



FutureSmart Solutions

brought to you by **onirik**

From exploration to remediation faster, smarter, cleaner, circular

Five advanced technologies transforming how
we explore, produce, and rehabilitate the planet

Across mining, energy, water, government, and agriculture, Onirik's FutureSmart solution platform helps industries and nations unlock resources responsibly, accelerate production, and regenerate ecosystems.

Each solution combines economic value, proven science, and environmental stewardship, and economic value — forming a circular system where uncertainty becomes opportunity and waste becomes resource.

The FutureSmart Platform

- ✓ **Exploring** – Discovering minerals, oil & gas and water with certainty
- ✓ **Production** – Powering E&P and construction value-chain performance
- ✓ **Mining** – Elevating mine and E&P operational expertise and agility
- ✓ **Remediating** – Eliminate mine tailings waste liabilities
- ✓ **Agriculture** – Turning tailings and bio-waste into agricultural assets



FutureSmart Exploring

From Probability to Certainty in 8 Weeks

FutureSmart Exploring unites three field-proven passive electromagnetic systems — Mineral Finder Technology (MFT™), Oil & Gas Finder Technology (OFT™) and Water Finder Technology (WFT™) — used in more than 400 research and commercial projects across 40 countries.

The Science & Steps

These technologies are built on over 160 years of science in electromagnetics and geophysics — from early pioneers Gauss, Maxwell, Faraday, to modern contributors such as Tikhonov, Schumann, and Pirson.

These systems listen to the Earth rather than disturb it, measuring natural variations in electric, magnetic, and electromagnetic fields at the boundary between the lithosphere and atmosphere.

Every element and compound has a unique fingerprint — its own resonance frequency spectrum. By interacting with these frequencies in the Earth's natural fields, FutureSmart Exploring directly identifies & maps subsurface resources with an average spatial precision of 94%.

Each project follows a proven three-phase process — Remote Satellite Sensing and Analysis, Field Electromagnetic Surveying, and Laboratory Integration with 3D Modelling & Reporting — delivering complete exploration intelligence in 17 weeks, with go-or-no-go certainty after the first eight.

Key Advantages

- Certainty in eight weeks - no false positives or negatives.
- Go or no-go confidence before drilling.
- Up to 80 % reduction in exploration cost and time.
- Depth penetration up to 9.8 kilometres – verified by drilling.
- Non-invasive, zero-footprint method — no permits or disturbance.

Sector Applications

- **MINING:** Map ore bodies, grade distribution, and bypassed zones.
- **ENERGY:** Locate oil, gas, reservoir pressure before drilling, and bypassed reservoirs.
- **WATER:** Identify aquifers, salinity, seasonal changes, and recharge potential.
- **GOVERNMENTS:** De-risk national resource programs and licensing rounds and secure a greater share of your natural resources.



FutureSmart Production

Operate Smarter, Produce Cleaner, Build Stronger

FutureSmart Production applies CDS® (Colloidal Delivery System – 100% organic) nanotechnology to boost value-chain performance from reservoir to refinery — optimising extraction, transport, and processing while cutting chemical input costs, water use, energy use and emissions.

Applications and Impacts

Kol-Oil® is a CDS®-based nanotechnology tailored to upstream operations. It enhances extraction efficiency and stimulates wells by significantly reducing crude viscosity (e.g. from 18,000 cps to 90 cps) and boosting flow. It also optimises lower solvent quantity use and improves water-oil separation, unlocking production from marginal or “dead” wells and extending field life.

Slink-Oil® is a CDS® formulation engineered for upstream and midstream pipeline flow. It reduces friction and viscosity, lowers the need for solvents, and cuts energy consumption — thereby enabling smoother, more efficient crude transport at lower cost.

Stasoil® strengthens in-situ soils for mine and energy-sector roads and platforms to bearing capacities of 200 tonnes per square metre. Reduces construction time and cost by up to half and minimises water usage.

Value to E&P Operators

Higher recovery and throughput; lower chemical, water, and energy consumption; reduced maintenance downtime; and extended well-pad and equipment life. These improvements deliver faster project turnaround, smoother operations, and sustained production efficiency from reservoir to refinery.

Value to Miners

Stronger, longer-lasting roads and rail foundations built from stabilised in-situ soils; less maintenance and reconstruction; shorter build times; lower material and water requirements; and greater operational reliability for heavy-haul fleets and site logistics. Together, these advantages cut costs, reduce disruption, and keep production moving safely and efficiently.



FutureSmart Mining

Learn Faster, Solve Deeper, Perform Better

Apply intelligence to mining & processing operations, and safety — gain a competitive edge by expediting workforce expertise, rehearsing and accelerating change, or the turn-around of wicked problems.

FutureSmart Mining can incorporate Mega Worlds — immersive enterprise digital twins — with your exploration models for your FutureSmart Exploring (MFT™, OFT™ & WFT™) to transform how miners and E&P companies plan, operate, innovate, and change.

How It Works & Why It's Powerful

- Expert Worlds provide immersive learning: 8–16 hours of simulation compress years of field experience, building capability fast.
- Mega Worlds enable strategic “war-gaming” in a virtual twin of your operation — testing capital plans, safety protocols, and new technologies before deployment.
- Grounded in cognitive science, they enhance pattern recognition, decision-making, and problem-solving in complex systems.

Value to Miners

- Experiment and optimise in zero-risk digital environments.
- Accelerate knowledge transfer and reduce reliance on scarce experts.
- Solve wicked technical and strategic challenges safely.
- Achieve demonstrated results — for example, doubling production without additional capital expenditure.



FutureSmart Remediating

Closing the Loop — From Waste to Resource

FutureSmart Remediating converts one of the mining sector's most persistent challenges — tailings waste — into 100% natural fertiliser assets for agricultural restoration and sustainable food production. It's a highly cost-effective, closed-loop solution that removes environmental, financial and compliance liabilities while helping build a cleaner and more circular future.

How It Works

Mine tailings and industry biomass waste are accepted and repurposed through mechanical, biological, and thermal systems that stabilise and transform them into safe, agri-products — BioRoc™, and RocTea™. No harsh chemicals are used, nothing goes to landfill, and each facility is self-powered through renewable energy generated by BioChar pyrolysis.

Value for Miners

- Removes the risk and long-term liability of tailings storage and management.
- Frees land for reuse or closure with environmental compliance intact.
- Reduces water handling and storage challenges.
- Delivers highly cost-effective, visible, and measurable remediation outcomes.
- Demonstrates leadership in ESG and sustainability performance.

Value for Governments

- Provides a cost-effective turnkey solution to remediate active and legacy tailings.
- Creates new regional industries and long-term employment through local BioRoc™ production facilities.
- Strengthens food security by converting waste streams into natural agricultural inputs.
- Supports national goals in circular economy, climate action, and environmental recovery.

Value for the Planet and People

- Prevents millions of tonnes of tailings and biomass waste from entering landfills or waterways.
- Restores degraded land safely and permanently.
- Reduces dependence on chemical fertilisers and improves soil health.
- Enhances human health through cleaner soils, water, and nutrient-rich food systems.



FutureSmart Agriculture

Heal Soils, Nourish Life, Regrow the Future

FutureSmart Agriculture delivers 100% natural bio-nutrients that restore soil health, replace chemical fertilisers, and strengthen food security. Through its BioRoc™ and RocTea™ solutions, it creates a regenerative cycle that transforms waste into growth.

How It Works

- FutureSmart Agriculture and FutureSmart Remediating operate as a single closed-loop system.
- Mine tailings and industrial bio-waste — including food, forestry, and agricultural residues — are accepted and repurposed through proprietary technology.
- Toxins are neutralised without any harsh chemicals, and the process is self-powered by renewable energy generated from the production of BioChar.
- The result: waste streams are entirely repurposed — nothing goes to landfill — and converted into high-value, natural products.

Products

- **BioRoc™** – A bio-fertiliser that rebuilds soil structure and nutrient balance; the probiotic and multivitamin for soil.
- **BioTea™** – A liquid bio-stimulant that delivers fast natural nutrition to plants; the energy drink for crops.

- **BioChar** – A carbon-rich soil conditioner (and ingredient of BioRoc™) that locks carbon, holds water, and nurtures microbial life; the coral reef of the soil.

The Value

For decades, the widespread use of chemical fertilisers and pesticides has depleted soils, weakened crops, and polluted waterways, creating ocean dead zones and damaging human health through nutrient-poor food and chemical residues. FutureSmart Agriculture reverses that cycle — restoring minerals, microbes, and balance to the land.

Each hectare regenerated with BioRoc™, and RocTea™ locks away greenhouse gases, eliminates fertiliser runoff, and produces nutrient-dense food that supports healthier people, ecosystems, and economies.

GOVERNMENTS gain stronger food security, FARMERS achieve higher yields with fewer inputs, and COMMUNITIES thrive with cleaner soil, water, and air.



FutureSmart Platform

Five smart solutions for a better future

From exploration to remediation, we empower industries to discover faster, produce smarter, and rehabilitate cleaner

EXPLORATION

Discover with more precision in less time

CONSTRUCTION

Build stronger roads, faster, with insitu soil

PRODUCTION

Operate with better productivity & throughput

PROCESSING

Operate with better productivity & throughput

REMEDIATION

Eliminate mine tailings waste liabilities

MINERALS

MFT™

FutureSmart Exploring

CDS® (STASOIL®)

FutureSmart Production

MEGA / EXPERT WORLDS

FutureSmart Mining

MEGA / EXPERT WORLDS

FutureSmart Mining

TAILINGS to FERTILISER

FutureSmart Remediating

OIL & GAS

OFT™

FutureSmart Exploring

CDS® (STASOIL®)

FutureSmart Production

CDS® (KOL-OIL®)

FutureSmart Production

CDS® (SLINK-OIL®)

FutureSmart Production

CDS®

FutureSmart Remediating

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