

Quarterly Industry Update

As of December 31, 2016

Industry: Biofuel Energy

Industry Summary

Cogent Valuation identified Biofuel Energy publicly traded companies, IPOs, and recent M&A transactions within the Biofuel Energy industry, which provides a basis for market and transaction pricing that can be used by your firm in estimating market sentiment and its impact on your firm's value. Over the last year since December 31, 2015, the median 52-week share price return of the Biofuel Energy industry was -18.8%. Between December 31, 2014 and December 31, 2016, the median EV/EBITDA multiple increased from 10.7 to 16.8. Furthermore, the median price-to-earnings multiple increased from 13.8 to 28.3 over the same period.

Comparable Public Company Key Statistics

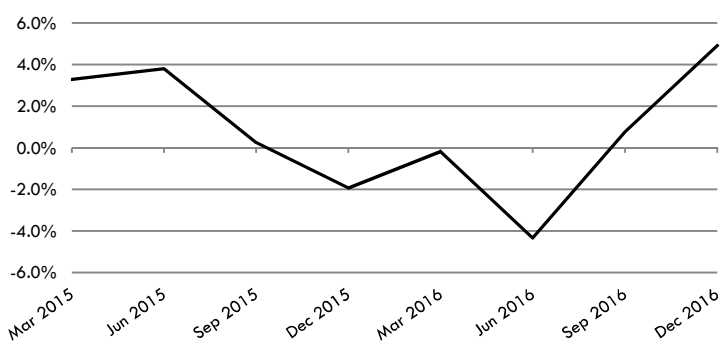
Median 52-Week Return	-18.8%	Median EV/Revenue Multiple	2.8x	Median Price/Earnings Multiple	28.3x
Median 3-Year CAGR Return	-28.7%	Median EV/EBITDA Multiple	16.8x	Median EV/Gross CF Multiple	25.9x

Comparable Public Company Market Price Returns (As of December 31, 2016)

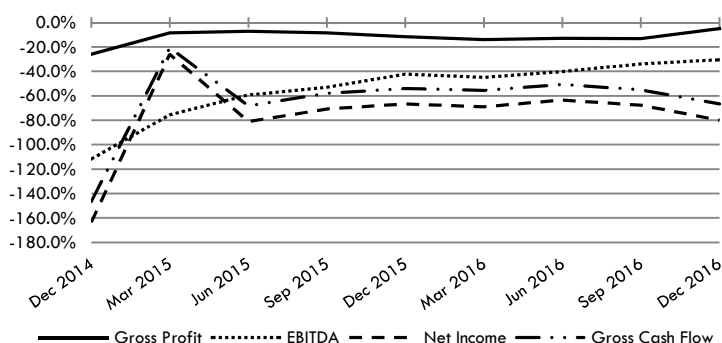
	YTD	3 Month	1 Year	2 Year	3 Year	5 Year	2015	2014	2013	2012	2011
Amyris, Inc.	-54.9%	25.9%	-54.9%	-40.5%	-48.3%	-42.4%	-21.4%	-61.1%	69.6%	-73.0%	-56.7%
Codexis, Inc.	8.7%	3.6%	8.7%	35.1%	48.7%	-2.8%	67.9%	80.0%	-36.7%	-58.3%	-50.0%
Deinove SA	-46.4%	-20.2%	-46.4%	-45.9%	-49.8%	-23.4%	-45.4%	-56.8%	32.1%	58.0%	61.5%
Gevo, Inc.	-72.1%	-64.1%	-72.1%	-81.0%	-79.9%	-71.6%	-87.1%	-77.6%	-7.1%	-75.5%	N/A
Green Plains Inc.	21.6%	6.3%	21.6%	6.0%	12.8%	23.3%	-7.6%	27.9%	145.0%	-19.0%	-13.3%
MGP Ingredients, Inc.	92.6%	23.3%	92.6%	77.5%	112.8%	58.2%	63.6%	205.6%	51.8%	-32.1%	-54.3%
Pacific Ethanol, Inc.	98.7%	37.5%	98.7%	-4.1%	23.1%	-9.8%	-53.7%	102.9%	7.3%	-70.2%	-79.0%
TerraVia Holdings, Inc.	-53.6%	-58.2%	-53.6%	-33.2%	-52.7%	-37.3%	-3.9%	-76.3%	38.5%	-33.9%	N/A
The Andersons, Inc.	41.3%	23.5%	41.3%	-8.3%	-9.1%	9.0%	-40.5%	-10.6%	107.9%	-1.7%	20.1%
Yield10 Bioscience, Inc.	-77.3%	-22.2%	-77.3%	-62.4%	-64.1%	-58.2%	-37.6%	-67.3%	-14.9%	-67.5%	-62.6%
Median of Industry Public Companies	-18.8%	5.0%	-18.8%	-20.8%	-28.7%	-16.6%	-29.5%	-33.7%	35.3%	-46.1%	-52.2%

(Multiple year periods are calculated as the average annual return.)

Median Quarterly Revenue Growth of All Biofuel Energy Companies



Median Gross Profit, EBITDA, Net Income and Gross Cash Flow Margins



Median Public Company Multiples of the Biofuel Energy Industry

Date:	12/31/2014	3/31/2015	6/30/2015	9/30/2015	12/31/2015	3/31/2016	6/30/2016	9/30/2016	12/31/2016
EV/Revenues Multiple	2.5x	1.3x	1.4x	2.3x	1.4x	1.1x	2.1x	2.0x	2.8x
EV/EBITDA Multiple	10.7x	10.2x	8.5x	6.7x	11.8x	10.4x	15.1x	16.5x	16.8x
Price/Earnings Multiple	13.8x	10.9x	10.8x	11.4x	15.9x	50.5x	22.6x	25.4x	28.3x
EV/Gross Cash Flows Multiple	8.6x	7.1x	8.0x	7.0x	11.4x	18.7x	20.9x	34.1x	25.9x

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Quarterly Industry Update

As of December 31, 2016

Industry: Biofuel Energy

Industry Initial Public Offerings (dollars in millions, except share prices)

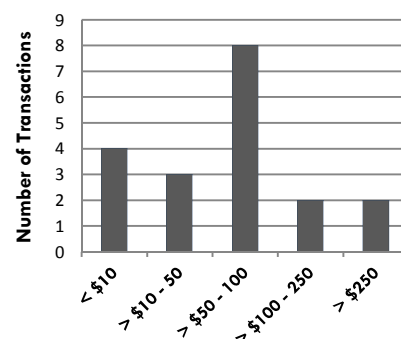
Offer Date	Company Name	Offer Price	Shares Offered	Amount Raised	Total Assets	Debt	LTM Revenues	LTM EBITDA	LTM Net Income	LTM Cash Flows
5/11/2016	Green & Smart Holdings PLC	\$0.13	44.4	\$5.8	\$9.1	\$2.1	\$4.4	\$1.0	\$1.0	\$1.0
1/18/2012	Renewable Energy Group, Inc.	\$10.00	7.2	\$72.0	\$472.6	\$109.5	\$626.8	\$78.6	(\$15.9)	\$85.5
6/23/2011	KiOR, Inc.	\$15.00	10.0	\$150.0	\$82.2	\$9.2	\$0.0	(\$36.0)	(\$53.1)	(\$34.3)
5/26/2011	TerraVia Holdings, Inc.	\$18.00	11.0	\$197.6	\$86.7	\$0.2	\$40.0	(\$16.7)	(\$19.6)	(\$15.8)
2/8/2011	Gevo, Inc.	\$15.00	7.2	\$107.3	\$57.9	\$20.3	\$2.4	(\$32.0)	(\$40.8)	(\$29.2)
9/27/2010	Amyris, Inc.	\$16.00	5.3	\$84.8	\$305.0	\$12.8	\$68.1	(\$62.8)	(\$76.0)	(\$56.4)
4/21/2010	Codexis, Inc.	\$13.00	6.0	\$78.0	\$99.0	\$7.9	\$82.9	(\$11.1)	(\$20.3)	(\$6.0)
6/14/2007	BioFuels Energy Corp.	\$10.50	5.3	\$55.1	\$121.5	\$0.0	\$0.0	(\$12.2)	(\$3.1)	(\$12.2)
11/13/2006	Metabolix, Inc.	\$14.00	6.8	\$95.2	\$22.0	\$0.0	\$5.1	(\$7.7)	(\$8.6)	(\$7.1)
8/22/2006	The Andersons, Inc.	\$37.00	2.3	\$83.3	\$600.7	\$248.8	\$1,331.6	\$68.9	\$28.9	\$90.8
7/12/2006	FutureFuel Corp.	\$8.00	22.5	\$180.0	N/A	N/A	N/A	N/A	N/A	N/A
Median of All IPOs		nm	nm	\$90.0	\$86.7	\$7.9	\$10.3	(\$11.1)	(\$15.9)	(\$7.1)

nm: not meaningful

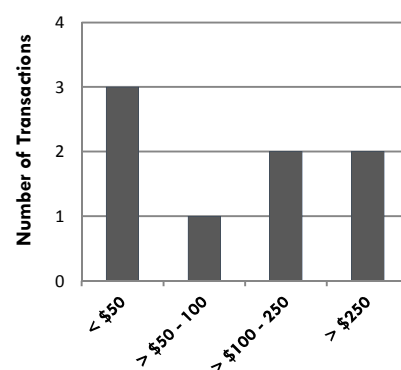
Recent Merger and Acquisition Transactions for a Majority Stake (dollars in millions)

Transaction Date	Target	Acquirer	Transaction Size	% Bought	LTM Revenues	EV/Revenues
11/28/2016	Sun Green Power Energy	Sun Capital Management	\$7.8	81%	\$0.6	16.8x
8/31/2016	Bio-Oils Huelva, S.L.U.	Verdant Palms sl	\$50.1	68%	N/A	N/A
6/25/2015	H2 Logic A/S	NEL ASA	\$38.7	100%	\$5.4	7.2x
6/16/2015	Biomethanol Chemie	OCI N.V.	\$16.9	100%	N/A	N/A
12/5/2014	Red Shield Acquisition LLC	Expera Specialty Solutions	\$10.5	100%	N/A	N/A
10/24/2014	Biofuel Research Pte. Ltd.	Unionmet (Singapore)	\$2.4	51%	\$1.3	3.6x
10/14/2014	Nidera B.V.	COFCO Corporation	\$1,300.0	51%	N/A	N/A
6/22/2014	Virdia Inc.	Stora Enso Oyj	\$62.0	100%	N/A	N/A
1/22/2014	LS9, Inc.	Renewable Energy Group	\$61.9	100%	N/A	N/A
10/31/2013	Verenium Corporation	BASF Corporation	\$96.4	100%	\$53.4	1.4x
5/15/2013	Energy Park Sutton Bridge	Pacific Green	\$68.8	100%	N/A	N/A
10/25/2012	SIA BIOIL	Montague International	\$0.2	90%	N/A	N/A
9/27/2012	A2A Coriance	Kohlberg Kravis Roberts	\$196.0	100%	\$122.5	1.6x
5/7/2012	Pure Biofuels	Pegasus Capital Advisors	\$72.2	100%	N/A	N/A
1/17/2012	GTL Resources	North Atlantic Value	\$140.1	52%	\$333.1	0.4x
1/4/2012	Blue Flint Ethanol	Great River Energy	\$64.4	51%	\$171.7	0.4x
1/3/2012	Range Fuels	Lanzatech NZ	\$5.1	100%	N/A	N/A
12/12/2011	Eco2 Limited	BNP Paribas Investment	\$265.4	100%	N/A	N/A
11/1/2011	NuGen Energy	REX American Resources	\$95.7	51%	\$336.6	0.3x
Median of the 19 M&A Transaction Targets			\$62.0	100%	\$87.9	1.5x

Size of M&A Transactions



LTM Revenues Reported



Definitions of Financial Terms Used in this Quarterly Industry Update:

Enterprise Value (EV): Market Value of Equity + Market Value of Debt - Cash

Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA): Profitability metric sometimes also referred to as operating profit or operating earnings.

Gross Cash Flows: Net Income + Depreciation and Amortization Expense

Latest Twelve Months (LTM): Financial information is as of the latest twelve months through the date of this Quarterly Industry Update.

Quarterly Industry Update

As of December 31, 2016

Clean Energy Industry Aggregates



Comparable Public Company Key Statistics

Median 52-Week Return	-43.8%	Median EV/Revenue Multiple	0.9x	Median Price/Earnings Multiple	9.8x
Median Year-to-Date Return	-43.8%	Median EV/EBITDA Multiple	14.0x	Median EV/Gross CF Multiple	27.6x

Comparable Public Company Market Price Returns (As of December 31, 2016)

	YTD	3 Month	1 Year	2 Year	3 Year	5 Year	2015	2014	2013	2012	2011
Ameresco, Inc.	-12.0%	4.6%	-12.0%	-11.4%	-17.1%	-16.7%	-10.7%	-27.5%	-1.5%	-28.5%	-4.5%
Amyris, Inc.	-54.9%	25.9%	-54.9%	-40.5%	-48.3%	-42.4%	-21.4%	-61.1%	69.6%	-73.0%	-56.7%
Ascent Solar Technologies, Inc.	-99.9%	-87.1%	-99.9%	-98.8%	-97.3%	-87.0%	-86.4%	-84.8%	13.7%	59.0%	-88.4%
Azure Power Global Limited	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Canadian Solar Inc.	-57.9%	-11.4%	-57.9%	-29.0%	-25.8%	35.6%	19.7%	-18.9%	777.1%	27.8%	-78.5%
Codexis, Inc.	8.7%	3.6%	8.7%	35.1%	48.7%	-2.8%	67.9%	80.0%	-36.7%	-58.3%	-50.0%
Deinove SA	-46.4%	-20.2%	-46.4%	-45.9%	-49.8%	-23.4%	-45.4%	-56.8%	32.1%	58.0%	61.5%
Ellomay Capital Ltd.	-6.0%	-11.0%	-6.0%	-8.7%	-6.0%	7.6%	-11.2%	-0.4%	62.9%	6.8%	-25.3%
Enphase Energy, Inc.	-71.2%	-14.4%	-71.2%	-73.4%	-45.8%	N/A	-75.4%	125.4%	73.7%	N/A	N/A
First Solar, Inc.	-51.4%	-18.7%	-51.4%	-15.2%	-16.3%	-1.0%	48.0%	-18.4%	77.1%	-8.6%	-74.1%
Gevo, Inc.	-72.1%	-64.1%	-72.1%	-81.0%	-79.9%	-71.6%	-87.1%	-77.6%	-7.1%	-75.5%	N/A
Green Plains Inc.	21.6%	6.3%	21.6%	6.0%	12.8%	23.3%	-7.6%	27.9%	145.0%	-19.0%	-13.3%
JA Solar Holdings Co., Ltd.	-50.9%	-20.8%	-50.9%	-23.7%	-19.6%	-6.6%	18.5%	-10.7%	114.8%	-36.3%	-80.6%
JinkoSolar Holding Co., Ltd.	-45.0%	-3.6%	-45.0%	-12.1%	-19.6%	25.0%	40.4%	-32.7%	371.8%	24.2%	-75.1%
MGP Ingredients, Inc.	92.6%	23.3%	92.6%	77.5%	112.8%	58.2%	63.6%	205.6%	51.8%	-32.1%	-54.3%
NextEra Energy Partners, LP	-14.4%	-8.7%	-14.4%	-13.0%	N/A	N/A	-11.6%	N/A	N/A	N/A	N/A
Pacific Ethanol, Inc.	98.7%	37.5%	98.7%	-4.1%	23.1%	-9.8%	-53.7%	102.9%	7.3%	-70.2%	-79.0%
SolarCity Corporation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Song Da Industry Trade Joint Stock Company	0.6%	7.5%	0.6%	-9.3%	-3.6%	-2.0%	-18.1%	8.9%	-6.6%	8.1%	-75.2%
SunPower Corporation	-78.0%	-25.9%	-78.0%	-49.4%	-39.5%	1.2%	16.2%	-13.4%	430.4%	-9.8%	N/A
TerraForm Power, Inc.	1.8%	-7.9%	1.8%	-35.6%	N/A	N/A	-59.3%	N/A	N/A	N/A	N/A
TerraVia Holdings, Inc.	-53.6%	-58.2%	-53.6%	-33.2%	-52.7%	-37.3%	-3.9%	-76.3%	38.5%	-33.9%	N/A
The Andersons, Inc.	41.3%	23.5%	41.3%	-8.3%	-9.1%	9.0%	-40.5%	-10.6%	107.9%	-1.7%	20.1%
Trina Solar Limited	-15.6%	-9.2%	-15.6%	0.2%	-12.0%	6.8%	19.0%	-32.3%	215.0%	-35.0%	-71.5%
Yield10 Bioscience, Inc.	-77.3%	-22.2%	-77.3%	-62.4%	-64.1%	-58.2%	-37.6%	-67.3%	-14.9%	-67.5%	-62.6%
Yingli Green Energy Holding Company Limited	-42.6%	-32.8%	-42.6%	-66.7%	-62.8%	-41.5%	-80.7%	-53.5%	114.9%	-38.2%	-61.5%
Median of Industry Public Companies	-43.8%	-10.1%	-43.8%	-19.5%	-19.6%	-2.8%	-11.4%	-18.6%	66.2%	-28.5%	-62.1%

(Multiple year periods are calculated as the average annual return.)

Quarterly Industry Update

As of December 31, 2016

Clean Energy Industry Aggregates



Median Public Company Multiples of the Clean Energy Industry Aggregates

Date:	12/31/2014	3/31/2015	6/30/2015	9/30/2015	12/31/2015	3/31/2016	6/30/2016	9/30/2016	12/31/2016
EV/Revenues Multiple	1.4x	1.3x	1.2x	1.1x	1.3x	1.2x	1.3x	1.9x	0.9x
EV/EBITDA Multiple	7.7x	8.1x	8.5x	8.5x	10.2x	8.5x	12.5x	13.7x	14.0x
Price/Earnings Multiple	12.7x	22.4x	23.4x	15.2x	19.4x	11.6x	11.6x	9.4x	9.8x
EV/Gross Cash Flows Multiple	9.9x	10.6x	19.5x	22.2x	13.0x	29.2x	18.4x	9.0x	27.6x

Industry Initial Public Offerings - Clean Energy Industry Aggregates (dollars in millions, except share prices)

Offer Date	Company Name	Offer Price	Shares Offered	Amount Raised	Total Assets	Debt	LTM Revenues	LTM EBITDA	LTM Net Income	LTM Cash Flows
10/12/2016	Azure Power Global Limited	\$18.00	3.4	\$61.4	\$485.6	\$364.4	\$45.6	\$31.7	(\$42.8)	\$43.2
5/11/2016	Green & Smart Holdings PLC	\$0.13	44.4	\$5.8	\$9.1	\$2.1	\$4.4	\$1.0	\$1.0	\$1.0
8/5/2015	Sunrun Inc.	\$14.00	17.9	\$250.6	\$2,016.4	\$447.1	\$217.8	(\$105.0)	(\$77.1)	(\$57.4)
3/26/2015	SolarEdge Technologies, Inc.	\$18.00	7.0	\$126.0	\$133.3	\$4.7	\$215.4	\$1.7	(\$2.4)	\$3.9
9/30/2014	Vivint Solar, Inc.	\$16.00	20.6	\$329.6	\$566.3	\$140.5	\$14.3	(\$75.1)	\$38.6	(\$70.8)
12/12/2012	SolarCity Corporation	\$8.00	11.5	\$92.0	\$1,151.2	\$299.3	\$124.1	(\$40.7)	(\$47.1)	(\$22.3)
3/29/2012	Enphase Energy, Inc.	\$6.00	6.5	\$53.8	\$106.2	\$34.1	\$149.5	(\$26.3)	(\$32.3)	(\$24.0)
1/18/2012	Renewable Energy Group, Inc.	\$10.00	7.2	\$72.0	\$472.6	\$109.5	\$626.8	\$78.6	(\$15.9)	\$85.5
6/23/2011	KiOR, Inc.	\$15.00	10.0	\$150.0	\$82.2	\$9.2	\$0.0	(\$36.0)	(\$53.1)	(\$34.3)
5/26/2011	TerraVia Holdings, Inc.	\$18.00	11.0	\$197.6	\$86.7	\$0.2	\$40.0	(\$16.7)	(\$19.6)	(\$15.8)
2/8/2011	Gevo, Inc.	\$15.00	7.2	\$107.3	\$57.9	\$20.3	\$2.4	(\$32.0)	(\$40.8)	(\$29.2)
9/27/2010	Amyris, Inc.	\$16.00	5.3	\$84.8	\$305.0	\$12.8	\$68.1	(\$62.8)	(\$76.0)	(\$56.4)
5/13/2010	JinkoSolar Holding Co., Ltd.	\$11.00	5.8	\$64.2	\$378.8	\$167.4	\$274.7	\$37.3	\$24.1	\$37.3
4/21/2010	Codexis, Inc.	\$13.00	6.0	\$78.0	\$99.0	\$7.9	\$82.9	(\$11.1)	(\$20.3)	(\$6.0)
6/25/2009	Alterra Power Corp.	\$1.29	66.7	\$86.2	\$12.9	\$0.5	\$0.0	(\$1.6)	(\$1.6)	(\$1.6)
6/14/2007	BioFuels Energy Corp.	\$10.50	5.3	\$55.1	\$121.5	\$0.0	\$0.0	(\$12.2)	(\$3.1)	(\$12.2)
6/7/2007	Yingli Green Energy Holding Company Limited	\$11.00	29.0	\$319.0	\$435.4	\$182.9	\$241.3	\$55.3	\$25.8	\$62.2
5/17/2007	China Sunergy Co., Ltd.	\$11.00	8.5	\$93.5	\$176.3	\$77.9	\$149.5	\$17.0	\$11.8	\$18.7
2/6/2007	JA Solar Holdings Co., Ltd.	\$15.00	15.0	\$225.0	\$7.3	\$0.0	\$0.0	(\$0.5)	(\$0.7)	(\$0.5)
12/18/2006	Trina Solar Limited	\$18.50	5.3	\$98.1	\$112.5	\$39.1	\$91.6	\$14.8	\$10.0	\$15.8
11/16/2006	First Solar, Inc.	\$20.00	20.0	\$400.0	\$255.1	\$71.0	\$95.9	(\$5.1)	(\$11.3)	\$2.4
11/13/2006	Yield10 Bioscience, Inc.	\$14.00	6.8	\$95.2	\$22.0	\$0.0	\$5.1	(\$7.7)	(\$8.6)	(\$7.1)
11/8/2006	Canadian Solar Inc.	\$15.00	7.7	\$115.5	\$57.5	\$23.2	\$37.4	\$8.3	(\$2.6)	\$8.5
8/22/2006	The Andersons, Inc.	\$37.00	2.3	\$83.3	\$600.7	\$248.8	\$1,331.6	\$68.9	\$28.9	\$90.8
Median of All IPOs		nm	nm	\$94.4	\$127.4	\$28.7	\$75.5	(\$3.4)	(\$5.9)	(\$1.0)

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