

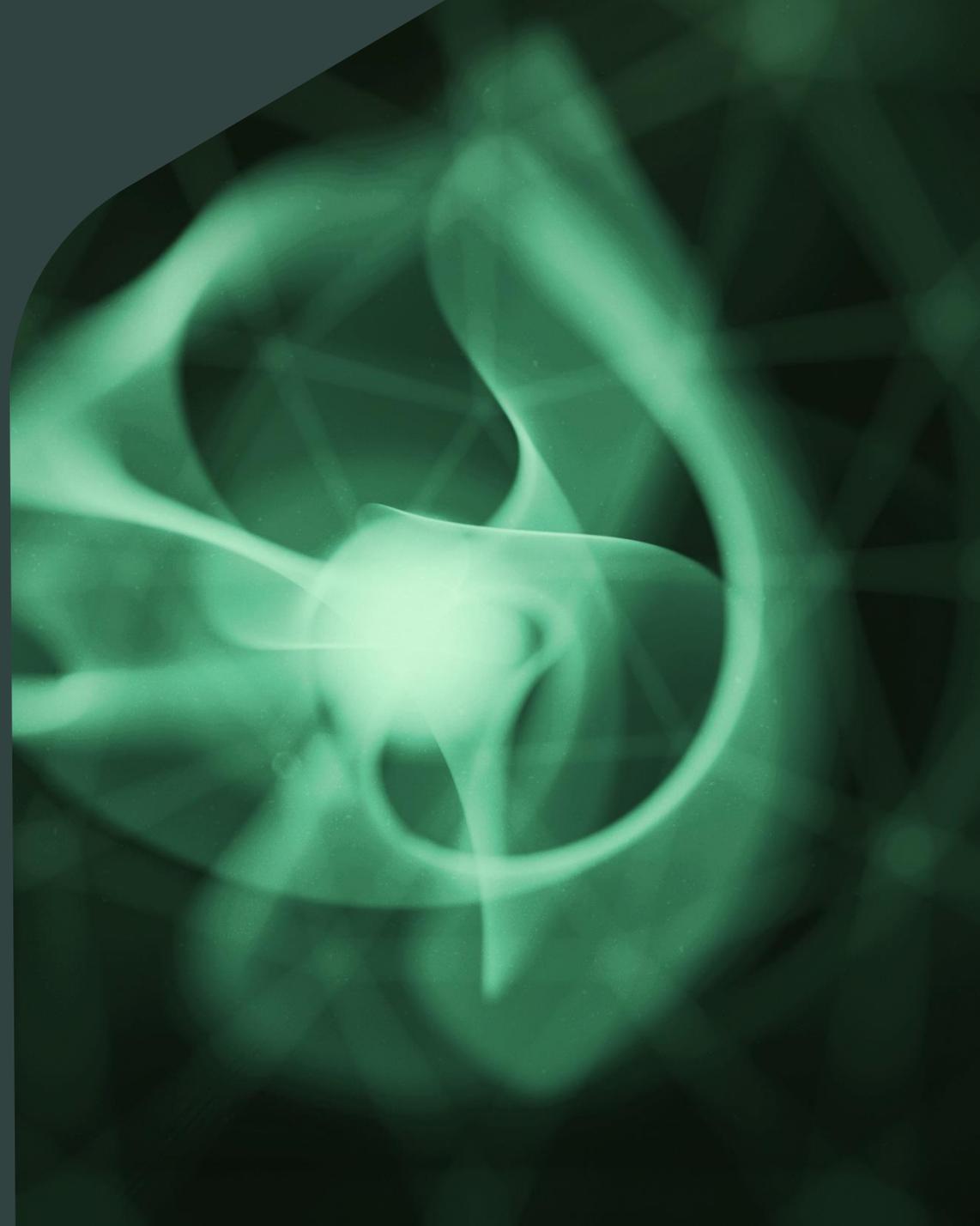


# Enabling Next- Generation Precision Cancer Treatments

Capital Markets Update

November 25, 2024

Jasper Kurth, CEO  
Brede Ellingsæter, CFO



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# Becoming a world-leading supplier of alpha-emitters to cancer therapies creating a multi-billion USD market

New cancer therapies create a  
**USD 1bn+**  
revenue opportunity

Industrial milestone  
**First Production Run  
Q4 2024**

Concept study for  
**'AlphaOne' plant**

Listed on Oslo Stock Exchange  
**NOK ~1bn**  
market capitalization





## Åpnet ny fabrikk på Herøya

News Report on national TV in Norway covering the finalization of Thor Medical's Pilot Plant  
Norway's Minister of Industry, Cecilie Myrseth, joined the ribbon cutting ceremony

# Strong team with solid track record



## Jasper Kurth

Chief Executive Officer

- >15 years' experience in the pharmaceutical and med-tech industry through various roles in Bayer Pharmaceuticals
- Latest role in Bayer as General Manager Radiology Nordics



## Brede Ellingsæter

Chief Financial Officer

- 10 years' industrial experience from advanced materials manufacturing
- Former CFO in Scatec Innovation and Elkem (Carbon Solutions Division)
- MSc from Norwegian School of Economics (NHH)



## Dr. Sindre Hassfjell

Chief Technology Officer

- >30 years' experience in nuclear and radiochemistry scientific research
- Former project leader and Section head at IFE
- Ph.D. in Nuclear Science, University of Oslo (UIO)



## Dr. Alf Bjørseth

SVP Business Development

- Former CEO of Thor Medical
- Serial entrepreneur, former R&D director Hydro and CTO Elkem
- Ph.D. in Physical Chemistry from University of Oslo (UIO)



## Astrid Liland

VP HSEQ

- >20 years experience from Norwegian Radiation and Nuclear Safety Authority (DSA)
- Came from the position of Director for Department of Emergency Preparedness and Response in DSA

### Board of Directors

Ludvik Sandnes  
Chair

John Andersen jr.  
Director

Mimi Berdal  
Director

### Technical Advisory Board

Roy Larsen

Brit Farstad

### Founder and main shareholder



# Enabling a transformation of cancer care with next-generation precision treatment



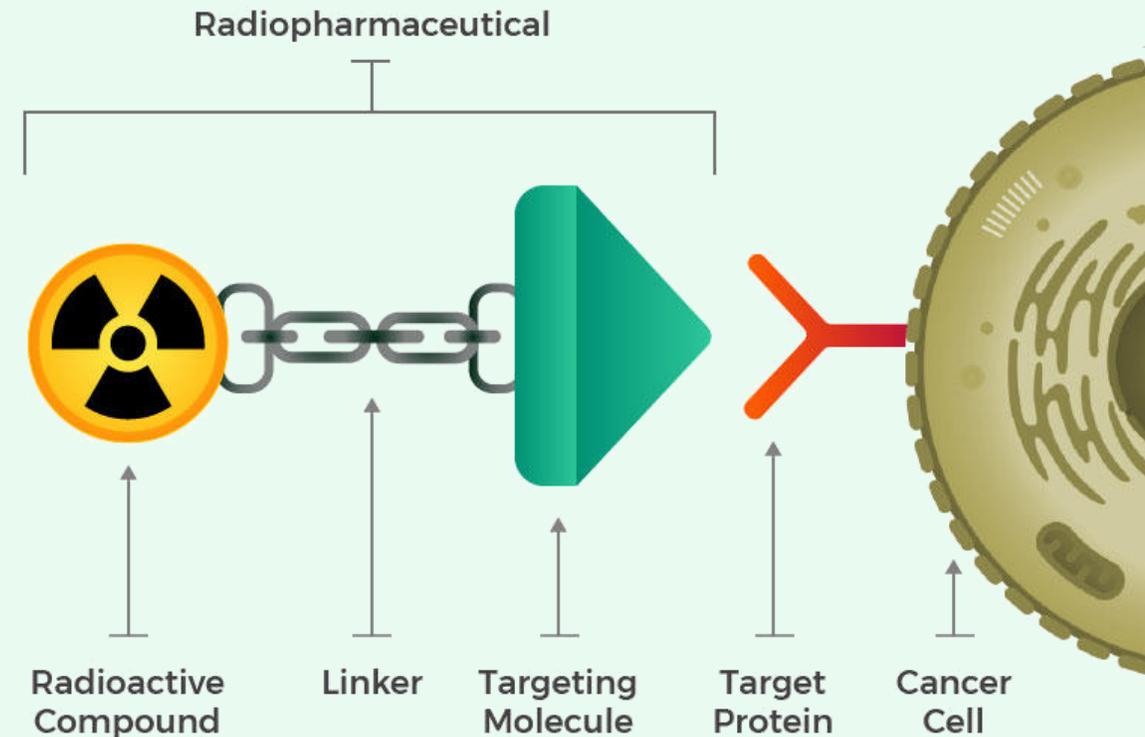
**Cancer is a leading cause of death** worldwide, accounting for around 10 million deaths per year



**Radiotherapeutics** represents one of the fastest growing cancer treatment options



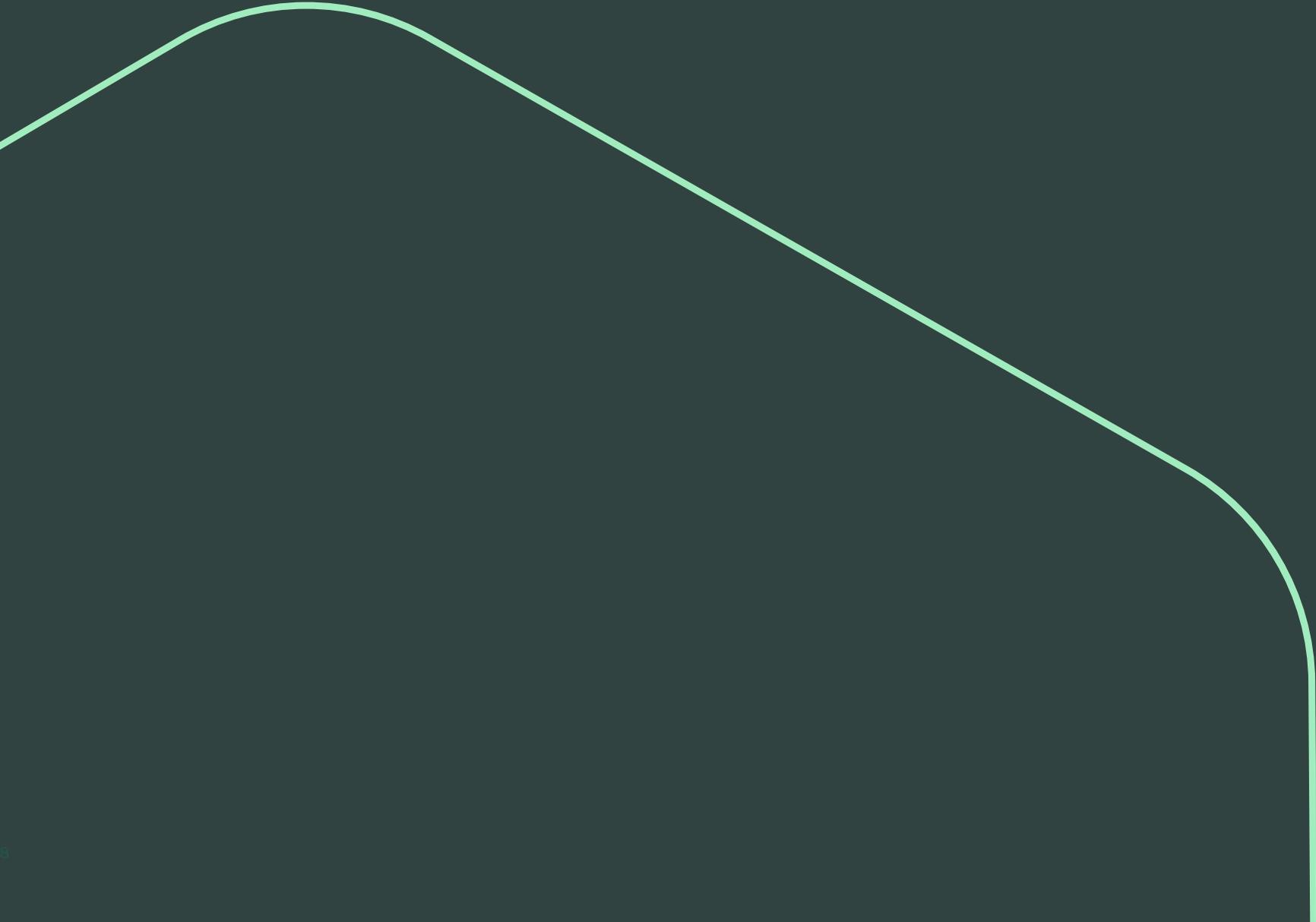
Thor Medical enables a transformation of cancer care with **alpha-emitters for next-generation precision treatment**



# Highlights

- Successfully completed and commissioned pilot facilities at Herøya, on-time and on-budget and with all required authorizations secured
- Secured strategic five-year supply agreement with ARTBIO for Thorium-228
- Shipped the first batch of Thorium-228 from the recently opened pilot facilities
- Signed three-year supply agreement with globally leading pharmaceutical company for Pb-212 for use in pre-clinical studies
- Developed strong partnerships with feedstock suppliers to ensure consistent and reliable supply of raw materials
- Completed concept study for 'AlphaOne' commercial plant with an estimated capital requirement of approximately USD 30 million

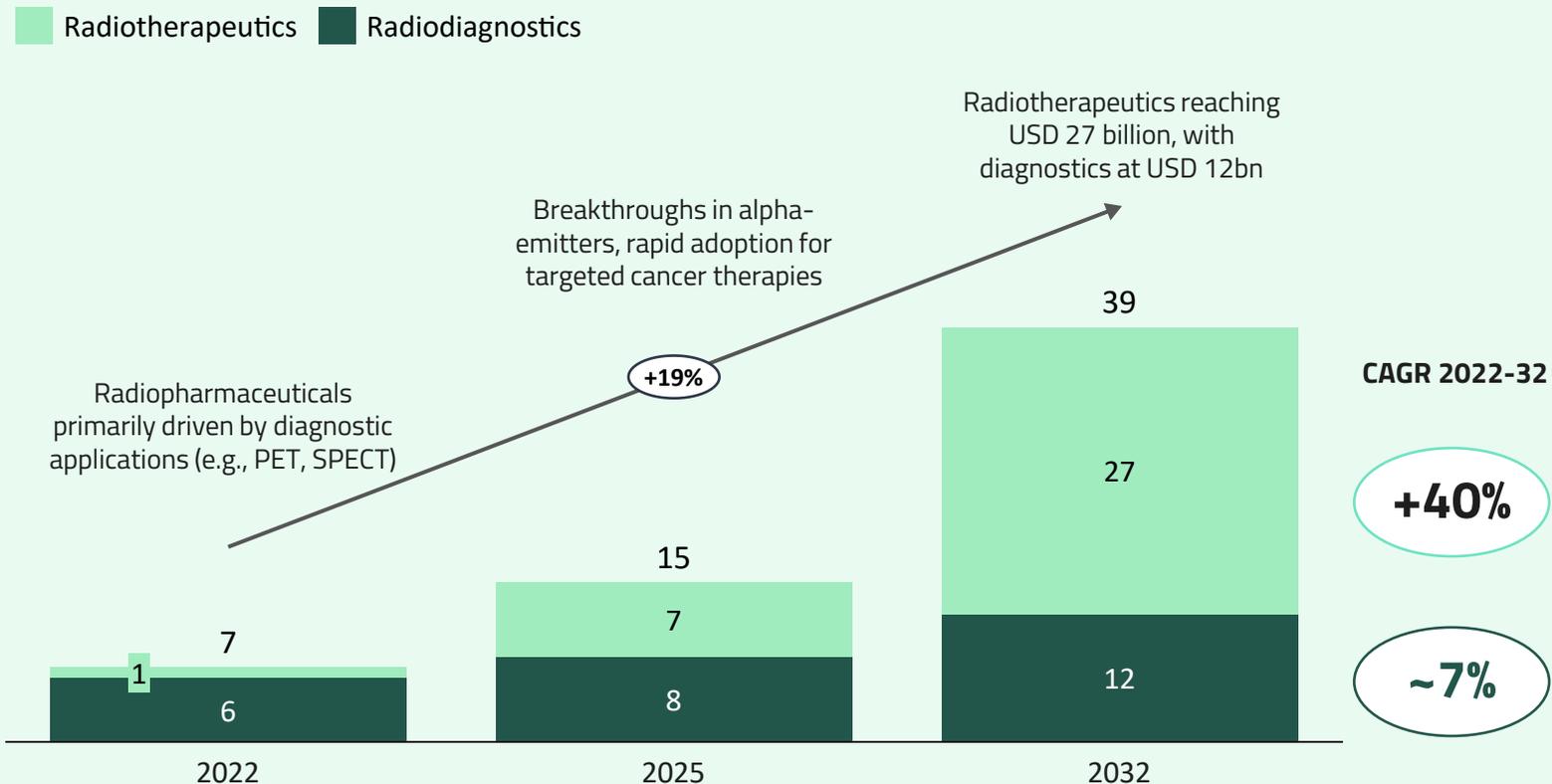




# Market development

# Radiotherapeutics expected to dominate the broader radiopharmaceutical market by 2032

## Radiopharmaceuticals market size, USDbn



## Key growth drivers

- 1. Technological advancements**  
Next-gen alpha-emitters deliver better efficacy with fewer side effects than beta-emitters, making radiotherapeutics more attractive.
- 2. Oncology demand**  
Cancer care drives the market, with over 20 companies developing candidates, some set to launch by the late 2020s.
- 3. Regulatory momentum**  
Faster approvals and strategic partnerships are boosting new product launches and accelerating market adoption

Fotnote: Note: Radiotherapeutics and radiodiagnostics serve complementary roles in healthcare—diagnostics identify and assess diseases, while therapeutics treat them. Accurate diagnosis is essential for effective treatment, making both crucial steps in patient care. Source: : MEDDraysintell Nuclear Medicine Report, Edition 2023

# High deal activity in the radiopharmaceuticals market

**All time high**  
oncology trial starts and 22% increase since 2018

**>USD 12bn**  
radiopharmaceutical transactions  
last twelve months

**>USD 1bn**  
raised in radiopharma financings  
last twelve months

Sanofi, RadioMedix, Orano Med Sign Deal For Next-Gen Radioligand Medicine For Rare Cancers

PanTera secures EUR 93 million in oversubscribed Series A round to accelerate global actinium-225 production

FINANCIAL TIMES

The hunt for a rare nuclear isotope that could redefine cancer care

NUSANO ANNOUNCES SERIES C FINANCING OF OVER \$115M TO COMMERCIALIZE RADIOISOTOPES

CDMO Nucleus RadioPharma links up with ARTBIO to help produce prostate cancer candidate for clinical trials

Lilly-partnered radiopharma startup Aktis Oncology raises \$175M

Sanofi SA [+ Add to myFT](#)

Sanofi joins rivals investing in nuclear cancer treatment

French pharma group to take €300mn stake in radiopharmaceuticals company

Health · Second Opinion

**Killing cancer cells with alpha particles could be the next frontier in treatment**

Injected treatment shreds the DNA of cancer cells with targeted radioactivity

 Mike Crawley · CBC News · Posted: Nov 16, 2024 4:00 AM EST | Last Updated: November 16

**Novartis to Buy Mariana Oncology, Paying \$1 Billion Upfront**

- Radiopharma firms are sought after by large drugmakers
- Novartis may make up to \$750 million in milestone payments

Battle of the alphas: lead-212 picks up speed in radiopharma

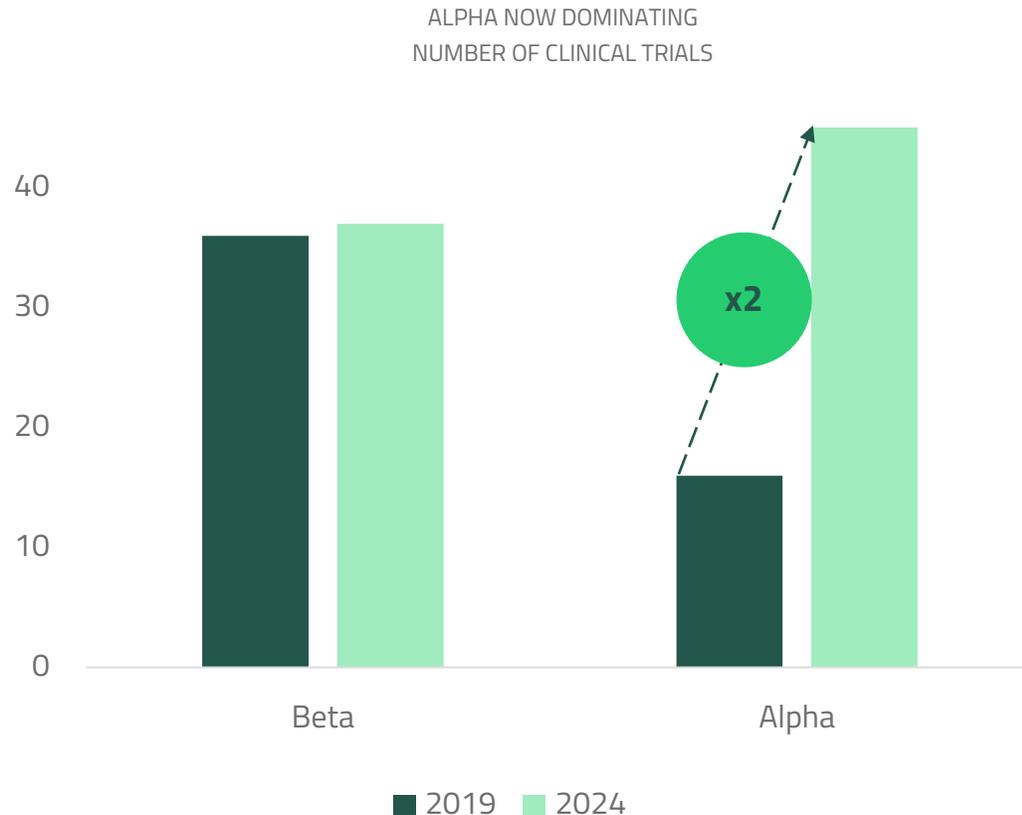
Going nuclear: radiopharmaceuticals funding sees surge in 2024

IONETIX closes financing led by Tees River and Eli Lilly and Company

Lead seeks to lead in radiopharma

# The future is alpha

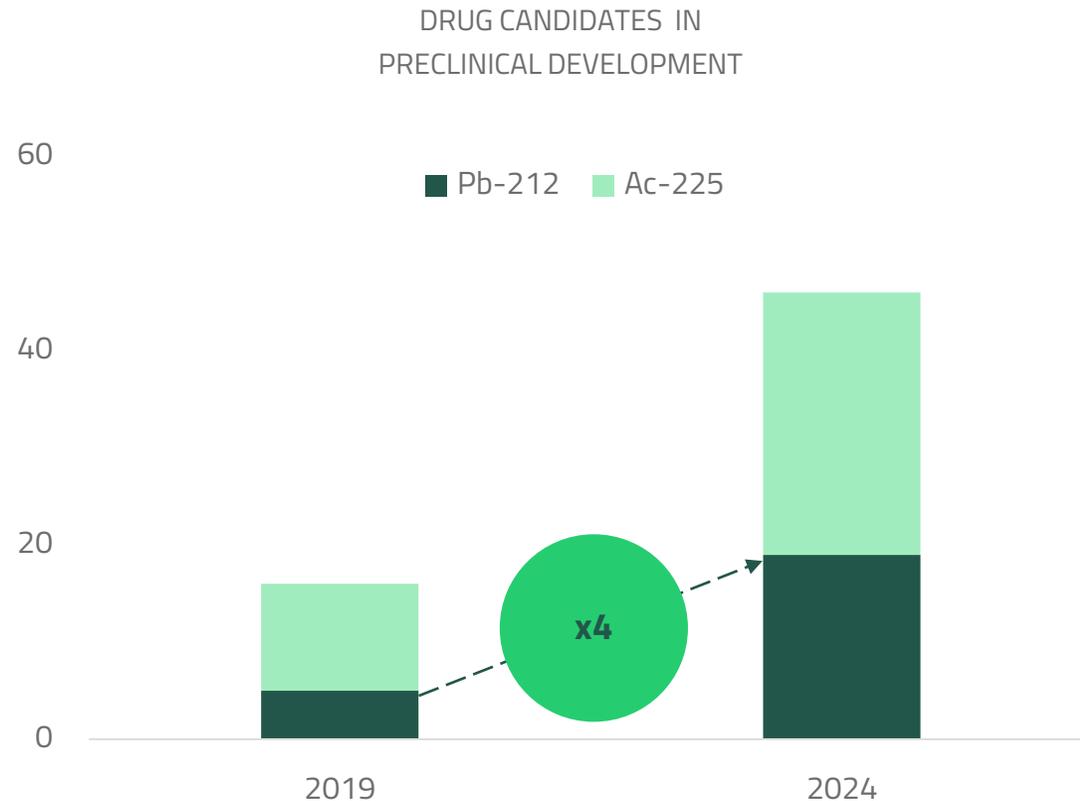
Alpha-particles yield better therapeutic performance with fewer side effects



## Alpha ( $\alpha$ ) > Beta ( $\beta$ )

- **Higher linear energy transfer**  
→ Greater therapeutic efficacy
- Direct cell death through **DNA destruction**  
→ Breaks **both DNA strands**
- Shorter path ranges  
→ **Lower off-target toxicity** as alpha radiation only travels a few cell diameters, leaving nearby healthy cells unharmed
- Short half-life  
→ **No long-lived radioactivity** in the patient

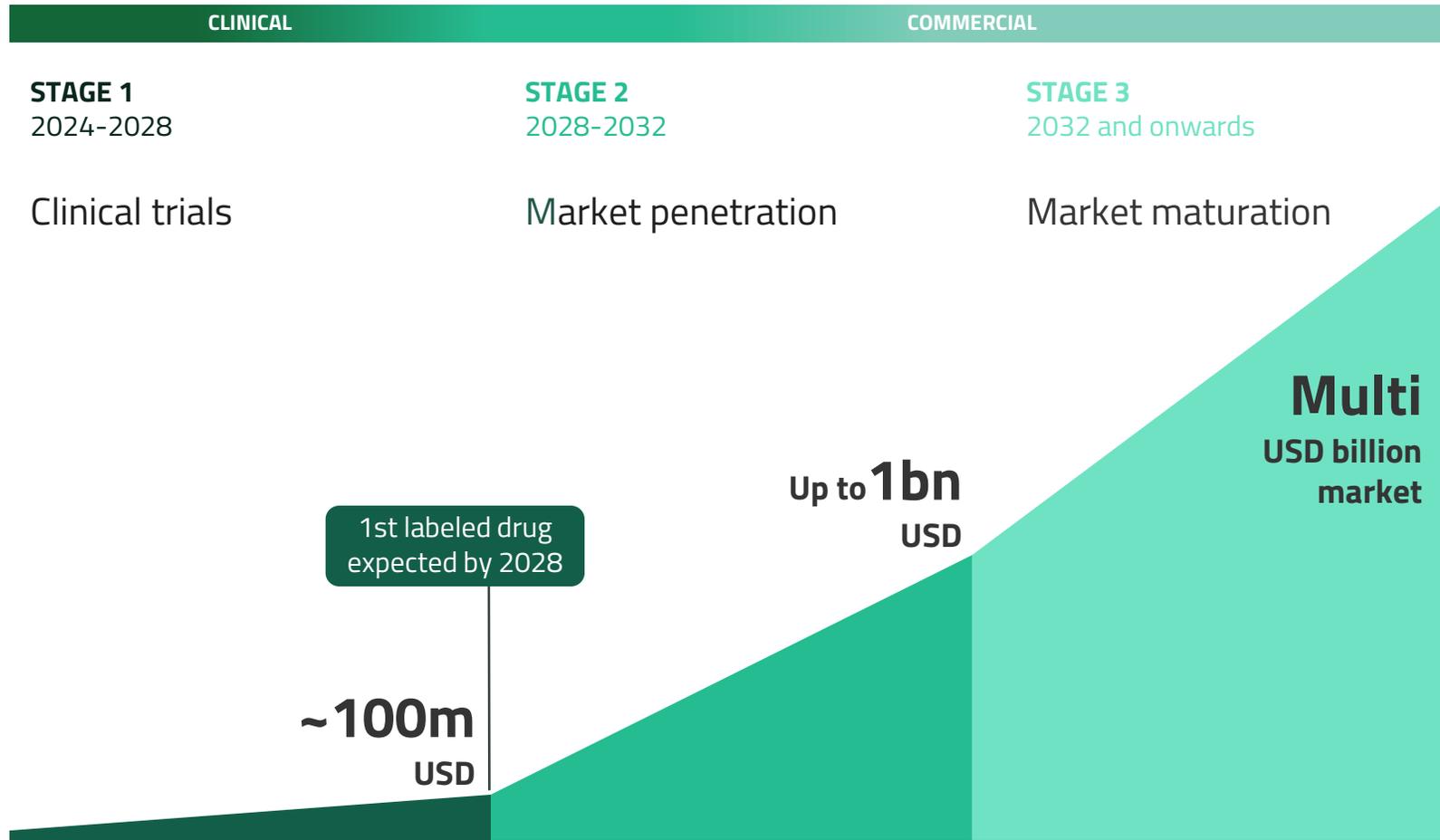
# Battle of the alphas – Lead-212 rapidly catching up with Actinium-225



- **Pb-212 is the ideal isotope** in terms of efficacy, off-target toxicity risk (safety), and post-treatment waste handling due to short half-life<sup>1</sup>
- **Higher growth in Pb-212** clinical development programs compared to Ac-225 in recent years, fueled by an emerging value chain for Pb-212
- **Supply shortage of Ac-225** causing halt in clinical trials – increased focus towards Pb-212 produced from natural thorium



# Rapidly growing radioisotope market with billion-dollar potential



- **A single successful Pb-212 product** can create a market worth several hundred million USD
  - **15 assets in clinical trials**, of which several are already in Phase 2
- 

**Oranomed**  
<sup>212</sup>Pb for Targeted Alpha Therapy



**onco  
invent**



**PERSPECTIVE™**  
THERAPEUTICS



**ARTBIO**



**AlphaTAU**



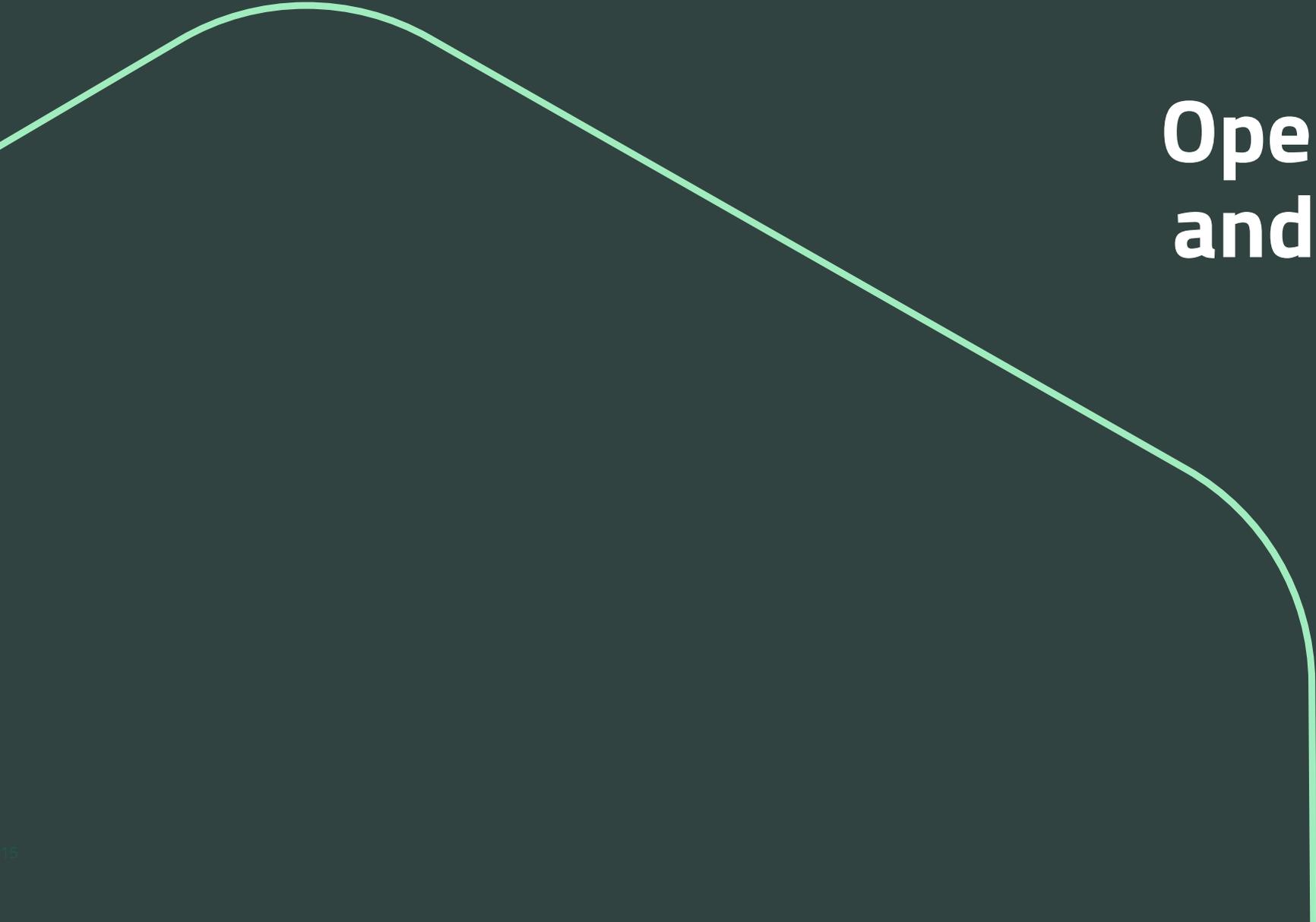
**AdvanCell**



**sanofi**

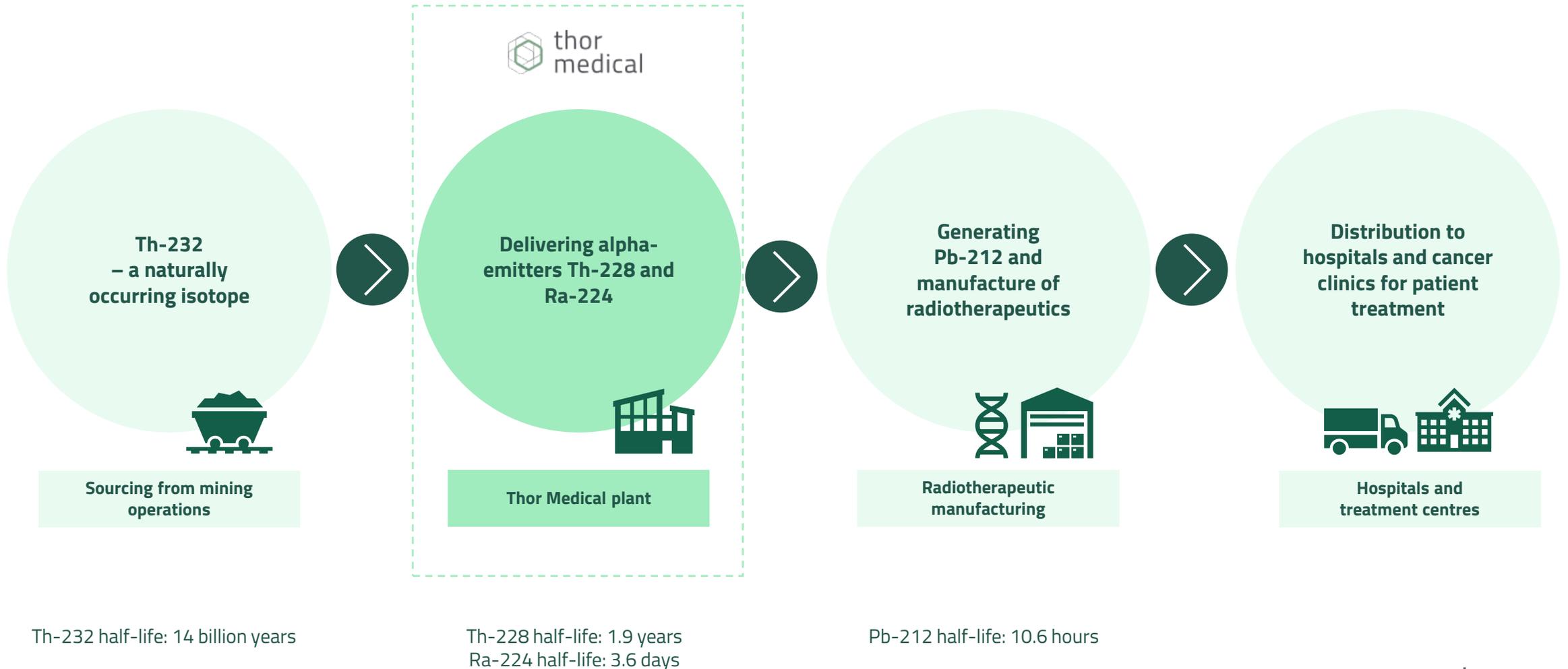


**RadioMedix**  
INNOVATING THERANOSTICS



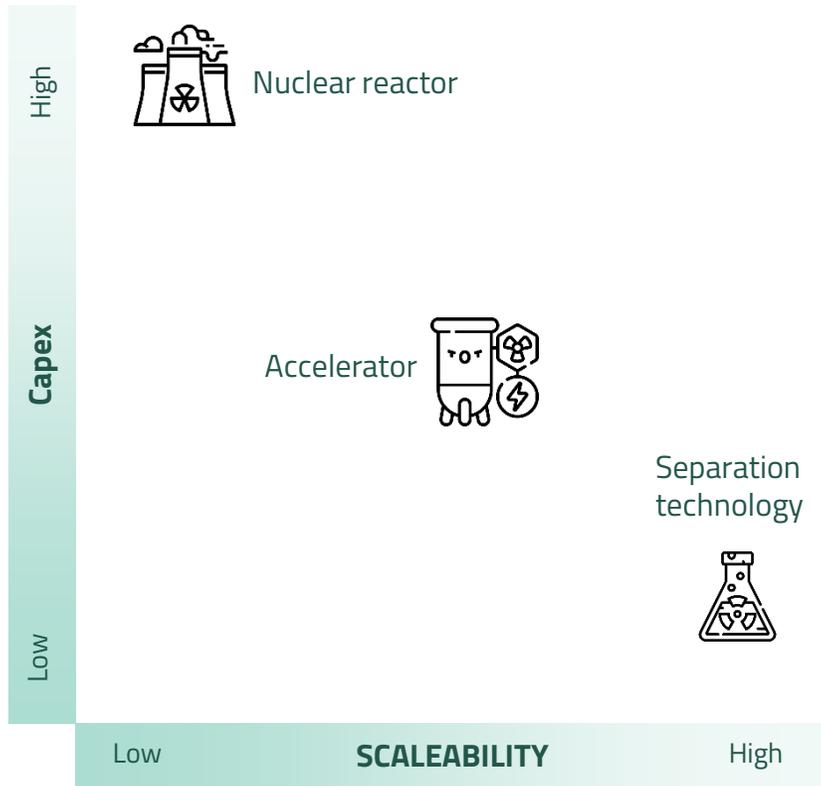
# Operational plans and development

# Building a value chain for next-generation cancer therapies



# Thor Medical's separation technology outperforms other production methods

Comparison of CAPEX and across radiopharmaceutical production technologies



## 1 Separation technology

- Lowest CAPEX and OPEX in extraction of naturally abundant resources
- Continuously scaling based on infinitely reuseable natural thorium-232 that also enables recycling of product and no accumulation of long-lived radioactive waste
- Proprietary process requiring high-quality separation technology

## 2 Particle accelerator technology

- Medium CAPEX and OPEX with significant energy consumption
- Artificial generation of radioactivity causing accumulation of long-lived waste products
- Limited capacity and high maintenance costs to operate the energy beam

## 3 Nuclear reactor technology

- Highest CAPEX and OPEX, driven by safety regulations and nuclear waste management
- Established process and only product in the market from US Department of Energy
- Inflexible process with high operational costs and environmental concerns

Thor Medical's proprietary process and strong IP create a significant competitive edge, making it difficult for others to match its cost efficiency and scalability

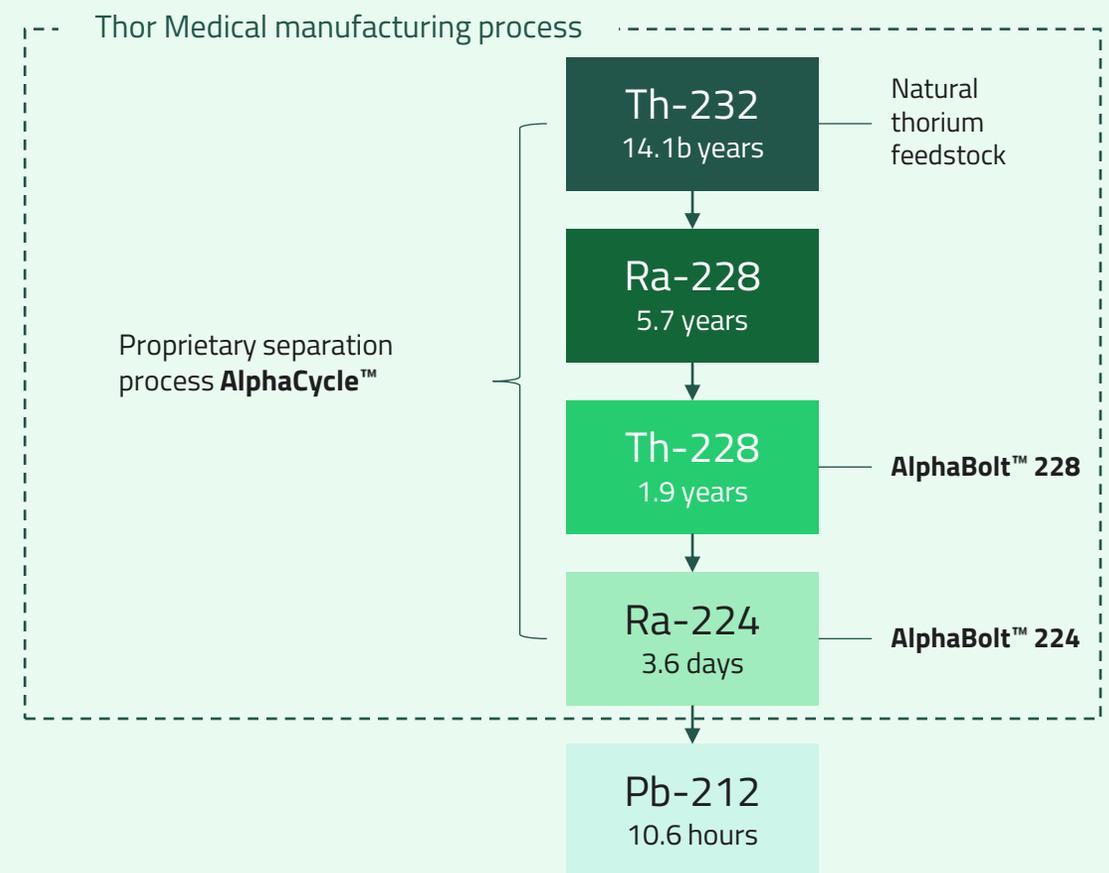
# Alternative production routes for Pb-212 deployment

	 <b>Chemical separation</b> natural decay of Th-232	 <b>Radium gamma</b> irradiation of Ra-226	 <b>Radium proton</b> bombardment of Ra-226	 <b>Radium neutron</b> irradiation of Ra-226	 <b>Thorium spallation</b> bombardment of Th-232
Products	Th-228, Ra-224, Pb-212	Pb-212	Ra-224	Th-228	Th-228
CAPEX	●	●	●	●	●
Time to market	●	●	●	●	●
Tech maturity	●	●	●	●	●
Supply chain implications	Generator based supply that can be locally deployed 	Centralized not suitable for short half-life	Centralized not suitable for short half-life	Generator based supply that can be locally deployed	Generator based supply that can be locally deployed

Separation from the natural decay of Th-232 offer proven, scalable, cost efficient and reliable distribution of isotopes globally

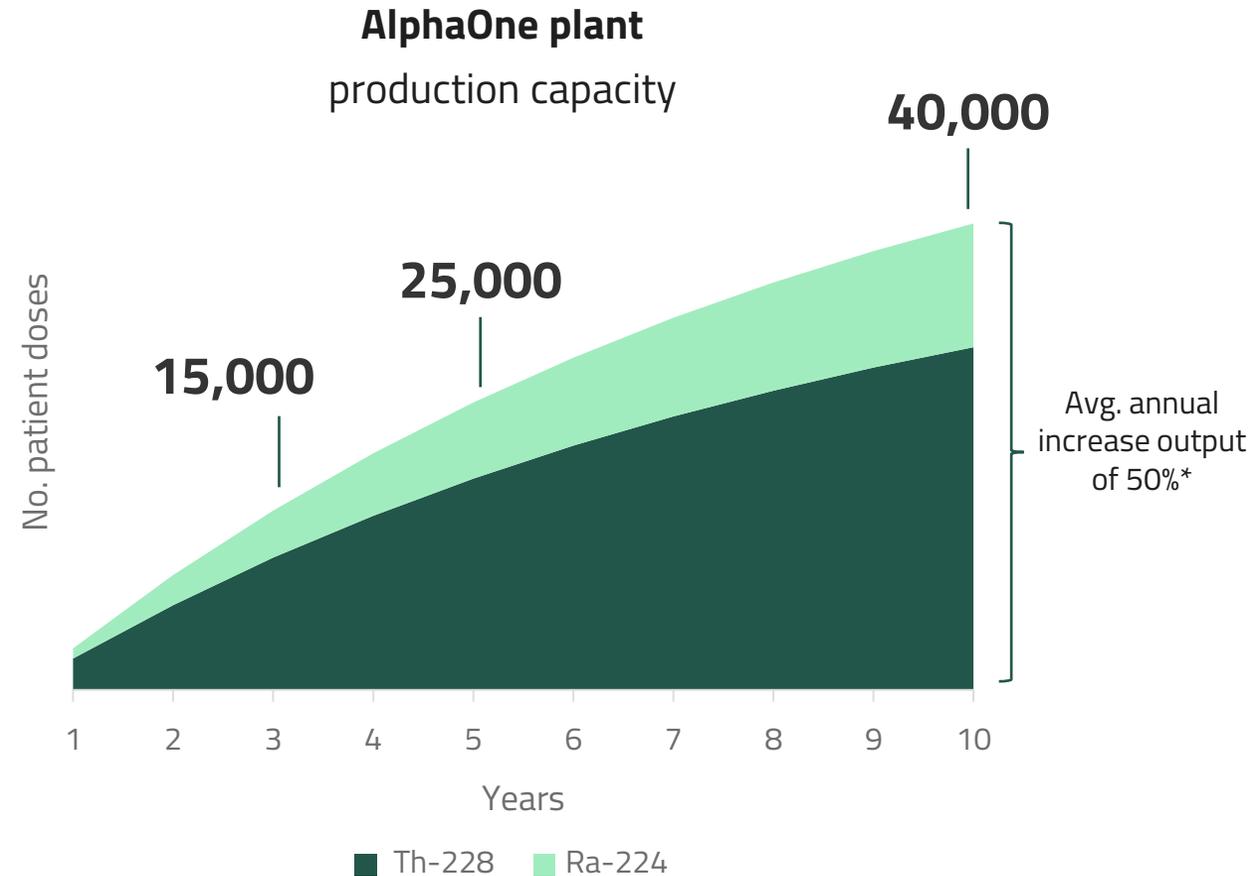
# Proprietary scalable and cost-efficient production process offer radioisotopes from naturally occurring thorium

- **Delivering high purity Th-228 and Ra-224**, parent isotopes for Pb-212, based on natural decay requiring no irradiation
- Natural decay chain **avoids radioactive contaminants** and impurities arising in irradiation-based processes
- **Proven and scalable** cost-effective separation method with 99.9% yield based on infinitely reusable Th-232 feedstock
- Production process is **self-scaling** and self-sustaining capacity



# Proprietary self-scaling AlphaCycle™ process of Thor Medical

- **AlphaCycle™** is a continuously **self-scaling** proprietary production process
  - Production output continuously scaling with no additional capex based on natural decay
  - Optimizing the production to maximize number of patient doses by supplying both Th-228 and Ra-224
  - Flexibility to increase share of Ra-224 depending on customer demand
- **AlphaOne plant** to reach a capacity of 40,000 patient doses after 10 years
- When market reach steady-state, **self-sustaining production capacity** by reusing Th-232 feedstock



# Production scale-up: **AlphaOne – first commercial scale plant**

- Ongoing clinical development of radiopharmaceuticals using Pb-212 require large volume of thorium-based radioisotopes
- Completed concept study in Q4 with capital requirement estimated to USD 30M for AlphaOne plant
- AlphaOne production capacity of 15,000 patient doses after three years of operations, 25,000 patient doses after 5 years
  - Representing revenue potential of NOK 250m and NOK 400m respectively, sufficient to bring the company to cash-positive operations
- Targeted investment decision by end of Q1 2025, subject to financing in place

**Herøya, Norway**  
Location

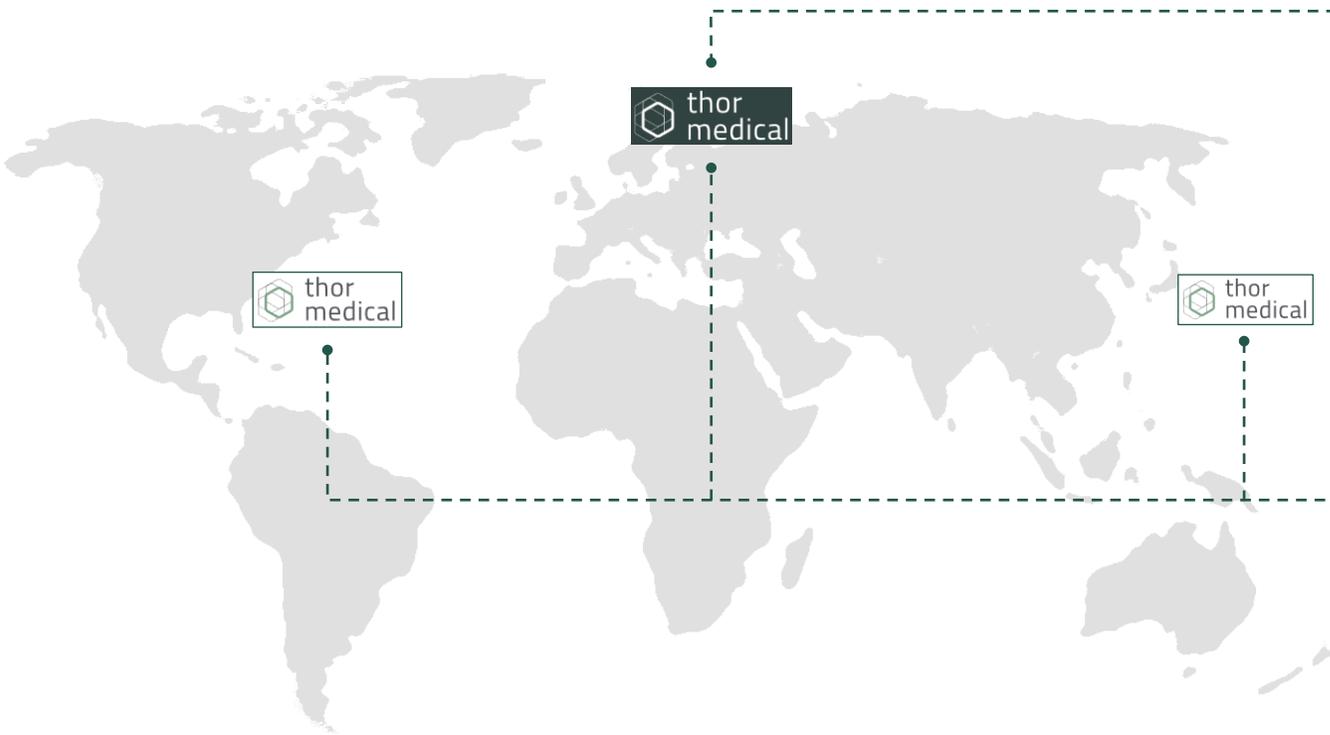
**15,000 patient doses**  
Capacity

**15-20 FTEs**  
Employment

**12 months from FID**  
Plant completion



# Flexible scaling with centralized and local production near key markets



Illustrative

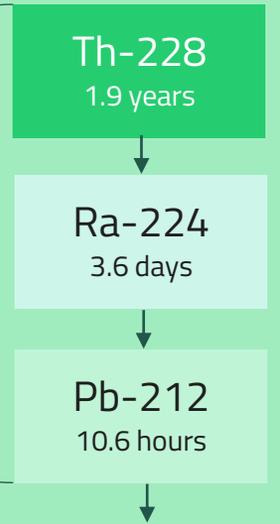
## Step 1: Upstream production

- Large-scale separation Th-232 with large footprint and capital intensity
- Centralized upstream production sites

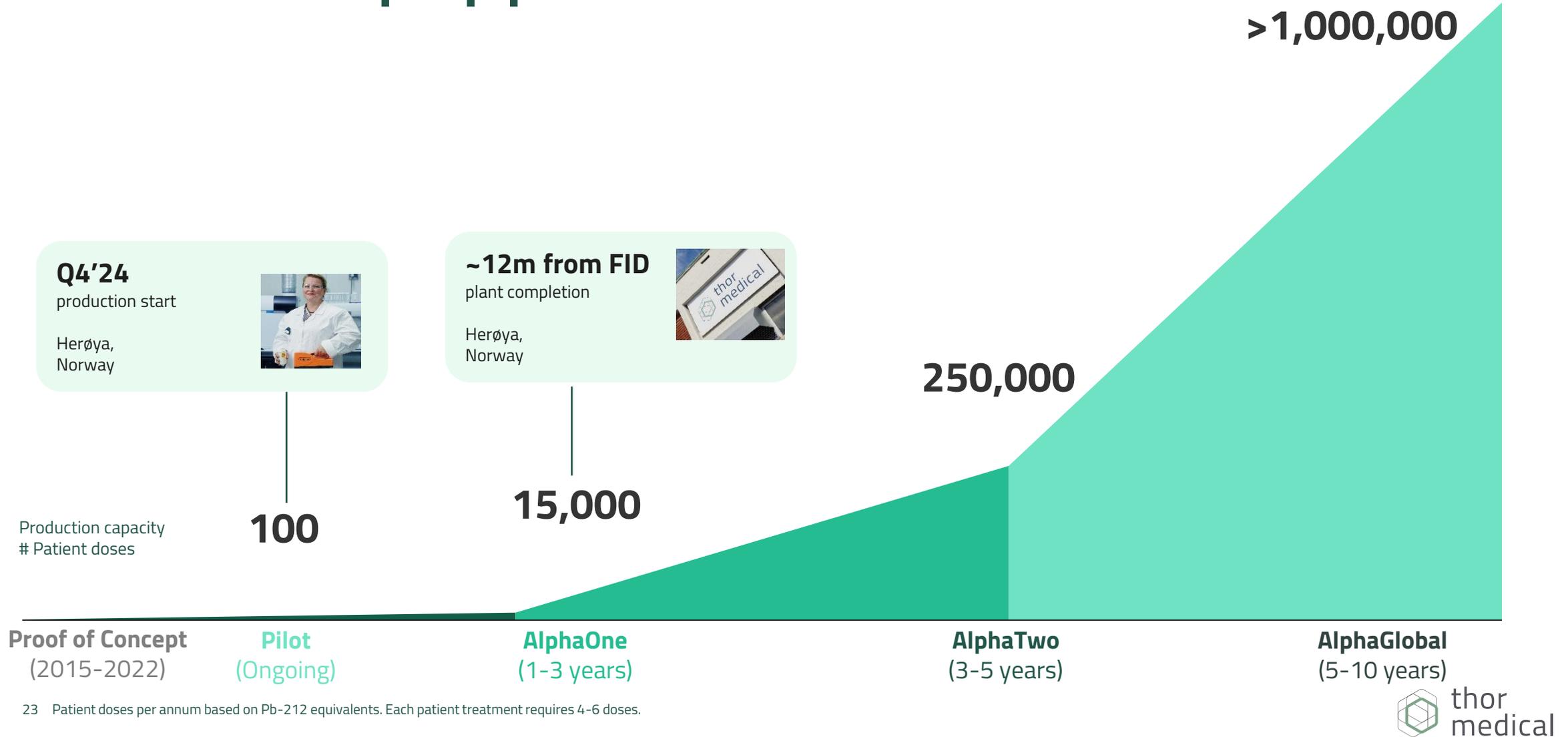


## Step 2: Downstream purification

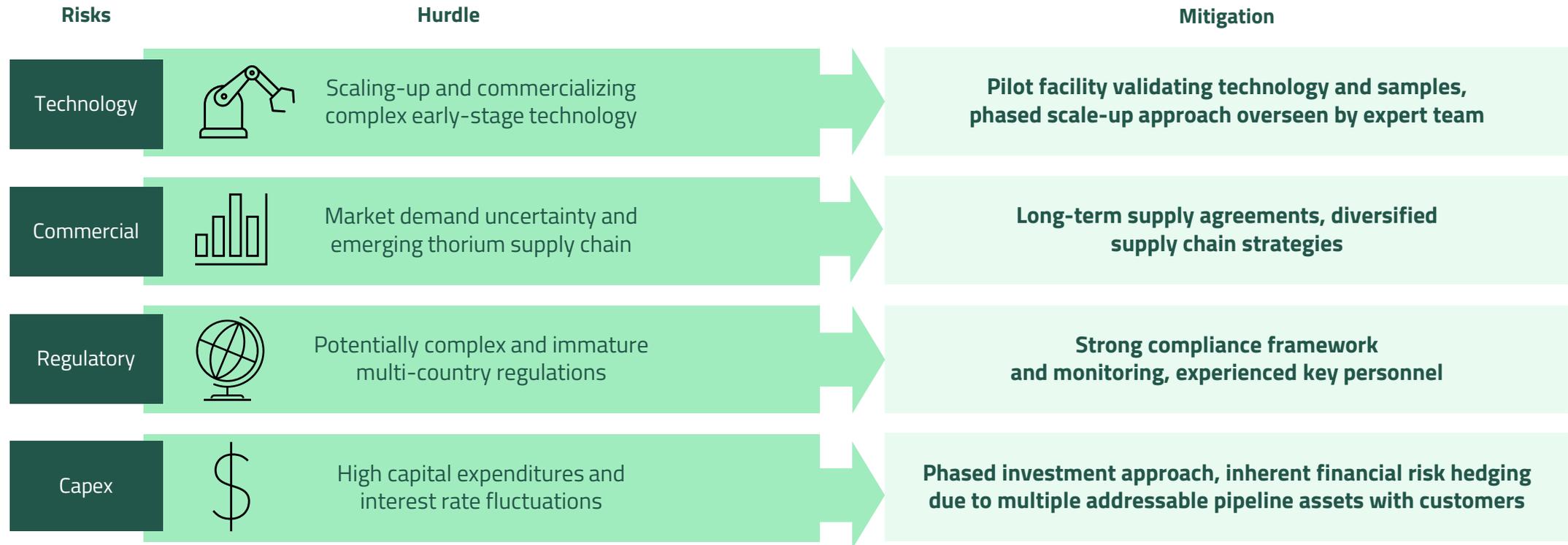
- Proximity to customers in key markets
- Limited footprint, efficient logistics
- Low capital intensity



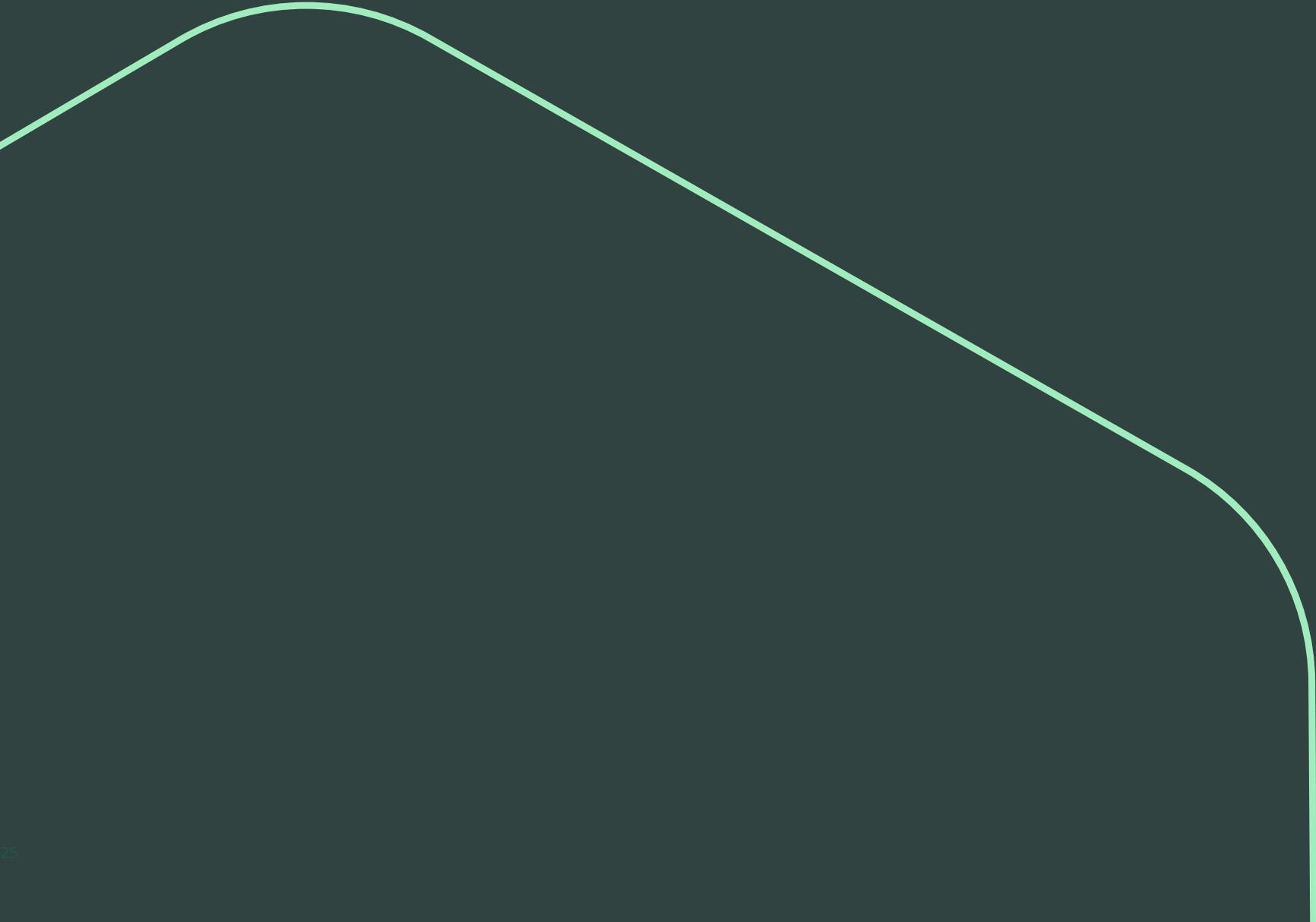
# Sharply growing market opportunity enables ambitious ramp-up plan over the next decade



# Mitigating key risks for sustainable growth – Thor Medical’s proactive approach



Systematic approach to mitigate risks through policies, procedures and continuous improvements



# Financials

# 'AlphaOne' capital requirement estimated to USD 30M

- Estimated capital requirements of USD 30M based on concept study
- Small investment compared to biotech benchmarks
- Will generate cash-positive operations with risk diversified across multiple customers
- Investment decision expected by end of Q1 2025
- To be financed through debt and equity from new investors and existing shareholders in Thor Medical
  - Received indicative loan offer of approx. 25% of capital requirement
  - Additional working capital financing under evaluation

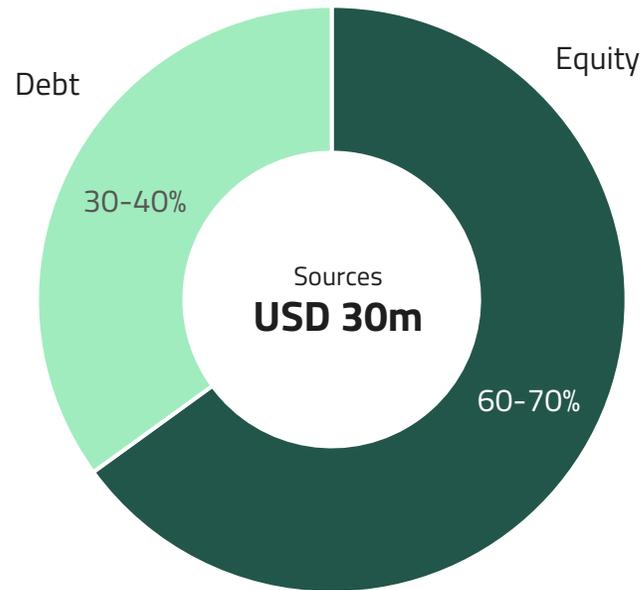
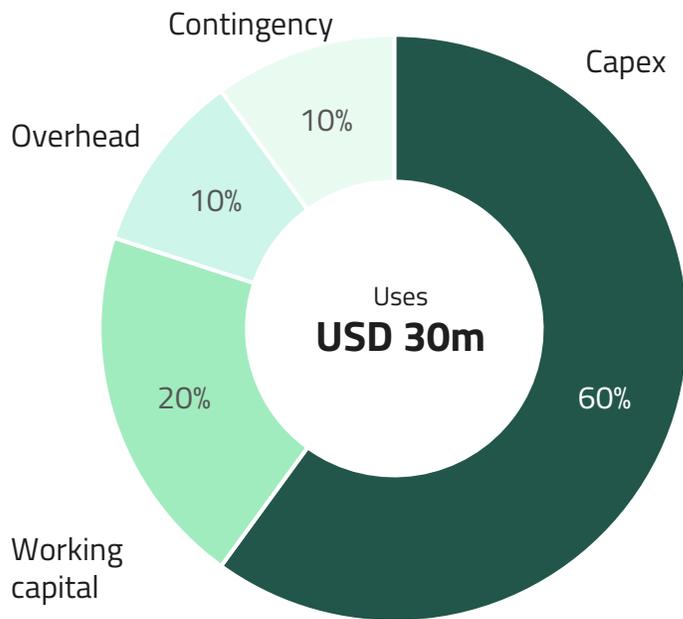
## Sources of financing

Equity  
new investors

Equity  
existing shareholders

Debt

# Use of proceeds to de-risk project and position Thor Medical for future funding



Based on indicative loan offer and potential WC financing

## De-risking milestones

Q4 2024

### Completion of pilot facility (completed)

Verifies production process at scale

### Secure offtake agreements (completed)

Secures market demand and reduces uncertainty

### Completion of Concept study (completed)

Pre-engineering to verify capex and timeline

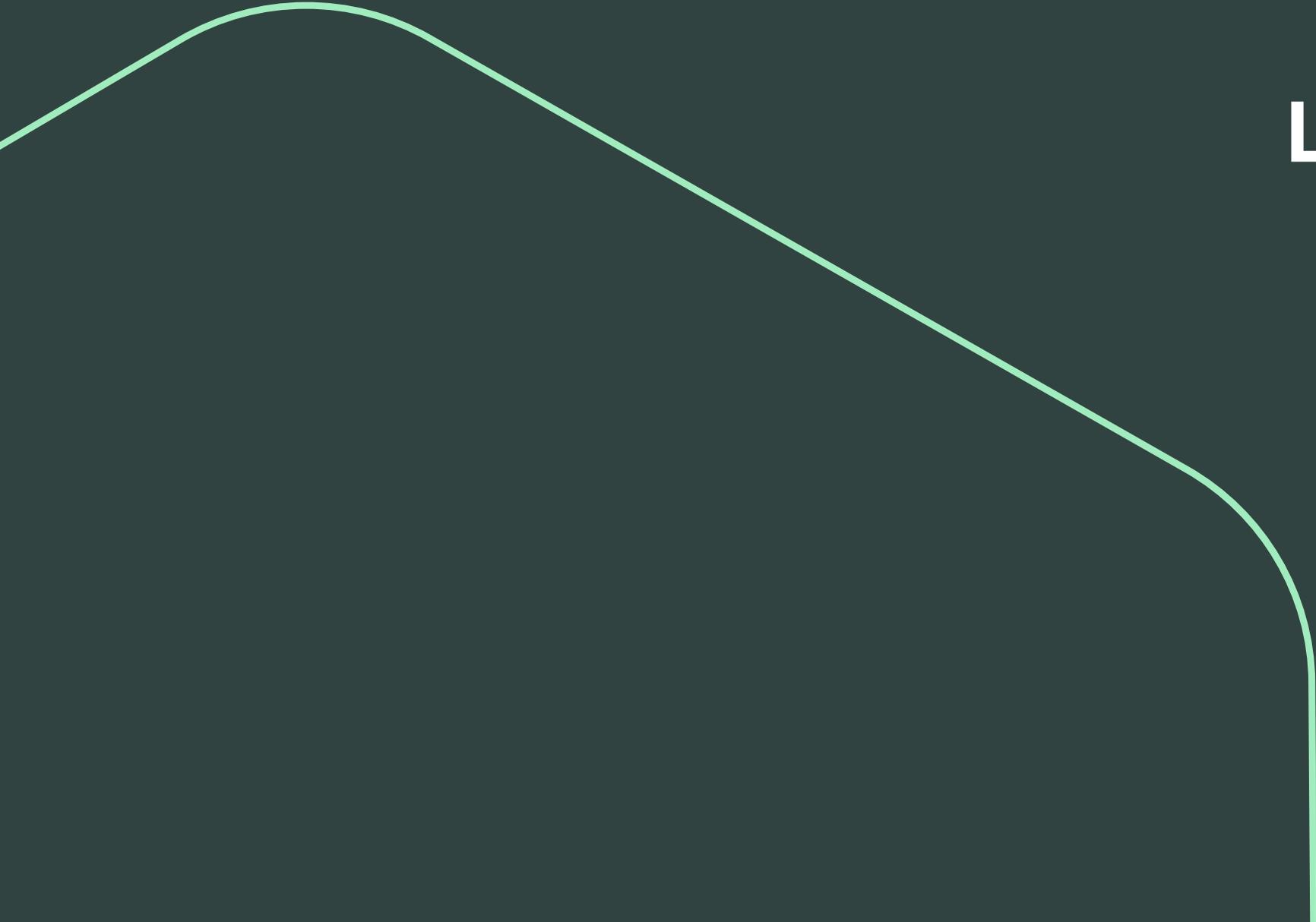
### Delivery of product samples (completed)

Establishes product validation and feedback

Q1 2025

### Final investment decision

Secures commitment for large-scale production



# Looking ahead

# Phased expansion plan: Scaling Thor Medical's production

1

## AlphaOne

Initial commercial production to meet early market demand

- Initial capital outlay to build and operate 'AlphaOne' production facility
- Early-stage production to supply key clients, enabling quick market entry
- Commercial scale volume production

**Capital requirements:  
USD 30M**

2

## AlphaTwo

Expand production capacity to meet growing client demand

- Larger facility development with scalable production capabilities
- Increased CAPEX to establish a full-scale industrial plant
- 10 times the processing capacity of 'AlphaOne' plant
- Expansion to North America in proximity to customers and markets

**Capital requirements:  
Approx. USD 100M**

3

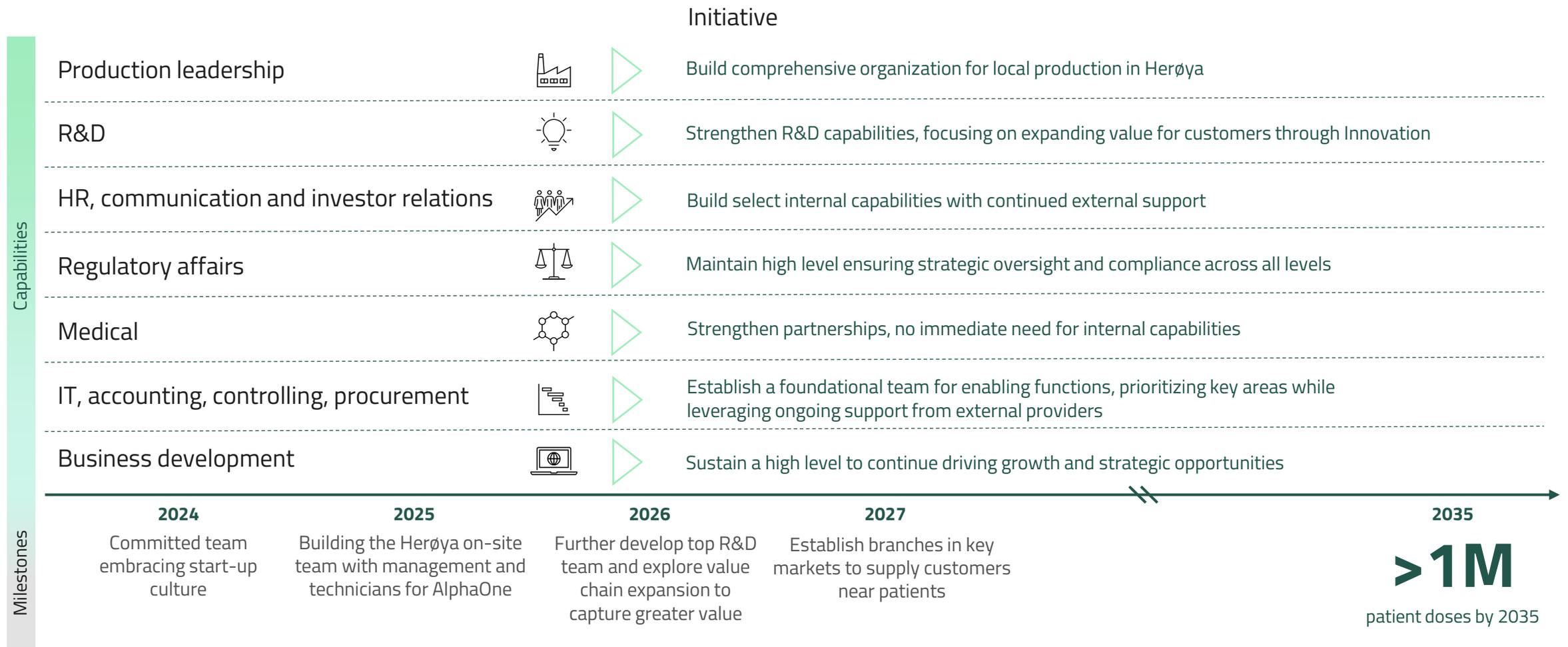
## AlphaGlobal

Secure worldwide supply of alpha-emitters to key regions

- Launch full global expansion to meet growing international market demand
- Position as a global leader in alpha-emitting radionuclide production
- Further geographic expansion to establish local presence in key markets

**Capital requirements:  
Approx. USD 100M**

# Organizational development focused on strengthening production, R&D and selected support functions



# Vision for 2035

**Transforming  
cancer care**  
with next-generation  
precision treatment

**1m+**  
Production capacity  
(patient doses)

**USD 1bn+**  
revenue opportunity

**>50%**  
EBITDA upon  
industrial ramp-up

Why invest in Thor Medical

# We are enabling next-generation precision cancer treatments

1

## Major market opportunity

The radiotherapeutics market is set to increase to USD 27bn by 2032, with alpha-emitting radioisotopes enabling next-generation precision cancer treatment. Thor Medical has an opportunity to generate annual revenues of up to USD 1bn.

2

## Unique, verified and scalable technology

Preparing for large-scale commercial supplies of the world's purest Thorium-based radioisotopes, based on verified patent-pending technology.

3

## Clear operational roadmap

Advancing pilot facilities as planned and within budget. 'AlphaOne' plant aims to enable commercial volume deliveries by mid 2026, positioning Thor Medical for rapid scale-up and market penetration in synchronization with increasing market demand.

4

## Clear financial roadmap

Remains fully funded through pilot phase with only limited capital requirements until the planned investment decision regarding commercial scale production.

5

## Strong teams and supportive owners

Extensive experience in nuclear medicine and radiochemistry, founded in the Norwegian radiopharmaceutical cluster and backed by Scatec Innovation.



Thor Medical is an emerging supplier of radionuclides, primarily alpha particle emitters, for medical use in cancer therapy. Its proprietary production technology requires no irradiation, and provides reliable, environmentally friendly, cost-efficient supply of alpha-emitters for the radiopharmaceutical industry.

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