8. IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF RESOURCES

For the construction and operation of the proposed Kemper County IGCC Project and connected facilities, some of the resource commitments would be irreversible and irretrievable; that is:

- Irreversible when primary or secondary impacts from use would limit future use options. Irreversible commitment applies primarily to nonrenewable resources, such as minerals or cultural resources, and to those resources that are renewable only over long time spans, such as soil productivity.
- Irretrievable when use or consumption would be neither renewable nor recoverable for use by future generations. Irretrievable commitment applies to the loss of production, harvest, or natural resources.

Resources that would be irreversibly or irretrievably used during construction of the power plant, lignite mine, and linear facilities (pipelines and electric transmission lines) would include land and raw materials. The land areas needed for the power plant and linear facilities corridors would be cleared, graded, and filled as needed to suit the facilities' construction. Although arguably the land areas and corridors and their associated resources could potentially be reclaimed at some point in the future, it is unlikely that they would be restored to original conditions and functionality. Therefore, these land commitments would be considered irreversible. Land impacted by surface lignite mining would be reclaimed after completing the mining, and, thus, would not be considered an irreversible commitment of resources, although the loss of productive use for other purposes (e.g., silviculture) during mining operations would be irretrievable. Raw materials needed for construction would include crushed stone, sand, concrete, lumber, water, diesel fuel, gasoline, and steel, for example. Construction would consume these materials, which would constitute an irretrievable commitment.

Resources that would be irreversibly or irretrievably used or lost during the demonstration would include lignite, water, natural gas (used during startup and fired in the CTs and duct burners during periods when the gasifiers were not operating), process chemicals, paints, degreasers, and lubricants. Based on full-load operations (see Table 2.5-1), the IGCC power plant would consume an estimated 19 million tons of lignite during the 4.5-year demonstration period (172 million tons over a 40-year project life, assuming successful demonstration). The lignite in deeper seams left in place (not mined due to economic considerations) would likely never be recovered and would, therefore, be considered irretrievably lost. Approximately 10 to 11 billion gallons of water (mostly reclaimed effluent) would be required for plant operations during demonstration (90 to 100 billion gallons over 40-year life). None of these resources is in short supply relative to the size and location of the proposed facilities. The large quantities of water used to operate the IGCC power plant would almost all be evaporated rather than discharged back to surface or ground water and, thus, would be considered irretrievably consumed on a local basis.

The construction and operation of the proposed facilities would require the irreversible commitments of human resources that would not be available for other activities during the period of their commitment, but these commitments would not be irretrievable.

Finally, the implementation of the proposed action would require the commitment of financial resources by Mississippi Power, NACC, their investors and lenders, and DOE for the construction, demonstration, and operation of the Kemper County IGCC Project. However, these commitments are consistent with the purposes of and needs for the proposed action as described in Chapter 1.

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