

5.2 Rathbun Lake Watershed

If Phase 2 were to be successful, it could lead to commercial switchgrass operations, which could require the dedication of up to 200 square kilometers (50,000 acres) of CRP acreage to switchgrass production. DOE considers this to be a reasonably foreseeable potential future action that could result from the Proposed Action, although DOE has no plans to support possible future commercial agricultural operations. In contrast to the cumulative impacts at the OGS plant, DOE believes that the cumulative impacts that could occur in the Rathbun Lake Watershed area under a commercial scenario would be both quantitatively and qualitatively different from those associated with the agricultural activities under the Proposed Action. On the basis of the impacts described in Section 4.0, most if not all of the cumulative impacts that would result in the Rathbun Lake Watershed under a commercial scenario would be beneficial. It is not possible to quantify the cumulative impacts at this time, but qualitatively they would include, but would not necessarily be limited to, (1) decreased chemical runoff and soil erosion into Rathbun Lake, with a concomitant improvement in regional water quality, (2) enhanced habitat for bird species of management concern, (3) an economic and employment stimulus for the region, (4) increased soil sequestration of harmful greenhouse gases, and (5) possibly the stabilization and preservation of archaeological and historic sites.

The SHPO's comments and recommendations (see Appendix B) implicitly recognize the potential for cumulative impacts from commercial switchgrass agricultural operations when the Office recommends a programmatic agreement between SHPO and other agencies that would be involved with future switchgrass undertakings. DOE concurs in principle with the potential value of such an agreement but feels that it would be most appropriate for USDA and SHPO to be the signatories, because DOE has no plans to be involved in future commercial agricultural operations, whereas the CRP would be involved with such operations.

6.0 SHORT-TERM USES AND COMMITMENT OF RESOURCES

As identified in Section 1.1, NEPA requires Federal agencies to (1) describe the relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity, and (2) characterize any irreversible and irretrievable commitments of resources that would be involved should a proposed action be implemented.

The Proposed Action that is the subject of this EA would commit less than 6,200 square meters (1.5 acres) of previously disturbed OGS site property to the potential annual production of 35 MW of electrical energy while concurrently replacing 5 percent of the coal burned at OGS with switchgrass, a renewable bioenergy crop. This commitment could serve to demonstrate the economic viability and pollution reduction benefits of the use of a biomass feedstock to co-fire coal-burning plants. Quantitatively, these benefits would not be significant on a national or global scale, but, if found to be viable and sustainable, they could encourage more widespread use of biomass energy crops.

The Proposed Action would result in the commitment of approximately 180,000 tonnes (200,000 tons) of switchgrass and small quantities of steel, lumber, concrete, and other construction materials and machines. Use of the switchgrass is a commitment of resources in that the crop, or a stored supply, would be harvested and burned. However, in contrast to coal, the switchgrass is a renewable resource. Therefore, the commitment of this resource is not irreversible.

Upon decommissioning of the proposed new facilities, it would be possible to recycle or reuse some of the committed construction materials. Any remaining materials that could not be recycled or reused would be disposed of in a landfill, making their use an irreversible commitment. The fuel, oil, and maintenance costs committed to growing, harvesting, storing, transporting, processing, and co-firing the

switchgrass would be irreversibly committed. The conversion of some land from row crops or pasture to switchgrass production under a commercial scenario would be a reversible commitment of these resources.

7.0 REFERENCES

- Allender Butzke Engineers Inc., 2002. *Geotechnical Exploration: Switchgrass Storage and Process Buildings*, Alliant Energy Plant, Chillicothe, Iowa, PN 021288, prepared for Alliant Energy, June 7, 2002.
- Alliant Energy, 2002. *Environmental Permitting Plan for the Chariton Valley Biomass Project*, appendix, May 2002.
- Alliant Energy et al., 2002. *Chariton Valley Biomass Project Design Package*, July 2002, available online at <<http://www.cvr.cd.org/deliverables/Design%20Package%20Part%201.pdf>>.
- Antares Group, 2002a. *Chariton Valley Biomass Project Draft Fuel Supply Plan*, September 2002, available online at <<http://www.cvr.cd.org/deliverables/Draft%20Fuel%20Supply.pdf>>.
- Antares Group 2002b. *Environmental Permits Report*, June 2002, available online at <<http://www.cvr.cd.org/deliverables/Environmental%20Permits%20Report.pdf>>.
- ASTM (American Society for Testing and Materials), 2001. *Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete*, ASTM C618-01, February 2001.
- BCCE (Bradford Conrad Crow Engineering Co.), 2003a. Personal communication; January 21, 2003, electronic mail (e-mail) message from J. Beck, U.S. Department of Energy, to T. Anderson, Battelle Memorial Institute, forwarding verification of square footage data provided by Bradford Conrad Crow Engineering Co.
- BCCE (Bradford Conrad Crow Engineering Co.), 2003b. Personal communication; February 19, 2003, electronic mail (e-mail) message from S. Conrad, BCCE, to W. Fallon, Battelle Memorial Institute. Figure 5 derived from BCCE Drawing 732-1001 Revision G (Site Plan).
- BCCE (Bradford Conrad Crow Engineering Co.), 2003c. Personal communication; February 19, 2003, electronic mail (e-mail) message from S. Conrad, BCCE, to W. Fallon, Battelle Memorial Institute. Figure 6 derived from BCCE Drawings 732-3005 Revision D and 732-3006 Revision C (Building Elevations).
- BCCE (Bradford Conrad Crow Engineering Co.), 2003d. Personal communication; February 19, 2003, electronic mail (e-mail) message from S. Conrad, BCCE, to W. Fallon, Battelle Memorial Institute. Figure 7 derived from BCCE Drawing 732-3001 Revision E (Building Plans).
- Burras, L., and J. McLaughlin, 2002. *Soil Organic Carbon in Fields of Switchgrass and Row Crops As Well As Woodlots and Pastures across the Chariton Valley, Iowa*, Iowa State University, final report, January, available online at <<http://www.cvr.cd.org/ResearchPapers/2002final-report/Burras%20SOC%20final%20report.pdf>>.
- CAST (Council for Agricultural Science and Technology), 1998. *Workshop on Carbon Sequestration in Soils*, co-sponsored by the Council for Agricultural Science and Technology, Pacific Northwest