



Virent, Inc.

Dave Kettner, President



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Virent Value Proposition: Biobased feedstocks to direct replacement fuels and chemicals



Leading bio-based catalytic technology to reduce the carbon footprint of everyday transportation fuels such as gasoline, jet fuel and diesel, as well as plastics, fibers, and packaging:

- **Feedstock Flexible:** Feedstock flexibility allows the use of commercially available sugars for a first plant project, with the prospect of sugars from cellulosic materials in the future when commercially available
- **Scalable:** Uses catalytic processes that are scalable and common to today's refining industries
- **Superior Yields:** Demonstrated yields are higher than possible with fermentation and enzymatic technologies
- **Drop-In Products:** Products are compatible with existing materials and supply chains

Virent Overview

- Founded in 2002 in Madison, based on technology developed at the University of Wisconsin
- Wholly-owned subsidiary of Marathon Petroleum Corp as of October 1, 2018
- Early investors included Shell, Cargill, Honda and various financial investors
- Recipient of grants from the USDA, DOE, DOD, FAA and others
- Extensive IP portfolio
 - Over 215 issued/allowed patents
 - Over 125 pending patent applications
- Current focus on scale-up and first plant commercial deployment

Partners



Technology and Capabilities



BioForm Gasoline/SAK Jet Fuel/Aromatics

Tested in Real World Applications



Successful deployment in high performance environment:

- Virent's biobased gasoline fuel being used by the Scuderia Ferrari race team supplied by Shell, in Oct 2010.
- Fuel produced from sugar beets in Eagle demonstration plant.



Successful 12-vehicle No-Harms Testing:

- Fleet trial successfully completed by Shell in the summer of 2011.
- Results demonstrate gasoline produced with Virent technology performs as well as fuels derived from petroleum.



SAK Jet Fuel Successful Flight:

- Test flight on July 17th 2015
- Emissions measurements at altitude and engine performance monitoring
- Moving through ASTM approval process for jet fuel



Successful Chemicals applications:

- Bio para-xylene produced in Virent's Madison facility that meets commercial PX specifications
- Converted to 100% bio PET resin and 100% bio polyester fiber by industry partners





Thank you

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