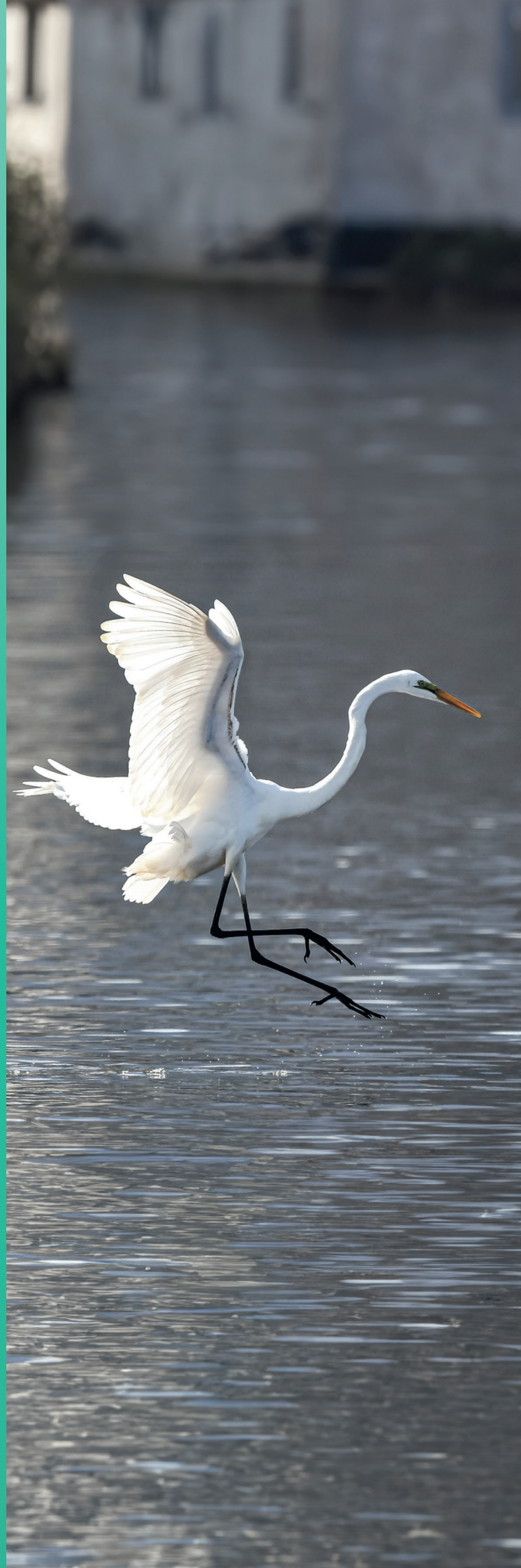




Excellent minds for a fair and sustainable world.

The sustainable solution for sewage sludge



Effective recovery of sludge

*The HBI technology combines two innovative thermochemical processes through which water and energy can be recovered from sewage sludge, **reducing up to 90% the residual waste to be disposed of.***



THE HTC STAGE

Initially, sewage sludge undergoes the hydrothermal carbonization process (HTC) through which water is released and hydrochar is produced. This is a solid carbonaceous material which contains most of the residual energy of the sludge. In this form, the energy can be effectively recovered through a gasification process.

THE GASIFICATION STAGE

This process allows the production of a renewable combustible gas, called syngas, that is used to produce the entire amount of thermal energy required by the HBI system. In this way, the HBI technology is energy neutral.

THE FERTILIZERS RECOVERY

HBI has developed a third stage that can be applied to gasification ashes to recover nutrients elements, such as phosphorus and other macro and micro nutrients. This process separates the contaminants from ashes through the addition of a catalyst.

The HBI solution

1. Reduces waste by 95%. Only 5% of the sludge is actually disposed of!

2. Produces renewable energy. HBI plants are energy neutral.

3. Recovers fertilisers. Each HBI plant can generate up to € 600k of value yearly.

4. Increases water recycling, by recovering up to 85% of the sludge water content



Easy to apply

Plug & Play to any wastewater treatment plant



Little human control

The technology is remote controlled leveraging an AI software



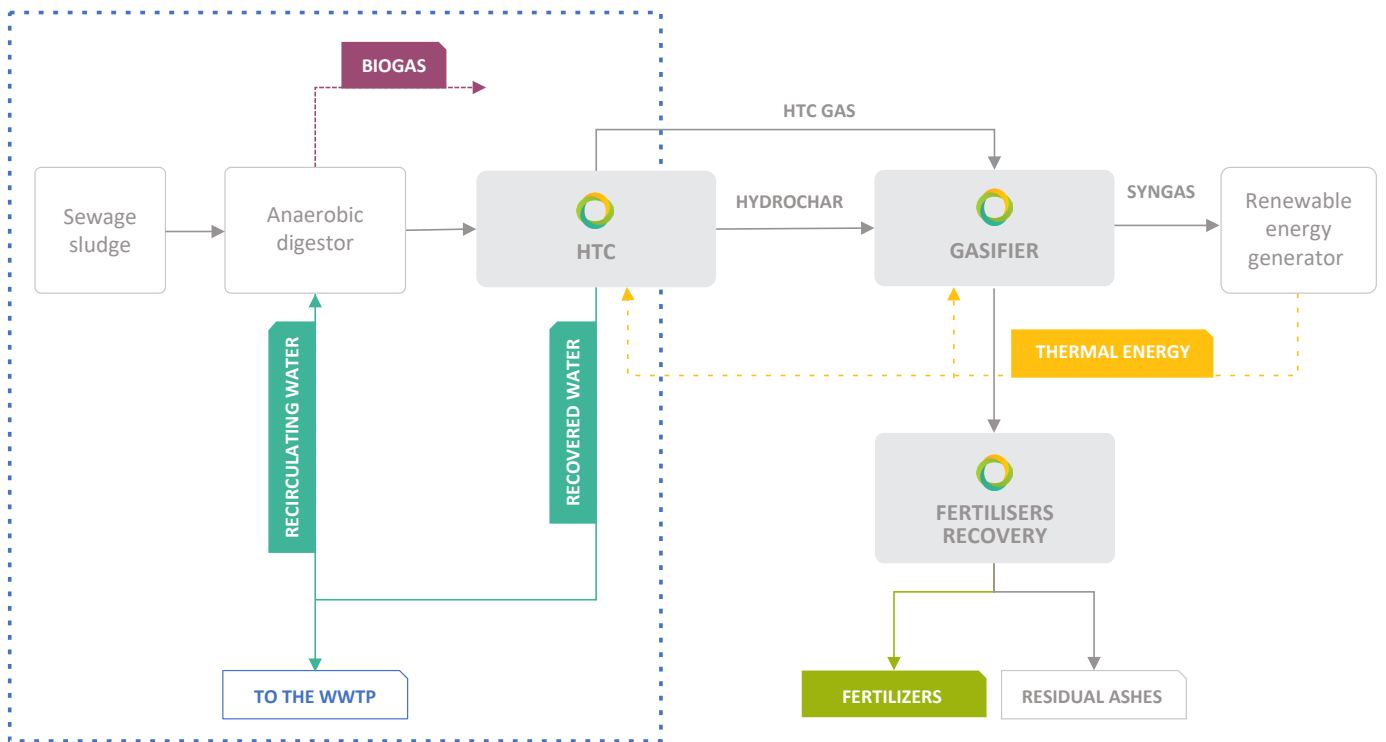
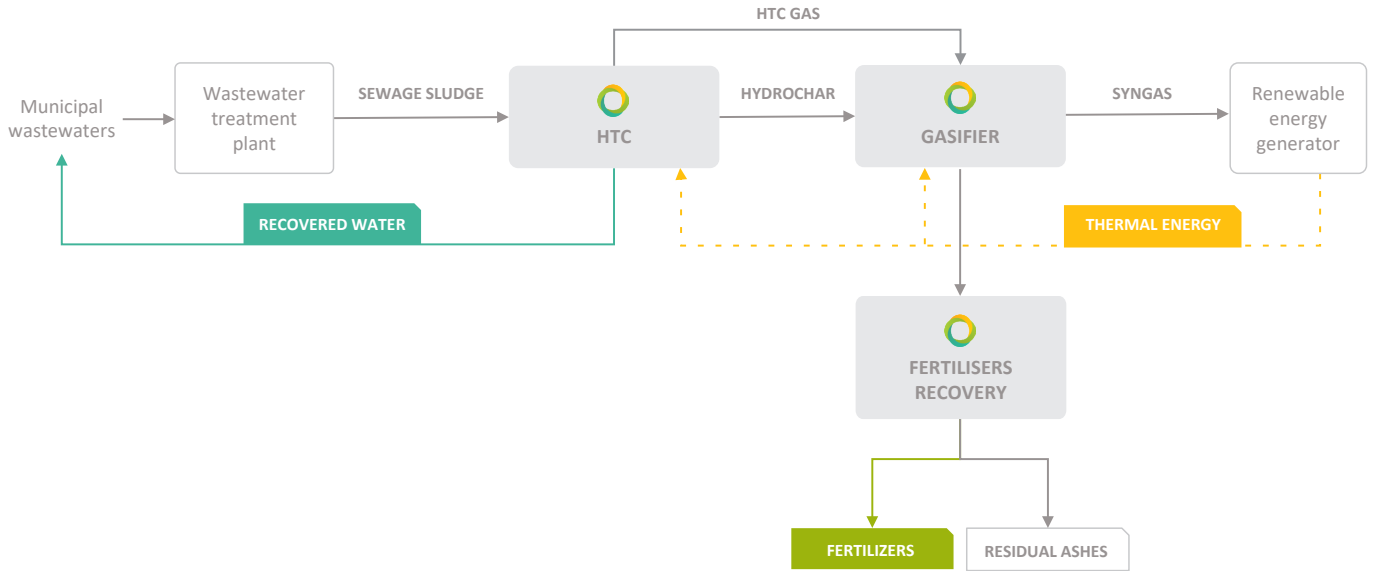
ESG compliant

The HBI technology increases the ESG rating due to emissions reduction

Application

The HBI technology can be directly applied to the wastewater treatment plant, for the treatment of centrifugated sewage sludge. The technology can also be applied for the treatment of digested sludge, perfectly integrating with existing infrastructures.





Complete integration with existing anaerobic digester

Relevant numbers, so far...

8,135

Total industrial
functioning hours

592

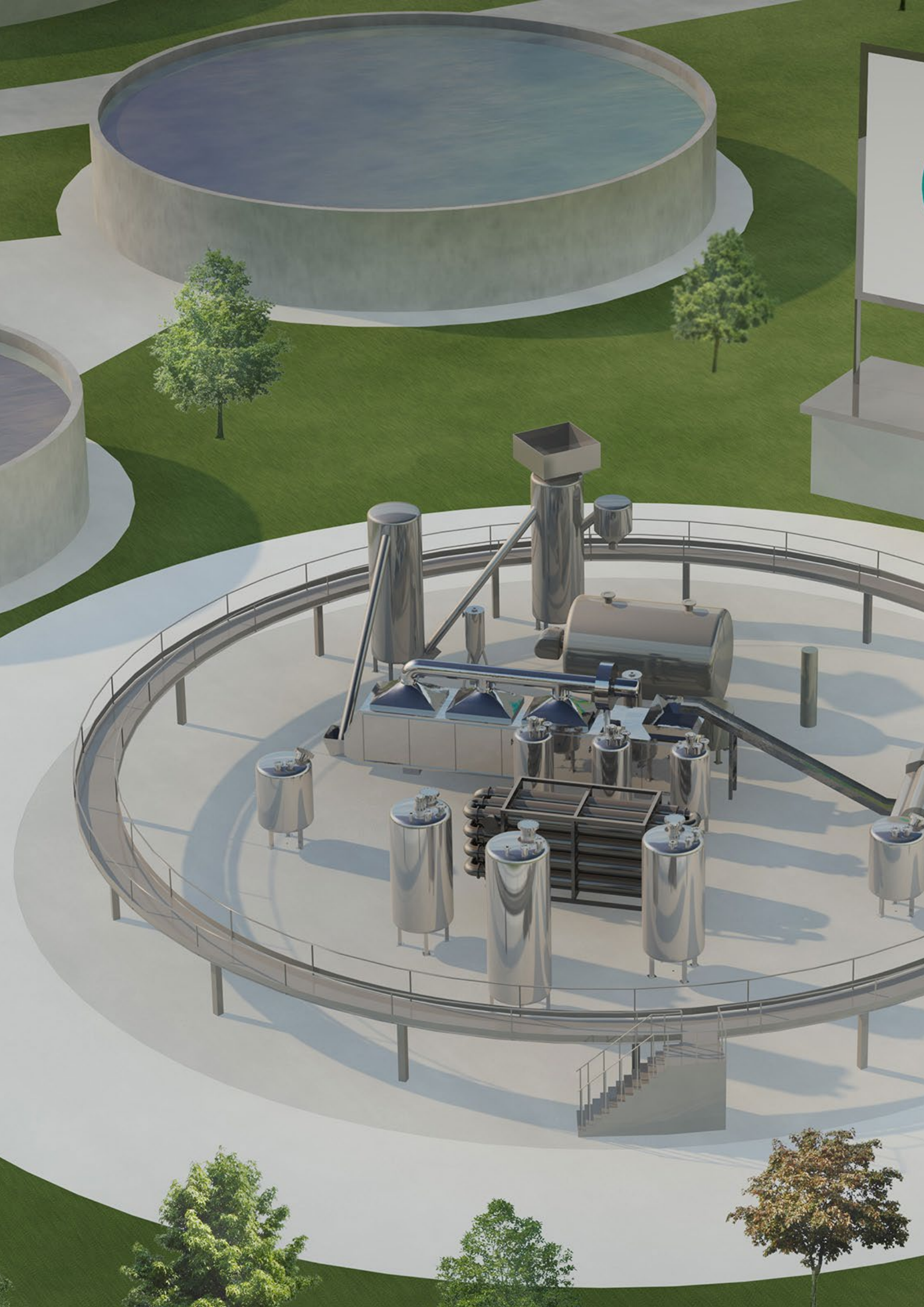
Tons of water recovered

54,150

m³ of biogas produced

69

Tons of materials
recovered





CONTACTS

info@hbigroup.it
www.hbigroup.it

HQ

NOI Techpark
Via A. Volta, 13/A
39100 – Bolzano (IT)

OPERATIVE QUARTER

Via Tasca, 1
31059 – Zero Branco (TV)

STATEMENT OF VERIFICATION	
Technology: EVA mini Registration Number: VN20220052 Date of issuance: 04/11/2022	
<small>This verification process, which results in this Statement, complies with the ETV General Verification Protocol and with the ISO Standard 14004 on Environmental Management: Environmental Technology Verification.</small>	
Verification Body Name: RINA SERVICES SPA Contact: Giovanni D'ANGELO, C Address: Via Cassala, 15, 10129 Genova, ITALY Telephone: +39 010 5385 720 E-mail: giovanni.dangelo@rina.org Web: www.rina.org	Proposer Name: HBS S.r.l. Contact: Daniele BASSO Address: Via A. Volta, 13/A, 39100 Bolzano, ITALY Telephone: +39 044 87 77 371 E-mail: d.basso@hbigroup.it Web: www.hbigroup.it
Signed: 04/11/2022	
Giovanni D'ANGELO, ETV Technical Manager	Daniele BASSO, CEO
<small>The Statement of Verification is publicly accessible. More information is available at: http://www.environmental-technology.com</small>	

