

# Desalination CryptoFlow: Mining Water from Waste Heat

Our central concept is to establish a groundbreaking, sustainable circular economy by synergistically connecting seawater desalination with energy-intensive cryptocurrency mining fed by a photovoltaic plant. In a pivotal innovation, waste heat from the mining process is efficiently captured and utilised to evaporate seawater in a specialised desalination system, producing potable freshwater. This closed-loop approach revolutionises a conventionally energy-intensive industry into a catalyst for vital resource generation while simultaneously addressing water scarcity, fostering clean energy adoption, and minimising environmental footprint.



# The Global Water Crisis

## Growing Scarcity

The stark reality of a global water crisis is no longer a distant threat, but a rapidly intensifying challenge impacting communities and ecosystems worldwide. From parched farmlands to burgeoning urban centers, access to clean, pure water is becoming increasingly scarce. Millions already lack this fundamental human right, and projections paint a sobering picture of escalating demand outpacing dwindling freshwater resources.

## Climate Change Impact

Climate change, with its erratic rainfall patterns and prolonged droughts, further exacerbates this precarious situation, turning once fertile lands into arid expanses. This crisis isn't confined to specific continents; it manifests in diverse and often unexpected ways across the globe.

## World's Water Stress

While some regions receive ample rainfall, many parts of the world face severe water stress due to rapid urbanization, population growth, and climate change. Prolonged droughts, unpredictable weather patterns, and over-extraction of groundwater have placed immense pressure on existing water infrastructure. Additionally, pollution of freshwater sources and inefficient water management further exacerbate the crisis, leading to shortages that impact public health, agriculture, and economic stability.



# Value Proposition

## Address Water Scarcity

Produce high-quality freshwater through an eco-friendly, waste-heat driven desalination process, ensuring sustainable access to potable water.

## Maximise Resource Efficiency

Capture waste heat from crypto mining to power desalination, minimising energy loss and demonstrating the value of innovative, integrated systems.

## Mitigate Environmental Impact

Create a closed-loop system that effectively transforms energy consumption into resource generation, significantly reducing the environmental footprint and paving the way for sustainable development.

## Generate Economic Growth

Contribute to local economies by fostering job creation, encouraging sustainable infrastructure development, and promoting a new era of resource management innovation.

# Government Pain Points



## Ensuring Water Security and Resilience

Growing water scarcity, exacerbated by climate change, poses a significant threat to national security, food production, and public health. Governments struggle to find reliable and cost-effective ways to secure water resources.



## Fostering Technological Innovation and Economic Diversification

Governments seek to promote technological innovation and diversify their economies, creating high-value jobs and attracting investment in future-forward sectors.



## Supporting Sustainable Agriculture and Food Security

Desertification and water scarcity threaten agricultural productivity and food security, requiring governments to invest in solutions that can revitalize degraded land and ensure a stable food supply.



## Optimizing Resource Efficiency

Governments are increasingly focused on resource efficiency and minimizing environmental impact. Traditional desalination plants can be energy-intensive.



## Scalability and Adaptability

Governments need desalination solutions that can be scaled to meet varying demands and adapted to different geographical contexts.

# Our Off-Grid Solution: Desalinating via Computing Heat Technology & Solar Plants



## Photovoltaic Energy Generation

Our system begins with solar photovoltaic arrays that harness renewable energy to power the cryptocurrency mining operation. This sustainable power source eliminates the carbon footprint typically associated with crypto mining while providing the electricity supply needed for the high-performance computing hardware to operate efficiently.



## Heat Capture from Computing

Our specialized liquid-cooling system efficiently extracts the significant amount of heat produced by the cryptocurrency mining ASICs (or other high-density computing hardware). This heated water, which would otherwise require energy-intensive cooling systems to dissipate, becomes the primary energy source for our desalination process.



## Seawater Evaporation

This warm water is then pumped into a specially designed evaporation chamber. Inside this chamber, the heat is transferred to the incoming seawater. This transfer of thermal energy causes the water molecules in the seawater to gain kinetic energy, eventually overcoming the intermolecular forces holding them in liquid form and transitioning into a gaseous state – water vapor.



## Vapor Condensation

The pure water vapor produced through evaporation then rises and enters a separate condensation chamber. This chamber is maintained at a cooler temperature. As the water vapor comes into contact with the cooler surfaces of the condensation chamber, it loses its thermal energy. This loss of energy causes the water molecules to slow down and transition back into a liquid state – pure, desalinated water.



## Freshwater Collection

The condensed pure water, now free of salts and other contaminants, is collected and ready for various applications, such as irrigation, potable water supply (after appropriate filtration and treatment if needed), or industrial uses.

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# Modular Plant Design



## Flexible Capacity

We can tailor the size of the desalination plant to match the specific water demands of a particular location. A smaller module might be ideal for a remote village or a small agricultural operation, while multiple interconnected modules can form larger-scale plants capable of supplying the needs of a town or even a district.



## Phased Deployment

The modular nature allows for a phased approach to implementation. Communities can start with a smaller unit to address immediate needs and then easily expand capacity as demand grows in the future, optimizing initial investment and reducing upfront costs.



## Ease of Transportation

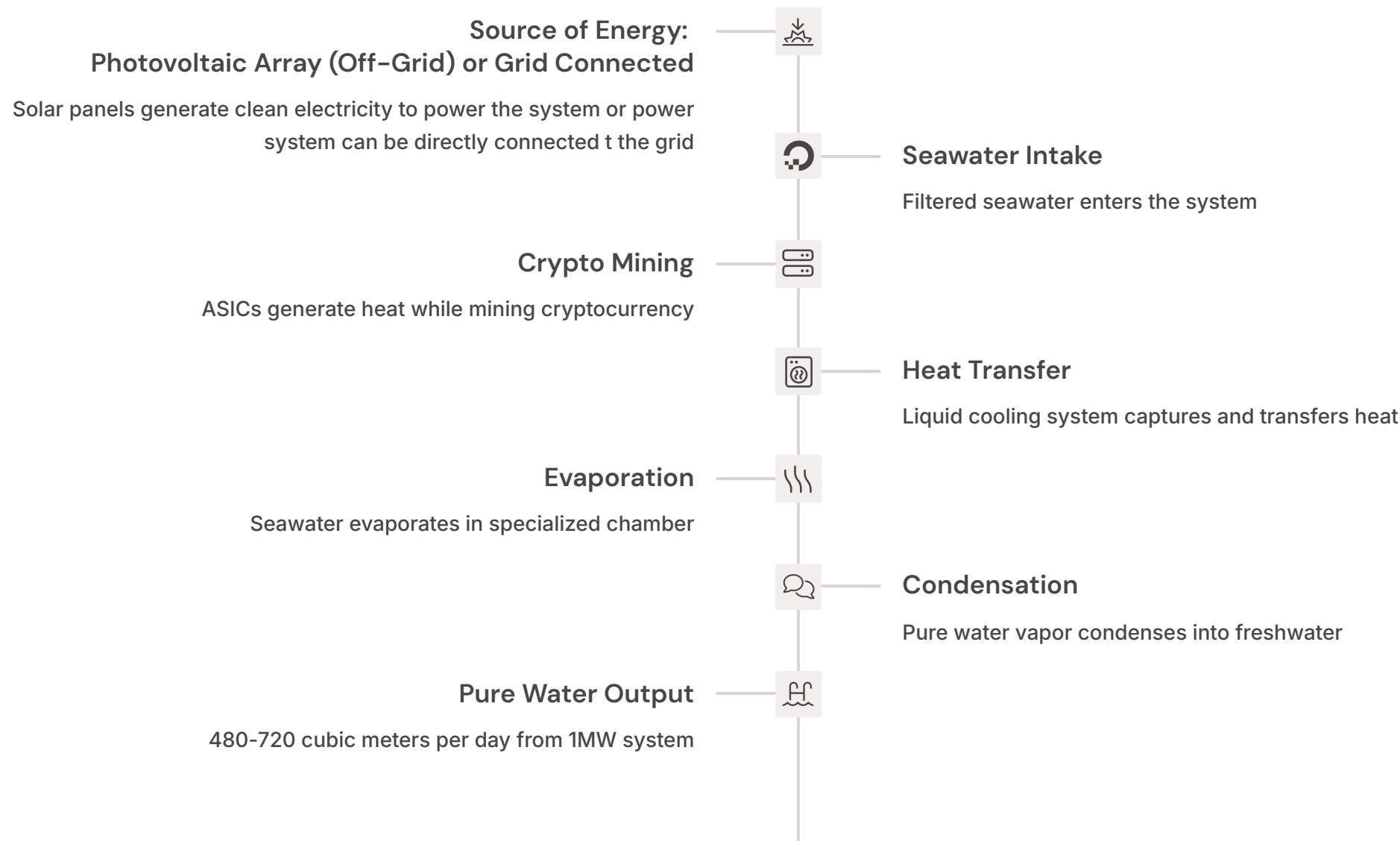
Individual modules are designed for relatively straightforward transportation and installation, even in areas with limited infrastructure. This is particularly beneficial for reaching remote or underserved communities.



## Redundancy and Maintenance

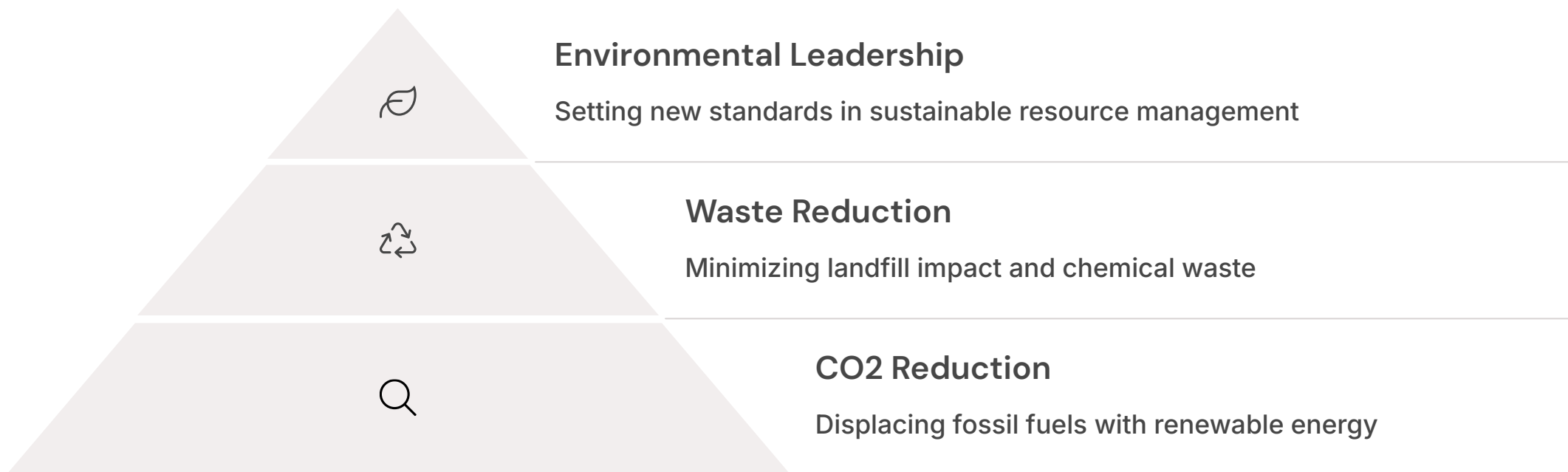
In larger installations with multiple modules, the failure of a single unit does not necessarily lead to a complete shutdown of the water supply. The remaining modules can continue to operate, providing a level of redundancy.

# Technical Plan





# Sustainability Metrics



Our integrated system offers significant and measurable environmental advantages compared to traditional desalination methods and conventional waste management practices. By primarily powering our system with renewable solar energy for both the cryptocurrency mining and the desalination processes, we significantly reduce our reliance on fossil fuel-based electricity grids. This direct displacement of fossil fuels translates to substantial reductions in carbon dioxide emissions, a primary contributor to climate change.

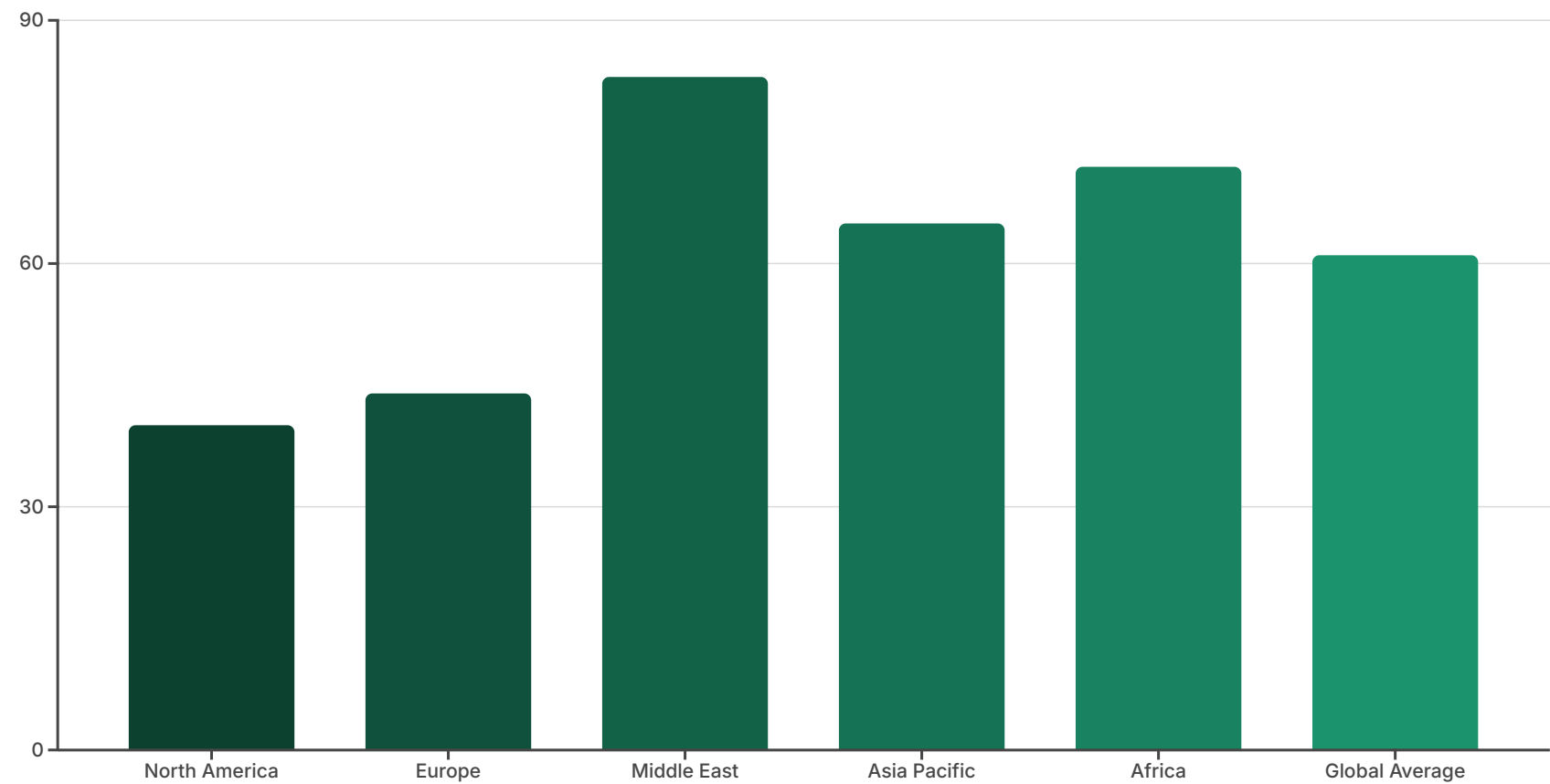
# Desalination by products overview

Brine, as a byproduct of desalination, can be utilized in various ways to reduce waste and promote a more sustainable approach to water treatment:

1. **Salt production:** Brine can be processed to extract salt, which has numerous applications in the food, chemical, and de-icing industries.
2. **Industrial processes:** Brine can be used as a cooling agent in industrial processes or as a feedstock for chemical manufacturing. For example, it can be employed in the production of chlorine and caustic soda through electrolysis.
3. **Irrigation:** In some cases, diluted brine can be employed as an alternative irrigation source, particularly for salt-tolerant crops or in arid regions where freshwater resources are limited.
4. **Aquaculture:** Certain species of microalgae, mollusks, and fish can tolerate brine, offering potential for brine-based aquaculture systems.

By comprehensive feasibility study for each individual case with exploring these applications, the environmental impact of brine disposal can be reduced, and valuable resources can be recovered in the process. However, the economic viability, technical feasibility, and environmental implications of each approach need to be carefully assessed before implementation.

# Market Opportunity: Global Pure Water Demand



The market opportunity for our innovative desalination solution is driven by the escalating global demand for pure water, a resource increasingly strained by population growth, industrial expansion, and the intensifying impacts of climate change. Water stress varies significantly across regions, with the Middle East and Africa facing the most severe challenges. Even regions with historically abundant water resources are experiencing increased stress due to urbanization, pollution, and climate change-induced weather pattern disruptions.

# First-Mover Advantage for Governments



## Establish a Global Precedent

Set a powerful global precedent in sustainable crypto infrastructure

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## Attract Innovation and Investment

Draw significant investment in renewable energy and advanced technologies

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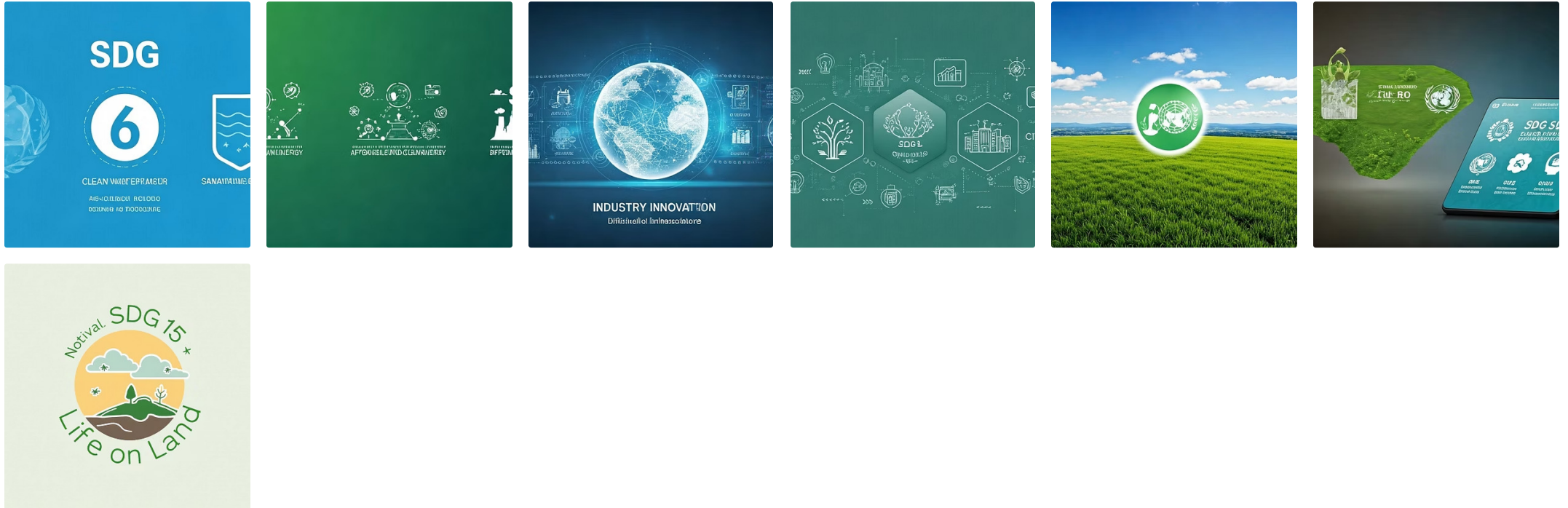


## Enhance National Reputation

Demonstrate commitment to tackling global challenges through innovation

Governments today face a dual imperative: to embrace technological innovation for economic growth and to champion sustainable solutions for a healthier planet. Our project presents a unique opportunity for forward-thinking governments, like Malaysia, to seize a first-mover advantage by becoming global pioneers in the burgeoning field of sustainable cryptocurrency infrastructure.

# Alignment with UN Sustainable Development Goals



Our integrated system for seawater desalination and desert reclamation, powered by renewable energy and leveraging the unique energy profile of cryptocurrency mining, directly contributes to the achievement of several key United Nations Sustainable Development Goals (SDGs), including Clean Water and Sanitation (SDG 6), Affordable and Clean Energy (SDG 7), Industry, Innovation and Infrastructure (SDG 9), Sustainable Cities and Communities (SDG 11), Climate Action (SDG 13), Zero Hunger (SDG 2), and Life on Land (SDG 15).

# SWOT Analysis

## Strengths

- Innovative and integrated solution
- Sustainable and environmentally friendly
- Potential for high water recovery and energy efficiency
- Step on the next level from established desalination technologies

## Weaknesses

- High initial capital investment
- Technological complexity
- Dependence on the success of hydro-mining operations

## Opportunities

- Growing demand for desalination and sustainable agriculture
- Government incentives and funding for renewable energy projects
- Potential for expansion into other arid regions

## Threats

- Fluctuations in cryptocurrency markets (affecting mining profitability)
- Changes in government regulations
- Extreme weather events

# Crypto Mining Integration

## Harnessing Waste Heat as a Resource

Traditional cryptocurrency mining, particularly using powerful ASICs, generates a significant amount of heat as a byproduct of the computational process. This heat is typically considered waste and requires substantial energy expenditure for cooling systems to dissipate.

Our system flips this paradigm by viewing this thermal output not as a problem, but as a valuable resource. Our specialized liquid-cooling system is designed to efficiently capture this heat from the mining hardware. This warmed water, instead of being cooled down and discarded, is directly channeled to our desalination unit.

## Generating a Stable Revenue Stream

Beyond providing a consistent source of heating energy, the cryptocurrency mining operation itself generates a predictable revenue stream. By strategically operating mining hardware, we can capitalize on the global cryptocurrency market.

This revenue can then be directly reinvested into the operation and expansion of the desalination facilities, ensuring the long-term financial sustainability of the project.



# Crypto Market Cap Projections

## \$4.07B

### Market Size by 2030

The global cryptocurrency mining hardware market is expected to reach \$4,074.2 million by 2030

## 9.8%

### Annual Growth Rate

The market is expected to grow at a Compound Annual Growth Rate (CAGR) of 9.8% from 2024 to 2030

## \$1M

### Bitcoin Value by 2030

Fidelity's demand model predicts Bitcoin will grow steadily to about \$1 million per full Bitcoin by 2030





# Crypto Mining Setup

| ASIC Model      | Hash Rate | Power Consumption |
|-----------------|-----------|-------------------|
| Whatsminer M20S | 68Th      | 3.3 kW            |
| Whatsminer M30S | 100Th     | 3.4 kW            |
| Whatsminer M50S | 126Th     | 3.2 kW            |

We specialize in upgraded to water cooling ASICs from MikroBT range. Our product, Imagine8 - mobile Bitcoin mining data center, has a Power Capacity of 1000/2000 kW and Miner Capacity of 300 - 600 units. The new feature Imagine8 Ver 4.0 water blocks provides an upgrade for air cooling based ASICs. The modular design ensures reliable operation with heat dissipation via cooling tower or dry cooler, and includes Smart PDU remote monitoring.

# Risk Mitigation: Market Risks

## Stablecoin Conversion

Strategic conversion of portion of crypto mining revenue to stablecoins

## Diversification

Balancing crypto holdings with stable revenue streams



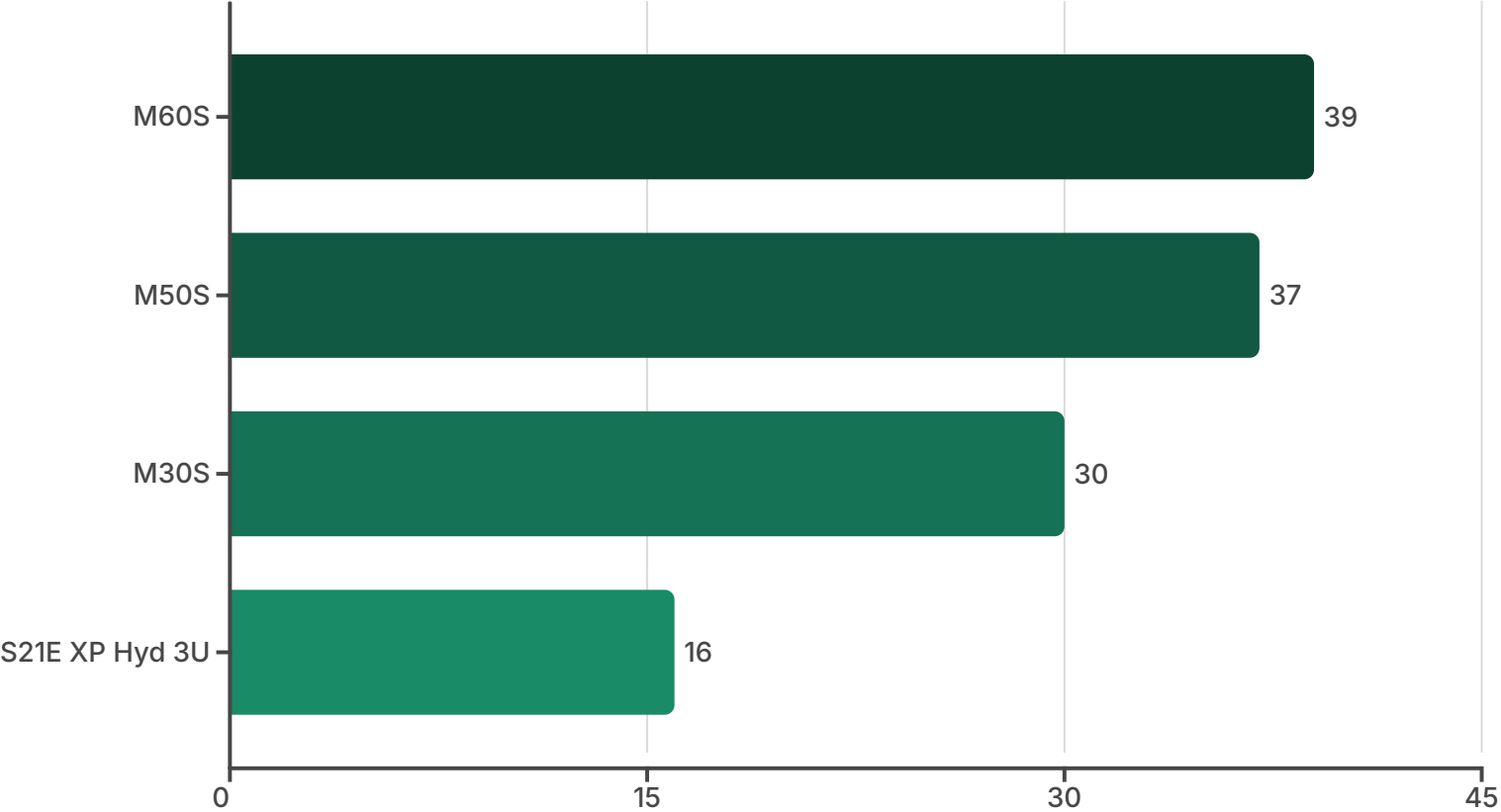
## Futures Contracts

Selective use of futures contracts for hedging against significant downside price risks

## Dollar-Cost Averaging

Long-term strategy for a portion of mined crypto assets

# ROI %



Our business model combines revenue from cryptocurrency mining with the production of valuable freshwater resources. Based on a pessimistic scenario with 1 BTC = \$85,000, our different ASIC models offer varying ROI percentages, with payback periods ranging from 2.58 to 6.30 years. The CAPEX for desalination chamber is approximately 1200 \$/kW, while CAPEX for mining hardware depends on the model, ranging from 541 to 1306 \$/kW. OPEX for maintenance infrastructure with 5 MW in capacity follows industry average from 8 to 16 \$/kWh per year.

# Technical Specifications



## Whatsminer M Series

We specialize in upgraded to water cooling ASICs from MikroBT range: Whatsminer M20S (68Th @ 3.3 kW), Whatsminer M30S (100Th @ 3.4 kW), and Whatsminer M50S (126Th @ 3.2 kW)



## Imagine8 Mobile Data Center

Product: Imagine8 - mobile Bitcoin mining data center with 1000/2000 kW power capacity, 300-600 miner capacity, featuring Imagine8 Ver 4.0 water blocks for upgrading air cooling based ASICs, modular design, cooling tower or dry cooler heat dissipation, and Smart PDU remote monitoring.

# Policy and Regulatory Alignment

## Local Compliance

- Business Licenses
- Building Permits
- Environmental compliance documentation

## Crypto Regulation

- Licensing and Registration with relevant authorities
- Anti-Money Laundering (AML) & Combating Financing of Terrorism (CFT) Compliance
- Know Your Customer (KYC) processes where applicable

## Regulatory Engagement

- Proactive communication with Country authorities
- Transparent relationships with regulators
- Adherence to evolving regulatory frameworks



# Off-Grid Potential Use Case: Desert Revitalization

via Hydro-mining heat-driven desalination

**Imagine8 Solutions** presents an integrated solution for desert revitalization by combining hydro-mining heat-driven desalination, solar-powered operations, and sustainable agriculture. Our unique value proposition lies in creating a closed-loop ecosystem that addresses water scarcity, promotes food production, and leverages renewable energy. By utilizing waste heat from on-site data centers to power seawater desalination, and then using the resulting freshwater to irrigate crops grown under solar panels (agrivoltaics), we optimize resource utilization and create a self-sustaining system.

This approach offers significant potential for positive environmental and social impact in arid regions. Key financial projections indicate strong revenue potential from agricultural produce, desalinated water sales, and potentially energy sales.





# Core Values in Detail

## Sustainability

- Harnessing 100% renewable energy sources to eliminate carbon footprint
- Implementing advanced water recycling systems that reduce consumption by 80%
- Regenerating native ecosystems to restore desert biodiversity
- Championing zero-waste principles through sustainable materials and regenerative agriculture

## Innovation

- Pioneering breakthrough technologies in heat-recovery desalination and agrivoltaics
- Cultivating an entrepreneurial environment where bold ideas thrive
- Establishing strategic partnerships with world-class research institutions

## Community Impact

- Generating meaningful employment with comprehensive skill development programs
- Building resilient local economies by prioritizing regional supply chains
- Empowering communities through participatory decision-making processes
- Transforming living standards with sustainable infrastructure and economic opportunities



# Integrated Solar Agriculture



## Shade Provision

Solar panels provide shade to crops, reducing water loss through evapotranspiration and protecting them from intense solar radiation



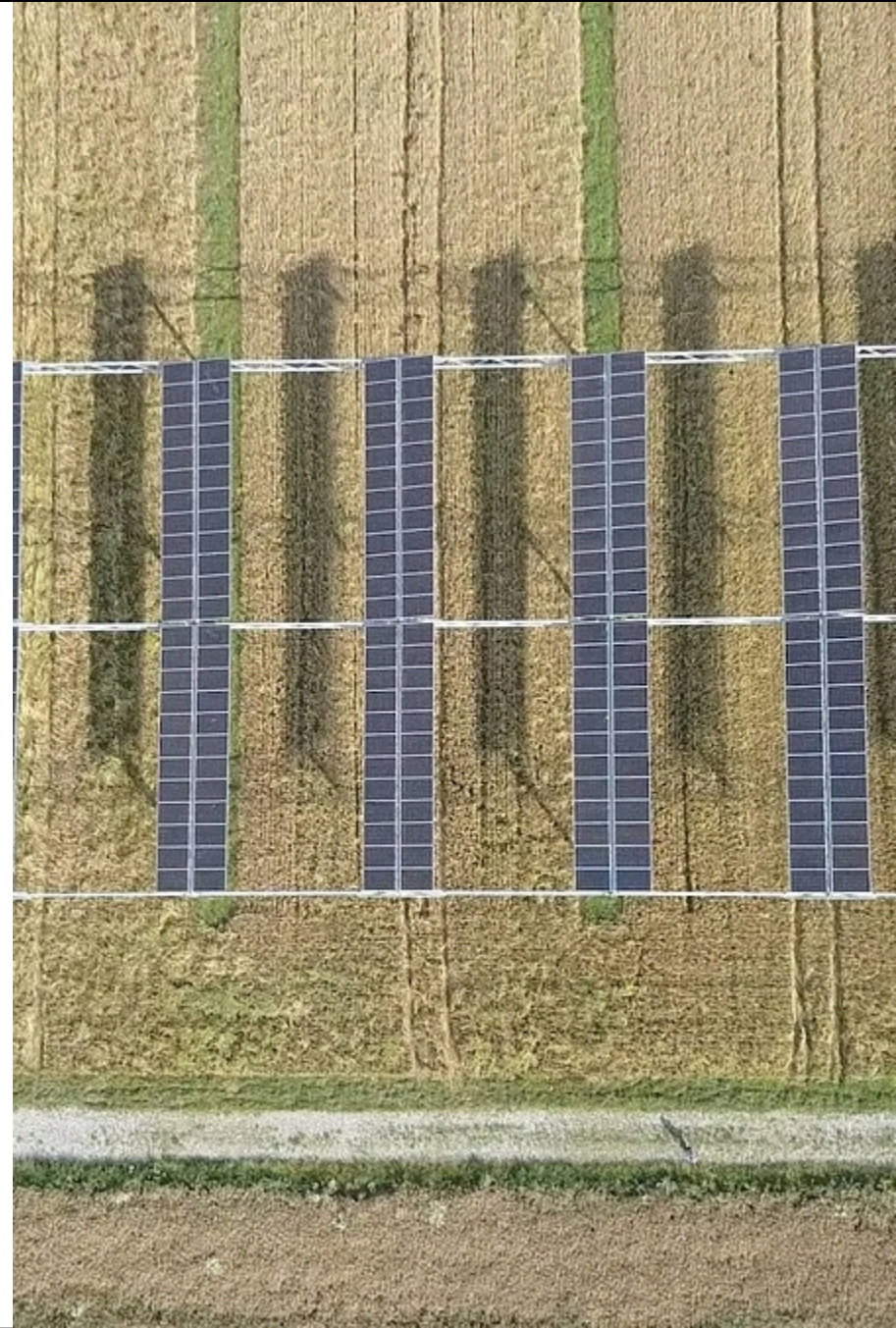
## Temperature Regulation

Shading helps maintain cooler temperatures for plants, improving their growth and reducing stress



## Microclimate Creation

The solar panels create a favorable microclimate for plant growth, promoting higher yields and improved quality



# Target Market Analysis

## Arid Regions

Countries and regions facing severe water scarcity and desertification, particularly in the Middle East, Africa, Australia, and parts of Asia

## Environmental Organizations

Non-governmental organizations (NGOs) and international agencies focused on desert restoration, water conservation, and sustainable development



## Governments

National, regional, and local governments responsible for water resource management, agriculture, and environmental protection

## Agricultural Businesses

Large-scale agricultural enterprises and cooperatives seeking sustainable irrigation solutions and increased crop yields in arid climates



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