**Appendix II: Types of Efficiency Gains Generally Considered**

Efficiency gains that are assessed pursuant to section 96 fall into two broad classes: production efficiencies and dynamic efficiencies. Production efficiencies result from real long run savings in resources which permit firms to produce more output or better quality output from the same amount of input. These efficiencies are generally the focus of the evaluation, because they can be quantifiably measured, objectively ascertained, and supported by engineering, accounting or other data.

Production efficiencies include:

> (i) product-level, plant-level and multi-plant level operating and fixed-cost efficiencies;
>
> (ii) savings associated with integrating new activities within the firm; and,
>
> (iii) savings attributable to the transfer of superior production techniques and know-how from one of the merging parties to the other.

Product-level efficiencies that are most commonly recognized are those that arise when a firm generates "economies of scale" by reducing the long run average unit cost of a product through increased volume production. Economies of scale can also arise at the plant level as plants are expanded toward their optimal size. In addition, at higher rates of output, mechanization of specific production functions previously carried out manually can give rise to scale related resource savings. Economies of scope can be generated at the plant level when the cost of producing more than one product at a given level of output is reduced by producing them together rather than separately. These efficiencies are particularly common in service industries.

Other efficiencies that can arise at the plant-level include savings that flow from specialization, the elimination of duplication, reduced downtime, a smaller base of spare parts, smaller inventory requirements and the avoidance of capital expenditures that would otherwise have been required. Multi-plant level savings can arise from plant specialization, the rationalization of various administrative and management functions, (e.g., sales, marketing, accounting, purchasing, finance, production) and the rationalization of R&D activities. In addition, mergers can bring about plant and multi-plant efficiencies in relation to distribution, advertising and capital raising.

Production-related efficiencies can also result from integrating activities within the merged entity that were previously performed by third parties. Attainment of these gains generally involves a reduction in transaction costs associated with matters such as contracting for inputs, distribution and services.

In addition to the foregoing, it is recognized that mergers can give rise to legitimate production-related savings attributable to the transfer of superior production techniques and know-how from one of the merging parties to the other. However, claims that a

merger is likely to give rise to efficiencies by reason of "superior management" are generally difficult to establish objectively. Moreover, it is generally difficult to demonstrate that particular savings are specifically attributable to management performance. Similarly, it is typically hard to establish that the efficiencies would not likely be sought and attained through alternative means if the merger did not proceed.

The second class of efficiencies considered in the section 96 assessment, dynamic efficiencies, include gains attained through the optimal introduction of new products, the development of more efficient productive processes, and the improvement of product quality and service. It is recognized that the attainment of dynamic efficiencies is crucial to both the general evolution of competition and the international competitiveness of Canadian industries. However, claims that a merger will lead to dynamic efficiencies are ordinarily extremely difficult to measure. Accordingly, the weight given to claims regarding such efficiencies will generally be qualitative in nature.