Projects | Extended *(million US $)* | Drawn *(million US $)* | Status [a] |
|---|---|---|---|---|---|
| Jordan | | | | | |
| USSR | 1976 Jun | Credit—Oil exploration | 4.5 | 4.5 | C |
| | 1984 Oct | Trade Credit—Oil drilling | [c] | | |
| | | Total | 4.5 | 4.5 | |
| North Yemen | | | | | |
| USSR | 1964 Mar | Credit—Petroleum container plant | 3.5 | 3.5 | C |
| | | Total | 3.5 | 3.5 | |
| South Yemen | | | | | |
| USSR | 1972 Nov | Credit—Oil exploration | 5.0 [b] | 5.0 | C |
| | 1978 Feb | Credit—Oil development | 5.0 [b] | 5.0 | C |
| | 1979 Oct | Credit—Added to 1975 credit for oil development | 27.5 [b] | 12.6 | UC |
| | 1980 May | Credit—Oil exploration, Northeast | 55.0 | 15.0 | UC |
| | | Total | 92.5 | 37.6 | |
| Syria | | | | | |
| USSR | 1957 Oct | Credit | 18.9 | 18.9 | |
| | | Petroleum exploration (*$17.8 million*) | | | C |
| | | Petroleum products storage (*$1.0 million*) | | | C |
| | | Pipeline design, Karachuk-Tartus (*$0.1 million*) | | | C |
| | 1972 Feb | Credit—Petroleum development | 30.0 | 30.0 | C |
| | 1976 Jun | Credit | 47.2 | 46.7 | |
| | | Petroleum development (*$46.2 million*) | | | C |
| | | Oil industry training center, Rumaylah(*$1.0 million*) | | | UC |
| | 1983 Aug | Credit—Gas treatment and transmission project | 129.0 | 2.4 | |
| | 1984 | Credit—Four oil and gas drilling rigs | 120.0 | | |
| | | Total | 345.1 | 98.0 | |
| Turkey | | | | | |
| USSR | 1967 Mar | Credit—Petroleum refinery, Izmir | 24.2 | 24.2 | C |
| | 1978 Mar | Credit—Expansion of Aliaga refinery, Izmir | 50.0 [b] | 25.0 | UC |
| | 1978 Oct | Credit—Oil research | 70.0 | 70.0 | C |
| | | Total | 144.2 | 119.2 | |

**USSR: Credits and Grants for Hydrocarbon Development in Non-Communist LDCs, 1956-84 (continued)**

| | Date Extended | Projects | Extended *(million US $)* | Drawn *(million US $)* | Status [a] |
|---|---|---|---|---|---|
| **South Asia** | | | | | |
| Afghanistan | | | | | |
| USSR | 1957 Jul | Credit—Petroleum exploration and aerial survey | 15.0 | 15.0 | C |
| | 1961 Oct | Credit | 32.3 | 32.3 | |
| | | Petroleum and gas exploration and exploitation (*$25.0 million*) | | | C |
| | | Gas pipeline, Shibarghan-Mazar-e-Sharif (*$7.3 million*) | | | C |
| | | Credit—Chemical fertilizer and gas electric plants | 29.0 | 29.0 | C |
| | 1963 Oct | Credit—Natural gas exploitation and pipeline, Shibarghan-Dushanbe | 38.9 | 38.9 | C |
| | 1968 Feb | Credit | 20.0 | 20.0 | |
| | | Equipment for natural gas extraction and transportation, Shibarghan (*$1.7 million*) | | | C |
| | | Petroleum storage depots, Kabul, Mazar-e-Sharif, Bagram (*$6.0 million*) | | | C |
| | | Oil and gas exploration (*$12.3 million*) | | | C |
| | | Credit | 26.9 | 26.9 | |
| | | Prospecting and drilling for oil and gas in north (*$20.0 million*) | | | |
| | | Expansion of Mazar-e-Sharif gas electric and fertilizer plant (*$6.9 million*) | | | |
| | 1972 Aug | Credit | 60.4 | 60.4 | S |
| | | Petroleum refinery, Shibarghan (*$18.0 million*) | | | S |
| | | Oil extraction and pipeline from Angot deposits (*$5.6 million*) | | | C |
| | | Oil exploration equipment (*$19.5 million*) | | | C |
| | | Gas pipeline, Amu Darya (*$2.3 million*) | | | C |
| | | Expansion of Mazar-e-Sharif gas and fertilizer complex (*$10.0 million*) | | | C |
| | | Oil storage depots, Logar, Herat, and Ghazni (*$5.0 million*) | | | C |
| | 1973 | Grant—Technical Institute for Petroleum and Mining | 4.1 | 4.1 | C |
| | 1975 Jan | Credit for Seven-Year Plan | 87.0 | 87.0 | |
| | | Gas pipeline, Jeraqduq (*$6.5 million*) | | | C |
| | | Gas collection and desulfurization plant, Jeraqduq (*$56.0 million*) | | | C |
| | | Oil and gas drilling equipment for 1981 (*$9.5 million*) | | | C |
| | | Fuel storage facilities, Hairatan, Pul-i-Khumri, and Mazar-e-Sharif (*$5.0 million*) | | | C |
| | 1979 Mar | Credit—Oil development | 106.4 | 50.0 | |

**USSR: Credits and Grants for Hydrocarbon Development in Non-Communist LDCs, 1956-84 (continued)**

| | Date Extended | Projects | Extended *(million US $)* | Drawn *(million US $)* | Status [a] |
|---|---|---|---|---|---|
| | | Oil production, Agnis and Ab-e-Dariah Refinery, Jeraqduq | | | UC |
| | | Oil products pipeline, Termez-Kelegai-Bagram | | | C |
| | | Oil products pipeline, Termez-Kelegai | | | C |
| | | Total | 420.0 | 363.6 | |
| Bangladesh | | | | | |
| USSR | 1961 Mar | Credit—Petroleum exploration | 4.0 | 4.0 | C |
| | 1972 Mar | Credit—Oil and gas exploration | 14.7 | 14.7 | C |
| | 1975 Apr | Credit | 5.5 | 5.5 | C |
| | | Gas liquifaction plant, Chittagong<br>Bitumin plant, Chittagong<br>Oil and gas exploration (*$5.5 million*) | | | C |
| | | Total | 24.2 | 24.2 | |
| India | | | | | |
| USSR | 1956 May | Credit—Petroleum exploration equipment, Punjab, Assam, and Gujarat | 3.6 | 3.6 | C |
| | 1957 Nov | Credit | 41.2 | 41.2 | |
| | | Coal mining machinery plant, Durgapur, West Benegal (*$21.0 million*) | | | C |
| | | Coalfield development, Korba, Madhyha Pradesh (*$11.2 million*) | | | C |
| | | Underground mines, Banki, and Surakachhau (*$5.7 million*) | | | C |
| | | Open cast mines, Manikpur and Korba (*$1.6 million*) | | | C |
| | | Workshop (*$1.7 million*) | | | C |
| | 1959 Sep | Credit—Petroleum development | 69.3 | 69.3 | C |
| | | Credit—Petroleum refinery, Barauni, Bihar | 34.1 | 34.1 | C |
| | 1961 Feb | Line of credit | 57.8 | 57.8 | |
| | | Oil Refinery, Koyali, Baroda, Gujarat (*$18.9 million*) | | | C |
| | | Coal washery, Kathara (*$6.2 million*) | | | C |
| | | Expansion of Barauni refinery (*$1.7 million*) | | | C |
| | | Petroleum exploration and production, Cambay, Anklesvar and other areas, (*$31.0 million*) | | | C |
| | 1966 Jul | Trade credit—Coal mining equipment and technical assistance | 67.0 | 10.0 | UC |
| | | Line of Credit | 140.0 | 50.0 | |
| | | Petroleum exploration and development, Assam (*$100.0 million*) | | | UC |
| | | Six coking coal projects, Ramgarh, Bihar (*$20.0 million*) | | | |

**USSR: Credits and Grants for Hydrocarbon Development in Non-Communist LDCs, 1956-84 (continued)**

| | Date Extended | Projects | Extended *(million US $)* | Drawn *(million US $)* | Status [a] |
|---|---|---|---|---|---|
| | | Mathura Refinery, Madhyha Pradesh (*$20.0 million*) | | | C |
| | 1980 Dec | Credit—Coal development | 123.0 | 20.0 | UC |
| | | Construction of Nigahi and Jhanjra mines | | | |
| | | Coal mining, Singrauli, and Raniganj (*$15.5 million*) | | | UC |
| | | Coal mine construction design institute | | | |
| | | Credit—Oil and gas prospecting and production | 50.0 [c] | | |
| | | Total | 586.0 | 286.0 | |
| Pakistan | | | | | |
| USSR | 1961 Mar | Credit—Oil exploration | 26.0 | 26.0 | C |
| | 1969 Jan | Credit—Oil exploration | 18.4 | 18.4 | C |
| | | Total | 44.4 | 44.4 | |
| Sri Lanka | | | | | |
| USSR | 1973 | Trade Credit—Onshore and offshore oil and gas exploration | 3.8 | 3.8 | C |
| | | Total | 3.8 | 3.8 | |
| **Total for LDCs** | | | **3,391.1** | **1,566.5** | |

[a] Symbols used in this table have the following meanings:
S - under survey, UC - under construction or being implemented,
and C - completed. No entry indicates no work has begun.
[b] The amount extended is estimated.
[c] The amount extended is not known.

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