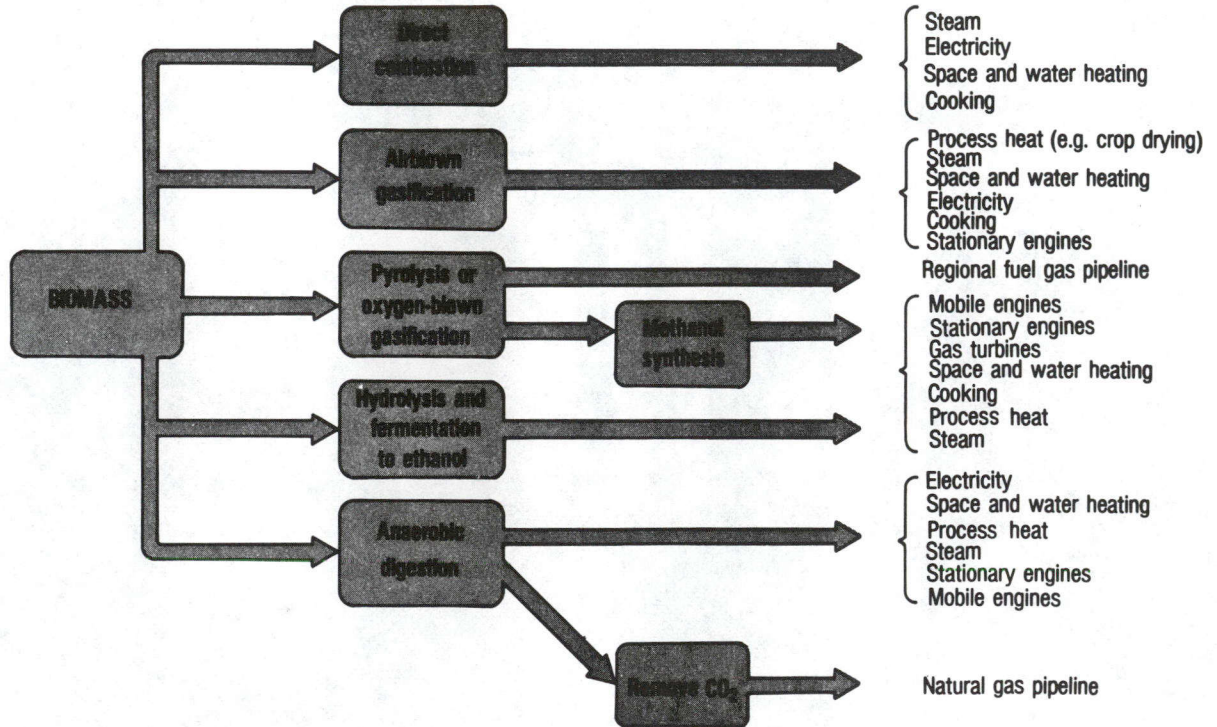


Figure 6-2: FUEL USES FOR BIOMASS



Source: United States, Office of Technology Assessment, 1980a, p. 24.

There are a number of advantages which accrue from exploiting biomass as a source of energy.

- It is an abundant resource.
- It is available in many different forms and can be adapted to a variety of uses.
- Biomass is continuously renewable provided adequate resource management practices are carried out.
- Its combustion can not only provide energy but it can also help reduce the waste disposal and/or pollution problems associated with the forest, pulp and paper, and food processing industries, and with the municipal and agricultural sectors.
- The combustion of recently living organic matter does not significantly alter the concentration of carbon dioxide in the atmosphere as does the combustion of fossil fuels. (This presumes proper management of the biomass resource.)
- Biomass is a widely dispersed resource which can often be well matched to regional requirements and small decentralized sites for energy production.
- Biomass can replace high-sulphur-content fossil fuels and, in so doing, can reduce sulphur dioxide emissions, one of the prime causes of acid rain.

There are, however, a number of difficulties associated with using biomass for energy production on a large scale.

- The harvesting of vast amounts of biomass could radically modify natural ecosystems and irreversibly damage them or, even worse, completely displace them. (This impact could be reduced with proper resource management; however, if very large amounts of energy were to be derived from biomass, the amount of growing space required would be correspondingly extensive.)
- There is a great deal of controversy over whether large tracts of land should be used for food or energy production.
- The resource is often remote in location.
- It typically has a low energy density (contains a low amount of energy per unit weight).
- It is often difficult to ship and store because of its wide variety of forms, which means that much of this resource is not economically exploitable with prevailing energy costs.
- Biomass usually has a high moisture content, meaning it must be dried before burning because energy con-