ENTRENCO

Company profile

October 2019

Agenda

- **ENTRENCO**
- **Technology**
- **Products**
- **Project variety**
- **Remote control**
- **Customer service**
- **Service concept Japan**
- **Wood industry**

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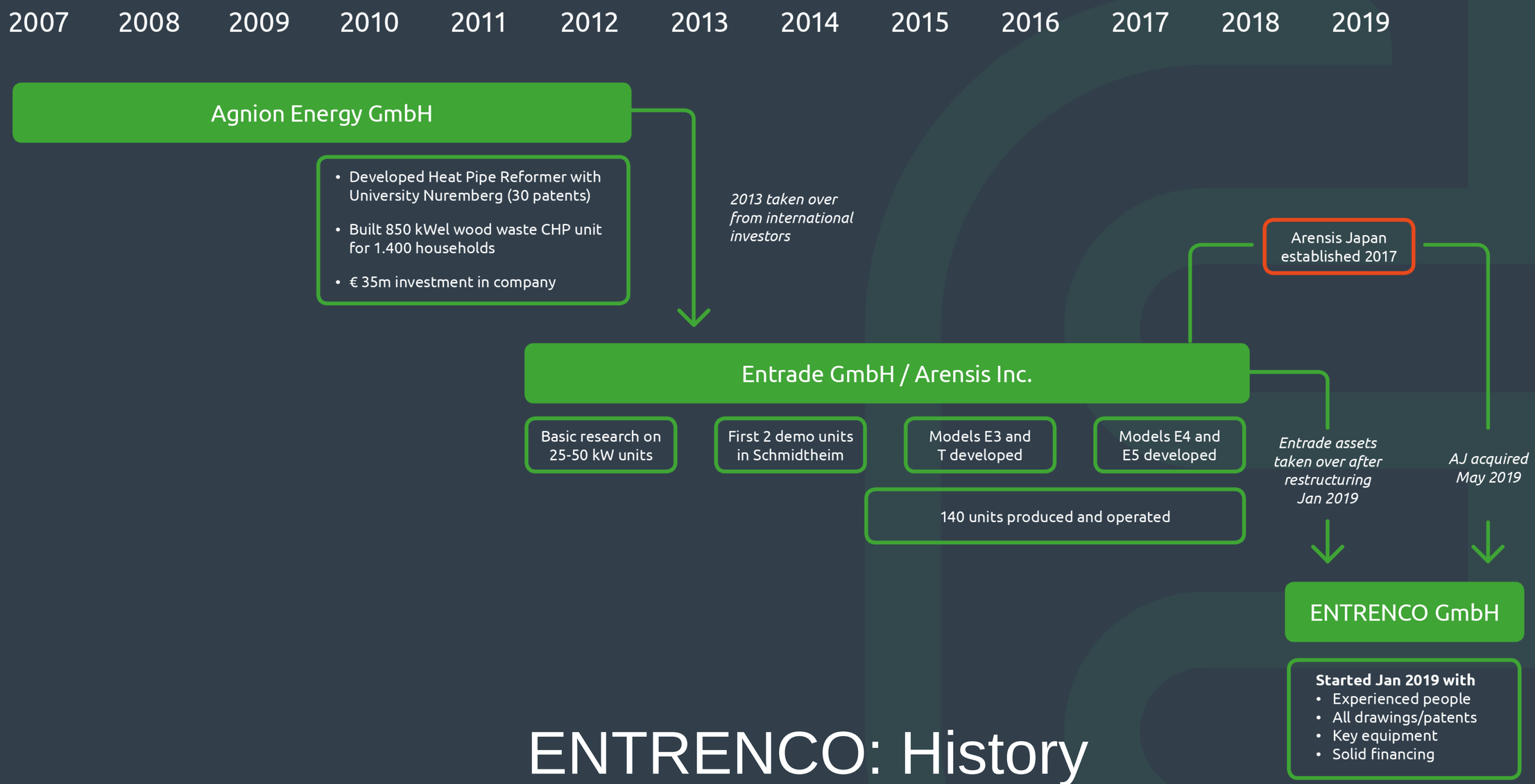

ENTRENCO: History

ENTRENCO as successor of Entrade has inherited all accumulated knowhow and could start quickly with experienced people under new management

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ENTRENCO: Shareholders and Management

ENTRENCO GmbH is financed by main shareholder Paul Matthews / Endeavour Capital
and run by MDs with track record in technology and renewables

Paul Matthews (70%)	DACL GmbH (10%)	Chimerica Holding (10%)	TR Squared (10%)

Education

MBA (Dipl.-Kfm.)

Relevant background

- 3 years family business (agriculture and beverages)
- 6 years international management consulting (A.T. Kearney, Roland Berger)
- 15 years senior mgmt: Partner/MD Venture Capital, MD startup company (high-tech machinery), CEO IT company
- Own company in Turkey: renewable energy projects, hydro energy plant (with Burghard)
- Expertise in Sales and Financing, re-starting Distressed Companies, Future Technologies; all kinds of Renewables

Education

M.Eng. (Dipl.-Ing.), MBA (Dipl.-Wirtsch.-Ing.)

- 4 years head of R&D (Engineering for Automotive)

Relevant background

- 13 years international management consulting (A.T. Kearney, Roland Berger
- 12 years senior management: Vorstand Automotive Supply, CEO Metals
- Own company in Turkey: renewable energy projects, hydro energy plant (with Egbert)
- Advisor to start-up companies
- Expertise in Strategy, Innovation, Turnaround, M&A , Project Management, Coaching; all kinds of Renewables

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ENTRENCO:
Locations Germany

Headquartered in Regensburg, ENTRENCO recently raised a new development and service center in Eching (close to Munich airport)

Regensburg

- Administration
- Finance
- IT/Monitoring
- Sales

Eching

- Development
- Engineering
- Commissioning
- Service Europe

ENTRENCO:
Location Japan

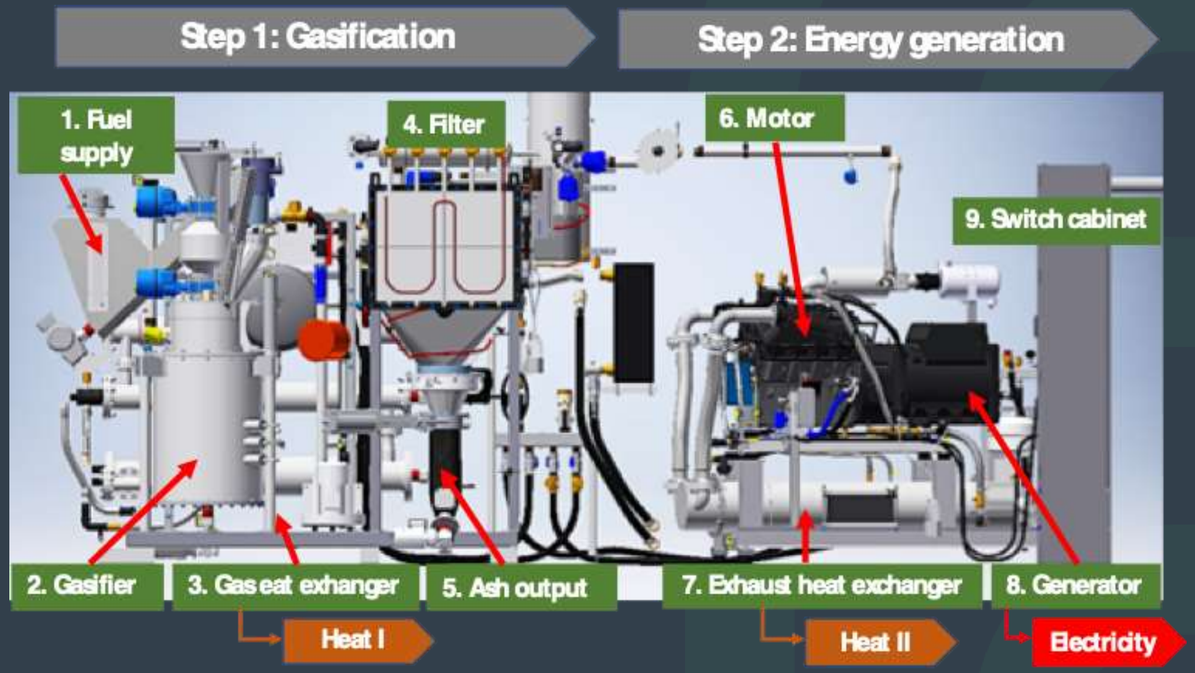
Office Japan will grow strongly, to form a high performance Sales and Service Center for Japan, as ENTRENCO´s most important target market

Arensis Japan (Tokyo office)

- Established 2017 by Christoph Wagner/Entrade
- Taken over by ENTRENCO in April 2019
- CEO Egbert von Cramm, CTO Dr. Moritz Husmann
- Sales and Service, incl. 24/7 remote monitoring and spare parts
- Start-up team of 3, growing to 7 people (6 Japanese) this year

Technology

ENTRENCO´s patented CHP (= Combined heat and power) technology generates electricity and heat from biomass, CO_2 neutral and with 90% overall efficiency



Current focus is on wood chips and pellets, extension to other fuels planned

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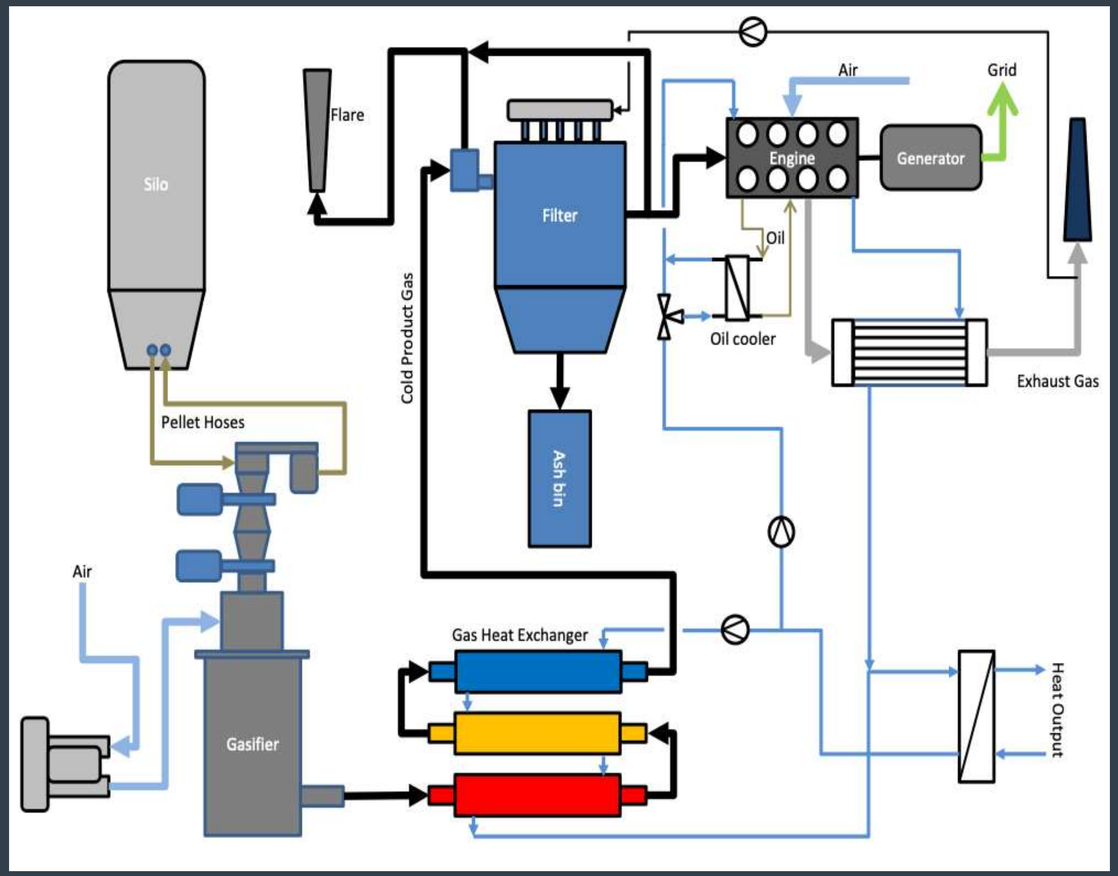
Technology (2)

ENTRENCO´s process has proven to be stable and efficient, with high level of self control, but is continuously developed further



- Fine-tuned components form a solid basic design, with stable process, high efficiency, low tar and moderate exhaust
- High share of series products (motor, generator, etc.) keep cost limited
- Proven partners for manufacturing (LTC in Saxonia) and Electric/Electronic (Schneider=market leader) ensure high product quality and cutting-edge technology
- Smart sensor setting (35 to 45 sensors) and software help extensive self control
- Based on huge data amount through continuous tracking, products are continuously improved as to uptime and lifetime
- Universities are supporting with special research and services

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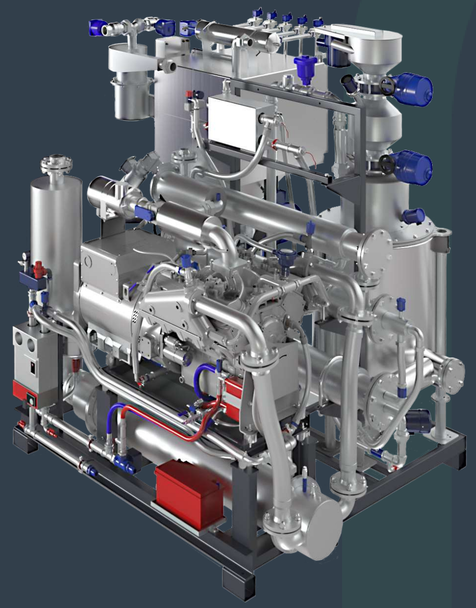
Products

As standard products, ENTRENCO offers 25 to 50 kW_{el} units, either for wood pellets or for wood chips (only 50 kW), either on pallets or in containers

ENTRENCO E3 / Wood pellets



ENTRENCO E4 / Wood pellets

ENTRENCO E5 / Wood chips

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Products

As standard products, ENTRENCO offers 25 to 50 kW_{el} units, either for wood pellets or for wood chips (only 50 kW), either on pallets or in containers

ENTRENCO E3 / Wood pellets

- 25 kW_{el} / 40 kW_{th}
- Wood pellets DIN EN Plus 6mm A1
- 23 kg/h
- 60 dB(A)
- 15 m2 or 20 ft HC container
- Internal feedstock storage option

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Products

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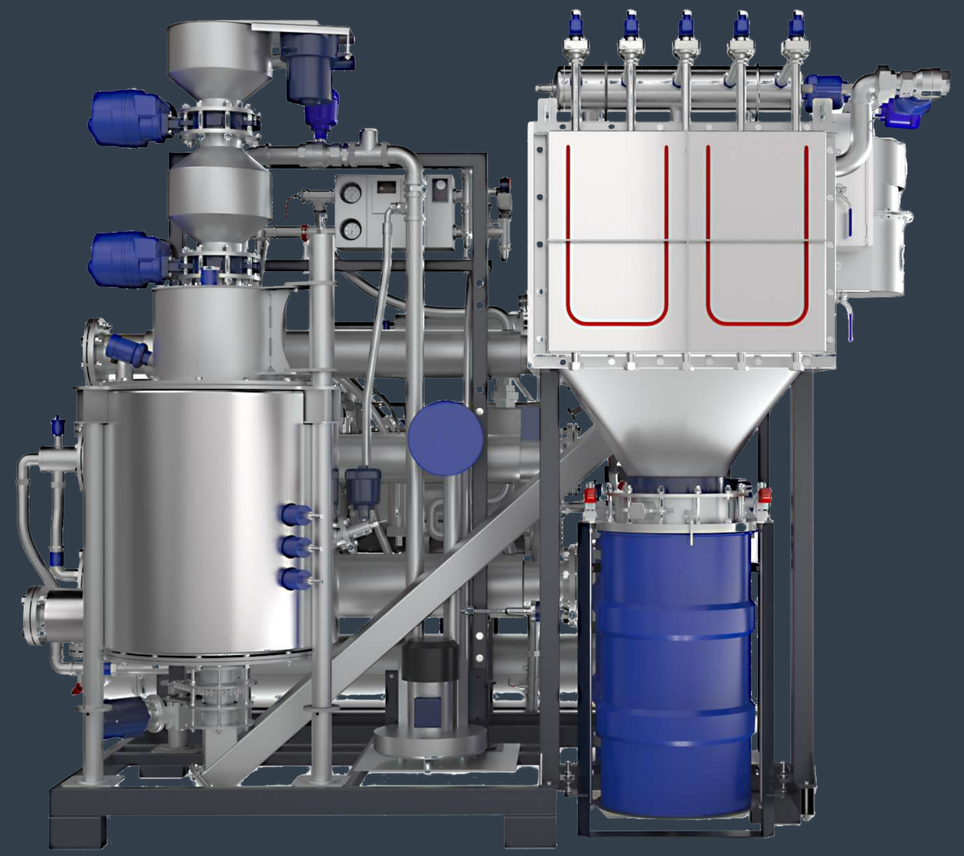

ENTRENCO E4 / Wood pellets

- 50 kW_{el} / 120 kW_{th}
- Wood pellets DIN EN Plus 6mm A1
- 44-46 kg/h
- 60 dB(A)
- 15 m2 or 20 ft container plus pellet silo

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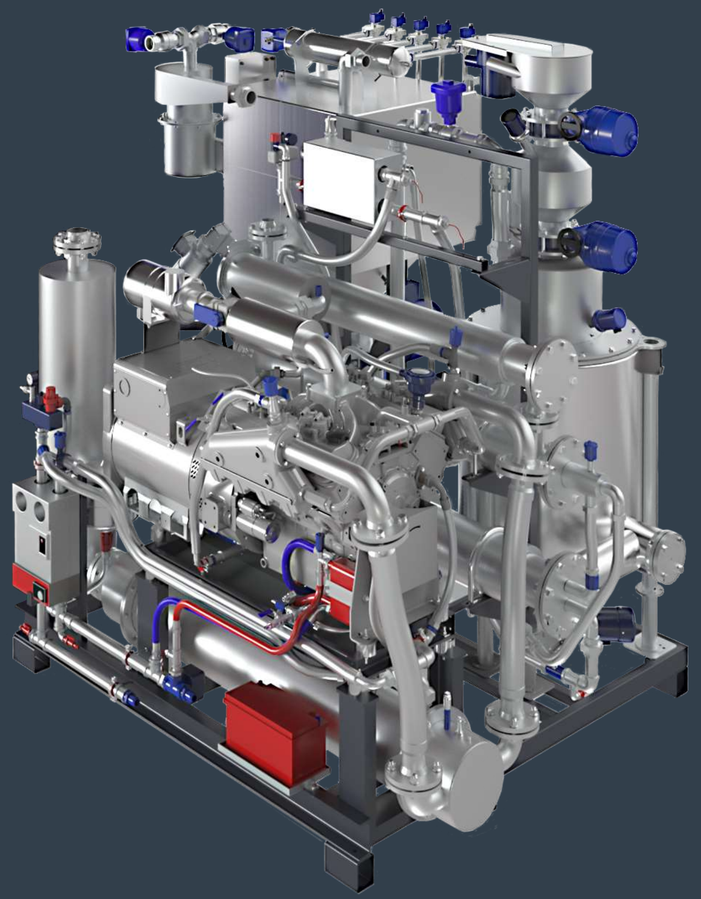
Products

As standard products, ENTRENCO offers 25 to 50 kW_{el} units, either for wood pellets or for wood chips (only 50 kW), either on pallets or in containers



ENTRENCO E5 / Wood chips

- 50 kW_{el} / 120 kW_{th}
- Wood chips A1-B2 quality, G30-G50, max. 13% water
- 50 kg/h
- 60 dB(A)
- 15 m2 or 20 ft HC container and plus wood chip bunker

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Products (2)

Since completely assembled and tested, the units can be commissioned at their target location in unbeatable short time, especially if in containers

Bigger capacities up to 2 MW can be constituted by cascaded 50 kW units, with several advantages towards big units:

- Faster design and construction
- Faster overall commissioning
- Higher reliability
- Shorter maintenance downtime
- Scalability
- Partial load possible
- Removability if change of capacity need or shrinking project economy

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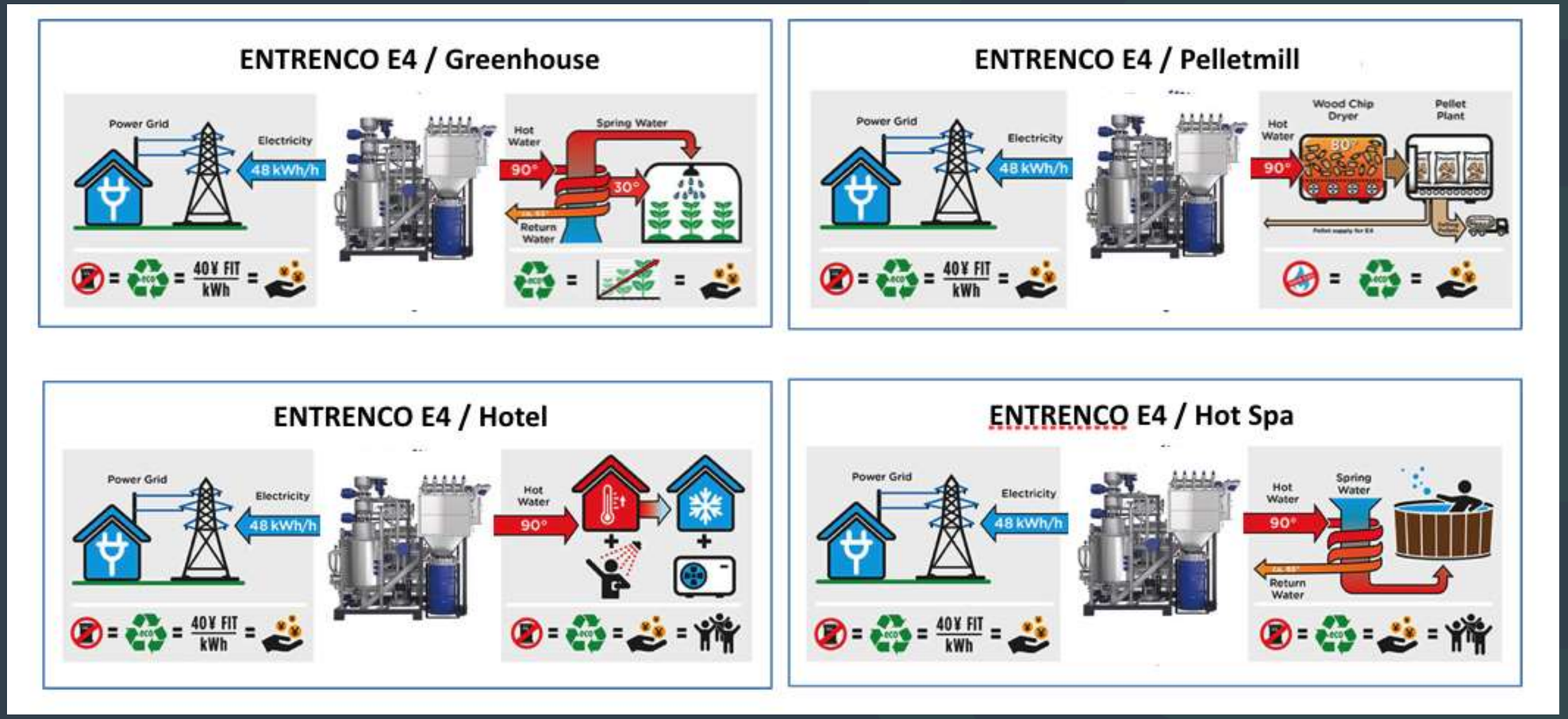
Project variety (1)

Some examples may demonstrate the beneficial use of electricity and heat in different industries, with feeding electricity into the grid paying-off separately



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Project variety (2)

Taking the example of Hot Spa: In case of a Japanese pool operator, replacing the existing oil boiler by E4 units for heating the water turned out being highly economic

Initial situation:

- 2 Pools with 25x18x1 and 25x15x1.5 meter
- Water temperature 27~28°C
- Required heat: 500,000 kcal/h or 580 kW
- Heating through oil boiler

Solution

- 5 x E4 with wood pellets, replacing oil boiler
- W600 kW clean heat
- 250 kW clean power
- Hot water is used directly for heating pools
- Electricity can be sold under FIT or reduce self-consumption of facility

Financial result:

- Payback period **below 5 years**

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Project variety (3)

Case-specific unit arrangements vary widely, whether single or up to 20 units in a row, in container or in a hall, micro-grid or connection to grid or heating network

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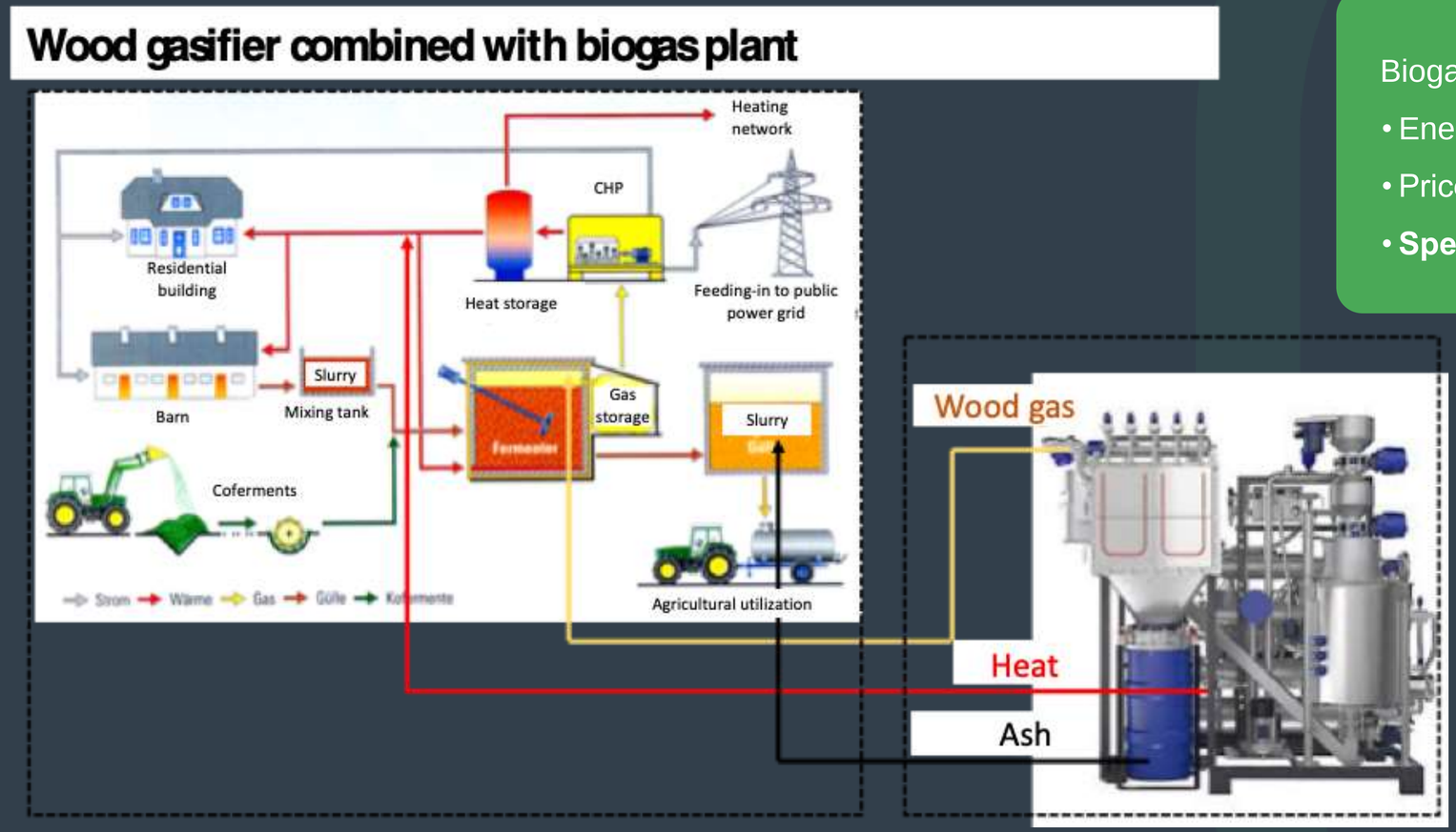
Project variety (4)

Also, combination of our wood gasifier with biogas production is possible,
mixing biogas with cleaner and cheaper wood gas



Biogas from corn vs. wood gas from wood chips:

- Energy content (kWh/kg) 0,68 <-> 1,0
- Price (€/t) 50 <-> 70
- **Specific price (€/MWh) 76 <-> 70**

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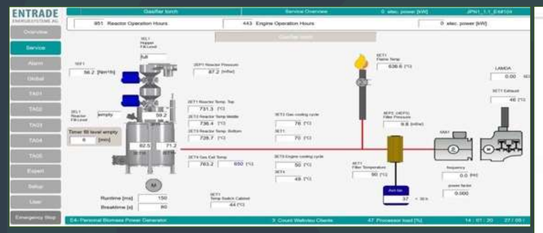
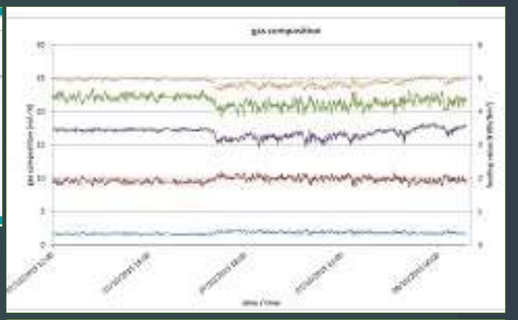
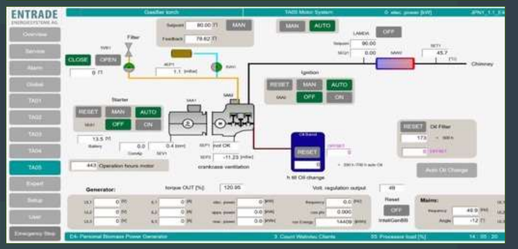
Remote control (1)

Our Service Center in Regensburg offers 24/7 control of each unit globally, helping high uptime and limited operator teams on site (best system in the market)







12 process schemes allow active control of the individual unit

Time series of key parameters prove success of self-regulation

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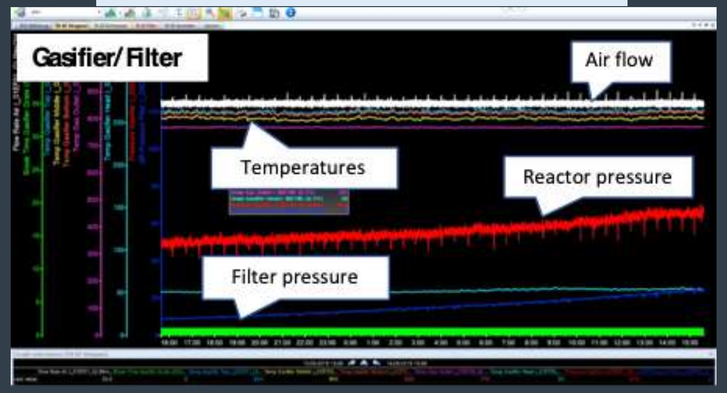
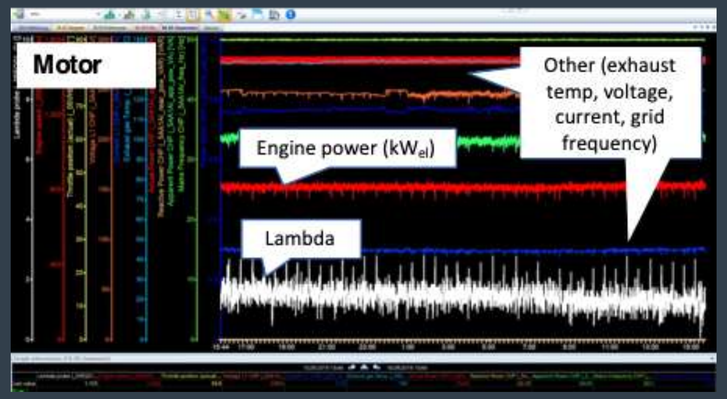
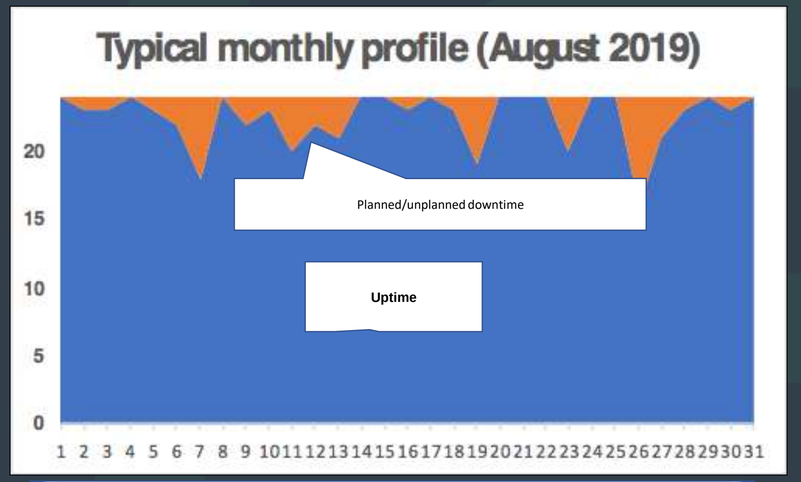
Remote control (2)

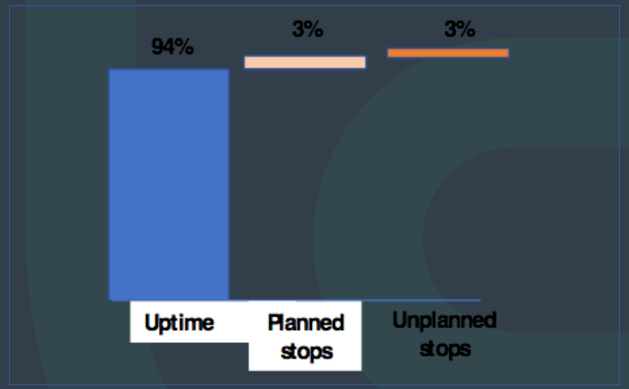
Example: E3 with a Japanese client (hot spa business) is running perfectly stable (uptime >90%) with pellets, recent E5 test on chips with another client went well

Typical 24 hours profile









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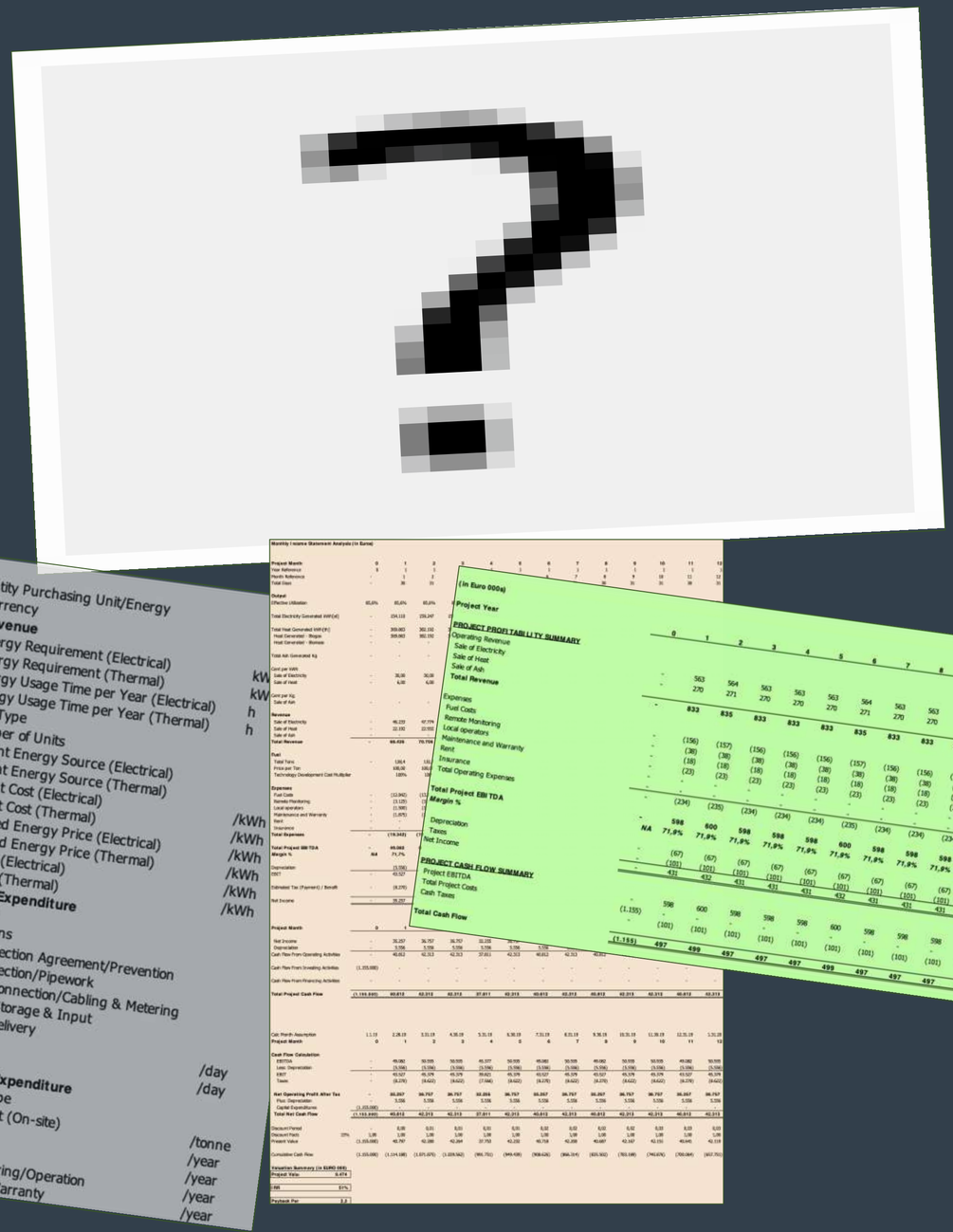

Customer service

ENTRENCO provides turn-key solutions, not just products, based on fair expert advice in both dimensions: technical and economic

- We think besides being modern solutions and contributing to growing renewables, investing in our CHPs must also be financially attractive
- Already in first contact, we check the project financials: investment, return, payback period, financability
- This is helped by a modular product structure with standard prices, also for infrastructure from our partners
- We use smart calculation tools with staggered detailing, ending in integrated P&L-cashflow-balance sheet models for project documentation

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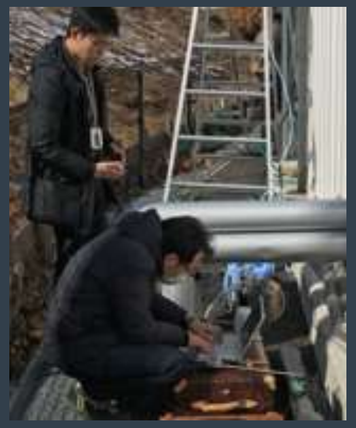
Service concept Japan (1)

Last 3 years have proven, that Japanese customers are highly interested in our German products, that distance plays no role and that chemistry works well

An opening ceremony

Joint commissioning team



Building infrastructure

First machine start

Client visits German R&D

German MD visits his Japan team

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Service concept Japan (2)

In the course of growing business, Japan will get an own service organization, with Germany in the role of global service center backing the Japanese unit