

Energetic Flowers !

A collective Solar installation System that redefines urban spatial configuration

Energetic flower proposed a collective system that include a series of redesigned solar installations with different scales to relate the idea of new energy to people's daily life in a beautiful way. The new solar system redefined the park spatial configuration in a natural way, creating a various and vigorous energy landscape. People are encouraged to wander and explore. Traditional solar panels are redesigned to perform better and integrated with spatial installations, creating a sense of community, curating human-nature interactions. All the module pieces are designed with an inherent aesthetic inspired by nature, achieving a systematic nature beauty. Four solar installations are developed and organized including solar petal, solar sphere, solar pad and solar ring pavilion. These new modules are exhibiting coherent sculptural characteristics in multiple dimensions. New energy landscape will help foster a new relationship among human, nature, technology.

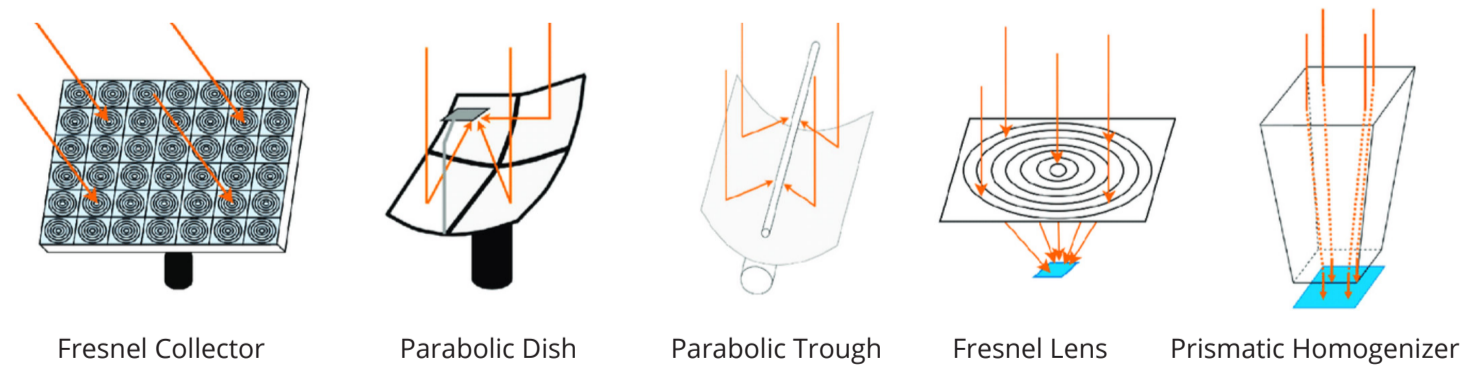
The new energy landscape is taking advantage of two technologies including CPV and Pavegen systems. CPV system is a proven technology to provide better energy efficiency than traditional solar panels. The solar petal and solar sphere are designed with optical features that can help concentrate sun lights which will greatly increase solar gain while allowing new sculptural aesthetics. Solar pads are proven products that can generate energy from people walking. These new technologies will create new definitions for energy systems in people's daily lives.

CPV Solar System

Concentrator photovoltaics (CPV) (also known as concentration photovoltaics) is a photovoltaic technology that generates electricity from sunlight. Unlike conventional photovoltaic systems, it uses lenses or curved mirrors to focus sunlight onto small, highly efficient, multi-junction (MJ) solar cells. In addition, CPV systems often use solar trackers and sometimes a cooling system to further increase their efficiency.

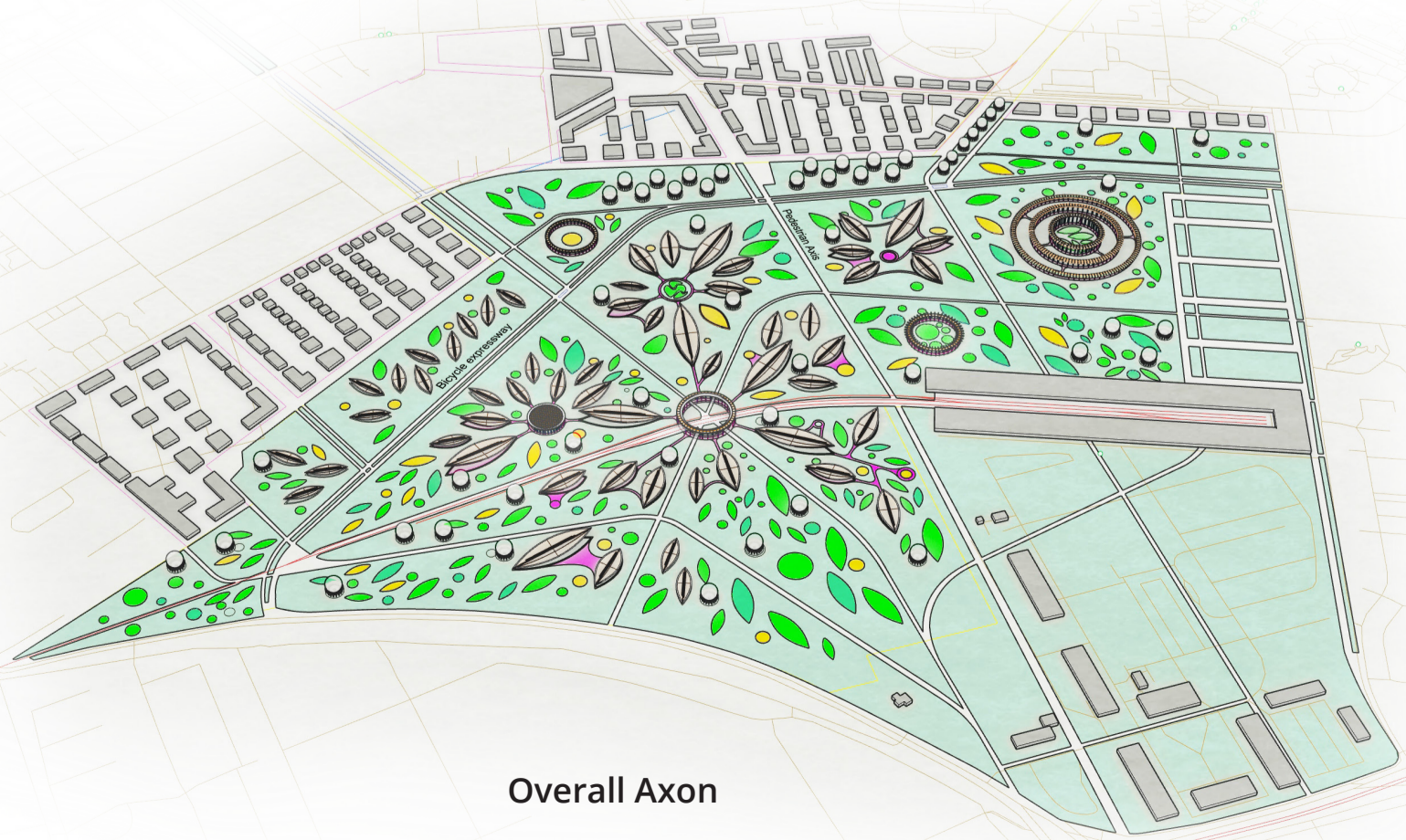
Systems using high-concentration photovoltaics (HCPV) possess the highest efficiency of all existing PV technologies, achieving near 40% for production modules and 30% for systems. They enable a smaller photovoltaic array that has the potential to reduce land use, waste heat and material, and balance of system costs. The rate of annual CPV installations peaked in 2012 and has fallen to near zero since 2018 with the faster price drop in crystalline silicon photovoltaics. In 2016, cumulative CPV installations reached 350 megawatts (MW), less than 0.2% of the global installed capacity of 230,000 MW that year.

HCPV directly competes with concentrated solar power (CSP) as both technologies are suited best for areas with high direct normal irradiance, which are also known as the Sun Belt region in the United States and the Golden Banana in Southern Europe. CPV and CSP are often confused with one another, despite being intrinsically different technologies from the start: CPV uses the photovoltaic effect to directly generate electricity from sunlight, while CSP – often called concentrated solar thermal – uses the heat from the sun's radiation in order to make steam to drive a turbine, that then produces electricity using a generator. As of 2012, CSP was more common than CPV.



Energy Pad System (Pavegen)

Power is generated when a footprint compresses the board from a depth of 5 mm to 10 mm. The triangular design maximizes power output and data capture, and its high durability and ease of install allow it to be seamlessly integrated into any location. Through electromagnetic induction by copper coils and magnets, each step produces from anywhere from 2 to 4 joules, which generates an average of 5 watts of energy: enough to operate an LED bulb for 30 seconds. This energy is stored in batteries that can power lights or other devices, such as speakers.



Overall Axon