Abstract No: MP-21

Current situation in the consumption of biomass energy for industrial boilers; Kalutara district

W. D. S. R. Leelarathna and W. A. R. T. W. Bandara*

Department of zoology and Environmental Management, Faculty of Science,
University of Kelaniya, Sri Lanka
*rasanjali.sanduni@gmail.com

Biomass fuel has shared a prominent place in the Sri Lankan industrial primary energy supply. Many industries including agricultural, manufacturing, and commercial sectors use biomass to fulfill their energy requirements. This study was carried out to collect information on biomass type and fuel wood species that are used in industries and to identify, reasons for consuming fuel wood species, limitation of using form of fuel wood in industries located in Kalutara district. An interviewer based survey was carried out in fifteen industries including tea, rubber, food and beverage, textile, wood product and paper product industries. According to the industrial survey results, 66.67% of respondent industries use only biomass boilers, 20% use biomass boilers and furnace oil boilers and, 13.33% use both biomass and diesel. Respondent industries in Kalutara district, use fire woods, saw dust, branches and roots as biomass type in their biomass boilers. Among them 73.33% use only the fire wood.20% of respondents use only the saw dust and 6.67% industries use both saw dust and fire wood. 100% of respondent industries in their biomass boilers use mainly Rubber wood. Other than that mix fuel woods such as Albezia (*Albizia lebbeck*), Mango (*Mangifera indica*), Ginikuru (*Alstonia macrophylla*), Gliricedia (*Gliricidia sepium*) and other minor species such as Kasa Ghas (*Caurina equisetifolia),* Gal Goraka *(Clusia rosea),* Ipil Ipil *(Leucena leucosephala)* from the jungle used as fuel wood. Reasons for consuming fuel woods for their boilers are low cost, high energy capacity and also to maintain the high quality of their output. Based on the survey the respondent industries also experience some disadvantages of using fuel woods. They can be identified as high amount of ash production and low availability of woods in some periods of the year. 100% of respondent industries daily buy fuel wood for their factories from fuel wood suppliers and the saw mills. Size and moisture content are the only factors they consider when they purchase fuel woods. All the respondents use mixture of fuel wood species. Because of that fuel becomes a heterogeneous mixture which leads to low efficiency.

Key words: biomass boilers, fuel woods