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DIRECTORATE OF INTELLIGENCE

21 NOV 1984

MEMORANDUM FOR: William F. Martin
Special Assistant to the President for
National Security Affairs and Senior
Director for Coordination

FROM: [redacted] 25X1
Director of Global Issues

SUBJECT: Central America: Background on Energy and Economic Development [redacted] 25X1

Attached, per your request, is our assessment of the economic and energy situation in Central America. If you have any questions, please call [redacted] 25X1

[redacted] 25X1

Attachment:
Central America: Background on Energy and Economic Development [redacted] GI M 84-10207, November 1984, [redacted] 25X1

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SUBJECT: Central America: Backgroung on Energy and Economic Development [redacted] 25X1

OGI/SRD/EMB/[redacted] (15 Nov 84) 25X1

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DIRECTORATE OF INTELLIGENCE

15 November 1984

Central America: Background on Energy and Economic Development

Summary

Central America depends on commerical energy--petroleum and electricity--to satisfy approximately 45 percent of total energy needs. Wood and agricultural residue supply the balance and are used primarily in the residential sector. Petroleum use has more than doubled since 1970 and accounts for at least 90 percent of total commerical energy consumption in most countries. Last year, the region imported almost 35 million barrels of oil at a cost of about one billion dollars. Commercial energy use is expected to rise as energy intensive industries and the transportation sector develop, and as the region moves away from non-commercial energy to prevent deforestation and soil erosion. By the year 2000, oil demand could more than double, diverting foreign exchange from more beneficial uses. Improvements in energy use, assistance in exploration and development of indigenous resources, and the creation of an attractive investment climate could help lessen the financial burden on these countries. 25X1

This memorandum was prepared by 25X1 Energy Markets Branch, Office of Global Issues; 25X1 Central America South Branch and 25X1 Central America North Branch, Office of African and Latin American Analysis. The Information contained herein is updated to 15 November 1984. Comments may be directed to 25X1 Chief, Strategic Resources Division, on 25X1

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Central America: Background on Energy and Economic Development

Overview

The six Central American countries examined in this memorandum primarily depend on petroleum, electricity and wood to meet their energy requirements.[1] The transportation and industrial sectors are the major consumers of petroleum and electricity, while wood and other non-commercial energy sources are used primarily for heating and cooking by the residential sector. The use of non-petroleum fuels currently has several drawbacks. Hydroelectric production varies with seasonal and yearly river fluctuations and deforestation and soil erosion are becoming more common in this region as wood usage takes its toll. To overcome these problems petroleum is becoming an increasingly important component in the energy balance of these nations. Guatemala is the only oil producer in the region; consequently, these countries must rely on imported oil to meet domestic requirements. Under the San Jose Accord, oil supplies are purchased from Mexico and Venezuela on a concessionary basis. Last year the region imported a total of about 35 million barrels of oil at a cost of about 1 billion dollars. By the year 2000 oil demand could more than double, diverting foreign exchange from more beneficial uses.

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Economic Background

Economic development in Central America varies considerably from country to country, but all share important similarities and linkages that provided the foundation for their fast-paced economic expansion between World War II and 1978. This common growth path was built on: periodic booms in agricultural commodity prices; dynamic, regionally protected manufacturing sectors; and heavy foreign borrowing. During 1961-78, Central America economic growth averaged about 5.6 percent per annum--above the rate of LDCs as a whole. This strategy failed, however, to produce enduring, broad-based economic expansion. (Panama is the only exception to this general pattern, and is treated separately below).

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Agriculture, the keystone of the region's economic development, remains the primary source of export earnings and employment. Despite wildly fluctuating international prices for major commodities--coffee, sugar, bananas, cotton and meat--the region has maintained its longstanding dependence on these items which account for more than seventy-five percent of export

GI M 84-10207

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[1]This memorandum covers six Central American countries: Belize, Costa Rica, El Salvador, Guatemala, Honduras and Panama.

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earnings. Indeed, a three-fold increase in coffee and sugar prices in the mid-1970s helped compensate for the 1973 OPEC oil price hike.

Agriculture has also provided the springboard for industrialization. Roughly 25 percent of regional economic activity was directly attributable to agriculture in 1983, and 75 percent of manufacturing output was directly related to agriculture as well. Food processing accounts for nearly half of manufacturing activity; textiles, wood, paper, and rubber production account for another quarter. The nascent manufacturing sector provided the most energetic component of regional economic growth during the 1960s-70s, as Central America's industrial base grew 7 percent annually.

Industrial performance was also greatly spurred by the formation of the Central American Common Market (CACM) in 1960. The CACM eliminated intraregional tariffs and trade restrictions and established a stiff common tariff on foreign manufactures. As a result, intraregional trade boomed and currently absorbs virtually all the region's manufactured exports. At the same time, however, these countries failed to develop products that would be competitive outside the protected CACM market.

As in many LDCs, rapid economic growth was financed in large measure by foreign borrowing. Wide variations exist, however; while Costa Rica's debt service burden is a major cause of its current foreign payments crisis, Guatemala has largely escaped debt-service problems.

Shaken by Change: 1979-1984

Regional economic growth fizzled in 1979 when a dramatic deterioration in external terms of trade coincided with sustained insurgent activity in Nicaragua, El Salvador and Guatemala. Spillover effects from the conflicts dampened foreign investor interest throughout the region. The Central American current account deficit rose to more than $2 billion in 1981 following a 50-percent drop in real coffee prices and a near tripling of energy bills over the previous two years. By the end of 1983, total import volumes were only about half of 1978 levels. Manufacturing withered, in part due to import declines but also because of inter-CACM problems. Mounting payments arrearages between member countries and exchange rate imbalances are continuing to prompt frequent trade and border closures. As a result, inter-CACM trade has fallen 35 percent in real terms since 1980. Today, we estimate that overall economic activity in the region is about 20 percent below its 1979 peak, a drop of more than one-third in per capita terms.

During 1984 the economies in the region have enjoyed a slight recovery, the first in four years. We project that these six country's economies will grow an average 1-2 percent. This improvement results from marginally better export markets, US aid

to finance raw materials imports and some progress against the insurgencies in El Salvador and Guatemala. Population growth of 3 percent annually, however, will mean a continued decline in per capita output.

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Panama: A Special Case

In contrast to some of its neighbors, Panama's prosperity is closely linked to the performance of its service industries, particularly finance and transportation. Nongovernmental services account for roughly 60 percent of its $4.2 billion GDP. Panama City has a thriving financial industry with a large number of foreign commercial banks. In fact, Panama has become the region's financial center, with billions of dollars flowing into its banking system from abroad. The two key stimulants to the development of Panama's large financial sector have been:

- Use of the US dollar as the local currency.
- Strict banking secrecy laws that make Panama an attractive haven for narcodollars.

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The transportation sector centers on the Panama Canal. Tolls for transiting the Canal earned Panama some $430 million last year--10 percent of total GDP. An oil pipeline built across the country in 1982 to transship Alaskan oil to the US east coast provides another 5 percent of GDP. Agriculture and mining, in contrast to the other economies in the region, account for a total of only 10 percent of GDP and manufacturing contributes another 10 percent.

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In 1983, the world recession and general decline in shipping helped to cut Panamanian real GDP by about 2 percent. Since the US economy has picked up this year, however, we believe that Panama has resumed slight positive growth.

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Energy Supply and Demand

Total energy consumption for this region has increased by 48 percent, rising from about 52 million barrels of oil equivalent in 1970 to about 76 million barrels of oil equivalent in 1981--the last year for which data on all fuel types are available. From 1970-1978 energy demand grew by an average of 4.5 percent per year. As a result of rising prices and deteriorating economic conditions, energy use first slowed and then declined slightly after 1978. According to United Nations statistics, during 1979-1980 total energy demand grew by an average of only 2.5 percent per year. In 1981 total energy demand for the region dropped by about 1 percent, with Belize, Guatemala and Panama recording about a 3 to 4 percent drop in total energy demand.

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Commercial Energy

Commercial energy as a percentage of total energy use averages about 45 percent for the region compared with an average of 40 percent in 1970. Costa Rica and Panama, two of the more developed countries, depend on commercial energy to satisfy about 70 percent of total energy demand. Guatemala, which has shown no trend toward urbanization, relies the least on commercial energy.

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Total commercial energy use increased about 73 percent between 1970 and 1981, according to United Nations statistics. The annual growth rate in commercial energy demand averaged about 6.4 percent during 1970-1979. In 1980, however, commercial energy demand grew by only 1 percent and in 1981 demand decreased by 2 percent. Despite this overall growth, annual commercial energy use per capita in 1981 ranged from about 1 barrel of oil equivalent in El Salvador and Guatemala to 5 barrels in Panama, extremely low when compared to per capita energy consumption of about 50 barrels of oil equivalent in the United States.

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Petroleum use has more than doubled since 1970 and accounts for more than 90 percent of total commercial energy consumption in most countries, including generation of about 40 percent of all the electricity produced in the region. The transportation and industrial sectors are the largest oil consumers. All of the countries except Guatemala are 100 percent dependent on imports. Proved oil reserves in Guatemala total less than 50 million barrels and production is a scant 5,000 b/d, representing about 20 percent of oil consumption.

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Electricity generated from non-petroleum sources has almost tripled since 1970 and is expected to continue to rise as this region tries to diversify its energy supplies. High annual rainfall and steep terrain provide Central America with a large resource base for hydroelectric development. Although accurate figures are difficult to obtain,

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potential hydro-power capacity for the region to be over 25,000 megawatts (MW), ranging from about 10,000MW in Guatemala to under 1,500MW in El Salvador. Hydroelectricity currently accounts for almost 60 percent of total electric power compared to 54 percent in 1970. Costa Rica is the largest consumer of hydro-power which satisfies an estimated 90 percent of total electricity demand.

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Most of the Central American countries also possess proven or potential geothermal resources. One study estimates the region has about 3,000MW of geothermal potential. High heat flow is commonly found in areas of the region's volcanoes and mountains. Geothermal development in El Salvador is most advanced and accounts for approximately 25 percent of total electricity demand. Domestic supply is expected to grow with increases in installed hydroelectric and geothermal capacity; however, it appears unlikely that oil-based electricity

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generation will be entirely replaced. According to one study, future growth rates, including petroleum-generated electricity, are estimated to range from a low of 7.1 percent in Costa Rica to a high of 10.0 percent in Guatemala. Although these estimates would seem to be high, they are lower than historical growth rates. Moreover, these projections envision large hydrolectric expansions in Costa Rica, Guatemala, and Panama and smaller ones in Nicaragua, Honduras and El Salvador.

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The use of **solid fuels** has not been significant in the energy balance of these countries to date. Coal reserves have been largely unexplored. Although significant deposits have not been found, small amounts of lignite appear throughout the region.

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Non-Commercial Energy

Non-commercial energy--relatively abundant and cost free--increased by about 35 percent between 1970 and 1981, and continues to be a major source of energy in the residential and commercial sectors.[2] Its share of the total energy mix, however, has fallen from an average of about 60 percent in 1970 to approximately 55 percent in 1981. According to one study, non-commercial energy demand will continue to grow at the rate of population growth through to the year 2000. Forest land and agricultural residue from the area's coffee, banana and sugar industries provide a vast biomass resource. The more urbanized countries such as Costa Rica and Panama rely less heavily on non-commercial energy to satisfy their energy needs. At the other extreme, according to a State Department estimate, about 90 percent of the rural population in El Salvador relies exclusively on wood. The residential sector in Guatemala is also primarily fueled by firewood and charcoal.

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Balance of Payments, Oil Imports, and the San Jose Accord

We estimate that in 1984 the region will incur a total trade deficit of $1.3 billion with exports of $4 billion and imports of $5.3 billion. Oil bills will probably amount to about $1 billion--accounting for about 15 percent of total commodity imports. Concessionary oil financing from Venezuela and Mexico--the two countries that supply the majority of oil to the region--will cut actual oil expenditures somewhat below this total.

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The Mexican-Venezuelan San Jose Accord, which includes all countries under consideration here except for Belize, has cushioned the impact of the 1979 oil price shock on nine Central

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[2]Non-commercial energy is defined as the use of wood, charcoal and vegetable residue.

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American and Caribbean countries. The accord grants loans--for a five-year term at 8 percent--covering 20 percent of the oil's price. Furthermore, should the beneficiary invest the money in long term economic development projects--especially in the energy sector or to promote regional economic integration--the terms of the loan can be extended to 20 years at 6 percent. Preference is also given to projects that incorporate a major portion of goods and services from Mexico and Venezuela.

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Mexico and Venezuela handle the financing details somewhat differently. Importers of Venezuelan oil pay 100 percent of their bill in dollars, of which 20 percent is deposited in the beneficiary country's account at the Central Bank of Venezuela. Half of the money is deposited in non-convertible bolivares, and half in dollars. Beneficiaries repay in whatever currency they draw down. Mexico, by contrast, requires cash for only 80 percent of the oil bill, and accepts repayment completely in pesos.

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In practice, the beneficiaries have not used their credits to finance energy projects. Since 1980,

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Mexico has received only three or four proposals to convert the credits into long term loans. All proposals have been returned to the beneficiaries for additional work and none have yet been approved.

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Outstanding Debt

A large external debt of approximately $12 billion continues to burden the Central American economies and debt service payments have become harder to meet because of declining export earnings. Costa Rica, Panama, and to a lesser extent Honduras are the most seriously affected, having debt service ratios exceeding 20 percent. The debt burden is less significant in El Salvador, Guatemala, and Belize where debt service ratios are less than 15 percent. Since none of these countries have been able to service their debts through expanded exports, they have had to cut back on imports. In the process, imports of capital goods and crucial production inputs have been reduced, thereby dimming the prospects for future growth.

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Domestic spending has been cut and taxes raised under both International Monetary Fund (IMF) and self-imposed austerity programs. The adjustments have had a high social cost and are often blamed for rising unemployment and declining living standards. With the exception of Belize, all of these countries have had an IMF program in the last two years. They are all, including Belize, at various stages of negotiating standby agreements with the IMF for 1985, but growing political opposition will hinder future economic adjustments.

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Demographic Projections

The six countries have a population of 22 million that is growing 3.1 percent annually. The more developed countries--Costa Rica and Panama--have the lowest population growth rates at 2.5 percent and the poorest country, Honduras, has the highest growth rate at 3.5 percent. Total population is expected to grow to nearly 35 million by 2000.

With the exception of Guatemala, the countries are expected to continue a long-run trend toward increased urbanization. The region's population is approximately 40 percent urbanized. The urban growth rate is 4.1 percent compared to only 2.3 percent for the rural population. Guatemala is the least urbanized and has shown no trend toward urbanization. The 33 percent urban population in Guatemala is unchanged from the 1960 level.

Energy Demand and Development

The transition from non-commercial energy to commercial energy is a natural progression as an economy develops. The use of commercial energy is needed to forestall deforestation and soil erosion. Moreover, the rural population may realize an increase in productivity as the time usually spent collecting wood and agricultural residue is made available for more economically productive applications.

Movement away from non-commercial fuels, development of more energy intensive industries, and the increase in the use of energy consuming durable goods like automobiles contribute to increased energy use during the development process. This partially explains the higher energy/GDP ratios common to LDCs when compared to developed countries. Consequently, it is quite likely that in a healthier economic environment, energy demand in LDCs may grow again at a rate faster than GDP.

As a result of rising energy use, oil demand in the region is expected to increase significantly. According to one study, it is expected to rise by between 3.6 and 5.4 percent per year and the region may require more than 200,000 barrels per day (b/d) in the year 2000--compared to the current 95,000 b/d. Due to the financial conditions prevailing in these countries and their external debt situation, we believe it would be difficult for these countries to finance energy imports at this level. Failure to import adequate amounts of oil could be one factor which might hinder future economic development.

Energy Strategy for Central America

To avoid increased reliance on imported oil, several steps could be taken to help these countries develop along more energy efficient lines:

- **Energy Planning.** Tracking and predicting energy demand for these countries has been a difficult if not an impossible task. During the past 10-13 years demand has often been erratic and incongruent with the rate of change in GDP or in the level of prices. Energy statistics from these countries have been unreliable, incomplete and sometimes nonexistent. Many of these countries are without a formal energy policy or a reliable system for retrieval and analysis of raw energy data. An attempt to develop a system of collecting accurate data on energy use in these countries could result in more efficient monitoring and planning of energy use.

- **Development of Indigenous Resources.** It is inevitable that these countries will continue to incur large financial burdens unless indigenous resources are found and developed. Assistance in exploration and development of indigenous resources within these countries is a necessary first step toward reducing import expenditures. To develop these supplies would require accurate resource assessments, including establishment of laws and conditions creating a favorable investment climate for the private sector.

Central America
Projected Petroleum Demand in the Year 2000

(million barrels)

	Case I[a]	Case II[b]
Guatemala	33.4	23.1
El Salvador	18.9	14.4
Honduras	10.6	7.1
Costa Rica	18.8	12.1
Panama[c]	34.0	23.3
Total	115.7	80.0

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these projections are based on 1977/78 oil prices and GDP growth rates of 5-6.7 percent.

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[a]Case I: Income elasticity = 1.35; > Price Elasticity = -.32
[b]Case II: Income elasticity = 1.00;
[c]Includes the area of the Panama Canal but excludes sales to ships using the canal.

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Central America: Estimated Energy Consumption

1981

(thousand barrels oil equivalent)

	Total Energy	Commercial Energy			Non-Commercial Energy
		All Fuels	Oil	Per Capita	
Belize	1020	447	447	2.7	573
Costa Rica	9988	6751	5424	2.9	3237
El Salvador	11061	5234	4340	1.1	5827
Guatemala	28958	8437	8239	1.2	20521
Honduras	12435	4567	4171	1.2	7868
Panama	12634	9031	8261	4.7	3603
Total for Region	76096	34467	30882	N/A	41629

NOTE: Data are based on UN Statistics. We are currently updating these figures.

NA = Not applicable

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Central America Economic Indicators[a]
1983

	GDP	Merchandise Trade Balance	Net Oil Import Bill	External Debt	Population (millions)[b]
Belize	176	-29	22	67	0.15
Costa Rica	3040	-132	150	3500	2.4
El Salvador	3730	-132	120	1000	5.2
Guatemala	8940	-100	180	1500	7.9
Honduras	2800	-82	128	2000	4.1
Panama	2180	-916	253	3500	2.0
Total	20866	-1391	853	11567	21.75

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[a]Monetary terms are in thousands of 1983 US dollars.
[b]Population figures are as of 1983.

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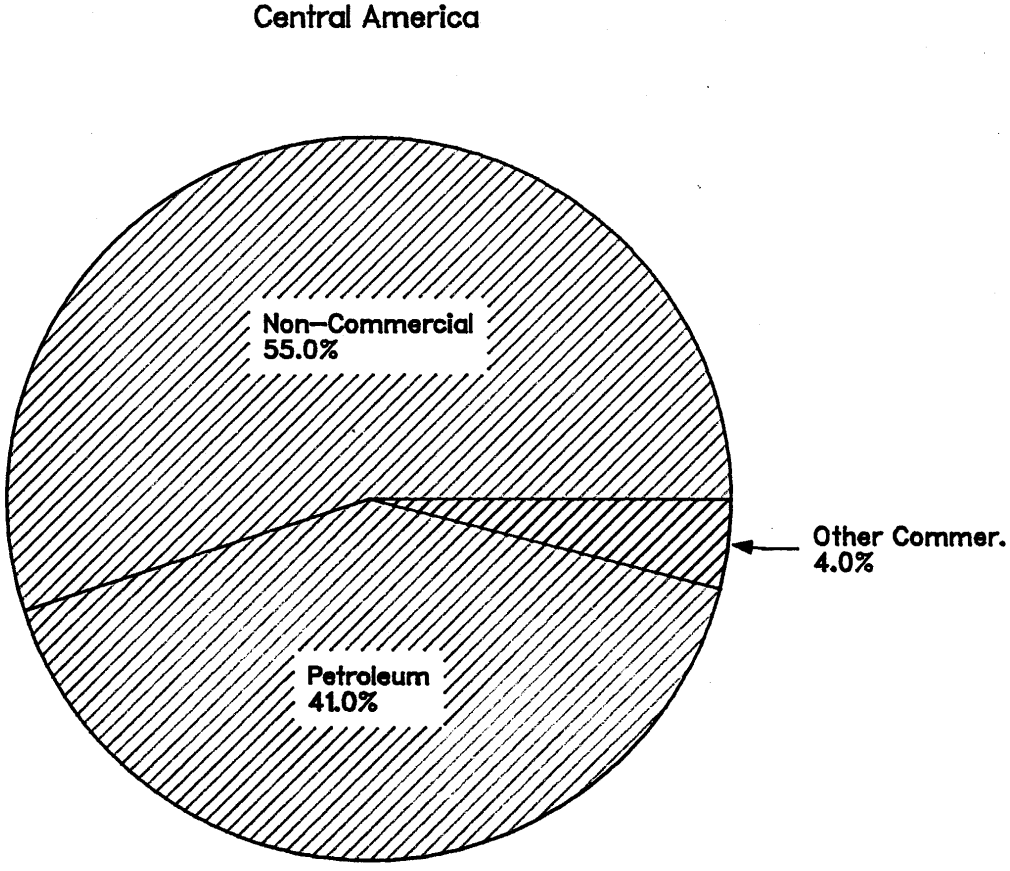
Percentage of Total Energy Use by Source



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