



***Direct Combustion
Heat-producing
Boilers***

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DIRECT COMBUSTION HEAT BOILERS



BIOMASS BOILERS

These are popular for their renewable status and are used in a variety of settings, from domestic to industrial.



NATURAL GAS BOILERS

They're known for their convenience and relatively lower emissions within the fossil fuel category.



COAL BOILERS & OIL-FIRED BOILERS

Once the backbone of industrial heating, coal boilers are less common now.



MUNICIPAL SOLID WASTE BOILERS

These burn non-recyclable municipal waste, playing a role in waste management and energy production.

Small-scale biomass systems help provide electricity to rural areas and businesses. Bioenergy aligns with the principles of the circular economy, where biological waste and by-products from agriculture and industry can be transformed into useful energy, closing the resource cycle.

BIOMASS BOILERS

Europe Market Overview



Market Size 2023
\$10.1 Bn

CAGR (2024-2032)
7.8%



Market Value 2032
\$20.1 Bn

Agricultural Waste
Segment
>\$1.5 Bn

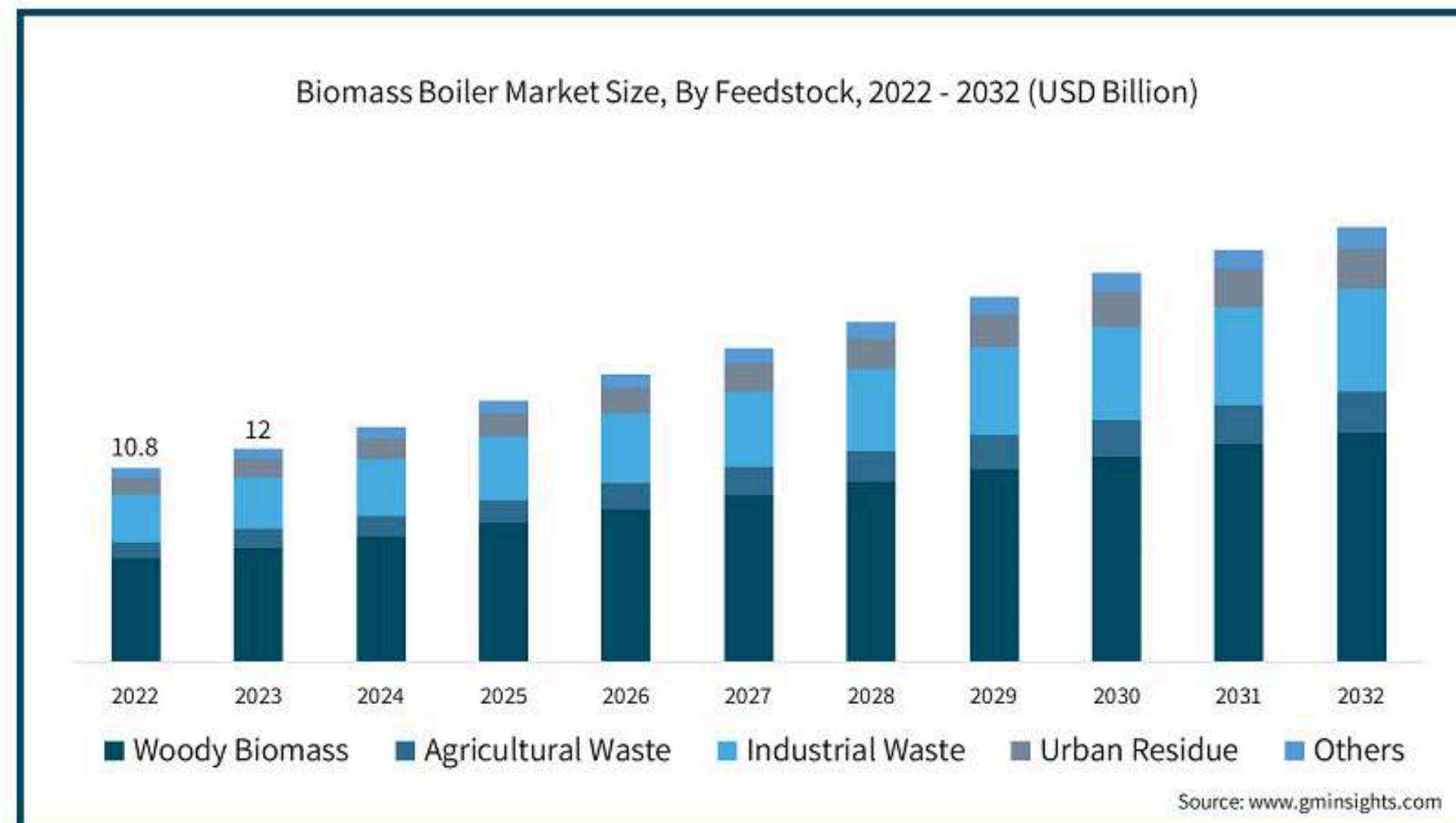


Industrial Boiler
Market Share 2022
30%

Source: Global Market Insights

BIOMASS BOILERS

Global Market Overview



CHALLENGES

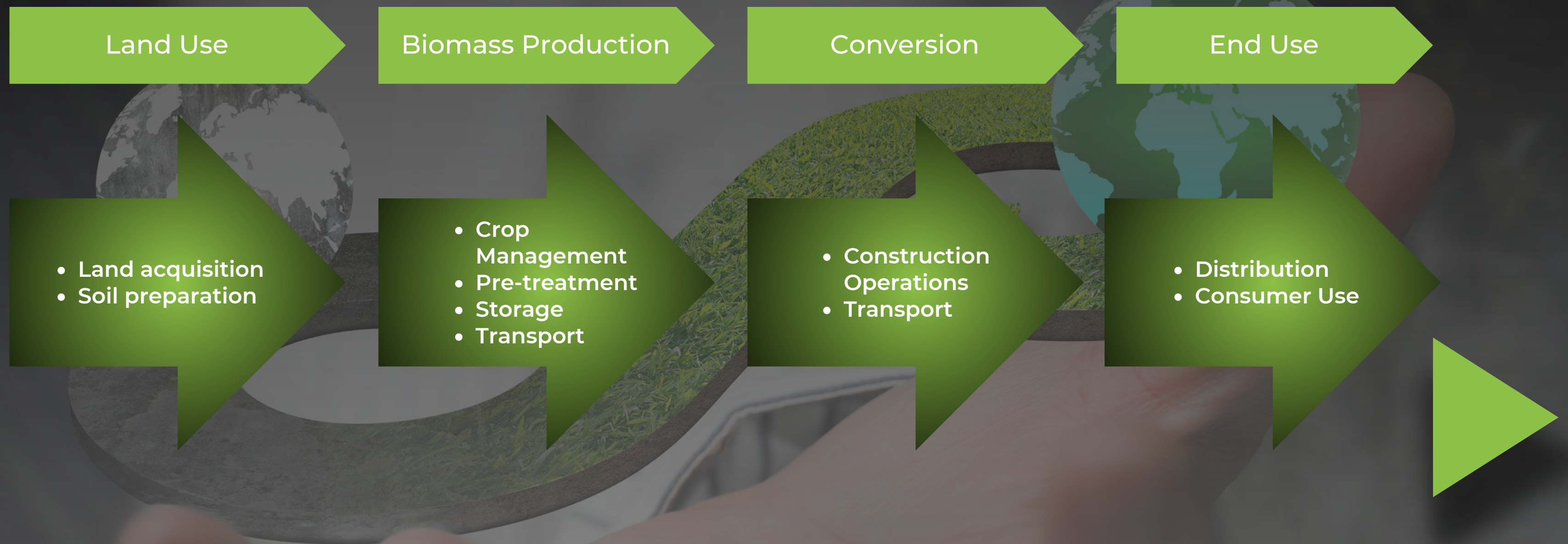
High Initial Investment

The significant upfront cost of adopting biomass boiler technology can deter many businesses. However, financing models like Energy as a Service (EaaS) allow for energy upgrades without initial costs, financed by future savings. Additionally, government incentives across Europe help offset these expenses, making sustainable solutions more accessible.

Fuel Availability

For biomass boilers in Europe, maintaining fuel availability depends on a resilient supply chain that efficiently handles sourcing, processing, and distribution of biomass like wood chips and pellets. This is essential to meet regional demands and ensure the sustainability of biomass heating systems.

BIOMASS VALUE CHAIN



CIRCULAR ECONOMY & WASTE MANAGEMENT

Biomass boilers offer businesses like wood mills and agricultural operations a way to convert organic waste into energy, aligning with circular economy principles. Key technical aspects include preparing biomass to meet boiler specifications and establishing logistics for efficient collection and feeding. This approach reduces costs, minimizes environmental impact, and can generate additional revenue through energy production, supported by sustainability incentives.

SCIVEN Biomass Boiler

Features

● 250kW

- ✓ **Fully automatic operation** including feeding, self-cleaning, ash removing & Control of Air-Fuel Ratio .
- ✓ Future range: **150 to 500 kW** per boiler.
- ✓ Capable of cascade integration for hot water production up to 95 °C.



● FUEL TYPE

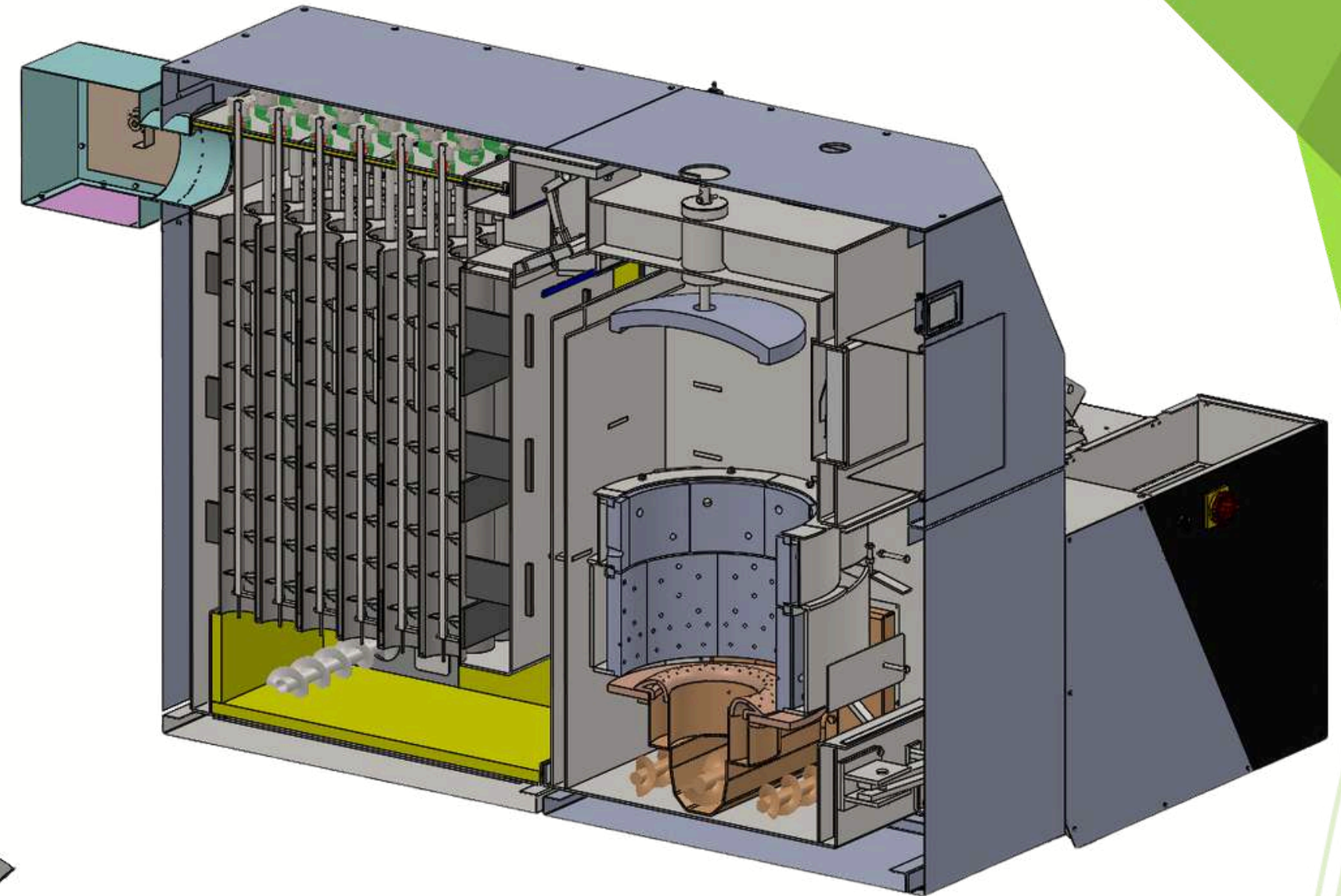
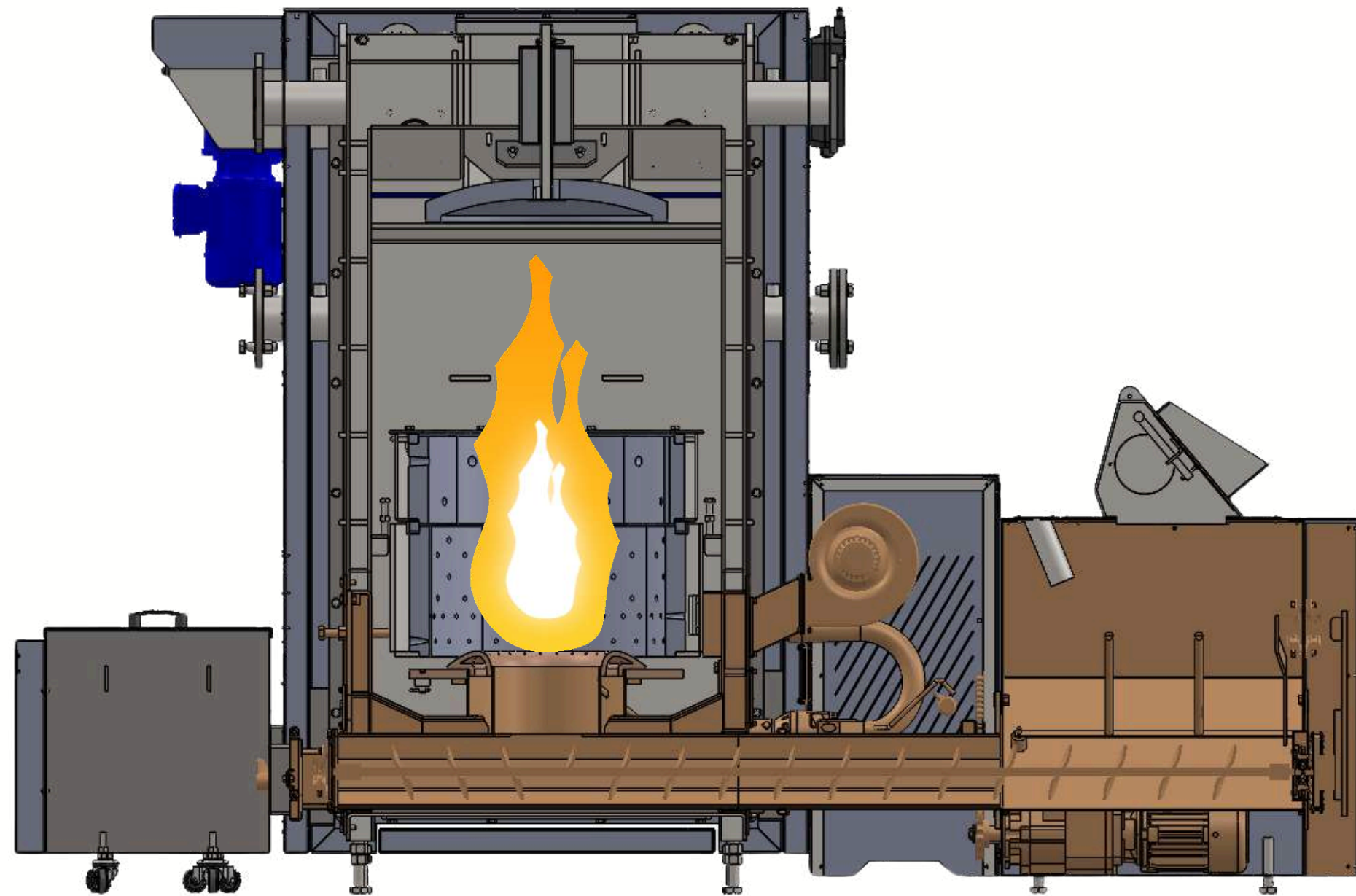


Wood Pellets

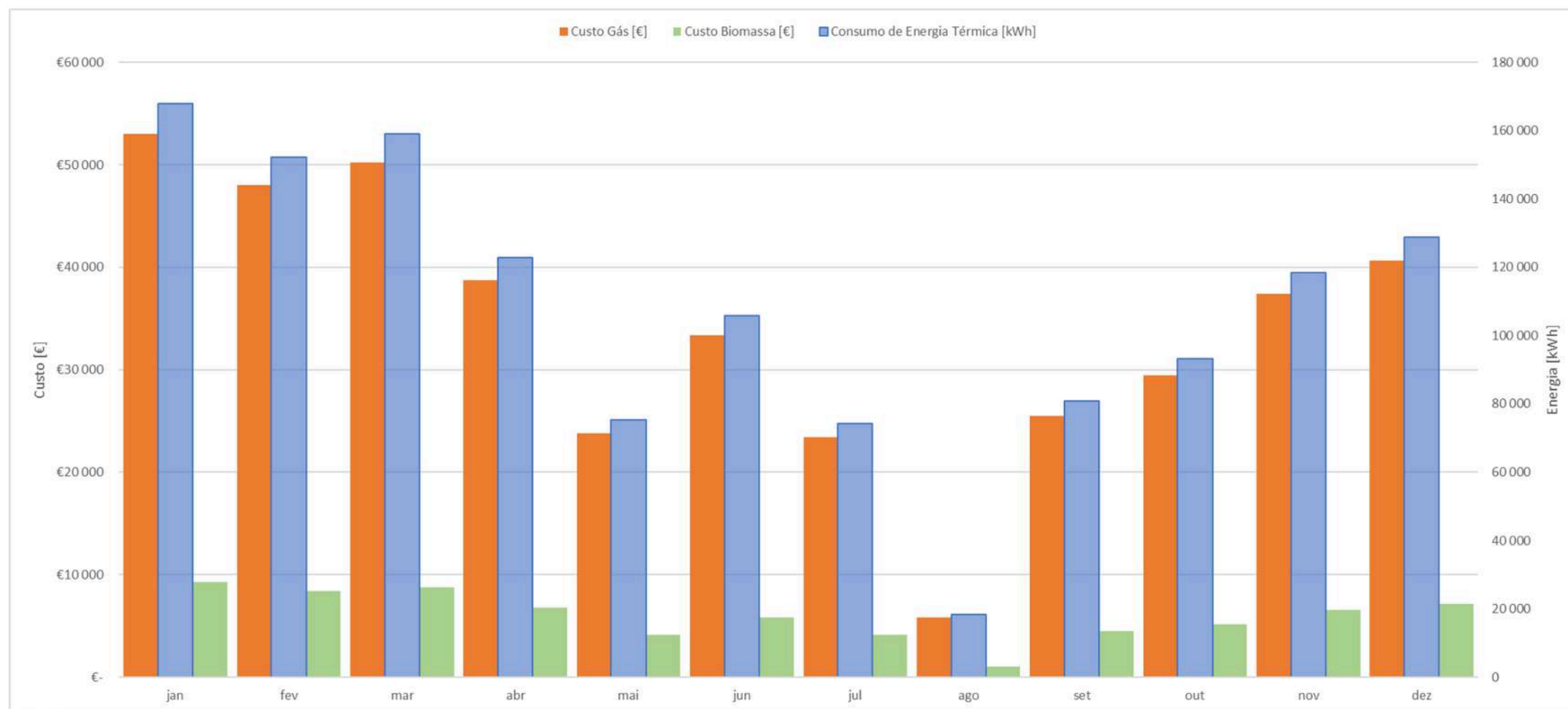
They contain very low levels of moisture and ash, when compared to woodchips or cordwood.

Fulfills thermal energy needs and removes the carbon footprint.

SCIVEN Biomass Boiler



COMPARATIVE ANALYSIS



Before x After - Fuel associated costs

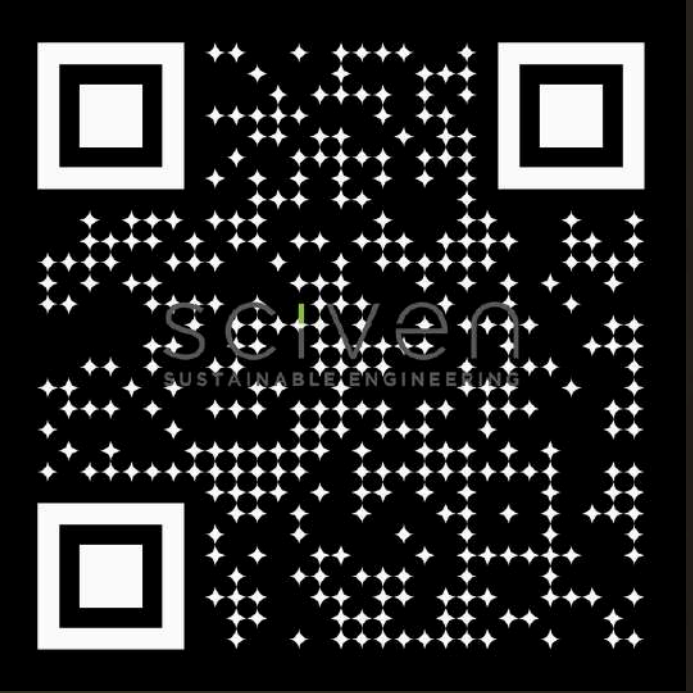
Q&A

“Most people don't understand biomass. If people talk about renewable energy they immediately think of wind and they immediately think of solar, and then after a bit of thought some might think of hydro and then some might add geothermal on to that.”

Ralph Sims - Professor of Sustainable Energy at Massey University, New Zealand.

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