Bioenergy Ownership and Investment Models for Rural America

Tony Crooks
USDA Rural Development

June 24, 2008
Berkeley, California
Ownership models for biofuels
  – Cellulosic ethanol considerations

Tapping farm equity; Key to greater local ownership
  – Farm equity investment in rural America

Investment models to reverse the decline of local ownership

Conclusions
Informa Economics commissioned to:

• Describe business models in biofuels industry
• Articulate advantages/disadvantages of each
• Assess public policy and Rural Development programs
• Assess the level of farm equity investment in rural America
• Develop investment models to reverse the decline of local ownership
A business model is a concept to describe:

• The value a company offers to its customers
• The operational architecture (means) used to create, market, and deliver that value to generate profitable and sustainable revenue streams.
Ownership models for biofuels

A closer look at the industry by producer and capacity depicts four characteristic ownership structures:

- “Corporate” model
- “Farmer-owned” model
- “Engineer/builder-owned” model
- “Franchise” model
Corporate model

- The renewable fuels producer is a corporation (typically a C corporation) or a subsidiary of a corporation
- Internal staff manages plant(s), grain procurement, fuels and co-product marketing
- Firm does not own or manage farm land
- May be integrated in grain processing, provision of marketing or transportation services
Archer Daniels Midland

• Vertically integrated agribusiness conglomerate
• Largest biofuels producer in the world
  ▪ > 1 billion gallons ethanol produced annually in US
• Extensive procurement and marketing staff
• Controls substantial transportation assets

“… uniquely positioned at the intersection of the world’s increasing demands for both food and fuel.” Patricia Woertz, CEO
Farmer-owned model

- Incorporated as cooperative, LLC, or other
- Farmer-members have a majority ownership
- Farmer-members may have delivery obligations to the facility, access to storage, grain elevator operations
Chippewa Valley Ethanol Company, LLC
Benson, Minnesota

- Formed by over 650 shareholders
  - Producers, elevators, local investors
- Original capacity of 15 MGY
  - Expanded to 20- then 45- MGY
  - Building new 40- MGY plant
- Founded marketing/procurement company for several plants
- Shakers® Vodka distillery
Engineer/builder owned model

- Design/build firms own facilities outright or maintain a significant ownership interest
- Design/build firms maintain a controlling interest in management
- Multiple facilities
- Sufficient scale for internal staff to conduct key functions, including grain procurement and renewable fuels and co-product marketing
- Provide management services to unaffiliated plants.
POET (formerly Broin Companies)

- 1983 - Family builds small on-farm plant, in MN
- 1987 - Purchase/refurbish a foreclosed plant, in SD
- 1990 - Broin & Associates provides engineering design and construction services
- 1994 - Broin Management provides management services
- 1995 - Dakota Gold Marketing™ to market distillers grains
- 1999 - Ethanol Products™ to market ethanol and CO₂
- 2006 - 23 operating ethanol plants; 9 plants under construction or development
- Mar 2007 – Broin is POET; Markets over 1 BGY
- Oct 2007 – DOE cooperative agreement for cellulosic ethanol production (corn stover)
Biorefinery franchise model

- Firm is not vertically integrated; depends on 3rd party service providers
- Plant is a “cookie-cutter” facility designed/built by engineering firms/consortiums
- Plant processes monitored remotely by the engineering company
- Dependent upon 3rd party providers for feedstock procurement and product marketing; plant management services
- Long-term agreements with service-providers often required by financers
- Service providers may invest capital in the facility
ASAlliances Biofuels, LLC

- Building 3 ethanol facilities of 100 mil gal capacity
  - Albion, NE; Bloomingburg, OH; Linden, IN
- Combines top-tier service providers with financial partners
- Each facility:
  - Built by Fagen, Inc.
  - Located adjacent to Cargill, Inc., grain elevator
  - Depends on Cargill, Inc. to provide procurement, marketing and transportation services
  - Depends on United Bio Energy Management, LLC, to provide operational and maintenance support
- Purchased by VeraSun, (announced Nov ’07)
Cellulosic ethanol considerations

- Acute issues of cost, legal structures, management
- Capital expenditures/gallon ~ 3/5 times traditional plant
  - Maybe affordable only to corporations and equity funds, or in very small scale to rural communities
- Intellectual property rights of key importance
  - Maybe Design/Build firms will rise in prominence
  - Enzyme R&D instrumental to industry success
- Collection and storage systems yet to be established
  - Maybe opportunity for hybrid Design/Build - Farmer-Owned structures tying together capital, intellectual property, and feedstock
    - POET collaborative partnerships with farmers and investors
Cellulosic ethanol considerations (continued)

• Variety of feedstocks are expected
  ▪ Producers less likely to be solely row crop farmers
  ▪ “Farmer-owned” business model must expand to accommodate

• Number and specialization of co-products to multiply
  ▪ Diverse and complicated mix of third party marketing firms

• Extra expense of highly technical applications –
  ▪ Specialized marketing and service firms
  ▪ Long-term off-take agreements
Barriers to investment in renewable fuels

- High equity investment requirements
- Complexities of the project development process
- The risky nature of renewable fuels investment
Federal and State Programs

• Variety of investment incentive programs available to farmers
• Most are modest -- offer $50,000 - $100,000
  • To help farmers through the “first phase” of a Bio-fuel project
  • Not very useful for the subsequent construction phase
• Plenty of information available on investment incentives
• No single comprehensive source to help farmer groups identify programs
Tapping farm equity

Key to greater local ownership

- Substantial equity already flows in/out of renewable fuel projects
  - Number of publicly traded ethanol companies
  - Most of investment in biofuels corporation goes outside community
    - No rural ownership; No multiplier effect from returns
- Growing stock of equity capital in farm real estate
  - Projected for 2008:
    - US farm business assets $2.51T
    - Farm real estate value $2.2T; ~ 87% of assets
    - Farm sector equity $2.29T
      - Debt-to-equity down from 17.4% in ’02 to 10% in ’08
      - Unused debt repayment capacity ~$120B
Unused debt repayment capacity, 1970-2006

Figure 1--Debt Repayment Capacity

Unused Debt Repayment Capacity
Farm business debt of operators
Investment models to reverse the decline of local ownership

- Closed-Ended Renewable Energy Funds for Farmers and Other Rural Investors
- Debenture Guarantees
- New Markets Tax Credit
- Tax Credit for Projects with a Minimum share of Farmer/Rural Involvement
Closed-ended renewable energy fund

- Limited to farmers and rural residents
- Large enough to invest across multiple facilities
- $10 - $50 K per qualified investor
  - > $100K sales & $1M Net Worth (~300,000 farms)
  - 300K farms @ $10K per farm = $3 B investment fund
    - 625 MGY, Cellulosic Ethanol capacity @ $8/gal; 60/40 (equity/debt)
    - 3.5 BGY, corn ethanol @ $2/gal; 40/60 (equity/debt)
Debenture guarantees

- Similar to SBA Rural Business Investment Companies (RBIC) of ’02 Farm bill
- Issued by an RBIC, pooled with other issues and sold to outside investors
  - Backed by the federal government, carry lower premiums
- Modified to:
  - Relax the maximum $6M net worth restriction to permit biorefinery investment
  - Relax dividend pre-payment requirements to generate cash flow
  - Lower leverage fees (significantly) to be competitive with market interest rates

HR 2419. Sec. 6027. Rural Business Investment Program authorization is $50m.
New markets tax credit

- Funded/managed by US Treasury - Community Development Financial Institutions program
- Taxpayers receive federal income tax credit for qualified equity investment in designated Community Development Entities (CDE)
- CDE modified for biofuels:
  - Required to invest in qualified biofuels/renewable energy portfolio
  - Leverages farmer equity
Production tax credit

- For projects with minimum share of rural involvement to outside investors, i.e., wind generated electricity
- Funded by future tax revenue
- Risk exposure shared by farmers and private (outside) investor(s)
- Federal government would have limited risk exposure.
Conclusions

USDA Rural Development aspires to:

- Stanch the trend of rural investors owning a smaller share of renewable fuel production capacity
- Keep (more) biorefinery returns circulating in rural communities
- Help farmers and rural residents to participate (more) fully in the cellulosic ethanol economy

http://www.rurdev.usda.gov/rbs/coops/csdir.htm

Scroll down to:
“USDA Rural Development Renewable Energy”