

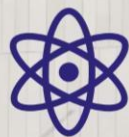


THORIZON

WHERE **NUCLEAR** WASTE
POWERS GROWTH.



Flexible carbon-free energy
100 MWe baseload, 550°C heat



Reduction of long-lived waste
Optimal use of scarce resources



Walk-away safe
Low pressure, no meltdown risk



Cost competitive
Up to € 60 per Mwh, modular core

WE UNLOCK THE **LOW-COST HEAT AND POWER** THAT'S TRAPPED IN USED NUCLEAR WASTE.

Our small molten-salt cartridges can slot into reactors to feed factories and data centres with affordable electricity and high-grade industrial heat. No smoke, no CO₂, no deep burial.

Yesterday's waste becomes tomorrow's energy. Clean, affordable energy. Off grid, high temperature, ready where it is needed.



EUROPE'S ENERGY GAP

Europe needs steady, low-price energy. Bills rise, plants close, the planet warms. Yet 67% we use is fossil fuel and 58 % of that is shipped in.

Industries cannot wait for weather-based power; it needs steady, cheap, carbon-free power and heat.

A home-grown reactor that runs on stored waste is the sure path to keep jobs and cut carbon.

Let's pick Europe's prosperity over dependence.

67%
FOSSIL
FUELS



58%
IMPORTED



WHAT ABOUT EXISTING NUCLEAR OR GREEN ENERGY?

Energy from sun and wind helps, but new data centres and other industries ask for round-the-clock, 700 °C heat and power. Green options opt out at low temperatures. Traditional nuclear reactors can deliver the high heat energy, yet raise concerns around waste, safety and costs.

Research* show people have a lot of concerns about nuclear energy: % of correspondents agree / strongly agree

WASTE?

“Leaving nuclear waste behind is just wrong”

63%

SAFETY?

“Nuclear energy is just too dangerous”

37%

COSTS?

“Nuclear energy is too expensive to build”

33%

BIG TECH IS SEEING THE OPPORTUNITY.

There is a need for small, safe and low-cost nuclear reactors. Big tech companies are moving into this space.



Media Release: Nvidia CEO
Nuclear is going to be a vital, integral part of powering AI

CLIMATE

Amazon goes nuclear, to invest more than \$500 million to develop small modular reactors

Google orders small modular nuclear reactors for its data centres

Terrell said SMRs offered “a simplified, inherently safe design, faster construction, and flexibility on deployment location” compared with large-scale nuclear plants. “Obviously, this is a bit of a longer-term bet, but it is an incredibly promising bet. If we can get it to scale globally, this will deliver enormous benefits to power grids around the world.”

MICROSOFT / TECH / SCIENCE

Microsoft wants Three Mile Island to fuel its AI power needs

Microsoft has signed a 20-year deal to exclusively access 835 megawatts of energy from a nuclear plant.

CLIMATE / ENVIRONMENT / SCIENCE

Meta turns to nuclear energy for its AI ambitions

“We believe nuclear energy will play a pivotal role in the transition to a cleaner, more reliable, and diversified electric grid,” Meta’s announcement says. It’s not alone.

IMAGINE A EUROPE POWERED BY ITS OWN LEFTOVER WASTE.

The moment for a clean, low-cost reactor is now; Molten salt reactors can unlock the full potential of nuclear energy.

Thorizon reactors provide 100MW of low-cost electricity and industrial heat locally and valorise spent nuclear fuel stocks in Europe. We enable Europe to flip the energy script.



CIRCULAR

Nuclear waste as fuel
Reduce long-lived waste

WALK AWAY SAFE

Low operating pressure
Self-regulating

AFFORDABLE

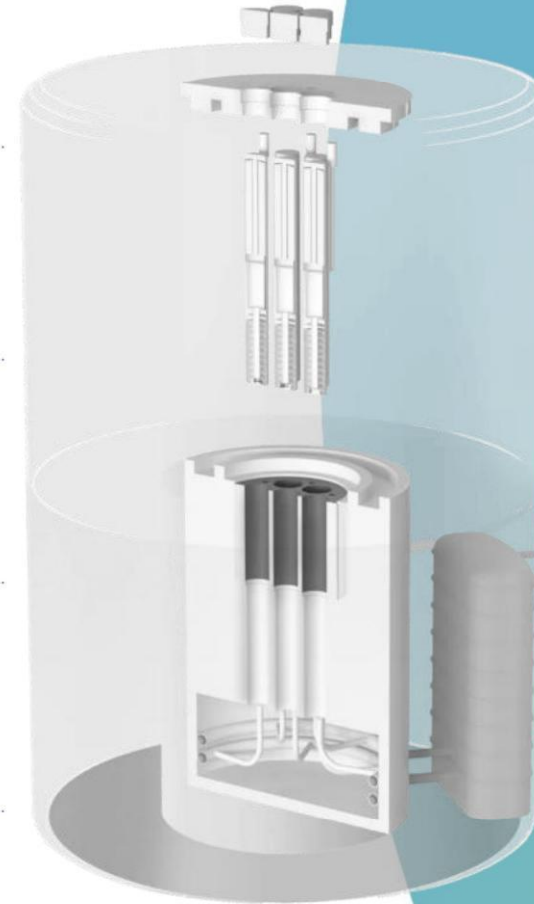
High Thermal Efficiency
Modular, low-pressure system

WE'VE SOLVED THE MOLTEN SALT REACTOR BOTTLENECKS: CORROSION AND TRANSPORT

Our safe, molten-salt cartridges are small, **circular** and safe. They bring high-heat close to site, using the pipes plants already own.

Think of each cartridge as a sealed heat battery: slide it in, run it day and night and swap after several years. It gives **safe** and low-cost base load and 700 °C heat for heavy industry.

These modular cartridges ship by road, stand off grid if needed and scale fast. Low-pressure design and factory-built parts keep builds **quick and costs low**.



CIRCULAR

Nuclear waste as fuel
Reduce long-lived waste

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Self-regulating

AFFORDABLE

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1

OUR PATENTED MOLTEN-SALT CARTRIDGE

A

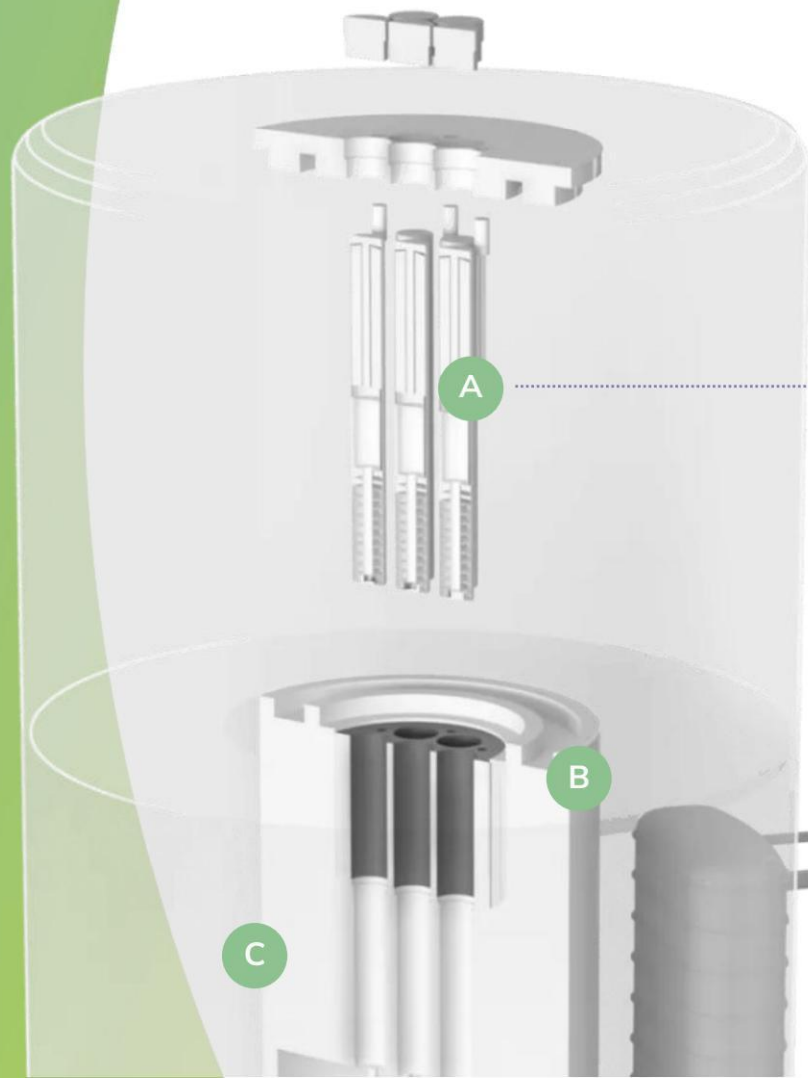
Fuel and all the key parts sit inside corrosion-proof cylinders at low pressure. No paths to meltdown.

B

Every five to ten years we replace the cartridge, keeping the reactor up to date and safe while the old one cools off-site.

C

The salt breaks down the long-lived nuclear atoms, shortening the life and size of the nuclear waste.

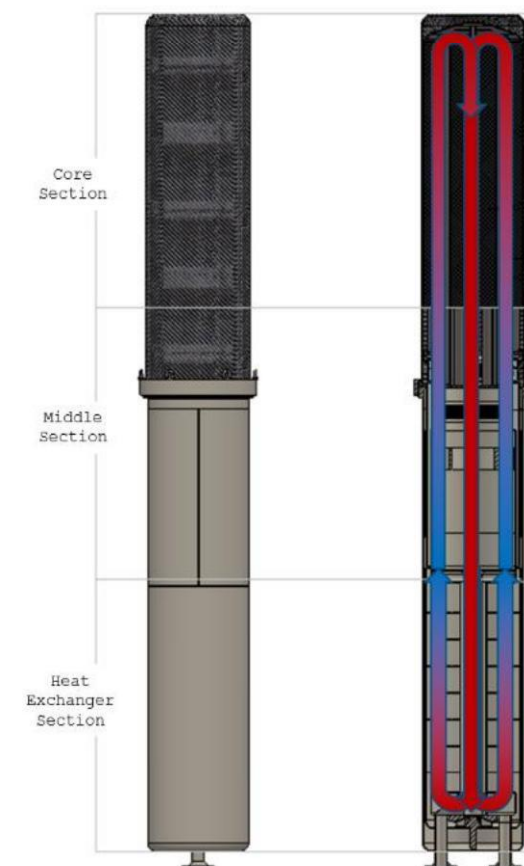


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EP 3 963 603 B1

EUROPEAN PATENT SPECIFICATION



OUR PATENTED MOLTEN-SALT CARTRIDGE

1

A

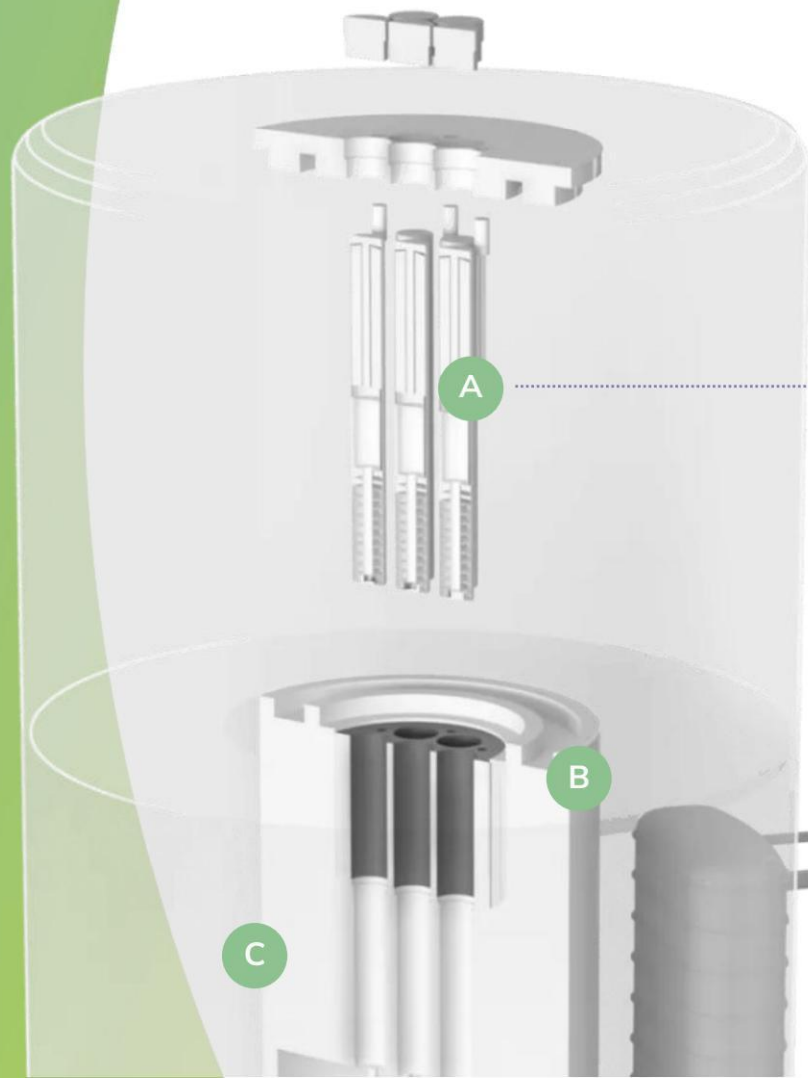
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1



EP 3 963 603 B1

EUROPEAN PATENT SPECIFICATION



ALL COMPLEXITY IN ONE CARTRIDGE:

1

2

3

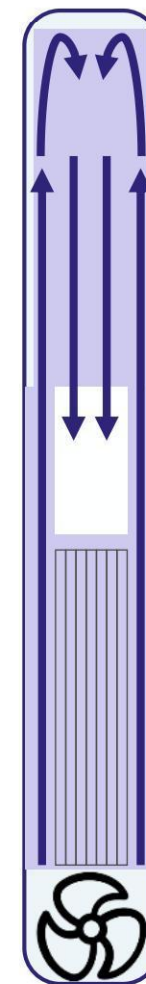
4

The cartridge contains all primary systems:
salt, pump and heat exchanger

In a molten salt reactor, the salt acts as both
the coolant and the fuel

When the pump is active, salt is pumped
upwards through the cartridges

1



ALL COMPLEXITY IN ONE CARTRIDGE:

1

2

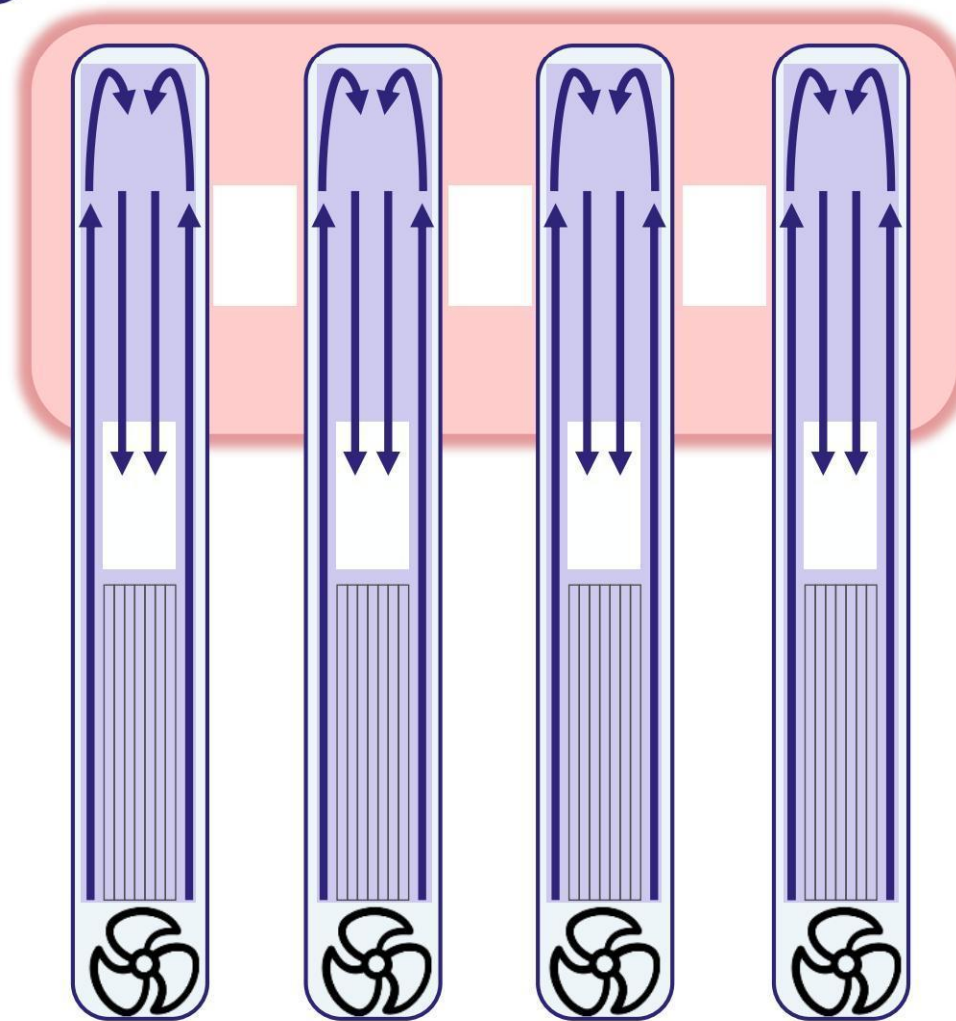
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4

Only when cartridges are all active, and salt circulated, there is a critical configuration at the top of the reactor

Fission energy is generated through neutron interaction between the cartridges at the top

2

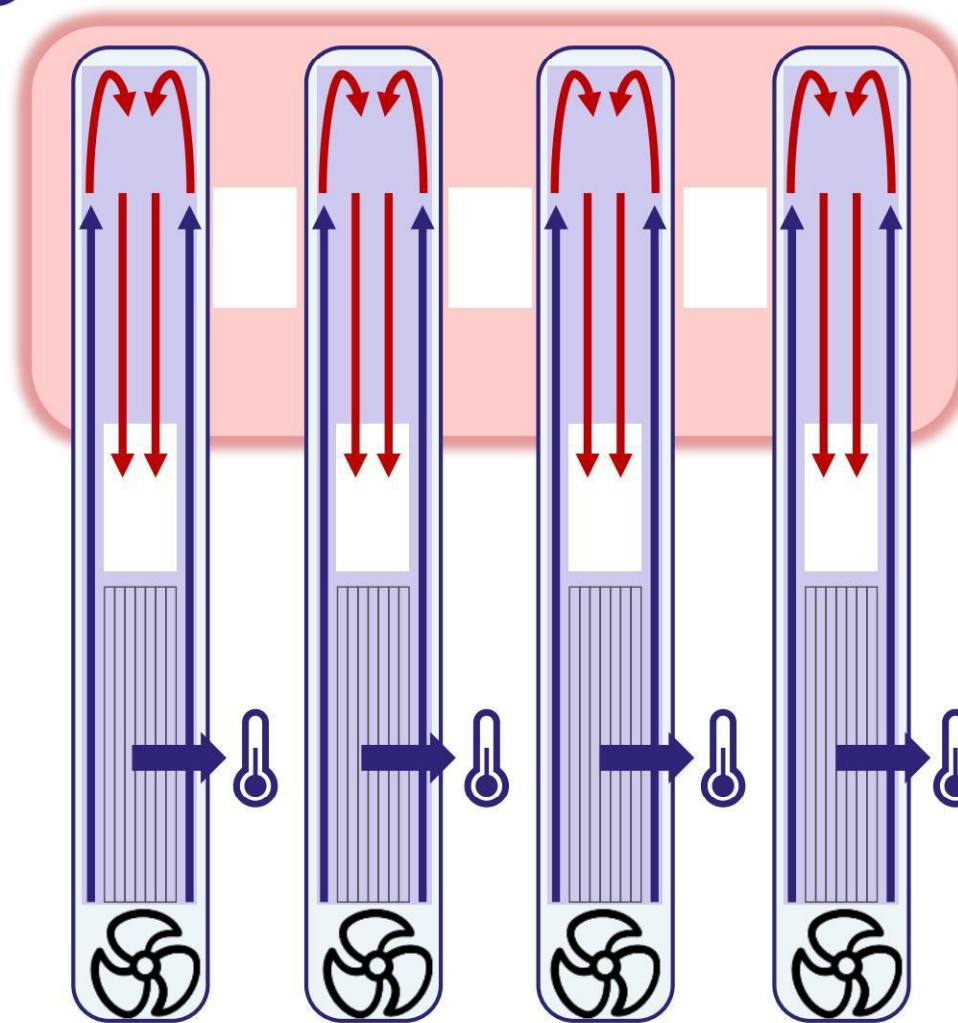


ALL COMPLEXITY IN ONE CARTRIDGE:

1 2 3 4

Heat is then circulated too the bottom, and extracted through the heat exchanger on the lower part of the cartridge

3



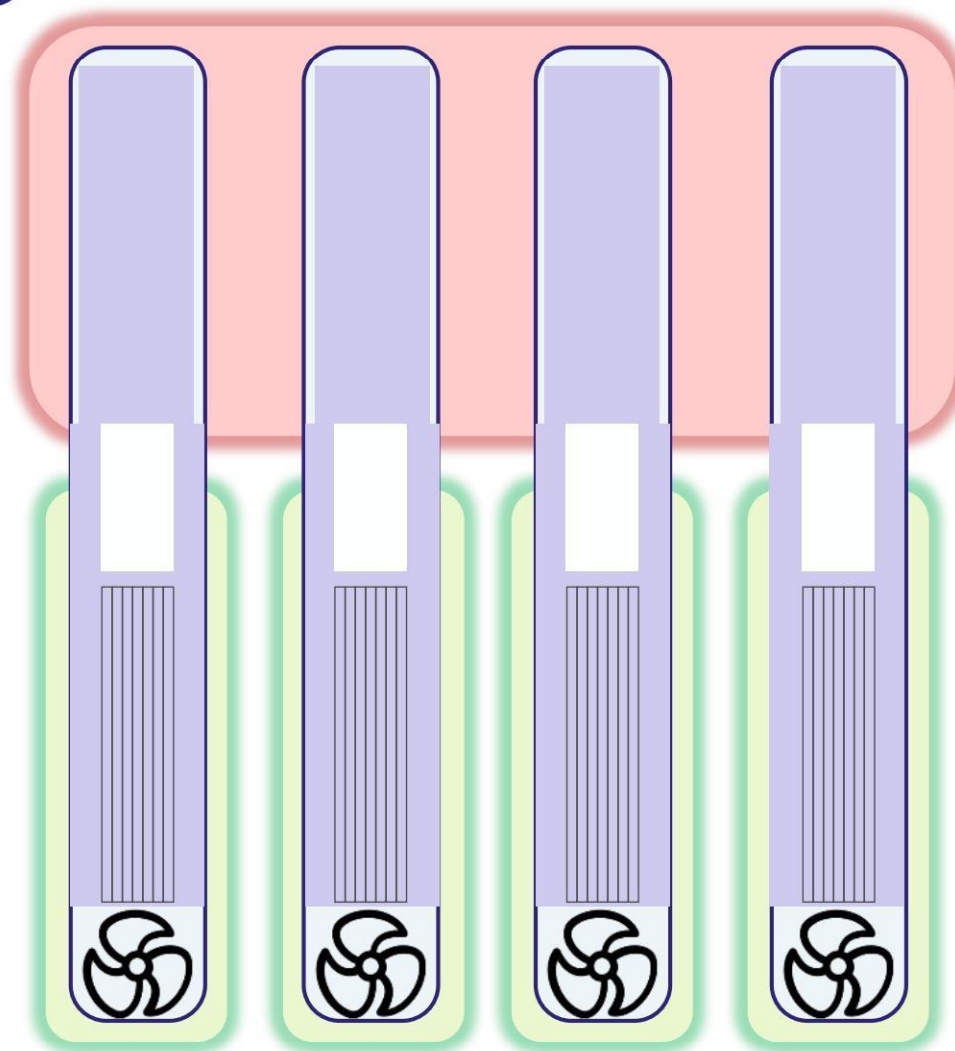
ALL COMPLEXITY IN ONE CARTRIDGE:

1 2 3 4

At the end of the cartridge lifecycle, or in case of a power failure, the pumps stop and the salt drops to the bottom of the cartridges

The fission reaction stops, the reactor is not critical anymore (station black-out scenario covered by design)

4



A MARKET WAITING TO BE CAPTURED.

To meet net-zero, global nuclear capacity must double by 2050, cutting emissions equal to 3 years of global CO₂.

Our reactor delivers 550°C high-temperature heat for industry, 27kt clean hydrogen, or 100MW off-grid power for fast-growing data center needs.



We can offer reliable, local, and domestic energy, with fuel security for decades.

550° heat
EU market of 390 reactors



MOLTEN SALT THE MOST COMPLETE SOLUTION IN FISSION.

We develop the only reactor delivering **industrial-grade heat at low pressure**, with **safety** governed by physics and **fuel circularity** by design.

	 Gen IV AMR Molten salt	 Gen III SMR Light water	 Gen IV AMR Sodium	 Gen IV AMR Lead	 Gen IV AMR HTR	 Fusion reactor
Carbon free energy Stable baseload, small energy footprint	✓	✓	✓	✓	✓	✓
Industrial use cases High outlet temperature, deliver industrial heat	✓ ~700°C	✗ ~300°C	⚠ ~550°C	⚠ ~550°C	✓ >700°C	⚠ Potential
Intrinsic safety No escalation, self- regulating capabilities	✓ ✓ Best in class	✗ High pressure, active systems	⚠ Passive cooling, fire risk	✓ Low pressure, passive safety	⚠ Pressurized, but passive shutdown	⚠ Unproven plasma stability
Fuel circularity Valorizing spent fuel and reducing long-lived waste	✓ ✓ Best in class	✗ Long-lived waste	✓ Supports recycling	✓ Supports recycling	✗ Triso fuel not reprocessible	⚠ Requires tritium breeding infra
Why choose?	Best mix of use cases, safety and circularity	Proven, known by regulator	Uranium fuel security, strategic R&D	Long cycle, compact, remote power	High temperature, more mature	Long-term moonshot for electricity

THORIZON. THE MOST BALANCED SOLUTION WITHIN MOLTEN SALT.

Our innovation is concentrated in the cartridge: a modular unit that can be independently prototyped and tested, based on proven materials.

We leverage **existing regulatory frameworks** and target licensed nuclear sites for early deployment.

We are **backed by industry leaders** combining deep technical expertise with real-world execution at scale.

Molten salt is maturing across the globe, first two construction permits granted in the US



YOU CANNOT BUILD A NUCLEAR REACTOR **ON YOUR OWN.**

UNMATCHED ENDORSEMENTS
FROM 4 EUROPEAN GOVERNMENTS

€10M

France
Grant



€4M

Dutch
Grant



And strong share of **€ 28,5mln equity**
recognition as a strategic EU SMR project
and trilateral pre-licensing.



STRATEGIC PARTNERSHIPS
WITH EXECUTION POWER

Thorizon partners with industry leaders:



orano

Orano for fuel supply



VDL for manufacturing



EPZ for deployment
and operations



Tractebel for licensing
and engineering.

KNOWLEDGE OF RENOWN
RESEARCH INSTITUTES



Thorizon, an NRG spin-off, builds on
decades of research with access to key
facilities and construction expertise,
partners with CEA, and is backed by
DIFFER's dedicated MSR lab.

THORIZON HAS **TRACTION** ON EVERY CRITICAL PATH

And the ambitious plan to start construction in 2030

TRANSITIONED TO BASIC DESIGN



Design based on strong platform patent and 8 patent follow-ons. Concept design mature enough to start the regulatory process.

STARTED PROTOTYPING & TESTING



Three test loops are running in-house. Salt and material irradiation is underway at Petten HFR and DIFFER. Pump prototype in fall 2025.

LINED UP FIRST DEPLOYMENT SITES



Engaged on three licensed sites in NL, FR, and BE, with prefeasibility studies completed. Included in Dutch government-led SMR simulations.

REGULATORY PATHWAY UNDERWAY



Active engagement with ANVS, ASNR, and FANC, joint preparatory review ongoing. First safety report due fall 2025.

CHEAPER THAN TRADITIONAL NUCLEAR, **ON PAR** WITH RENEWABLES.

Electricity from this source would cost about €60 per MWh.
Clean and affordable.



SIMPLER SAFETY SYSTEMS

Molten salt reactors are inherently safe because they operate at **low pressure** and use **passive safety** features. This eliminates the need for complex systems found in traditional reactors, enabling simpler buildings, reduced shielding, and **lower construction costs**.



IMPROVED FUEL EFFICIENCY

MSRs run at high temperatures, achieving up to **15% higher energy conversion** than conventional reactors. They can use a **wide range of fuels**, including spent fuel and thorium. With reprocessing, **long-lived waste becomes a resource**, cutting disposal costs and supporting fuel circularity.



MODULAR PRODUCTION

Thorizon's modular cartridge shifts complexity from the plant to a **standardized, offsite-manufactured unit**, reducing cost and construction time. Each **new generation** of cartridges benefits from continuous improvement, extending lifetime and boosting performance — driving scalable deployment.

A STRATEGIC OPPORTUNITY FOR EUROPE



Strong market pull

Carbon-free energy for industry, data centers, sovereignty



Capital-light model

License, service, fuel - no plant ownership



Public backing

Fully leveraging equity with grants, Europe aligned on advanced nuclear



Proven pathway

First advanced reactors to get US construction permits are molten salt



Modular and protected tech

Cartridge system enables stepwise validation, patent fully owned



Attractive returns

\$7–10B valuation for U.S. comparables, cash-positive from mid-2030s

AHEAD OF THE RISKS

Modular design and public funding cut first-unit costs.

We're co-developing fuel with Orano and testing it now, with licensing slots already secured in Europe.

Seasoned nuclear operators and manufacturers are on board to take the design straight into real-world use.

WILL YOU HELP US TURN YESTERDAY'S FUEL INTO TOMORROW'S ENERGY?

Together we can give Europe secure, affordable, zero-carbon energy, while earning venture-scale returns on a technology the world can't wait for.

Driving technological breakthrough at speed

Best positioned to commercialize MSRs fast — using proven materials and designing within today's regulatory framework.

Unlocking a large, clean source of energy

100 MWe baseload and 550°C industrial heat — ideal for data centers, electrification, and Europe's energy-hungry industries.

Credible player capable of rapid scaling

Backed by Orano, VDL and EPZ. A unique consortium spanning fuel, manufacturing and operations — hard to replicate.

Attractive returns, strong financial backing

Public support from NL, FR, and EU governments. Capital-light model with cartridge sales and 'fuel-as-a-service'. Competitive LCOE.

Exceptional Team with nuclear, deep tech and scale-up talent

Driven team combining nuclear experience with engineering excellence and start-up agility — built to deliver.

THANK YOU!

Follow us: [linkedin.com/company/thorizon](https://www.linkedin.com/company/thorizon)

More info: [thorizon.com](https://www.thorizon.com)

Hekelveld 8, 1012 SN Amsterdam - The Netherlands

49 Boulevard Vivier Merle, 69003 Lyon - France

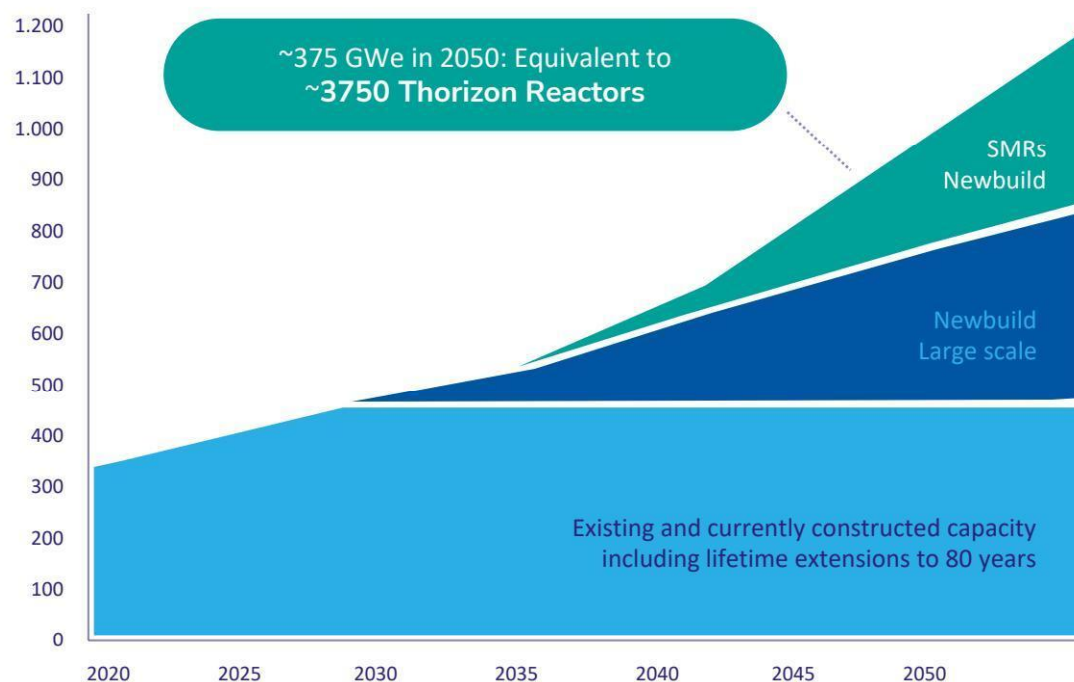


THORIZON
YESTERDAY'S FUEL TOMORROW'S ENERGY

MARKET HUNGRY FOR HEAT & POWER

We will need an equivalent of **3750 Thorizon's small modular reactors** by 2050 to meet the global energy demand.

Global installed nuclear capacity (electricity)
GWe, IPCC 1.5° C scenario



EU MARKET 2050:

ELECTRICITY 100 MWe

~4,800 GWe (12% of global)
~5% nuclear (~225 GWe)
~40% New SMR
~900 Thorizon reactors

IND. HEAT 250 MWth

~3,000 TWh th (10% of global)
~50% addressable temperature
~50% nuclear, 100% new SMR
~390 Thorizon reactors

HYDROGEN 22 kt H₂

~32 Mt
20% nuclear
100% New SMR
~290 Thorizon reactors

A MARKET WAITING FOR THORIZON REACTORS

Industrial heat alone is a €250 B market, now served by gas.
Add grid power and hydrogen, and the addressable market passes
€1 T.

ONE 100 MW THORIZON UNIT CAN POWER
A CITY DISTRICT OR STEEL MILL; THOUSANDS
ARE NEEDED ACROSS EUROPE THIS DECADE.


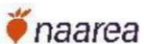










































Thorizon: Safest,
replaceable and circular

MOLTEN SALT vs OTHER SMALL MODULAR REACTORS.

Copenhagen Atomics, Blykalla
and others chase molten salt,
but rely on massive single
tanks or new fuel.

Our cartridge architecture
ships on trucks, fits existing
waste, and scales like
batteries, cutting capex
per kW by half.

	 THORIZON	 naarea	 Jimmy	 newcleo	 HEXANA	 MarvelFusion
Technology	Molten salt reactor	Molten salt reactor	High temperature gas cooled	Lead cooled fast reactor	Sodium cooled fast reactor	Fusion
Use cases	100 MWe 550°C heat	40 MWe Microreactor	10 to 20 MWth Up to 500°C	200 MWe 440°C heat	300 MWe 500°C heat	~1000 MWe XL powerplant
Addressable market size						
Inherent safety Self-regulation, low operating pressure						
Material integrity Regular replacement						
Fuel circularity Valorizing spent fuel and reducing long-lived waste						
Costs Competitive LCOE Opex and Capex						
Time-to-market Tech maturity FOAK target date						

BEST WITHIN MOLTEN SALT

Molten Salt
EOMs

	Origin	Size (MWe)	Improving fuel circularity	Modularity & industrial approach	Compliant with existing regulations	Optimal use of inherent safety	Operational readiness	Comments
		~30	-	++	-	-	-	<ul style="list-style-type: none"> Advanced on components Fuel supply not developed
		~30	+	++	-	+	+	<ul style="list-style-type: none"> No breeding Decentralized licensing slow
		~100	++	++	++	++	+	<ul style="list-style-type: none"> Optimal use of MS characteristics Fuel logistics with Orano
		~100	++	-	-	+	-	<ul style="list-style-type: none"> Very early stage Reactor not transportable
		~100	-	+	-	-	-	<ul style="list-style-type: none"> MS on a barge complex Strong network in Asia
		~300	++	+	-	-	+	<ul style="list-style-type: none"> Reprocessing not allowed in CA, circularity long term
		~400	-	-	+	+	+	<ul style="list-style-type: none"> Solid fuel close to commercial MSR in earlier stage
		~400	-	+	++	+	++	<ul style="list-style-type: none"> Closest to commercialization Not using MS advantages

Thorizon's cartridge-based concept is recognized by industry experts as a smart way to overcome molten salt reactor design challenges.



REALISTIC LICENSING PATH



APPLIED BEST PRACTICES



SECURED KEY PARTNERSHIPS

EVERYTHING WE DO IS FOCUSED ON OPTIMIZING OUR PATH TO MARKET

- Preparatory review with committed regulators
- Existing regulations, proven components & materials
- 3 ongoing engagements on sites with nuclear license



- Safety by design for our entire team
- Best practice systems engineering approach
- Strategic partnership with Tractebel



- Strong partnership with Orano (nuclear fuel)
- Early input from experienced operators
- Combining nuclear expertise and disruptive high-tech



Home • Energy & Environment • New Nuclear • Regulation & Safety • Nuclear Policies • Corporate • Urar

HOME / REGULATION & SAFETY / JOINT PREPARATORY REVIEW FOR THORIZON ONE REACTOR

Joint preparatory review for Thorizon One reactor

Wednesday, 4 September 2024

Thorizon of the Netherlands has announced that the Dutch and French nuclear regulators are to collaborate on a preparatory review of its Thorizon One molten salt reactor to streamline the pre-license applications expected next year.



OUR DELIVERY IS CONSTANT

ACHIEVEMENTS OF
PAST 2.5 YEARS:



TECHNOLOGY

- Core patent granted 5 follow up patents submitted
- Two operational loops: Molten salt & plexiglass flow observation
- Concept design ready

ORGANIZATION & FINANCE

- Secured 10m grand in France, 4M in NL
- Expanded in France (Lyon), scaled team
- Strong management team

GO TO MARKET

- Cornerstone partnerships in place
- Ongoing engagements on three sites with nuclear license
- Licensing dialogues in three EU countries

Our team has built Europe's first thorium salt loop, licensed reactors and scaled hardware. We know deep tech, regulation and fast manufacturing.

A team of 22 people in
Amsterdam



And a team
of 21 in Lyon



PEOPLE WHO'VE DONE IT BEFORE



Fast pace hiring
and onboarding

Strong team building across
offices and disciplines

+30% woman
>10 nationalities