



CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

REQUEST FOR INFORMATION (RFI)

Sustainable Energy Innovation – Call for Submissions from Industry

To assess the types and extent of innovative sustainable energy initiatives and/or projects available for implementation within the City of Cape Town

This document contains a Request for Information (RFI) on how the City of Cape Town (the City) can apply technology and data to enhance energy security and enable an innovative developmental pathway within the City. The information obtained from this RFI will be used by the City as a basis for further discussion and help guide the City in planning future initiatives. Interested parties wishing to respond to this RFI should read this document carefully and follow the guidance for responding.

Contents

1. Background	3
2. Scope	3
3. Administrative Information	4
4. Areas of interest	4
4.1 Areas of interest explained:	4
4.1.2. Solar water heating:	4
4.1.3. Energy efficiency:	4
4.1.4. Smart Metering:	4
4.1.5. Street Lighting Controls:.....	4
4.1.6. Alternate transport fuels and methods:	4
4.1.7. Demand side management/ load shifting:	5
4.1.8. Load curtailment:.....	5
4.1.9. Utility scale Energy storage (behind the meter):	5
4.1.10. Ocean energy (wave/ tidal):	5
4.1.11. Micro-grids	5
4.1.12. Energy trading platforms:.....	5
4.1.13. Waste to energy solutions:	5
4.1.14. Integrated renewable energy hubs:.....	5
4.1.15. Smart building design and build:	5
4.1.16. Behavioural change and education and awareness:.....	5
5. Submitting a Response	5
5.1 Who Should Respond	5
5.2 How to Respond	5
6. RFI Review and Clarification Process.....	6
7. Confidentiality	6

Request for Information (RFI)

To assess the types and extent of innovative sustainable energy initiatives and/or projects available for implementation within the City of Cape Town

1. Background

Energy security in South Africa has become a big part of the discourse in the country in recent times. Year-on-year increases in electricity prices as well as load-shedding (instituted intermittently since 2008) has had a detrimental economic effect on the country and many industries and residents are looking for alternative energy solutions to adapt to the crisis. South Africa and the City of Cape Town have also made commitments toward lowering carbon emissions, with the City pledging to become a carbon neutral City by 2050.

The City of Cape Town is looking for innovative solutions to the energy crisis by supporting the implementation of transformational actions and technological advancements to: increase the supply of renewable energy, improve building energy efficiency, alternate waste management solutions, increase access to affordable low carbon transport options, alleviate energy poverty and change energy consumption patterns.

The specific objectives of this RFI are as follows:

- To gather information to validate the existence of capable innovators/implementers and/or organisations in the market who are able to conceptualise, fund and implement sustainable energy and green economy projects in one or more thematic areas as identified by City of Cape Town
- Improve service delivery to citizens and businesses and alleviate energy poverty
- Assess market interest
- Gather information to support the development of procurement processes for sustainable energy within the City of Cape Town

2. Scope

According to our 2017 – 2022 Integrated Development Plan (IDP), part of our vision is:

- to be an opportunity city that creates an enabling environment for economic growth and job creation,
- provide assistance to those who need it most; and
- deliver quality services to all residents.

Aligned with this vision, one of the key guiding principles that have been developed is sustainability. The City defines sustainability as “meeting the present generation’s needs, without compromising future generations’ ability to meet their needs”. We recognise that, as Cape Town’s natural resources are not unlimited, sustainability is essential to achieving the vision for the future, and should, therefore, play a key role in planning and decision-making.

Sustainable energy solutions are wide and varied in nature. The City of Cape Town wishes to facilitate an open and transparent process to assess the market for sustainable energy interventions that can be added to its existing programmes and assist in ensuring the City enhances its energy security as well as its low carbon developmental pathway. Proposals need to address one or more of the thematic areas identified in the RFI with specific focus on energy security, job creation and income generation capacity, skills development, behavioural change and environmental conservation.

3. Administrative Information

This Request for Information (RFI) is not a request for proposal, request for quotation, offer or invitation for bid, nor does its issuance restrict the City of Cape Town in its eventual implementation activities. This is an RFI only and all information received will be used for planning purposes only.

4. Areas of interest

The City is seeking information and ideas on any products and technologies or other offerings that could leverage existing and/or new infrastructure and data as a platform to improve City operations and services.

Areas of interest include, but are not limited to:

1. Renewable energy
2. Demand side management and load shifting
3. Energy efficiency
4. Smart metering
5. Micro-grids in un-electrifiable areas and backyarders
6. Alternate transportation
7. Alternate waste management
8. Institutional or Policy changes in the support of the above.

The City encourages submissions that use Artificial Intelligence (AI), Augmented Reality (AR) and IoT (Internet of Things) in application to the above list. Proposed solutions should be designed to allow for adapting, upgrading and integrating to current infrastructure. The list is not intended to be exhaustive and responders are encouraged to share additional ideas.

4.1 Areas of interest explained:

4.1.1. Solar Photovoltaic (PV) and other small-scale embedded generation (SSEG):

Including but not limited to ground mounted, floating PV, roof top (city owned or private), solar powered goods (bags, phone charges, lights etc.) wind, biogas generation and any new advanced technologies in the industry suitable for application within the City.

4.1.2. Solar water heating:

Solar water heaters, hybrid solar/electrical heating systems, molecular solar thermal energy storage and any other new advanced technologies suitable for application within the City.

4.1.3. Energy efficiency:

Heat pumps, retrofitting lighting, AI for heating, ventilation, and air conditioning (HVAC) systems, machine learning opportunities in homes and industrial applications and any new advanced technologies in the solar industry suitable for application within the City.

4.1.4. Smart Metering:

Remote/automated meter-reading that allows information to be collected and forwarded to the Electricity Department for billing and communication purposes.

4.1.5. Street Lighting Controls:

Dynamic lighting systems that can be controlled remotely, react to citizens, provide valuable data and/or reduce energy costs.

4.1.6. Alternate transport fuels and methods:

- Sustainable private and mass transport technologies and application.
- Electric buses and cars, hybrid electric buses (diesel HEB), compressed natural gas (CNG), liquefied natural gas (LNG), hydrogen fuel cell, hydrogen fuel cell hybrid bus, alternate rail opportunities etc. and any other new advanced technologies in the industry suitable for application within the City.

4.1.7. Demand side management/ load shifting:

Ripple control, appliance apps for households and any other new advanced technologies in the industry suitable for application within the City.

4.1.8. Load curtailment:

Implementation of load reductions (for example >10% for stage 1 and 2; >20% for Stage 3 and 4 etc., for the entire period of load-shedding) in certain geographic areas/suburbs/industrial complexes in order to be exempted from load-shedding.

4.1.9. Utility scale Energy storage (behind the meter):

Mechanical, electric, thermal and biological storage systems. E.g. molten salt storage, flywheel energy storage, flow battery, large scale hydro/pumped storage etc. or other new advanced technologies suitable for application within the City.

4.1.10. Ocean energy (wave/ tidal):

- Tidal power generation or schemes that are applicable within City of Cape Town.
- Hydropower from urban water pipes using turbines or other new advanced technologies for application within the City.

4.1.11. Micro-grids:

Instituting micro-grids using various technologies for application in un-electrifiable areas and backyarders within the City.

4.1.12. Energy trading platforms:

Block chain applications and other energy trading applications for the City.

4.1.13. Waste to energy solutions:

PV on closed landfill facilities, anaerobic digestion, composting and any other new advanced technologies in the waste industry suitable for application within the City.

4.1.14. Integrated renewable energy hubs:

Integrated energy hubs consisting of various renewable energy technologies that can be tested or piloted within the City.

4.1.15. Smart building design and build:

- The retro-fitting of buildings and construction of new buildings in City of Cape Town for improved energy and materials efficiency.
- 3-D printing for developments, biogas opportunities for energy generation within buildings etc.

4.1.16. Behavioural change and education and awareness:

Advanced technology applications AI, AR, IoT, rewards programmes etc. to assist the City in instituting a change in behaviour toward waste management, electricity consumption and the uptake of renewable energy in the City.

5. Submitting a Response

5.1 Who Should Respond

The City welcomes ideas from innovators, technologists, telecommunications specialists, advertising agencies, social entrepreneurs, engineers, architects, designers, academic organisations, NGOs and general city enthusiasts working locally or internationally.

5.2 How to Respond

- Complete the online response form and attach an electronic copy in machine-readable format (MS Word format or PDF) of your response.
- It's encouraged that you limit the size of your response to approximately 10 pages
- (Including supporting documentation).

- Responses must be received by no later than close of business on **14 June 2019**.
- You may make one or more submissions, depending on which areas of interest you are addressing.
- Questions regarding this RFI are to be submitted via email to innovation@capetown.gov.za by no later than close of business on **17 May 2019**.
- All questions received by this date and time will be answered appropriately.
- Questions received after **17 May 2019** will not be responded to.
- The City expects to respond to your questions by **3 June 2019**.

The City anticipates the following schedule for the RFI process:

(1) RFI release	15 April 2019
(2) Questions regarding the RFI due	17 May 2019
(3) Responses provided	3 June 2019
(4) RFI submission due date	14 June 2019
(5) RFI review of submissions	3-4 months from date of closure
(6) RFI feedback (if required)	October 2019

6. RFI Review and Clarification Process

This RFI is issued with the intent to obtain information that provides guidance to the City in formulating future initiatives. To fully comprehend the information contained within a response to this RFI, the Review Committee may request further clarification in the form of brief verbal communication by telephone, written communication, electronic communication or a presentation to the Review Committee.

Only those responses which will be considered, will receive formal feedback from the City.

7. Confidentiality

All parties (the City of Cape Town and bidder) shall keep all information obtained by them in the context of this RFI confidential and shall not divulge it without the written approval of the other party.

All submissions must be cognisant of supply chain process as well as guiding principles and regulations that govern transactions with municipal entities.