Protecting Renewables Investments: Strategies for Acquisition and Operation of Patent Portfolios for Algae-Derived Fuels and Products

Jeremiah B. Frueauf, Partner
Patent acquisition considerations

- Due diligence
  - Understand which patent law applies
  - Patent subject matter eligibility

- Freedom-to-operate
  - Remove blocking patents
Which patent law applies?

2011 America Invents Act (AIA)

➢ Brought significant changes:
  • U.S. now a “first-inventor-to-file” system no longer “first-to-invent”
  • Different scope of prior art – e.g., expands on-sale prior art outside U.S.
  • Formalities changes – requires new inventor declarations
Diligence – When filed?

- AIA Patent – filing date on or after March 16, 2013
  - Applies to any patent application first filed on or after that date
  - If any earlier related applications filed before March 16, 2013, is a pre-AIA Patent

<table>
<thead>
<tr>
<th>Related U.S. Patent Application Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filed: Jun. 4, 2015</td>
</tr>
<tr>
<td>(22)</td>
</tr>
<tr>
<td>(63) Continuation application No. 13/288,815, filed on Nov. 3, 2011, now Pat. No. 9,066,527.</td>
</tr>
</tbody>
</table>
Diligence – When filed?

Majority of applications filed pre-AIA

When assessing the strength of the patent portfolio, scope of prior art differs for pre-AIA and AIA patents:

<table>
<thead>
<tr>
<th>Pre-AIA</th>
<th>AIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;1-year bar</td>
<td>Limited 1-year bar – inventor’s own disclosure</td>
</tr>
<tr>
<td>&lt;1-year can swear-behind</td>
<td>No swear-behind</td>
</tr>
<tr>
<td>U.S. on-sale bar</td>
<td>Global on-sale bar</td>
</tr>
</tbody>
</table>
Diligence – Patent strength?

- Large pool of prior art:

Diligence – Ownership

Who owns the patents?
- Did they transfer rights correctly?
- Did the inventors execute declarations with correct statements?
  - e.g., acknowledgment of penalties clause?

What is it and why is it important?

- Patent law generally permissive to any invention so long as it falls within one of a process, machine, manufacture, or composition
  - Historic exceptions: law of nature, abstract ideas, natural phenomenon
- Exceptions infrequently used but in 2012 and 2013, U.S. Supreme Court significantly changed that
Diligence - Subject Matter Eligibility

Must analyze the patent portfolio for eligibility – both existing patents and pending applications

<table>
<thead>
<tr>
<th>Input</th>
<th>Process</th>
<th>Output</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLAIMED SUBJECT MATTER</td>
<td>Biomass, Host cell, Enzymes</td>
<td>Growing, Harvesting, Dewatering, Extraction, Conversion</td>
<td>Fuels, Chemicals (e.g., pigments, proteins, lipids, polysaccharides), Co-products</td>
</tr>
<tr>
<td>JUDICIAL EXCEPTION</td>
<td>Products of nature</td>
<td>Abstract ideas</td>
<td>Products of nature</td>
</tr>
</tbody>
</table>
Patent ownership does not give you the right to practice your invention, *only* exclude others from making, using, selling, offering for sale, or importing it.

- So when you invest in patent rights, need to clear freedom-to-operate.
# Post-AIA patent portfolio options

## Your Portfolio

### Pre-Filing
- New Options Affecting
  - Inventor Declarations
  - Simpler
  - Due at Allowance
  - Power of Attorney
  - Application Data Sheet

### Examination
- **Rapid Patent Portfolio Creation**
  - “Track One” Acceleration
    - Prioritized Examination
    - 1 year to Final Disposition
    - Extensive Interviewing
  - Available for Applications
    - Up to 30 Claims Total
    - Up to 4 Independent
    - Add $4,000 Filing Fee ($2,000 for small entity)
    - Add $300 Publication Fee
    - Add $140 Processing Fee ($70 for small entity)
  - Track One RCE Available

### First to File
- New Patent Laws
  - First to File March 16, 2013
  - 1 Year Grace Period
  - Expanded Prior Art ($102)
  - Protection from Derivation

### Other Reforms Making a Difference
- **United States**
  - Enhanced Interviewing
- **International**
  - Green Technology Initiatives
  - Patent Prosecution Highway
  - International Fast Track
  - Lower Cost
  - One Patentable Claim Required
  - Begins 2-3 Months from Request
  - Available In:
    - Europe/UK, Japan, Korea, China, Singapore, Taiwan, Russia
    - Canada, Mexico, Colombia
    - Australia, Israel, and more

## Against Others

### While Pending
- **Submissions by Third Parties**
  - Submit material with concise statement of relevance
  - Not required to disclose real party in interest
  - Not limited to prior art - e.g., can be court filings
  - Submitted material can already be of record
  - **Timing:** before allowance or before the later of 6 months from publication or the date of first claim rejection

- **Protests by the Public**
  - Any fact or “information” adverse to patentability
  - Including arguments - e.g., obviousness, eligibility
  - Available for patents in reissue proceedings
  - **Timing:** before publication or allowance, whichever is first, unless with written consent of applicant

### Challenges to Issued Patents

#### Before Examiners
- Rule 501 Practice
- Ex Parte Reexamination

#### Before PTAB Judges
- Inter Partes Review
- Post-Grant Review
- Covered Business Method

#### Strategic Considerations
- Estoppels
- Concurrent Litigation
- Standing to Challenge §§ 101, 102, 103, 112
- Nature of Prior Art
- Privy with Patent Owner
- Standards for Initiating
- Cost of Proceedings
New FTO options

Inter Partes Review

Post Grant Review

Covered Business Method Patent Review

PTAB
Enforcing/Defending a patent

Old World

File $$$$$

District Court Litigation 1 year 2 years 3 years

Median ~ 2.5 years

Inter Partes Reexamination $$

Average ~ 30-41 months from filing to decision

New World

1 year deadline from petition to final disposition

PTAB $$$$+ 6 months for exceptional cases

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Inter partes review

PATENT GUIDE

Estimated Time to Final Disposition

< 12 months

Time will depend on examination and parties responses

$ 23,000
Base Fee for Petition

• Allows petitioner to challenge validity of patent on prior art
Advantages of PTO litigation

- Many believe it favors the petitioner:
  - No presumption of validity
  - Lower burden of proof
  - Broadest reasonable interpretation
  - Trial conducted by technically savvy panel of three judges

<table>
<thead>
<tr>
<th>IPR Outcomes</th>
<th>Claims Instituted</th>
<th>Claims Canceled</th>
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<tr>
<td></td>
<td>56%</td>
<td>63%</td>
</tr>
<tr>
<td></td>
<td>62%</td>
<td>81%</td>
</tr>
</tbody>
</table>

- Biotech/Chem
- Overall

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Disadvantages of PTO litigation

Consequences to Patent Owner:

• Perceived as a recent blow to patent value
• Success rate less than 50%
• Estopped from
  ▪ taking action inconsistent with adverse PTO judgment
  ▪ pursuing claims patentably indistinct from canceled claims

IPR Outcomes

- Claims Instituted: 56%
- Claims Canceled: 62%
  - Biotech/Chem: 63%
  - Overall: 81%
FTO strategies for your biofuels patent portfolio

- **Speedy PTO trial alternative**
  - Offensive in support of licensing
  - Defensive in support of freedom to operate

- **Return on investment on patent expenditures**
  - More time-certain investment
  - Quick results
  - Informed decision-making
Checklist for decision-makers

Know which questions to ask when conducting diligence:

- Which patent law applies: AIA or pre-AIA?
- Who owns the patent portfolio?
- Have rights been transferred properly?
- Have all patent filing formalities been met?
- What is the strength of the portfolio in view of prior art?
- Are the patent claims subject matter eligible?
- Are there freedom-to-operate issues for practicing the portfolio?

Discuss with your patent counsel
Questions?

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- Thanks to Nicholas Rachmaninoff for his data analytics
Abstract

With more than 70% of producers expecting to expand production last year, 2015 saw another year of promising growth and investment in the algae industry. This trend holds promise in the industry despite the recent overhaul of a key-player underlying the investment—intellectual property protection of the technology. Major changes to U.S. patent law implemented in 2012 and 2013 ushered in a new system for patent applicants to navigate and new opportunities to challenge patents before the U.S. Patent & Trademark Office. A thorough understanding of the patent landscape and freedom-to-operate issues is essential to anyone or any company investing in and operating in the industry. This presentation will discuss the elements of a proper diligence and freedom-to-operate analysis where reality requires distinction between new and old patent systems. The presentation will also provide an update on key diligence questions that must be considered in view of decisions interpreting the new law and legal trends on the patent eligibility of inventions in the algae industry. Finally, the presentation will provide strategies for dealing with blocking patents and securing a path to commercialization, which ultimately dictate an investment opportunity.