

Locus Bio-Energy Solutions® ESG Benefits

GROWING DEMAND FOR ESG-FRIENDLY OILFIELD CHEMISTRIES

Oil & gas companies are looking for green, sustainable oilfield chemistries that can optimize costs, improve performance and exceed ESG goals to preserve shareholder value. Locus Bio-Energy Solutions® (Locus BE) ESG-friendly biosurfactant technologies meet these needs by:

1

Reducing Scope 1 Emissions & Carbon Footprint

Carbon-neutral biosurfactants maximize total oil recovery to minimize the need for new drilling

2

Minimizing Health & Environmental Concerns

Replace synthetic chemistries with fully biodegradable biosurfactants made from renewable, sustainable raw materials

3

Optimizing Operations & Costs

Double initial production and sustain higher rates for several months with no downtime for superior ROI and profitability

ADDRESSING TOP ESG CHALLENGES

1 Reducing Scope 1 Emissions & Carbon Footprint

Hydraulic fracturing of shale reservoirs typically recovers 8- 10% of the original oil in place. Oil producers often leave the remaining 90% and instead drill new wells to extract another 10% in a new location. This high-CAPEX drilling approach increases the carbon footprint of oil production, greenhouse gas emissions and higher water use for new completions.



Carbon-neutral biosurfactants are field proven to achieve higher and faster peak oil production and mobilize more oil from existing wells (up to 45%) - minimizing the need for new drilling to increase oil and gas production and lowering the carbon footprint of operations (less water and sand usage, truck deliveries and diesel emissions). They can replace traditional surfactants in many oilfield applications at up to 50 times lower effective concentrations—greatly reducing chemicals needed to maintain production.

✓ 0 carbon products¹

✓ 50x lower dosage rates

2 Minimizing Health & Environmental Concerns

Commercial surfactants traditionally used in the oilfield are typically synthesized from petrochemicals and can represent a significant environmental risk in large-scale use, with inherent aquatic toxicity. They require less than 1 mg/L to kill off or prevent water organisms from reproducing. In addition to their high toxicity levels, traditional surfactants do not biodegrade easily and can bio-accumulate across the marine food chain, causing human and aquatic health and safety concerns.



Locus BE biosurfactants are fully biodegradable with low acute toxicity, making them safe for fragile environments. The treatments are water-based and produced using renewable raw materials—minimizing the use of BTEX solvents as chemical “carriers”. Studies demonstrate a “no-observed-effect aquatic toxicity concentration” (NOEC) of 11.3 mg/L as compared to approximately 1 mg/L for currently used surfactants.

✓ 10x lower toxicity²

✓ 100% biodegradable

3 Optimizing Operations & Costs

Synthetic hydrocarbon-based surfactants and chemicals used for remediation, production and fracking / completions are costly and have performance challenges in downhole conditions. They often require high dosage rates to effectively reduce Interfacial (IFT) and Surface tensions and have larger micelle sizes (100 nm), which can prevent them from reaching immobile oil in unconventional tight formations where pore throats are small (3-50 nm). With budgets significantly reduced and ESG pressure rising, operators need new solutions to sustainably recover more from current assets.



Locus BE’s biosurfactants reduce IFT faster and lower than traditional surfactants, allowing them to outperform at a fraction of the dosage rate and cost. Their small micelle size (<2 nm) allows them to reach otherwise immobile oil. Operators typically see 2x more initial production with sustained increases of 45% or higher for 6-12 months, resulting in 2-3x higher ROI and treatment paybacks in less than four months. They are also the only biosurfactant treatments that qualify users for a 10-year, 50% severance tax credit on all oil produced, saving millions of dollars annually.

✓ 2x higher initial production

✓ 2-3x ROI

¹ Carbon footprint certification is in process with SGS, the premier global environmental certification agency
² <https://doi.org/10.1002/ejlt.200900153>



ADDITIONAL ESG BENEFITS

E

Environmental

Company's impact on ecosystems, water, air and human health.



3,671.31
Metric tons of CO₂e -equivalent to emissions from-

800 cars
Have been prevented through Locus BE's internal energy and composting initiatives



Minimizing Pollution and Climate Change Contribution.

- Innovative fermentation technology allows the development of high-quality and nature-based biosurfactants at as little as 10% of standard production costs—reducing energy usage and resources.
- Biosurfactant treatments are Biosafety level 1, fully biodegradable and have extremely low toxicity, lowering risk from spills and minimizing environmental impact.
- Locus BE's Biosurfactants are carbon-neutral, reduce water usage and help lower Scope 1 and supply-side Scope 3 emissions.
- Operational energy use associated with biosurfactant production is offset by new on- or off-site renewable energy sources. 4,654,000 kWh of renewable energy have been purchased to date.

Reducing and Managing Waste.

- ISO 9001-accredited manufacturing program implements lean tools, including Six Sigma techniques and the 5S methodology, that result in reduced waste, minimized contamination risks, optimized productivity, higher yields and lower operating costs.
- 99% of raw materials are purchased locally within 500 miles of our production plant—supporting local suppliers and reducing costs by 25%.
- Locus BE's green production methods use renewable, sustainable raw materials and utilize by-products of the fermentation to reduce waste.
- Locus BE utilizes composting to reduce internal waste, with more than 20,825 pounds of compost collected to date.
- In field applications, each treatment is tailored to individual wells and offers multiple mechanisms of action, eliminating the need for multiple products to achieve the same benefits.
- Unlike synthetic surfactants, up to 50% of Locus BE's biosurfactants are retained in reservoirs and slowly release over weeks and months, ensuring a long-term positive impact on production, requiring less frequent treatments to sustain increased production.

Reducing and Managing Waste.

- Locus BE's Biosurfactants can double initial production and boost ongoing production by over 45%. Each treatment lasts for several months by breaking down the "interfacial tension" between the oil and the reservoir rock, releasing more oil.



S

Social

Company's impact on employees and on society.



Security and Human Rights.

- Locus BE actively promotes diversity in the workplace and has talented team members from seven different countries.
- 20% are Gen Z (many of whom are in leadership positions within their departments) and 35% of the women hold senior management roles.
- All benefits are non-denominational and social responsibility initiatives were developed to encourage volunteering and community-focused events.

Workforce Health and Safety.

- All products are HSE-friendly and safer alternatives to current toxic chemicals and thermal treatments with up to 50x lower dosage rates, allowing for less human exposure to hazards and lower environmental impact for both customers and the Locus BE team.
- All employees go through an onboarding and training process, along with ongoing full company safety trainings.
- The company culture encourages innovation, forward-thinking and professional growth, with high retention and advancement rates (15%) through progressive leadership approaches.
- Locus BE pays for 90% of employee healthcare premiums and provides benefit packages that exceed industry standards.

Community Relations.

- Employees have donated 2,235 pounds of items to local charities, from clothing to food.
- Growth is continuing across top U.S. oil basins, with localized facility expansions in Texas and Ohio.
- Low-CAPEX production process does not require an advanced degree to operate, offering a wide range of employment and economic opportunities throughout these communities.
- Facilities can be established and scaled quickly anywhere in the world for substantially lower costs, eliminating expansion challenges and creating broader reach opportunities.
- New programs and benefits are continuously developed to embrace an environmental and community focus, such as an extensive recycling and composting program, quarterly donations to local non-profits, paid time off for volunteering and community involvement.

G Governance

Corporate policies and how the company is governed.

Corporate Risk Management and Business Transparency.

- Scientific and financial support is given from the parent company, Locus Fermentation Solutions (Locus FS), reducing overall corporate risk.
- “Asset-Lite” business model is used to distribute products via established oilfield chemical companies—eliminating resource duplication and reducing operational carbon footprint of operations while providing maximum access to end-users.
- Low-CAPEX and ISO 9001-accredited manufacturing techniques remove efficacy and cost issues and can be scaled anywhere within months, reducing financial risk and opening global growth opportunities.
- The approach allows customization to a multitude of applications and accelerates commercial deployment to eliminate R&D expenses.
- Owners and operators reduce their own corporate risk by using economically viable solutions that safety amplify well performance, extend the lifespan and reduce the need for new drilling.

Management of Legal and Regulatory Environment.

- Treatments are the first biosurfactants approved by the Texas Railroad Commission as an “Enhanced Oil Recovery” technology eligible for a 50% reduction in severance tax for 10 years—worth millions of dollars annually.



Locus BE has made massive strides in shifting the oil industry’s perception of green technology, proving that environmentally friendly solutions can be both highly effective and commercially viable. Using unique and patented production technology, the company developed the industry’s first nature-based, customized biosurfactant treatments that can be formulated into numerous oilfield chemical applications proven to outperform and replace toxic and low-biodegrading traditional surfactants. This innovative approach is moving the oil industry forward in environmental stewardship, social responsibility, safety and profit—with unmatched ESG benefits.