How To Survive
In A Competitive Fuel Market

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Fuel is a Commodity

- All fuels compete in a commodity market
- Judged on Value
- Renewables are no exception

Questions:

- How will you create value?
- How will your fuel compete?

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Technology Development vs Market Development

- Just because a particular renewable fuel ***CAN*** be produced doesn't mean it can be ***cost-effectively* produced**, or **effectively marketed**.
- Clean-technology companies often focus on ***technology*** solutions
  - This includes renewable fuels developers
  - But will the fuel itself be profitable?

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Technology Development vs Market Development

- Not enough attention is paid to marketing & commercialization
  - How will the production **technology** be marketed?
    - Who are the customers?
    - Who will build plants**??**

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Technology Development vs Market Development

- How will that **renewable fuel** be successfully marketed?
- How will it remain competitive?
  - Who are the customers**??**
    - **Identify the value chain**
  - What motivates sales**??**
  - Are there supply chain or logistics challenges**??**

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Technology & Market Viability

- Viability of technology is **important**
  - Will it work?
  - Does it offer a carbon reduction solution?
    - Has that been quantified?
  - Is it economically feasible?
- Marketability of fuel is ***critical***
  - Is the fuel fungible?
  - Policy: are governmental incentives available?
  - Regulations: RFS and/or LCFS pathways?
  - Is the fuel competitive with petroleum counterpart?
    - Why is that important**??**

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Technology Viability

- Does the production technology work?
  - Is it scalable?
  - Is the energy balance sustainable?
- What are the cap-ex costs for a facility?
- Are input costs realistic for a profitable business model?
  - Can they be controlled**??**
  - Can they be improved**??**
- How do incentives factor into the equation?
  - What happens when they go away**??**

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Knowing The Fuel Markets

- Petroleum industry is entrenched
  - Sets bar for fuel values – Including renewables
- Policy & regulatory support is important
  - Incentives to support carbon reduction
  - Promote use of alternatives
  - BUT, do government regulations have unintended consequences**??**
- Renewables need to effectively compete
  - Pricing is always determined relative to petro fuels

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Example:
California Biodiesel Market

- Biodiesel credits & incentives
  - $1.00/gallon blenders tax credit
  - $1.20/gallon RIN value (RFS2)
  - $1.35/gallon UCO value (LCFS)
  - **$3.55/gallon total credits value**
- Wholesale Diesel Value: $1.20
- Wholesale Biodiesel Value: $0.00
- Credits drive all low carbon diesel to California

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Profitability In The Fuel Markets

- Remain focused on profitability
  - Who are the fuel customers?
  - What compels them to buy your fuel?
  - Fuel quality issues? Fungibility?
- Production costs
- Feedstock opportunities
- Grants / Incentives / Regulations / Mandates
  - For building a production facility
  - For using the fuel

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Policy & Incentives

- Take advantage of favorable policies but plan your business as if they don't exist!!
- Educate yourself
- Get to know your state and federal regulators and legislators
- Educate your customers
- Incentives can be cyclical
  - put money aside when times are good – you will need it when they are bad.

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