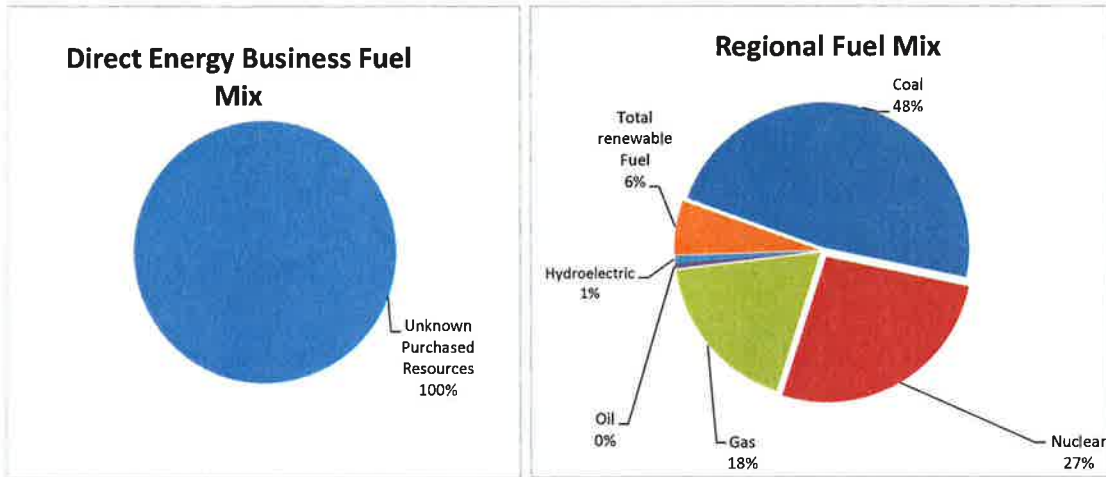




The environmental characteristics of your electricity as required by Public Act 141 of 2000

Comparison of the Fuel Sources Used to Generate Electricity

Direct Energy Business vs. regional average for the 12-month period ended 10/31/2016.



Fuel Sources	Percentage of fuel types used to produce Direct Energy Business electricity.	Percentage of fuel type used to produce electricity in Michigan, Illinois, Indiana, Ohio, and Wisconsin.
Coal	0	47.716
Nuclear	0	26.671
Gas	0	18.127
Oil	0	0.575
Hydroelectric	0	0.844
Total Renewable Fuel	0	6.067
Biomass	0	0.526
Biofuel	0	0.789
Solid Waste Incineration	0	0.087
Wind	0	4.113
Wood	0	0.477
Solar	0	0.075
Unknown	100	100

Note: (1) Biomass above excludes wood; solid waste incineration includes landfill gas, and (2) "--" indicates not applicable or negligible, less than 0.1%.

Airborne Emissions and High-Level Nuclear Waste Comparison

Direct Energy Business, LLC vs. regional average for the 12-month period ended 10/31/2016.

Type of emission/waste	Direct Energy Business average lbs/MWh	A regional average of all generation in Michigan, Illinois, Indiana, Ohio, and Wisconsin
Sulfur Dioxide	Unknown	7.56
Carbon Dioxide	Unknown	2,170
Oxides of Nitrogen	Unknown	2.01
High-level nuclear waste	Unknown	0.0083



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The following is the Michigan Public Service Commission (MPSC) Staff's calculation for regional average fuel mix, emissions, and high-level nuclear waste. This data has been prepared as directed by the Commission in Order Case No. U-12487, dated [June 5, 2001](#) and [December 20, 2001](#), concerning supplier disclosure standards as required under 2000 PA 141. Suppliers may rely upon this information to meet their disclosure requirements for the year 2016.

Michigan Public Service Commission
Regional Electric Power Fuel Sources, Emissions, and Nuclear Waste
for Electric Supplier Disclosures for the Year 2016
 Issued: October 31, 2016

Fuel Source For the 12-month Period August 2015 - July 2016	Regional Average Fuel Mix Used to Generate Electricity in Michigan, Illinois, Indiana, Ohio, and Wisconsin
Coal	47.716%
Nuclear	26.671%
Natural Gas	18.127%
Oil	0.575%
Hydroelectric	0.844%
Renewable Fuels Total*	6.067%
Biofuel	0.789%
Biomass	0.526%
Solid Waste Incineration	0.087%
Solar	0.075%
Wind	4.113%
Wood	0.477%

*Includes Landfill Gas

Emission/Waste For the 12-month Period August 2015 - July 2016	Regional Average for Fossil/Nuclear Generation for Michigan, Illinois, Indiana, Ohio, and Wisconsin (lb/MWh)
Sulfur Dioxide	7.56
Carbon Dioxide**	2,170
Nitrogen Oxides	2.01
High-Level Nuclear Waste***	0.0083

** Carbon Dioxide emissions for the historical years 1998-2008 have been revised by EIA due to changes in emission factors.

*** High-level nuclear waste is based on discharged fuel for a time span of approximately 2 years in length ending in 2002.

Prepared by: Staff of the Michigan Public Service Commission, November 2016

[Methods for Calculating Regional Electric Generation Fuel Mix and Emission Data \(2010 version\)](#)
[Template for Supplier Disclosure of Fuel Information](#)

- Prior Years:
- [Regional Power Source, Emissions and Nuclear Waste Disclosures - 2015](#)
 - [Regional Power Source, Emissions and Nuclear Waste Disclosures - 2014](#)
 - [Regional Power Source, Emissions and Nuclear Waste Disclosures - 2013](#)
 - [Regional Power Source, Emissions and Nuclear Waste Disclosures - 2012](#)
 - [Regional Power Source, Emissions and Nuclear Waste Disclosures - 2008-B](#)
 - [Regional Power Source, Emissions and Nuclear Waste Disclosures - 2008-A](#)
 - [Regional Power Source, Emissions and Nuclear Waste Disclosures - 2007](#)
 - [Regional Power Source, Emissions and Nuclear Waste Disclosures - 2006](#)
 - [Regional Power Source, Emissions and Nuclear Waste Disclosures - 2005](#)
 - [Regional Power Source, Emissions and Nuclear Waste Disclosures - 2004](#)
 - [Regional Power Source, Emissions and Nuclear Waste Disclosures - 2003](#)
 - [Regional Power Source, Emissions and Nuclear Waste Disclosures - 2002](#)