Aqualimpia Engineering e.K.

Digester in slaughterhouse

AquaLimpia Engineering e.K.
Niendorferstr. 53 B
29525 Uelzen
Alemania

www.aqualimpia.de
aqua@aqualimpìa.de
Tel.: +49 - 581 - 3900550 / 2305522

Is the largest provider of lagoon biogas plants

- Aqualimpia Engineering e.K.(AQL) is a German company of integral engineering dedicated to the design and construction of CSTR (continuous-flow stirred tank reactor) covered lagoon digester, steel tank biogas plants, tropicalized industrial digesters, UASB reactors and treatment plants.

  We also offer consulting services, prepare surveys, expert reports, insurance reports, studies and plant optimisation measures, inspect technical safety equipment and provide operator services and training courses.

  Alongside the design, planning, approval planning execution, preparation and involvement in the awarding of the contract, overall management of the construction site and commissioning of the biogas plants.

We supply all the components and equipment necessary for its construction and operation. In the last 10 years we have constructed more than 50 successful projects outside of Germany.

Our CSTR lagoon digester is based on a semi-continuous flow of fresh biomass input that is semi continuously and optimally mixed in the digesters, generating a high production of biogas.

Services

- Feasibility studies and final design for the construction of digesters and UASB waste treatment plants.
- Construction of digesters and anaerobic UASB waste water treatment plants.
- Optimization of waste water treatment lagoons and their transformation to digesters. Supply and installation of cover membranes for digesters.
- Design and implementation of systems for electricity and steam production using biogas.
- Supply and installation of equipment for digesters (agitators, flares, pressure valves, generators, etc.)

Field of works

We do possess experience with agricultural substrates such as slurry, manure, straw and other agricultural crop residues or various energy crops such as grass silage and also with commercial waste such as kitchen waste, food leftovers, waste from the food industry, organic waste from industries such as fruit residue and market waste such as fruit and vegetable residues or municipal organic waste such as organic waste bins or green waste etc.

Pig farms

Livestock farms

Slaughterhouses

Poultry waste

Organic waste

Dairy waste

Experience

We have accumulated more than 25 years of experience in the design and construction of tropicalized biodigesters, design and construction of UASB wastewater treatment plants. We have developed projects since 1995 in almost all Latin American and Caribbean countries. We supply and carry out the commisioning of all the electromechanical equipment required for the operation of biodigesters and treatment plants.

We have representations or associates in all Latin American countries. Aqualimpia's headquarters are in Uelzen-Germany.

Branches

- Germany
- Austria
- Ecuador
- Honduras
- México
- Perú
- El Salvador
- Nicaragua
- Bolivia
- Argentina
- Guatemala
- Panamá

Our clients

AQUALIMPIA ENGINEERING

acciona Agua
España

GRUPO COINSU
Honduras

CAISA
Panamá

arcis group inc.


Mundimar / Costa Rica

CARNES EL PAZO
Carnes El Pazo
Venezuela

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Perú

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Del Cibao, SRL
Rep. Dominicana

HACIENDA RIVERA
Rep. Dominicana

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Agrícola AASA
AASA Energía / Chile

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Guatemala

udla
UNIVERSIDAD DE LAS AMÉRICAS
Ecuador

MAGDALENA ¡Tierra dulce!
Ingenio Azucarero
Magdalena
Guatemala

ALCALDIA MUNICIPAL DE SAN PEDRO SULA
Alcaldía de San
Pedro Sula
Honduras

Viru Naturally ahead
Sociedad Agricola Viru S.A.
Perú

VILLA AVOCADO
Villa Avocado / México

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
GIZ / Alemania

Quescrem
Quescrem
España

AIPAH
Asociación Agroindustrial de
Palmicultores de Sabá
Honduras

COMISIÓN NACIONAL DE ENERGÍA
República Dominicana

ALANZA
Alanza Construcciones
Honduras

LA BODEGUITA DEL CERDITO
Granjas El Progreso
El Salvador

Monsier
Porcinocultores Unidos
El Salvador

Our clients

Eductrade
España

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Hacienda San Ramón
El Salvador

Universidad Nacional Autónoma de México

erco Sistemas Energéticos
España

ice
ICE
Costa Rica


RENIG SA DE CV
El Salvador

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Finning
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grupojaremar
Grupo Jaremar
Honduras

Cummins Perú
Cummins
Perú

Municipio de Metapán
El Salvador

ASAPALSA
ASAPALSA / Honduras

PALMASA PALMEROS DEL AGUAN S.A
Palmasa / Honduras

UNIVERSIDAD DE OVIEDO
España

Estación Experimental Indio Hatuey
Estación Indio Hatuey
Cuba

GIPSA
Gestión Industrial de
Proyectos SA de CV
Mexico

SANUT
SANUT
República Dominicana

CAMAGUEY
Matadero Camaguey
Colombia

TERRALIMPIA Biogas Solutions
Terralimpia
Rep. Dominicana

natuflor www.ecofarmscorp.com HATYOJOP

AGROCANA

Sanáa

Avícola Carger

San Julián
Fabrica de Lácteos
San Julián
El Salvador

AGROSUPER
Agrosuper
Chile

Celanese The chemistry inside innovation
México

CODANA
Ecuador

Equipamientos y Suministros Industriales, S.A. de C.V.
ESISA
México

Universidad Tecnológica Riviera Maya
México

Our clients

Universidad Tecnológica de Campeche
México

Universidad Michoacana de San Nicolás de Hidalgo
México

Nicaragua

Pontificia Universidad Católica del Perú

Ecuador

Ecuador

SANAA
Honduras

Bolivia

Chile

Universidad Autónoma de Bucaramanga
Colombia

Universidad Tecnológica Nacional - Facultad Regional San Rafael
Argentina

Venezuela

Fundación Nueva Esperanza / Honduras

Chile

COSUDE
Suiza

Costa Rica

El Salvador

Urbanizaciones Hasbun
Honduras

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Argentina

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México

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México

Fundación Nueva Esperanza / Honduras

Chile

COSUDE
Suiza

Costa Rica

El Salvador

Urbanizaciones Hasbun
Honduras

El Salvador

Costa Rica

Phases for the design and construction of digesters

1- PLANNING

Technical and economic feasibility studies, final design, technology selection, technical specifications and construction costs

2- CONSTRUCTION

Turnkey construction, optional with the participation of the client or local companies. Uses of local construction labor and materials.

3- SUPERVISION

Supervision of construction, supply of equipment, permanent supervision of construction, continuous quality control of materials and execution of works.

4- COMMISIONING AND TRAINIG

Support during the initial start-up phase of the digesters, training for the operation of the digester and auxiliary structures, equipment operation, as well as training in the biology of the anarobic process and the measurement of parameters that must be controlled during the process.

Project experience in biogas in more than 20 countries

México
Guatemala
Honduras
El Salvador
Nicaragua
Costa Rica
Cuba
Isla de Granada
Panamá
Colombia
Spain

Bolivia
Venezuela
Brasil
Ecuador
Perú
Argentina
Germany
Dominican Republic

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Design and construction of digesters - references

MANURE AND LIVESTOCK WASTE

PIG MANURE AND DAIRY WASTE WATER

MANURE AND LIVESTOCK WASTE

POULTRY WASTE – CHICKEN MANURE

SLAUGHTERHOUSE WASTE

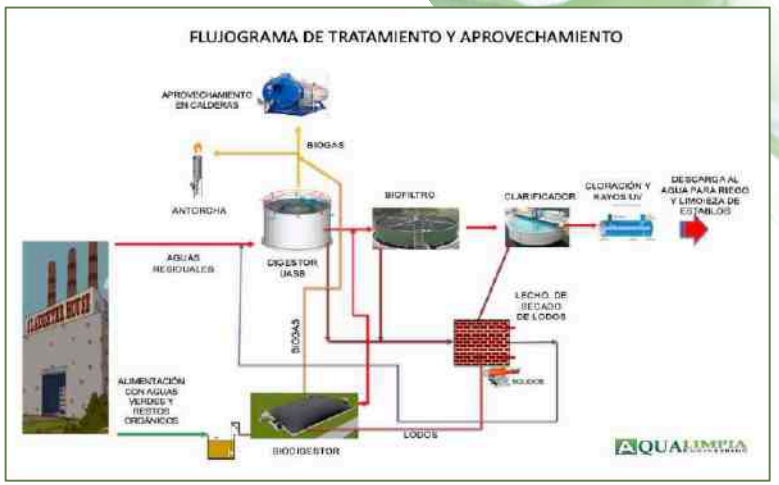
DAIRY WASTE WATER

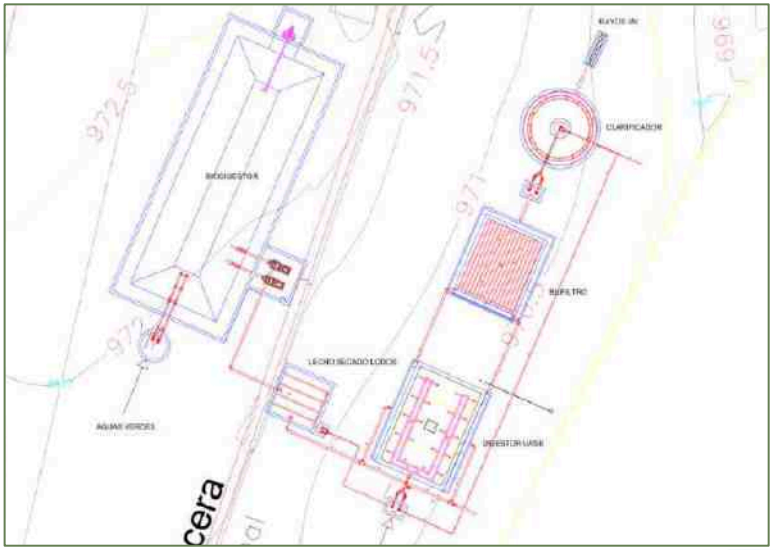
Digestor Proagri / Honduras

Basic data:

Biomass: Slaughterhouse waste, cattle 80 /day

Digester capacity: 500 m3
Generator: 75 kW
Year: 2019 (on going project – feasibility study and final design





Services of Aqualimpia Engineering e.K.

- Feasibility study and final design

Digester PICSA / Panama

Basic data:

Biomass: Slaughterhouse waste
500 pigs/day

Digester capacity: 1200 m3
Generator: 100 kW
Year: 2019 (under construction)

Services of Aqualimpia Engineering e.K.

- Feasibility study and final design
- Supervision of construction, supply of equipment, (agitators, pressure valves, flare, pumps, blowers, etc). Commissioning and training.

Digestor Renig / El Salvador

Basic data:

Biomass: Chicken manure 1 million caged layers

Digester capacity: 5500 m3
Generator: 2 x 360 kW
Year: 2015-2016

Services of Aqualimpia Engineering e.K.

- Feasibility study and final design
- Construction “turnkey”, supply of equipment, (agitators, pressure valves, flare, pumps, blowers, etc).
- Commissioning and training.

Digester Pilot Plant Fonte / México

Basic data:

Biomass: Nopal

Digester capacity: 200 m3
Generator : 30 kW
Year: 2014

Services of Aqualimpia Engineering e.K.

- Feasibility Study and final design
- Supply and installation of equipment, (agitators, pressure valves, flare, pumps, blowers, generator, etc).
- Commissioning and training

Digester Hacienda San Ramón / El Salvador

Basic data:

Biomass: Cattle manure

Digester capacity: 4500 m3
Generator: 360 kW
Year: 2014-2015

Services of Aqualimpia Engineering e.K.

- Feasibility Study and final design
- Supply and installation of equipment, (agitators, pressure valves, flare, pumps, blowers, generator, etc).
- Commissioning and training

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Digestor Slaughterhouse Camaguey / Colombia

Basic data:

Biomass: Slaughterhouse waste 500 cattle/day

Digester capacity: 2500 m3
Generator: 250 kW
Year: 2018

Services of Aqualimpia Engineering e.K.

- Feasibility Study and final design
- Supevision of construction. Supply and installation of equipment, (agitators, pressure valves, flare, pumps, blowers, generator, etc).
- Commissioning and training

Digester Protena / Nicaragua

Basic data:

Biomass: waste water blood plasma production

Digester capacity: 2 x 700 m3
Biogás as fuel for a steam boiler 150 BHP
Year: 2013

Services de Aqualimpia Engineering e.K.

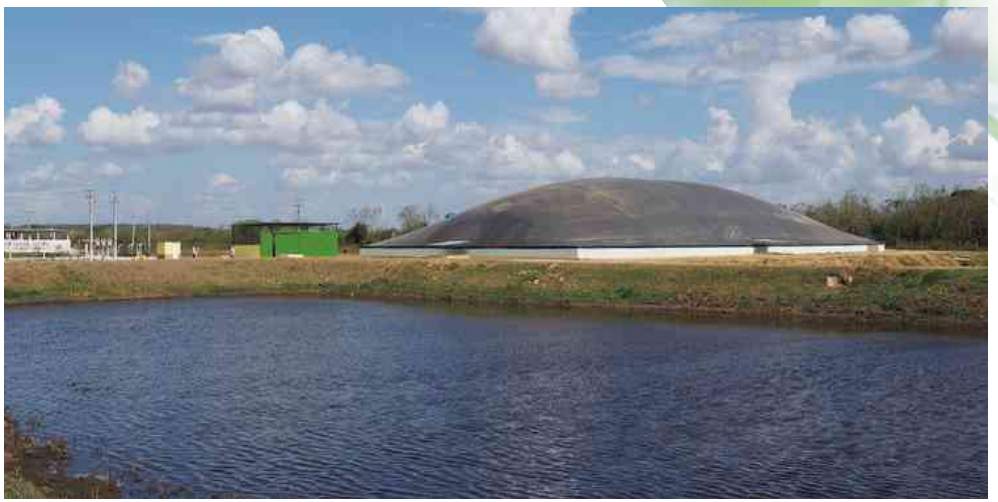
- Feasibility study and final design
- Construction “turnkey”, supply and installation of equipment, (agitators, pressure valves, flare, pumps, blowers, etc).
- Commissioning and training.

Digester Marti I / Cuba

Basic data:

Biomass: Slaughterhouse waste wáter – pig manure

Digester capacity: 3500 m3
Generator: 2x120 kW
Year: 2017-2018



Services of Aqualimpia Engineering e.K.

- Feasibility study and final design
- Construction “turnkey”, supply and installation of equipment, (agitators, pressure valves, flare, pumps, blowers, generators, etc).
- Commissioning and training.

Digester Slaughterhouse Carnes El Paso / Venezuela

Basic data:

Biomass: Slaughterhouse waste, 2000 cattle and 1000 pigs/day

Digester capacity: 16000 m3
Biogás as fuel for a steam boiler 1000 BHP
Year: 2012

Services of Aqualimpia Engineering e.K.

- Feasibility study and final design
- Supervision of construction, supply and installation of equipment, (agitators, pressure valves, flare, pumps, blowers, etc).
- Commissioning and training.

Digester Avicola Victoria / Guatemala

Basic data

Biomass: Chicken manure – 500.000 caged layers.

Digester capacity: 6000 m3
Electricity production
Year: 2015

Services of Aqualimpia Engineering e.K.

- Feasibility study and final design
- Construction “turn key”, supply and installation of equipment, (agitators, pressure valves, flare, pumps, blowers, etc).
- Commissioning and training.

Digestor Agrosania / El Salvador

Basic data:

Biomass: whey waste water and pig manure

Digester capacity: 1200 m3
Generator: 120 kW
Steam boiler 60 BHP
Year: 2012-2013

Services of Aqualimpia Engineering e.K.

- Feasibility study and final design
- Construction “turnkey”, supply and installation of equipment, (agitators, pressure valves, flare, pumps, blowers, etc).
- Commissioning and training.

Digestor Granja El Progreso / El Salvador

Basic data:

Biomass: Pig manure and poultry waste

Digester capacity: 3500 m3
Generator: 200 kW
Year: 2014

Services of Aqualimpia Engineering e.K.

- Feasibility study and final design
- Construction “turnkey”, supply and installation of equipment, (agitators, pressure valves, flare, pumps, blowers, generator, etc).
- Commissioning and training.

Digester Granja San Jose / El Salvador

Basic data:

Biomass: Pig manure and poultry waste

Digester: 2500 m3
Generator: 100 kW
Year: 2014

Services de Aqualimpia Engineering e.K.

- Feasibility study and final design
- Construction “turnkey”, supply and installation of equipment, (agitators, pressure valves, flare, pumps, blowers, generator etc).
- Commissioning and training.

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Digester Porcinocultores Unidos / El Salvador

Basic data:

Biomass: Slaughterhouse waste, pigs 50/day

Digester capacity: 1000 m3
Biogás as fuel for a steam blower
Year: 2015

Services of Aqualimpia Engineering e.K.

- Feasibility study and final design
- Construction “turnkey”, supply and installation of equipment, (agitators, pressure valves, flare, pumps, blowers, etc).
- Commissioning and training.

Digester: Linares / México

Basic data:

Biomass: Household waste 200 t/día

Digester capacity: 4 x 2500 m3
Generators: 4 x 250 kW
Year: 2015







Services of Aqualimpia Engineering e.K.

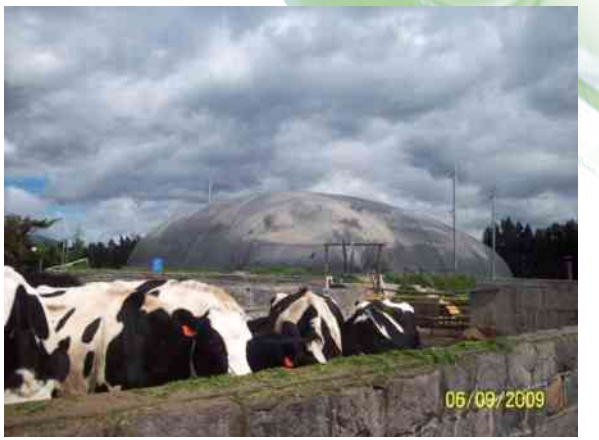
- Feasibility study and final design
- Construction “turnkey”, supply and installation of equipment, (agitators, pressure valves, flare, pumps, blowers, generators, etc).
- Commissioning and training.

Digester: San Francisco / Ecuador

Basic data:

Biomass: Cattle manure 800 units

Digester capacity: 1300 m3
Generator: 100 kW
Year: 2008



Services de Aqualimpia Engineering e.K.

- Feasibility study and final design
- Construction “turnkey”, supply and installation of equipment, (agitators, pressure valves, flare, pumps, blowers, generators, etc).
- Commissioning and training.

Feasibility Studies and final design and consulting services

Aqualimpia Engineering e.K. has developed More than 30 feasibility studies for the construction of digesters and waste water treatment plants.

Services of Aqualimpia Engineering e.K.

- Feasibility studies and final design
- Cost – benefit analysis
- Operation and maintenance manual
- Optimization of digester

- Palm oel extraction, Palmeras de la Costa – Colombia
- Chicken farm, Aviaría – Honduras
- Haushold waste, Municipality of San Pedro Sula – Honduras
- Slaughterhouse Macesa – Honduras
- Slaughterhouse Nuevo Carnic – Nicaragua
- Slaughterhouse El Arreo – Costa Rica
- Dairy waste, Sigma Lácteos – Costa Rica
- Fruit processing waste, Ticofrut – Costa Rica
- Fruit processing waste, Mundimar – Costa Rica
- Landfill, Municipality of Ambato - Ecuador
- Etc.

Final design Chicken farm Aviaria / Honduras

Feasibility study and final design construction of digester.
Biomass: chicken manure 200.000 caged layers.

Services of Aqualimpia Engineering e.K.

- Feasibility study and final design
- Cost – benefit analysis
- Operation and maintenence manual

Digestor Prolacsa / Panama

Feasibility study and final design digester for dairy waste water

Services of Aqualimpia Engineering e.K.

- Feasibility study and final design
- Cost – benefit analysis
- Operation and maintenence manual

Special projects

Aqualimpia Engineering e.K. has developed two research and training projects financed by the German Government trough the GIZ and the program DeveloPPP

- Using of poultry manure for energy production in digesters - El Salvador
- Education and training on the design and construction of industry digester - Cuba

Chicken manure as single sustrat for digesters – El Salvador

Main objectives of the project

Demonstrate that pure chicken manure can be used as a single biomass (mono-digestion) in digesters for the production of biogas and energy. The project includuds the construction of two pilot plants. A laboratory plant and a field plant based on a 20 foot container.

Project financed by GIZ through the DeveloPPP program. SUMA GmbH and Aqualimpia Engineering e.K.

- Estimate the biogas production and CH4 concentration of chicken manure.
- Determination of optimal operating parameters to maximize biogas production.
- Determine the optimal dilution percentages (chicken + water or recirculation).
- Determine optimal hydrolyzing times prior to feeding the biodigester.
- Determine the appropriate retention times to maximize biogas production.
- Determine optimal methods for nitrogen reduction.
- Solve problems of separation of feathers and calcium carbonate.

Education and training on the design and construction of industry digester - Cuba

Main objetives of the project

Training project for Cuban technicians in the dimensioning, design, construction and operation of industrial digesters.

Project financed by GIZ through the DeveloPPP program.
Participation of Aqualimpia Engineering e.K.

- Preparation of manuals for the dimensioning and design of industrial biodigesters.
- Biogas courses for the training of instructors.
- Courses for the training of operators for industrial biodigesters.

Supply and installation of equipment for biogas plants

We supply and commissioning of the following equipment

- Agitators - mixers
- Flares
- Biogas generators
- Blowers and compressors
- Complementary equipment
- Biogas meter
- Biogas treatment systems
- Pumps
- Sensors, pressure meters
- Chiller for biogas

Aqualimpia Engineering www.aqualimpia.de
UELZEN – ALEMANIA aqua@aqualimpia.com

Mixers and agitators

We supply mixers and agitators for manure tanks, lagoongs, digesters.

Agitators

Agitators and mixers for lagoon-type digesters and for above-ground tank-type biodigesters. The stirrers are made entirely in Germany. We also offer the service of design of supporting structures and installation

Instalación en biodigestor sobre tierra tipo tanque

Instalación en laguna de estiércol

Mixers

We supply and install mixers for feed tanks of treatment plants and digesters

Instalación en tanque de alimentación

Blowers and compressors

We supply and install blowers for biogas pumping stations, calibration trains and compressors for filling biogas cylinders. We prepare the hydraulic design of the calibration train for generators and boilers.

Sopladores de 60 kW en biodigestor en extractora de aceite de palma africana

Flares

We supply and install flares for biogas burning. Biogas flow up to 3.000 m3/h. The flares are manufacture in Stainless Steel ST316.

Flares

Biogas generators

We supply and install generators up 30 kW to 500 kW

Biogas generators (CHP)

www.aqualimpia.com
www.aql-software.com
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www.aqualimpia-engineering.com

aqua@aqualimpia.com – aqua@aqualimpia.de
aqualimpia@gmail.com

AquaLimpia Engineering e.K.
Niendorferstr. 53b
29525 Uelzen
Germany

Tel.:(00049) 581-3890550/2305522