

Optima KV Biogas Case Study

New Waste-to-Energy Construction



Location:
North Carolina

Loan Type:
USDA REAP

Optima BioEnergy, a joint venture among three prominent players in the biogas and waste-to-energy fields, has developed a multi-site renewable natural gas production system using captured methane from swine waste in Duplin County, NC. The project includes five in-ground anaerobic digesters located on five separate hog farms that process a total of 430,000 cubic feet/day-of raw biogas. The biogas is then treated by a gas upgrading system, fed directly into an underground natural gas pipeline, and distributed throughout Duke Energy's service territory.

The project was financed by owner equity, an NC Department of Commerce development grant, a federal Qualified Energy Conservation Bond, and a USDA REAP loan. The \$6,500,000 REAP loan was funded by Live Oak Bank and 70% guaranteed by the USDA. This system will create a profit-generating solution for the proper disposal and containment of animal waste produced by Concentrated Animal Farming Operations. The energy created from this system will be sufficient to power ~800 North Carolina homes and will reduce greenhouse gas emissions by ~35,000 tons of CO₂/year.

Supporting Organizations:

- North Carolina Agricultural Finance Authority
- North Carolina Pork Council
- North Carolina Department of Commerce
- Duplin County Economic Development Commission
- Duke University
- United States Department of Agriculture
- Smithfield Foods
- Natural Capital Investment Fund

LIVE OAK LOAN TERMS



Amount

\$6.5 million



Term

15 years



Energy Created

**~85,000 MMBtu
of natural gas/year**

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