

industries to be developed include:

Steel: Huge coal deposits exist in the Guajira, can be transported by water or rail; very large Venezuelan deposits of iron ore can be brought by sea; output can be shipped to interior of country by river and rail.

Machinery: Machinery-making industry will utilize the steel to begin manufacture of other machines, including machine tools, power equipment, and machinery for new factories.

Chemicals: Both inorganic industrial chemicals and petrochemicals will be greatly expanded.

Nuclear Power: One or two nuclear plants, serving as foci for agro-industrial complexes ("nuplexes"), will provide some of the power required while serving as the base for very high-technology production and research.

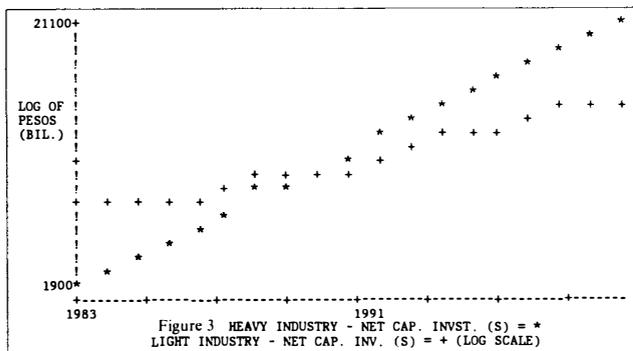
Satellite industries: The density of heavy industries will create a demand for a host of satellite industries of all descriptions, including vehicles, pipelines, urban and transportation infrastructure, and consumer goods for the population that will move into the area.

It is anticipated that steel production capacity by 2000 will be between 15 and 20 million tons (up from less than 250,000 tons in 1981), while heavy industry output will increase more than thirteenfold.

This growth will transform the structure of the economy. The share of metals (steel and non-ferrous) in the total economy will grow substantially (Figure 2), and will absorb, by 2000, more than twice the investment resources required by light industry (it now absorbs about one-tenth) (see Figure 3).

Energy and infrastructure

Coal reserves estimated to be the largest in Latin America will do for Colombia what oil has done for some of the OPEC nations (see box on the Cerrejón coal fields and Figure 4). Very substantial inland coal resources will also be developed for export and power.



Investment in light and heavy industry, 1982-2002: Investment in light industry and heavy industry, on a logarithmic scale, showing the relative reversal in priorities. At present, heavy industry receives almost no investment. In 2002, heavy industry investment will be about double that in light industry.

The world's largest coal mine

Colombia, with national coal reserves estimated at 11 billion metric tons, is on the verge of becoming one of the world's leading exporters of high-grade coal. Exploitation will soon begin of what is reported to be the world's largest coal mine, El Cerrejón, located on the northeast peninsula of Colombia known as La Guajira.

El Cerrejón, which contains proven reserves of more than 1.6 billion metric tons of low-ash, low-sulfur and high-BTU (11,800 BTUs per pound) coal, will cost some \$3 billion to exploit, including project infrastructure consisting, among other things, of a 90-mile diesel-electric railroad, a coal-loading port, employee living facilities, and an electric power distribution grid.

The mine is being developed jointly by the state mining agency Carbocol and the Exxon subsidiary Esso Inter-America Inc., the latter operating through its wholly-owned Colombian affiliate Intercor. Carbocol estimates that the mine and related projects will employ as many as 8,000 workers, while Exxon believes that eventually 30,000 people will be either working directly at the mine or servicing its employees.

First contract to Spain's Carboex

Although the mine will be undergoing exploitation in stages, the first substantial contract for delivery of 350,000 tons of coal by year's end has just been signed with the Spanish company Carboex. That coal will come from the central zone of El Cerrejón, which will begin production at the end of July. Another contract with Carboex, for delivery of 600,000 tons of coal per year for the next 10 years, goes into effect in 1986, when the main northern zone of the mine is scheduled to begin production. That zone is expected to produce 15 million tons of coal a year.

Coal will also be exported to the United States, Western Europe, Japan, Brazil, and other Latin American countries, and Carbocol hopes to be providing a full 10 percent of the 600 million tons of coal that will be exported worldwide by the year 2000. To meet that goal, Carbocol is financing feasibility studies and exploratory projects across Colombia, with at least 11 different zones believed to have major potential.