Schwarting Biosystem

References










Anaerobic digestion plants

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BIOGAS PLANT in LOCMINÉ – France

Location
Locminé
France

GENERAL CONTRACTOR
Schwarting Biosystem GmbH

PROJECT
Turn Key

START UP
Under construction - 2016

CO-GENERATION PLANT
2 x 800 kW

CAPACITY
60.145 t/year organic waste

PRODUCTION
Biogas 507 m³/hour

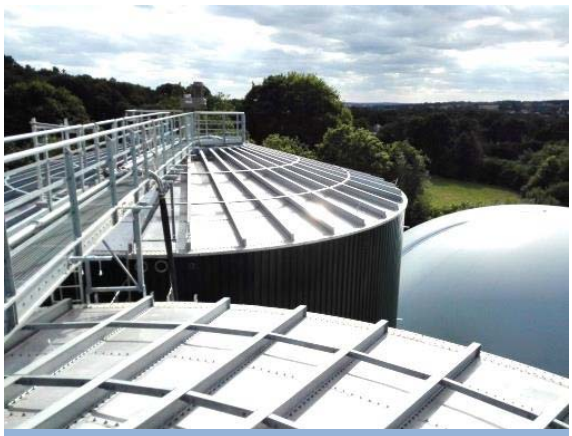
DESCRIPTION

Biogas plant with completely mixed digester

CAPACITY: 60.145 t/year organic waste (slurry, sewage sludge, fats, process waste (vegetables), slaughterhouse waste)

Concept of treatment:
Manure reception tank, reception bunker, feeding units, hammer mill, hygienisation unit, mixing tank, heat exchanger, digesters, post digester with gas buffer, dewatering unit, liquid digestate buffer tank

Tank capacity:	Digester: 2 units x 4.100 m³ each Post digester: 4.340 m³ with 2.400 m³ gas buffer
Biogas production:	507 m³/hour
Co-generation plant:	Electric power: 2 x 800 kW each
Biogas upgrading plant:	65 Nm³/hour of biomethane



digesters, post digester

manure tank, buffer tank, liquid digestate tank

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BIOGAS PLANT in QINHUANGDAO - China


Quelle: Beijing Fairyland Environmental Technology Co., Ltd

LOCATION
Qinhuangdao, Hebei
China

SCOPE OF WORK
Basic Engineering

CLIENT
Beijing Fairyland Environmental Technology Co., Ltd

START UP
2014

CAPACITY
54,750 tons/year food waste

PRODUCTION
Biogas

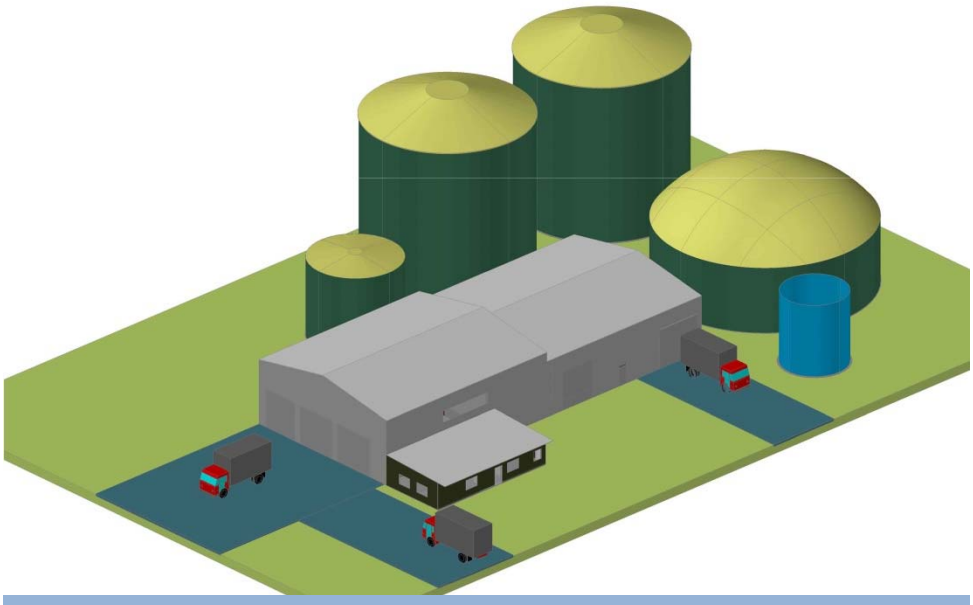
DESCRIPTION

Biogas plant with completely mixed digester

CAPACITY: 54,750 t/year **food waste (market waste, kitchen waste, expired packed food)**

Concept of treatment:
Reception bunker, reception tank, hammer mill, hygienisation, hydrolysis, disintegrator, feeding pump, heat exchanger, digester with central stirrer, post-digester, biogas desulphurisation, biogas storage, co-generation plant, emergency flare, digestate dewatering, biolocigal waste water treatment, biofilter for waste air

Tank volume: Digester: 2 units x 3,000 m³ each



suggestion of layout

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BIOGAS PLANT in QINGDAO - China


Quelle: Beijing Fairyland Environmental Technology Co., Ltd

LOCATION
Qingdao, Shandong
China

CLIENT
Beijing Fairyland Environmental Technology Co., Ltd

CAPACITY
73,000 tons/year food waste

SCOPE OF WORK
Basic Engineering
Detail Engineering
Support in commissioning

START UP
2013

PRODUCTION
Biogas

DESCRIPTION

Biogas plant with completely mixed digester

CAPACITY: 73,000 t/year food waste (market waste, kitchen waste, expired packed food)

Concept of treatment:
Reception bunker, reception tank, hammer mill, hygienisation, hydrolysis, disintegrator, feeding pomp, heat exchanger, digester with central stirrer, post-digester, biogas desulphurisation, biogas storage, co-generation plant, emergency flare, digestate dewatering, biological waste water treatment plant, biofilter for waste air

Tank volume: Digester: 2 units x 3,300 m³ each
Post-digester: 2,400 m³




reception area

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BIOGAS PLANT in AUCH - France


Quelle: Naskeo Environnement

LOCATION
Auch
France

CLIENT
Naskeo Environnement

CAPACITY
44,000 tons/year organic waste

SCOPE OF WORK
Basic Engineering
Detail Engineering
Support in commissioning

PLANNING PERIOD
2011-2012

PRODUCTION
Electricity, heat, steam

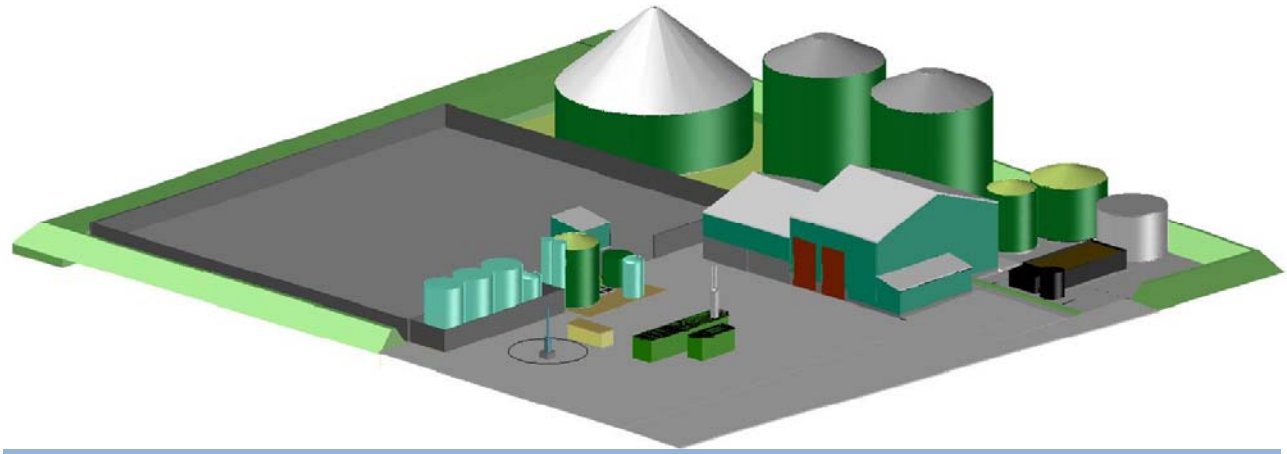
DESCRIPTION

Biogas plant with completely mixed digester

CAPACITY: 44,000 t/year **sewage sludge, fat, manure, gastrointestinal content, blood, expired vegetables, fruits, animal food**

Concept of treatment:
Reception bunker for liquid and solid substrate, disintegrator, hygienisation, hydrolysis, central stirred digesters, post-digester, biogas storage, digestate dewatering, cogeneration plant, waste water treatment

Tank capacity:	Digester:	2 units x 2,800 m³ each
	Post-digester:	1 x 3,200 m³ with 1,200 m³ gas buffer
Cogeneration plant:		890 kW



layout

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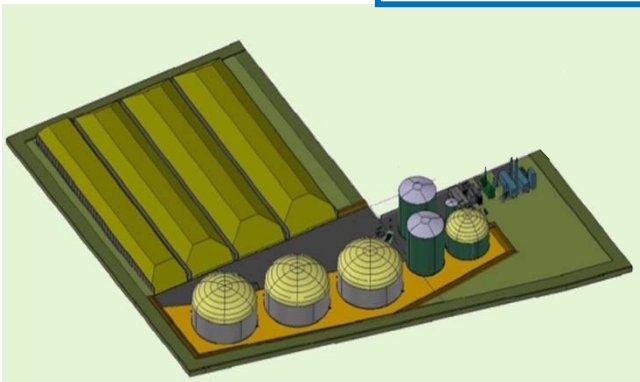
BIOGAS PLANT in ZORBAU - Germany



LOCATION
Zorbau
Germany

CLIENT
Energiepark Zorbau I

INPUT
36,000 tons / year
Renewable resources
(Corn silage, sugarbeet silage, energy crops)

SCOPE OF WORK
Engineering for permit procedure

PLANNING PERIOD
2011 - 2012

PRODUCTION
Biomethane

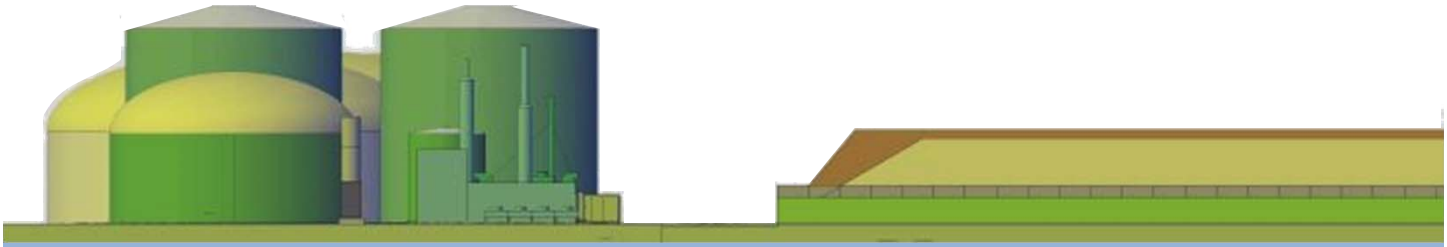
DESCRIPTION

Biogas plant with completely mixed digesters

Input: **36,000 t/year** **renewable resources (corn silage, sugarbeet silage, energy crops)**

Concept of treatment:
Solids mixer, feeding unit, digester with central stirrer, post-digester, desulphurisation, biogas buffer, digestate storage, emergency flare, digestate dewatering, process water tank, heating system, biomethane plant, cogeneration plant, silo

Tank volume:	Digester: 2 x 3,400 m³ each Post-Digester: 1 x 1,500 m³ with 500 m³ gas buffer Digestate storage: 3 x 5,200 m³ each with 1,700 m³ biogas buffer
Cogeneration plant:	Electric power : 250 kW
Biomethane plant:	350 Nm³/h biomethane



Zorbau – side view

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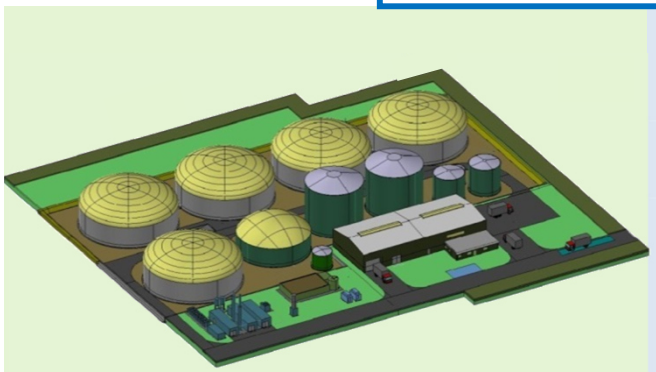
BIOGAS PLANT in ZORBAU - Germany



LOCATION
Zorbau
Germany

CLIENT
Energiepark Zorbau II

INPUT
66,000 tons / year
Organic waste
(old bread, fat, abattoir refuse)

SCOPE OF WORK
Engineering for
permit procedure

PLANNING PERIOD
2011 - 2012

PRODUCTION
Biomethane

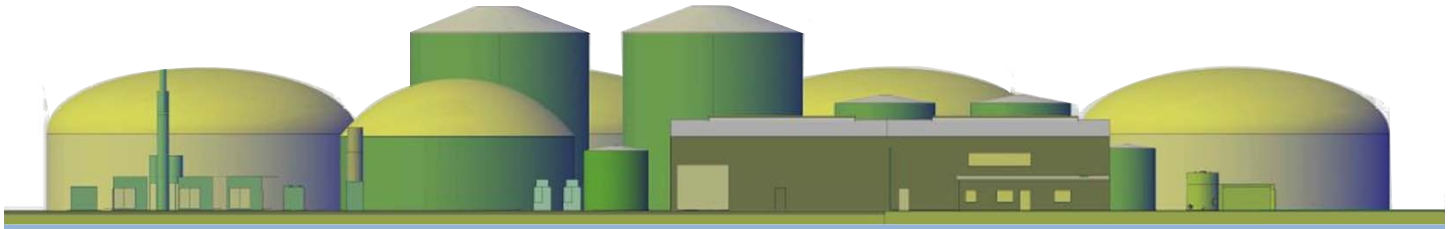
DESCRIPTION

Biogas plant with completely mixed digesters

Input: **66,000 t/year** **abattoir refuse, old bread, fats**

Concept of treatment:
Reception bunker, feeding unit, fat reception bunker, hydrolysis, hygienisation, buffer tank, digester with central stirrer, post digester, digestate storage, biogas buffer, emergency flare, digestate dewatering, biological waste water treatment, biofilter for waste air, biomethane plant, micro gas turbine, machine hall

Tank volume:	Digester: 2 x 3,700 m³ Post digester: 1 x 2,500 m³ with 700 m³ gas buffer Digestate storage: 5 x 5,200 m³ each with 1,700 m³ gas buffer
Micro gas turbine:	Electric power: 2 x 200 kW using natural gas
Biomethane plant:	700 Nm³/h Biomethane



Zorbau – side view plant

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BIOGAS PLANT in BEBRA - Germany

LOCATION
Bebra
Germany

PROJECT
Turn Key

INPUT
20,000 tons / year
food waste

GENERAL CONTRACTOR
Schwarting Biosystem GmbH

START UP
2008

CO-GENERATION PLANT
844 kW

PRODUCTION
Biogas

DESCRIPTION

Biogas plant with completely mixed digester

Input: **20,000 t/year** **food waste like market waste, kitchen waste, leftovers, expired packed food**

Concept of treatment:
Reception bunker, reception tank, hammer mill, hygienisation, hydrolysis tank, disintegrator, feeding pump, heat exchanger, digester with central stirrer, post digester, biogas desulphurisation, biogas buffer, co-generation plant, emergency flare, digestate dewatering, biological waste water treatment, biofilter for waste air

Tank volume:	Digester: 3,400 m³ Post digester: 1,500 m³
Co-generation plant:	Electric power: 844 kW

digester and co-generation plant

digester and waste water treatment plant

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BIOGAS PLANT in ENGSTINGEN - Germany

LOCATION
Engstingen
Germany

PROJECT
Turn Key

INPUT
10,000 tons / year
food waste

GENERAL CONTRACTOR
Schwarting Biosystem GmbH

START UP
2008

CO-GENERATION PLANT
500 kW

PRODUCTION
Biogas

DESCRIPTION

Biogas plant with completely mixed digester

Input: **10,000 t/year** **food waste like leftovers, kitchen waste, expired packed food**

Concept of treatment:
Reception bunker, reception tank, hammer mill, hygienisation, hydrolysis tank, disintegrator, feeding pump, heat exchanger, digester with central stirrer, post digester, biogas desulphurisation, co-generation plant, emergency flare, biogas buffer, digestate dewatering, biological waste water treatment, biofilter for waste air

Tank volume:	Digester: 1,700 m³ Post digester: 1,300 m³
Co-generation plant:	Electric power: 500 kW

biogas plant

post digester und digester

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BIOGAS PLANT in BOIS JOLY - France

LOCATION
Bois Joly
France

PROJECT
Turn Key

INPUT
15,000 tons / year
organic waste and sludge

GENERAL CONTRACTOR
Schwarting Biosystem GmbH

START UP
2008

CO-GENERATION PLANT
250 kW + 365 kW

PRODUCTION
Biogas

DESCRIPTION

Organic waste digestion plant with completely mixed digester

Input: **15,000 t/year** **organic waste and sludge like sewage sludge, fats, blood, liquid manure**

Concept of treatment:
Hygienisation, hydrolysis with stirrer, disintegrator, feeding pump, heat exchanger, digester with central stirrer, post digester, biogas desulphurisation, co-generation plants, emergency flare, digestate dewatering

Tank volume:	Digester: 1,700 m³ Post digester: 1,300 m³
Co-generation plants:	Electric power: 250 kW + 365 kW

biogas plant

digester and post digester

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BIOGAS PLANT in KLEIN EICHHOLZ - Germany

LOCATION
Klein Eichholz
Germany

PROJECT
Turn Key

INPUT
35,000 tons / year
food waste

GENERAL CONTRACTOR
Schwarting Biosystem GmbH

START UP
2006

CO-GENERATION PLANT
1,364 kW

PRODUCTION
Biogas

DESCRIPTION

Biogas plant with completely mixed digesters

Input: **35,000 t/year** **food waste like leftovers, kitchen waste, expired packed food**

Concept of treatment:
Hydrolysis tank, disintegrator, feeding pump, heat exchanger, digesters with central stirrer, post digester, biogas desulphurisation, digestate storage, co-generation plant, steam generator

Tank volume:	Digester: 2 units x 3,100 m³ each Post digester: 2,500 m³ Digestate storage: 6,000 m³
Co-generation plant:	Electric power: 1,364 kW
Steam generator:	650 kg/h

digesters

digester, biogas desulphurisation and post digester

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Schwarting Biosystem

BIOGAS PLANT in SCHLESWIG - Germany

LOCATION
Schleswig
Germany

GENERAL CONTRACTOR
Schwarting Biosystem GmbH

PROJECT
Turn Key

START UP
2007

INPUT
60,000 tons/year distillery waste
+ 3,000 tons/year glycerine solution
+ 2,800 tons/year colza cake

CO-GENERATION PLANT
1,416 kW

PRODUCTION
Biogas

DESCRIPTION

Biogas plant with completely mixed digesters

Input:	**60,000 t/year**	**distillery waste**
	3,000 t/year	**glycerine solution**
	2,800 t/year	**colza cake**

Concept of treatment:
Feeding pump, heat exchanger, digesters with central stirrer, post digester, biogas desulphurisation, digestat storage, co-generation plant, steam generator, emergency flare

Tank volume:	Digester: 2 units x 3,300 m³ each Post digester: 2,400 m³ Digestate storage: 5,000 m³
Co-generation plant:	Electric power: 1,416 kW
Steam generator:	700 kg/h

hydrolysis, post digester, desulphurisation, digester

co-generation plant- and office building

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REPOWERING - SCHLESWIG - Germany

LOCATION
Schleswig
Germany

PROJECT
Turn Key

INPUT
75 – 80 tons / day corn silage

GENERAL CONTRACTOR
Schwarting Biosystem GmbH

START UP
2008

CO-GENERATION PLANT
1,400 kW + 2 x 330 kW

PRODUCTION
Biogas

DESCRIPTION

REPOWERING

Biogas plant with completely mixed digesters

Input: 75-80 t/day corn silage

Concept of treatment:
Feeding pump, heat exchanger, digester with central stirrer, post digester, biogas desulphurisation, digestate storage, co-generation plants, steam generator, emergency flare

Tank volume:	Digester: 2 units x 3,300 m³ each Post digester: 2,400 m³ Digestate storage: 5,000 m³
3 co-generation plants:	Electric power: 1 x 1,400 kW 2 x 330 kW each
Steam generator:	700 kg/h

reception tank and digesters

hydrolysis, desulphurisation, post digester

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BIOGAS PLANT in HERBERTINGEN - Germany

LOCATION
Herbertingen
Germany

PROJECT
Turn Key

INPUT
12,000 tons / year
manure and energy crops

GENERAL CONTRACTOR
Schwarting Biosystem GmbH

START UP
2006

CO-GENERATION PLANT
530 kW

PRODUCTION
Biogas

DESCRIPTION

Co-digestion plant with completely mixed digester

Input: 12,000 t/year manure and energy crops

Concept of treatment:
Reception tank, heat exchanger, digester with central stirrer, post digester, biogas buffer, co-generation plant, emergency flare

Tank volume:	Digester: 2,500 m³ Post digester: 1,000 m³
Co-generation plant:	Electric power: 530 kW

digester

digester

biogas plant

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BIOGAS PLANT in WALDMÖSSINGEN - Germany

LOCATION
Schramberg-Waldmössingen
Germany

PROJECT
Turn Key

INPUT
1,000 m³ / year solid and liquid manure
4,000 t / year energy crops

GENERAL CONTRACTOR
Schwarting Biosystem GmbH

START UP
2006

CO-GENERATION PLANTS
45 kW + 190 kW

PRODUCTION
Biogas

DESCRIPTION

Agricultural biogas plant with completely mixed digester

Input: **1,000 m³/year** **solid manure, liquid manure**
4,000 t / year **energy crops**

Concept of treatment:
Manure reception tank, solid matter bunker with push floor and screw conveyor, heat exchanger, digester with submersible stirrer and lateral stirrer, post-digester, digestate storage, biogas desulphurisation, biogas buffer, co-generation plant

Tank volume: Digester: 1,500 m³
Post digester: 500 m³

Co-generation plants: Electric power: 45 kW
190 kW

digester

digester - stirrer

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BIOGAS PLANT in KALTBRUNN - Germany

LOCATION
Allensbach-Kaltbrunn
Germany

PROJECT
Turn Key

INPUT
580 tons / year
Liquid manure, solid manure, grass

GENERAL CONTRACTOR
Schwarting Umwelt GmbH

START UP
2003

CO-GENERATION PLANT
90 kW

PRODUCTION
Biogas

DESCRIPTION

Agricultural biogas plant with completely mixed digester

Input: 580 t/year liquid manure, solid manure, grass

Concept of treatment:
Reception tank, digester with submersible stirrer and lateral stirrer, post digester, digestate storage, biogas desulphurisation, co-generation plant, emergency flare, biogas buffer, gas blower

Tank volume:	Digester: 500 m³ Post digester: 115 m³
Co-generation plant:	Electric power: 90 kW

reception

digester

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Schwarting Biosystem

BIOGAS PLANT in ALBERSDORF - Germany

LOCATION
Albersdorf
Germany

PROJECT
Turn Key

INPUT
80,000 tons / year
manure and energy crops

GENERAL CONTRACTOR
Farmatic biotech energy AG,
Nortorf

START UP
2002

CO-GENERATION PLANT
836 kW

PRODUCTION
Biogas

DESCRIPTION

Co-digestion plant with completely mixed digesters

Input: 80,000 t/year manure and energy crops

Concept of treatment:
Reception tank, disintegrator, feeding pump, heat exchanger, hygienisation, digester with central stirrer, post digester, co-generation plant, biogas desulphurisation, biogas buffer, emergency flare

Tank volume:	Digester: 2 units x 3,300 m³ each Post digester: 2,400 m³
Co-generation plant:	Electric power: 836 kW

biogas plant

co-generation plant

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BIOGAS PLANT in BACKENSHOLZ - Germany

LOCATION
Backensholz
Germany

PROJECT
Turn Key

INPUT
14,000 tons / year cow manure
+1,200 tons / year corn silage

GENERAL CONTRACTOR
Schwarting Umwelt GmbH,
Flensburg

START UP
2002

CO-GENERATION PLANT
168 kW

PRODUCTION
Biogas

DESCRIPTION

Agricultural digestion plant with completely mixed digester

Input: **14,000 t/year** **cow manure**
+1,200 t/year **corn silage**

Concept of treatment:
Reception tank with stirrer, disintegrator, feeding pump, heat exchanger, digester with central stirrer, biogas desulphurisation, biogas buffer, co-generation plant, emergency flare

Tank volume: Digester: 1,200 m³

Co-generation plant: Electric power: 168 kW

co-generation plant

digester

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BIOGAS PLANT in HOLSWORTHY - United Kingdom


Quelle: Farmatic Anlagenbau GmbH

LOCATION
Holsworthy
United Kingdom

PROJECT
Turn Key

INPUT
116,000 tons / year manure
+ 29,000 tons / year organic waste

GENERAL CONTRACTOR
Farmatic biotech energy AG,
Nortorf

START UP
2002

CO-GENERATION PLANT
2 x 1,000 kW

PRODUCTION
Biogas

DESCRIPTION

Co-digestion plant with completely mixed digesters

Input: **116,000 t/year manure**
+29,000 t/year organic waste

Concept of treatment:
Reception tank, disintegrator, feeding pump, heat exchanger, digesters with central stirrer, hygienisation, biogas desulphurisation, biogas buffer, co-generation plants

Tank volume:	Digester: 2 units x 4,000 m³ each Post digester: 3,000 m³
Co-generation plants:	Electric power: 2 x 1,000 kW


Quelle: Farmatic Anlagenbau GmbH

biogas plant


Quelle: Farmatic Anlagenbau GmbH

hygienisation, co-generation plant

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BIOGAS PLANT in KARSTÄDT - Germany


Quelle: Farmatic Anlagenbau GmbH

LOCATION
Karstädt
Germany

PROJECT
Turn Key

INPUT
80,000 tons / year manure and organic waste

GENERAL CONTRACTOR
Farmatic biotech energy AG, Nortorf

START UP
2002

CO-GENERATION PLANT
1,200 kW

PRODUCTION
Biogas

DESCRIPTION

Co-digestion plant with completely mixed digester

Input: 80,000 t/year cattle manure and organic waste

Concept of treatment:
Reception tank with stirrer, disintegrator, feeding pump, hygienisation, heat exchanger, digester with central stirrer, biogas desulphurisation, biogas buffer, co-generation plant

Tank volume:	Digester: 4,400 m³ Post digester: 2,400 m³
Co-generation plant:	Electric power: 1,200 kW


Quelle: Farmatic Anlagenbau GmbH

biogas plant

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BIOGAS PLANT in TIRPERSDORF - Germany


Quelle: Schwarting Umwelt GmbH

LOCATION
Tirpersdorf
Germany

PROJECT
Turn Key

INPUT
32,500 tons / year solid manure, liquid manure and energy crops

GENERAL CONTRACTOR
Schwarting Umwelt GmbH, Flensburg

START UP
2002

CO-GENERATION PLANT
330 kW

PRODUCTION
Biogas

DESCRIPTION

Agricultural digestion plant with completely mixed digesters

Input: 32,500 t/year solid manure, liquid manure and energy crops

Concept of treatment:
Reception tank, disintegrator, feeding pump, heat exchanger, two digesters with central stirrers, biogas desulphurisation, biogas buffer, co-generation plant, emergency flare

Tank volume:	Digester: 2 units x 1,100 m³ each
Co-generation plant:	Electric power: 330 kW


Quelle: Schwarting Umwelt GmbH

digesters, reception tank


Quelle: Schwarting Umwelt GmbH

co-generation plant

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Schwarting Biosystem

BIOGAS PLANT in KONSTANZ - Germany

LOCATION
Konstanz
Germany

PROJECT
Turn Key

INPUT
5,000 tons / year grape marc, fruit residues, grass, grease

GENERAL CONTRACTOR
Biosystem GmbH, Konstanz

START UP
2002

CO-GENERATION PLANT
150 kW

PRODUCTION
Biogas

DESCRIPTION

Biogas plant with completely mixed digester

Input: **5,000 t/year** **grape marc, fruit residues, grass, contents from fat separators**

Concept of treatment:
Reception of substrate, digester with side stirrers and internal heat exchanger, biogas buffer, co-generation plant, emergency flare

Tank volume:	Digester: 1,000 m³
Co-generation plant:	Electric power: 150 kW

digester, machine hall

co-generation plant

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BIOGAS PLANT in ALTENO - Germany


Quelle: Farmatic Anlagenbau GmbH

LOCATION
Alteno
Germany

PROJECT
Turn Key

INPUT
86,000 tons / year manure and organic waste

GENERAL CONTRACTOR
Farmatic biotech energy AG, Nortorf

START UP
2001

CO-GENERATION PLANT
1,250 kW

PRODUCTION
Biogas

DESCRIPTION

Co-digestion plant with completely mixed digesters

Input: 86,000 t/year manure and organic waste like leftovers, packed food

Concept of treatment:
Reception tank, mechanical treatment, pulper, disintegrator, feeding pump, heat exchanger, hygienisation, digesters with central stirrer, biogas buffer, biogas desulphurisation, co-generation plant

Tank volume:	Digester: 2 units x 3,300 m³ each Post digester: 2,400 m³
Co-generation plant:	Electric power: 1,250 kW


Quelle: Farmatic Anlagenbau GmbH

biogas plant

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BIOGAS PLANT in HIRSCHFELDE - Germany

LOCATION
Hirschfelde
Germany

PROJECT
Turn Key

INPUT
5,000 tons / year food waste

GENERAL CONTRACTOR
Biosystem GmbH, Konstanz

START UP
1997

CO-GENERATION PLANT
190 kW

PRODUCTION
Biogas

DESCRIPTION

Co-digestion plant with completely mixed digesters

Input: 5,000 t/year food waste

Concept of treatment:
Hygienisation, hydrolysis with stirrer, disintegrator, feeding pump, heat exchanger, two digesters with stirrers, biogas desulphurisation, co-generation plant, waste water treatment

Tank volume:	Digester: 2 units 1 x 300 m³ 1 x 1,000 m³
Co-generation plant:	Electric power: 190 kW

biogas plant

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