

PRODUCTION OF BIOMASS FOR ENERGY FROM SUSTAINABLE FORESTRY SYSTEMS: CANADA AND EUROPE

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Forest ecosystems are the world's largest accessible source of biomass. Under varying levels of management intensity, much of this biomass is used for conventional forest products such as lumber, pulp, and panels. Throughout most of the developing world, forest biomass is also harvested for energy, and for cooking, heat, and other daily needs. Increasingly in the western industrialized world also, interest is focused on the forest as a feedstock for bioenergy, a sustainable, carbon-neutral alternative to fossil energy. Forest biomass for energy may come from harvesting residues, from silvicultural treatments or from utilization of otherwise unmerchantable species or assortments. To be truly sustainable, forest systems harvesting biomass for energy must consider nutrient cycling, wood ash recycling, carbon sequestration, stand productivity, and soil and water conservation, as well as cost-efficient forest operations. Social and cultural issues must also be taken into account. In many jurisdictions, policy and tax measures can help to make this form of renewable energy a viable alternative. Using biomass for energy from existing forestry systems is an alternative to growing short-rotation woody crops specifically for energy purposes. It is particularly suited to regions such as northern Europe and Canada, where forest resources are abundant. Natural phenomena which may be associated with climate change may provide significantly enhanced availability of such forest biomass, but sustainability of supply must always be considered.

KEY WORDS: forestry systems, forest biomass, sustainability, environment, socio-economics

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