Commercializing the Biofuels Supply Chain

Advanced Biofuels and the RFS: The State of Technology, Investment and Market Outlook
Washington, D.C. June 12, 2012
Who is Catchlight Energy (CLE)?

- 50/50 Chevron and Weyerhaeuser joint venture
- Our Mission is to commercialize the large scale production of liquid transportation fuels from sustainable forest based resources
- Our Vision is to be the leader in delivering advanced biofuels “from forest to fuel”
- We commercialize the supply chain elements needed to produce 2\textsuperscript{nd} generation biofuels
- We leverage synergies between CLE, Weyerhaeuser, Chevron, and 3\textsuperscript{rd} parties
Commercializing Forest to Fuels

End-to-End Value Chain Solution Leverages the Strengths of Two Natural Resource Leaders

Catchlight Energy (CLE)

Feedstocks at Scale

Conversion Technology

Fuel Integration

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When CLE was formed...

- Outlook for biofuels was robust
- Chevron faced a rapidly growing obligation under RFS2
- Weyerhaeuser seeking opportunities to expand biomass business
- Based on this, the Catchlight Energy JV
  - Expected to quickly Build-Own-Operate
  - Established research platforms for forest feedstock scalability and environmental sustainability
  - Developed product integration strategies
  - Embarked on ambitious technology developments
Times have changed...

- Economy has been through a recession and is recovering slowly
- High degree of uncertainty and risk in biofuel and RIN markets
  - RFS2 markets have not materialized at expected rate
  - Uncertain outlook for biofuels policy
  - Uncertain qualification of certain forest based feedstocks

Technology outlook

- “Cost competitive” technology is still on the horizon
  - Gen 2.0 technology economics uncertain
  - Gen 2.5 technology may be needed
Our Commercialization Advantage

- Large scale sustainable feedstock from certified timberlands.
- Well-established fuel testing, distribution, refining, and marketing system
- End-to-end solution with just one partner
- More than 200 years of energy and forestry industry expertise and reputation
- Financial wherewithal
CLE has adapted

Focusing on our core strengths:

- Commercialize feedstock supply and product off-take components of the supply chain. Establishing “wrap-around” partnerships
- Continue forest feedstock scalability and sustainability R&D
- Continue to evaluate 3rd party conversion technology and investment opportunities
- Progress internal conversion technology development if:
  - Technology is transformational & based on core expertise
  - Industry and government collaborations can help reduce risk and accelerate commercialization
Environmental Sustainability

- Science should be the basis for regulations/BMPs
- CLE is funding unparalleled sustainability science
  - Large-scale studies (1200 acres)
  - Partner with universities, NCASI, & USFS
  - Identifying ecosystem effects
    - Soils, nutrients, soil carbon
    - Water quality/quantity
    - Wildlife/biodiversity
    - Carbon life cycle analysis
“Wrap-around” Partnerships

Feedstock supply

- Forest sustainability certification
- Conversion plant siting; assured biomass supply at scale
- Biomass pre-processing
- Woodyard design and operation; inventory control

Product off-take/ integration

- Consulting on storage and offtake facilities
- Assured offtake and logistics support
- Fuel testing, specification & registration
- Product stewardship

KiOR “Wrap” is our first (press release links below)

- Product offtake: http://investor.kior.com/releasedetail.cfm?ReleaseID=586356
Conversion Technology R&D

CLE pre-treatment process enables cellulosic ethanol from softwood

CLE solvent liquefaction technology produces refinery compatible bio-oil at high yield and low cost
In Summary...

• Catchlight Energy (CLE) is commercializing feedstock and product integration elements of the biofuels supply chain

• CLE’s strategy has adapted to a changing view of technology and markets
  • Cost competitive technology is still on the horizon
  • Implementing wrap-around partnerships
  • Seek industrial and government collaborations to accelerate development of transformational Gen2.5 technology.

• CLE is uniquely positioned to commercialize biofuels through strategic partnerships
"The power of Human Energy to find newer, cleaner ways to power the world"

"Superior sustainable solutions for the world"

www.catchlightenergy.com