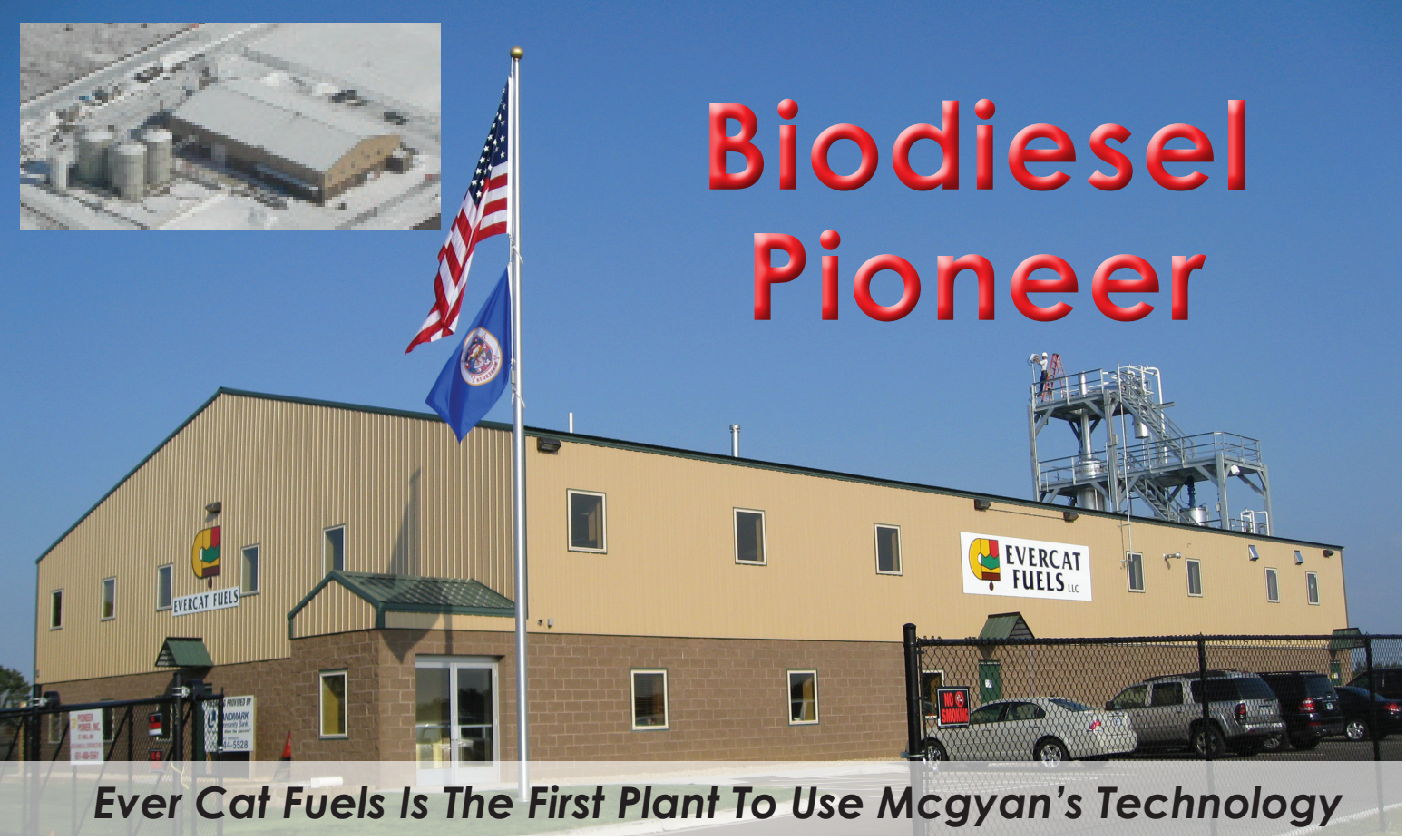


Biodiesel Pioneer

Ever Cat Fuels Is The First Plant To Use Mcgyan's Technology

Ever Cat Fuels (ECF), a 3-million-gallon-a-year (MMGY) biodiesel plant in Isanti, MN, is the first commercial plant designed to use the Mcgyan® biodiesel technology.

In addition to operating as a commercial plant, ECF is a demonstration plant for prospective licensees of the Mcgyan process; serves as a training facility for licensees; and contains a large laboratory for feedstock testing.

"The patent-pending Mcgyan technology is the first of its kind in the world," said David Wendorf, director of marketing for Mcgyan Biodiesel, which is headquartered in Anoka, MN, a suburb of Minneapolis-St. Paul.

"As far as we know, no one else is making biodiesel with this type of a process," he said.

The Mcgyan process uses no water or harsh chemicals and can process feedstocks with high free fatty acid (FFA) content, Wendorf explained.

It saves steps in biodiesel production, Wendorf said, because transesterification and esterification take place simultaneously in a continuous process that takes seconds, instead of hours as does the traditional biodiesel process.

The process takes a mixture of heated feedstock and alcohol which is introduced into 6-inch wide and 6-feet long reactor tubes, and run over a fixed-bed, metal-oxide catalyst.

The catalyst is durable and never wears out, thus the name "Ever Catalyst," or "Ever Cat."

Because ECF has the ability to use any lipid feedstock, it has the flexibility to buy lower-cost feedstocks such as used cooking oil and other feedstocks with high free fatty acid content.

Plant History

ECF began operations on Sept. 28, 2009. It was built on a 3-acre plot in Isanti, 40 miles north of Minneapolis-St. Paul. An adjacent 5-acre plot provides space for a possible future expansion to 10 MMGY, he said.

Wendorf said the Mcgyan process was developed in 2006 at SarTec Corp. by Augsburg College student Brian Krohn and his professor, Arlin Gyberg;

"The Mcgyan technology is the first of its kind in the world. As far as we know, no one else is making biodiesel with this type of a process."

- David Wendorf, director of marketing, Mcgyan Biodiesel

Facility Feature

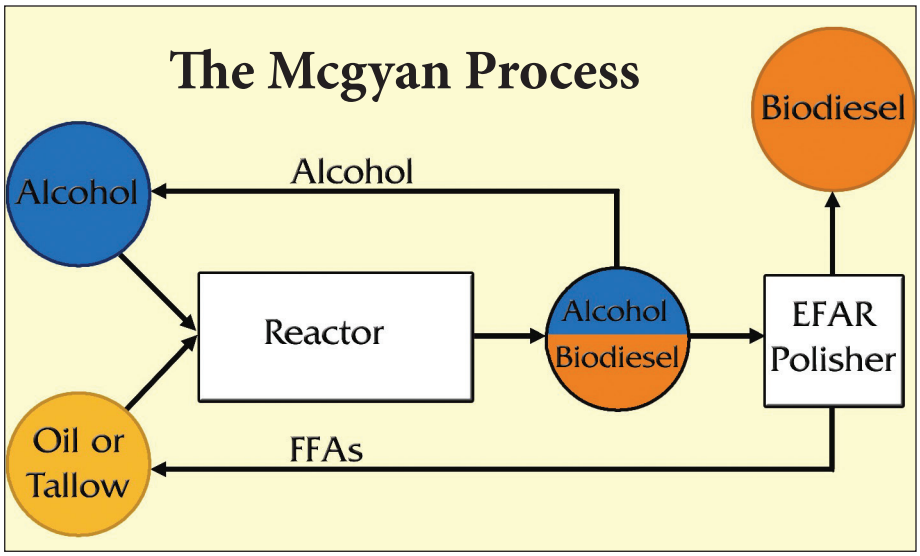
Ever Cat Fuels, LLC

763-444-8444 | Isanti, MN
Evercatfuels.com

Larry McNeff, Chief Managing Officer
Clayton McNeff, Vice President and Director of Research
Steve Rupp, Vice President

Employees: 20
Capacity: 3 MMGY
Feedstock: Multiple

Larry McNeff in the ECF lab.



Oil or tallow feedstocks and alcohol are converted into biodiesel in the Mcgyan reactor. Excess alcohol is recycled.

Clayton McNeff, an Augsburg College graduate; and Ben Yan, research director at SarTec Corp.

SarTec Corp., which is based in Anoka, MN, is owned by the McNeff family.

The Mcgyan name is a composite of the names *Mc*Neff, *Gy*berg, and *Yan*.

Mcgyan Biodiesel, LLC is a privately-held company that licenses the Mcgyan biodiesel process technology.

The Mcgyan technology also can be added to an ethanol plant to use the oil extracted from dried distillers grains with solubles (DDGS) as a biodiesel feedstock.

Biodiesel produced at ECF meets ASTM D 6751 specifications, Wendorf said.

Company Organization

Majority equity owners of both Mcgyan Biodiesel, LLC and Ever Cat Fuels, LLC are the McNeff family, Wendorf said, including Larry McNeff, who is chief managing officer of Mcgyan, and Clayton McNeff, who is chief science officer.

ECF designed and built the plant as its own general contractor. A local contractor did the construction.

It cost $10 million to buy the land and build the plant and its tank farm, Wendorf said. The project was financed with a combination of equity financing and bank loans.

The site was selected because of its rural location, a nearby and available labor pool, and tax increment financing that was granted by the local government.

Wendorf said money is currently being raised to buy additional equipment for a possible expansion and for an initiative to contract with Minnesota farmers to raise pennycress, also known as stinkweed, and camelina as feedstocks for ECF.

Both crops can be grown by Minnesota farmers as a second crop that is planted after soybeans are harvested or ▶

The inventors of the Mcgyan biodiesel process are, from left to right: Arlin Gyberg, Clayton McNeff, Ben Yan, and Brian Krohn.

Ever Cat Fuels' tank farm consists of three 70,000-gallon tanks. Two are used for storing biodiesel and one is for storing feedstocks.

on land that is not suitable for growing soybeans, he said.

Mcgyan Biodiesel assists in the management of the plant with ECF's management team.

Feedstock

The Mcgyan process allows ECF to process any feedstock, Wendorf said.

"We've been using waste greases like used cooking oils, waste vegetable oils from food processing plants, and non-food grade corn oil derived from DDGS that we purchase from ethanol plants," Wendorf said.

Because the Mcgyan technology can process non-food grade oils, plants using the technology have feedstock costs that are considerably lower than other biodiesel producers, he said.

Biodiesel plants built in the future will use more non-food feedstocks, including energy crops such as pennycress and camelina, he added.

"We've been focusing on pennycress and camelina because they grow well in Minnesota," he said. "We see them as future feedstocks for us. Our technology allows us to use non-food crops so it plays into that whole energy crop scenario."

Marketing

Mcgyan procures the feedstock and markets the biodiesel as part of its licensing agreement with ECF.

The bulk of ECF's production is sold to blenders to satisfy Minnesota's state biodiesel mandate, which requires that all petroleum-based diesel contain 5% biodiesel (B5), Wendorf said.

The mandate will increase to B10 next year.

Licensing

In February 2010, Mcgyan Biodiesel and Biodiesel Analytical Solutions (BAS), Delaware, OH (740-369-5475), formed a partnership to commercialize Mcgyan's technology.

According to the partnership agreement, BAS does the sales and marketing of the Mcgyan technology to licensees.

Mcgyan focuses on site selection, technology, plant design, plant engineering services, remote plant monitoring, supply of catalyst and other plant equipment, plant management, plant operator training, feedstock procurement, and the marketing of biodiesel.

Terms of the agreement called for BAS to take a minority ownership stake in Mcgyan, but both parties declined to say how much.

In addition to ECF, there is one other licensee of the Mcgyan technology.

That is Growth Energy, LLC, Forest City, IA, which is in the final stages of raising capital, Wendorf said.

Transportation

ECF does not transport its feedstock or biodiesel at this time. Feedstock sellers haul feedstock to the plant and biodiesel is picked up at the plant by buyers. All deliveries and shipments go by truck.

There is a rail line near the plant, Wendorf said, but no connecting rail spur. "If we do our expansion to 10 million gallons, we'll have to build a rail connection," he said.

Storage Capacity

The tank farm consists of two 70,000-gallon tanks for storing biodiesel and one 70,000-gallon tank for storing feedstocks.

"Because we have one feedstock tank, it all gets put in that tank," Wendorf said.

The Future

Expansion at ECF will occur as more energy crops such as pennycress and camelina are grown in the surrounding area.

"We've got some farmers interested in planting those crops on contract," Wendorf said.

It would take 35,000-40,000 acres of pennycress to fuel the ECF plant, Wendorf explained.

There is more than twice that amount of acres in a neighboring county that is in pasture formerly used for dairy farms, he said.

Those acres could easily be converted to raising pennycress and camelina, Wendorf added.

Outlook

"We see a bright outlook for the future of biodiesel as an industry and specifically for the Mcgyan process," Wendorf said.

"The new Renewable Fuel Standard mandate and state mandates, along with the desire to become energy independent, will contribute to the growth of the industry.

"The Mcgyan biodiesel process used by ECF will become more popular in the industry as new non-food feedstocks such as energy crops become more available in the future."

Jerry Perkins, editor