

World-wide Investments in Bio-based Chemicals

December 2012

This list presents a collection of publicly available information on investments made in bio-based building blocks by companies all over the world, starting with investments made in 2005. It does not claim to be exhaustive.

Company	Company based in	Investment made in	Product	Capacity	Start	Investment	Source/Reference
ADM	North America, USA	North America, USA	Propylene Glycol	100,000 t/a	2010		P&G Chemicals, Identifying New Applications for Glycerine- An Industrial Perspective 2010
BASF	Europe, DE	Europe, DE	Vitamin B2	1,000 t/a			BASF 2006
BASF	Europe, DE	North America, USA	Terpenes		2012	13.5 Mio US\$	www.process.vogel.de/management_und_it/branchen_maerkte/kapazitaetserweiterungen/articles/356813/
Beta Renewables	Europe, ITA	Europe, ITA	Cellulose Ethanol	60,000 t/a	2012		http://www.gruppomg.com/news.php?newsid=30
Bio-On	Europe, ITA	Europe, ITA	Polyhydroxybutyrate (PHB)	10,000 t/a	2013		Homepage Bio-On, Chen 2009
Bioamber	North America, USA	North America, CAN	1,4-Butandiol	23,000 t/a	2014		http://www.prnewswire.com/news-releases/bioamber-announces-biobased-succinic-acid-plant-in-ontario-canada-128586383.html
Bioamber	North America, USA	North America, CAN	Succinic Acid	17,000 t/a	2013		http://www.prnewswire.com/news-releases/bioamber-announces-biobased-succinic-acid-plant-in-ontario-canada-128586383.html
Bioamber (DNP/ard)	North America, USA	Europe, FRA	Succinic Acid	3,000 t/a	2009		GTAI Chemical Building Blocks from Biomass, Infra Serv 2010
BP/DuPont	Europe/North America, GB/ USA		Butanol	55,000 t/a	2013		GTAI Chemical Building Blocks from Biomass, Infra Serv 2010
Braskem	South America, BRA	South America, BRA	Propylene	30-50,000 t/a	2013	100 Mio. US\$	Braskem PR
Braskem	South America, BRA	South America, BRA	Ethylene, HDPE	200,000 t/a	2010	292 Mio. US\$	GTAI Chemical Building Blocks from Biomass, Infra Serv 2010, Hirth 2010, http://bioplastic-innovation.com/2010/12/12/biobased-hdpe-and-lde-braskem-presents-its-technology-for-making-resins-from-sustainable-resources/

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Cargill/Novozyme	Europe/North America, DK/USA		Acrylic acid	10 t/a			Kircher 2011
Cargill/Ashland	North America, USA	North America, USA	Propylene Glycol	65,000 t/a	2008		P&G Chemicals, Identifying New Applications for Glycerine- An Industrial Perspective 2010
CSM/BASF	Europe, DE	Europe, ESP	Succinic Acid	15,000 t/a	2011		GTAI Chemical Building Blocks from Biomass, Infra Serv 2010
Dow Chemicals	North America, USA	North America, USA	Epichlorohydrin	1,000 t/a	2011		P&G Chemicals, Identifying New Applications for Glycerine- An Industrial Perspective 2010
Dow Chemicals	North America, USA	North America, USA	Propylene Glycol	1,000 t/a			P&G Chemicals, Identifying New Applications for Glycerine- An Industrial Perspective 2010
Dow Chemicals/Huntsman	North America, USA	North America, USA	1,2-propanediol	45,000 t/a	2013		GTAI Chemical Building Blocks from Biomass, Infra Serv 2010
Dow Chemicals/Mitsui	North America/South America, USA/BRA	South America, BRA	Ethylene, Polyethylene	350,000 t/a	2014		GTAI Chemical Building Blocks from Biomass, Infra Serv 2010, Hirth 2010
DSM	Europe, NL		Caprolactam	10 t/a			Kircher 2011
Elevance	North America, USA	North America, USA	Soy oil	180,000 t/a			GTAI Chemical Building Blocks from Biomass, Infra Serv 2010
Evonik Industries	Europe, DE	Europe/North America/South America, BE/USA/SGP	Amino acids: Methionin	580,000 t/a	2014		http://corporate.evonik.de/de/presse/suche/pages/news-details.aspx?newsid=15195
Evonik Industries	Europe, DE	South America/Europe/North America, BRA/RUS/USA	Lysin	300.000 t/a	2014	350 Mio. €	www.bio-based.eu/news/nachricht.php?id=20121009-06
Evonik Industris	Europe, DE	Europe, DE	Methylmethacrylic acid	10 t/a			Kircher 2011
Galactic	Europe, BE	Europe, BE	Lactic Acid for PLA production	1,650 t/a	2009		GTAI Chemical Building Blocks from Biomass, Infra Serv 2010, Hirth 2010

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Genencor/Danisco	North America, USA	North America, USA	Ethylene	780,000 t/a	2012		GTAI Chemical Building Blocks from Biomass, Infra Serv 2010
Genencor/Goodyear	North America, USA	Europe, BE	Isoprene	10 t/a	2014		GTAI Chemical Building Blocks from Biomass, Infra Serv 2010, Hirth 2010, Kircher 2011
Genomatica	North America, USA	North America, USA	1,4-Butandiol	10 t/a	2010		Hirth 2010, Kircher 2001
Gevo	North America, USA	Asia, MY	Isobutanol				Industrial Biotechnology 4/2012, Gevo
Gevo	North America, USA	North America, USA	Isobutanol	50,000 t/a	2012		http://www.world-grain.com/News/News%20Home/BioFuel%20News/2012/5/Gevo%20opens%20bio-based%20butanol%20facility.aspx?cck=1 , Gevo, Industrial Biotechnology 4/2012
Grupo M&G/Genomatika	Europe/North America, ITA/USA	Europe, ITA	1,4-Butandiol	20,000 t/a	2013		Nachrichtenportal: http://www.bio-based.eu/news/nachricht.php?id=20120112-05
HiSun	Asia, CN	Asia, CN	Lactic Acid for PLA production	5,500 t/a	2008		Shen, Haufe, Patel 2009
Lanxess	Europe, DE	North America, USA	Succinic acid	20,000 t/a	2012	10 Mio US\$	http://lanxess.de/de/corporate/investor-relations/investor-news/?tx_editfiltersystem_pi1[cmd]=detail&tx_editfiltersystem_news_pi1[uid]=21456&tx_editfiltersystem_pi1[news_category]=42
Malaysian Biotech Corp. + X	Asia, MY	Asia, MY	Biorefinery		2015		Industrial Biotechnology 4/2012
Metabolic Explorer	Europe, FRA	Europe, FRA	1,3-propanediol	8,000 t/a	2010		www.metabolic-explorer.com , METabolic EXplorer, announces launch of construction work on its first PDO manufacturing plant in Malaysia (2010)
Myriant	North America, USA	North America, USA	Succinic Acid	15,000 t/a	2013	85 Mio. (??)	http://www.bio-based.eu/news/nachricht.php?id=20120618-02

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Myriant Technologies, Davy Process Technology	North America, USA	North America, USA	Succinic Acid	15,000 t/a	2013	USDA bond 25 Mio. US\$	Industrial Biotechnology 4/2012
NatureWorks	North America, USA	Asia, THA	Lactic Acid for PLA production	155,000 t/a	2015	200 Mio. US\$	http://www.nationmultimedia.com/business/NatureWorks-move-puts-PTT-atop-global-petrochemica-30167547.html
NatureWorks	North America, USA	North America, USA	Lactic Acid for PLA production	155,000 t/a	2005		EuropaBio "Building the Bio-Economy by 2020", 2010
Neste Oil	Europe, FIN	Asia, SGP	NexBtL (Synth. Diesel)	800,000 t/a	2010	550 Mio. €	http://www.bio-based.eu/news/nachricht.php?id=20071203-03
Neste Oil	Europe, FIN	Europe, NL	NexBtL (Synth. Diesel)	800,000 t/a	2011	670 Mio. €	http://www.nesteoil.com/default.asp?path=1;41;540;1259;1261;9663;10465
Novamont/ Polimeri Europe	Europe, ITA	Europe, ITA	Biorefinery -> polymers	350,000 t/a	2016	500 Mio. €	http://naturalplastics.blogspot.de/2011/06/polimeri-europa-eni-group-and-novamont.html
Novozymes	Europe, DK	North America, USA	Enzymes		2012	200 Mio. US\$	Industrial Biotechnology 4/2012
OPX Biotechnologies/ DOW	North America, USA	North America, USA	Acrylic acid	20 t/a	2015	22 Mio. US\$ risk capital	P&G Chemicals, Identifying New Applications for Glycerine- An Industrial Perspective 2010
Perstorp	Europe, SWE	Europe, SWE	3-HP (propionic acid and 3-hydroxypropionic acid)	1,000 t/a	2012		www.perstorp.com , Perstorp's long-term investment in industrial biotechnology (2008-06-23), Hirth 2010
PHB Industrial Brasil S.A.	South America, BRA	South America, BRA	Polyhydroxybutyrate (PHB)	100 t/a			Chen 2009
Purac	Europe, NL	Asia, THA	Lactic Acid	100,000 t/a	2007		Shen, Haufe, Patel 2009
Purac	Europe, NL	Asia, THA	Lactide	75,000 t/a	2012	45 Mio. US\$	Shen, Haufe, Patel 2009, Hirth 2010, Purac S.A 2010
Purac	Europe, NL	Europe, ESP	Lactide	5,000 t/a	2008		Shen, Haufe, Patel 2009, Hirth 2010, Purac S.A 2010

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Roquette/DSM	Europe, FRA	Europe, FRA	Succinic Acid	10,000 t/a	2012		Hirth 2010
Roquette/DSM	Europe, FRA	Europe, ITA	Succinic Acid	10,000 t/a	2012		Portal/ICIS
Segets	North America		Levulinic acid	120 t/a	2009		GTAI Chemical Building Blocks from Biomass, Infra Serv 2010
Senergy	North America, USA	North America, USA	Propylene Glycol	30,000 t/a	2008		P&G Chemicals, Identifying New Applications for Glycerine- An Industrial Perspective 2010
Shi Jinyan	Asia, CN	Asia, CN	Butanol	50,000 t/a	running		Kircher 2011
Solvay	Europe, FRA	Asia, CN	Epichlorohydrin	100,000 t/a	2014	155 Mio. €	http://www.bio-based.eu/news/nachricht.php?id=20120611-06
Solvay	Europe, FRA	Europe, FRA	Epichlorohydrin	10,000 t/a	2010		http://www.solvay.com/EN/NewsPress/Documents/2007/20070404_Tavaux_EN.pdf
Solvay	Europe, FRA	Asia, THA	Epichlorohydrin	100,000 t/a	2012		http://www.solvay.com/EN/NewsPress/Documents/2007/20070404_Tavaux_EN.pdf
Solvay/Indupa	South America/ Europe, BRA/ ARG/FRA	South America, BRA	Ethylene, Vinyl chloride	120,000 t/a	2007, 2012		GTAI Chemical Building Blocks from Biomass, Infra Serv 2010
Südchemie/Clariant	Europe, DE	Europe, DE	Cellulose Ethanol	1,000 t/a	2011	28 Mio. €	http://www.process-worldwide.com/engineering_construction/plant_design/articles/326314/
Tate & Lyle/DuPont	Europe/North America, GB/ USA	North America, USA	1,3-propanediol	50,000 t/a	2010		www.bio-based.eu/news/nachricht.php?id=20100504-02 , DuPont Tate & Lyle Bio Products 2010
Telles	North America, USA	North America, USA	Polyhydroxybutyrate (PHB)	50,000 t/a	2010 (ended in 2012)	400 Mio. US\$	http://plasticsnews.com/headlines2.html?id=10031502201
Tianjin GreenBio Material Co.	Asia, CN	Asia, CN	Polyhydroxybutyrate (PHB)	10,000 t/a	2009		iBIB 2011
Tong-Jie-Lang	Asia, CN	Asia, CN	Lactic Acid/PLA	100 t/a	2007		Shen, Haufe, Patel 2009

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UPM	Europe, FIN	Europe, FIN	2nd G Biodiesel	100,000 t/a	2014	150 Mio. €	http://www.upm.com/EN/MEDIA/All-news/Pages/UPM-to-build-the-world%E2%80%99s-first-biorefinery-producing-wood-based-biodiesel-001-Wed-01-Feb-2012-10-05.aspx , Industrial Biotechnology 1/2012
Verdazyme	North America, USA	North America, USA	Adipic acid	40 t/a	2013		GTAI Chemical Building Blocks from Biomass, Infra Serv 2010
Votorantim/Amyris	South America, BRA	South America, BRA	Isoprene	680,000 t/a	2012		GTAI Chemical Building Blocks from Biomass, Infra Serv 2010
Wacker AG	Europe, DE	Europe, DE	Acetic Acid	500 t/a	2010		ICIS Green Chemicals
Yangnong	Asia, CN	Asia, CN	Epichlorohydrin	150,000 t/a	2011		P&G Chemicals, Identifying New Applications for Glycerine- An Industrial Perspective 2010
Yikeman, Shandong	Asia, CN	Asia, CN	Polyhydroxybutyrate (PHB)	3,000 t/a			Chen 2009
Zhejiang Tian An	Asia, CN	Asia, CN	Polyhydroxybutyrate (PHBV)	2,000 t/a			Chen 2009

Quotable as:
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www.bio-based.eu/policy

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