

## RECENT PROJECT MILESTONES:

- Obtained IDNR air permit for commercial co-firing
- Reached agreement on fuel supply contract
- Co-fired fly ash meet requirements for use in concrete
- Now eligible for Section 45 Tax Credit

## PROJECT GOALS:

- Co-fire up to 200,000 tons of switchgrass annually at Ottumwa Generating Station (OGS)
- Demonstrate technical and commercial feasibility of producing power from switchgrass
- Develop a new business opportunity for the area farmers and the utility
- Improve air emissions, soil conditions at the farm, and the local water quality

The Project has focused on improving harvesting because:

- Harvesting and handling costs are the largest component of the total production cost
- Harvesting using traditional methods is difficult to perform on rough terrain



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## DEVELOPING FEEDSTOCK PREPARATION AND HANDLING SYSTEMS FOR EMERGING BIOMASS MARKETS

### COST-SHARED BY:

UNITED STATES DEPT. OF ENERGY

UNITED STATES DEPT. OF AGRICULTURE

ALLIANT ENERGY

KELDERMAN MANUFACTURING  
PRAIRIE LANDS BIOMASS, LLC

### MANAGED BY:

CHARITON VALLEY RC&D

*Printed by Iowa Farm Bureau*

## ADVANCES IN HARVESTING & FIELD PROCESSING



The Kelderman self propelled baler (above) developed for the project has operated 1,000+ hours and baled 30,000+ bales. Advantages over pull-type balers:

- 4 wheel drive makes baling possible on difficult terrain of the CRP land in adverse conditions
- Higher operator safety and comfort level
- More fuel efficient
- Easier operator training
- Lower maintenance
- Bale uniformity
- Longer baler life
- Lower costs by reducing or eliminating field operations
- Able to bale other herbaceous feedstocks
- Higher annual baling capacity—more hours at higher rates

## FUTURE DEVELOPMENTS



The baler currently drops three parallel bales in the field. Future baler will drop three vertical bales for a single pickup by the stacker.



An improved baler will be fit with a double-tie knotter allowing higher bale weight and more uniform bale density.

## FUTURE DEVELOPMENTS



Direct cutting on the self propelled baler (concept shown above) will eliminate swathing step and another pass in the field.



Adding pre-cutter / chopper on baler will reduce straw length in bales. This will reduce processing requirements at central facility.