Center for Biological Diversity

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Technical Advisory - Ecological and Community Problems with Biomass-To Energy

Following the highly publicized 2000 fire season there has been a high level of focus on potential uses of trees logged during fuels reduction efforts. Biomass-to-energy facilities have emerged as one of most common proposals for addressing the supposed abundance of available biomass. The potential ecological damage caused by widespread biomass logging has created great concern within the conservation community and rural communities.

Biomass-to-energy is no panacea to problems we face in our national forests and rural communities, though it appears an easy solution to a perceived over-abundance of trees. Potential problems include:

- Ecologically destructive logging practices
- Economic harm to appropriate scale, community based business
- Decreased long-term stability of rural communities.

The economics of biomass-to-energy require both an unsustainable and ecologically damaging approach to fuels reduction. Common specifications obtained from extensive interviews with two biomass proponents in southern New Mexico[1] illustrate the questionable nature of biomass-to-energy facilities. In both cases the proposed facilities cases the production capability of the proposed biomass plants is five megawatts each[2], requiring 600 tons of biomass per day to fuel the facility[3].

Fuels reduction prescriptions on national forests surrounding the proposed facilities are projected to produce five to ten tons of biomass per acre. Additional proposals call for removal of up to ninety percent of all trees (many feel removing ten tons per acre or more are unnecessarily aggressive treatments). Using these general prescriptions translates into thinning of sixty to one hundred twenty acres per day or twenty two thousand to forty three thousand acres per year to fuel each biomass facility. Not every acre of a forest needs thinning or even can be thinned so the actual area logged will be much greater than these examples. The supply area for each facility is limited to approximately a fifty-mile radius because of the high costs of handing and hauling the biomass.

Clearly, logging tens of thousands of acres per year from a limited area to fuel a single small biomass facility is an industrial endeavor. There will be strong economic pressure to operate year-round and at the highest production level possible because of the large amount of capital necessary to build even a small biomass facility. One great risk will be the pressure on the Forest Service to offer larger trees to increase the economic viability of biomass plants, causing great damage to wildlife and watersheds.

An additional problem associated with the need for economic efficiency will be the pressure to continue ongoing, ecologically damaging contracting methods on public lands. Historically this large-scale, industrial approach to forest management has limited access to forest products and contracts to corporate interests. This in turn limits the viability of small community-based businesses that could effectively complete fuels reduction projects in a more ecologically sound manner.

It would be fair to say that an industrial approach to fuels reduction and community protection can actually hinder rural people's long-term access to forest jobs. In addition to the inaccessability caused by large contracts, logging large trees and large tracts of land require expensive specialized equipment that is financially out of reach of most that live in rural communities.

An additional concern is the similarity to past logging practices that cause ecological damage and keep rural communities in the "boom – bust" cycles they have experienced in the past. Several rural communities in the West have recognized that this vicious cycle threatens their vitality and stability. In places like Catron County, NM, community groups such as the Catron County Citizens Group have opposed biomass-to energy proposals. Various other communities around the SW have opposed any large-scale industrial approach to fuel reduction, recognizing the threat to real community-based forest businesses. Preferences in many of these communities are diversified businesses that are viable over the long-term rather than a short-term "quick fix" that biomass proposals offer.

There are appropriate uses for biomass-to-energy technology. Micro-scale facilities that are appropriately sized not to cause ecological damage or facilities that utilize true agricultural waste may be beneficial in some cases. These concepts can fit into ecologically sound, long-range plans for rural communities.

Community-based approaches to forest management have a long history in the Southwest as well as other parts of the country. Participants in these local efforts (including conservation groups) are confident that a community-based approach can effectively and efficiently implement fuels reduction strategies. This approach will provide real community protection from fire and will also create long-term, ecologically appropriate jobs in rural communities.

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[1] Forest Energy Corporation – Show Low, AZ and Southwest Resource Consultants – Las Cruces, NM.
[2] One megawatt is considered the absolute minimum size for an economically viable facility. Each megawatt of generating capacity costs $1million.
[3] Each megawatt of generating power requires a minimum of 120 tons of biomass per day.