

the Prize Winners

# The Innovation Competition 2019

BOIS ENERGIE  
ReGen Europe .COM  
Biogaz Europe

## Biogaz Europe



### Argent/Silver / Bee&Co, BioBeeBox® – containerised solution for biowaste autonomous management by micromethanisation



Methanisation is a genuine positive energy solution for waste treatment.

Over a number of years, biowaste management has been evolving: source separation and matter recovery will become obligatory by 2025. Today, biowastes represents a third of the household waste bin of the French population. Nonetheless, for a recovery by methanisation, it requires a prior hygienisation: this extra step often distorts solutions from both a technical and economic stand-point. This major challenge inspired innovators to propose alternative solutions.

The urban installation of the BioBeeBox micromethanisation system, designed and made in France, represents a relocated solution by its modest dimension to this biowaste problem. We believe that its adaptation will come to satisfy all our expectations while respecting the virtual circle of waste treatment.



### Argent/Silver / CH4Process, GFG France, Sensor Scanner Gaz DAG9



The instrumentation for methanisation units is an attested trend which enables a better security control and to an optimal functioning of the process. Furthermore, the security and the follow-up of the methanisation installations are absolutely necessary conditions in order to ensure the development of the sector in France. The sensor scanner gaz DAG9 can not only fulfil these conditions with enhanced performance, but in addition it offers a very competitive economical solution. Indeed, this tool proposes, in a sole portable instrument, detection and analysis up to 7 gases, to comply to the INERIS recommendations, and to make savings of around 20%... hence the Jury's decision to award a Biogaz d'Argent for this innovation to CH4 Process.

# ReGen Europe .COM

Prix Hors  
Catégorie  
2019  
ReGen Europe  
Concours de l'Innovation

**HAFFNER**  
energy

## Hors Catégorie/Special Award / HAFFNER ENERGY, Hynoca® - renewable hydrogen production from biomass at an ultra-competitive price

In order to fight against climate change and air pollution in built up areas, electric mobility will take a significant place in the years to come. If it answers de facto to the particles and NOx emission reduction, it is now necessary to decarbonise the electrical or hydrogen source (electrical vehicles are fed either with a battery or a fuel cell). Regarding hydrogen today, about 95% of the production comes from methane steam reforming process, from LPG or naphta, ie from fossil fuels. The peak-limiting of the non-controllable by water hydrolysis renewable energies is just starting at industrial scale. Haffner Energy proposes to produce hydrogen from biomass with an entering H<sub>2</sub>/energy production yield of around 77% and a global energy yield of 86% (the system generates biochar, a sub-product which can be recovered in boiler houses for example). Hynoca®, the R&D Haffner Energy project, is being finalised by the creation of two under construction demonstrators in Vitry le François and in Strasbourg. These two installations aim to validate a decentralised model for hydrogen production with a selling price at the pump of around 8€/kg, compared to a current market cost of around 10€/kg. Haffner's projected future Hynoca® pump sale price could fall as low as 4,5€/kg, which would represent a potential saving of 60% compared to current day prices. We hope that this technology will rapidly enable the deployment of hydrogen mobility from local biomass.



# BOIS ÉNERGIE

## Category 1 : Wood fuel supply chain and wood fuels

**UMIKRON**

## OR/Gold / UMIKRON, Moisture meter

Everybody was waiting for it to happen and Umikron has done it... a simple device that can perform wood fuel moisture measurements in a reliable and fast way. Indeed, this technology is based on microwave drying in 7 to 15 minutes, ie with a measurement time which is suitable for a waiting delivery. The reliability is comparable to the heat chamber measurement, if the sampling is similar to the one that would be done for moisture analysis by heating in a heat chamber (the only one still complying to the ISO 18134-3 standard, but requiring several hours of drying), which has been proved by numerous comparative studies with the heat chamber and various situational exercises and follow-up with boiler houses. The Umikron product also has an internet connexion in order to send the results immediately, and it is also equipped with a printer enabling to issue a measurement ticket or with a SD card reader to register the measurement on a spreadsheet.

It is a neat innovation, well developed, and really interesting to enable a smoothness between "wood and boiler houses" or "supplier and operator" by facilitating the receipt of the wood fuel – which is always a sensitive point!





Category 1:  
Wood fuel supply chain  
and wood fuels



**Argent/Silver** / **BEMA**, Labo'mobile

On a platform or on a worksite, wood fuel moisture and granulometry measurements. The mobile laboratory intervenes before the delivery to a boiler house in order to avoid expensive wood fuel refusals on delivery. Nonetheless, for the reliability of the measurements, the sampling quality always remains the most important aspect, by respecting the standardised protocol. A point to be vigilant of, which must also be underlined for the granulometry analysis: the screening has to be done without exception when the sample is dry, thus after going through the Umikron by sub-sample.

This service is an interesting progress for big chipping worksites with just in time delivery, which makes more delicate the moisture follow-up, specifically with a heat chamber on a platform or in the company offices, the measurement time enabling an optimised management of the worksite and of the trailers filling.



Category 2 : Energy production  
from wood for industrial and  
local authority sectors



**OR/ Gold** / **ETA - ENERGY CONCEPT**, Biomass boiler ETA "eHACK" 20 to 130 kW power

ETA has once again pushed the woodchips heating to a new perfection limit. Indeed, the eHack boiler is able to emit less than 1 mg/Nm<sup>3</sup> at 13% O<sub>2</sub>! In order to do so, the Austrian manufacturer has added an electro filter besides the multicyclone filter which is already integrated in its boilers. If electro filter solutions for wood small powers exist now for many years, the innovation lies in the ingenious compactness of the boiler. This compactness brings civil engineering gains in boiler houses and manpower gains during the installation. In the replacement of its 20-130 kW woodchips boilers range, ETA has also succeeded to combine the de-ashing of the filtration and of the grate in one sole ash collector. And the step by step maintenance guidance on the interface of the regulation screen is an excellent idea.





# BOIS ENERGIE

Category 2 : Energy production from wood for industrial and local authority sectors



## Argent/Silver / HEIZOMAT - SAELEN, Heizoconnect - Remote control system for biomass boiler house installations of any power rating

Considered as a gadget for a while, object connectivity is now one of the main pivots of the energy transition. The remote control of the boiler regulation enables to reduce the fuel consumption while optimising the energy consumption according to the dwelling needs. Of course, most of the boilers on the market propose de facto this remote control. The Heizomat innovation however doubles up. First, as the Heizoconnect module is retrofittable to the whole existing Heizomat boiler pool, the solution enables to fight against planned obsolescence. Secondly, the aggregation solution of the 3G/4G multi-operator connections give a large simplicity to the implementation without having to create a fixed IP with a DynDNS service for example: ie the installer does not have to be a computer scientist.



## Argent/Silver / APF, Compact narrow wall electrofilter with integrated multicyclone SmartFilter Z mono

Advanced Particle Filter, the Austrian manufacturer, develops each year new solutions to improve the yield (condensation) and the emission level (filtration) of biomass boilers. This year, APF presents "Smartfilter", a new filtration system combining a multicyclone and an electro filter in the same body in order to equip a posterior existing wood boiler houses which have to reduce their emission level. Until now, it was necessary to build two different equipment in series and this could sometimes be impossible because of lack of space. The "Smartfilter" enables an extension of the boiler house life which ought otherwise to have been closed for hygiene reasons, leaving the door open to substitution with natural gas for example.

