





Helping Clients Navigate the Bioeconomy for Over 25 Years

Our team of world-renowned experts offers engineering and technical services, financial guidance and regulatory support to help you achieve your business goals and make a positive impact on the world.

Despite Unprecedented Challenges, There are Incredible Opportunities

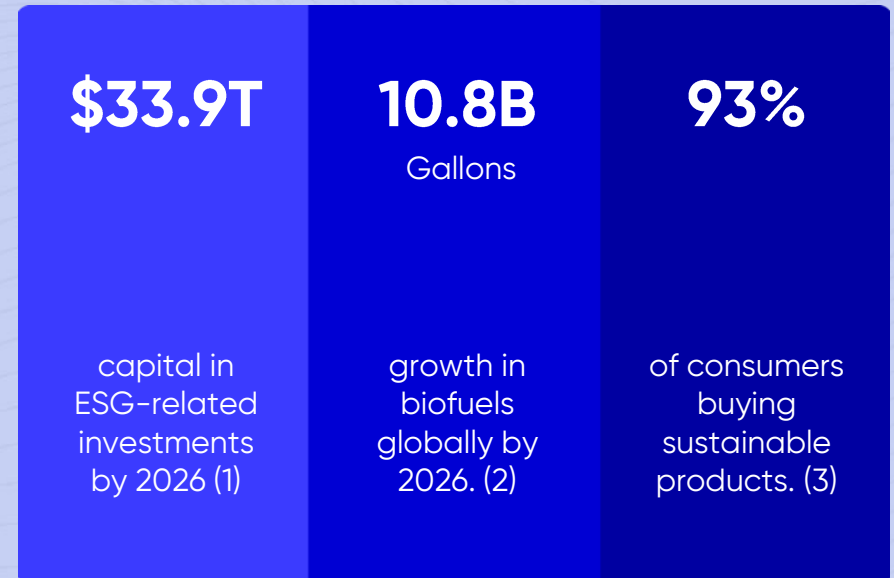
From retail products to institutional investments, consumers are demanding solutions that embrace the shift towards a green economy.

Businesses of all sizes are struggling to find profitable ways to address new regulations, financial market shifts and changing consumer attitudes.

Any proposed solution must align with existing industry best practices and regulations while also looking at innovative alternatives on the horizon.

Charting the uncertain waters of the new bioeconomy requires a measured confidence, built from experience.

To succeed now and in the future, businesses must pursue these opportunities to achieve sustainable and profitable outcomes.



(1) PwC: Asset Wealth Management Revolution

(2) International Energy Agency: Renewables Analysis

(3) IRI and the NYU Stern Center for Sustainable Business (CSB): Sustainability and the Consumer report

Guiding Businesses to Align Sustainability and Success

Whether your company is a startup seeking funding or a large multinational facing technical challenges, our network of over 150 world-renowned bioeconomy experts has the experience to guide you to success.

Leading Bioeconomy Expertise

As the most trusted group of experts in the bioeconomy, we guide projects to sustainable and profitable outcomes from planning through implementation.

Specialty Services Available

In addition to engineering, operational and financial guidance, we provide regulatory support and expert witness testimony.

The Team You Need

We build multidisciplinary teams that meet the specific needs of your project in biofuel refining, biomaterial production and biotechnology development.

Single Point of Contact

We maintain a single point of contact, making communication and coordination easier for you.

150+
Experts

30+
Average Years of Experience

50%
C-Suite Executives

97%
PhD, MBA & Advanced Degrees

\$3B
Projects Evaluated

Our Featured Clients

Our team of expert consultants has helped early-stage companies and some of the most well-known organizations in the world achieve more successful and sustainable outcomes.





Our Services

For Your Unique Business Needs



Funding & Due Diligence

Explore funding sources and ensure your investment assumptions have been validated.



Engineering & Project Oversight

Gain valuable insights from engineering reviews to financial analyses.



Project Development & Operations

Receive expert guidance from project planning through implementation.



Regulatory & Specialty Services

Leverage our deep knowledge of regulatory frameworks and specialty consulting services.



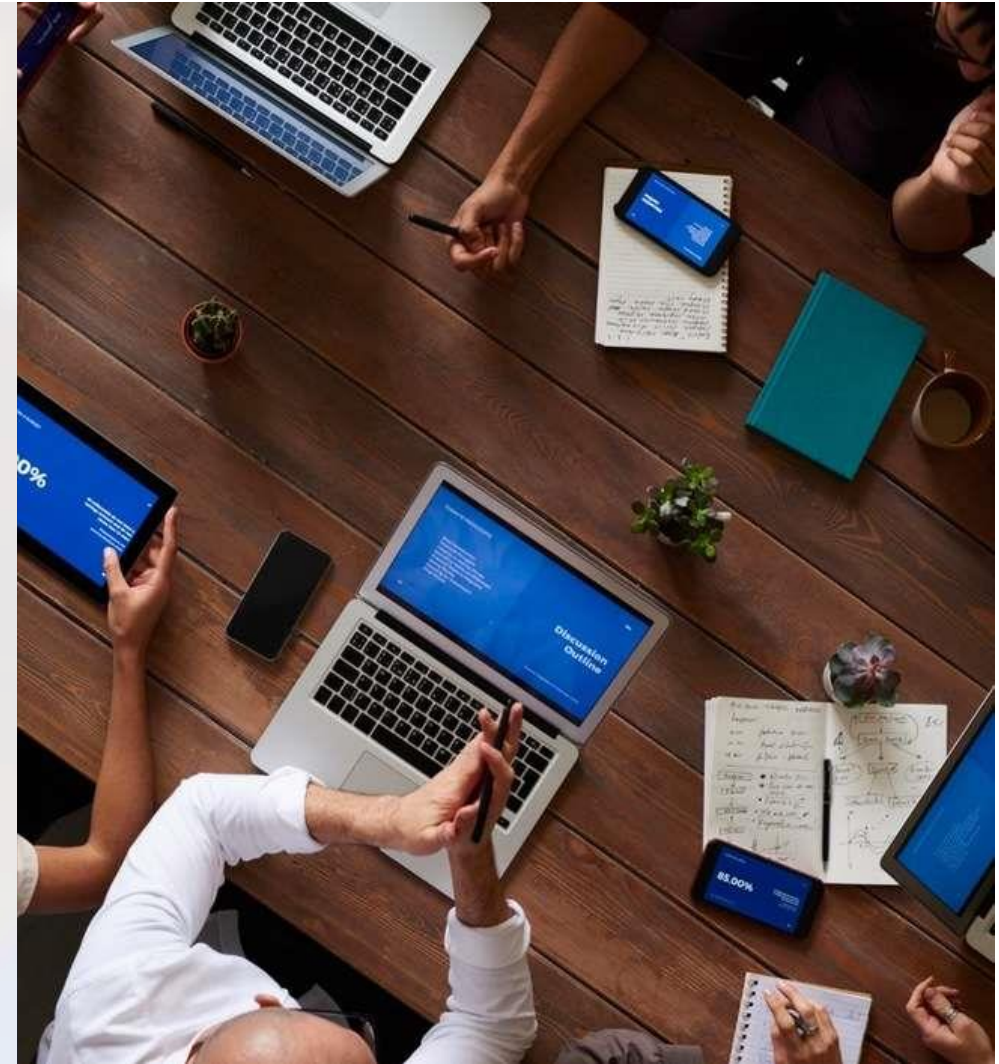
Expert Witness

Find the best subject matter experts to provide testimony on the latest biotechnologies.

Finding Funding and Validating Assumptions

Locating funding sources can be a challenge, especially for technologies that have not reached full commercialization. Our experts can provide help locating funding from government to private sources.

Our multidisciplinary approach with a single point of contact ensures investment recommendations are backed by solid technical, economic, and feasibility analyses.



**Funding &
Due Diligence**



**Engineering &
Project Oversight**



**Project Development &
Operations**



**Regulatory &
Specialty Services**



**Expert
Witness**

Avoiding Obstacles Before They Appear

There are risks inherent in every project. Engineering and project oversight mitigates these risks by offering ongoing, independent, and comprehensive reviews of the project, people, and processes.

We have proven experience overseeing projects in the bioeconomy, overcoming obstacles, and completing projects in a timely fashion within budget. When you embark on a project, you'll benefit from expertise that extends beyond operations to compliance and regulatory approval.



Funding &
Due Diligence



Engineering &
Project Oversight



Project Development &
Operations



Regulatory &
Specialty Services



Expert
Witness

Guiding from Experience

As a project progresses through planning, execution, monitoring and startup, continual management and coordination is vital to achieving success. Improving efficiency while identifying and mitigating inherent risks is only possible with an experienced team.

LEC experts lead and support project development, aligning outcomes with stakeholder needs and helping your organization stay on target with timelines and budget estimates.



Funding &
Due Diligence



Engineering &
Project Oversight



Project Development &
Operations



Regulatory &
Specialty Services



Expert
Witness

Navigating Regulatory Frameworks

Projects in the bioeconomy operate at the nexus of economic, environmental and social concerns. Set within a complex regulatory framework, successful project outcomes rely on technical expertise and a deep understanding of the compliance challenges and funding opportunities that exist.

Our regulatory and specialty services support or enhance projects, moving them to a successful conclusion and compliant, efficient operations.



Funding &
Due Diligence



Engineering &
Project Oversight



Project Development &
Operations



Regulatory &
Specialty Services

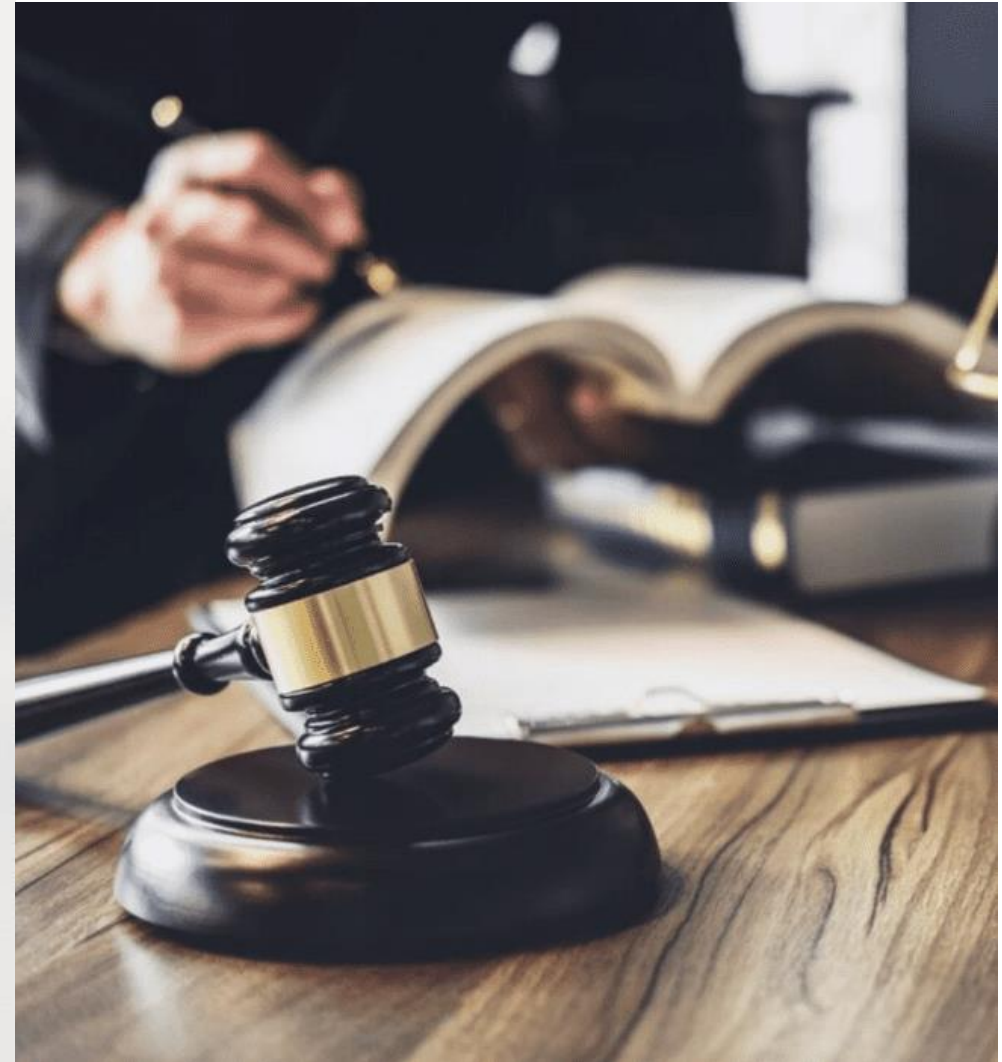


Expert
Witness

Protecting Your Interests

As a highly innovative space, many technologies in the bioeconomy are hotly contested. Litigations related to the bioeconomy require experts with very specific industry experience in processes, systems, technology or bioproducts. LEC expert witnesses in these areas go beyond a general chemistry, biology or engineering background.

Our experts have proven experience working with the latest biotechnologies, providing clear and compelling testimony to support attorneys working internally or on behalf of a client.



**Funding &
Due Diligence**



**Engineering &
Project Oversight**



**Project Development &
Operations**



**Regulatory &
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**Expert
Witness**

Areas of Expertise



Biobased Materials Chemicals

Biobased materials are innovating across a number of industries from plastics to textiles, leather, wood, and paper. Biobased chemicals are rapidly replacing traditional chemicals with more sustainable alternatives.



Feedstocks

Finding the best combination of feedstock, technology, and logistics at the lowest cost is vital to ensuring biobased projects are sustainable for the environment and a company's bottom line.

Bioenergy Biofuels

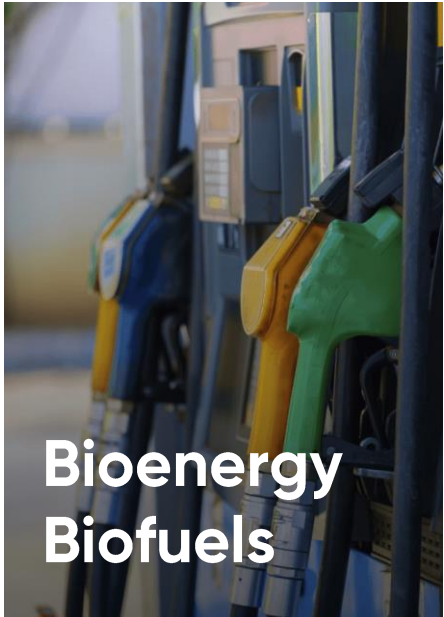
Bioenergy and biofuels contribute to an economically and environmentally sound future by supplying domestic clean energy, reducing dependence on petroleum, generating jobs, and revitalizing rural economies.



Biotechnologies

Biotechnologies spanning a number of sectors are boosting manufacturing efficiency and crop yields, saving money on operating costs, minimizing reliance on petrochemicals, and reducing greenhouse gasses.





Bioenergy Biofuels



Fueling the Future

The journey towards a low-carbon future must be supported by the infrastructure of today and driven by the renewable energy sources of tomorrow. With new information arriving on an almost daily basis, successful projects require a balanced approach towards the past and future based on experience with industry standards and the latest fuel technologies.

- Advanced Biofuels
- Cellulosic Ethanol
- Methanol/DME
- Biobutanol/Isobutanol
- Ethanol
- Renewable Diesel
- Biocoal
- Fuel Additives
- Renewable Natural Gas
- Biodiesel
- Hydrogen
- Sustainable Aviation Fuel
- Biogas
- Landfill Gas
- Syngas

"To say that Raven SR has benefited from our relationship with LEC would be a significant understatement. From supplying reliable third-party verification of our processes, to providing deep technical and industry guidance, to improving our technology and our business model ... LEC has been a strong ally in our growth and expansion."

Matt W Murdock

CEO | Raven SR





Biobased Materials Chemicals



Revolutionizing Industries

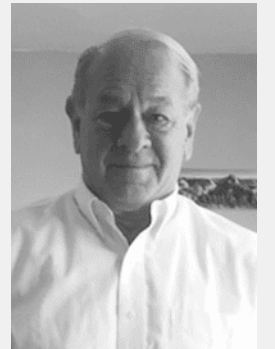
Industries are being transformed by novel technologies and materials which require rigorous evaluation to replace their less sustainable alternatives. Our experts help unlock the secrets of Mother Nature with new ways to create pharmaceuticals, textiles, and ingredients that reduce our impact on the environment.

- Ammonia
- Animal-Free Products
- Biochar
- Biofabricated Proteins
- Bioplastics/Polymers
- Coproducts
- Enzymes/Peptides
- Latex/Rubber
- Food Products
- Glycerin
- Nutraceuticals
- Flavors and Fragrances
- PLA/PHA
- Renewable Chemicals
- Sustainable Fertilizers/Pesticides

"LEC has been a valuable partner to us for several years. The people and capabilities that LEC has brought to our company have been a critical part of our success. The breadth and experience of their team is extraordinarily unique. They not only provided technical and project support, but helped secure USDA loans and other critical financing. Most importantly, they are people you can trust. LEC will be an integral part of our company for years to come."

Jeffrey Craig

CEO | Renewable Natural Gas Co.





Implementing New Technologies

Making better use of existing resources is an important facet of the bioeconomy. Improving efficiencies and reducing waste in production processes allows more sustainable processes to achieve profitability sooner. Our experts guide biotechnology projects from inception through commercialization.

- Activated Carbon/Biochar
- Alternative Protein
- Anaerobic Digestion
- Biocatalysis
- Biochemical Conversions
- Bioplastics/Biopolymers
- Carbon Capture Utilization / Storage
- Cellular Agriculture
- Enzymes
- Fermentation
- Gasification
- Hydrolysis
- Landfill & Waste Technologies
- Pyrolysis
- Synthetic Biology
- Torrefaction
- Waste Valorization

"LEC has assisted us with several technical reviews on a variety of topics. We have found their team to be informed, collaborative and easy to work with. We will not hesitate to use them again, or recommend them to others who are in need of similar assistance."

Shu Shibuya

Business Development | Itochu International Inc.



Optimizing Value Chains

By integrating sustainability into every stage of the value chain, from sourcing raw materials to delivering the final product, we help organizations minimize resource consumption, reduce waste, and achieve greater profitability. Optimizing your supply chain also enhances brand reputation, fosters innovation, and unlocks new business opportunities to explore.

- Agricultural Waste
- Algae
- Biogas
- Biomass
- Cellulose
- CO2
- Energy Crops
- Fats and Oils
- Forestry Waste
- Hemp
- Lignins
- Plastic Waste
- Pulp and Paper
- Syngas
- Waste and Waste Oils

Feedstocks

"LEC provided us with expert witness services that produced a necessary and high-quality analysis of a proprietary technology at the center of an intellectual property case. The expert's analysis, report, and testimony were instrumental in providing a very effective defense for our client. I would highly recommend LEC to others requiring this type of service."

Daniel J. Burnham

Partner | Nixon Peabody





Five Steps to Success and Sustainability

Our consistent approach to project planning and management ensures that your bioeconomy project will meet the goals of your organization.

1 Establishing Your Goals

The most important part of any project is understanding your business goals. This understanding allows us to gather the necessary expert(s) that meet your specific needs.

2 Reviewing Our Proposal

With a solid understanding of your objectives, we will present a proposal for deliverables including time and cost, choosing the best experts for your project. We will review the proposal with you to ensure we are in alignment.

3 Gathering and Analyzing Data

As your project begins, our experts will gather and analyze existing data, ranging from statistical analyses to first-person interviews based on your project scope.

4 Delivering Reports or Services

After completing our analysis, we will provide a detailed report of our findings. For projects which require ongoing oversight, our team will manage your project with continual communication, keeping you informed throughout the process.

5 Following-up to Ensure Success

Many projects require additional steps to reach completion, and our experts are available to help you every step of the way. We are truly committed to achieving successful and sustainable outcomes for our clients, from project inception to implementation.



LEC provided us with essential, unbiased analysis that covered technology, physical plant, and financial reviews. Their work was an instrumental part of our decision to move forward with a significant capital investment, and we would gladly recommend them to others seeking this type of assistance.

Ethan Shoemaker

Investment Partner & Head Infra Credit, Orion Infrastructure Capital



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We came to LEC with a challenging request: to opine on a novel strategy that involved piecing together a couple of established, distinct concepts under a tight timeline. LEC was able to call on two specialists from their deep bench with exactly the experience we needed to validate our strategy. And they were able to produce a solid report within a month. The team worked exceptionally efficiently together, diving into the details of our concepts and turning drafts as fast as we could provide guidance on them. LEC is a great partner; for every idiosyncratic ask, they seemingly have an expert ready to respond.

Nick Babikian

Vice President, Business Development Hunt Energy Network



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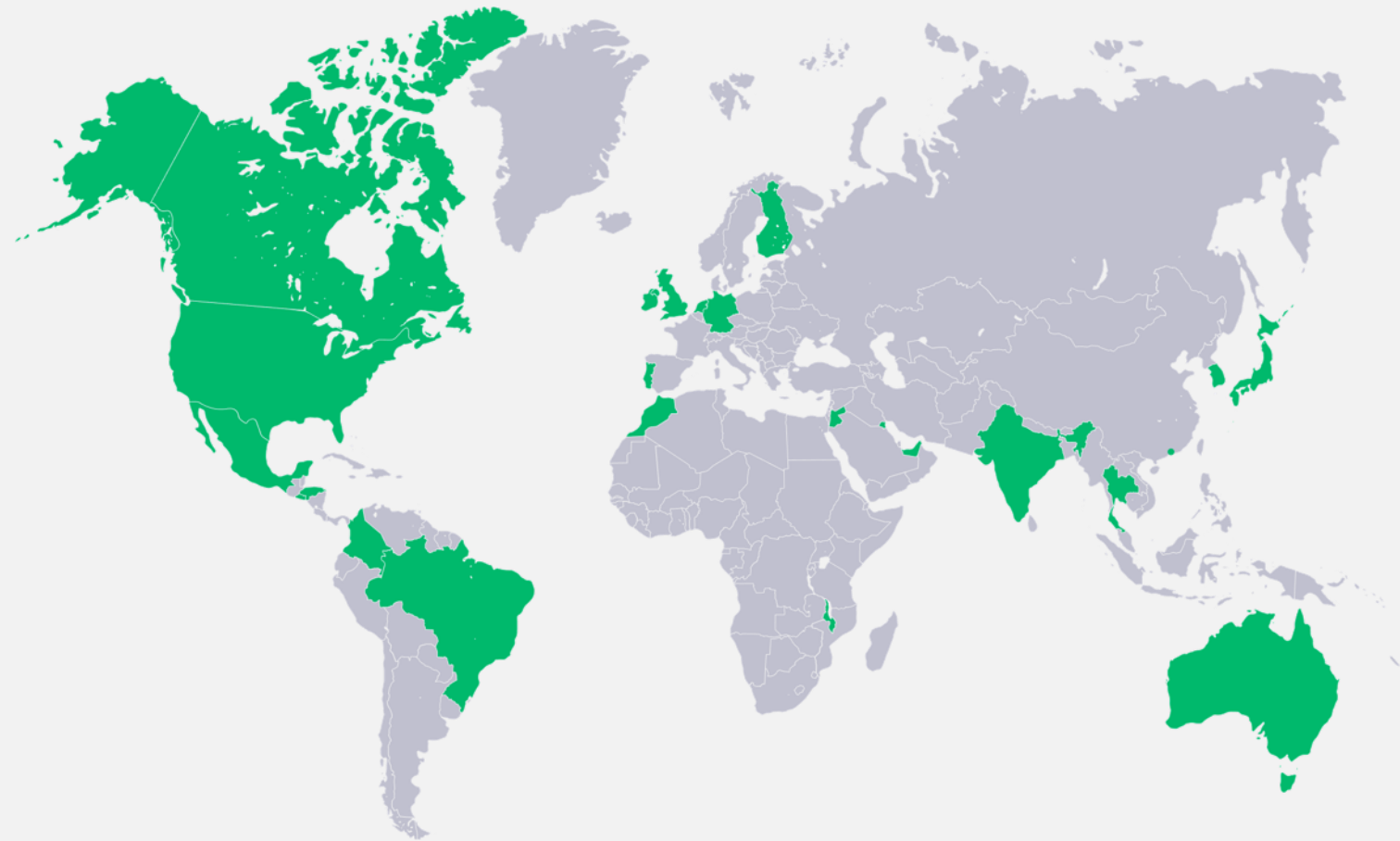
Through technical insights, multiple due diligence requirements and an engineer's DOE loan guarantee application from 2019-present, LEC has been instrumental in Danimer Scientific's ability to expand our production capacity of completely biodegradable PHA products.

I highly recommend LEC.

Phil Van Trump

Chief Scientific and Technology Officer Danimer Scientific





Guiding Sustainable and Successful Projects Around the World

Our experts have experience managing bioeconomy projects across geographic and cultural boundaries.



Thank you!

Ready to get started? Have any questions?
Let's schedule a call to learn how we can help you.

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