PRESS RELEASE: 2024-12-10 – FOR IMMEDIATE RELEASE

Could the key to Europe's energy security be sitting under *your* kitchen sink?

Boson Energy one of only six deeptech innovators globally picked for NATO's 2026 DIANA Energy & Power Challenge.

Luxembourg, Gothenburg, Warsaw, Tel Aviv: **Boson Energy was selected for DIANA on a simple proposition: waste is a sustainable and strategic energy resource hiding in plain sight — at a scale that is profoundly underestimated. Europe's non-recyclable waste alone, applied for electrification of EU trucks and buses, could replace all 440 million barrels of diesel they consume every year, *plus* offsetting a quarter of EU household gas heating.**

Boson's distributed Waste-to-X plants can unlock this potential on compact sites that can deliver heavy-duty fast charging, EdgeAI datacentre power, heat or cooling, or sustainable fuels close to users – without relying on distant generation, congested grids exposed to hybrid threats, or imported energy.

DIANA (Defence Innovation Accelerator for the North Atlantic) invited 150 deeptech innovators to the accelerator from 3,688 applicants. Boson was tapped for the Energy & Power Challenge, which seeks resilient, distributed, and secure energy systems for both civilian and defence environments. Unlike large-scale renewable production requiring extensive transmission infrastructure, Boson's Waste-to-X units can operate 'behind-the-meter', on compact footprints already embedded in urban perimeters – right where waste is produced. A standard plant can convert 100 tonnes per day of otherwise non-recyclable waste into 100 MWh of fast charging – enough to power 300 to 400 trucks or buses without drawing a single kilowatt-hour from the grid. Clustered systems treating 300,000 tonnes per year can also produce circular hydrogen and CO_2 for up to 50,000 tonnes of Sustainable Aviation Fuel (SAF) per year.

"Our technology and solution transform local waste into local energy, sustainable fuels, and even clean drinking water. We can do this at fossil-competitive cost, on attractive commercial terms," ***said Jan Grimbrandt, CEO of Boson Energy****. "Being selected by DIANA confirms that distributed generation from local resources has moved from a 'conceptually appealing idea' to a strategic necessity, and we can deliver that. Europe, and the world, has a massive, largely untapped 'sleeping asset' in its bins and landfills."*

Boson's technology has been demonstrated at industrial scale, with commercial projects now in development in Europe, including NATO countries France and Poland. The company is industrialising a standardised global rollout model together with partners including Siemens AG. Within DIANA, Boson will accelerate work on landfill mining – a strategic opportunity to unlock major 'virtual reserves' of energy and fuels across NATO: In the EU up to 11 billion barrels of diesel-equivalent fast charging, heating potential that could replace 900 bcm of natural gas, and more than 1.2 billion tonnes of SAF.

About NATO DIANA

NATO DIANA finds and accelerates cutting-edge technologies to deliver battle-winning defence and security solutions for the Alliance, while fostering deep-tech innovation. As a cornerstone of NATO's innovation and technology strategy, DIANA brings together world-class talent and the latest advancements to maintain the Alliance's technological edge. Leveraging a network of leading accelerator sites, test centres, expert mentors, and Allied expertise across 32 nations, DIANA empowers innovators working at the intersection of defence readiness, commercial potential, and technological breakthroughs. **Media: press@diana.nato.int**

About Boson Energy

Boson Energy develops distributed Waste-to-X solution that transform non-recyclable waste and landfill materials into Hydrogen-powered, fast charging for heavy duty vehicles, EdgeAI power supply, heat or cooling, captured CO2, methanol, and sustainable aviation fuel. The system achieves high conversion efficiency and comes with integrated vitrification of residues, a compact footprint, and a wide range of flexible and commercially viable outputs – allowing Boson to be fossil-competitive. Boson's core technology has been validated at industrial scale, running on real mixed municipal solid waste, and all downstream systems completing the solution, are commercially available. Boson works with global partners like Siemens AG to blueprint and industrialise the solution for rapid rollout. The first commercial projects are currently in development in Europe, Israel, and Australia. Boson's founder and CEO Jan Grimbrandt is a serial entrepreneur having been instrumental in bringing two industrial deeptech-cleantech companies 'from garage to global leadership' in their niche industries – to be acquired by Siemens AG and Nalco respectively.

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Facts & Context: Europe's energy resource hiding in plain sight

EU non-recyclable waste (projected 2035: 230+ million tonnes/year)

- Holds enough energy to replace roughly 440 million barrels of diesel each year if deployed for heavy-duty electrification – similar to today's EU truck and bus diesel consumption.
- In addition, the rest heat available can replace some 35 bcm of gas, comparable to one quarter of EU household gas demand.

EU landfill mining potential (±6 billion tonnes of legacy waste)

- Contains the equivalent of 11 billion barrels of diesel-grade energy for electrification – roughly four times the recoverable resources of Johan Sverdrup, the largest oil field in Western Europe.
- In addition, it represents about 900 bcm of heating potential, similar in scale to 10 times Romania's Neptun Deep gas field, and enough to heat EU homes for many years.
- The mining potential could yield 1 billion tonnes of Sustainable Aviation Fuel (SAF) – far beyond the EU's 2050 target of 20–25 million tonnes of SAF.

Boson's distributed Waste-to-X system

- A standard plant processes 100 tonnes of waste per day, delivering around 100 MWh of heavy-duty fast charging – typically 300–400 trucks per day, without drawing energy from the grid.
- A cluster treating 300,000 tonnes annually can supply materials for approximately 50,000 tonnes of SAF, produced from circular hydrogen and captured CO_2.

Pictures and illustrations

See next page.

Link to High-resolution pictures:
https://www.dropbox.com/scl/fo/wcldltlzhmukrtlf8agsd/AAi0RaikskYQnCGoYexOA6s?rlkey=3p6lnt7wsq9fg8qozuq0hyhjj&st=9qjrqlkf&dl=0

Caption: Heike Carl Zatterstrom, CCO Boson Energy (right) and Jordan Tromme, Sales and Business Development Manager of fellow Luxembourg DIANA 2026 Cohort Innovator company Odysseus Space (left). At Luxembourg Defence Technology and Innovation Day 2025. Photo credit: Luxinnovation.

Architect's impression. Credit: Yehiel Tsubery, YTS Architects

Diana Innovator logo

Blue	White
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Boson Energy Logos

Green	White
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