

# How the great energy transition will make our cities more beautiful and more just

## The outcome of a design competition for Glasgow points the way

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We stand at the beginning of 2017 at a political and technological crossroads. Those of us who are concerned about the health of the Earth's climate and the balance of natural systems are encouraged by what economists tell us is an inevitable transition from a reliance on fossil fuels towards an emergence of a great renewable energy economy. Listen and you will hear it knocking at the door. It has the goods ready to deliver—clean forms of energy such as solar and wind are now competing with conventional coal, nuclear, and other fossil fuel technologies on a levelized cost of energy basis. Investors are shifting money into cleantech and away from fossil fuels. Yet, the elections in 2016 in both the UK and the USA make it clear that as enticing as this sustainable energy vision has become to some, the general public remains skeptical. For now the door remains only slightly ajar, with the security chain engaged.

Those of us who work on design solutions understand that it is entirely possible to make the transition to post-carbon economies well before the middle of this century if only we could build the political will to do so. Without political action and strong public policies in place, the private sector will continue to swim upstream.

The scientific community and communications experts have done an excellent job of bringing the potential disastrous consequences of climate change to the attention of the vast majority, and polls show that most people are no longer in denial. The catastrophic messages of rising sea levels, heat map projections, mass extinctions, warnings of greater floods, droughts, and severe weather events have all gotten the message across, but what remains unclear is how to translate this knowledge into political action. The issues seem out of scale with our ability to tackle them and people are paralyzed.

Perhaps this is due to a lack of focus on exactly how the renewable energy economy will benefit people's lives directly and in a good way. It's not enough to scare someone into action; you have to entice this with something good. This is especially true for those who find themselves at what seems to be the losing end of the bargain—whose livelihoods are invested in fossil fuels, or who see change as something that will bring sacrifice or disruptions to their way of living.

Naomi Klein points out in her 2014 book, *This Changes Everything*, that the most direct path to climate change mitigation is paved with regulations and policies that will empower people, communities, and civic institutions.

The Land Art Generator Initiative (LAGI) calls attention to the great energy transition by making its benefits very visible to communities around the world. The idea is that an uplifting approach is more effective than stories of doom and gloom at reaching those who are still not yet convinced of the science, or who may be tempted to protest new solar and wind installations because they fear they are not visually pleasing.

Instead, what if we celebrate the beauty of our renewable future by bringing creative minds together to design culturally relevant energy infrastructures that help neighborhoods and people directly? The world that LAGI would like to see emerge in the coming decades is one in which the mass proliferation of clean energy systems will also lead to some of the 21st century's greatest works of civic art and social projects.

In order to entice people and stimulate political will, sustainable energy projects should be at a minimum suitable to places and respectful of people. At best they can bring lasting improvements to people's lives and enhance public places.

What would a utility-scale renewable energy project for Glasgow look like if the design process was led by artists, architects, landscape architects, and urban planners, working in collaboration with engineers? How would such an installation relate to the community?

In 2013, Chris Fremantle (*eco/art/scot/land*) reached out to Elizabeth Monoian and Robert Ferry, the directors of the Land Art Generator Initiative to inquire about the possibility of bringing the project to Scotland.

By the fall of 2014, Chris had set the stage and LAGI was formally invited to bring the project to Glasgow by the City Council following a Creative Carbon Scotland Green Teas(e) event — part of the European Green Arts Lab Alliance project. The Dundas Hill site was suggested as one of a number of potential sites by the City Council, a lead partner in the Glasgow Canal Partnership. Scottish Canals/BIGG Regeneration welcomed the suggestion and have supported the evolution of the project. The project neatly ties into many of the outcomes of 2014 community design charrette and it offers the opportunity to present a model of what community-scale renewable energy projects can aspire to be in their built form.

The consortium including Glasgow City Council (with great thanks to Heather Claridge), Scottish Canals, and igloo Regeneration (again, great thanks to Gary Watt), supported by *ecoartscotland* brought together overseas teams who participated in past LAGI open competitions (UAE 2010; NYC 2012; Copenhagen 2014) to work with Glasgow-based teams in order to research and develop LAGI artwork concept proposals for Port Dundas.

LAGI Glasgow formed part of Glasgow's Green Year 2015 and continued through 2016 as Glasgow's contribution to Scotland's Year of Innovation, Architecture, and Design—engaging local communities as well as those interested in art and innovation in renewable energy.

The project demonstrates the potential for artists, designers, architects, and landscape architects to contribute to renewable energy infrastructure and integrate it into a placemaking approach.

Glasgow is a place with a long and storied history with public art—from the Victorian Necropolis, to the contemporary Glasgow International Festival and the Turner prize. This opportunity at Dundas Hill is quite unique and important to the City Council, project partners, and to the whole of Glasgow.

This is the chance to build a large and site-specific artwork that will take its place atop a City that eats and breathes art. The scale is both exciting and overwhelming—the completed work has the potential to shape the image of the City and bring people to an activated cultural site, all while powering approximately 300 homes in the new mixed use development.

Proposals were conceived and delivered with this context in mind. The project sought entries that were brave, bold, beautiful, honest, inspiring, and functionally elegant.

The winning submission for LAGI Glasgow, *Wind Forest*, was designed by Dalziel + Scullion, Qmulus Ltd., Yeadon Space Agency, and ZM Architecture. It utilizes Vortex Bladeless™ wind turbines with an annual capacity of 900 MWh.

*Wind Forest* aims to transform the post industrial landscape of Dundas Hill with an enriched infrastructure, based on ideas around technology, landscape and context. On the site, forest groves with different spatial, sensory and environmental qualities are planned.

A forest absorbs energy from the earth's atmosphere and distributes this energy to its connected ecosystem. *Wind Forest* mimics this activity by absorbing energy from the wind passing through the site and distributing it to its diverse and connected community.

*Wind Forest* works with the physical landscape of 100 Acre Hill into which a forest of one hundred 4 kW single stem-like wind turbines is 'planted'. These are not like conventional wind turbines; they have no blades but rather work through oscillation. Within this 'boreal' forest are a number of large 'erratic' boulders, which conjure up the massive geological processes that once shaped this landscape—in particular, the glacial drumlin that is 100 Acre Hill.

The futuristic forest exists as three groves of the bladeless turbines that create characterful spaces within the site, while generating energy by the swaying motion at the top of each singular structure. One of the sites (shown in the diagram to the left) is to the East—the gathering place or central common—one in the centre wetlands around the natural SUDS (sustainable urban drainage system) basin, and one to the West—the glade—where the edge of the site spectacularly opens onto views of Park Circus and the west of the city. This particular

grove is most visible from the city centre and it will be sited partially on one of the sloping and more difficult sites to build on. All sites are exposed areas in 'no build zones' within the current masterplan and will be interconnected through a path network.