

Federal Assistance and Economics of Small-Scale Biodiesel Production





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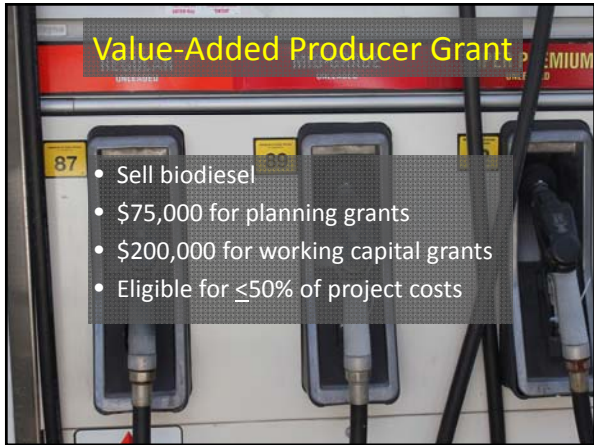
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Presentation Outline

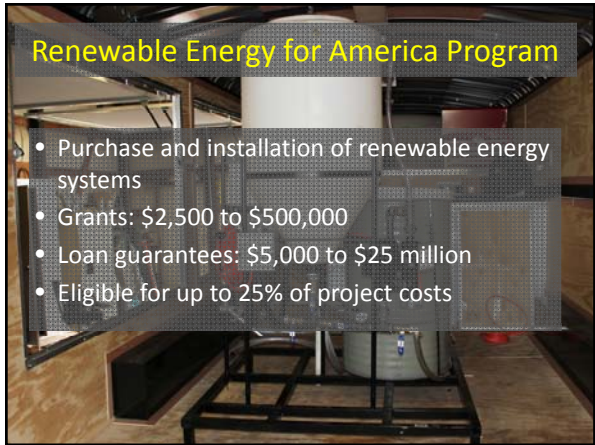
- Federal Assistance Programs
- Investment Costs
- Operation Costs
- Income Estimates
- Estimated Production Cost

Value-Added Producer Grant




- Sell biodiesel
- \$75,000 for planning grants
- \$200,000 for working capital grants
- Eligible for ≤50% of project costs

Renewable Energy for America Program




- Purchase and installation of renewable energy systems
- Grants: \$2,500 to \$500,000
- Loan guarantees: \$5,000 to \$25 million
- Eligible for up to 25% of project costs


Biodiesel Production




Canola seed



Conversion Technology



Canola Meal



Biodiesel

Production Cost

Revenue

1. Equipment Cost

- Oil press unit: **\$8,000**
- Biodiesel processor : **\$4,000 - \$5,000**
- Methanol recovery: **\$3,495**
- Installation Cost: **\$2,100**
- **Initial Investment Cost: \$18,835**
- Estimated annual loan payment: **\$2,380.**
- Capital cost including interest per gallon of biodiesel with annual production
 - 1000 gallons: **\$2.73**
 - 1500 gallons: **\$1.82**
 - 2000 gallons: **\$1.37**

2. Operating Cost

- Chemicals: **\$0.60 per gallon**
- Maintenance Cost: **\$0.07 – 0.14 per gallon**
- Electricity: **\$0.77 per gallon**
- Total Processing cost per gallon of biodiesel with annual production
- 1000 gallons: **\$4.23**
- 1500 gallons: **\$3.27**
- 2000 gallons: **\$2.79**

3. Feedstock Cost

Feedstock production cost = \$160/acre

(Buntin et al., 2013)

Canola Yield: 2100 lbs/acre

(2012 National Winter Canola Variety Trials in Tennessee)

(Stamm and Dooley, 2013)

Feedstock Cost = **\$2.15 – \$2.73 per gallon**

Total Production Cost



Revenue Generation

- Value of seed meal

\$2.17 - \$3.17 per gallon of biodiesel



USDA-ERS, 2012

Cost Scenarios

Ownership Scenarios	Total Production Costs (\$/gallon)	Seed meal value (\$/gallon)	Production Cost (\$/gallon)
Individually Owned	\$5.92	\$3.03	\$2.89
Subsidized (25%)	\$5.47	\$3.03	\$2.44
5 farmers	\$4.44	\$3.03	\$1.41
10 farmers	\$4.29	\$3.03	\$1.26

Further information

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