ABSTRACT

The main objective of this study is to understand the structure of industrial demand for energy in Thailand, with emphasis on the substitution effect among energy products and between aggregate energy and the other inputs of production. This knowledge is vital for energy pricing policies and demand management.

The econometric method is employed for this study. The study focuses on five sectors: agriculture, manufacturing, transportation, electricity and water supply, and services and others. Demand for inputs is constructed from the translog cost function, with an assumption of homothetic separability between energy products and the other inputs of production. The cost share equations are estimated for the period 1970-1984 for each sector by iterative Zellner's technique. Some of the energy data are missing, and estimated values are used instead.

The results indicate that the demand for energy products is price responsive and that pricing policy should be effective for energy demand management. Elasticities vary

across sectors. Interfuel substitution exists and is the dominant feature. Diesel-gasoline, fuel oil-electricity and gasoline-LPG are strongly substitutable.

The Full Static Equilibrium (FSE) and the Partial Static Equilibrium (PSE) models are specified for the aggregate input model. The FSE model shows that inputs are price responsive. The substitution effect is strong for capital-energy and capital-labor. The substitution possibility between energy and labor is apparent, in the manufacturing sector. The PSE model confirms that energy demand further responds well to prices. This model indicates that in the longrun, capital substitutes for all inputs. This is consistent with the FSE model. Both models confirm that agriculture cannot adjust well to input price changes. Transportation and manufacturing do adapt fairly well.