

**Towards the Development of an Optimal Long-Term Structure and Policy for the  
Development of Trinidad and Tobago's Petrochemical Industry  
Part 11. The Olefin-based Complex**

*H.I. Furlonge & A. Young Hoon*

**Abstract**

By the year 2000, Trinidad and Tobago's natural gas production would be sufficient to support a 500,000 t y ethylene plant. In this paper, the problem of selecting an initial optimal structure and policy for development of an olefin-based complex is addressed. The mathematical model used is formulated to capture the dynamic nature of the petrochemical market. The planning time horizon extends until 2015, during which economic parameters were allowed to vary. Uncertainty in the estimation of these parameters is taken into account. The study recognises that planning on this scale must satisfy various interest groups which may have conflicting goals. As a result, a multiobjective analysis was performed. It was found that the optimal policy for an olefin-based complex involves the immediate product of a blend of basic, intermediate and end-products. Based on the range of feed compositions considered, the ethylene plant should produce the maximum amount of propylene possible.