University of Michigan Eco-Driving Index (EDI)

http://www.ecodrivingindex.org

Latest data: December 2014

Developed and issued monthly by

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What is the EDI?

The University of Michigan Eco-Driving Index (EDI) is a national index that estimates the average monthly amount of greenhouse gases produced by an individual U.S. driver who has purchased a new vehicle that month. The amount of greenhouse gases emitted when using internal-combustion engines depends on the amount of fuel used. The EDI estimates the amount of fuel used (and thus the amount of greenhouse gases emitted) by taking into account two primary variables: the fuel economy of the vehicle and the distance driven.

How is the EDI calculated?

The monthly values of the EDI are derived from two sub-indexes: (1) the average amount of fuel used per distance driven by newly purchased vehicles (EDI_f), and (2) the distance driven per individual driver (EDI_d). The index and the two sub-indexes are computed monthly relative to their respective values in October 2007 (the nominal start of the 2008 model year—the first model year for which the EPA started using the current fuel-economy rating system). The EDI is computed by cross-multiplying EDI_f and EDI_d. The lower the value of the EDI, the smaller the environmental impact.

EDI_f estimates the relative amount of fuel needed to drive a fixed distance. EDI_f is calculated as an inverse of the sales-weighted harmonic mean fuel economy of purchased new vehicles for each individual month.

EDI_d provides information about the relative amount of driving per licensed driver. EDI_d starts with the estimates of the total distance driven in the U.S. for each month as issued by FHWA. These raw distances are then adjusted by us to take into account (1) the seasonal variations in driving (in the U.S. more driving is done in the summer than in the winter), (2) the varying number of days in a month, (3) the continuously increasing number of drivers, and (4) the so-called rebound effect (increased amount of driving as a consequence of improved fuel economy of the new vehicle). (As recommended by the EPA, a rebound effect of 10% is included, meaning that 10% of the gain in fuel economy is assumed to be effectively lost due to increased amounts of driving.)

Current, recent, and future values of the EDI

The values of the index (EDI) and of its two sub-indexes (EDI_f and EDI_d) from October 2007 through December 2014 are shown in Figure 1 and Table 1.

The EDI for December 2014 stands at 0.81, indicating that in December 2014 there was a 19% reduction of emissions per driver of newly purchased vehicles compared to the situation in October 2007. (EDI_f and EDI_d for December 2014 are 0.81 and 1.00, respectively.)

Future monthly values of the EDI will be issued with a lag of about 50 days (due to lags in the availability of the underlying data). (Data for recent months are occasionally updated in the underlying FHWA and EPA data sources, possibly resulting in small changes to recent sub-index and EDI values.)

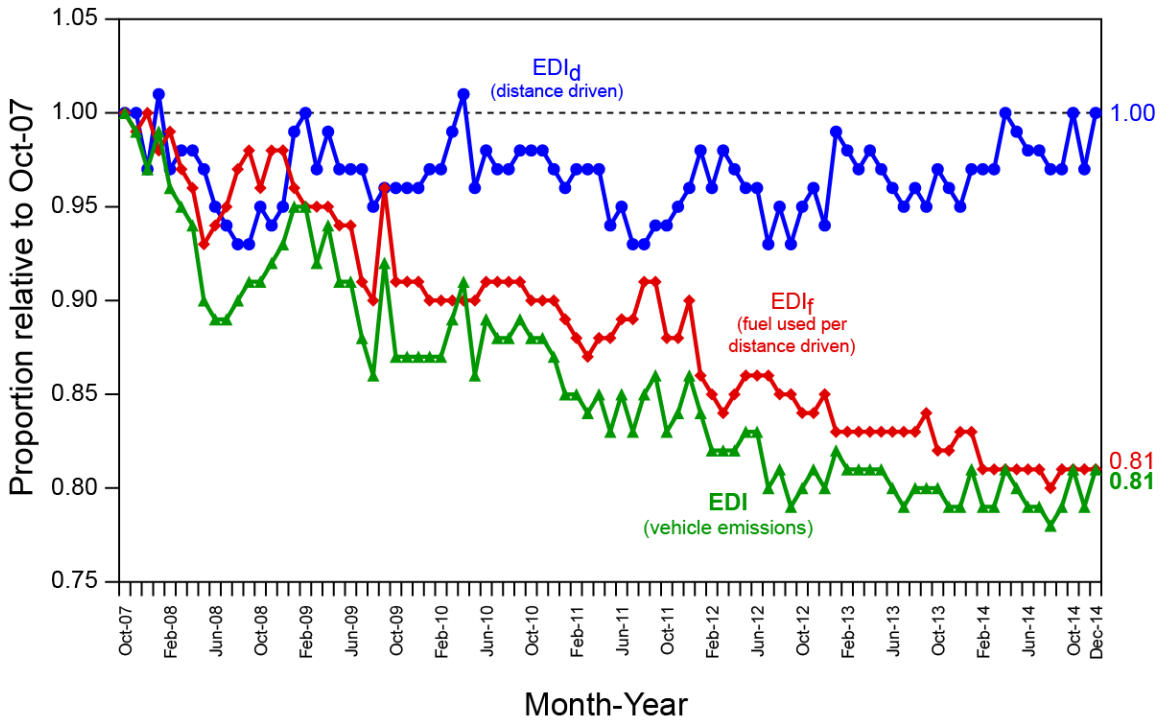

Figure 1. University of Michigan Eco-Driving Index (EDI) and the two sub-indexes (EDI_d and EDI_f) for October 2007 through December 2014.

Table 1
University of Michigan Eco-Driving Index (EDI) and the two sub-indexes (EDI_d and EDI_f) for October 2007 through December 2014.

Month-Year	EDI_d (distance driven)	EDI_f (fuel used per distance driven)	EDI (vehicle emissions)
Dec-14	1.00	0.81	0.81
Nov-14	0.97	0.81	0.79
Oct-14	1.00	0.81	0.81
Sep-14	0.97	0.81	0.79
Aug-14	0.97	0.80	0.78
Jul-14	0.98	0.81	0.79
Jun-14	0.98	0.81	0.79
May-14	0.99	0.81	0.80
Apr-14	1.00	0.81	0.81
Mar-14	0.97	0.81	0.79
Feb-14	0.97	0.81	0.79
Jan-14	0.97	0.83	0.81
Dec-13	0.95	0.83	0.79

(continued)

Table 1 (continued)

Month-Year	EDI_d (distance driven)	EDI_f (fuel used per distance driven)	EDI (vehicle emissions)
Nov-13	0.96	0.82	0.79
Oct-13	0.97	0.82	0.80
Sep-13	0.95	0.84	0.80
Aug-13	0.96	0.83	0.80
Jul-13	0.95	0.83	0.79
Jun-13	0.96	0.83	0.80
May-13	0.97	0.83	0.81
Apr-13	0.98	0.83	0.81
Mar-13	0.97	0.83	0.81
Feb-13	0.98	0.83	0.81
Jan-13	0.99	0.83	0.82
Dec-12	0.94	0.85	0.80
Nov-12	0.96	0.84	0.81
Oct-12	0.95	0.84	0.80
Sep-12	0.93	0.85	0.79
Aug-12	0.95	0.85	0.81
Jul-12	0.93	0.86	0.80
Jun-12	0.96	0.86	0.83
May-12	0.96	0.86	0.83
Apr-12	0.97	0.85	0.82
Mar-12	0.98	0.84	0.82
Feb-12	0.96	0.85	0.82
Jan-12	0.98	0.86	0.84
Dec-11	0.96	0.90	0.86
Nov-11	0.95	0.88	0.84
Oct-11	0.94	0.88	0.83
Sep-11	0.94	0.91	0.86
Aug-11	0.93	0.91	0.85
Jul-11	0.93	0.89	0.83
Jun-11	0.95	0.89	0.85
May-11	0.94	0.88	0.83
Apr-11	0.97	0.88	0.85
Mar-11	0.97	0.87	0.84
Feb-11	0.97	0.88	0.85
Jan-11	0.96	0.89	0.85

(continued)

Table 1 (continued)

Month-Year	EDI_d (distance driven)	EDI_f (fuel used per distance driven)	EDI (vehicle emissions)
Dec-10	0.97	0.90	0.87
Nov-10	0.98	0.90	0.88
Oct-10	0.98	0.90	0.88
Sep-10	0.98	0.91	0.89
Aug-10	0.97	0.91	0.88
Jul-10	0.97	0.91	0.88
Jun-10	0.98	0.91	0.89
May-10	0.96	0.90	0.86
Apr-10	1.01	0.90	0.91
Mar-10	0.99	0.90	0.89
Feb-10	0.97	0.90	0.87
Jan-10	0.97	0.90	0.87
Dec-09	0.96	0.91	0.87
Nov-09	0.96	0.91	0.87
Oct-09	0.96	0.91	0.87
Sep-09	0.96	0.96	0.92
Aug-09	0.95	0.90	0.86
Jul-09	0.97	0.91	0.88
Jun-09	0.97	0.94	0.91
May-09	0.97	0.94	0.91
Apr-09	0.99	0.95	0.94
Mar-09	0.97	0.95	0.92
Feb-09	1.00	0.95	0.95
Jan-09	0.99	0.96	0.95
Dec-08	0.95	0.98	0.93
Nov-08	0.94	0.98	0.92
Oct-08	0.95	0.96	0.91
Sep-08	0.93	0.98	0.91
Aug-08	0.93	0.97	0.90
Jul-08	0.94	0.95	0.89
Jun-08	0.95	0.94	0.89
May-08	0.97	0.93	0.90
Apr-08	0.98	0.96	0.94
Mar-08	0.98	0.97	0.95
Feb-08	0.97	0.99	0.96
Jan-08	1.01	0.98	0.99

(continued)

Table 1 (continued)

Month-Year	EDI_d (distance driven)	EDI_f (fuel used per distance driven)	EDI (vehicle emissions)
Dec-07	0.97	1.00	0.97
Nov-07	1.00	0.99	0.99
Oct-07	1.00	1.00	1.00