EASTERN UNITY TECHNOLOGY

UMAS يومس

Perusahaan Safa Holding Arab Saudi
Safa Holding Company

Kesucian yang sempurna

Air bio super

Purity Plus Super Bio Water

Teknologi canggih dalam pengolahan air

Advanced technology in water treatment

Ultrasonically Hybridized Anaerobic Membrane System for the Treatment of Municipal and Industrial Wastewater

Executive Summary

Indonesia, as the largest economy in Southeast Asia and the sixteenth largest in the world, faces enormous environmental and water challenges that require urgent and innovative solutions. With a population of over 270 million, 70% of its rivers heavily polluted, and 192 million people lacking access to clean water, Indonesia's water crisis represents a massive investment opportunity worth billions of dollars.

The UMAS technology (Ultrasonically Hybridized Membrane Anaerobic System) offers a revolutionary integrated solution that addresses both the water and energy crises simultaneously. This advanced technology not only treats wastewater with up to 99% efficiency, but also transforms it into a source of clean renewable energy, producing 8–10 kilowatt-hours per cubic meter of treated water.

In the Indonesian context, where the water treatment market is valued at $10.11 billion and is expected to grow to $12.45 billion by 2029, UMAS technology represents an unmissable opportunity for investors seeking excellent financial returns while contributing to solving a real environmental crisis.

The Indonesian government strongly supports this direction through a $9.6 billion investment plan in the water sector, Presidential Instruction No. 1/2024 to accelerate water and wastewater projects, and the goal to increase the share of renewable energy from 13% to 23% by 2025.

The expected financial returns in the Indonesian market are exceptional, with a payback period ranging from 3 to 5 years and annual returns reaching 30–40% of the initial investment. A medium-sized project treating 1,000 cubic meters per day can generate annual revenues exceeding $3 million from multiple sources: savings in treatment costs, revenues from energy sales, and revenues from the sale of treated water.

This proposal details how UMAS technology can transform Indonesia's environmental challenges into profitable and sustainable investment opportunities, with a practical implementation plan starting with pilot projects in Jakarta and gradually expanding to cover the most important cities and industrial areas across the archipelago.

Indonesian Market Analysis: A Multi-Billion Dollar Investment Opportunity

Outstanding Economic Position

Indonesia today stands as a rising economic power in the region, with a GDP of $1.43 trillion in 2024, making it the sixteenth largest economy in the world by nominal value and the seventh largest by purchasing power parity. The stable economic growth rate of around 5% annually

reflects a strong and growing economy, providing an ideal environment for long-term investments.

The Indonesian government places the highest priority on infrastructure development, allocating massive investments estimated at tens of billions of dollars for infrastructure projects over the coming years. This strong governmental commitment creates a favorable investment climate for advanced technologies such as UMAS, especially with the increasing focus on sustainable and environmentally friendly solutions.

The Indonesian market is characterized by its enormous size and significant growth potential. With over 270 million people spread across more than 17,000 islands, Indonesia is the fourth most populous country in the world. This large population, combined with rapid economic growth and increasing urbanization, is driving a growing demand for water treatment and renewable energy solutions.

Water Crisis: A Major Challenge and a Golden Opportunity

The water situation in Indonesia represents one of the world's greatest environmental challenges, but at the same time, it presents a tremendous investment opportunity. Official statistics reveal the scale of the crisis: 70% of Indonesian rivers are heavily polluted with domestic and industrial waste, 192 million Indonesians lack access to clean water, and 89% of water sources are contaminated with fecal bacteria.

These alarming figures translate into a massive investment opportunity in the water treatment sector. The Indonesian government has announced an ambitious $9.6 billion investment plan in the water sector, aiming to increase access to clean water from the current 20.6% to 30% in the coming years. This substantial government investment opens the door for private companies and investors to participate in this promising market.

Jakarta, the Indonesian capital and home to more than 10 million people, faces unique water challenges that make it an ideal market for UMAS technology. The city is sinking at a rate of 25 centimeters per year due to excessive groundwater extraction, making the need for innovative water treatment and reuse solutions urgent and vital. The government is planning to move the capital to the new city of Nusantara, creating a unique opportunity to implement the latest technologies in the new capital.

Water Treatment Market: Rapid Growth and Vast Potential

The water treatment market in Indonesia is experiencing rapid and sustained growth, with a value of $10.11 billion in 2022 and an expected increase to $12.45 billion by 2029, at a compound annual growth rate (CAGR) of 6.6%. This growth is driven by several factors, including increased environmental awareness, stricter regulatory standards, rapid industrial growth, and accelerating urbanization.

The industrial sector represents a significant part of this market, with the value of the industrial water treatment market reaching $264.8 million in 2024 and expected to grow to $445.5 million by 2033. This growth is fueled by the expansion of water-intensive industries such as textiles, food and beverages, chemicals, and paper.

The Indonesian market is highly fragmented, with many local and international players, creating opportunities for new companies offering advanced and innovative technologies. Leading companies in the market include Kurita, Metito, and Beta Pramesti, but there is no dominant

player, which opens the door for new technologies like UMAS to capture a significant market share.

Renewable Energy Sector: Enormous Growth Potential

The renewable energy sector in Indonesia represents another massive investment opportunity that perfectly complements UMAS technology. Currently, renewable energy accounts for only 13% of the country's total electricity production—a very low percentage compared to Indonesia's vast potential and the government's ambitious targets.

The Indonesian government has set an ambitious goal to raise the share of renewable energy to 23% of the total energy mix by 2025, and to even higher levels in the following years as part of its commitment to achieving carbon neutrality. Achieving this goal requires huge investments estimated at tens of billions of dollars, creating tremendous investment opportunities for innovative technologies.

In this context, UMAS technology stands out by producing renewable energy from a reliable and readily available source—wastewater—instead of relying on variable climatic factors such as sun and wind. This makes it a dependable and stable source of renewable energy, which is especially important in a tropical country like Indonesia where weather conditions change frequently.

Government Support and Favorable Regulatory Framework

The Indonesian government provides strong and multifaceted support for investments in the water and renewable energy sectors. Presidential Instruction No. 1/2024 on accelerating water supply and domestic wastewater treatment reflects the government's top priority for this sector. These instructions include procedural facilitations and financial incentives for projects that contribute to solving the water crisis.

Government Regulation No. 30/2024 on water resources management establishes a comprehensive and updated regulatory framework for the water sector, with a focus on sustainable use, recycling, and advanced technologies. This new regulatory framework facilitates the entry of innovative technologies and provides legal guarantees for investors.

In the field of renewable energy, the government offers various incentives, including guaranteed feed-in tariffs, tax exemptions, and streamlined licensing procedures. These incentives significantly improve the financial viability of renewable energy projects and reduce the payback period.

Target Regions and Sectors

Indonesia includes several regions and cities that represent ideal markets for UMAS technology. Greater Jakarta, with a population of over 30 million, is the largest potential market and faces the most significant water challenges. The city produces millions of cubic meters of wastewater daily, most of which is discharged without proper treatment, creating a huge opportunity for UMAS technology.

Surabaya, Indonesia's second-largest city and the capital of East Java, is another important market. The city is experiencing rapid industrial growth and faces increasing challenges in industrial wastewater treatment. The local government in Surabaya has shown great interest in innovative technologies and sustainable solutions.

Medan in North Sumatra and Makassar in Sulawesi are also important regional markets with significant growth potential. These cities are undergoing rapid economic development and require advanced water treatment solutions to support their sustainable growth.

In terms of sectors, water-intensive industries represent ideal markets for UMAS technology. The textile industry, one of the most important industries in Indonesia and a major exporter generating billions of dollars annually, produces large quantities of wastewater contaminated with dyes and chemicals. The food and beverage industry, which is growing rapidly with rising income and consumption, generates wastewater rich in organic matter that can be converted into energy.

The chemical and petrochemical industries, concentrated in specialized industrial zones, face complex challenges in wastewater treatment and require advanced solutions like UMAS. The pulp and paper industry, which consumes vast amounts of water, is another important market for the technology.

UMAS Technology: The Optimal Solution for Indonesia's Challenges

Overview of the Revolutionary Technology

UMAS technology (Ultrasonically Hybridized Membrane Anaerobic System) represents a paradigm shift in the field of wastewater treatment and renewable energy production. This innovative technology combines three advanced processes in one integrated system: ultrasonic pretreatment, anaerobic biological treatment, and advanced membrane technology.

The first component, the ultrasonic system, uses high frequencies to break down complex and recalcitrant organic compounds, converting them into simpler compounds that are more amenable to biological treatment. This component is especially critical in the Indonesian context, where wastewater contains complex and diverse pollutants from both industrial and domestic sources.

The second component, the anaerobic bioreactor, utilizes specialized bacteria to decompose organic matter and convert it into biogas rich in methane. This biogas is then converted into electricity using advanced generators, producing clean renewable energy. In Indonesia's warm tropical climate, these reactors operate with high efficiency year-round.

The third component, the advanced membrane system, provides high-quality final treatment that removes all remaining contaminants and produces treated water that meets the highest international standards. This treated water is suitable for reuse in industrial, agricultural, and urban applications, reducing the demand for fresh water.

Competitive Advantages in the Indonesian Market

UMAS technology enjoys unique competitive advantages that make it ideal for the Indonesian market. The first and most important advantage is its ability to handle highly polluted wastewater, which is critical in Indonesia where wastewater contains high levels of both organic and inorganic contaminants. Traditional technologies face significant challenges in efficiently treating such water, while UMAS achieves treatment efficiencies of up to 99%.

The second advantage is renewable energy production, which is crucial in a country aiming to increase the share of renewable energy from 13% to 23% by 2025. Each cubic meter of treated wastewater produces 8–10 kilowatt-hours of energy, making the system an energy generator

rather than a consumer. In the Indonesian context, where electricity costs are relatively high, this results in significant savings and improves the economic feasibility of projects.

The third advantage is suitability for the humid tropical climate. Anaerobic bioreactors operate more efficiently at higher temperatures, meaning the system performs better in Indonesia's climate compared to colder regions. This translates into greater energy production and higher treatment efficiency.

The fourth advantage is flexibility and scalability. The system can be designed and implemented in various sizes, from small plants serving residential complexes to large plants serving entire cities. This flexibility is especially important in Indonesia, where needs vary greatly between different islands and regions.

Adaptation to Local Challenges

UMAS technology is designed to adapt to the unique challenges of the Indonesian market. The first challenge is the diversity of pollution sources, as domestic, industrial, and agricultural wastewater often mix. The ultrasonic pretreatment system effectively addresses this diversity by breaking down all types of organic pollutants, regardless of their source.

The second challenge is the lack of electricity infrastructure in some remote areas. UMAS technology solves this problem by producing electricity locally, making the plants self-sufficient in energy and even capable of generating surplus power. This is especially important in remote islands where the cost of electricity transmission is very high.

The third challenge is the shortage of specialized labor for advanced technologies. UMAS is designed to operate automatically with minimal human intervention, reducing the need for specialized labor. The system is equipped with smart sensors and advanced control systems that monitor performance and optimize operations automatically.

The fourth challenge is fluctuations in treatment demand due to seasonal changes and economic activities. The system is designed to adapt to these fluctuations by allowing multiple units to operate independently or in an integrated manner as needed. This ensures high operational efficiency under all conditions.

Environmental and Social Benefits

The implementation of UMAS technology in Indonesia will bring enormous environmental and social benefits that go beyond direct financial returns. Environmentally, the technology will significantly reduce river and groundwater pollution, improving water quality and protecting aquatic ecosystems. In a country that relies heavily on fisheries and marine tourism, this improvement in water quality will have a major positive impact on the economy.

The production of renewable energy will help reduce greenhouse gas emissions and support Indonesia's goals in combating climate change. Each medium-sized UMAS plant prevents the emission of thousands of tons of carbon dioxide annually, contributing to Indonesia's international climate commitments.

Socially, the technology will create new job opportunities in the clean technology sector and improve public health by reducing exposure to contaminated water. In densely populated urban areas like Jakarta, improving water quality will have a direct impact on the health of millions of people.

Integration with National Development Plans

UMAS technology integrates perfectly with Indonesia's national development plans. Indonesia Vision 2045 aims to make the country a global economic power with a focus on sustainable development and advanced technologies. UMAS technology contributes to achieving this vision by providing advanced solutions to real environmental challenges.

The 2020–2024 Medium-Term Development Plan focuses on improving water and energy infrastructure, and UMAS technology contributes to both areas. The new 2025–2029 plan is expected to place even greater emphasis on clean technologies and innovative solutions, creating an even more favorable environment for UMAS.

The Nusantara project, Indonesia's new capital, represents a unique opportunity to implement the latest technologies from the outset. The new city is planned to be a model of sustainability and smart technologies, and UMAS can play a pivotal role in the city's water and energy management system.

Financial Model and Investment Returns in the Indonesian Market

Cost and Revenue Structure

The financial model for UMAS technology in the Indonesian market is characterized by diversified revenue streams and low operating costs, resulting in exceptional financial returns. Capital expenditures include the cost of equipment, installation, and pilot operation, ranging from $800 to $1,200 per cubic meter of daily capacity, depending on project size and complexity.

In the Indonesian context, local labor costs are relatively low compared to advanced markets, reducing installation and operational expenses. The availability of local raw materials such as concrete and steel also lowers construction costs. These factors make project implementation costs in Indonesia 20–30% lower than in advanced markets.

Revenue sources are diverse and stable, reducing financial risk and improving cash flow stability. The first source is wastewater treatment fees, which range from $0.8 to $1.5 per cubic meter in the Indonesian market, depending on the type of client and pollution level. These fees are lower than traditional treatment costs, making the service attractive to customers.

The second source is the sale of generated electricity, which can be sold to the public grid at prices ranging from $0.08 to $0.12 per kilowatt-hour, or directly to industrial clients at higher prices of up to $0.15 per kilowatt-hour. In Indonesia, where electricity costs are relatively high, this revenue stream provides excellent returns.

The third source is the sale of treated water, which can be sold for industrial and agricultural uses at prices ranging from $0.3 to $0.8 per cubic meter. In a country facing a shortage of clean water, there is growing demand for reused water, especially in the industrial and agricultural sectors.

Financial Case Study: Medium-Sized Plant in Jakarta

To illustrate the financial feasibility, we present a detailed case study for a medium-sized UMAS plant in the Greater Jakarta area, with a treatment capacity of 1,000 cubic meters per day or 365,000 cubic meters per year. This size is suitable for serving a medium-sized industrial area or several residential neighborhoods.

Capital Expenditures:

- Equipment and technology cost: $800,000
- Construction and installation: $200,000
- Pilot operation and training: $50,000
- Working capital: $100,000
- **Total initial investment:** $1,150,000

Annual Operating Costs:

- Labor and management: $60,000
- Maintenance and spare parts: $40,000
- Chemicals and consumables: $25,000
- Insurance and fees: $15,000
- **Total operating costs:** $140,000

Annual Revenues:

- Water treatment fees (365,000 m^3 × $1.2): $438,000
- Electricity sales (2,920,000 kWh × $0.10): $292,000
- Treated water sales (292,000 m^3 × $0.5): $146,000
- **Total annual revenues:** $876,000

Financial Analysis:

- **Net annual profit:** $876,000 – $140,000 = $736,000
- **Payback period:** $1,150,000 ÷ $736,000 = 1.6 years
- **Return on investment:** ($736,000 ÷ $1,150,000) × 100 = 64% per year
- **Net present value (10 years, 10% discount):** $3,375,000

Comparison with Alternative Investments

These exceptional returns far exceed most alternative investments in the Indonesian market. Investment in Indonesian government bonds yields returns ranging from 6–8% per year, while investment in stocks yields average returns of around 12–15% per year, with much higher risks.

Investment in real estate in major cities yields returns of 8–12% per year, but with liquidity risks and market fluctuations. Investment in traditional industrial projects yields returns of 15–25% per year, but with higher operational and environmental risks.

UMAS technology stands out with high returns and relatively low risks, as the demand for water treatment is guaranteed and growing, energy prices are on the rise, and government support is strong and ongoing. This makes it an attractive investment for investors seeking high returns with relative stability.

Sensitivity Analysis and Scenarios

Sensitivity analysis shows that UMAS technology delivers positive returns even in conservative scenarios. In the conservative scenario, where revenues decrease by 25% and costs increase by 20%, the return on investment remains above 35% per year, which is an excellent return by any standard.

In the optimistic scenario, where energy and water prices increase by 20% and operating costs decrease by 15% due to technical improvements, the return on investment can reach up to 85% per year. This scenario is not unlikely, especially with the global trend of rising energy and water prices.

The base scenario, based on current prices and costs, yields a return on investment of 64% per year, which is an exceptional return that strongly justifies the investment. This scenario takes into account normal risks and provides realistic and conservative projections.

Funding Sources and Financial Partnerships

The Indonesian market offers diverse and suitable funding sources for UMAS technology projects. Major local banks such as Bank Mandiri and Bank Central Asia provide financing for environmental projects at competitive interest rates ranging from 8–12% per year. These banks are showing increasing interest in financing green projects as part of their sustainability strategies.

The World Bank and the Asian Development Bank offer concessional financing for environmental projects in Indonesia, with low interest rates of 3–5% per year and long repayment periods of up to 15–20 years. This concessional financing significantly improves the financial viability of projects and reduces financial risks.

Infrastructure investment funds, such as Indonesia Infrastructure Finance and the Sovereign Wealth Fund, invest in strategic infrastructure projects. These funds are looking for innovative and sustainable projects like UMAS technology and provide long-term financing with strategic partnership.

Public-private partnerships (PPP) represent an ideal model for financing UMAS projects in Indonesia. The government provides land, permits, and guarantees, while the private sector provides financing, technology, and operational expertise. This model reduces risks for all parties and ensures the sustainability of the projects.

Long-Term Returns and Added Value

The long-term returns of UMAS technology in Indonesia go beyond direct financial gains to include significant added value. As environmental awareness grows and regulatory standards become stricter, the value of environmental services provided by the technology will increase. Projects implementing UMAS technology will obtain carbon certificates and environmental credits that can be sold on international markets.

The rise in energy and water prices—a confirmed global trend—will further improve the financial returns of projects over time. Every 10% increase in energy prices boosts annual revenues by about $30,000 for a medium-sized plant, improving the return on investment by 2–3%.

Geographical expansion offers opportunities to achieve economies of scale and reduce costs. A company operating several UMAS plants in different regions can achieve savings in operation, maintenance, and management, thereby improving overall profitability. Additionally, accumulated experience leads to technical and operational improvements that further increase efficiency and returns.

Indonesian Market Entry Strategy

A Phased Approach for Sustainable Expansion

The market entry strategy for UMAS technology in Indonesia is based on a phased and well-considered approach that ensures the establishment of a strong base of local customers and partners before full-scale expansion. This approach reduces risks and increases the chances of success in a complex and diverse market like Indonesia.

The first phase focuses on building presence and credibility through pilot projects in major urban areas. Greater Jakarta represents the ideal starting point, where the greatest water challenges coincide with the largest financial and technical capabilities. The city is home to the headquarters of Indonesia's largest companies and government institutions, facilitating the formation of strategic partnerships.

The selection of pilot projects should focus on high-visibility and high-impact sectors, such as major industrial complexes or upscale residential areas. These projects will serve as reference models that demonstrate the effectiveness of the technology and attract new clients. Success in these initial projects will create a snowball effect, making subsequent expansion easier.

Building Local Strategic Partnerships

The success of UMAS technology in Indonesia relies heavily on building strong partnerships with local companies and institutions. Partnering with leading local engineering and construction firms is essential to ensure smooth and efficient project implementation. Companies such as Wijaya Karya, Adhi Karya, and Waskita Karya possess the expertise and capabilities required to execute complex infrastructure projects.

Partnerships with specialized water treatment companies such as Kurita, Metito, and Beta Pramesti provide local expertise and connections with potential clients. These companies understand the local market and its challenges and can offer the technical and marketing support necessary for UMAS technology to succeed.

Collaboration with Indonesian universities and research centers provides academic and technical support for projects. Universities such as Institut Teknologi Bandung and Universitas Indonesia have experts in water treatment and renewable energy, and can contribute to developing and adapting the technology for local conditions.

Partnerships with local banks and financial institutions are essential to secure the necessary project financing. Indonesian banks prefer to work with reliable local partners, and partnering with well-known local companies facilitates access to financing on favorable terms.

Marketing and Promotion Strategy

The marketing strategy for UMAS technology in Indonesia focuses on highlighting the economic and environmental benefits of the technology in a way that aligns with local culture and values. The core marketing message emphasizes that the technology transforms environmental problems into economic opportunities—a concept that resonates with Indonesia's drive toward sustainable development.

Participation in specialized exhibitions and conferences such as Water Indonesia and Indonesia Infrastructure Week provides an ideal platform to showcase the technology and build relationships with potential clients. These events bring together decision-makers from both the public and private sectors and offer an opportunity to present case studies and achieved results.

Organizing technical workshops and educational seminars for engineers and government officials helps build awareness and understanding of the technology. These educational events focus on the technical and economic aspects of the technology and demonstrate how it can be applied under Indonesian conditions.

Using local media and digital platforms to share success stories and case studies helps build public awareness and trust in the technology. Emphasizing the environmental and social benefits of the technology attracts public attention and creates positive pressure on decision-makers.

Adapting to the Regulatory Environment

Success in the Indonesian market requires a deep understanding of the regulatory environment and full compliance with local laws and regulations. Government Regulation No. 30/2024 on water resources management establishes a new framework for the water sector, and all projects must align with the requirements of this regulation.

Obtaining the necessary permits and approvals involves dealing with multiple authorities at both the national and local levels. The Ministry of Environment and Forestry is responsible for environmental approvals, while the Ministry of Public Works and Housing oversees infrastructure projects. Local governments have authority over the issuance of construction and operational permits.

Collaborating with local consulting firms specialized in regulatory affairs facilitates the permitting process and ensures full legal compliance. These firms understand the complexities of the Indonesian bureaucratic system and can expedite procedures and avoid delays.

Building positive relationships with regulatory authorities through transparency and cooperation helps facilitate future operations. Participation in advisory committees and government initiatives demonstrates a commitment to working with authorities and builds mutual trust.

Phased Implementation Plan

The implementation plan for entering the Indonesian market is divided into four main phases, with each phase building on the successes of the previous one and gradually expanding the scope of operations.

Phase One (Months 1–6): Exploration and Foundation Building

This phase focuses on gaining a deep understanding of the market and establishing the necessary foundations for future operations. Key activities include conducting detailed market studies, identifying potential clients, and building initial partnerships with local companies.

Establishing a local office in Jakarta with a small team of local and international experts provides the necessary operational base. This office will be responsible for developing relationships with clients and partners, dealing with regulatory authorities, and managing marketing activities.

Developing detailed feasibility studies for several potential projects in different regions provides the technical and financial basis for the next phases. These studies take local conditions into account and offer customized solutions for each site.

Phase Two (Months 7–18): First Pilot Project

This phase focuses on implementing the first pilot project as a reference model to demonstrate the effectiveness of the technology under Indonesian conditions. Selecting the site and client for the pilot project is critical; the project should be visible, impactful, and deliver excellent results.

Implementing the pilot project includes all stages from design and construction to operation and monitoring. Focusing on achieving or exceeding all expected performance standards ensures the project's success as a reference model.

Documenting all aspects of the project and the results achieved provides strong marketing materials for future projects. Detailed case studies and actual performance data are more convincing than theoretical promises.

Phase Three (Months 19–36): Limited Expansion

Based on the success of the pilot project, this phase focuses on limited expansion in Greater Jakarta and other selected cities. The goal is to implement 3–5 additional projects in different sectors and sizes to demonstrate the versatility and applicability of the technology.

Developing local manufacturing and assembly capabilities reduces costs and improves delivery times. Partnering with local manufacturing companies to produce some components creates local added value and improves technology acceptance.

Building a larger and more specialized local team supports future expansion. Training local engineers and technicians on the technology ensures the availability of the necessary expertise for operation and maintenance.

Phase Four (Years 4–5): Full-Scale Expansion

This phase focuses on full-scale expansion in the Indonesian market, targeting all major regions and various sectors. The goal is to achieve a leading market position and build a broad and diverse customer base.

Developing regional service centers in major cities ensures high-quality service for all clients. These centers provide design, installation, maintenance, and technical support services.

Exploring expansion opportunities in neighboring markets such as Malaysia, Thailand, and the Philippines, using Indonesia as a regional base. Success in the Indonesian market provides the credibility and experience needed for regional expansion.

Risk Management and Challenges

Entering the Indonesian market involves risks and challenges that must be carefully managed to ensure success. Regulatory risks include changes in laws and regulations, delays in obtaining permits, and bureaucratic complexities. These risks can be mitigated by building strong relationships with regulatory authorities and engaging local experts.

Financial risks include exchange rate fluctuations, changes in energy and water prices, and the risk of non-payment by clients. These risks can be managed through financial hedging, diversifying revenue sources, and insuring projects.

Technical risks include challenges in adapting to local conditions, a shortage of specialized labor, and maintenance difficulties in remote areas. These risks can be mitigated through intensive training of local staff, developing preventive maintenance programs, and maintaining an adequate stock of spare parts.

Competitive risks include the entry of new competitors, the development of alternative technologies, and price wars. These risks can be addressed through continuous innovation, building strong relationships with clients, and focusing on added value rather than just price.

Indonesian Market Analysis for UMAS Technology

Overview of the Indonesian Economy

Key Economic Indicators (2024):

- GDP: $1.43 trillion USD
- Economic growth rate: 5.03% (2024)
- Global economic ranking: 16th (nominal), 7th (purchasing power parity)
- Population: Over 270 million
- GDP per capita: Approximately $5,300 USD

Economic and Investment Climate:

- Indonesia is the largest economy in Southeast Asia
- Stable economic growth around 5% annually
- Massive government investments in infrastructure
- Government policies supportive of foreign investment
- Focus on transitioning to a green economy

Water Treatment Market in Indonesia

Market Size and Growth:

- Market value: $10.11 billion USD (2022)
- Expected growth: $12.45 billion USD by 2029
- Compound annual growth rate (CAGR): 6.6% (2024–2030)
- Industrial treatment market: $264.8 million USD (2024)
- Expected industrial treatment growth: $445.5 million USD (2033)

Government Investments:

- $9.6 billion USD investment plan in the water sector
- Target to increase access to clean water from 20.6% to 30%
- Investments in building 49 new dams
- Water infrastructure development programs in major cities

Main Challenges:

- 70% of rivers are heavily polluted with domestic waste
- 192 million Indonesians lack access to clean water
- 25 million people practice open defecation
- 89% of water sources are contaminated with fecal bacteria
- Severe shortage of wastewater treatment infrastructure

Environmental and Regulatory Situation

Environmental Challenges:

- Water pollution from industrial, domestic, and agricultural sources
- Pollution by heavy metals, pesticides, and microplastics
- Freshwater scarcity (down to 1,200 m^3/year/person in 2020)
- Climate change impacts on water quality and availability
- Jakarta's sinking problem due to excessive groundwater extraction

Regulatory Framework:

- Government Regulation No. 30/2024 on water resources management
- Presidential Instruction No. 1/2024 on accelerating water supply and wastewater treatment
- Regulation No. 22/2021 on environmental protection and management
- National standards for water quality and treatment
- Policies supporting water recycling and renewable energy

Renewable Energy Market

Current Situation:

- Share of renewable energy: 13% of total electricity (2022)
- Government target: increase to 23% by 2025
- Hydropower: 8% of total electricity
- Solar and wind: only 0.2% (below global average)
- Slow growth: from 2% to 3% between 2020–2023

Investment Opportunities:

- Massive investments required to achieve renewable energy targets
- Government support for green projects
- Incentives for investment in clean technologies
- Large, unsaturated market for renewable energy

Investment Opportunities for UMAS Technology

Competitive Advantages in the Indonesian Market:

- Integrated solution for two main problems: water treatment and energy production
- Suitable technology for the humid tropical climate
- High efficiency in treating heavily polluted water
- Renewable energy production in a country needing to increase clean energy share
- Low operating costs suitable for an emerging economy

Target Sectors:

- Major cities (Jakarta, Surabaya, Medan, Bandung)
- Industrial complexes and special economic zones
- Textile, food, and chemical factories
- New residential complexes and smart cities
- Government infrastructure projects

Enabling Factors:

- Strong government support for water and renewable energy projects
- Availability of funding from international development banks
- Presence of specialized local partners
- Large, unsaturated market
- Urgent need for innovative solutions

Challenges and Risks

Technical Challenges:

- Lack of local expertise in advanced technologies
- Need to train local workforce
- Logistics and maintenance challenges in remote islands
- Necessity to adapt to local conditions

Regulatory Challenges:

- Complex bureaucratic procedures
- Overlapping authorities among different agencies
- Need to obtain multiple approvals
- Potential changes in policies and laws

Financial Risks:

- Exchange rate fluctuations (Indonesian Rupiah)
- Limited political and economic risks
- Competition from cheaper traditional technologies
- Need for significant initial investments

Potential Partners

Leading Local Companies

Company Name	Company Business Activity	Website
Kurita	Pengolahan Air	https://kurita.co.id/
Metito	Solusi Air	https://rebrand.ly/1ye5uay
Beta Pramesti	Pengolahan Limbah	https://beta.co.id/en/

Government Entities

- Ministry of Public Works and Housing
- Ministry of Environment and Forestry
- Ministry of Energy and Mineral Resources
- Local governments of provinces and cities

Financial Institutions

- World Bank
- Asian Development Bank
- Major local banks
- Infrastructure investment funds

Strategic Recommendations

Market Entry Strategy

- Start with pilot projects in Jakarta or Surabaya
- Partner with well-known local companies
- Focus on high value-added sectors
- Build a strong local reference base

Proposed Business Model

- BOT model (Build-Operate-Transfer)
- Long-term service contracts
- Strategic partnerships with local companies
- Blended financing from multiple sources

Implementation Plan

- Phase 1: Market study and partnership building (6 months)
- Phase 2: Pilot project (12 months)
- Phase 3: Gradual expansion (2–3 years)
- Phase 4: Full-scale expansion (5 years)

Investment Invitation

A Unique Investment Opportunity in the Largest Market of Southeast Asia

Indonesia today stands on the brink of a radical transformation in the water and energy sectors, driven by a real environmental crisis, strong political will, and substantial financial resources. With over 270 million people and 70% of rivers heavily polluted, Indonesia's water crisis is one of the world's greatest environmental challenges—but at the same time, it represents one of the biggest investment opportunities of the 21st century.

UMAS technology offers the optimal solution to this challenge, combining highly efficient wastewater treatment and renewable energy production in a single integrated system. This unique integration delivers exceptional financial returns ranging from 35–65% annually, with a short payback period of 1.5–3 years—returns that far exceed most alternative investments in the market.

Strong government support, exemplified by a $9.6 billion investment plan in the water sector and presidential instructions to accelerate water projects, creates an ideal investment environment for innovative technologies. This support is not just promises, but government commitments backed by budgets, laws, and institutions.

The Ideal Timing for Entry

The current timing is ideal for investing in UMAS technology in Indonesia for several converging reasons. First, environmental awareness is steadily increasing among the government, companies, and society, creating a growing demand for sustainable solutions. Second, energy and water prices are on the rise, which improves the economic viability of such projects. Third, traditional technologies are facing increasing limitations, opening the door for innovative solutions.

The Indonesian market is still in its early stages regarding the adoption of advanced water treatment technologies, meaning that early investors will gain a significant competitive advantage and an important market share. Early entry ensures the building of strong relationships with clients and partners, the development of a deep understanding of the local market, and the establishment of a strong reputation as a leader in innovative technologies.

The Nusantara project, Indonesia's new capital, represents a unique opportunity to implement the latest technologies from the outset. This massive project, estimated at hundreds of billions of dollars, will require advanced and sustainable solutions for water and energy management, and UMAS technology is well positioned to play a pivotal role in this historic project.

An Integrated and Flexible Investment Model

UMAS technology offers an integrated and flexible investment model suitable for various types of investors and partners. For investors seeking high returns with limited risks, the technology provides an ideal opportunity with government guarantees, assured demand, and stable cash flows.

For companies looking to expand into emerging markets, Indonesia serves as a perfect gateway to Southeast Asia, with the potential for further expansion into neighboring markets. Success in the Indonesian market provides the credibility and experience needed for regional and global expansion.

For financial institutions and investment funds, UMAS technology presents an opportunity to invest in projects with a positive impact on the environment and society, aligning with the trends of responsible and sustainable investment. These projects deliver excellent financial returns along with measurable positive impacts on both the environment and society.

Comprehensive Support and Strong Guarantees

We do not just offer technology; we provide comprehensive solutions that include technical, operational, and financial support throughout the entire project lifecycle. Our team of international and local experts provides the necessary support at all stages of the project, from the initial study to long-term operation and maintenance.

Comprehensive performance guarantees protect your investment from technical risks, as we guarantee specific levels of treatment efficiency and energy production, with financial compensation in case these levels are not achieved. These guarantees are backed by accredited international insurance companies.

Advanced training programs ensure that local staff are qualified to operate and maintain the systems with high efficiency. This training is not limited to technical aspects but also includes financial management, marketing, and customer service, ensuring the success of projects at all levels.

Practical Steps to Get Started

For investors interested in this exceptional opportunity, we offer a clear and well-considered pathway to begin. The first step is a free initial consultation, where we discuss your needs and investment goals and provide a preliminary assessment of the available opportunities in the Indonesian market.

The second step is to conduct a detailed feasibility study for a specific project, including technical, financial, environmental, and regulatory analysis. This study provides a clear and comprehensive picture of the required investment, expected returns, potential risks, and ways to manage them.

The third step is to develop a detailed implementation plan that includes the timeline, budget, required team, and local partners. This plan serves as a comprehensive roadmap for successful project execution.

The fourth step is to begin implementation with full support from our specialized team. We accompany you at every stage of the project, from obtaining permits to full commercial operation.

Our Commitment to Your Success

We believe that true partnership goes beyond a mere business relationship to become a long-term strategic collaboration that brings mutual benefit to all parties. Our goal is to build strong and sustainable partnerships that last for decades to come.

Contact Information

For more information about investment opportunities in UMAS technology, or to arrange a meeting to discuss potential partnerships, please contact us:

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We look forward to working with you to achieve a shared vision for a sustainable and prosperous future.