



LAGI**2019**
ABU DHABI

Return to
the Source

1ST PLACE \$40,000

LAGI 2019
Sponsor

LAGI 2019
Partner

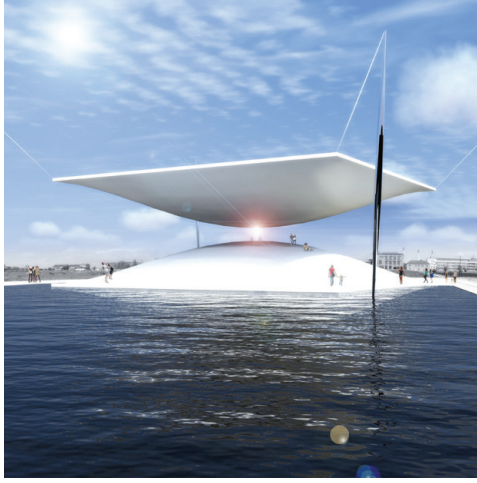
LAGI 2019
is a project of



LAND ART
GENERATOR
RENEWABLE ENERGY CAN BE BEAUTIFUL







WHAT IS THE LAND ART GENERATOR?

The Land Art Generator initiative (LAGI) was founded in 2008 to engage the world in an exploration of how art in public space can actively contribute to a sustainable future, and how renewable energy infrastructure can become a beautiful extension of human culture.

Since the launch of the first LAGI open-call design competition in 2010, thousands of creative minds from over 60 countries have responded to the challenge with designs for site-specific public art installations that have the added benefit of large-scale clean energy generation.

Thanks to their innovation and creativity, LAGI design competition participants are inspiring people everywhere about the beauty and promise of a net-zero carbon future, and providing new ways of thinking about how we can integrate sustainable infrastructure into the cultural fabric of our cities.

As we move closer to a 100% renewable energy world over the coming decades, it is important that art and design have an influence on the aesthetics of sustainable infrastructures on our cherished urban places and our scenic landscapes.

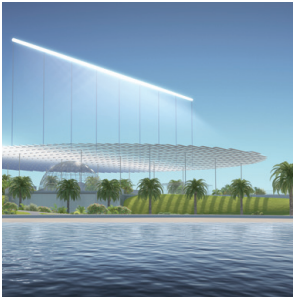
The great energy transition and the solar power revolution offers an opportunity for artists and designers to leave a lasting cultural legacy through which future generations can remember this important time in history. Part of a quintessential 21st century cultural landscape, Land Art Generator public art installations generously give back in many ways in addition to kilowatt-hours—increasing livability, stimulating local economic development, and creating beautiful places for people.

We're looking forward to seeing your designs for this special 2019 edition of LAGI!

Elizabeth Monoian and Robert Ferry
LAGI Founding Directors

LAGI 2019 DESIGN GUIDELINES

www.landartgenerator.org/competition2019.html



OPPOSITE PAGE: *The Solar Hourglass*, by Santiago Muros Cortés—concentrated solar power (thermal beam-down tower with heliostats)—annual capacity 7,500 MWh. 1st place winner LAGI 2014 Copenhagen.

LEFT: *Sun Ray* by Antonio Maccà—linear Fresnel reflector—annual capacity 1,100 MWh. A LAGI 2018 Melbourne submission.

Energy Duck by Hareth Pochee, Adam Khan, Louis Leger, Patrick Fryer—photovoltaic panels, hydraulic turbines—annual capacity 400 MWh. A LAGI 2014 Copenhagen submission.

Beyond the Wave by Jaesik Lim, Ahyoung Lee, Sunpil Choi, Dohyoung Kim, Hoeyoung Jung, Jaeyeol Kim, Hansaem Kim (Heerim Architects & Planners)—organic photovoltaic (OPV), kinetic harvesting (piezoelectric)—annual capacity 4,229 MWh. A LAGI 2014 Copenhagen submission.



Night & Day by Kevin Kudo-King, Annie Aldrich, James Juricevich, Evan Harlan, Vikram Sami, Erin Hamilton, Gabriela Frank, MacKenzie Cotters, Lauren Gallow, Jonathan Nelson (Olson Kundig)—mono-crystalline silicon photovoltaic, pumped hydro storage—annual capacity 1,000 MWh. 2nd place winner LAGI 2018 Melbourne.

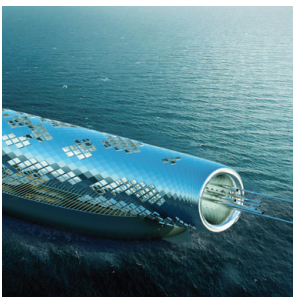
St Kilda Halo, Pete Spence, Hiroe Fujimoto, Sacha Hickinbotham, Michael Richards, Alison Potter, Jason Embley, Michael Zito, Robert Butler (Grimshaw Architects)—silicon photovoltaic thin-film (Sphelar®)—annual capacity 2,000 MWh.

A LAGI 2018 Melbourne submission.

Windstalk by Darío Núñez Ameni, Thomas Siegl, Gabrielle Jesiolowski (poetics), Radhi Majmudar (ISSE Innovative Structural and Specialty Engineering), and Ian Lipsky (edesign Dynamics, Ecology and Renewable Energy)—piezoelectric generator and torque generator—annual capacity 20,000 MWh. A LAGI 2010 UAE submission.

The Pipe by Abdolaziz Khalili, Puya Kalili, Laleh Javaheri, Iman Khalili, Kathy Kiany (Khalili Engineers)—photovoltaic panels, electromagnetic desalination—annual capacity 10,000 MWh to generate 4.5 billion liters of drinking water. A LAGI 2016 Santa Monica submission.

Light Up by Martin Heide, Dean Boothroyd, Emily Van Monger, David Allouf, Takasumi Inoue, Liam Oxlade, Michael Strack, Richard Le (NH Architecture); Mike Rainbow, Jan Talacko (Ark Resources); John Bahoric (John Bahoric Design); Bryan Chung, Chea Yuen Yeow Chong, Anna Lee, Amelie Noren (RMIT Architecture Students)—flexible mono-crystalline silicon photovoltaic, wind energy harvesting, microbial fuel cells—annual capacity 2,220 MWh. 1st place winner LAGI 2018 Melbourne.



LAGI 2019 ABU DHABI

Return to the Source

ABOUT LAGI 2019

LAGI 2019—**Return to the Source**—invites you to create an iconic work of art for a landmark site within Masdar City, Abu Dhabi. Your artwork will use renewable energy technology as a medium of creative expression and will provide on-site energy production consistent with the master plan of the city.

Masdar is the Arabic word for “source.” As the name of Abu Dhabi’s multifaceted renewable energy company and most ambitious low-carbon development, it is a reference to the Sun, the source of energy that sustains life on Earth, drives the wind and waves, and that over millions of years powered the transfer of ancient carbon dioxide out of the atmosphere and into the ground, creating a climate habitable to humans.

“Source” also has meaning within the context of the Land Art Generator initiative, which was established in the UAE in 2008. The first LAGI design competition was supported by Masdar and the award ceremony took place at the 2011 World Future Energy Summit, where eight years later the 2019 LAGI design competition is launched.

LAGI 2019 presents a new kind of challenge from the Land Art Generator initiative. This year’s special edition is in partnership with the 24th World Energy Congress, the largest and most influential global energy event, that has been a forum for innovation and dialogue on energy issues for 95 years. The 24th World Energy Congress will be the venue for the exhibition of 25 shortlisted projects designed for Masdar City.

The goal of LAGI 2019 is to bring forward a portfolio of feasible concept designs that push the boundaries of what is possible using today’s renewable energy technologies. To ensure that the proposals are constructible, this will be the first LAGI design competition that will provide a capital cost restriction as a part of the design brief. The cost per watt of installed nameplate capacity is meant to provide guidance and steer proposals towards technologies that are ready for implementation.

The limit has been set to coincide with the approximate cost per watt of installed solar photovoltaic panels as it existed in 1992, the year of the first United Nations Framework on Climate Change meeting (the Earth Summit in Rio de Janeiro).



Since then, the cost of installed solar has fallen more than 85%. Celebrating this achievement that has placed solar at parity with fossil fueled electricity, you are asked to reinvest this cost margin into the artistic elements of your design. You are free to use any renewable energy technology, as long as your estimated cost per watt installed does not exceed \$20 USD.

When we think of renewable energy infrastructure we often have in mind dark blue photovoltaic rectangles carpeting the landscape or large three-blade horizontal axis wind turbines marching along mountain ridges or into the sea. We think about grid reliability and consumer cost per kilowatt-hour, or we think about the climate change apocalypse that we will impose on future generations if we fail to act swiftly enough.

All of these elements are important from technical and policy perspectives, but there is something missing that will be key to success if we are to meet the goals for decarbonization that we have set for ourselves. We must recognize the importance of human culture to the realization of change.

We are optimistic that we are witnessing the early stages of a shift from a culture of consumption and exploitation of nature to a culture of sustainability and stewardship of nature. It will be a culture in which art in public space is designed regeneratively to give back to people and to the planet, not only in visual beauty, experiences of wonderment, education, and storytelling, but also by helping to provide—through its own use of renewable energy technology—a part of the energy that will sustain us and make possible our 21st century technical, social, and cultural achievements.

LAGI 2019—**Return to the Source**—invites you to present your vision for what public art looks like within the public space of Masdar City—the global capital of sustainability.

LAGI 2019 SPONSOR MASDAR

About Masdar

Established in 2006, Masdar, or Abu Dhabi Future Energy Company, is a global leader in renewable energy and sustainable urban development. Masdar means 'source' in Arabic.

Our mandate is to help maintain the leadership of the United Arab Emirates (UAE) in the global energy sector, while supporting the diversification of both its economy and energy sources for the benefit of future generations.

At Masdar, we develop commercially viable renewable energy projects in the Middle East & North Africa (MENA) and international markets. We advance innovation in clean technologies. We are building the world's most sustainable city. We also deliver knowledge and industry platforms to stimulate further growth in the wider renewable energy and clean-tech industry, creating new revenue streams for the UAE over the long term.

Wholly owned by the Abu Dhabi government's Mubadala Investment Company, Masdar is supporting the UAE's transition towards a knowledge-based economy. A catalyst for renewable energy development in the Arab world over the last decade, Masdar is demonstrating how the business community can deliver on the global sustainability agenda.

Sustainability

Masdar City combines passive and intelligent design to showcase how an urban environment can accommodate denser populations more efficiently. The water and energy demand of the city's buildings is 40 per cent lower than that of the average building in Abu Dhabi, and each building must meet a minimum 3 Pearl rating according to the Estidama Building Rating System, introduced by the Abu Dhabi Urban Planning Council. Pearl 3 is comparable to the LEED Gold (Leadership in Energy and Environmental Design) international standard.

The City is a hub connecting education with research & development and business with investment. It serves as a test bed for renewable energy and technology companies in the UAE and around the world.

Master Plan

Masdar City aims to be a commercially viable city offering the highest quality of life within the lowest environmental footprint. The city is a mixed-use, sustainable community, including employment-generating land uses, residential areas, parks, plazas and neighbourhood amenities.



Masdar City is a free zone and an investment zone, enabling foreign ownership of property and companies, and attracting cleantech companies of all sizes and types to test, commercialise and deploy clean energy technologies.

The city's walkable environment offers multiple cleantech transit options including the Personal Rapid Transit – an internal electronic driverless mode of movement. Externally, two major Abu Dhabi networks, the Metro and the LRT are planned to pass through

Masdar City

Masdar City is strongly focused on sustainable development, through the reduction of demand for energy and water, and recycling and reuse of waste material particularly during the construction activities.

Masdar City has made ambitious commitments under Abu Dhabi's building rating system, Estidama, targeting a minimum rating of 3-Pearls for all buildings under the Estidama Pearl Building Rating System. The city is also targeting a minimum rating of 4 Pearls for its public areas, including parks, plazas and streets, in line with the Estidama Pearl Community Rating System.

Sustainable Buildings & Projects

Each building in Masdar City is constructed with low-carbon cement, utilises 90 per cent recycled aluminium, and is designed to reduce energy and water consumption by at least 40 per cent compared with ASHRAE standards. These criteria are set in accordance with the Leadership in Energy and Environmental Design (LEED) certification and the UAE's Estidama Pearl Rating System, which is administered by Abu Dhabi's Department of Urban Planning and Municipalities. Estidama means 'sustainability' in Arabic.

Text courtesy of Masdar



LAGI 2019 PARTNER

24TH WORLD ENERGY CONGRESS

The triennial World Energy Congress is the world's largest and most influential energy event covering all aspects of the energy agenda. Running since 1924, the Congress enables dialogue among Ministers, CEOs, policy-makers and industry practitioners on important developments in the energy sector. The flagship event of the World Energy Council, the Congress offers a unique platform for global energy leaders to explore new energy futures, critical innovation areas, and new strategies. The Congress has been staged in over 20 cities across the world.

In 2019, the 24th World Energy Congress will be held in Abu Dhabi, United Arab Emirates for the very first time under the patronage of H.H. Sheikh Khalifa Bin Zayed Al Nahyan, President of the United Arab Emirates from 9–12 September 2019. Under the theme “Energy for Prosperity,” the Congress will be a global leadership forum that defines the strategy for a collaborative, sustainable and innovative energy future that enables societal, commercial and community prosperity. For more information visit www.wec24.org

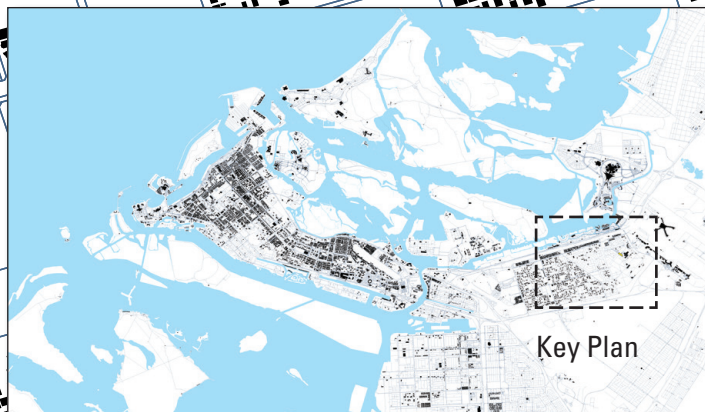
LAGI 2019 DESIGN GUIDELINES

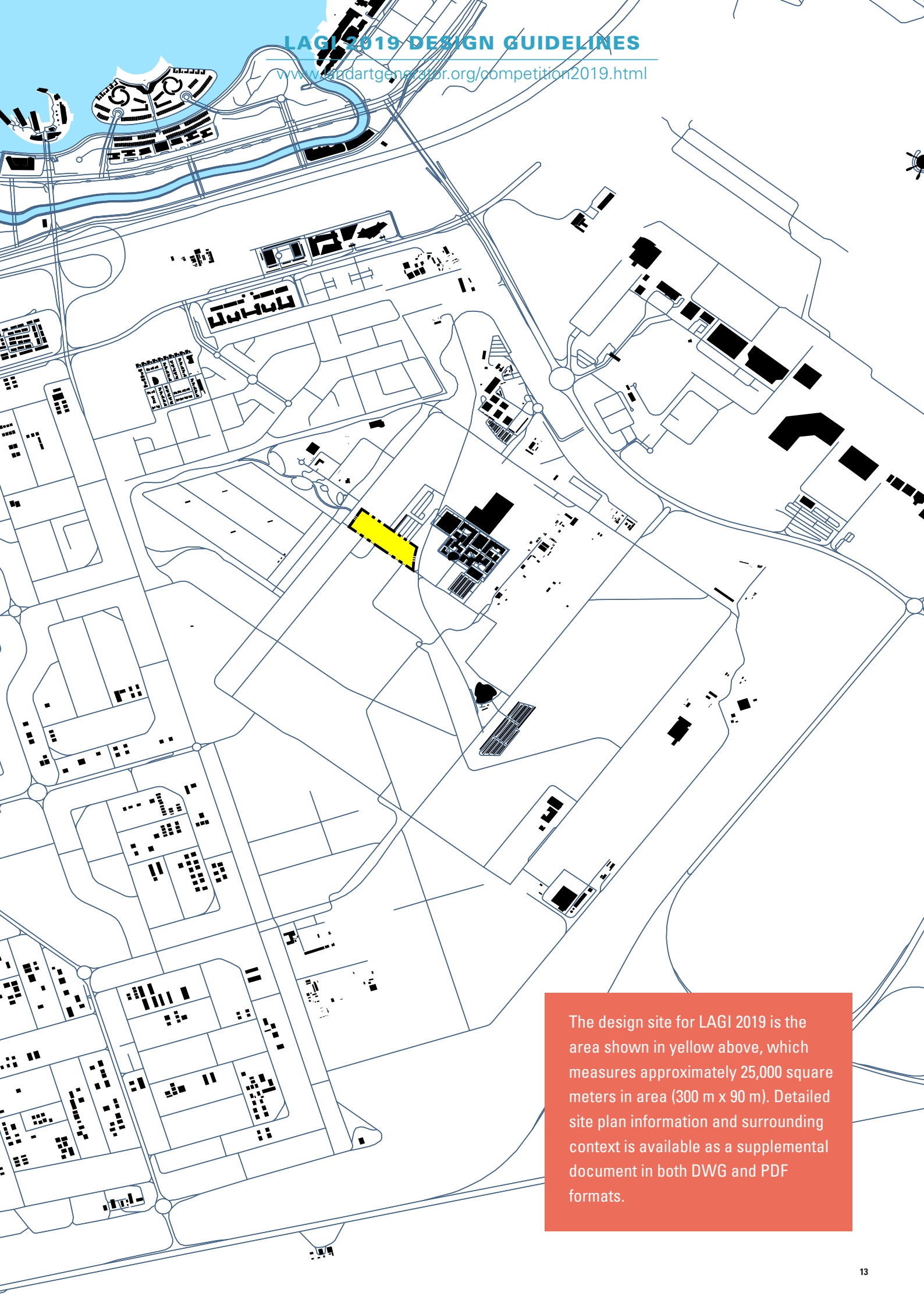
www.landartgenerator.org/competition2019.html



LAGI 2019 DESIGN SITE

Your artwork will provide thought-provoking experience, shade for recreation, a place of contemplation, and will be a gateway to Masdar City, while generously providing clean electricity to power the lives of residents.





The design site for LAGI 2019 is the area shown in yellow above, which measures approximately 25,000 square meters in area (300 m x 90 m). Detailed site plan information and surrounding context is available as a supplemental document in both DWG and PDF formats.

LAGI 2019 DESIGN SITE SURROUNDING CONTEXT

Detailed information about the site is available for download at the LAGI 2019 design competition website:

**[landartgenerator.org/
competition2019.html](http://landartgenerator.org/competition2019.html)**

Supplemental materials to this Design Guidelines document include:

- » Design Site Boundary Survey
- » Site Photos
- » Climate Information and Other Supporting Documents
- » Q+A Document
- » LAGI 2019 Terms & Conditions

LAGI 2019 DESIGN GUIDELINES

www.landartgenerator.org/competition2019.html





A QUALIFIED ENTRY TO LAGI 2019 MUST

- Consist of a three dimensional sculptural form that has the ability to stimulate and challenge the minds of visitors to the site. The work should aim to inspire the world about the beauty of renewable energy infrastructures and bring a positive message about life in a post-carbon future. The work should challenge visitors' assumptions about issues related to climate change, for example: the balance of ecological systems, human habitation and development, energy and resource generation and consumption, energy storage, and/or other concepts at the discretion of the design team;
- Capture energy from nature, convert it into electricity, and have the ability to store, and/or transform and transmit the electrical power to a grid connection point to be designed by others. Consideration should be made for artfully housing electrical equipment within the project boundary and restricting access to those areas for the safety of visitors to the site;
- Not generate greenhouse gas emissions or other forms of environmental pollution. Each entry must provide a brief (approx. 300 words) environmental assessment as a part of the written description in order to determine the effects of the project on natural ecosystems and to outline a strategy to mitigate any foreseeable issues;
- Be pragmatic and constructible, and employ technology that can be scalable and tested. There is no limit on the type of technology or the proprietary nature of the technology that is specified. It is recommended that the design team make an effort to engage the owners of proprietary technology in preliminary dialogue as a part of their own research and development of the design entry;
- Be designed as a permanent installation that will serve as a contemporary, relevant, and lasting cultural attraction that provides a recognizable image to bolster local character and be proudly associated with the place;
- Not exceed \$20 USD per watt of installed capacity. This symbolic number is the cost of a standard small-scale solar installation in 1992—the year of the Rio de Janeiro Earth Summit. Since then the cost of a similar installation has fallen to \$3 per watt installed. Use the additional \$17 per watt to make your installation a work of art;
- Provide opportunities within a variety of spaces for recreation, events, and interaction;
- Be well informed by a thorough understanding of the history, geography, details of the design site, and the broader contexts of Masdar City, the City of Abu Dhabi, and the United Arab Emirates;
- Be safe to people who would view it. Consideration must be made for viewing areas, accessibility, and boundaries between public and any restricted areas;
- Use English language for all text and metric scale.



LAGI 2019 PUBLICATION

The top 50 submissions will be featured in a publication by Prestel (a division of Random House) and will have broad international distribution.



LAGI 2019 JURORS

H.E. Eng. Fatima Alfoora Alshamsi

Assistant Undersecretary for Electricity and Future
Energy in the United Arab Emirates Ministry of
Energy and Industry; CEO 24th World Energy
Congress Organizing Committee

Yousef Ahmed Baselaib

Executive Director Sustainable Real Estate
Masdar

Lukas Sokol

Head, City Design, Sustainable Planning
Masdar

Chris Wan

Head, Design Management
Masdar

Tim Mollette-Parks

Landscape Architect
Associate Principal, Mithun

Zac Cirivello

Operations Manager, Fly Ranch
Burning Man Project

Hala El Akl

Architect & Urban Planner
Director, PLP Architecture, London

Raya Ani

Founder | Design Director
RAW-NYC Architects

Daniel Glaessl

Design Director
Gensler Silicon Valley

Emily Doherty

Director
The Christo and Jeanne-Claude Award

LAGI 2019 SELECTION CRITERIA

Adherence to the Design Brief;

The integration of the work into the surrounding
environment and landscape;

The sensitivity of the work to the environment, and to
local, and regional ecosystems;

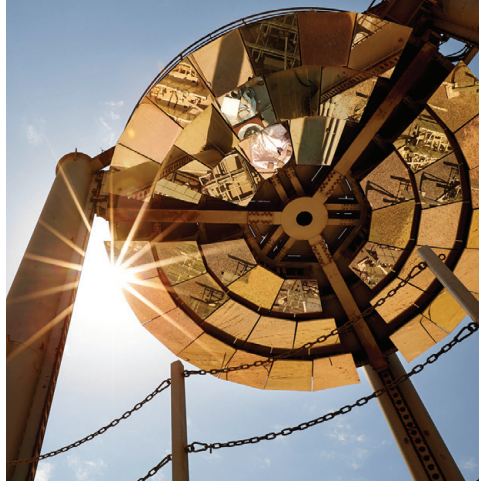
The estimated amount of clean energy that can be
produced by the work;

The way in which the work addresses the public;

The embodied energy required to construct the work;

The perceived return on capital investment of the
work, judged by the complexity of the design in
relation to the energy it produces each year;

And the originality and social relevance of the
concept.



GENERAL CRITERIA

Your entry must not have been used in any other context, and it must not have been previously published or exhibited anywhere in the world.

The design must be kept confidential and anonymous until the results of the competition are announced.

Designs that have already been made public, are found to plagiarize any existing design, that may harm public safety, or that are found to infringe on the intellectual property rights of others will be disqualified.

There are no restrictions on team size and/or makeup. It is recommended (but not mandatory) that the team be comprised of interdisciplinary members so as to arrive at the most well conceived result. An ideal team might consist of an artist, an architect, a landscape architect, an electrical engineer, and a renewable energy scientist.

Anyone is eligible to enter the LAGI 2019 design competition. There is no fee to enter.

See Terms & Conditions for more information.

FORMAT

- Exactly three (3) A1 size layout boards (PDF only). A1 size is based on the international ISO 216 standard (594mm height × 841mm width).

Each layout board may not exceed 20MB file size.

Layout boards must be **landscape in orientation** (for consistency in jury review).

Nowhere on the layout boards or written description file can there be any personal identifying information. The jury will see these boards and we must maintain anonymity of the entries. During the upload process, all of your files will be automatically assigned a random character code and this will be used by the jury to identify your team.

- One (1) DOC, DOCX, or TXT format file containing:
 - » a 1,200-word maximum written description (do not include any information within the written description file that could identify who the team members are)
 - » technology used in your design
 - » nameplate capacity in kWp (peak output measured in kilowatts of *power*)
 - » annual kWh (kilowatt-hours) of *energy* expected to be generated by your design under average site conditions
 - » dimensions, list of the primary materials used in your design, and an order-of-magnitude conceptual cost estimate
 - » a 300-word maximum environmental impact summary

- Three (3) to eight (8) JPG (300 dpi) CMYK image files (*without text*) or simple diagrams. These should be the same images used in the layout boards. Images can be any orientation and dimension, but must not exceed 50MB each in file size.

The purpose of these image files is to facilitate the production of the book with Prestel Publishing. The top 50 submissions will be published in this book for release in January 2020. Please note that we might contact you for more images for the purposes of publication and exhibition. CMYK images are preferred.

- Language must be English.

For examples of layout boards you can visit the below links where you will find a portfolio of submissions from the previous three LAGI design competitions.

landartgenerator.org/LAGI-2014
landartgenerator.org/LAGI-2016
landartgenerator.org/LAGI-2018

REGISTRATION

Register your team by creating an account at:
www.landartgenerator.org/competition2019.html

Click on the “LAGI 2019 Registration and Submission Portal ” link.

Click “Register” at the top of the page.

Enter your email address and pick a password.

If you encounter any difficulties or have any questions, please email lagi@landartgenerator.org.

HOW TO SUBMIT YOUR ENTRY

- Teams may submit only one entry to the competition. Individuals may not be on more than one team.
- Be sure that no personal identifying information is visible on any of your layout boards, written description, or JPG images.
- The naming convention for your files is not important. The LAGI submission process will automatically name the files according to the type and automatically assign a random 8-character code for anonymous team association. This is a change from past LAGI competitions.
- Log into the LAGI 2019 Registration and Submission Portal the same way you did when you registered.
- Click “Submit Your Entry Here”
- Upload your files using the online forms.

Locate each of your PDFs, JPGs, and your text file on your local computer by clicking “Browse” in each upload field. Click the “Upload” button and then proceed to the next field.

Make sure that your email address and all other team information is correct, and that all required fields are completely filled in. This is the information we rely on for publications.

- Please be patient while each file upload is in process and do not navigate away from the page.
- When finished, you will have the opportunity to continue to a confirmation page where you will find links to all of your files as well as a summary of the team information that you have provided. You will also receive an email with this same information.

DEADLINE

Submissions shall be accepted until May 12, 2019 at 23:59 (11:59pm) anywhere on earth (AOE). This means that the deadline has not passed if, anywhere on earth, the deadline date and time has not yet passed. Submissions received after that time may be deemed noncompliant and may be rejected from consideration.

FIRST PLACE

winning submission will be awarded

\$40,000 USD

SECOND PLACE

winning submission will be awarded

\$10,000 USD

One representative of the first and second place winning teams will be flown to Abu Dhabi for the award ceremony. Travel visas are the responsibility of the participating team.



SCHEDULE

January 16, 2019

LAGI 2019 competition opens

April 15

End of question & answer period

Answers will be posted to the LAGI website

May 12

Competition closes at 23:59 (11:59 pm)

June

Selection & jury process

August

Winners & shortlist contacted

September 9–12

Award ceremony and exhibition held at the
24th World Energy Congress, Abu Dhabi

January 2020

Exhibition and book launch at the World
Future Energy Summit, Abu Dhabi

FREQUENTLY ASKED QUESTIONS

LAGI 2019 is open to everyone (students, professionals, and others).

There is no fee to enter as we strongly believe in creating an open and accessible platform for creativity and innovation.

We encourage interdisciplinary teams comprised of artists, architects, landscape architects, engineers, scientists, designers, and others. However, we also recognize that great solutions can come from individuals working alone or in smaller teams.

CONTACT

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LAGI Founding Directors

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www.landartgenerator.org



**RENEWABLE
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