

Methodological approach to assess forest biomass potential for municipal bioenergy

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The paper reviews methodological specifics of forest biomass potential assessment for its application in municipal bioenergy. The author describes a principal arrangement of forest energy biomass development at various stages of stand production and timber processing including live woods and stands affected by various adverse factors, timber processing wastes on the basis of research literature analysis. Specifics of bioenergy raw material production in various loggings as well as timber raw material processing for the stages in question are reviewed.

For bioenergy several levels of forest biomass assessment are under review: 1) Natural (available, total) forest biomass potential resource produced in all loggings and timber processing with complete utilization of estimated allowable cut, 2) actual (real, industrial technical) same in actual timber production volumes, 3) Economically accessible timber biomass resource relating its volumes to market application opportunity for energy production.

Methodological assessment of forest energy biomass potential addresses some subsequent targets: 1). Collection of initial data on annual timber harvests and timber processing production (forest paper products), 2). Estimation of data on forest biomass and timber processing waste biomass, 3). Estimation of its combustion energy indicators.

Performance requirements for every assessment step are shaped, initial data sources for calculations are presented as well as principal approaches (mainly due to application of coefficients of various biomass fraction and timber processing production) to define energy biomass volumes.

At final stage timber biomass combustion energy indicators are assessed through energy biomass volume conversion into energy indicators for example in reference fuel tons (r. f. t.).