print is exported gives some indication of the importance to the Canadian economy of this industry, the success of which is facilitated by the existence of widespread harnessable water resources.

The mineral industry consumes another fifth of the country's total energy production and approximately 75 p.c. of the electric power used by this industry is used in the smelting and refining of metals. The mining of metals is carried on mainly in two physiographic regions of the country—the Western Cordillera and the Canadian Shield. The mountainous topography and relatively high precipitation of the Western Cordillera produce many tumultuous rivers capable of development as hydro-electric power sites. The Canadian Shield, an extensive Precambrian formation stretching in a wide sweep around Hudson Bay from the Mackenzie River basin to the eastern tip of Labrador, is characterized by large numbers of lakes connected by short river sections with numerous rapids and falls also suitable for development. Thus, the incidence of large water power resources in the regions where important metal deposits have been found has greatly facilitated development of these deposits. Recent examples are the nickel mining and refining complex at Thompson in Manitoba, which uses hydro power generated in the Kelsey plant on the Nelson River, and the iron ore mining operations in Labrador, which are supplied by the Twin Falls plant on the Unknown River. That the availability of abundant supplies of low-cost electric energy is paramount to the smelting industry is well illustrated by the existence in Canada of large aluminum smelters. These smelters, constructed in conjunction with huge hydro power plants, supply one quarter of the world's requirements of aluminum, although their raw material is imported; Canada has no known deposits of bauxite.

## Subsection 3.—Water Power Resources, Undeveloped and Developed

Table 3 presents a summary of developed water power in Canada and an estimate of undeveloped water power potential, based on records maintained by the Water Resources Branch of the Department of Northern Affairs and National Resources. Estimates of available power are shown for undeveloped sites only; for developed sites, the total generating capacity actually installed is indicated. It should be noted that the capacity installed at an existing hydro-electric development is frequently in excess of the continuous power available at the site. The relationship between installation and available power is explained on p. 647.

**3.—Water Power Resources, by Province, as at Jan. 1, 1965**

| Province or Territory | Undeveloped Water Power | | | Developed Water Power |
|---|---|---|---|---|
| | Available Continuous Power at 88 p.c. Efficiency | | | Installed Generating Capacity |
| | at Q95[1] | at Q50[2] | at Qm[3] | |
| | kw. | kw. | kw. | kw. |
| Newfoundland | 1,240,000 | 3,635,000 | 4,871,000 | 453,000 |
| Prince Edward Island | — | 1,000 | 2,000 | — |
| Nova Scotia | 21,000 | 112,000 | 165,000 | 143,000 |
| New Brunswick | 62,000 | 222,000 | 499,000 | 229,000 |
| Quebec | 9,000,000 | 27,200,000 | 34,200,000 | 9,553,000 |
| Ontario | 493,000 | 1,148,000 | 1,747,000 | 5,937,000 |
| Manitoba | 2,990,000 | 5,583,000 | 5,997,000 | 747,000 |
| Saskatchewan | 387,000 | 812,000 | 1,089,000 | 320,000 |
| Alberta | 806,000 | 2,289,000 | 3,604,000 | 291,000 |
| British Columbia | 6,039,000 | 17,435,000 | 32,442,000 | 2,613,000 |
| Yukon Territory | 841,000 | 3,932,000 | 6,625,000 | 28,000 |
| Northwest Territories | 525,000 | 1,153,000 | 1,826,000 | 17,000 |
| **Canada** | **22,404,000** | **63,523,000** | **93,067,000** | **20,331,000** |

[1] Power equivalent of flow available 95 p.c. of the time. [2] Power equivalent of flow available 50 p.c. of the time. [3] Power equivalent of arithmetical mean flow.