OVERVIEW OF RIN PROGRAM AND CURRENT TRENDS

COMPLYING WITH USEPA RULEMAKING FOR CALIFORNIA ENERGY COMMISSION JANUARY 11, 2013
Services

- Regulation & Policy
  - Registrations (domestic /international), Pathways, & Land Use
  - Facility planning
  - Federal liaison

- Engineering Consulting
  - RFS reviews and site audits
  - Permitting
  - Design & construction management

- Renewable Energy Identification Numbers (RINs)
  - Compliance software
  - RIN price index
  - Quality Assurance Plans

- Software Solutions
  - Traceability systems, Satellite imaging
  - Compliance automation
  - Data management

www.EcoEngineers.us  515.309.1279
AGENDA

RFS OVERVIEW AND REGISTRATION
HOW RINS WORK
CURRENT ISSUES RELATED TO RIN FRAUD
RFS2 overview

Clear roadmap
- 36 billion gallons by 2022
- 21 billion gallons of advanced biofuels

Feedstock pool and new pathways will grow

Clear incentives
- RIN D codes, fuel types tied to GHG reduction

International trade will pick up
- Foreign entities can participate

Implementation hiccups being ironed out
- RIN QAP

Cellulosic & Advanced Fuel challenge
- Opportunity for industry

www.EcoEngineers.us  515.309.1279
## Fuel Types and RIN D Codes

<table>
<thead>
<tr>
<th>D Code</th>
<th>Fuel Type</th>
<th>Fuel</th>
<th>GHG Reduction Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>D3 RIN</td>
<td>Cellulosic Biofuels</td>
<td>Cellulosic ethanol, cellulosic naphtha, etc.</td>
<td>60%</td>
</tr>
<tr>
<td>D4 RIN</td>
<td>Biomass-based Diesel</td>
<td>Biodiesel, renewable diesel, etc.</td>
<td>50%</td>
</tr>
<tr>
<td>D5 RIN</td>
<td>Advanced Biofuels</td>
<td>Sugarcane ethanol, renewable heating oil, biogas, etc.</td>
<td>50%</td>
</tr>
<tr>
<td>D6 RIN</td>
<td>Renewable Fuel</td>
<td>Corn ethanol, etc.</td>
<td>20%</td>
</tr>
<tr>
<td>D7 RIN</td>
<td>Cellulosic Diesel</td>
<td>Cellulosic diesel</td>
<td>60%</td>
</tr>
</tbody>
</table>
### Renewable Fuel Volume Requirements for RFS2 (billion gallons)

<table>
<thead>
<tr>
<th>Year</th>
<th>Cellulosic biofuel (D3/D7)</th>
<th>Biomass-based diesel (D4)</th>
<th>Advanced biofuel (D5)</th>
<th>Renewable Fuel (D6)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>n/a</td>
<td>0.8</td>
<td>1.35</td>
<td>12.6</td>
<td>13.95</td>
</tr>
<tr>
<td>2012</td>
<td>0.00865</td>
<td>1</td>
<td>2</td>
<td>13.2</td>
<td>15.2</td>
</tr>
<tr>
<td>2013</td>
<td>tbd</td>
<td>1.28</td>
<td>2.75</td>
<td>13.8</td>
<td>16.55</td>
</tr>
<tr>
<td>2014</td>
<td>tbd</td>
<td>tbd</td>
<td>3.75</td>
<td>14.4</td>
<td>18.15</td>
</tr>
<tr>
<td>2015</td>
<td>tbd</td>
<td>tbd</td>
<td>5.5</td>
<td>15</td>
<td>20.5</td>
</tr>
<tr>
<td>2016</td>
<td>tbd</td>
<td>tbd</td>
<td>7.25</td>
<td>15</td>
<td>22.25</td>
</tr>
<tr>
<td>2017</td>
<td>tbd</td>
<td>tbd</td>
<td>9</td>
<td>15</td>
<td>24</td>
</tr>
<tr>
<td>2018</td>
<td>tbd</td>
<td>tbd</td>
<td>11</td>
<td>15</td>
<td>26</td>
</tr>
<tr>
<td>2019</td>
<td>tbd</td>
<td>tbd</td>
<td>13</td>
<td>15</td>
<td>28</td>
</tr>
<tr>
<td>2020</td>
<td>tbd</td>
<td>tbd</td>
<td>15</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>2021</td>
<td>tbd</td>
<td>tbd</td>
<td>18</td>
<td>15</td>
<td>33</td>
</tr>
<tr>
<td>2022</td>
<td>tbd</td>
<td>tbd</td>
<td>21</td>
<td>15</td>
<td>36</td>
</tr>
</tbody>
</table>
# 2013 AB volume requirements

<table>
<thead>
<tr>
<th></th>
<th>Volume</th>
<th>Mandate</th>
<th>In RIN Gallons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Biofuels</td>
<td>2,750</td>
<td></td>
<td>2,750</td>
</tr>
<tr>
<td>Biomass-based diesel</td>
<td>1,280</td>
<td></td>
<td>1,920</td>
</tr>
<tr>
<td>Other Advanced Fuels</td>
<td></td>
<td></td>
<td>830</td>
</tr>
</tbody>
</table>

- **Projections for 2013 sugarcane ethanol imports:**
  - 306 – 768 million gallons

- **EPA estimate of 2013 domestic Advanced Biofuel production:**
  - 150 million gallons
Registration

Without up-to-date registration, you may not be able to interact with EPA / EMTS properly or even interact at all!

Documents required for Part 80 -
- Completed CDX registration forms (signature page)
- Copies of applicable air permits
- A list of the facility's process energy sources
- Facility specific requirements as per 40 CFR §80.1450(b)
- Third party engineering review of facility
- FFARS letter (Part 79 registration is a pre-requisite for Part 80)

http://www.epa.gov/oms/regs/fuels/producers.htm
EPAFuelsPrograms@epa.gov
Telephone: 202-343-9755

www.EcoEngineers.us  515.309.1279
From Registration to Production

**Planning**
- Fuel Pathway is recognized under RFS
- Feedstock meets definition of renewable biomass
- Eligibility for desired RIN D codes
- Begin dialogue with EPA

**Construction Completion**
- CDX Registration
- FFARS Registration
- Engineering Review
- Supplemental documents
- EPA review and approval

**Start Production**
- Daily/weekly data upload
- Temperature-corrected volumes
- RIN generation
- RIN/Fuel transfer data
- Third party monitoring (QAP)

**Reporting / Record-keeping**
- Feedstock purchases- proof of renewable biomass
- Other input and output records
- Biomass conversion records
- Sampling and testing records
- QAP reports
- Quarterly RIN reports
- Annual Attest Engagement

www.EcoEngineers.us  515.309.1279
What is a RIN?

- **A New Commodity**
  - Proof of compliance that OPs need to buy
  - Attached to wet gallon at birth

Fuel

Feedstock + Catalyst + Process Energy

Co-Product(s)

RIN (K1)

www.EcoEngineers.us  515.309.1279
What is a RIN?

- RIN prices bridge the delta between supply and demand caused by a mandate
- Secondary market after separation from wet fuel gallon
RIN Separation Basics

RIN Separation is Highly Regulated

Errors in separation result in invalid RINs

- RINS are Separated
  - When fuel reaches obligated party,
  - Upon export
  - When blended to produce a transportation fuel, heating oil or jet fuel
  - When neat fuel is designated as or used without further blending as transportation fuel, heating oil, or jet fuel
  - Upward Delegation

If your operations do not allow you to separate a RIN, then you will surrender it with the fuel to party downstream.

www.EcoEngineers.us    515.309.1279
RIN Management Platform – Product Transfer Document

Transferor: 3697
Transfer Date: 6/19/2011
PTD #: 10611BUR

Transferor: 3697
Transferee: 4761

EcoEngineers Test Producer
500 Diagonal Ave
Des Moines, IA 50266
Generation Year: 2011
Assignment: Assigned
Associated reason: Standard Trade
Additional Information:
Bill of Lading/Invoice Number - 10611BUR

EcoEngineers Test Marketer
100 Main Street
AnyTown, IA 50322
RIN Gallons: 10105
RIN Type: D6 - Renewable Fuel
Fuel Gallons: 10105

LCFS information:
Type of Fuel: Ethanol
Facility Producing Fuel: 70291
CI #: 90.1
Who is taking reporting obligation: Buyer / Seller

www.EcoEngineers.us  515.309.1279
## D6 RIN Values

**EcoEngineers RIN Index**

Jan 2011- Dec 2012 (Monthly Averages)

<table>
<thead>
<tr>
<th>Month</th>
<th>D6 2011</th>
<th>D6 2012</th>
<th>D6 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>3.05</td>
<td>3.21</td>
<td>3.54</td>
</tr>
<tr>
<td>Feb</td>
<td>3.76</td>
<td>3.36</td>
<td>3.65</td>
</tr>
<tr>
<td>Mar</td>
<td>2.36</td>
<td>3.35</td>
<td>3.76</td>
</tr>
<tr>
<td>Apr</td>
<td>2.08</td>
<td>2.99</td>
<td>3.09</td>
</tr>
<tr>
<td>May</td>
<td>3.68</td>
<td>3.21</td>
<td>3.79</td>
</tr>
<tr>
<td>Jun</td>
<td>3.54</td>
<td>3.35</td>
<td>3.87</td>
</tr>
<tr>
<td>Jul</td>
<td>3.75</td>
<td>3.21</td>
<td>3.76</td>
</tr>
<tr>
<td>Aug</td>
<td>1.96</td>
<td>2.10</td>
<td>4.06</td>
</tr>
<tr>
<td>Sep</td>
<td>0.79</td>
<td>1.64</td>
<td>3.54</td>
</tr>
<tr>
<td>Oct</td>
<td>0.43</td>
<td>1.28</td>
<td>3.87</td>
</tr>
<tr>
<td>Nov</td>
<td>0.30</td>
<td>0.33</td>
<td>0.82</td>
</tr>
<tr>
<td>Dec</td>
<td>0.23</td>
<td>0.58</td>
<td>3.475</td>
</tr>
</tbody>
</table>

### Annual Average Price

- **D6 2012:** $0.0287
- **D6 2013:** $0.0709

[www.Ecoengineers.com](http://www.Ecoengineers.com) 515.309.1279
D 4 & D5 RIN Values
Jan 2011- Dec 2012 (Monthly Averages)

EcoEngineers RIN Index
Annual Average Price
D4 2012: $1.0955
D5 2012: $0.6166

www.Ecoengineers.com    515.309.1279
## EcoEngineers RIN Index – January 9, 2013, VWAP

### 2013 Vintage Indices

<table>
<thead>
<tr>
<th>Index</th>
<th>Value</th>
<th>Change From Prior Day</th>
<th>Week Ago</th>
<th>Month Ago</th>
</tr>
</thead>
<tbody>
<tr>
<td>D4</td>
<td>50.250</td>
<td>4.25</td>
<td>45.000</td>
<td>63.500</td>
</tr>
<tr>
<td>D5</td>
<td>44.000</td>
<td>5.50</td>
<td>41.000</td>
<td>42.500</td>
</tr>
<tr>
<td>D6</td>
<td>8.005</td>
<td>0.41</td>
<td>6.975</td>
<td>6.875</td>
</tr>
</tbody>
</table>

### 2012 Vintage Indices

<table>
<thead>
<tr>
<th>Index</th>
<th>Value</th>
<th>Change From Prior Day</th>
<th>Week Ago</th>
<th>Month Ago</th>
</tr>
</thead>
<tbody>
<tr>
<td>D4</td>
<td>45.451</td>
<td>4.45</td>
<td>44.151</td>
<td>55.180</td>
</tr>
<tr>
<td>D5</td>
<td>44.000</td>
<td>7.00</td>
<td>37.000</td>
<td>49.500</td>
</tr>
<tr>
<td>D6</td>
<td>6.770</td>
<td>0.90</td>
<td>5.350</td>
<td>5.000</td>
</tr>
</tbody>
</table>

### 2011 Vintage Indices

<table>
<thead>
<tr>
<th>Index</th>
<th>Value</th>
<th>Change From Prior Day</th>
<th>Week Ago</th>
<th>Month Ago</th>
</tr>
</thead>
<tbody>
<tr>
<td>D4</td>
<td>43.000</td>
<td>5.00</td>
<td>34.000</td>
<td>50.000</td>
</tr>
<tr>
<td>D5</td>
<td>36.000</td>
<td>6.00</td>
<td>30.000</td>
<td>40.000</td>
</tr>
<tr>
<td>D6</td>
<td>0.250</td>
<td>0.00</td>
<td>0.350</td>
<td>0.350</td>
</tr>
</tbody>
</table>
RIN Fraud - The Problem

- Semi-frozen RIN markets
- Lack of trust
- Fool me once…
- Affecting biodiesel/ new fuels/ smaller and non-branded producers
What is a RIN QAP

- A procedural and monitoring framework to assure that RINs entering commerce were validly generated.

- Expected to promote greater liquidity in the transfer and use of RINs.

- EPA is developing a rulemaking proposal, which is expected to be released Jan 2013

http://www.epa.gov/oms/fuels/renewablefuels/qap.htm
Who is Affected?

- Voluntary
- Incentives for participation
  - Waiver of NOVs (OPs)
  - Waiver of RIN replacement obligation (OPs)
  - Access to RIN markets (Producers)
  - Premium pricing (Producers)

Corn ethanol / branded products currently perceived as low risk. Biodiesel / advanced / new fuels / pathways perceived as higher risk.
Elements of EcoEngineers RIN QAP

Proving Production happens at the plant
- BOLs, POs, mass / energy balance

Fuel Quality
- CofA, BQ 9000

Verifying renewable biomass records
- Feedstock sourcing

RIN Replacement Instruments
- Financial Guarantees
- Replacement RINs

Qualitative Data
- Company history, market reputation

RIN Generation / Transfer / Separation details
- Niche market transfer reasons

www.EcoEngineers.us  515.309.1279
RIN QAP Planning

- Review facility operations/ conversion process
- Identify checkpoints - inputs/outputs
- Identify document trail
- On-site audit / engineering review
- On-boarding and training
- Prepare for weekly/monthly reporting
- Corrective action
- Who takes replacement liability?
QAP Audit and Report Info on RIN Trading Platforms

<table>
<thead>
<tr>
<th>Producer</th>
<th>Bid</th>
<th>Volume</th>
<th>Purchase</th>
<th>Purchase Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMERICAN BIODIESEL INC (DBA) (4936)</td>
<td></td>
<td>$10,200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARCHER DANIELS MIDLAND COMPANY (4998)</td>
<td></td>
<td>$7,470</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIODIESEL OF LAS VEGAS INC (5648)</td>
<td></td>
<td>$118,696</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRIMSON RENEWABLE ENERGY LP (4814)</td>
<td></td>
<td>$6,656</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cargill Biodiesel (3683)</td>
<td></td>
<td>$124,925</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEERFIELD ENERGY, LLC (4285)</td>
<td></td>
<td>$14,921</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FINA, LLC (4839)</td>
<td></td>
<td>$363</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Genuine Bio-Fuel, Inc. (3374)</td>
<td></td>
<td>$33,750</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INCORAS INDUSTRIES LTD (4905)</td>
<td></td>
<td>$21,477</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IOWA RENEWABLE ENERGY LLC (4698)</td>
<td></td>
<td>$40,793</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOUIS DREYFUSS AGRICULTURAL INDUSTRIES LLC (5333)</td>
<td></td>
<td>$18,560</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MID-AMERICA BIOFUELS LLC (4887)</td>
<td></td>
<td>$8,261</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIDWEST BIODIESEL PRODUCTS LLC (4652)</td>
<td></td>
<td>$603,263</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MINNESOTA SOYBEAN PROCESSORS (4207)</td>
<td></td>
<td>$82,914</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NATURAL BIODIESEL PLANT LLC (4696)</td>
<td></td>
<td>$1,758</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

www.EcoEngineers.us  515.309.1279
Current QAP Program

- 330,000,000+ Biodiesel GPY / 35 Facilities
- 200,000,000+ Ethanol GPY / 5 Facilities
- Access to insurance programs and indemnifications
- Expanding QAP Review Staff
- Training Market Participants
- Additional Automation via Software Interfaces
- Integration with other QA and environmental programs (LCFS, RED, etc.)