

AGRICULTURAL RESIDUAL BIOMASS SUPPLY ANALYSIS FOR PRODUCING ALTERNATIVE ENERGY GENERATION

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ABSTRACT

Purpose: This research highlighted the importance of utilizing agricultural waste efficiently. Agricultural waste is one of the abundant resources which could be used to produce massive energy, however, they are not fully utilized in producing electricity, heat, or other form of energy. One of the most important reasons is the unavailable database of agricultural waste source and general market price.

Design/methodology/approach: The database of ten potential agricultural wastes in Thailand were systematically collected in term of location and local price. Three maximum supply sources of each agriculture residue with total of 30 locations were proposed as one of the outcomes. After obtaining residue locations, the analysis of collection center was conducted based on waste amount, distance and price.

Findings: There were 30 points which are considered suitable for being agriculture waste collection center. For example, the center of rubber waste collection point is at Chaiya District, Surat Thani. The suitable consolidate cost of each waste is also proposed. Rubber waste is collected at 2,921 baht per ton including transportation cost to collecting point. However, the cost is subject to change depending on the amount of agriculture waste produced each year.

Originality/value: At present, there has been no collection of information on the production of agricultural residues and residues that have the potential to produce clear alternative energy. This includes the analysis of the cost for collecting and transporting in a way that is suitable for distribution to the point of alternative energy production, such as Inter Far East Energy Corporation Public Company Limited or Bua Sommai Biomass Company Limited, etc.

Keywords: Agricultural Residual, Center of Gravity Method, Load – Distance Technique, Cost Analysis