

gas distribution grid, due to be completed in March 1979, will anchor new industrial centers, with special emphasis on expanding coastal industrial complexes such as the giant Las Truchas steel plant on the Michoacan coast. The need to build ports for the export of the oil is being taken as the spark for fully diversified port-industrial complexes.

The industrial boom will increasingly shift the nation's energy perspective from oil to the atom. Precisely as the full extent of Mexico's oil potential has been revealed, López Portillo and his top ministers have stressed that a first priority for use of the oil wealth is to guarantee Mexico's advance to the energy perspective stretching beyond oil—nuclear fission and fusion.

Finally, the industrial boom will be long-term. López Portillo, on his Far East trip in October, summed up the tasks now being undertaken when he stated, "We must begin to construct the cities of the 21st century."

### Economic 'base line'

The "base line" economic picture for this takeoff is one of the most propitious in the Third World. Mexico starts with an extensive industrial capacity and trained work force. Its Gross Domestic Product, estimated at approximately \$75 billion in 1977, is already surging forward again after falling off in 1976. The preliminary target for real growth this year, set at 5 percent, has now been revised upward to 7 percent. The industrial sector is leading this recovery: the percentage increase in overall industrial production volume during the first three quarters of 1978 as against the same three quarters of 1977 is 10, 12 and 15 percent respectively. Oil and petrochemicals lead the way, as would be expected. The current forecast is for a 25 percent real volume increase this year. But such areas as iron and steel (8 percent), building and construction materials (8 percent), basic chemicals (7 percent) and motor vehicles (10 percent), all show strong growth and are surpassing initial forecasts.

The agricultural sector lags somewhat behind, but the government sees the solution in extending its industrial focus to the rural areas. It recently announced an ambitious program to both import more tractors and spur domestic tractor production to meet Mexico's estimated 100,000 tractor deficit. Large-scale projects developing new agro-industries across the country are in the advanced planning stage.

In the following summary, the *Executive Intelligence Review* presents a "progress report" on Mexican development in three key areas: nuclear energy, capital goods, and banking and credit. The unifying theme is that the government planners, with their private sector allies, are aggressively taking advantage of the short remaining period before the oil revenues expand to a flood, to prepare the framework and direction of subsequent economic development until the end of the century.

### From oil power to nuclear power

Mexico's official nuclear program calls for building 20 nuclear reactors by the year 2000. During the past year, the nation has carefully laid the groundwork to put this major nuclear energy program into gear.

On the domestic front, the Mexican Congress has concluded a year's debate with this week's approval of a comprehensive nuclear energy bill reorganizing the nation's nuclear program. Previously, a small but capable nuclear research and training institute, INEN, had stood in a loosely defined relationship to the pioneer Mexican commercial reactors being built by the Federal Electricity Commission at Laguna Verde on the Veracruz coast. The nation's enormous uranium reserves—10,000 tons of it proven with estimates of potential reserves ranging from 200,000 to 500,000 tons—had lain virtually untapped. The uranium for the Laguna Verde plants in fact was purchased in France and sent to the U.S. for enrichment!

The new law establishes a Nuclear Energy Commission to coordinate all aspects of the nuclear effort. Its three sub-branches include a government-controlled uranium mining and refining monopoly called Uramex, expansion of INEN as the core research and training facility, and a reactor construction program.

During the course of the debate, the pro-nuclear forces in the country were strengthened by the Aug. 24

## Pemex: Mexico's

Even now that news of Mexico's mammoth oil reserves has begun to hit the pages of the U.S. press, few people in this country are familiar with "Pemex" (pronounced "Peh-Mex"), short for "Petroleos Mexicanos", the Mexican national oil company. And yet Pemex is the single largest corporation in Latin America, with assets exceeding \$11 billion, sales this year worth \$5.4 billion, and a staff of nearly 100,000.

At the time Pemex was founded in 1934 by the government of nationalist president Lazaro Cardenas, all of Mexico's oil was exploited by British and U.S. oil companies, primarily Royal Dutch Shell's "El Aguila" and Standard Oil's "Huasteca Petroleum." Pemex, or Petromex as it was then called, accounted for only 1.75 percent of all oil extracted in Mexico.

However, the foreign oil companies' power was curtailed by the 1917 Constitution, framed at the conclusion of the Mexican Revolution, which proclaimed that all land, minerals and territorial waters belonged to the nation, and would be administered by the government for the benefit of the population.

Following the expropriation of all foreign oil holdings by President Lazaro Cardenas in March of

founding of the Mexican Fusion Energy Association, working in coordination with the New York-based Fusion Energy Foundation.

The bill represents a major setback for some Mexican government officials who were in open alliance with U.S. Energy Secretary James Schlesinger in attempting to restrain Mexico's nuclear development. An unprecedented series of attacks from press and congressional sources culminated in early November when INEN director Francisco Vizcaino Murray accused several government officials by name of sabotaging President López Portillo's nuclear strategy and delaying the completion of the Laguna Verde plant. The President has ordered the twin Veracruz reactors completed "at forced-march pace," Vizcaino reported.

Simultaneously the government has opened intense international negotiations for "oil for nuclear technology" deals. Mexico's nuclear future headed Foreign Minister Santiago Roel's agenda during his trip to France and Great Britain last July. In discussions of long-term deals with the British-Dutch-German nuclear consortium Urenco, Roel and Vizcaino Murray demanded for Mexico a status "not as a client" but "as a partner" in the consortium. Mexico has begun discussions with France and the Soviet Union concerning advanced training programs, while France offered Mexico access to the full seven years of preparatory studies going into France's

Super-Phoenix breeder reactor. The deals worked out at that time could very well be consolidated during French President Giscard's visit to Mexico next February.

Continuing the push, two nuclear collaboration deals were among the core of agreements worked out this week during the visit of King Juan Carlos of Spain to Mexico City.

The only major nuclear supplier country currently outside the Mexican negotiations is the United States, despite the fact that it is U.S. suppliers who won the major contracts for the Laguna Verde plants. Carter Administration "antiproliferation" strictures, which have delayed the return of Mexican uranium in the U.S. for enrichment, have incensed Mexico's leaders, who take pride in their international efforts for nuclear disarmament. Mexican congresswoman and economist Ifigenia Navarrete rose in the Chamber of Deputies near the conclusion of the nuclear law debate to castigate those foreign countries which, "just like the gods who were angered that Prometheus gave the gift of fire to mankind, now try to prevent the spread of nuclear technology, now open to everyone."

The stage is now set for beginning the immediate siting studies and actual construction for a vastly stepped-up program. To keep on the timetable of a minimum 20 reactors by the year 2000, Congressman Hugo Castro Aranda has estimated that 13 reactors must be completed by 1993. In eloquent testimony to the Congress the day the new nuclear bill passed, Castro Aranda declared:

"The construction of a reactor takes from eight to ten years. If we don't make the decision now to build those reactors and to have an ambitious nuclear program in Mexico, by 1985 the same thing will happen to us as has happened in other moments of our history: we will miss the opportunity for development."

### Capital goods: full speed ahead

To provide "effective use of rural manpower, employment opportunities for the growing labor force, and optimum levels of occupation for the economically active population, we must bridge the gap with the development of the steel and capital goods industries, which are the keystones of the process." With these words from his second State of the Union address, President José López Portillo underscored the role the capital goods industry will play in the development strategy his government has adopted.

To give an idea of the tremendous capital goods requirements of Mexico over the next years, the Director of Programs for Nafinsa (Mexico's national financing agency), Luis Almeida, has calculated that in the next decade Mexico's demand for capital goods will total \$45 billion dollars.

Definite steps to implement this strategy are already under way. On Nov. 15, the government's Program for the Development of the Capital Goods

## National Oil Company

1938, Pemex began to demonstrate just how the Constitution's mandate would be carried out. Despite the hostility fostered internationally by the foreign oil companies — who in addition to withdrawing all their technicians and trained personnel also organized international boycotts of Mexican oil — Pemex personnel rapidly assumed all aspects of oil production.

Since then Pemex has placed great emphasis on the training of a skilled labor force, working closely with the Mexican Oil Institute (Instituto Mexicano del Petroleo). Pemex now has one of the largest cadres of trained personnel in the Third World. As a result, Mexico is the *only* oil producer in the developing sector that has the ability to run its entire oil industry without the aid of foreign oil companies, and is looked up to for that accomplishment throughout the Third World. In fact, during the past few years Mexico has signed agreements with other Third world countries to provide them with technical assistance and training.

Today Pemex is 100 percent owned by the Mexican government. In accordance with Article 27 of the Mexican Constitution, no private or foreign company can exploit the country's oil or other mineral resources.