

**Crowdsourcing a Virtual Solar Grid
with a “Solar Minecraft”**

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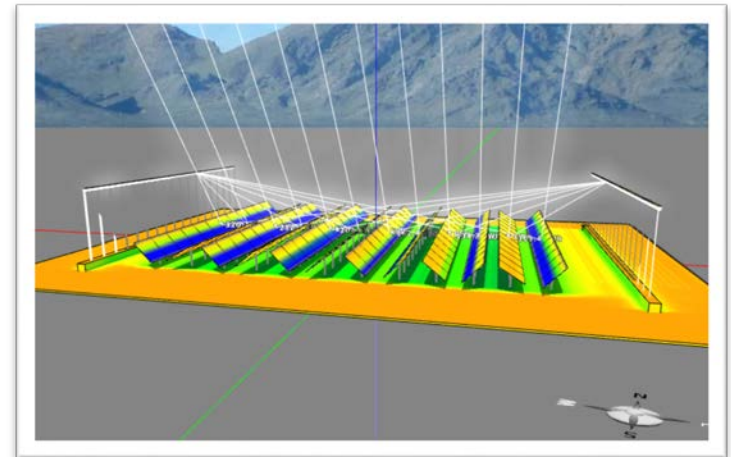
COMPANY ORIGINS

Who are we?

A group of researchers, developers, and educators focused on engineering computation and education

What problem are we trying to solve?

Among the existing methods for large-scale computational assessment of solar potential (*constant-value, manual selection, and GIS-based* as per Melius, et al., NREL, 2013), site-by-site manual selection has the finest resolution and highest accuracy but is too time-consuming to be scalable (Gagnon, et al., NREL, 2016).

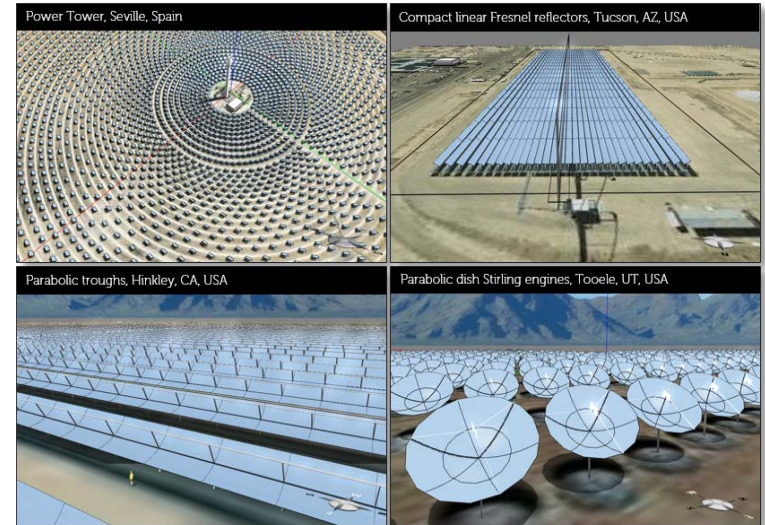


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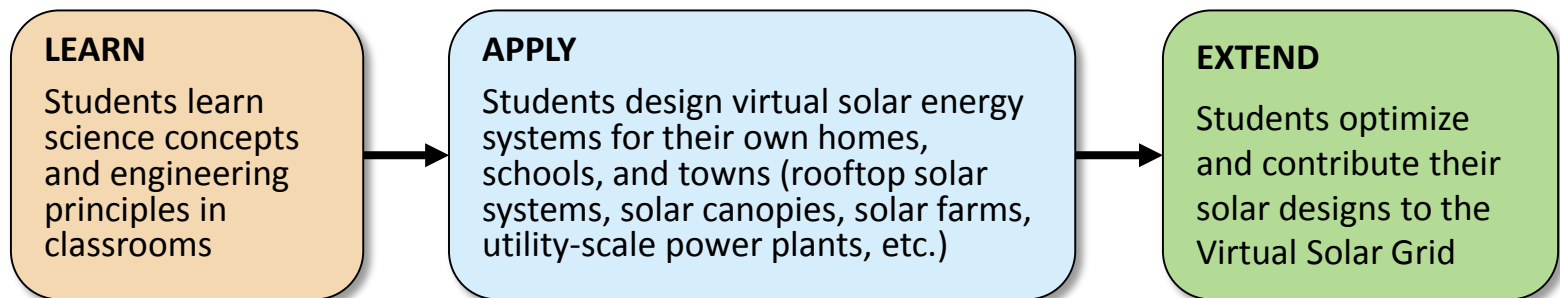
KEY PRODUCTS/TECHNOLOGIES

A Crowdsourcing Solution

- Energy3D: a “Minecraft-like one-stop-shop” CAD program for simulating and designing all types of solar energy systems (photovoltaic, concentrated solar power, passive solar, etc.) for almost anywhere in the world
- A crowdsourcing model to create a Virtual Solar Grid based on integrating STEM education and citizen science



Four types of CSP plants modeled by Energy3D

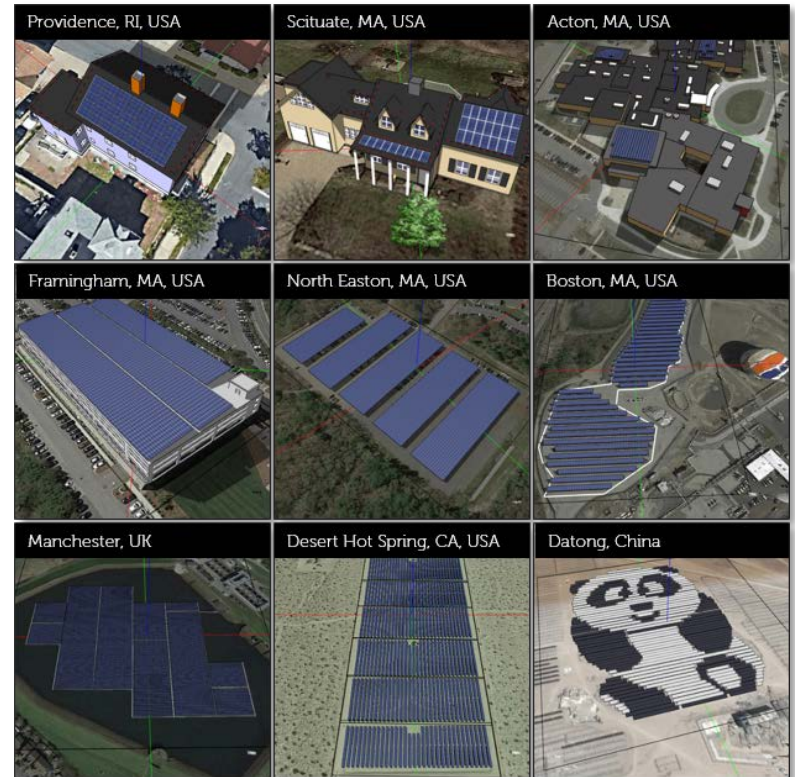


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KEY PRODUCTS/TECHNOLOGIES

R&D plan in the next two years

- Create artificial intelligence (AI) to guide engineering design (quality assurance for submitted models)
- Develop time-dependent, multiscale simulation to predict minute-by-minute outputs from modules (micro) to grids (macro)
- Make this project as engaging or necessary to students as robotics or Minecraft (integration with education standards and practices)



Energy3D turns Google Maps into “Solar Canvas”

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COMMERCIAL IMPACT

What will be the impact of the technology once it is commercialized?

- Energy research (ultra-fine-grained computational model)
- Solar companies (leads?)
- RE100 companies (sponsorships?)
- STEM education (especially engineering education)



600+ regions supported worldwide

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NEXT STEPS AND NEEDS

What are we looking for?

- Funders
- Partners
- Developers
- Teachers

Current funders:

- National Science Foundation
- General Motors

