

# **Chronology of Events Involving Ethanol and Biodiesel Fuels in Michigan and Nation**

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- 1990—Congress adopts the 1990 Clean Air Act Amendments which identified numerous areas of the country, that must reduce or eliminate their air pollution levels and included southeastern Michigan. Those areas must change the gasoline and diesel fuels used, either year-round or seasonally. Through the next several years, cleaner and cleaner fuels such as ethanol, natural gas, biodiesel and propane were used in cars, trucks and buses.
- 1991—Michigan is founding member of Governors’ Ethanol Coalition, the Coalition's Administrative Office is at Box 95085, Lincoln, NE 68509. Several hundred commercial service stations provide E-10 (10% ethanol blends with gasoline) to motorists.
- 1991—Michigan Soybean Promotion Committee (MSPC) begins soy biodiesel promotion/research activities by fueling its own Cummins diesel pickup with B20 biodiesel
- 1992—Congress and President Adopted Federal Energy Policy Act (EPACT) of 1992, Alternative Fuel Vehicle (AFV) Provisions for Alternative Fuel Producers as well as Federal and State fleets
- Summer 1992— Michigan State University (MSU) Crops Farm powers tractors and forklift with biodiesel fuel blend
- 1992—National Biodiesel Board formed with Michigan as a charter member
- 1993—State of Michigan acquired 83 AFVs, including 59 vehicles fueled by ethanol (E-85) or methanol (M-85); 22 electric powered; and two vehicles fueled by Compressed Natural Gas.
- 1994—State of Michigan acquired 16 additional AFVs, including 5 vehicles fueled by ethanol (E-85); and 11 vehicles fueled by Compressed Natural Gas.
- 1994— Flint Mass Transit Authority powers promotional buses with biodiesel
- 1994—U.S. Dept of Energy (DOE) operates its fishing research vessel “Grayling” powered by B20 on Lake Huron
- 1995—State of Michigan acquired 116 additional AFVs, including 7 vehicles fueled by ethanol (E-85); and 109 vehicles fueled by Compressed Natural Gas.
- 1996—State of Michigan AFV fleet consisted of 275 vehicles total, consisting of 71 fueled by ethanol (E-85) or methanol (M-85); 22 powered by electricity/rechargeable battery; 177 vehicles fueled by Compressed Natural Gas; and 5 vehicles powered by Propane (LPG).

- October 1996—Michigan Alternative Fueling Stations consisted of 295 stations total with 219 Propane (LPG); 35 Compressed Natural Gas; three methanol (M-85); 37 electric; and one ethanol (E-85) station.
- December 1996—“Michigan State Plan for Alternative Fueled Vehicles,” prepared by: State of Michigan Alternative Fueled Vehicle Inter-Departmental Task Force and presented to Governor John Engler.
- 1998—The 1992 Federal Energy Policy Act (EPACT) was amended to include B20 as official alternative fuel for diesel engine powered vehicles; also allowed alternative fuel vehicles purchase credits to government and/or government regulated fleets when using biodiesel in at least a B20 blend.
- March 1998—First commercial E-85 station opens in Lansing, Michigan (Ball Park Mobil).
- May 1999—General Motors sponsors National Ethanol Vehicle Challenge with new Chevrolet Silverado pickup trucks. A stop in Lansing for the 14 college teams road rally with two teams from Michigan competing: Wayne State University and Kettering University.
- 1999—500,000 gallons of biodiesel fuel were sold in the U.S. and only about 50,000 in Michigan.
- 2000—Two refueling stations in Michigan have biodiesel fuel available
- 2000—State of Michigan’s Michigan Department of Management and Budget and Michigan Dept. of Transportation begin using B20 fuel for state fleet trucks by virtue of 1998 EPACT amendment.
- 2000— Pictured Rocks National Lakeshore in Michigan’s U.P. becomes first public park in Michigan to use B20 year-round in their trucks.
- 2000—The University of Michigan in Ann Arbor fuels 200 diesel buses with B20 fuel.
- 2000— B20 biodiesel becomes the only alternative fuel to successfully complete EPA’s Tier I and Tier II Health Effects testing under the Clean Air Act.
- 2000—Detroit Edison Company (DTE) uses biodiesel fuel in its utility trucks
- 2000—Approximately 100,000 gallons of biodiesel brought in and used in Michigan
- August 2000—Michigan Ethanol Workshop was sponsored by the Biomass Energy Office of Michigan Department of Consumer & Industry Services, Michigan Department of Agriculture and U. S. Department of Energy with many co-sponsors including Corn Marketing Program Committee of Michigan. 80 people attended.
- 2000—The number of E-85 commercial fueling stations in Michigan increases to a total of six, with over one thousand stations offering E-10 (10% ethanol blended gasoline).

- 2000—A fuel-cycle analysis by DOE Argonne National Laboratory concluded the use of ethanol-blended fuels reduces GHG emissions by 12-19%, petroleum use by 90-93%, and fossil energy use by 40%. Ethanol as an alternative fuel (E-85) is a renewable, low-carbon fuel, helps to reduce greenhouse gases (GHG) emitted from cars and trucks, including carbon dioxide, methane, and other gases that contribute to global warming. Growing recognition of ethanol's ability to reduce GHG emissions from vehicles has spurred interest in ethanol production and use worldwide. The production of ethanol represents a carbon cycle, where plants absorb carbon dioxide during growth, "recycling" the carbon released during fuel combustion and releasing carbon dioxide that is reabsorbed by biomass plants
- 2001—American Society of Testing and Materials issued final fuel specification on B100 biodiesel – ASTM D6751
- 2001—City of Ann Arbor begins using biodiesel in their municipal vehicles.
- 2001—Approximately 200,000 gallons of biodiesel brought in and sold in Michigan
- 2001—Construction of Michigan's first commercial ethanol plant (Michigan Ethanol LLC) in nearly 20 years began in a certified industrial park in Caro, MI (Tuscola County). Michigan Department of Environmental Quality permits the Michigan Ethanol LLC plant requiring "state of the art" air pollution control equipment to be built-in which MDEQ believes meets the new national air quality standards for ethanol plants. It is one of the best plants in the nation because it is using thermal oxidizers with its grain dryers and meets all of the MDEQ environmental permit requirements. This \$60 million facility will produce 40-45 million gallons of fuel ethanol. Various state and local incentives were used to attract Broin and Company from South Dakota to build in Michigan, including \$4.8 million state construction grant and tax incentives allowed through a regular Renaissance Zone. Michigan Ethanol LLC invites local corn growers and others to invest in the business and approximately 30% of Michigan Ethanol LLC is farmer-owned. Michigan corn growers assure company that a plentiful supply of quality corn was available in Michigan as feedstock and adequate livestock numbers exist to consume co-product, DDGS (Dried Distillers Grain Solubles).
- 2002—Less than 20 Michigan suppliers of biodiesel in Michigan with Wacker Oil in Manchester, MI first to put B20 at a retail pump
- 2002—St. Johns Public Schools first school district to change entire bus fleet over to B20
- 2002—Approximately 375,000 gallons of biodiesel were brought in and used in Michigan
- November 2002—Michigan Ethanol LLC plant starts operation, buying 15 million bushels of corn from hundreds of Michigan farmers, providing 41 full-time jobs and providing \$110 million annual economic impact to state and local economy.
- 2003—Zeeland Farm Services opens a new \$5 million soybean oil refinery creating 30 new jobs. The refinery combined with ZFS soybean crushing plant enables company to produce food-grade soybean oil and/or refined oil feedstock for a

- biodiesel manufacturing plant to make biodiesel fuel. ZFS begins to market out-of-state biodiesel fuel to customers.
- 2003—New Holland and John Deere back continued development of biodiesel fuel for farm machinery
- 2003—City of Romulus fuels their municipal trucks with B20
- 2003—Utica Community Schools began using B20 in their bus fleet
- 2003—MSU Ag Communication students produced school bus publication titled “Purifying Engines, Protecting Young Minds ~ Soy Biodiesel Fuel”
- 2003—Biodiesel B20 is sold retail at 7 Michigan stations and over 80 diesel fuel suppliers offer biodiesel fuel blends for home/farm/business delivery
- 2003—Michigan State Legislature adopts and Governor Jennifer Granholm approves property tax incentives for the manufacturing and blending of biodiesel fuel. State legislation for mandatory labeling of 10% ethanol blends at Michigan service station gasoline pumps is changed to be consistent with national voluntary label standards.
- June 1, 2003—Michigan’s ban on the use of the gasoline additive Methyl Tertiary Butyl Ether (MTBE) took effect. Michigan Department of Agriculture and the Michigan Department of Environmental Quality supported this legislatively imposed ban. MTBE has been banned in many states due to water contamination and health concerns. A University of California-Davis report “Health & Environmental Assessment of MTBE” found that there are “significant risks and controls associated with water contamination due to the use of MTBE.”
- 2003—Michigan ethanol consumption is estimated to be 151 million gallons according to the U.S. Energy Information Administration and Federal Highway Administration.
- December 2003—Michigan Soybean Promotion Committee and Michigan Department of Agriculture agree to form Michigan Biodiesel Alliance (MBA) and conduct informational/educational sessions and “biodiesel bus tours” for general public and MBA members.
- 2003—Approximately 750,000 gallons of biodiesel were brought in and used in Michigan
- 2004—Sleeping Bear Dunes National Lakeshore begins using B20 fuel in their trucks
- 2004—Detroit Salt Mine uses B100 in their mining equipment
- 2004—Approximately 90 diesel fuel retailers in Michigan supply biodiesel fuels and approximately 17 retail biodiesel pumps in Michigan
- 2004—At least 30 public school districts in Michigan fueling buses on biodiesel blends

- 2004—Michigan Soybean Promotion Commission (MSPC) offers Biodiesel grants made available to schools to offset higher cost of fuel
- 2004—Michigan Soybean Promotion Committee publishes “Biodiesel Use in Michigan: A Technical, Economic and Environmental Analysis” Report
- 2004—Approximately 1.5 million gallons of biodiesel were brought in and used in Michigan
- 2005— Michigan’s first Marina, Cedar River State Harbor in the U.P., retails B5 at a pump.
- 2005—Kettering University participates in the Clean Snowmobile Challenge using ethanol blended fuel.
- 2005—Michigan Department of Natural Resources begins biodiesel use at its state parks
- 2005—Nine County Road Commissions start using biodiesel fuel in their trucks
- 2005—122 diesel retailers in Michigan supplying biodiesel of which 90 had B100 - At least 31 biodiesel pumps across the state
- 2005—Michigan Soybean Promotion Committee offers biodiesel grants made available County Road Commissions
- 2005—Approximately 40 school districts are using biodiesel
- 2005—St. Johns Public School District documents that their bus fleet fuel economy mileage increases 10% with B20 biodiesel fuel, also saves maintenance costs and teachers and students like cleaner air around buses.
- 2005—Daimler Chrysler announces that the 2005 Jeep Liberty CRD is factory filled with B5
- 2005—Michigan Soybean Promotion Committee (MSPC) and National Biodiesel Board begin funding a Cold Flow study on B100
- 2005—MSPC and MDA estimate that approximately 3 million gallons of biodiesel fuel were brought in and used in Michigan.
- 2005—State of Michigan fleet contains 1,650 alternative fuel vehicles (E85), 22 CNG vehicles, 10 electric/gasoline hybrids, 25 electric vehicles and State Of Michigan has always complied with US EPACT.
- August 2005—Congress adopts new Energy Policy Act (EPACT 2005) amendments which includes a 7.5 billion gallon renewable fuels standard by 2012 into law and this mandates the use of ethanol (and biodiesel) into the American fuel supply.
- August 2005—Groundbreaking ceremony for Midwest Grain Processors (formerly Great Lakes Ethanol) plant in Riga Township (Lenawee County).

September 2005—6 renewable fuels related bills were introduced in Michigan State Legislature, with bi-partisan support.

October 2005—American Trucking Association endorses B5

November 2005—Governor Granholm signs into law the 21st Century Jobs Fund passed overwhelmingly by the Michigan Legislature with a bi-partisan agreement – the largest investment in diversifying our economy this state has ever seen. It'll create tens of thousands of new jobs. Michigan will invest more than \$2 billion in public and private funds to develop new sectors of our economy: Advanced manufacturing, Homeland Security and Defense, Life Sciences; and Alternative Energy.

December 2005—The National Biodiesel Board estimates that 72.5 million gallons of biodiesel were sold across the nation.

2006—General Motors launches massive promotional campaign for flexible fuel vehicles (FFVs) ([www.livegreengoyellow.com](http://www.livegreengoyellow.com)) using E85 ethanol fuel nationwide.

April 2006—Meijer, Inc., Governor Granholm and General Motors announce the installation of 20 new E85 pumps at Meijer's stores in Michigan during the next year.

Summer and Fall 2006—Two Michigan-based amusement companies, Elliott's Amusements and McDonagh's Amusements, use biodiesel in their diesel generators and diesel vehicles at county and state fairs.

2006—Biodiesel included as part of Michigan Department of Environmental Quality Clean School Bus program regional meetings

2006—Projected opening of three new Michigan biodiesel production plants (Gladstone, Bangor and Milan); Ag Solutions, Inc. has Grand Opening on August 18, 2006

June 2006— NOAA ceremony in Muskegon on biodiesel fuel and other biobased products used in research vessels on the Great Lakes

July 2006—Michigan State Legislature passes 7-bill package on renewable fuels and Governor Granholm signs package into law on July 7, 2006.

August & September 2006—Grand Openings of The Andersons Albion LLC Ethanol Plant and U.S. Bio Woodbury Ethanol Plant, each producing more than 50 million gallons annually of fuel ethanol, buying approximately 18 million bushels of corn from hundreds of Michigan farmers, providing 30-35 full-time jobs at plant and each business providing more than \$110 million annual economic impact to state and local economy.

August 2006—Governor Granholm announces goal of 1,000 biofuels pumps by 2008.

2006— Michigan Soybean Promotion Committee offers biodiesel fuel grants available for county fairs and local amusement companies and Michigan Farm Bureau County Promotion & Education Committees.

September 2006—Michigan Agri-Business Association sponsors first BioEconomy Summit with in-depth discussions and presentations on biofuels and bioproducts.

September 2006—DaimlerChrysler Corporation announces that 2007 Jeep Commander will use “clean diesel” engine technology with a B5 biodiesel fuel factory fill at their Jefferson Avenue assembly plant in Detroit.

October 2006—47 Michigan public school districts bus fleets using biodiesel fuel.

October 2006—Michigan Dept. of Labor and Economic Growth announces Biofuels Infrastructure Grants Program that provides funds to Michigan public service stations to install or convert fuel delivery systems to sell high blend ethanol E85 and/or biodiesel blends of B20 or higher. The goal of this program is to increase biofuels infrastructure and availability throughout Michigan. The BIG program was initiated by P.A. 274 which was signed into law July 7, 2006. The program is funded through a grant from the U.S. Department of Energy and administered by the DLEG's Energy Office in cooperation with the Michigan Strategic Fund.

December 2006—Michigan Dept. of Management and Budget dedicates both E85 and biodiesel pumps at State Secondary Complex for refueling state vehicles

November 2006—Michigan at least 52 B2-B100 pumps, [www.michigansoybean.org](http://www.michigansoybean.org)

November 2006—Michigan has 32 E85 ethanol fuel pumps, [www.e85fuel.com](http://www.e85fuel.com)