

# The Virtual Solar Grid

## Public Participation of Scientific Research in Renewable Energy

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### Innovations

A "Powercraft" that empowers anyone to design and simulate any type and size of photovoltaic and concentrated solar power systems anywhere in the world



A citizen science portal that supports public participation of research and education on smart renewable energy grids on the global scale

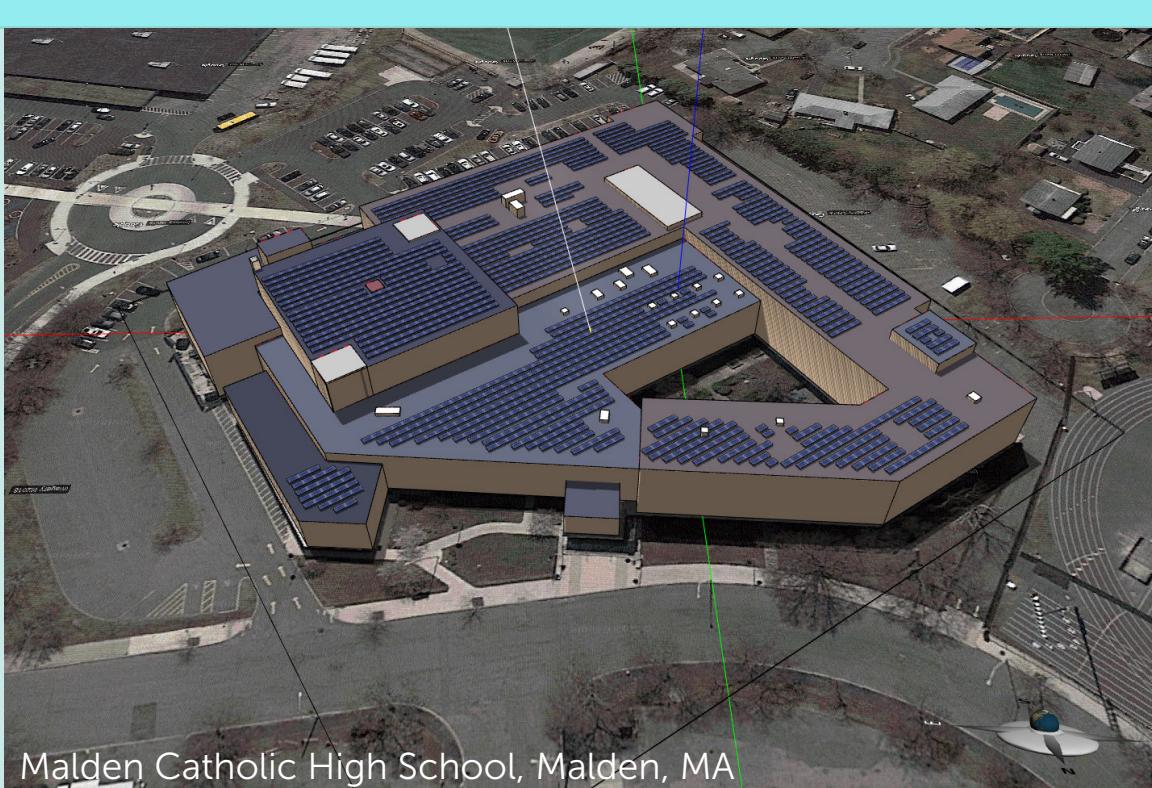
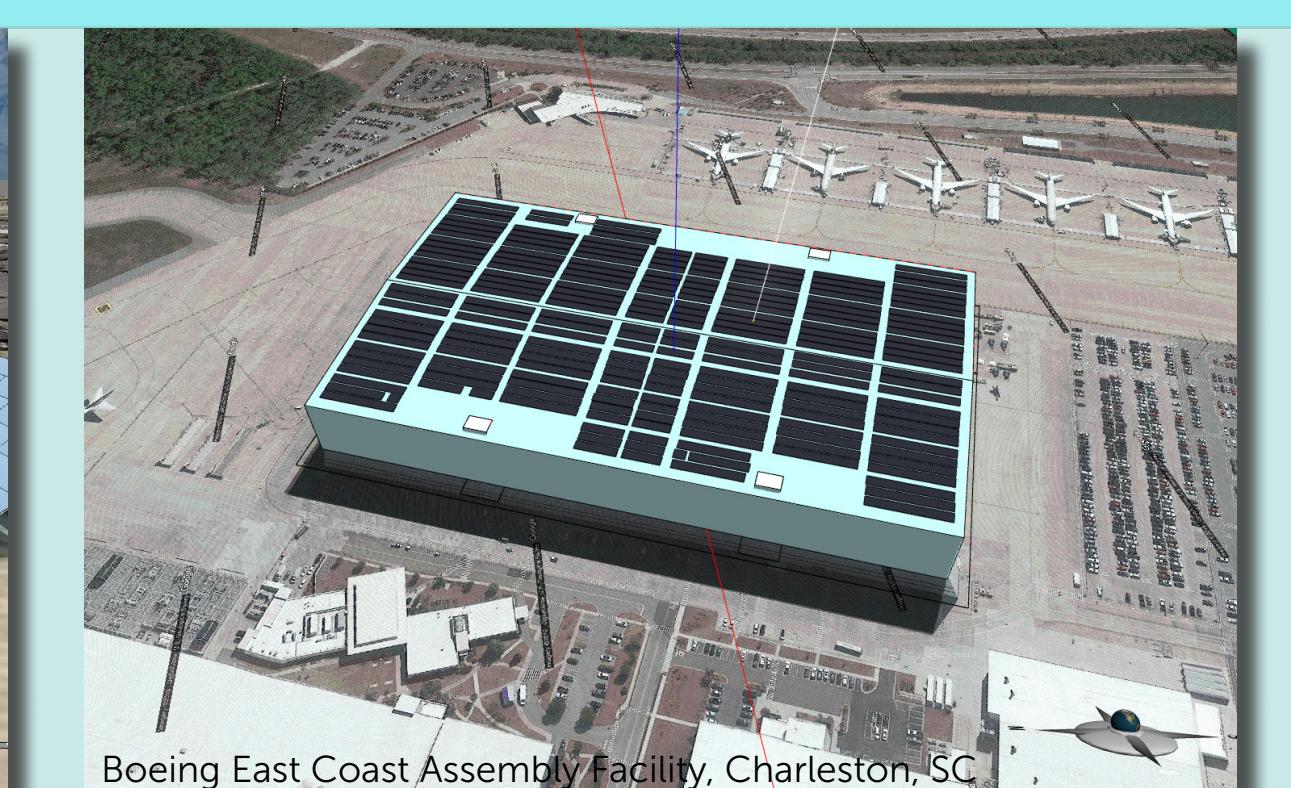
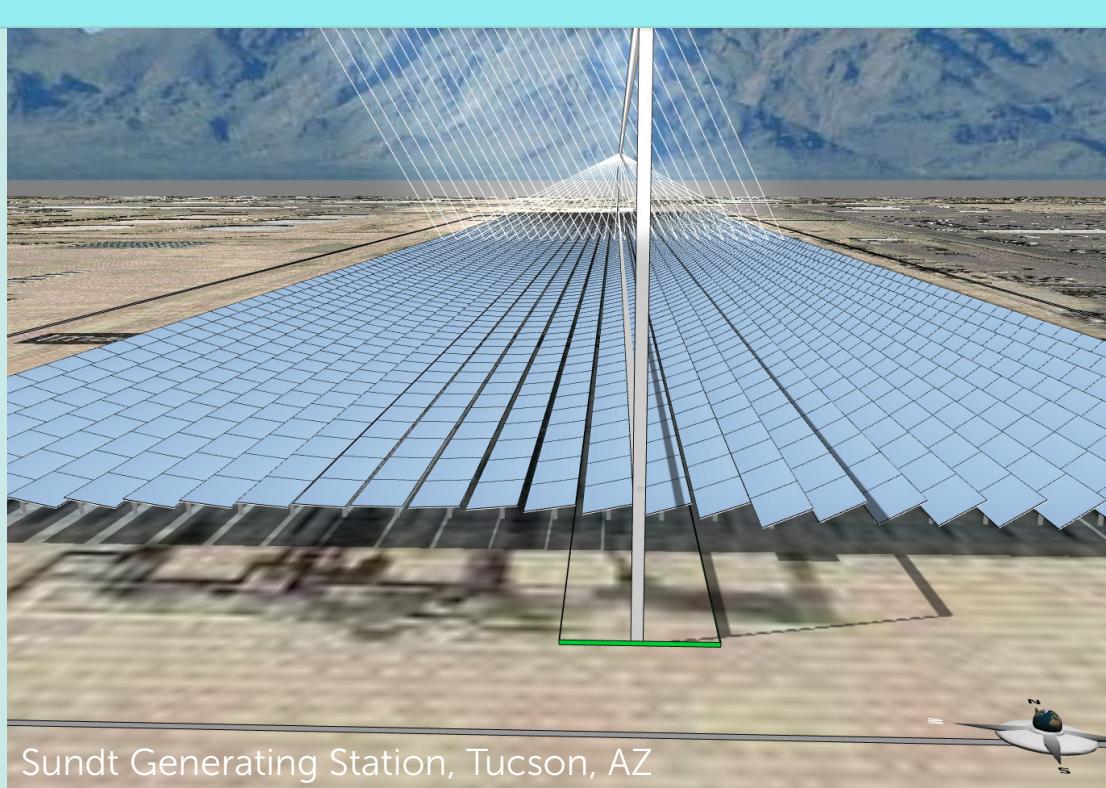
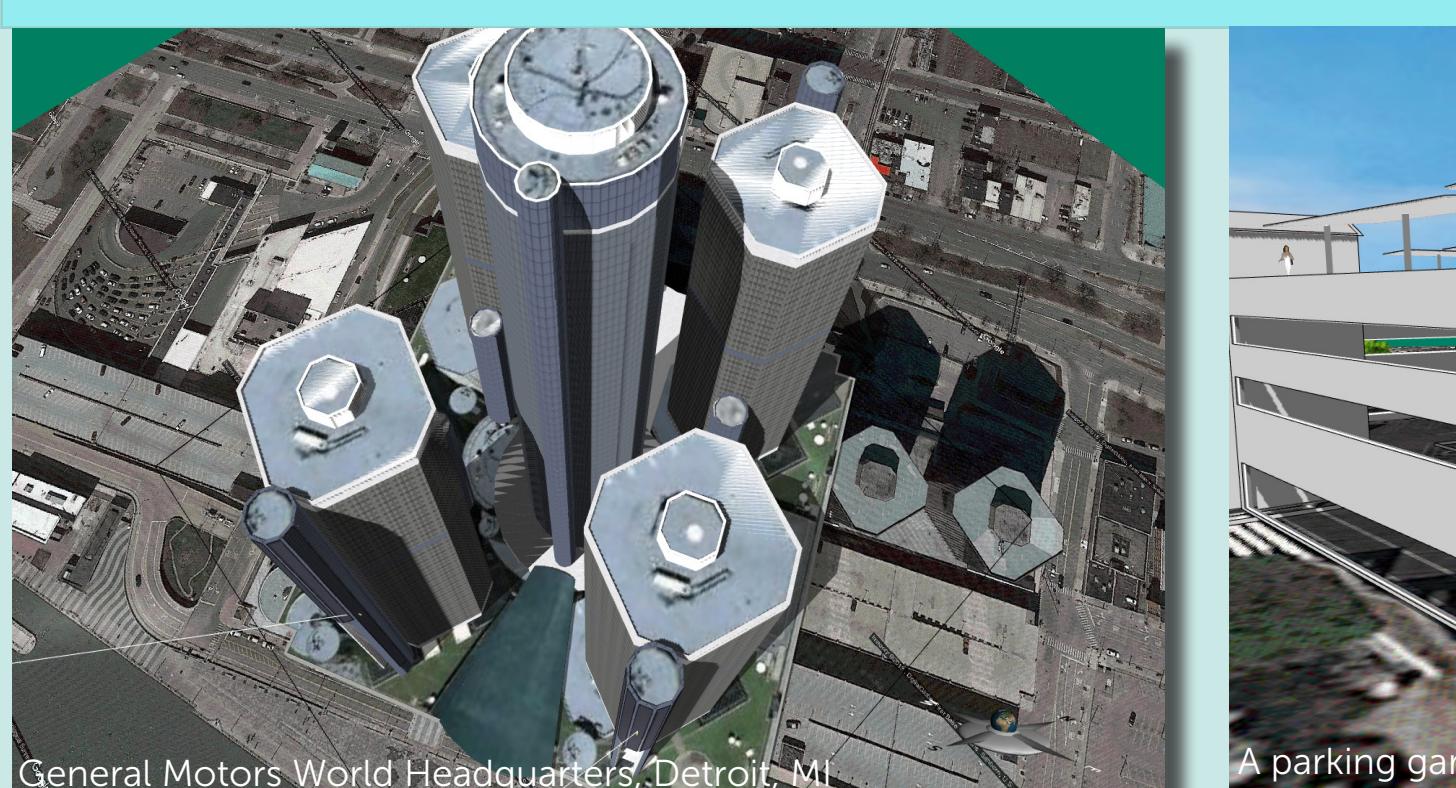
Featuring powerful 3D engineering simulation of realistic-looking built environments



The big question: Can humanity be powered 100% by renewable energy?

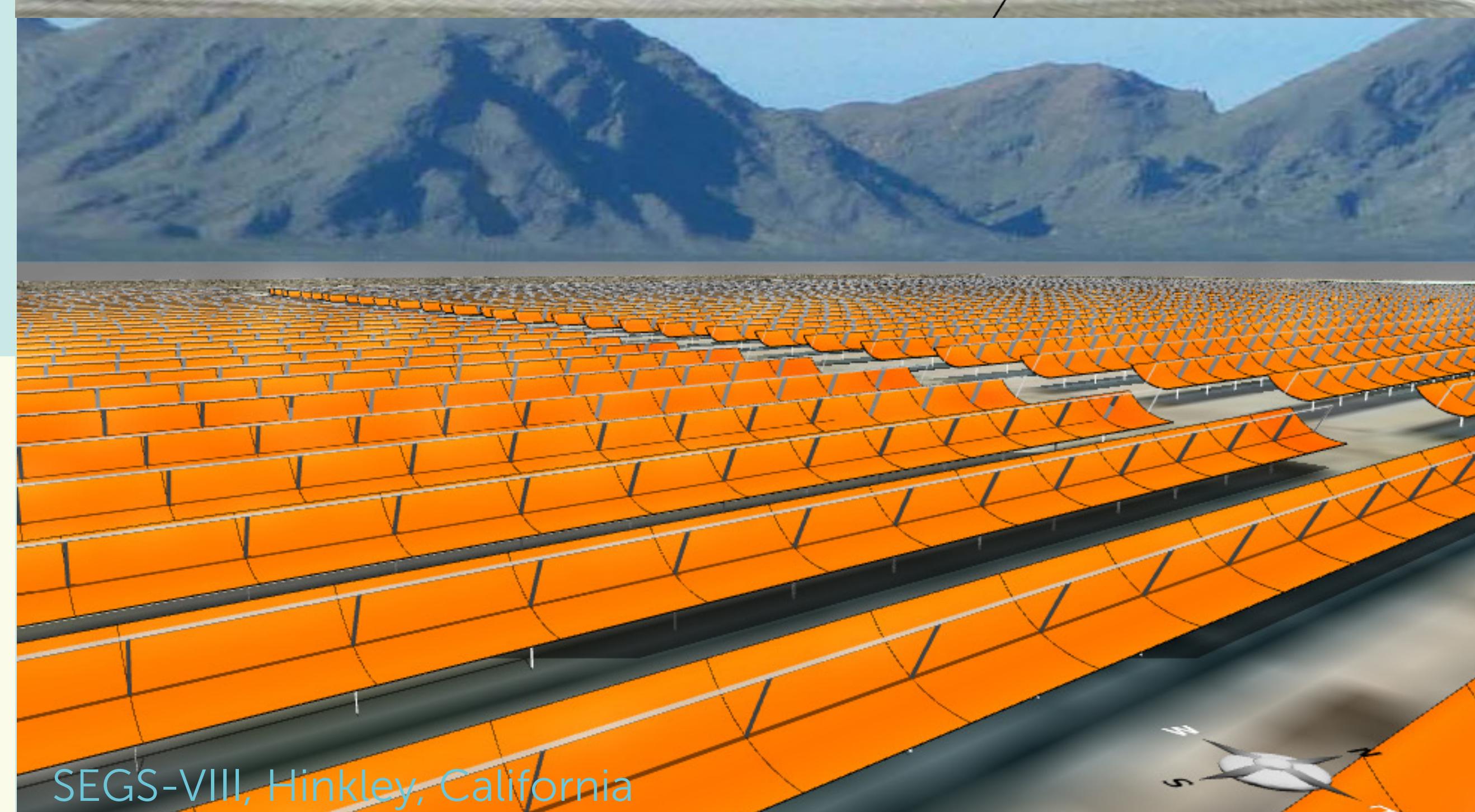
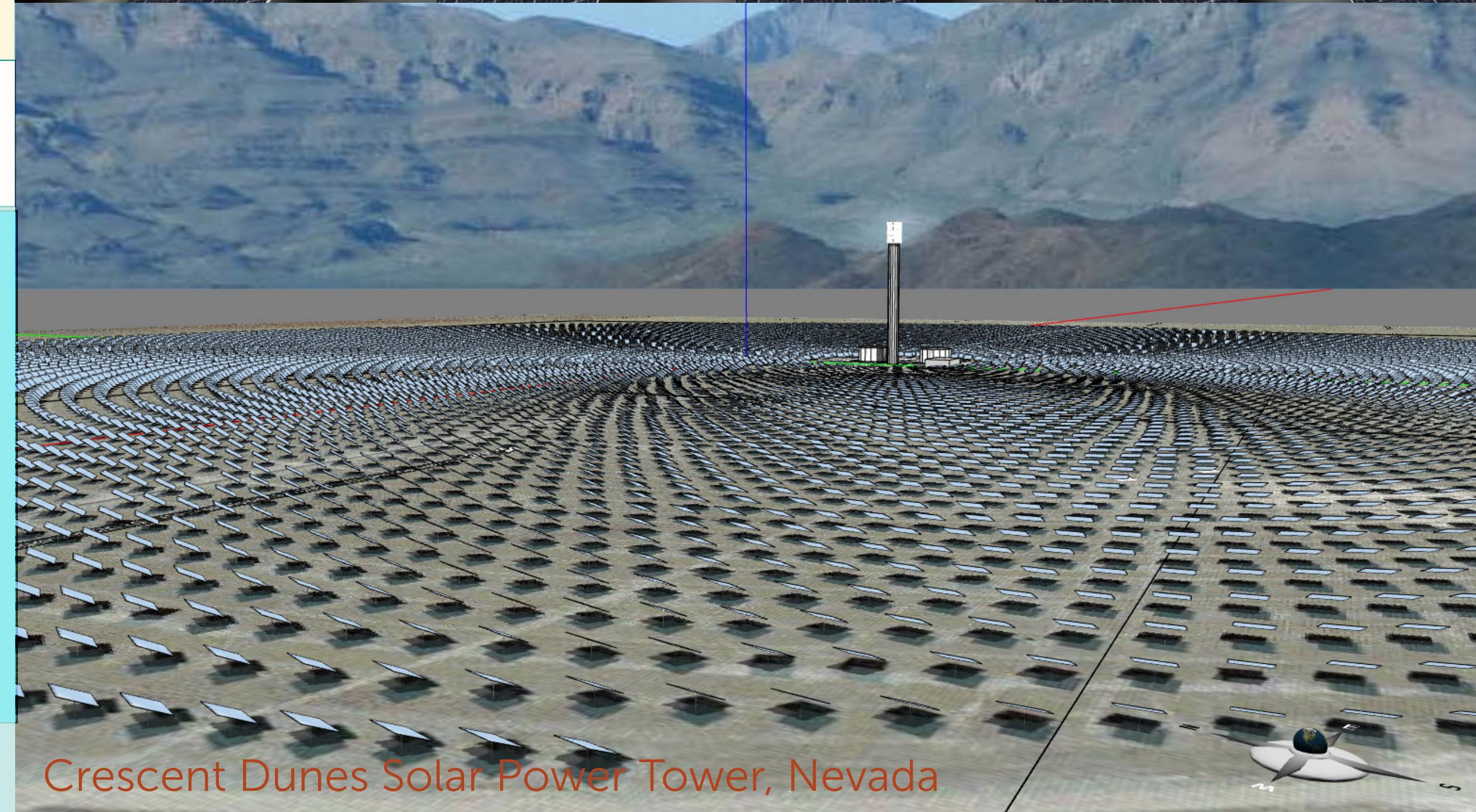
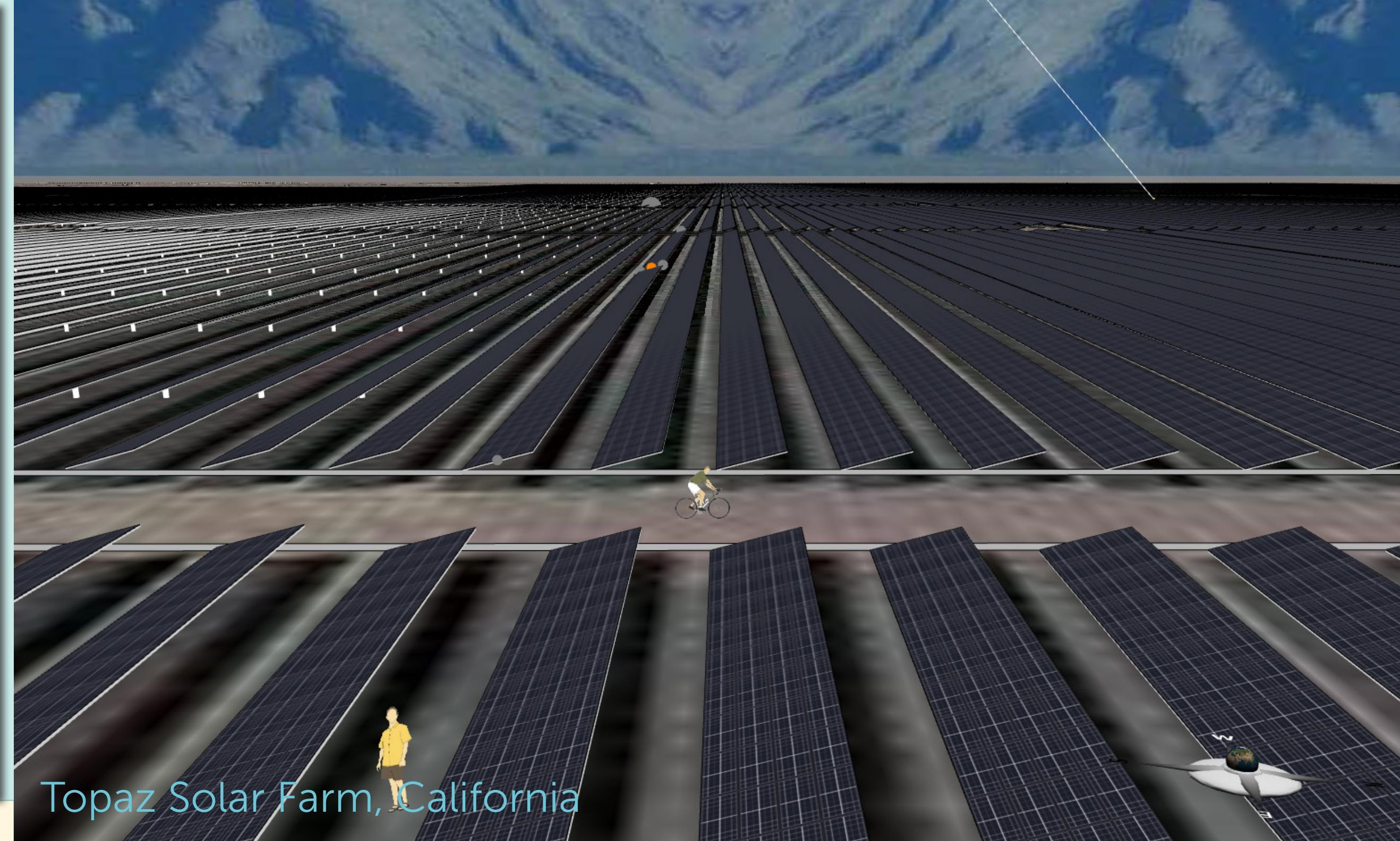
#### The science challenge:

Among the existing computational methods for large-scale solar potential assessment, site-by-site manual evaluation has the finest resolution and highest accuracy but is too time-consuming to be scalable. (Gagnon, et al., The National Renewable Energy Laboratory, 2016)

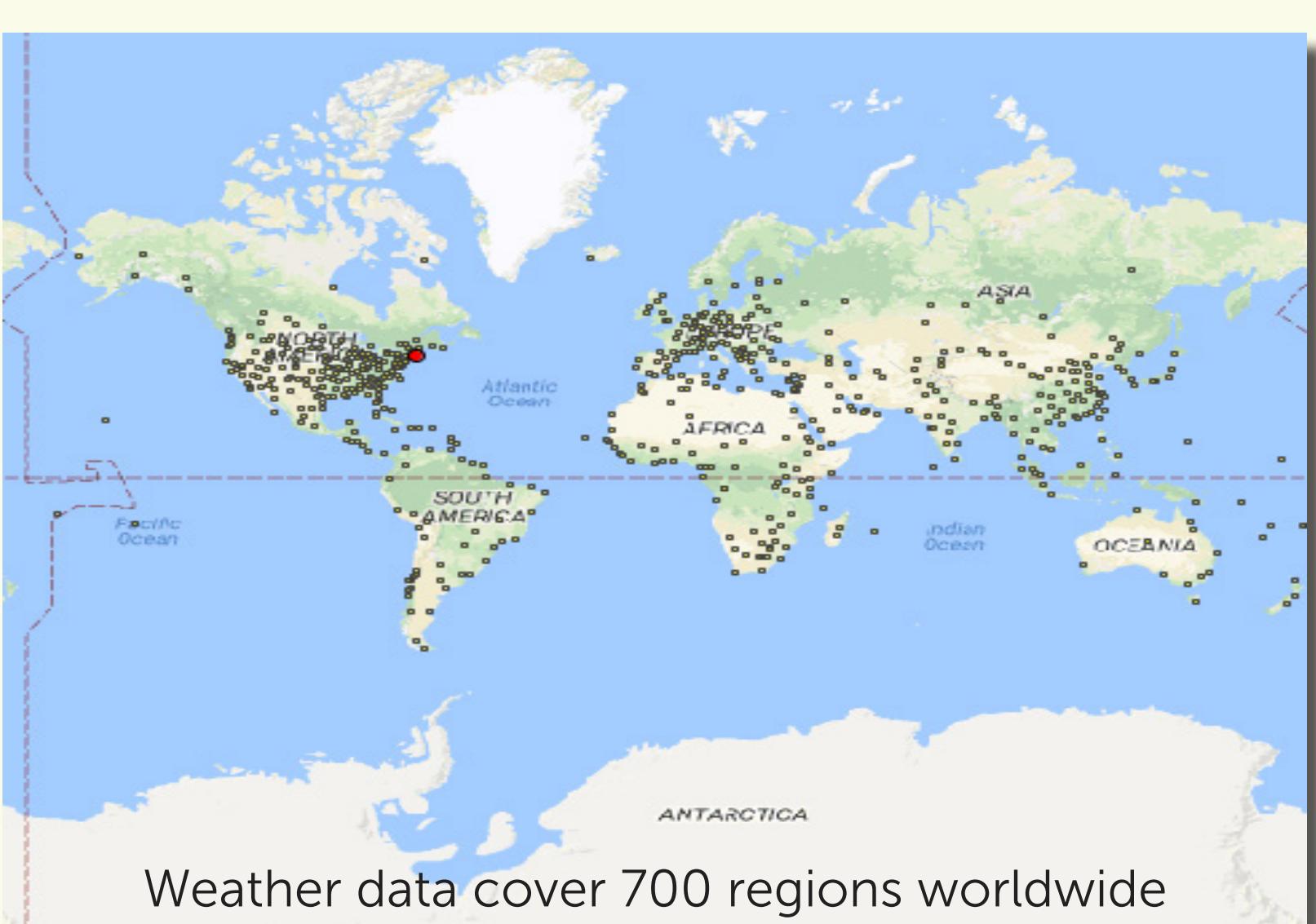


#### The education challenge:

High school students are expected to be able to "use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem." (HS-ETS1-4, Next Generation Science Standards)

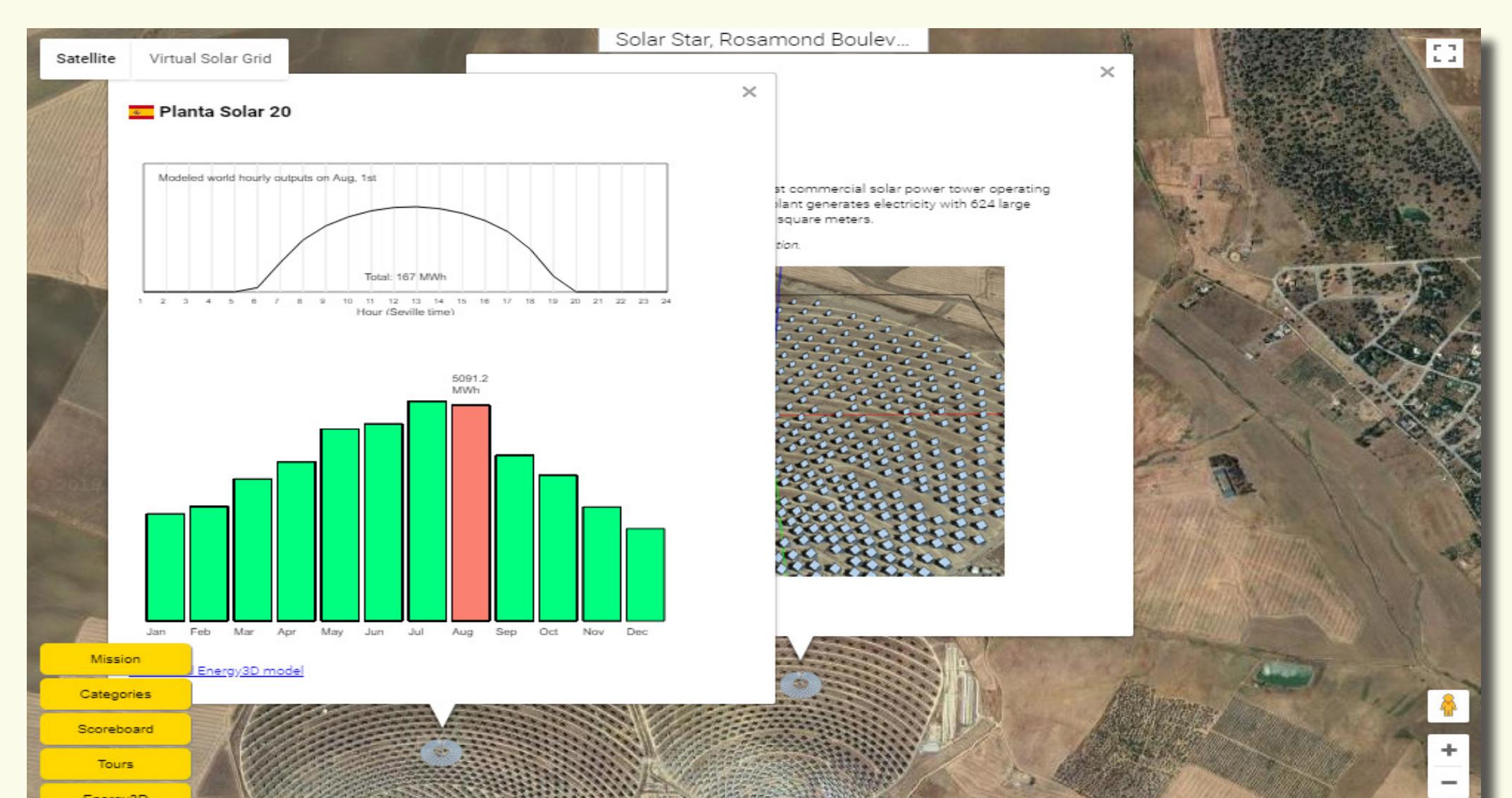


#### A Global Initiative to Support International Collaboration



Weather data cover 700 regions worldwide

#### Solarize Your World Curriculum to Support Crowdsourced Science



- Students learn the knowledge and skills needed to tackle engineering challenges in the classroom.

- Students practice engineering design through open-ended, real-world projects.

- Students explore independently and collaboratively and contribute to the Virtual Solar Grid.

<http://energy3d.concord.org>

