Now also cogeneration pellet or wood chips. Contact us

BIOBOX ENERGY SOLUTIONS

equipped with froling boilers

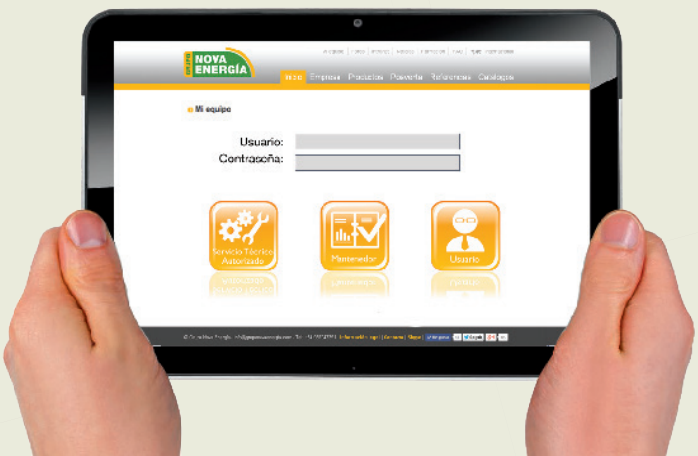
biomass energy solutions containerized

BIOMASS COMBUSTION 7 - 500 kW

- √ Great tolerance with non-standard wood chips and pellets
- √ Flue gas recirculation system
- √ Equipment financing and complete solutions
- √ Equipment rental
- √ 365/24 service
- √ 10 year warranty
- √ Total telemanagement
- √ Important quality certifications

Equipped with the best boilers

froling



Version 1.0 - 01.09.15 - This version cancels previous.

WHAT ARE BIOBOX?

BioBox® energy cabins are completely customizable, compact solutions with the highest quality components and best boilers on the market, Froling. A robust, reliable and equipped with a control system of last generation solution.

Custom designed according to the technical and **architectural integration** of each project needs.

They are ideal for buildings, centralized systems, sports facilities, industry, hotel industry, shopping centers, farms, greenhouses ...

Built in maritime containers of **metal** or concrete **waterproofed**, allowing **semi-buried installation**.

Equipped with **Froling boilers** that have **10 year warranty** and meet the strictest **European standards** both emissions and efficiency.

The Froling boilers have a **low power consumption**, low noise level and are virtually **maintenance free** as they have a **very high tolerance for non-standard chips and pellets**.

ABOUT BIOBOX

Grupo Nova Energía iinstalled **the first BioBox® 2005** at the Hotel Mirador Lles in Cerdanya. This represents an annual BioBox® its owner from € 20,000 savings and contributes to the failure to issue each year about 70 tons of CO2.

BioBox® is a trademark of Nova Energy Group, a company with 15 years of experience and more than **3.000 equipment installed biomass.**

Thanks to our products, our customers have an annual saving of 56 million liters of diesel, avoiding the emission of 148,000 tons of CO2 / year.

This amounts to about 15,600 hectares of coal or 31,500 cars absorbing unused.

OUR MISSION

We design, develop, manufacture and market products for the general public and professional and very technologically advanced solutions in the energy sector. We also take responsibility for the checks of their equipment to reach a long life in perfect working order.

FIRST WITNESS BIOBOX

Hotel Mirador

Lles de Cerdanya, Lerida

(Spanien)

"We are delighted with the Biobox, after setting has not given us any problems at all ages. Our fuel comes from forest cleaning done by the City Council. Thanks to Biobox we achieved a saving of over 60% compared to diesel consumption, we would certainly recommend to other establishments."

Ramón Sellés
Mirador Hotel Manager

KEY BENEFITS

The BioBox® cabins are **very compact, minimal operating and maintenance costs**. Models equipped with boilers Froling also have a guarantee of boiler feed system 10 years.

Some advantages of BioBox® are:

- No construction costs.
- Big savings by replacing fossil fuels.
- Self-supporting, can be removed if necessary.
- Concept Plug-and-Play can grow with the needs. For example, you can increase the installed capacity, increase the volume of the silo or annexing a system for generating cold (BioBox Cooling®) from boiler heat.
- Keeps the current installation as “emergency” and BioBox connect to it.
- Very compact, it is almost immediate assembly and is not necessary or even work permits.
- Durability and robustness due to the high quality of the materials and equipment used.
- Customizing and waterproofed with our models in reinforced concrete possibility of partially buried.
- Large storage capacity and thus autonomy of use.
- Possibility of total remote management of the boiler room and silo.

Funding and grants

We finance your BioBox® and, if you prefer you can **rent** thus avoiding the initial investment. Our Department of Finance and grants is available to process or help finance your project.

KEY BENEFITS

Froling, the best boiler market

Boilers Froling.10 year warranty
BioBox® selected for their Austrian customers Froling boilers. Froling is the world's largest manufacturer of biomass boilers and has excellent technical support for the design of the facility. Moreover, it is the only manufacturer in Spain that offers post-sales service 365 days a year, 24 hours a day, local store of spare parts, remote management standard and 10-year warranty.

Advantage: first class technical solution and important cost reductions resulting from shutdowns or maintenance.

Certification Blauer-engel
This certification by the German government with over 35 years of history, has been awarded to more than 12,000 products from 1,500 companies. It is given to products that have the highest standards for protecting people and the environment. Froling has 30 products with Blauer- Engel certificate.

Advantage: your boiler has a certificate of high efficiency and low emissions, saving additional costs resulting from stricter emission standards.

Smoke cleaning
In containerized solutions, due to lack of space, other manufacturers have chosen to eliminate external cleaning fumes that require their boilers. The Froling boilers comply with existing regulations and systems that have turbo-cyclonic cleaning exchanger built into the boiler.

Advantage: Minimum space, noise and power consumption resulting in improved service quality and environmental quality in the vicinity of the installation.

Flue gas recirculation
While other Austrian boiler stop, get stuck, they reduce its power delivery .... Throughout the years they have proven Froling boilers work best with heterogeneous biomass that we have in Spain as pellets with a high percentage of land or badly screened chips.

Advantage: The robustness of its components and the inclusion of smoke recirculation systems can combust well and keep the power delivery even very wet or too dry biomass.

ARCHITECTURAL INTEGRATION

The biomass BioBox® have multiple finishes that allow a perfect architectural integration of energy cabin in the landscape, thus avoiding the visual impact of the installation on the environment.

A solution for every need

Tailored solutions for all types of households, communities, shops, public buildings and sports facilities, factories, farms and isolated houses ...

ARCHITECTURAL INTEGRATION

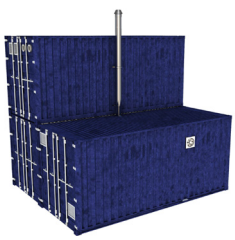
Want other finish?
We designed it for you!

High strength concrete

Stone coating

Wood Coating

Vegetation cover



Sheet metal structure

Exterior painting of high resistance

HIGHLIGHTS

1 Froling biomass boiler with the highest levels of quality, efficiency and low emissions.

2 Fireplace AISI 316 stainless steel, with double wall.

3 Maximum utilization of the volume of the silo equipped with racks for natural cross ventilation and moisture reduction option.

4 Container of the highest quality, offering multiple finishes and covers, optional and customizable.

5 Buffer tank designed to ensure maximum thermal efficiency.

6 Door RF120 fire resistance (Concrete BioBox) and lock (BioBox Metal).

7 Exhaust ventilation in the boiler room and silo activated thermostat.

8 Bocas pneumatic loading.

9 Canvas rubber pneumatic loading.

10 Separation between the boiler and silo RF120 fire resistance.

11 Complete electrical installation.

12 Complete hydraulic system with expansion tank, ball valves and safety valve, PWM low power pumps, ...

13 Sensors and cameras located in silo, boiler room and outside the cab for total control of the state of the cockpit by BTCS® (optional) system.

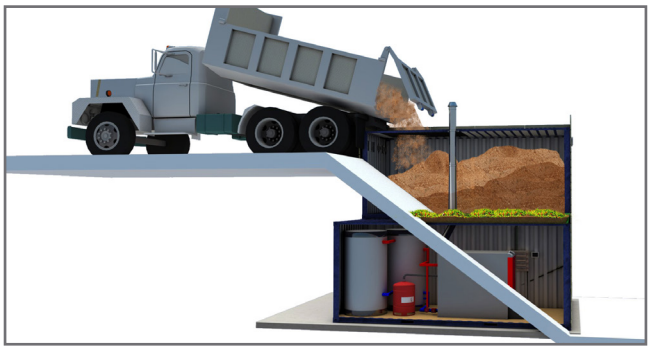
14 Touch screen control system BTCS® (optional).

15 Acoustic insulation made from polypropylene (optional)

FILL

There are different options BioBox filled. There is the possibility of installing a sliding gate at the top for direct download, ascending worm with sprinkler or pneumatic loading mouths.

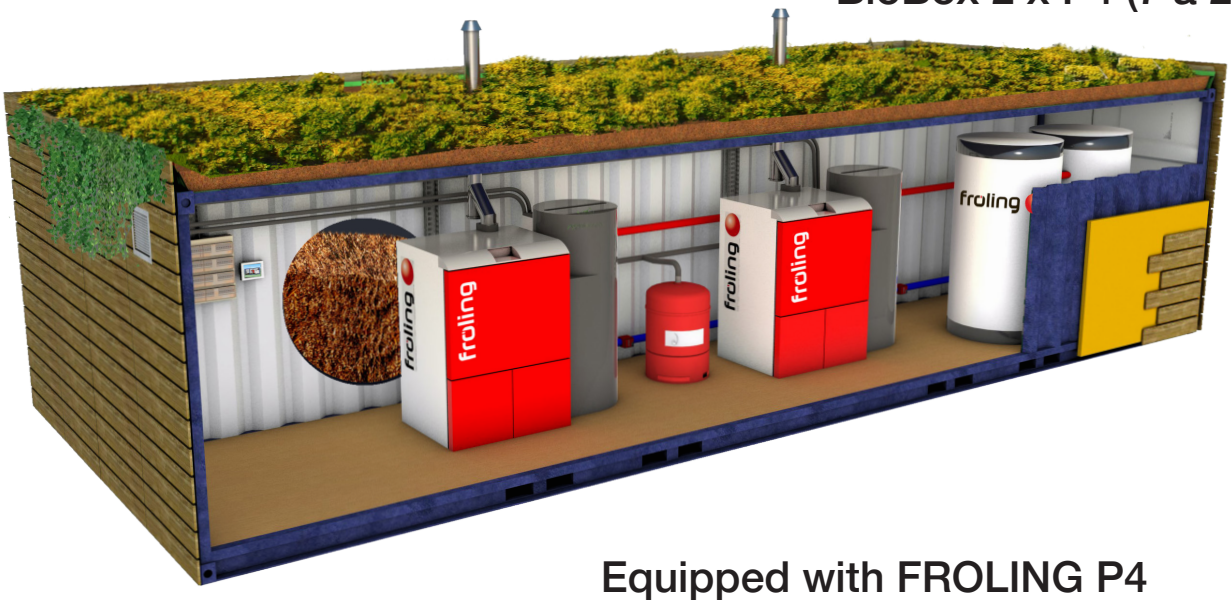
The most compact and reliable solution for biomass heating installations



BIOBOX FROLING
PELLET AND OLIVE STONE

BioBox P4 (7 a 105 kW)

BioBox 2 x P4 (7 a 210 kW)



Equipped with FROLING P4

BIOBOX FROLING
PELLET AND OLIVE STONE

Metal BioBox equipped with one or two boilers Froling P4, depending on model. With a power range from 7 to 210 kW. Ideal for combustion of pellets and olive stone.

					
Model		**P4-80**	**P4-100**	**2 x P4-80**	**2 x P4-105**
Fuel		Pellets and olive stone			
Number of modules	**nº**	1	1	2	2
Length cabin	**mm**	12.192	12.192	12.192	12.192
Cabin width	**mm**	2.438	2.438	4.876	4.876
Cabin height	**mm**	2.891	2.891	2.891	2.891
Approx. (vacuum)	**kg**	6.000	6.000	12.000	12.000
Volume boiler room	**m³**	32	32	76	76
Ø Smoke outlet	**mm**	350	300	350x2	300x2
Capacity inertia	**litros**	1.800	1.800	3.000	3.000
Number deposits	**nº**	1	1	2	2
Maximum flow temperature	**ºC**	90	90	90	90
Approximate capacity silo	**m³**	33	33	55	55
Boiler					
Boiler power	kW	80	100*	2 x 80	2 x 105
Modulation	kW	24-80	30-100	24-160	30-200
Water Efficiency	%	93,2	94,3	93,2	94,3
Electrical connection	V, A	230V/16A			
Average power consumption	W	115	112	115	112
Particulate emission	mg/m³	18	18	18	18
CO2	mg/m³	8	8	8	8
NOx	mg/m³	118	122	118	122

* Option of boiler 100 or 105 kW.

BIOBOX FROLING
FOR WOOD CHIP AND PELLET

BioBox T4 (24 a 150 kW)

Personalize it with the name of your organization or business

Equipped with FROLING T4

BIOBOX FROLING
FOR WOOD CHIP AND PELLET

BioBox metal equipped with a boiler Froling T4 of 24-150 kW, suitable for wood chips and pellets, equipped with a rotary spring for intensive use. Also available in waterproofed concrete container.

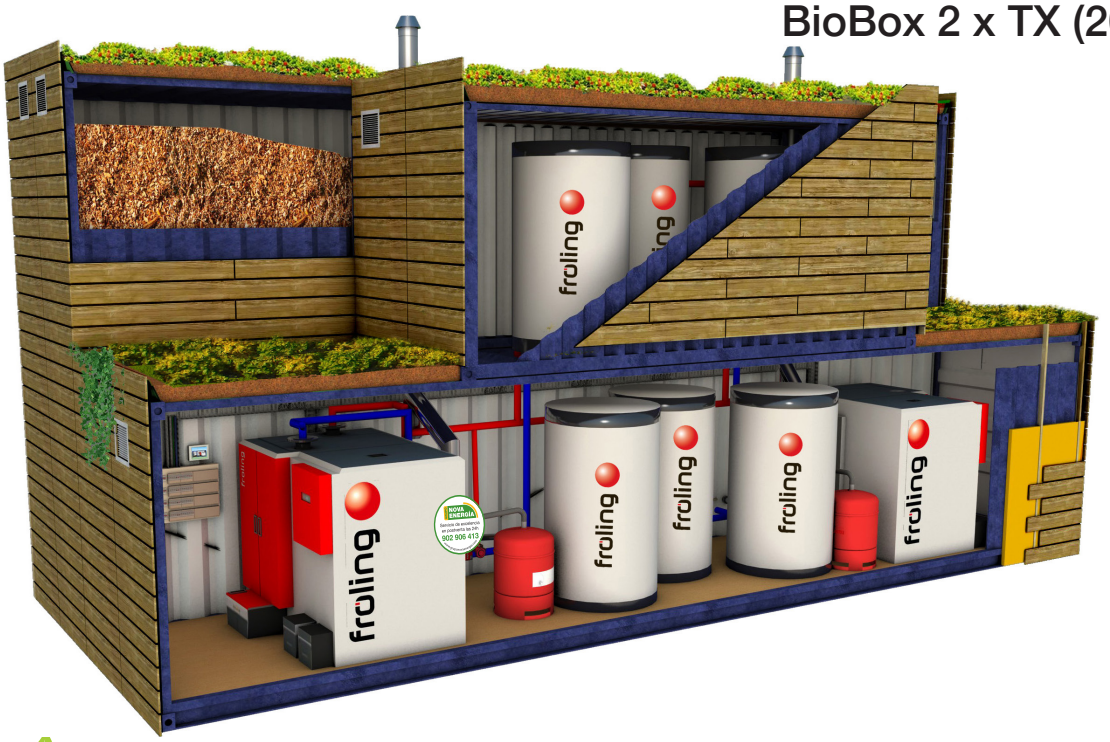
					
Model		**T4-90**	**T4-110**	**T4-130**	**T4-150**
Fuel		Pellet y astillas			
Number of modules	nº	3	3	3	3
Length cabin	mm	6.058	6.058	6.058	6.058
Cabin width	mm	4.876	4.876	4.876	4.876
Cabin height	mm	5.782	5.782	5.782	5.782
Approx. (vacuum)	kg	10.000	10.000	10.500	10.500
Volume boiler room	m^3	33	33	33	33
Ø Smoke outlet	mm	300	300	300	350
Capacity inertia	litros	1.800	1.800	3.000	3.000
Number deposits	nº	1	1	2	2
Maximum flow temperature	ºC	90	90	90	90
Approximate capacity silo	m^3	52	52	52	52
Boiler					
Boiler power	kW	90	110	130	150
Modulation	kW	27-90	33-110	39-130	45-150
Water Efficiency	%	94,1	92,9	93,3	93,8
Electrical connection	V,A	400V/20A			
Average power consumption	W	260	260	340	340
Particulate emission	mg / m^3	16	20	15	18
CO2	mg / m^3	18	13	11	6
NOx	mg / m^3	97	98	95	94

BIOBOX FROLING
FOR WOOD CHIP AND PELLET

BioBox TX (200 a 250 kW)

Equipped with FROLING TX

BioBox 2 x TX (200 a 500 kW)



BIOBOX FROLING
FOR WOOD CHIP AND PELLET

Metal BioBox equipped with one or two boilers Froling TX 200 to 250 kW, suitable for wood chips and pellets, equipped with one or two rotary springs for heavy use. Also available in waterproofed concrete container.

					
Model		**TX-200**	**TX-250**	**2 x TX-200**	**2 x TX-250**
Fuel		Pellet y astillas			
Number of modules	**nº**	3	3	4	4
Length cabin	**mm**	12.192	12.192	12.192	12.192
Cabin width	**mm**	4.876	4.876	4.876	4.876
Cabin height	**mm**	5.182	5.182	5.782	5.782
Approx. (vacuum)	**kg**	14.000	14.000	20.000	20.000
Volume boiler room	**m³**	76	76	76.4	76,4
Ø Smoke outlet	**mm**	350	400	2 x 350	2 x 400
Capacity inertia	**litros**	4.500	4.500	9.000	9.000
Number deposits	**nº**	3	3	6	6
Maximum flow temperature	**ºC**	90	90	90	90
Approximate capacity silo	**m³**	52	52	104	104
Boiler					
Boiler power	**kW**	200	250	2 x 200	2 x 250
Modulation	**kW**	60-200	75-250	60-90	75-500
Water Efficiency	**%**	92,9	93,7	92,9	93,7
Electrical connection	**V,A**	400V/20A			
Average power consumption	**W**	285-650	285-650	285-650	285-650
Particulate emission	**mg / m³**	29	15	29	15
CO2	**mg / m³**	7	6	7	6
NOx	**mg / m³**	98	103	98	103

BOILER BEST MARKET

The Froling boilers are equipped with **self-cleaning systems** and **recirculation fumes** that allow full control of temperature of the combustion chamber. Compared with the other Austrian boilers Froling boilers have a **very high tolerance and non-standard chips typical of the Peninsula pellets.** Given the above, the Froling boilers require **minimal maintenance** and are a **safe investment**.

Froling chains used only where, by the nature of their work and easy maintenance, they will have a long life. For the same purpose, it has been replaced by the reducing gear motors.

All Froling boilers have different remote control systems: **Modbus** connection real possibility of integration with **SCADA**, remote management software and remote management via **visualisierung Froling-Connect**. No boiler provides many remote management options.

The Froling boilers have **minimal power consumption** and meet the strictest **European standards** of energy consumption, energy efficiency, noise levels and emissions.

Froling has 30 certified products with the environmental quality label Blauer-engel.

The Froling boilers are the perfect choice for its versatility of use of fuels, minimum maintenance and operating costs, emissions, noise and power consumption.

FROLING PE-1 y P4 (7 a 105 kW)

High efficiency boiler and suitable for the combustion of pellets and olive stones in comfort sturdiness. It's very small dimensions are ideal for Biobox.

- Auto clean.
- **Extraction, compression and automatic ash removal.**
- **Induced draft fan tachometer**.
- **Lambda control** for optimal combustion, despite the variability of fuel.
- **P3200** Lambdatronic system control.
- Heat exchanger with 3-step system performance **optimization patented WOS**.
- Minimum noise, emissions and energy consumption.

ADVANTAGES OF THE BOILER FROLING

FROLING T4 (24 a 150 kW)

Automatic boiler for combustion of **pellets or wood chips**. Its high energy efficiency has earned multiple international awards. Its advanced technology enables optimum combustion with high yields, low fuel consumption and low emissions.

- **Extraction, compression and automatic ash removal**.
- Minimum emissions without **external multicyclone**.
- Combustion air supply regulated by **depression.**
- Endless supply of great strength with **rotary valve.**
- Heat exchanger with 3-step system performance **optimization patented WOS.**
- **Induced draft fan tachometer**.
- **Lambda control** for optimal combustion, despite the variability of fuel.
- Control Lambdatronic **H3200**.
- **Flue gas recirculation for perfect combustion even of the chips and pellets harder.**

FROLING TX (200 a 250 kW)

Caldera virtually maintenance free, robust, economical and safe, fully automatic, which allows woods chips or pellets burn very efficiently

- Combustion chamber r**efractory brick.**
- Staged combustion grill and hinged ventilated drying prior to complete combustion and automatic cleaning.
- Vertical heat exchanger **4 steps** and system performance **optimization patented WOS**.
- **H3200** system control.
- Minimum emissions **without external multicyclone**.
- **Flue gas recirculation for perfect combustion even of the wood chips and pellets harder.**

INSTALLATION AND ASSEMBLY PLUG-AND-PLAY

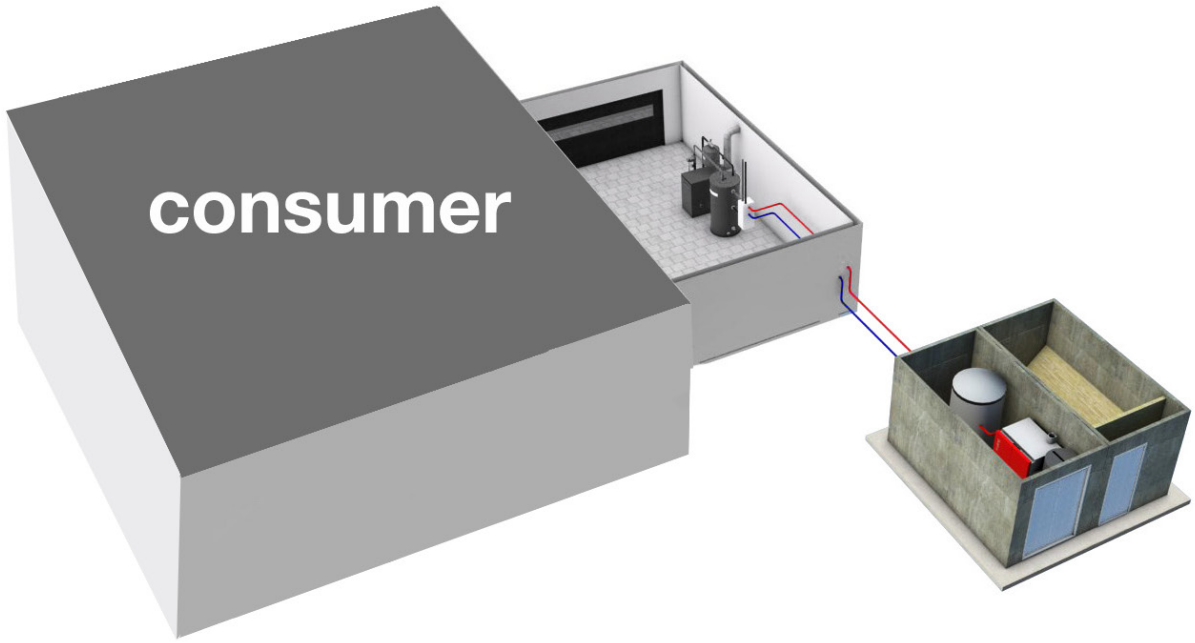
It is essential to have good access to the drop zone with a truck trailer type and a tow truck. The concrete slab is not compulsory, but recommended, if the ground is not paved installed or has low resistance.

The flexibility of this solution can be adapted to the various existing facilities, for example by placing the BioBox parallel to the current boiler room, fully outsourcing the boiler room or just the silo.

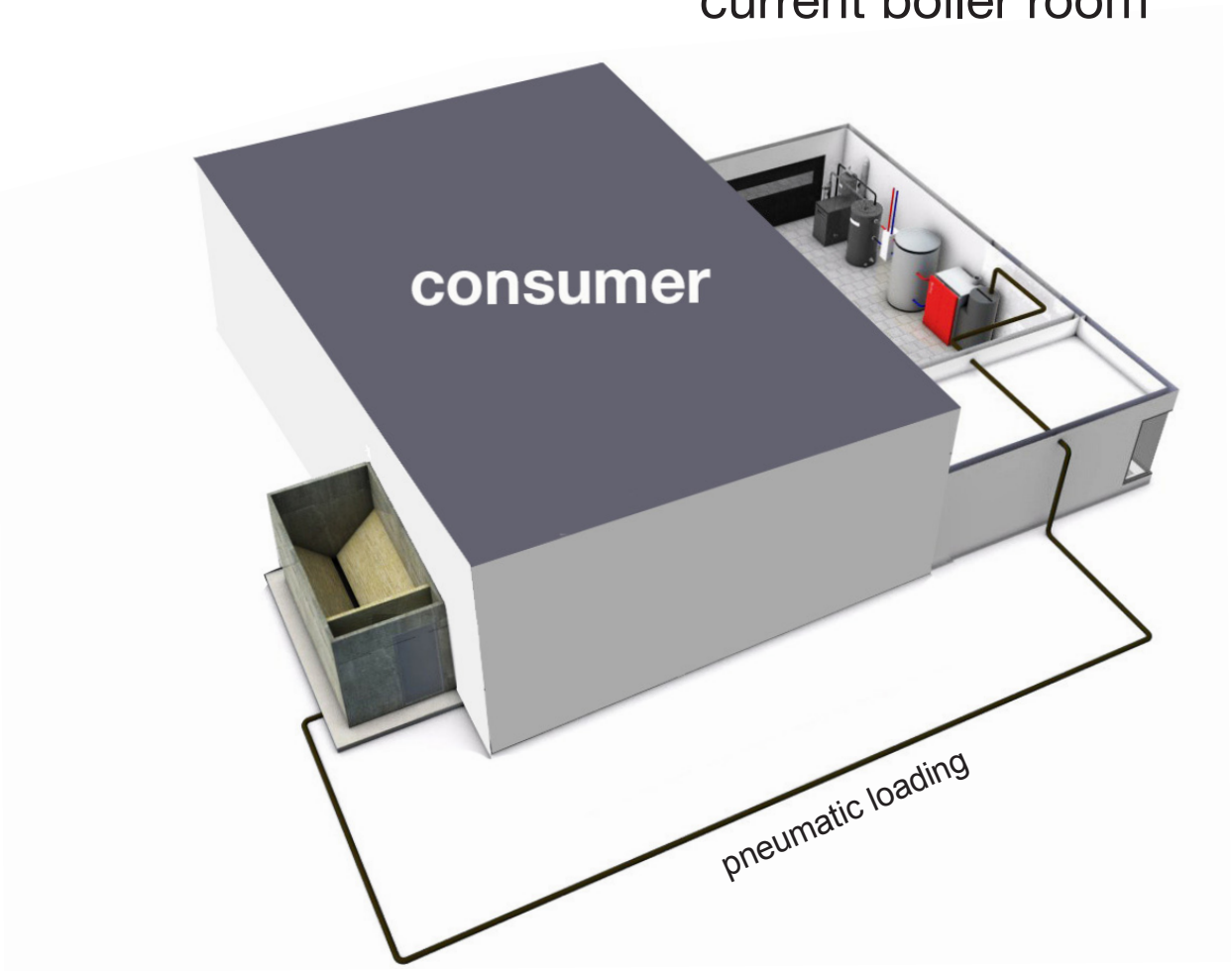
The installation is left mounted with an exterior water connection network, a cold water inlet (boiler return) and a hot from the boiler (drive). Power and internet cable is also required.

No drive pumps, manifolds for external circuits and all elements, the design of which depends on the installation and connecting of BioBox not own are included.

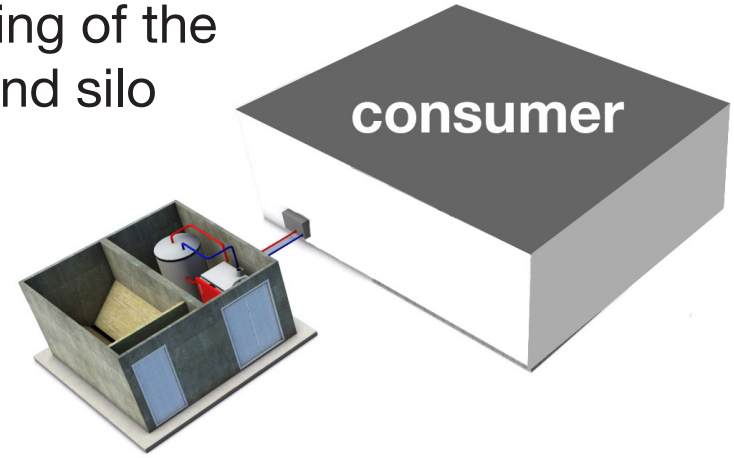
BioBox installed in bypass to the current boiler room



Outsourcing silo during current boiler room



Full outsourcing of the boiler room and silo



BTCS® CONTROL SYSTEM

(OPTIONAL)

You would like to know the **amount of biomass** available in the silo installation without having to go to it? What is the biomass **moisture** is feeding your boiler? **When** did you first **load the silo** truck biomass and when finished? **How much energy** has produced this month installation? Does receiving an **e-mail automatically** when incidents occur?

BTCS® control system is the most comprehensive facilities biomass market, the system is integrated into the on-line **My Biobox** application for easy and quick access. It is based on a powerful industrial PLC programming open to facilitate remote management and maintenance of your Biobox comfortably from a smartphone, tablet or PC.

The BTCS® system allows:

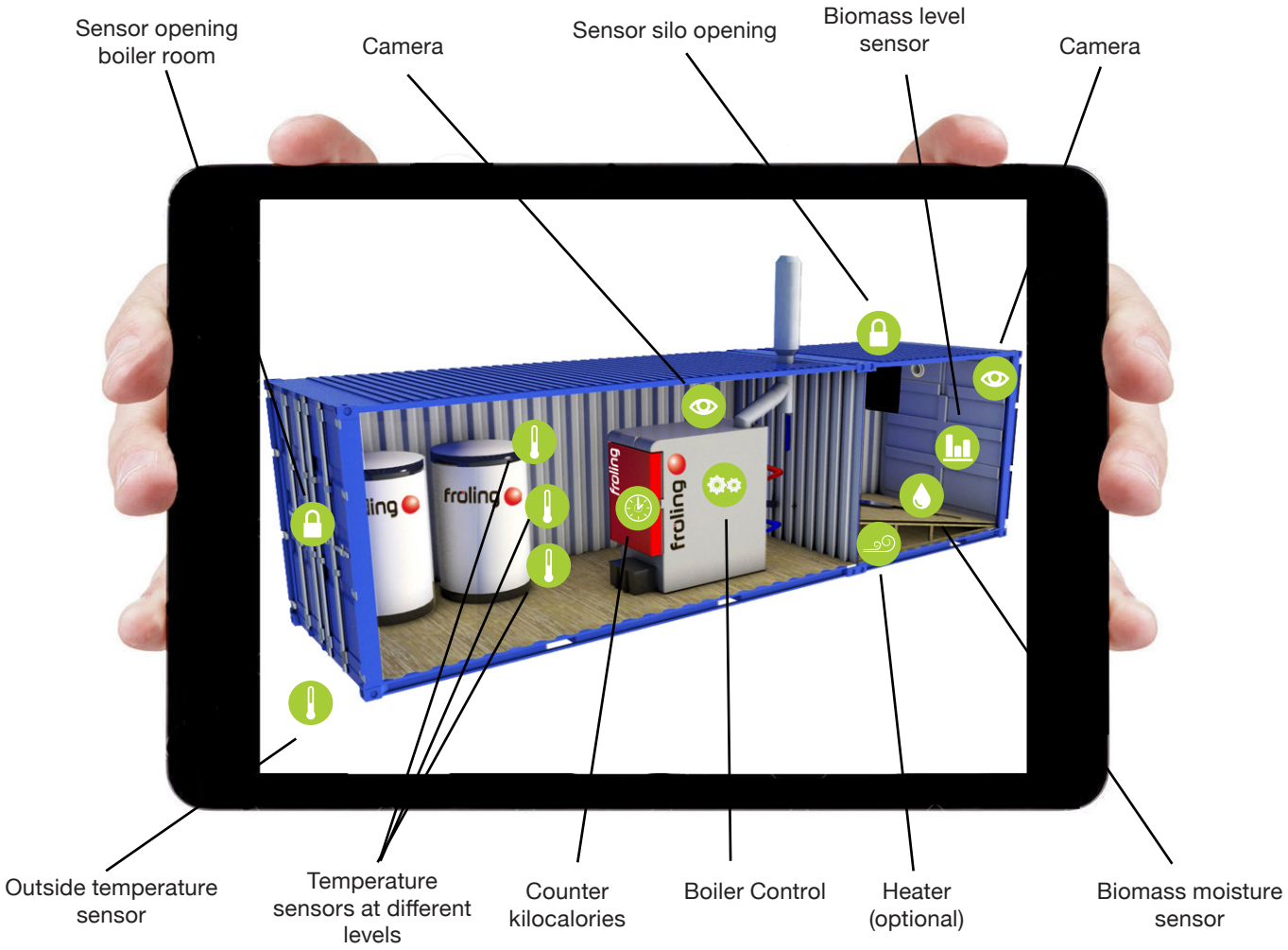
- Acquisition and display of the **main variables of the boiler** and equipment as part of the installation as:
  - **Energy produced** (Snapshot, cumulative, temperatures, etc.).
  - **Power** (instantaneous, cumulative, instantaneous voltage, maximum and minimum, etc).
  - In **boiler** water temperature, smoke, residual O2, power, etc.
  - **Temperatures** inertia, ACS, heating circuits, etc.
- **Alarm management** via email, or on screen, for quick reaction.
- View or change **settings remotely** for better operation and efficiency.
- **Especially in alarm** for quick identification of the possible causes of the problems datalogger.
- Registration and consultation of **current and historical data** of the boiler.
- **Graphical representation** of significant variables.
- **Data export** to external exploitation system.

System on-line control to a comfortable facility management

BTCS® CONTROL SYSTEM

(OPTIONAL)

Full control for maximum tranquility



Optionally, it can also be added:

- Sensor volume level of biomass in the silo
- Real time measurement of moisture biomass boiler feed.
- Hydraulic pressure sensor circuit
- Quick Biomass Drying System Drying System (BQDS®)
- Video camera system inside the silo to see the level of biomass
- Control system opening doors and loading
- and all that you require

In short, the BTCS® has the aim to offer customers full control of all major components in the system in order to provide the best service with such a facility minimizing operating and maintenance costs. This results in a higher yield.

MIRADOR HOTEL

Location: Lles de Cerdanya (Lleida)

Installation year: 2005

Model: BioBox Froling Turbomatic 110 kW

Applications: Heating, hot water and air conditioning of the outdoor pool.19 m^3

Silo: 70 Tn wood chip

Annual consumption: 18.400€

Annual savings:

Description:

This hotel is located in the Pyrenees of Lleida installed in 2005 Booth biomass energy for heating rooms and pool. His manager, Ramon Selles, says: *We are delighted with the BioBox, after setting has not given us any trouble over the years. Our fuel comes from forest cleaning done by the City Council. With biomass we achieved a saving of over 60% compared to the oil boiler previously had, we would definitely recommend to other establishments.*

BioBox energy cabin includes the boiler room and silo. Installation was a major saving for the resort also thanks to its design plug-n-play allowed to install in a few days without the need for civil works. In the future, if necessary, you can easily reposition or connect with another energy absorbing cabin for example to generate AC.

In this iconic region of the Pyrenees, architectural integration was very important to keep in mind so the cabin walls were lined with stone, following the architectural style of the region appearance.

CAMPING ARENA BLANCA

Location: Benidorm (Alicante)

Installation year: 2010

Model: BioBox Froling Turbomatic 100 kW

Applications: Heating, hot water and pool heating with sunroof.

Silo: 41 m^3

Annual consumption: 75 Tn Heizung

Annual savings: 16.000 €

Description:

This tourist exhibition installed in 2010, a BioBox equipped with a Froling boiler, which made him the first campsite services supplied domestic hot water and heating with a biomass boiler, the first comprehensive, sustainable and ecological tourist site.

The campsite has all the certifications of quality services, and thanks to the sustainable biomass also offers service to the efficient use of energy.

The installation consists of a boiler of 100 kW biomass for the production of hot water for different camping facilities, supported by a solar installation, and pool heating with sunroof in the winter months.

The cabin is used as didactic element to the user site that are indexed discover all the advantages of biomass in its information panels.

FOOTBALL FIELD

Location: Campdevànol (Girona)

Installation year: 2015

Model: BioBox Froling T4 60kW

Applications: Heating, hot water and air conditioning of the outdoor pool.

Silo: 23 m^3

Annual consumption: 16 Tn wood chip

Annual savings: 9.500€

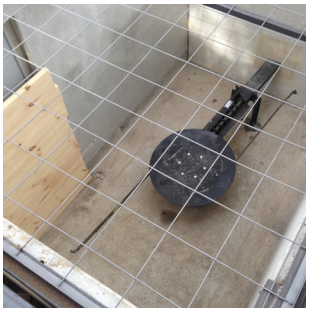
Description:

The municipal football field of natural gas Campdevànol replaced by biomass from forests. The installed system is an energy cabin equipped with a biomass boiler Froling T4 60 kW, boiler easy to use, compact, safe and with yields above 90% BioBox. The boiler has won many international awards such as the Eco-label Austria and quality certification Blue Angel.

Thanks to the installation of BioBox now 100% of the thermal needs are met, not only hot water, but also heating. A total of 55 435 kW / h which will save almost 60% on the previous system.

The module 23 m3 for the storage of chip features a sliding front gate for loading quickly and easily using bags or big-bag loader. It is estimated that the new equipment will consume about 16 tons of annual splinter, which will cost € 1,500 per year and avoid the emission of 3 tonnes of CO2 per year.

The project was partially funded by the County Council of Girona, through the line of grants specifically for projects to improve the energy efficiency of municipal facilities.



DISTRICT HEATING SANTA PAU

Location: Santa Pau (Girona)

Installation year: 2015

Model: BioBox Froling T4 130 kW

Applications: Heating and hot water

Silo: 35 Tn wood chip

Annual consumption: 22.000€

Annual savings:

Description:

The City of Santa Pau (Girona), set up a booth BioBox energy for heating the municipal nursery, school and medical clinic in the village.

The installation company decided to build a silo construction with concrete panels. The BioBox is “connected” to that silo.

Previously, each building had its own oil-fired boiler. Obviously very over dimensioned. A mini district heating for from the BioBox, supply the heat required for each building was conducted.

Because architectural integration, the truck can directly overturn the splinter in the silo decreasing therefore the download time.

Installation is expected to avoid the emission of 15 tons of CO_2 into the atmosphere while helping to give an economic value to the forest splinter from cleaning the area. An area with a high landscape value.

Students from both school and daycare, and visit the BioBox for educational purposes and know the importance of it to the local economy and the environment.

THE HIGHEST QUALITY WITH EXCELLENT CUSTOMER SERVICE

Technical service

BioBox® has an extensive **network of sales and service** throughout the Peninsula available **24 hours a day, 365 days a year.**

The official service consists of highly skilled professionals to ensure greater energy efficiency, minimal downtime and minimal maintenance costs.

Our customers tell us that the Froling boilers, compared to other Austrian boilers, require far less technical interventions. In fact, the average annual interventions in boilers Froling in Spain is 0.78 times a year. That is, an annual review.

And thanks to the innovative Digital Passport Nova Energy Group, customers have all the information from their computers via the online tool **My Biobox**. This monitoring via Web provides access to installation, see all the computer information, status, history, operations, manage maintenance plans, plan or request technical visits, ordering spare parts or even all telecontrol equipment functions remotely.

Warranty

Due to the quality of the materials used, design and advanced management system, Froling is the only manufacturer that gives 10 year warranty on their boilers and power systems.

In BioBox® we believe in our products and give our customers increase the warranty period for the entire energy unit up to 10 years option.

www.bioboxsolutions.com