

3.10 NORWAY

Norway has a population of 4.2 million and GDP of \$76,000 million U.S. (1986). It invests approximately 1.8% of its GDP on R&D. ● ●

Norway has a relatively large resource-based industrial structure including such sectors as offshore petroleum, mining, ocean transport, shipbuilding, steel production and fish processing. These sectors are the basis for exports which account for 36% of GDP.

TECHNOLOGY TRENDS

The Government has chosen the following eight priority areas (two-thirds of total R&D expenditure falls within these priority areas):

- A) Information technology
- B) Biotechnology
- C) Aquaculture
- D) Material technology
- E) Oil and gas technology
- F) Organization, management and administration
- G) Traditional and cultural dissemination
- H) Health, environment and living conditions

A re-evaluation of the R&D system is presently taking place in Norway. There is a general feeling that R&D expenditures have not given the expected results. Too many government agencies have been giving out funds and there has not been enough coordination of these funds. It is expected that in future more R&D funds will be given to industry and less to research institutions directly.

Thus industry will have more influence on how and where research funds will be used. In an effort to improve internationalization of Norwegian industry, the government will also emphasize marketing, or commercialization, of research development abroad.

TECHNOLOGY STRENGTHS

Key technological strengths in Norway are in the following areas:

- power generation - engineering, construction, production and installation of power generation stations, units and equipment (hydro power turbines, generators, transformers, cables, switchgear products) including underground installations, electrical transmission and distribution systems. Firms: EB, Kvaerner, Norconsult
- metals and electro-chemicals - ferro-silicon, silicon metal, carbides, magnesium, aluminium, zinc, metal, iron and steel products. Sale of know-how, engineering expertise and advanced processing equipment to electro-metallurgical industry. Firms: Elkem, Norsk Hydro
- chemicals - fertilizers, explosives, petrochemicals (ethylene, propylene, vinyl chloride monomer and PVC), paints and synthetic resins, edible fats and their derivatives, wood and fine chemicals, pharmaceuticals, diagnostic agents such as X-ray contract media. Firms: Norsk Hydro, Dyno Industrier, Jotun, Nycomed
- pulp, paper and board - newsprint, magazine paper, kraft paper, packaging grades, wood-free printing and writing qualities, board, tissue, sulphite paper and greaseproof, increased use of re-cycled paper