

The Mineral Network

From extraction to regeneration



The Mineral Network reimagines mining in Nome as a catalyst for historical and ecological restoration, circular economy, and community resilience.

Rare earth extraction becomes a visible, integrated part of public life, supporting research, jobs, and biodiversity. Infrastructure connects industry, people, and ecosystems across Ulefoss and Lunde, blending high-tech innovation with landscape design. Waste is transformed into resources and new habitats. The mine is designed for adaptability, growing and shrinking over time, and eventually giving way to nature and new uses. Nome becomes a model for a regenerative, future-proof industry.



The Nome project confronts the paradox of environmental disturbance for progress. Essential Rare Earth Elements (REE) for renewable energy demand interventions normally opposed.

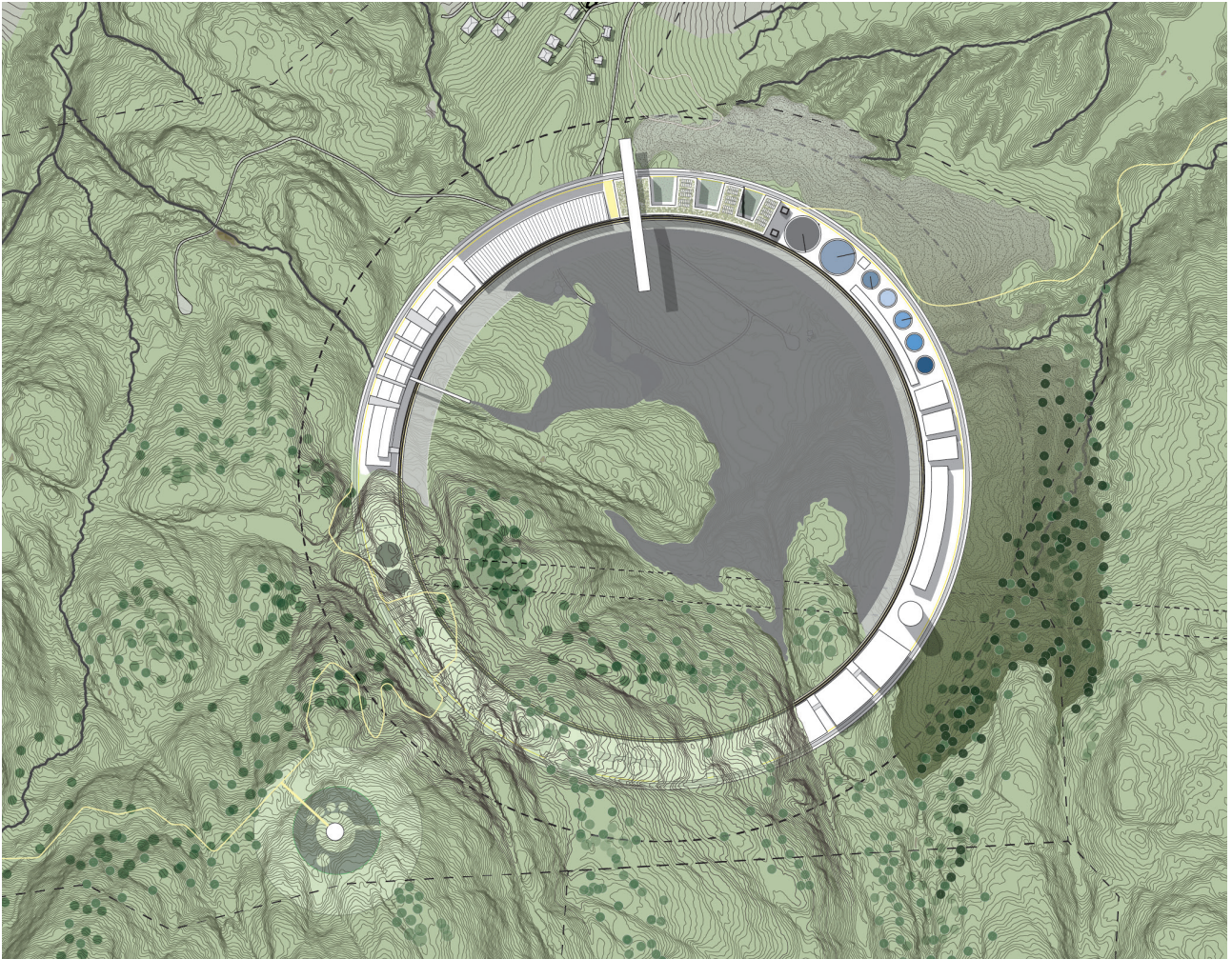
As designers, we ask: how to design for typically protested impacts?

Our approach uses the mine as a means to achieve broader goals, taking only what's needed while giving back more. Instead of an isolated extraction site, the project becomes a research and knowledge hub, bridging techno- and ecosphere, a network for people, industry, and nature. Nome is crucial for cleaner energy and a European-focused economy. We reverse the typical mine outlook, making it a force for good. Our human-, landscape-, and nature-based "Mineral Network" supports this industrial transition, keeping people, communities, and biodiversity central.

Nome will be a flagship for green industrial networks, showcasing rehabilitation and sustainable technological progress globally.

Nome Region: High-Tech & R&D Hub

Nome will become a high-tech and R&D ecosystem, attracting skilled professionals and creating diverse employment. It will develop into a leading knowledge center for rare earth materials, renewable energy, and circular economy, focusing on sustainable extraction and processing. This positions Nome, Lunde, and Ulefoss as key contributors to the green transition, reducing European dependence. The Green Mineral Park will engage the local community through job creation, training, and reviving businesses like the brick factory and waterways. Educational partnerships, including a new High Tech Museum in Ulefoss, will foster learning and innovation, sharing knowledge on renewable energy and safe nuclear power. Technical solutions link craftsmanship to futuristic landscapes. Existing infrastructure will form a route between the mineral network's nodes and flows: industrial (REE, circular economy), recreational (hiking, swimming), and ecological (animal flows, substrates).



Lunde: Material Hub & Community Focus

Lunde joins the high-tech and R&D hub, hosting a research center for building materials and vernacular techniques, and a material hub for sorting, processing, production, and logistics. Lunde Station will be renovated and expanded for increased traffic, with a new overpass reuniting the town. Investment will also support the sports complex, integrated with Telemark Canal watersports. Housing will expand via acupuncture densification and underused camping infrastructure. A poetic route will showcase circular and high-tech activities, guiding visitors from the station through Lunde's circularity hub to the Ulefoss campus and museum, a symbolic path of discovery.

Ulefoss: Waterfront & Research Revitalization

Ulefoss, the FEN-complex access point, will see significant investment to enhance its historical, cultural, and ecological value, building community trust. New land reclamation will create a waterfront with cultural and recreational amenities, including a technical museum and cultural center. An archipelago of islands, made from mine materials, will become a protected paradise for fish and wetland birds, largely inaccessible to humans. The historic industrial harbor will be revitalized as a research and education center for nautical robotics, with renovated warehouses accommodating high-tech functions. Pathways will make the new REE-port and waterfront accessible.

Design for Growth & Degrowth: The Mining Halo

Every intervention from the start contributes to the green mineral network. The mine is transparent, part of daily life, adding quality to life and landscape. Materials flow from mine to local factories or Frierfjorden for circular economy integration. The network is adaptive, designed to expand or shrink, with independent yet connected nodes. After mining, the nodes and network will remain for future generations, repurposed for recreation. We design for growth and degrowth, for the current transition, and for nature to take over. Our mining operations begin with a large ring dike from initial excavations. This dike uses coarse rock, provides a stable foundation for early mining buildings, and temporarily stores tailings, clustering operations and making materials accessible. The mine's round design efficiently hosts industrial processes with minimal environmental impact. The ring includes an electrical car park, later operated by a thorium molten-salt reactor, designed for easy expansion or reduction.

Nome's Circular Economy & Landforming

In our green mineral network, waste doesn't exist; we maximize material recycling. Unlike conventional REE mines where only 1% is used, we can use 66% of Nome's material for other products, from Thorium for nuclear power to coarse rock for building. The remaining 33%, traditionally landfilled, will be repurposed through landforming to create new landscapes and boost biodiversity. The mine is a means to build new landscapes and ecology, every material a source for this.

Purification, Rock & Tailings Reuse, Thorium

Mining processes require vast water. As a green mineral network, we reuse this water to make new landscapes, not just clean it in factories. Phytoremediators like reed and willows filter water and store heavy minerals. A polder system cleans water in steps, storing it in valleys to create large wetlands, like beavers building habitats. These wetlands will attract beavers, moose, and water voles. Polders are built from interlocking dikes of fine tailings in dewatering geotubes, forming strong foundations for dikes and Ulefoss land reclamation. Coarse rock, a primary byproduct, is a valuable resource. It will be reused for roads, dikes, embankments, restoring excavation areas, and shaping ecologically functional landscapes, minimizing transport.

Coarse rock will form the outer dike-ring of the Tailings Storage Facility (TSF) for structural support. Fine tailings, a significant byproduct with radioactive minerals, are safely stored in the TSF to prevent contamination. They will be reused for geopolymers, alkali feldspar (glass, ceramics), and landscape restoration. Storage is adjacent to the REE plant due to particle fineness. A large part will be mixed with geopolymers for backfilling in Ulefoss underground. Thorium mined at the FEN-complex offers a valuable opportunity for thorium molten salt reactor research, advancing Europe's leadership in renewable energy. A pilot plant will showcase safe, efficient nuclear innovation. Its design near the REE-plant and recreational route from Lunde to Ulefoss aims to demonstrate hyper-efficient and safe energy production.

