Resilience Challenge Fund Guidelines

Introduction

This document provides detailed challenge statements for the three focus areas (Cognitive Cities; Health & Life Sciences; Environmental Science) of the Dubai Resilience Challenge Fund. These statements are designed to guide applicants in developing competitive proposals that address Dubai's most critical resilience needs.

What This Grant Round Is About

This grant round will fund applied research and pilot projects that make Dubai's systems more resilient in real life, not just on paper.

Priority will be given to projects that address clearly evidenced resilience gaps or vulnerabilities in Dubai's systems, rather than generic or purely opportunity-driven topics.

We want projects that:

- Start from a real resilience problem in Dubai, meaning a clearly evidenced issue where one or more Dubai entities are already experiencing, or can credibly expect, measurable operational disruption, cost, or risk, for example, keeping power, cooling, and critical infrastructure services running during peak demand, protecting outdoor workers and other high-risk groups, reducing water and energy use while maintaining service quality, preventing cascading service failures during disruptions, or safeguarding critical infrastructure and ecosystems.
- Are led by a Principal Investigator (PI) from a Dubai-based university or research institution and co-designed with at least one Dubai government and/or industry partner (see partnership requirement section for full detail).
- Deliver and test a working solution or prototype in an operational environment in Dubai within one to three years.
- Show a credible path to adoption (for example, into operations, practice, or policy) or commercialisation after the grant ends.

> *For this grant round we are not funding theory-only research or generic applications that are not tied to a real deployment in Dubai.*

How the Three Challenge Areas Work Together

Resilience challenges are inherently interdisciplinary. Many issues such as power and cooling reliability, transport and mobility, air quality, water security, food security, urban flooding, ecosystem degradation, and urban cooling could logically fit under more than one of the three challenge areas.

To maximise portfolio coverage while avoiding duplication:

- Each issue is assigned one primary "home" challenge area in these statements (Cognitive Cities; Health & Life Sciences; Environmental Science).
- Within each challenge area, we also define several focus areas (for example, predictive maintenance, air quality and health, circular materials, etc.).

Applicants must:

- Select one primary challenge area (i.e. Cognitive Cities, Health & Life Sciences, or Environmental Science) under which to submit their proposal; and
- Identify one primary focus area within that challenge as the main lens for their project.

Each proposal should clearly identify at least one primary focus area from the lists provided under the three challenge areas and go into sufficient depth on that area. These focus areas reflect priority resilience issues identified with Dubai stakeholders and through analysis of Dubai's systems, but they are illustrative rather than exhaustive. Projects may also cover more than one focus area where this is genuinely needed and well-justified. What matters is a coherent, focused design, sufficient depth of work, and a clear pathway to real-world deployment or adoption in Dubai, not the number of areas covered. Applicants may propose different methods or technologies from those mentioned in the focus areas, as long as they achieve comparable outcomes.

Cross-domain collaborations and methods are welcome where they add clear value, but proposals must remain firmly anchored in one primary challenge area and go into sufficient depth within at least one focus area.

> *Proposals that spread effort thinly across multiple domains or focus areas, without a strong rationale or sufficient depth in any one area, are unlikely to be competitive.*

Issues described under one challenge area can still be tackled using expertise or methods from other domains, as long as the proposal is submitted under a single primary challenge area and includes clear, appropriate objectives and metrics that make its contribution to that area explicit.

> *Proposals that use cross-domain methods but cannot clearly explain how they strengthen resilience in their chosen primary challenge area are unlikely to be competitive.*

The fact that an issue appears under one challenge area does not prevent interdisciplinary approaches where they are clearly needed and add value. Review panels will equally value proposals that are strongly focused within a single domain and proposals that use cross-domain methods, as long as they clearly strengthen resilience in the chosen primary challenge area. Proposals will not receive higher scores simply for involving multiple domains; what matters is a clear problem definition, strong Dubai relevance, and depth and quality of the proposed work. Systemically important resilience problems that naturally span multiple domains (for example, urban flooding that combines infrastructure, health, and environmental dimensions) are welcome and encouraged, but must still identify one primary challenge area and focus area for submission.

In addition to system level resilience, Dubai is also working to strengthen resilience at the level of households and communities. Six core needs are particularly relevant in this context: food security, water sovereignty, energy stability, shelter and medicine, digital resilience, and psychological wellbeing. Projects under this Fund may address one or more of these needs, where doing so contributes clearly to one of the three challenge areas, for example, household level food or water resilience under the Environmental Science challenge, home and building level energy and thermal stability under the Cognitive Cities challenge, or community based mental health and wellbeing interventions under the Health & Life Sciences challenge. Such projects will be assessed using the same criteria as other proposals, including Dubai relevance, robustness of evidence and methods, and a credible pathway from proof of concept to pilot deployment and adoption.

What We Are Looking For

Proposals should:

- Tackle one clearly defined resilience problem in Dubai, linked to one of the three challenge areas.
- Must be led by a Dubai-based university or research institute and Dubai-based government and/or industry partners in an active consortium. In many cases, a three-way partnership (University + Government + Industry) will be the strongest model; in other cases, a two-party consortium may be more appropriate where involving a third party would not add clear value (*see partnership requirements section for full details*).
- Combine research with real-world testing in Dubai (lab work alone is not enough). This should be demonstrated by a credible deployment (for example, into operations, practice, or policy) and/or commercialisation pathway in Dubai. Submissions should describe who would use the solution, in what setting, and what would need to be true for it to be adopted, supported by commitments or interest from named partners. (At full proposal stage, we expect a convincing case that deployment or adoption in Dubai is realistic, not merely something to explore later.)
- Deliver measurable improvements against agreed, relevant metrics for their chosen challenge and focus area (for example, reduction in failures, hospital admissions, energy or water use), using Dubai-specific baselines and benchmarks where these are available or can be established during Phase One.
- Include a brief evidence and landscape section that summarises relevant work already underway in this area in Dubai and internationally (including, where applicable, projects funded under the Dubai RDI Grant Initiative at dubairdi.ae). This Fund is designed to build on and connect existing efforts by

government, industry, and universities. Applicants are therefore expected to explain how their project will extend, complement, or add a distinct new perspective to current initiatives, rather than repeating work that is already in progress.

- Include solutions that can be tested and demonstrated at multiple levels for example, at the level of infrastructure systems, service providers, and/or households and communities where this is necessary to deliver meaningful resilience gains in Dubai.
- Use approaches that combine more than one method of influence (for example, policy and regulation, awareness and behaviour change, incentives, physical infrastructure, and research and innovation) when this is needed to achieve real-world impact, provided that the overall intervention is testable, measurable, and feasible to pilot within the grant period.

> *Proposals that do not clearly address these elements will be significantly less competitive and are unlikely to be funded.*

Approach to Solutions Guidance

We do not prescribe specific solution types under this Challenge Fund, but all projects must go beyond theory-only research and demonstrate a credible pathway to testing and use in real Dubai conditions. Instead, solutions may combine different levers for example, technology and infrastructure, policy and regulation, incentives, awareness and behaviour change, and new service or governance models as long as the overall approach is evidence-based, testable in Dubai-relevant conditions, and designed with a clear pathway to real-world use. Our role is to define the resilience challenges and the types of outcomes that matter for Dubai, not to decide in advance which specific solutions or project-level outcomes applicants must pursue. We trust and expect consortia of researchers, government entities, and industry partners, who are closest to the operational reality and technical frontier, to propose the most appropriate solution pathways and project outcomes. Applicants should therefore put forward approaches that, in their expert view, best address the challenge and deliver clear, measurable outcomes based on evidence, prior work, and the needs of their Dubai partners.

For each challenge, we provide indicative expected outcomes. These are not checklists; each project will agree specific outcomes at award, tailored to its focus and solution.

CHALLENGE ONE

Cognitive Cities

Primary Focus

Systems that keep the city running: power and cooling infrastructure, transport networks, smart-city and control systems, and other critical infrastructure services such as airports, ports, data centres, and core communications or financial systems. This includes the operational technologies that deliver these services reliably for people and businesses, including built infrastructure, critical infrastructure services, digital systems, and service delivery systems.

> *Cognitive Cities resilience issues often affect health and environmental outcomes, and projects may involve those dimensions where relevant. In this challenge, proposals should be primarily framed from the Cognitive Cities and infrastructure systems perspective, while clearly explaining any important health or environmental implications where they are integral to the problem or solution. This can include not only large infrastructure assets and networks, but also how buildings, neighbourhood-scale systems, and household-level solutions contribute to keeping essential services running and maintaining safe, liveable conditions for residents during periods of stress.*

Challenge Statement

Dubai's infrastructure including power grids, district cooling, transport, smart city systems and other critical infrastructure services are under growing pressure from rising demand, climatic conditions, increasing digital and system complexity, and tighter performance expectations. In many areas, operations and maintenance still rely heavily on reactive approaches, which evidence shows can increase operating costs and the risk of service interruptions or asset failures, especially during peak or high stress conditions.

The Challenge

Design and test solutions that help entities responsible for operating critical infrastructure and services in Dubai predict problems early, adjust operations automatically, and avoid failures and service interruptions during high stress and peak operating conditions.

Focus Areas

Each proposal must select at least one primary focus area below and go into sufficient depth. Focus areas are illustrative, and you may justify additional or crosscutting topics where needed.

1. Asset Longevity and Predictive Maintenance

Systems that can predict equipment failure 24–72 hours in advance and enable proactive intervention before service disruption (for example, using AI, advanced analytics, sensor fusion, or other predictive methods). Focus on critical infrastructure such as district cooling plants, power generation and distribution equipment, transport systems, smart city sensor networks, and large, high occupancy buildings or campuses (for example commercial towers, malls, hospitals, airports, ports, or logistics hubs).

2. Energy Efficiency Under Peak Demand

Approaches that reduce energy consumption by around 10–20% during high stress or peak operating periods while maintaining service quality (for example, through dynamic load management, demand response systems, intelligent grid balancing, real-time optimisation or other innovative methods).

3. Autonomous System Adaptation

Infrastructure and control systems that automatically adjust operations in response to real-time environmental conditions, demand patterns, and stress indicators to maintain performance and prevent incidents. This can include self-healing networks, adaptive cooling systems, and intelligent traffic or logistics management that responds dynamically to changing conditions.

4. System-Level Resilience

Solutions that coordinate across multiple infrastructure networks to prevent or contain cascading failures. These should address dependencies between power, cooling, water distribution, transport, and similar systems, and enable graceful degradation for example, controlled, prioritised reduction of services rather than widespread service disruption when parts of the system are under stress.

5. Cybersecurity and Digital Infrastructure Resilience

Protecting and strengthening the resilience of critical digital and data infrastructure that underpins Dubai's infrastructure systems and services, including data centres, cloud platforms, operational technology networks, and key digital control systems. This can include approaches to prevent, detect, and respond to cyber incidents and other digital disruptions, maintain continuity of critical services, and reduce systemic risk arising from increasing digital interdependence.

6. Other Infrastructure Resilience Challenges

We recognise that not all important infrastructure resilience problems can be fully captured in the focus areas listed above. You may propose a project that addresses a different resilience challenge within the Cognitive Cities domain, provided that: the connection to infrastructure resilience is clear and specific; the problem is material for Dubai (not a niche or purely academic issue); and you explain why it does not fit any of the listed focus areas.

Proposals with a weak or generic link to infrastructure resilience or to Dubai's context are unlikely to be competitive.

Potential Target Partners (Illustrative)

The organisations listed below are examples of entities whose mandates align with this challenge. They are provided to help applicants understand the types of partners that may be relevant; they are not being asked to respond directly to approaches from all applicants. Applicants may, and are encouraged to, work with other Dubai-based organisations that play comparable roles and are well-matched to the focus area and solutions proposed.

Government Entities (illustrative)	Industry & Ecosystem Partners (illustrative)
– Dubai Electricity and Water Authority (DEWA) – Roads and Transport Authority (RTA) – Dubai Municipality – DP World – Digital Dubai Authority (Dubai Digital) – Dubai Civil Aviation Authority (DCAA)	– Real estate developers and property management firms – District cooling technology providers – IoT sensor and smart infrastructure companies – Energy management system providers – Infrastructure AI and analytics firms – Building automation system providers – Transportation technology and mobility companies – Other Dubai-based utilities, operators, regulators, large infrastructure owners, or relevant private firms with a clear and substantive role in the challenge

For this challenge, apply the general Approach to Solutions guidance above, ensuring your methods are grounded in real infrastructure operations and deployment pathways with Dubai infrastructure partners.

Expected Outcomes

Successful projects under the Cognitive Cities challenge will agree specific outcomes at the time of award that clearly contribute to making Dubai's infrastructure systems more resilient. The indicative outcomes below show the types of infrastructure-level changes and benefits we expect Cognitive Cities projects to deliver.

- Deploy and test a predictive maintenance system on real cooling, power, transport, or other critical infrastructure assets in Dubai, showing that it can warn operators 24–72 hours before failures and that those warnings lead to successful interventions and reduced unplanned downtime.
- Test resilient sensors or materials in priority infrastructure systems, demonstrating that they work reliably under high stress operating conditions (including high temperatures) and measurably improve system reliability or lifespan.

- Implement an automated optimisation system in at least one major infrastructure network in Dubai, with documented improvements in efficiency, reliability, cost, or service quality under peak or high stress conditions.
- Demonstrate a cross-system coordination capability that reduces service interruptions by better managing dependencies between power, cooling, water, transport, airports, ports, or digital infrastructure during high stress events.
- Provide clear pathways for scaling in Dubai, including business cases and strategies for deployment or adoption (for example, into operations, practice, or policy) and/or commercialisation, developed and validated with government and industry partners.

Success Metrics (Indicative)

These ranges are based on international predictive maintenance and smart infrastructure benchmarks and will be refined with Dubai-specific baselines and partner input during project design and execution. The ranges are indicative, and not every project must target all of them.

- 10–20% extension in critical asset operational life before major overhaul or replacement.
- 5–15% reduction in cooling or energy operational expenditure during high stress or peak operating periods.
- Around 80% accuracy in failure prediction with 24–72 hour advance warning.
- 15–25% reduction in unplanned service interruptions or emergency maintenance events.
- Documented energy efficiency gains of 10–20% under high stress or peak operating conditions compared to baseline.
- Measurable improvement in meantime between failures (MTBF) for targeted infrastructure systems.

What We Are NOT Looking For

- *Generic smart-city concepts without specific deployment environments or operational partners*
- *Laboratory-only research without operational testing pathways in real infrastructure*
- *Incremental improvements to existing systems without transformative impact potential*
- *Technology-push solutions without clear operational needs validation from government or industry partners*
- *Projects without meaningful government or industry partner commitment to testing and deployment*
- *Solutions that require complete infrastructure replacement rather than integration with existing systems*

CHALLENGE TWO

Health & Life Sciences

Primary Focus

Human health, wellbeing, healthcare systems, and health determinants across Dubai's population.

> *Health & Life Sciences resilience issues often overlap with infrastructure and environmental resilience, and projects may involve those dimensions where relevant. In this challenge, proposals should be primarily framed from the population health and health systems perspective, while clearly explaining any important infrastructure or environmental implications where they are integral to the problem or solution.*

Challenge Statement

Dubai's population including outdoor workers, office employees, children, older people, and people living with chronic conditions are exposed to ongoing health pressures from high temperatures, air pollution, dense urban living, and high rates of noncommunicable and stress related conditions. Current healthcare and public health responses are often reactive and fragmented, with limited integration of environmental, occupational, behavioural, and population level data into day-to-day decision-making.

These pressures are experienced both through formal health and public health systems and in everyday life at the level of households and communities for example in how people access essential medicines and care during disruptions, cope with heat and air quality, and maintain psychological wellbeing and a sense of safety.

The Challenge

Design and test solutions that predict health risks early, protect vulnerable groups, and keep people healthy and productive under Dubai's real operating conditions, while ensuring healthcare and public health services can absorb and manage recurrent surges in demand driven by environmental conditions (such as heat and air quality), communicable diseases, and rising levels of chronic conditions.

Focus Areas

Each proposal must select at least one primary focus area below and go into sufficient depth. Focus areas are illustrative, and you may justify additional or crosscutting topics where needed. Projects may range from system level health service resilience to household and community level interventions, as long as they are grounded in robust methods and have a credible pathway to adoption in Dubai.

1. **Air Quality and Health**

   Understanding and reducing the health impacts of air pollution, especially for vulnerable groups such as children, older adults, and people with existing respiratory or cardiovascular conditions.

2. **Heat and Humidity**

   Managing the health effects of heat and humidity across the population including workers, older adults, people with chronic conditions, and children in the context of Dubai's real operating conditions.

3. **Health-System Resilience**

   Improving how healthcare and public health services plan for, absorb, and adapt to recurrent environmental and demand pressures, while maintaining quality, access, and equity.

4. **Chronic and Lifestyle-Related Health**

   Addressing noncommunicable and lifestyle related conditions in populations exposed to Dubai's environmental and urban stresses, including how environment, behaviours, and service delivery interact over time.

5. **Other Health Resilience Challenges**

   You may propose a project that addresses a different resilience challenge within the Health & Life Sciences domain, provided that: the connection to population health resilience is clear and specific; the problem is material for Dubai (not a niche or purely academic issue); and you explain why it does not fit any of the listed focus areas.

Proposals with a weak or generic link to health resilience or to Dubai's context are unlikely to be competitive.

Potential Target Partners

The organisations listed below are examples of entities whose mandates align with this challenge. They are provided to help applicants understand the types of partners that may be relevant.

Government Entities (illustrative)	Industry & Ecosystem Partners (illustrative)
– Dubai Health Authority (DHA) – Dubai Police – Dubai Civil Defence – Community Development Authority – Dubai Municipality (including public health and environment functions)	– Hospital systems and healthcare providers – Health insurance companies – Pharmaceutical and medical technology companies – Wearable technology and biosensor firms – Digital health and telemedicine platforms – Air quality and environmental monitoring technology firms

  - Employers across key sectors (e.g. logistics, construction, aviation, hospitality, retail)
  - Fitness, wellness, and lifestyle companies
  - Health data, analytics, and AI firms
  - Mental health and wellbeing service providers

Apply the general Approach to Solutions guidance, with solutions clearly targeting population-health outcomes and adoption by healthcare providers, employers, or public health authorities in Dubai.

Expected Outcomes

Successful projects under the Health & Life Sciences challenge will agree specific outcomes at the time of award that clearly contribute to making Dubai's population and health systems more resilient.

- Better ability to anticipate and manage health risks linked to air quality, heat, humidity, and other environmental conditions in Dubai, for example through predictive tools, alerts, or decision support systems used by health services, employers, or authorities.
- Improved protection for vulnerable groups such as outdoor and high exposure workers, older adults, children, and people with chronic conditions under Dubai's real operating conditions, evidenced by safer exposure profiles, fewer incidents, or better clinical control.
- Stronger integration of environmental, occupational, behavioural, and health data to inform decision making in health services, workplaces, and urban management, including adoption of new practices, protocols, or planning tools.
- Improved continuity and quality of healthcare and public health services during periods of recurrent environmental or demand stress, such as maintaining service coverage, controlling waiting times, or reducing avoidable deterioration in care.
- More effective prevention and management of chronic and lifestyle related conditions in ways that are adapted to Dubai's context, including demonstrated uptake of improved care pathways, prevention programmes, or workplace policies.
- Clear pathways for scaling in Dubai, including business cases and strategies for deployment or adoption into clinical practice, public health programmes, workplace or community practice, or policy and/or commercialisation, developed and validated with healthcare, employer, and government partners.

Success Metrics (Indicative)

These indicative metrics are informed by international experience in environmental health, occupational health, and health system resilience, and will be calibrated with relevant Dubai baselines. Not all projects need to target all metrics.

- Reductions in hospital admissions, emergency visits, or other acute events linked to air quality, heat, or related environmental conditions.
- Improvements in relevant population health indicators (for example, respiratory and cardiovascular health metrics, mental health screening scores, chronic disease control markers).
- Demonstrated improvements in how well health and related systems cope with periods of environmental or demand stress (for example, limited increases in wait times or care delays, preserved service coverage).
- Evidence of better protection and outcomes for high risk and vulnerable groups, and measurable reductions in health inequities between different population groups.
- Maintenance or improvement of productivity and participation alongside gains in health, particularly in occupational or workplace focused interventions.
- Demonstrated use of predictive or early warning capabilities (for example, reliable lead time for high-risk periods or events to trigger preventive or preparedness actions).

What We Are NOT Looking For

– *Generic health tracking applications without environment-specific functionality or validated clinical utility*

– *Research focused solely on climate science or environmental monitoring without health intervention application*

– *Laboratory or simulation studies without field validation in real populations and operational environments*

– *Interventions requiring complete work cessation or activity elimination rather than adaptive optimisation*

– *Projects without clear adoption pathways through healthcare providers, employers, or public health authorities*

CHALLENGE THREE

Environmental Science

Primary Focus

Natural resources (such as water and energy), ecosystems, circular economy, nature-based solutions, and environmental quality.

> *Environmental Science resilience issues underpin both infrastructure and population health resilience, and projects may involve those dimensions where relevant. In this challenge, proposals should be primarily framed from the resource systems and ecosystem resilience perspective, while clearly explaining any important infrastructure or health implications where they are integral to the problem or solution.*

Challenge Statement

Dubai's environmental resilience depends on secure, low carbon resource systems (for example, water and energy) and healthy ecosystems that support cooling, carbon storage, biodiversity, and coastal protection. Current patterns of resource use, ecosystem pressure, and emerging climate impacts including increased flood risk and urban drainage pressures are under increasing strain from population growth and economic activity, creating risks for long term environmental quality and service reliability.

These dynamics ultimately affect households and communities, for example through dependence on centralised water and energy systems, limited local food production, exposure to urban heat and flooding, and access to nearby green and blue spaces. Projects may therefore include household and community scale pilots, for example around food, water, or energy self-sufficiency, local environmental buffers, and nature-based solutions, where these clearly contribute to Dubai's wider resource system and ecosystem resilience.

The Challenge

Design and test solutions that significantly reduce resource use and environmental impacts, strengthen natural and hybrid systems, and deliver measurable environmental benefits while supporting Dubai's economic growth and urban functionality in line with its clean energy, circular economy, and sustainability agendas.

Focus Areas

Each proposal must select at least one primary focus area below and go into sufficient depth. Focus areas are illustrative, and you may justify additional or crosscutting topics where needed.

1. **Low Carbon Water and Energy Systems**

   Improving how Dubai produces, manages, and uses water and energy in ways that reduce emissions, increase efficiency, and enhance reliability under climate and demand pressures.

2. **Circular Materials, Waste, and Resource Use**

   Reducing extraction and waste through circular economy approaches in key sectors (for example, construction, industry, logistics, and consumption), and improving how materials and products are designed, used, recovered, and reused.

3. **Urban Ecosystems and Nature-Based Cooling**

   Restoring and enhancing ecosystems in and around the city such as urban green spaces, mangroves, wetlands, and coastal habitats to provide cooling, carbon storage, biodiversity, and recreation while integrating with urban development.

4. **Coastal and Marine Resilience**

   Strengthening the resilience of Dubai's coastal and marine environments, including shorelines, marine habitats, and built coastal assets, to sea-level rise, storms, and other climate related pressures.

5. **Environmental Quality and Monitoring**

   Advancing how Dubai monitors and manages environmental quality for example, air, water, soil, marine conditions, and urban flooding and drainage and how this information is used in planning, regulation, operations, and public awareness.

6. **Other Environmental Resilience Challenges**

   You may propose a project that addresses a different resilience challenge within the Environmental Science domain, provided that: the connection to environmental resilience is clear and specific; the problem is material for Dubai (not a niche or purely academic issue); and you explain why it does not fit any of the listed focus areas.

Proposals with a weak or generic link to environmental resilience or to Dubai's context are unlikely to be competitive.

Potential Target Partners

The organisations listed below are examples of entities whose mandates align with this challenge. They are provided to help applicants understand the types of partners that may be relevant.

Government Entities (illustrative)	Industry & Ecosystem Partners (illustrative)
– Dubai Electricity and Water Authority (DEWA) – Ministry of Climate Change and Environment (MOCCAE) – Dubai Municipality (environment, waste management, and parks functions)	– Water production, desalination, and treatment companies – Renewable energy and energy storage developers

- Dubai maritime and marine/coastal authorities
- Relevant federal or emirate level entities involved in circular economy, biodiversity, and coastal management
- AgriTech, urban farming, and controlled environment agriculture firms
- Landscape, green infrastructure, and nature-based solutions providers
- Marine and coastal engineering and monitoring companies
- Waste management, recycling, and circular economy companies
- Sustainable real-estate developers and green building firms
- Environmental consulting, data, and monitoring firms
- Organisations active in voluntary carbon markets and nature-based climate solutions

Apply the general Approach to Solutions guidance, with solutions focused on measurable resource and ecosystem resilience outcomes and adoption into planning, regulation, or operations in Dubai.

Expected Outcomes

Successful projects under the Environmental Science challenge will agree specific outcomes at the time of award that clearly contribute to strengthening Dubai's resource systems, ecosystems, and environmental quality.

- Demonstrated reductions in resource use and/or emissions for targeted systems (for example, water production or reuse, energy use, materials and waste flows, or land and habitat impacts) under Dubai-relevant conditions and, where relevant, reduced frequency, depth, or duration of urban flooding in targeted areas.
- Evidence that restored or enhanced ecosystems in Dubai such as urban green spaces, mangroves, wetlands, or coastal and marine habitats can withstand stress conditions and deliver measurable services such as cooling, biodiversity support, or coastal protection.
- Proven nature-based or hybrid solutions that improve local environmental conditions (for example, temperature, shading, microclimate, water efficiency, or habitat quality) in real urban or coastal settings, and are taken up in design, planning, or operational practice.
- Circular economy pilots that show credible resource recovery, waste reduction, and emission reduction, alongside viable operating or business models and/or adoption into industry practice or regulatory frameworks.

- Integrated resource optimisation approaches that demonstrate coordinated improvements across water, energy, materials, and/or land use, together with clear environmental quality gains, and that are reflected in new operating procedures, planning tools, or policy instruments.
- Clear pathways for scaling and replication in Dubai, supported by business cases, policy insights, and strategies for deployment or adoption into operations, planning practice, regulation, or policy and/or commercialisation, developed and validated with relevant public and private partners.

Success Metrics (Indicative)

These indicative metrics are informed by international experience in low carbon water and energy systems, ecosystem restoration, and circular economy transitions, and will be calibrated with relevant Dubai baselines. Not all projects need to target all metrics.

- Percentage reduction in resource use, emissions, or waste for targeted systems or processes (for example, water, energy, materials, or land use), compared with current practice under similar conditions.
- Positive or stable indicators of ecosystem health at project sites (for example, survival and growth rates, habitat condition, species richness, or other agreed ecological metrics) over an appropriate monitoring period.
- Measurable improvements in local environmental conditions where interventions are deployed (for example, reductions in ambient or surface temperature, improved water or soil quality, enhanced vegetation cover, or reduced flood extent or duration in affected sites).
- Documented increases in resource recovery and waste diversion from disposal, together with quantified emissions or pollution reductions where possible.
- Demonstrated co-benefits across multiple dimensions such as water, energy, materials, ecosystem health, and environmental quality showing an integrated value proposition.
- Evidence that approaches can be sustained and scaled in Dubai, including indicative cost, operational feasibility, and alignment with relevant strategies and regulations.

What We Are NOT Looking For

- *Generic climate science research without deployment applications or technology development*
- *Purely technical water treatment studies without energy efficiency focus or circular economy integration*
- *Ecosystem research without clear resilience, climate adaptation, or quantified ecosystem services objectives*
- *Conceptual nature-based solutions without pilots validated in Dubai's specific environmental conditions*
- *Projects without integration across water-energy-ecosystem dimensions or demonstration of systems thinking*
- *Laboratory-scale technology development without pathway to pilot deployment and operational validation*

Mandatory Partnership Structure

The fund aims to strengthen practical collaboration between Dubai's research, government, and industry ecosystems so that research is grounded in real problems and has a credible path to use in Dubai.

For government and public entities, participation offers access to dedicated research capacity, evidence, and tested options that can inform future policies, programmes, and investments.

For industry and nongovernmental partners, it provides a low risk way to explore new ideas, technologies, and business models that respond to Dubai's strategic challenges, with DFF funding the research while partners help shape real world use cases and potential routes to adoption.

All proposals must include:

Lead Principal Investigator (PI) from a Dubai-based university or research institution

- PhD (or equivalent research qualification) in a field relevant to the challenge area
- Demonstrated research excellence and track record
- Experience or exposure to innovation, applied research or translational research
- Full affiliation with a Dubai institution (not visiting or adjunct)

A Government or Public Sector Partner providing (as relevant to the project):

- A deployment environment or operational testing site
- Access to relevant operational data and/or baseline information
- Operational insight to validate and refine the problem definition and use cases
- Alignment with relevant policies, strategies, or regulatory frameworks
- A potential pathway to adoption, scaling, or policy integration if results are promising
- In-kind contributions: e.g., resources, funding, operational support, space etc. (this is not compulsory)

An Industry or Non-Governmental Partner providing (as relevant to the project):

- A real world testing environment, use case, or user group
- Technical, operational, or business model expertise to shape and validate solutions
- Co-development of pilots, prototypes, or services that they can take forward if successful
- Insights into potential routes to market, adoption, or long term implementation
- Feedback on user needs, operational constraints, and value propositions
- In-kind contributions: e.g., resources, funding, operational support, space etc. (this is not compulsory)

Some of these contributions may come from either government or industry/nongovernmental partners; what matters is that, taken together, the consortium can define the problem credibly, test solutions in real settings, and enable adoption or scaling in Dubai.

In many cases, a tripartite consortium (university + government + industry/nongovernmental partner) will be appropriate. In some cases, a two-way partnership (university + government or university + industry/non-governmental partner) may be more suitable where involving a third party would not add clear value. Proposals must briefly justify the chosen partnership structure and explain how the identified partners are sufficient for problem definition, testing, and potential uptake.

Partnership Quality Requirements

Partners must be identified and supportive at proposal stage (via a letter of collaboration). Government and/or industry/nongovernmental partners should have a meaningful role in:

- Validating and refining the problem definition in a Dubai-relevant context.
- Co-shaping the use cases and testing scenarios, including access to appropriate operational environments and data as described in the partnership structure above.
- Providing feedback on the practicality, relevance, and value of proposed solutions for their operations, customers, or constituencies.
- Planning how successful solutions could be adopted, scaled, or integrated into operations, practice, policy, or commercial offerings.

Proposals should outline, at a high level, how partners expect to collaborate over the course of the project (for example, governance arrangements, working groups, or regular review points) and how the contributions described under the Mandatory Partnership Structure will be organised across the consortium.

Evidence of Existing Work and Added Value

Proposals must show that the team has reviewed relevant projects and pilots already carried out in Dubai and internationally, and must explain clearly how the proposed work:

- Builds on or extends what has already been tested; or
- Fills a proven gap where no suitable solution currently exists; or
- Adapts promising approaches to Dubai's specific conditions and priorities.

> *Proposals that assume they are the first to address an issue without demonstrating basic landscape scanning and awareness of existing initiatives are unlikely to be competitive.*

Phased Funding Structure

Projects under this fund are expected to run for up to three years with a total grant award up to AED 2,000,000, divided into two phases.

All proposals must set out a full three-year plan, but progression from Phase One to Phase Two is not automatic and will depend on performance and review. If a project does not meet agreed Phase One milestones, it will not receive Phase Two funding.

Across both phases, we expect projects to balance shorter term "quick wins", such as proof-of-concepts, pilots, and early behaviour or practice changes, with insights into the longer term shifts that may be required in policy, standards, infrastructure, or community practices to make resilience improvements durable at scale in Dubai. After Phase Two, Dubai Future Foundation will review completed pilots with relevant partners to identify which solutions merit further support for deployment or scale-up through separate operational, policy, or investment decisions. This review does not imply a guarantee of additional funding or implementation beyond the scope of this Fund.

All projects will receive a single total grant amount (up to AED 2,000,000) at award. Phase One and Phase Two funding allocations are indicative maxima within that total; teams may rebalance budgets for each phase (within specific phase) and activities during refinement, but the overall award amount will not increase.

Phase One — Proof of Concept and Planning (Year One) Funding: Up to AED 500,000

What we expect by the end of Phase One: You will have shown that your core idea is technically or conceptually sound under Dubai-relevant conditions, and you will have a realistic, co-developed and updated plan with your partners for a pilot, building on the initial three-year plan submitted at proposal stage.

Objectives

- Validate the core technical, scientific, or methodological concept through laboratory work, modelling, or small-scale testing in Dubai-relevant conditions.
- Confirm and strengthen the consortium and working arrangements with government and/or industry partners.
- Establish baseline measurements and refine success metrics relevant to the chosen challenge and focus area(s).
- Assess feasibility across technical, operational, and high level economic/commercial dimensions.
- Refine and update the Phase Two implementation plan including timeline, milestones, budget profile within the awarded total, and risk mitigation approach using the evidence and learning generated in Phase One, while remaining within the total three-year budget agreed at award.

Deliverables

- Proof of concept results showing that the core idea is feasible and worth testing at pilot scale.
- Activation of committed from government and or industry partners and collaboration arrangements (for example letters of intent or MOUs, and an outline of how data, IP, and deployment questions will be handled in Phase Two).
- Baseline data and a clear measurement framework for key metrics.
- An updated Phase Two work plan and deployment proposal, with refined success metrics, deployment/use cases, and a realistic schedule and budget profile, building on the three-year plan submitted at proposal stage.
- A risk assessment identifying major technical, operational, and partnership risks and proposed mitigation strategies.
- Early research and knowledge outputs, such as conference presentations, working papers, or draft publications, where appropriate. Over the full life of the project, we encourage validation and dissemination of results through peer-reviewed original papers, high-quality survey papers, and/or published white or technical papers, in ways that are consistent with partner obligations and any confidentiality or IP arrangements.

What Phase One must demonstrate to be considered for Phase Two

- A technically sound solution tested on appropriate historical and/or first year data in Dubai-relevant conditions, showing clear potential for benefit relative to current practice.
- At least one government or industry partner who recognises that the project addresses a real problem for them, can see a credible use case or application in their context, and is open in principle to hosting a pilot or operational trial in Phase Two.
- A credible case for why early results are likely to generalise beyond the initial test (for example through back testing on existing multiyear datasets, scenario or stress testing, or comparison with current practice), and why further investment in a pilot phase is justified.

Phase Two — Pilot Implementation and Validation (Years Two to Three) Funding: Up to AED 1,500,000 (capped at AED 750,000 per year)

What we expect by the end of Phase Two: You will have run a pilot in a real environment in Dubai with your partners, and you will understand what would be required to scale, be adopted into operations, practice, or policy, and/or be commercialised.

Objectives

- Deploy the solution in an operational testing environment at pilot scale with relevant government and/or industry partners.
- Validate performance against agreed success metrics using robust measurement and evaluation methods.
- Refine the solution based on operational feedback, user experience, and iterative testing.
- Clarify the pathway to full-scale deployment or adoption (for example, into operations, practice, or policy) and/or commercialisation, as appropriate.
- Document learning, good practices, and implications for operations, policy, regulation, and future investment.

Deliverables

- An operational pilot in Dubai with documented performance data and user/partner feedback.
- Validated success metrics demonstrating the degree and conditions of impact.
- A scaling and/or integration plan, including technical, operational, and indicative economic analysis.
- A commercialisation strategy or operations/policy/implementation pathway, where relevant, developed with partners.
- A final report capturing learning, refinements made, recommendations, and communication materials suitable for sharing with policymakers, practitioners, and other stakeholders.

Phase Two Funding Decision

Phase Two funding will be reserved for projects that demonstrate:

- Robust proof of concept results from Phase One, showing clear technical or methodological merit under Dubai-relevant conditions, tested on appropriate historical and first-year data.
- Documented partner interest (through a clear signed commitment letter/MOU/MOC) indicating that they see a plausible use case or application in their organisation, and are open in principle to piloting the solution in Phase Two if performance remains positive.
- A credible case that the proposed Phase Two pilot can generate evidence relevant to future deployment or adoption (for example, into operations, practice, or policy) and/or commercialisation decisions in Dubai.
- Continued commitment from key partners to participate in pilot scale testing.
- An acceptable detailed Phase Two plan with clear milestones, budget logic, and risk management.
- Available budget and overall portfolio balance considerations.

Partners are not expected to make binding procurement or adoption commitments at this stage; rather, they should be able to articulate why, if Phase Two results are positive, the solution would be seriously considered within their normal decision-making processes.

Projects not progressing to Phase Two will receive constructive feedback and may be considered for alternative forms of support or future calls, where appropriate.

Evaluation Criteria — Letter of Intent (LOI) Stage

Across all criteria, reviewers will consider the credibility of the proposed pathway to real-world testing, validation, and potential adoption in Dubai.

Criteria	Weight	What Reviewers Will Assess
1. Strategic Alignment	**10%**	Contribution to Dubai's resilience priorities (e.g. D33, Dubai 2040 Urban Master Plan, and related strategies). Alignment with the selected challenge area, focus area, and expected outcomes. Relevance to current and future Dubai needs (5–10 year horizon). Contribution to positioning Dubai as a global leader in resilience and applied research.
2. Technical and Scientific Excellence	**35%**	Advancement beyond current state-of-the-art or best practice (e.g. meaningful improvement in performance, reliability, resilience, or efficiency). Scientific rigour and methodological soundness. Evidence of feasibility (e.g. prior work, preliminary data, or proof of concept plan). Level of innovation in approach, technology, or integration of disciplines. Consideration of assumptions, uncertainties, and technical risks. Appropriateness of the approach for real-world testing and validation under Dubai-relevant conditions.
3. Partnership Quality and Strength	**15%**	Strength and relevance of government/public sector partners (e.g. problem ownership, operational relevance, access to data/environments, and willingness to engage actively in enabling testing, validation, and potential adoption, and defining route to adoption or commercialisation). Complementarity and track record of partners. Clarity of roles, responsibilities, and value contribution of each partner. Evidence of commitment (e.g. letters of support, endorsements, or equivalent).
4. Execution Capability and Project Management	**15%**	Team capability and relevant experience. Realistic and well-structured work plan with clear Phase One (proof of concept) and Phase Two (pilot) logic appropriate to the level of detail possible at LOI stage. Budget appropriateness and alignment with

		objectives. Identification of key risks (technical, operational, partnership) and mitigation strategies. Access to required infrastructure, data, and facilities. Feasibility within the proposed timeframe. Credibility of transition from proof of concept to pilot implementation.
5. Impact Potential: Scalability, Learning Value, and Sustainability	**25%**	Clarity and evidence of pathway from pilot to deployment, scaling, or policy integration. Plausible route to commercialisation and/or adoption if successful. Potential to generate transferable knowledge, methods, or solutions. Consideration of long-term sustainability beyond the grant period. Plans for dissemination and stakeholder engagement. Potential for significant economic, operational, environmental, or societal value.

Evaluation Criteria — Full Proposal

Full proposals will be assessed with greater emphasis on depth, feasibility, validation, and implementation readiness compared to the Letter of Intent stage. A detailed evaluation criteria will be provided to those applicants who will be invited to submit a full proposal.

Assessment Process

- Independent expert review (typically two reviewers per proposal, covering technical and Dubai relevance perspectives).
- Panel discussion and calibration to ensure consistent scoring and interpretation of criteria.
- Due diligence on partnership commitments and feasibility, appropriate to Letter of Intent stage.
- Portfolio balancing across challenge areas, institution types, and risk levels.
- Consolidation of review feedback and scores, followed by communication of outcomes to applicants.

Ethics, Data, and Responsible Use

At Letter of Intent stage, we do not require detailed data sharing or intellectual property (IP) agreements. However, applicants should:

- Indicate whether their proposed work is likely to involve sensitive data, human participants, or environmental interventions, and confirm that they are willing to obtain any necessary approvals (for example ethics approvals or permits) if the project is selected for funding.

- Confirm that all work will comply with relevant Dubai and UAE laws and regulations, including those related to data protection, privacy, health research, and environmental protection.
- Acknowledge that, if funded, the consortium will be expected during contracting or shortly after grant award to agree on appropriate arrangements for data management, IP, and use of results that both protect individuals and organisations and enable learning, policy insight, and practical use of successful solutions in Dubai.

Detailed expectations on data management, IP, and ethics will be provided to shortlisted teams invited to submit full proposals and will be formalised in Grant Agreements. Where government data access is required, applicants should plan for the time needed to obtain the necessary approvals; Dubai Future Foundation and relevant entities may, where possible, help clarify processes and points of contact, but cannot guarantee data access approvals.

Summary of Application Timeline*

19th May	Open Call for Letters of Intent (LOI)
3rd June	Deadline for LOI submissions
24th June	Invite shortlisted applicants to submit full proposals
22nd July	Deadline for full proposal submissions
1st October	Announcement of selected applications for funding

**Indicative timeline only: The dates in this timeline are provided for planning purposes and may be adjusted if required. While we will make every reasonable effort to follow the published schedule, we cannot guarantee that all stages will occur on the exact dates indicated. Should the timeline need to change, we will inform applicants as early and clearly as possible.*

Application Process

Applications follow a two-stage process:

Stage 1: Letter of Intent

Required elements:

- Selected challenge area and a short justification of alignment with the challenge statement and focus areas.
- Proposed solution concept and core innovation, including the problem being addressed and why it matters for Dubai's resilience.
- Preliminary consortium description, including identified government and/or industry partners and brief evidence of initial engagement (for example, emails indicating interest).
- Indicative success metrics and an outline of how the solution could be tested and deployed in Dubai, including initial Phase One and Phase Two logic.
- High level budget estimate across Phase One and Phase Two, within the expected total funding envelope.
- Brief summary of team qualifications and relevant experience.

Assessment

Concept notes will be screened against the published evaluation criteria (above), with emphasis on:

- Strategic fit with the selected challenge area and Dubai's resilience priorities.
- Quality and distinctiveness of the core idea.
- Viability and relevance of the proposed partnership (including at least one engaged government and/or industry/nongovernmental partner) including the execution capability and project management of applicant.
- Initial plausibility of the deployment/adoption pathway in Dubai.

Selected applicants will be invited to submit full proposals.

Stage 2: Full Proposal (Invited Only)

Required elements:

- Detailed technical approach and scientific/technical methodology.
- Comprehensive work plan with clear milestones, timeline, and Phase 1 / Phase 2 structure.
- Full consortium composition with letters of commitment from all key partners (university, government, industry/nongovernmental).
- Detailed budget with justification for all phases, consistent with the total requested grant amount.
- Description of collaboration arrangements (for example MOUs or similar) specifying roles and responsibilities, and outlining how data, IP, and deployment/adoption questions will be addressed.
- Risk analysis and mitigation strategies (technical, operational, partnership).
- Baseline data plan and refined success metrics with measurement approaches.
- More detailed deployment or adoption pathway (for example, into operations, practice, or policy) and/or commercialisation pathway, appropriate to the stage of the work.
- Ethics and regulatory compliance plan, including any approvals that must be obtained before implementation starts.

Assessment

Full proposals will be assessed using a similar independent review and panel process, with deeper scrutiny of technical plans, partnerships, and feasibility before final funding decisions.

Additional Resources to Be Provided in Formal Call for Proposals:

- Detailed application guidelines
- Budget templates and justification requirements
- Partnership Agreement templates
- Evaluation criteria
- FAQ document