Auckland, 15th October 2018

organic waste streams - the foundation of our integrated energy solutions

Content.

- The company
- Key Markets and business model
- Delivery model AU / NZ business case
- References

Company

One step ahead.

Over 35 years of experience, technological competence and flexibility.

Demand Drives Design

Innovative technologies and decades of experience are the key to our success.

AGO Bioenergy, a 100% subsidiary of AGO AG Energie+Anlagen, is specialized to make organic waste covering energy shortages lastingly.

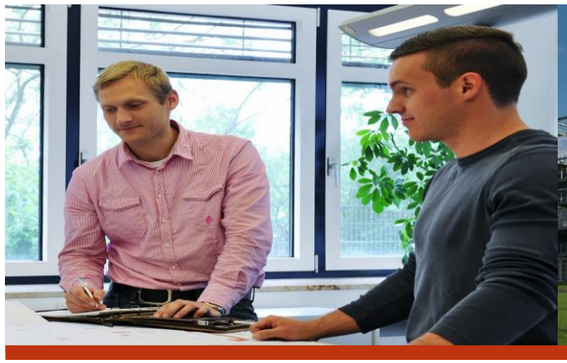
Demand Drives Design

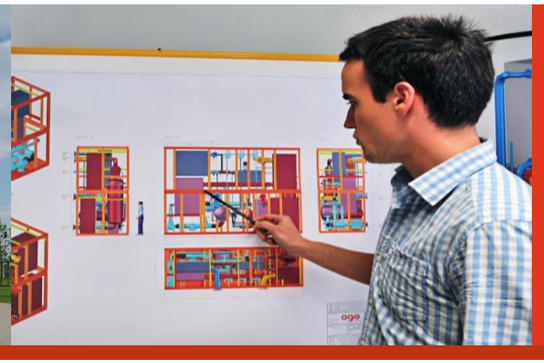
Innovative technologies and decades of experience are the key to our success.

We can strongly influence the feasibility of a project through our design. An important aspect is the understanding of the adjusting screws.

However, as important as the feasibility is listening to the clients´ wishes and demands. To cover and consider these wishes and demands, flexibility is one of the main attributes.

Both, feasibility and flexibility are results from the long time industry experience of AGO Bioenergy´s staff.





„Coming together is a beginning; keeping together is progress; working together is success.“

Henry Ford

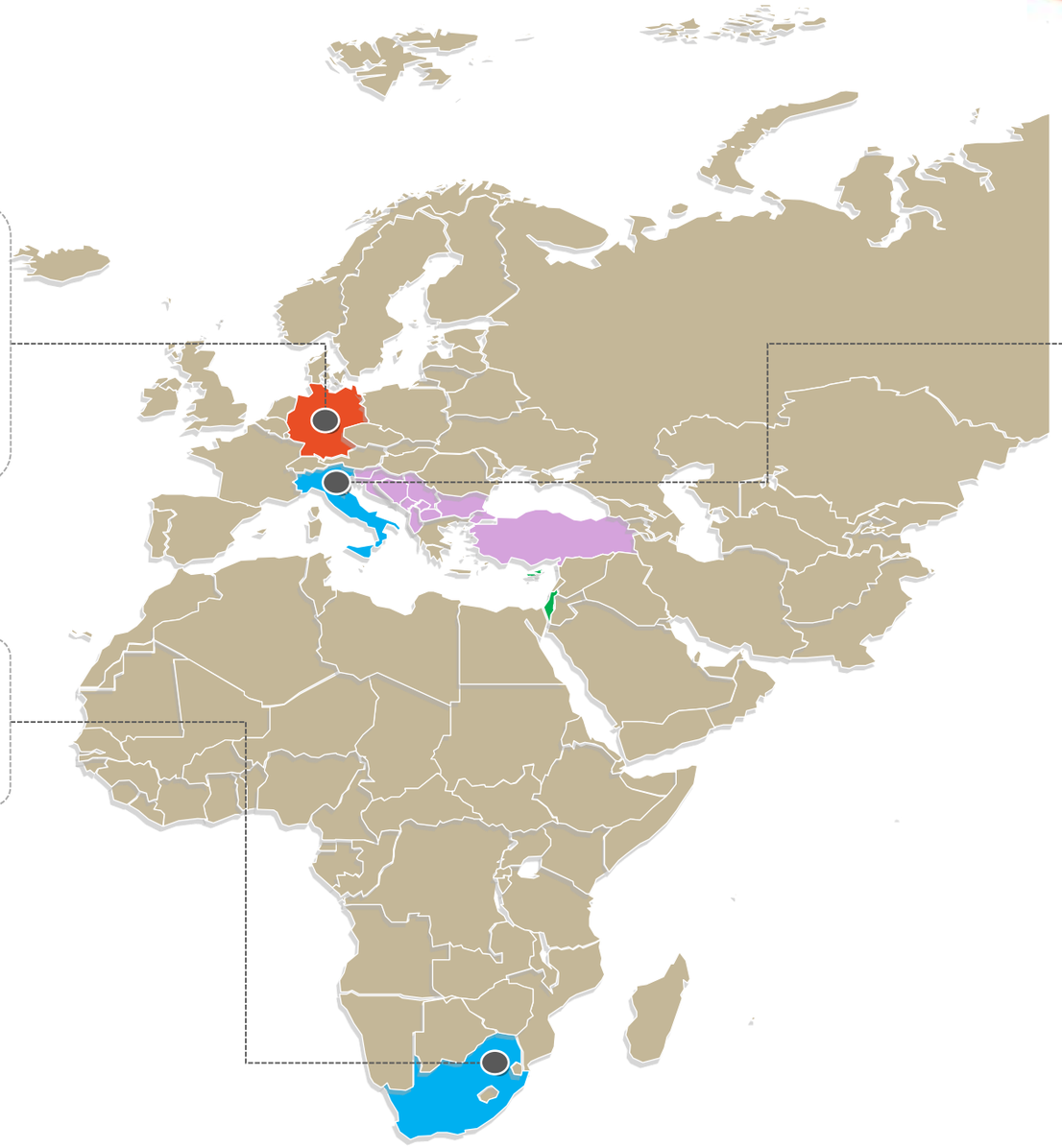
AGO´s locations and offices

Germany

- Kulmbach (HQ*)
- Landshut
- Willich

Italy

- Bolzano (RO*)
- Crema



Freelancer/Partner

- Turkey
- South/East Europe

South Africa

- Johannesburg

Freelancer/Partner

- Israel
- Cyprus

- *HQ Headquarter
- *RO Registered Office

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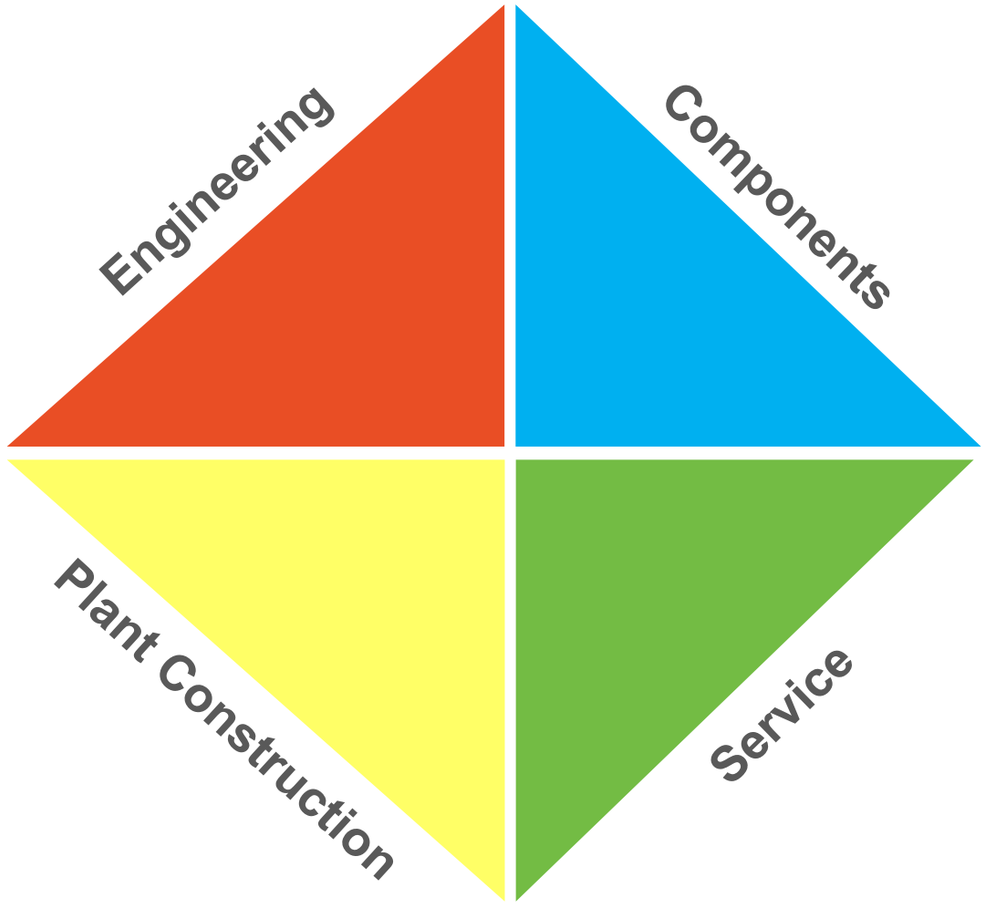
AGO Bioenergy´s business areas

Pre-, Basic Engineering, Feasibility Studies

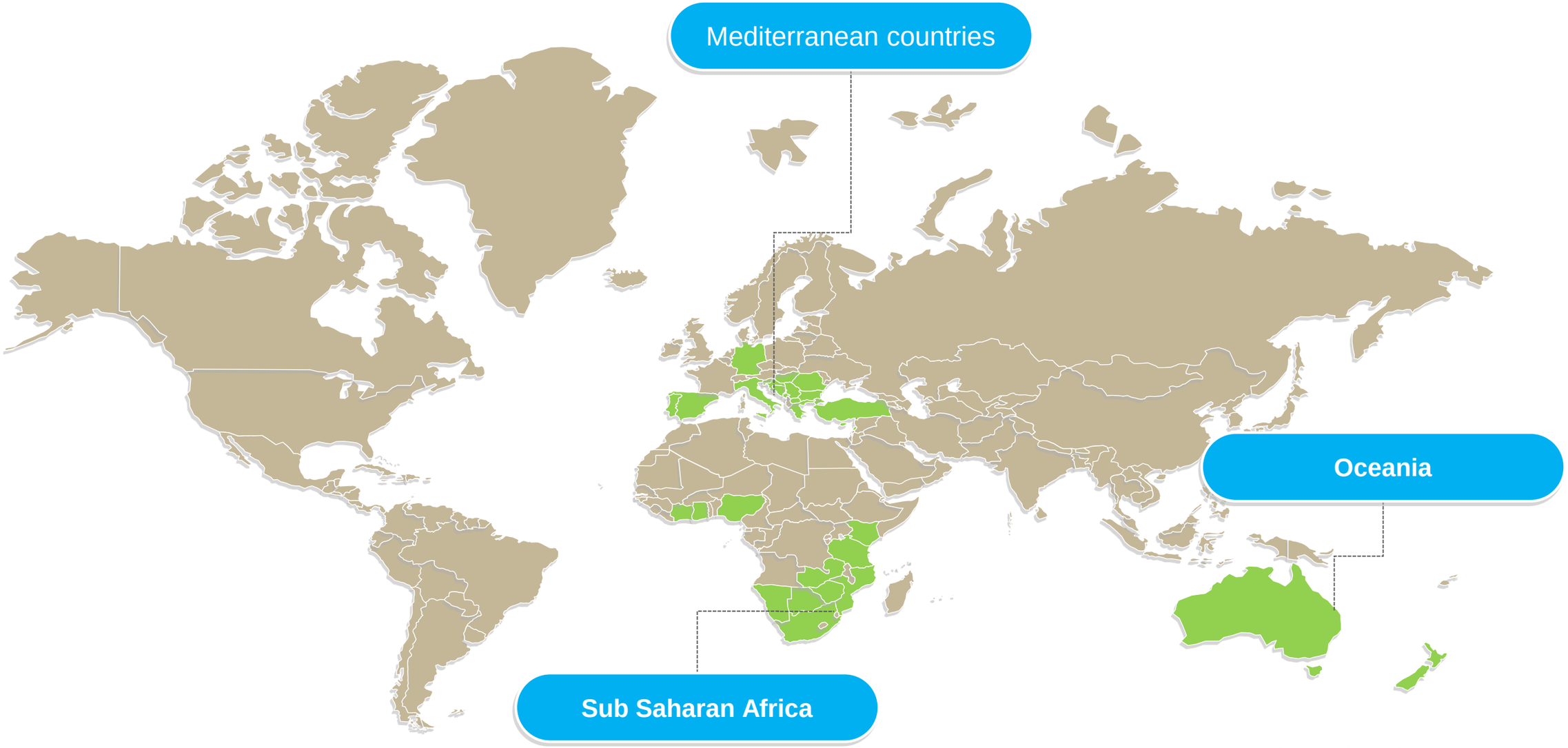
Supply of standardized, containerized components



Plant engineering, Technology packages, Project- and site management, Start up

Retrofit, Repowering, Maintenance, Spare parts

Key and target markets



Waste disposal – slowly becoming a problem?

The common way of waste disposal is putting it to landfill. But !!!!

- landfills running out of space
- cities growing fast - long distances from the source to the landfill - time consuming - transport costs are constantly increasing
- about 50% of the waste being dumped is organic and could have been converted into a useful energy source

Dandora Landfill Nairobi

Landfill in Brisbane, QLD

Food processing waste

At the same time, big food processing companies suffer from

- high disposal costs for their food processing waste
- high prices for electricity
- high prices for CO2
- high prices for heat, cooling and steam
- reliable energy supply (especially on islands)

Leftovers from the food production

As a result

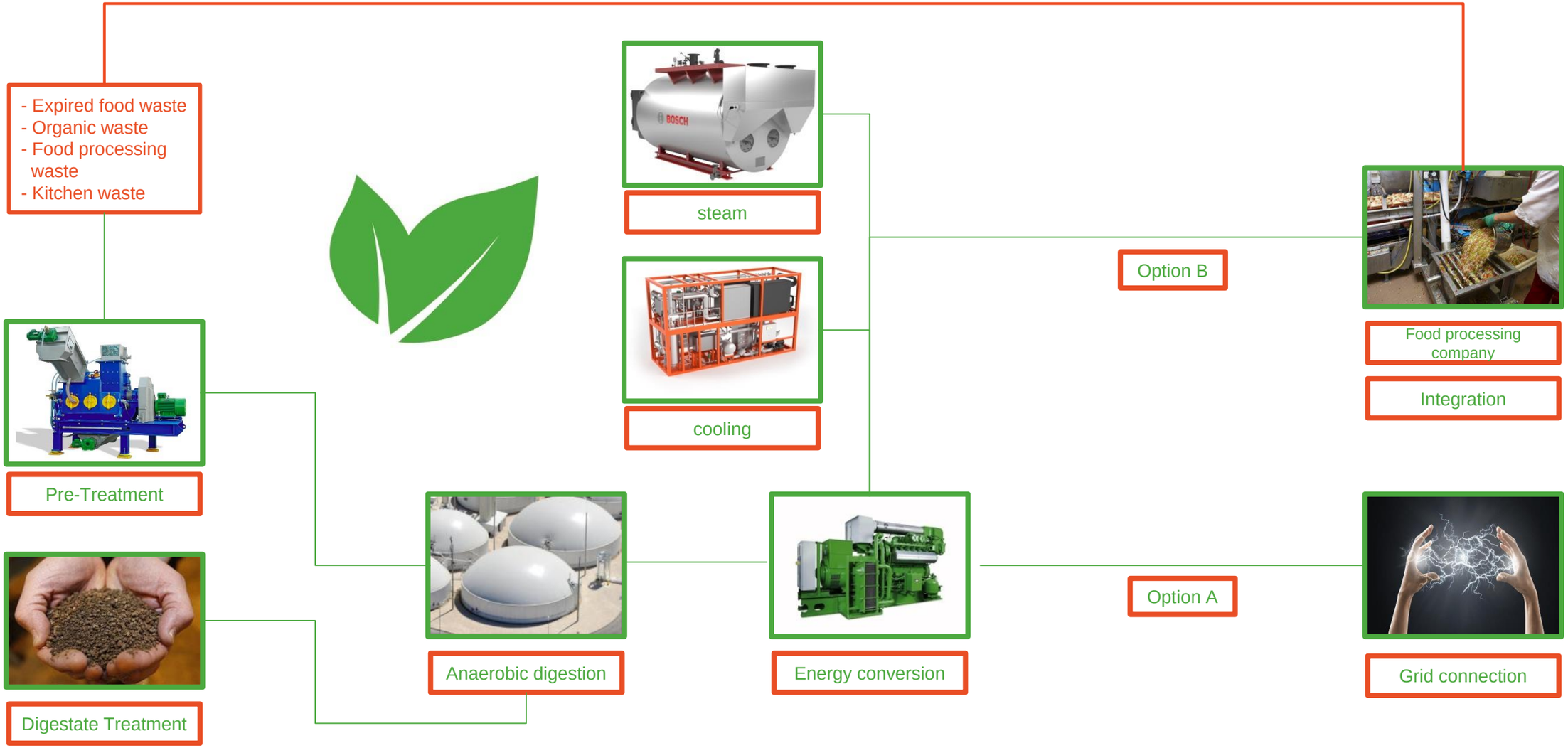
In many countries, decentralized energy production is going to be seen as an essential solution for different kinds of industry sectors. As a result of the growing consume and the thereby related energy demand in those countries - the infrastructure is not state of the art anymore and power outages are not unusual and common.

At the same time, still until today, most of the organic waste has been put to landfills - even though, highly valuable energy and fertilizer value is going to be lost.

The AGO Bioenergy GmbH provides its clients a tailor-made integrated solution to economically generate power, heat, cooling out of the organic residues that accrue during the production.

AGO´s Green Leaf system / components

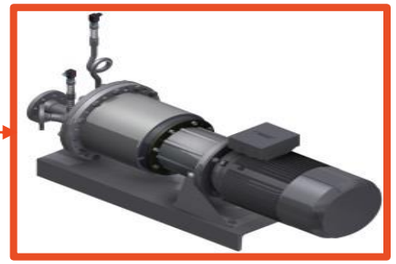
for food/organic waste



AGO´s standardized containerized units

CHP´s

ORC



Congelo

Calforma

Steam boiler

Digestate treatment

The benefits at a glance

AGO´s integrated energy solutions provides plenty of benefits to its clients

- reliable energy supply
- reduction of disposal costs
- sustainability
- waste to landfill reductions
- significant reduction of operation costs (e.g. diesel, process downtime)
- green footprint
- PPA´s-Contracting

Target industries

- Dairy and milk industry
- Fish industry
- Slaughterhouses/Abattoirs
- Juice, soft - and carbonated drink producers
- Breweries
- All kinds of agri-business
- Flower and fruit farms
- Cold storage houses
- Mining industries

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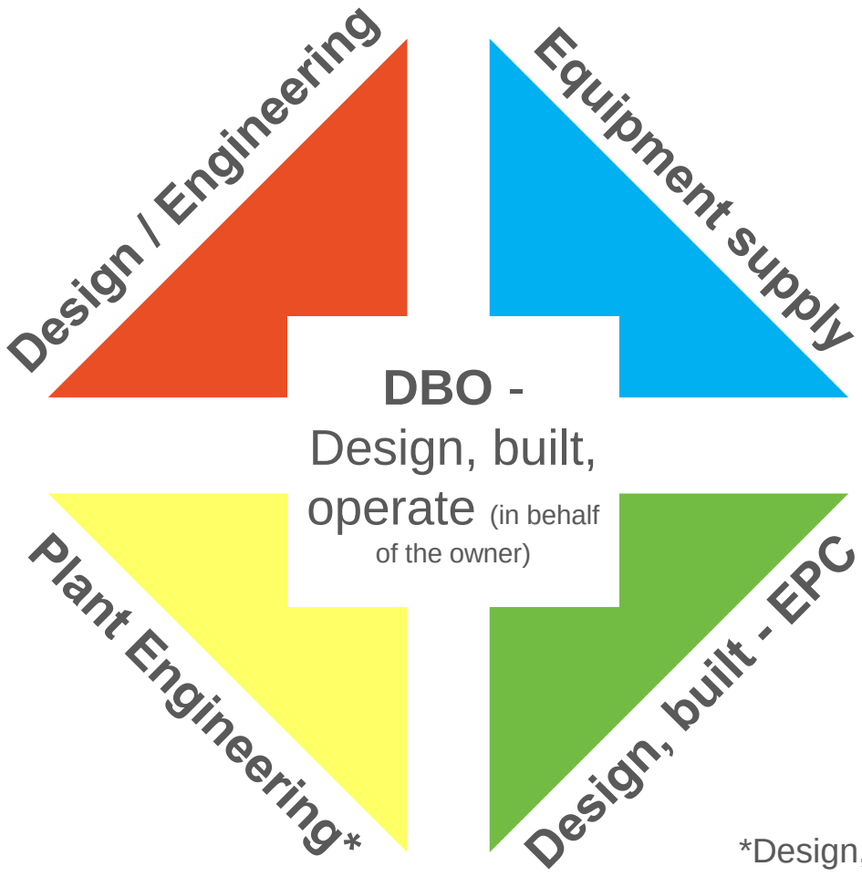
Anaerobic Digestion scope of supply

AGO´s delivery model is flexible and suitable to meet the client´s demand. All the way from “Design Only” to a full wrapped EPC contract.



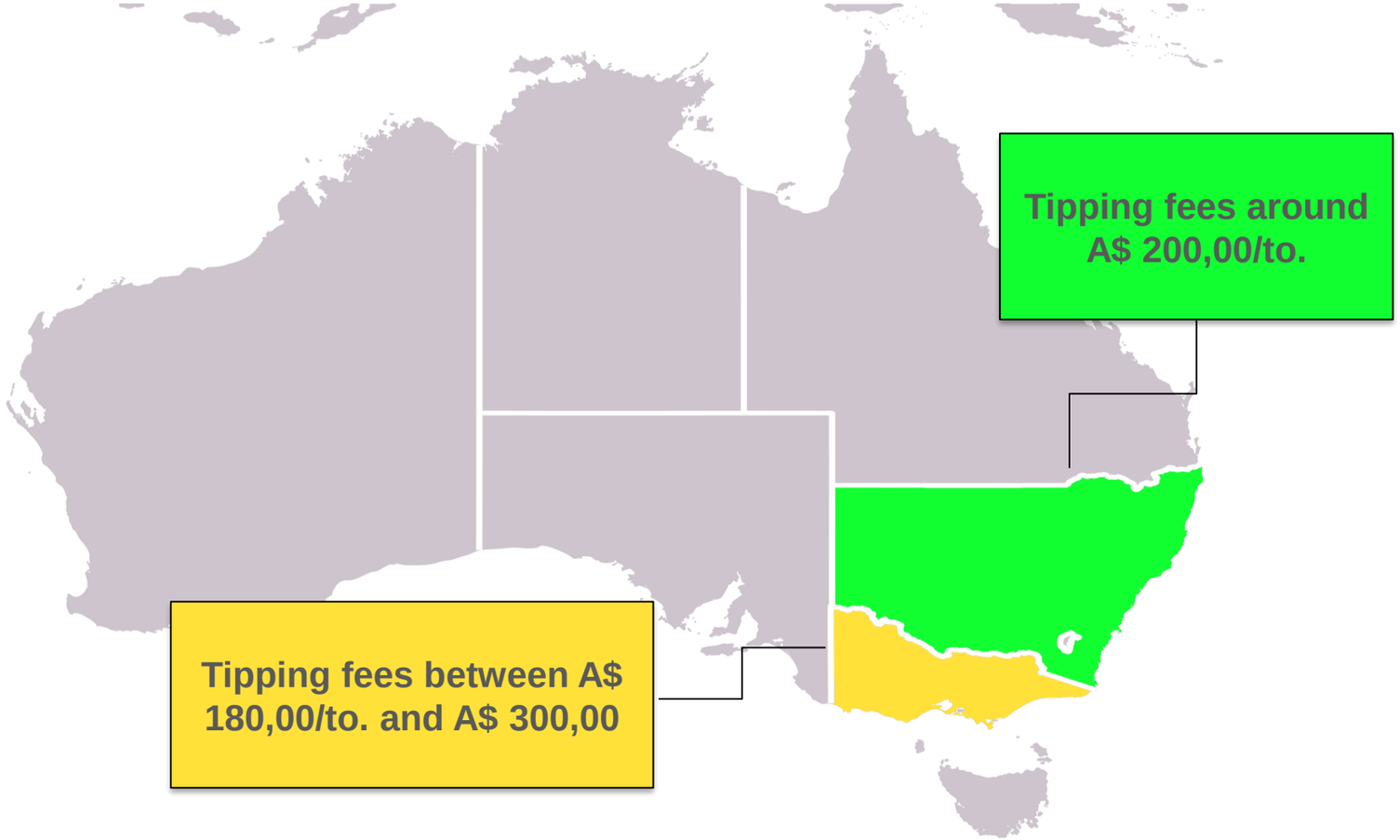
For New Zealand and Australia, AGO is looking for an exclusive distributor to provide excellent service to end clients.

*Design, technology package including process guarantees

Different circumstances in different countries

Project Drivers Australia vs. New Zealand

Waste disposal starts to costs a fortune.



Different circumstances in different countries

Project Drivers Australia vs. New Zealand

Effluent treatment becomes the most important project driver in New Zealand

NEW ZEALAND / REGIONAL

Fonterra fined over waste in waterways

5:39 pm on 31 July 2015

Fonterra has been fined nearly $175,000 for discharging wastewater from its Edgecumbe plant into Bay of Plenty waterways.

Councils issue nearly twice as many pollution notices – and worst dairy farms are still to pay fines

MARTY SHARPE
Last updated 10:31, September 17 2017

Two companies responsible for "chronic and insidious" dirty dairying have failed to pay fines of $225,000 imposed by the Environment Court.

NEW ZEALAND / ENVIRONMENT

Affco meat company fined $66k for illegal wastewater discharge

3:31 pm on 22 August 2018

Share this

Business case example

Foodwaste project Australia – size 2MWel

DATA	
Plant size (in KW)	2.100
TOTAL CAPEX	$ 19.118.750,00
Net electrictiy production (kWh)	15.457.405
Electricity Sales price	$ 0,26
OPEX p.a.(average)	$ 1.091.863,38
Lifetime	20 years

Revenues	
Electricity	$4.018.925,23
Gate Fees	$3.279.575,00

Sell of electricity at current costs

Gate fees 35.000 to./ at 90 AUD

Financials	
LCOE	$ 0,13
IRR	51%
Payback (years)	3,74

Savings / benefit p. kWhel $ 0,13

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What we provide for you.

Electricity

- Tri-generation plants
- Cogeneration plants
- Biomass cogeneration plants
- ORC-systems
- Gas and steam turbines
- Anaerobic digestion

Heat

- Tri-generation plants (combined cooling, heat and power)
- Combined heat and power plants (CHP)
- Steam and hot water systems
- Thermal heat pumps
- Biomass cogeneration

Refrigeration

- ago congelo®-chiller – low temp.
- Absorption technology -medium temp.
- Refrigeration plants
- Process refrigera-tion
- Tri-generation

Ventilation

- Industry and production
- Laboratory and operating rooms
- Cleanroom technology
- Convenience air conditioning
- Air conditioning split systems

Service

- Customer service and support
- Maintenance
- Hygiene inspection
- Repair and troubleshooting service
- Renovation and plant expansion

Thank you very much for your attention!

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