Participate!

FOR SUSTAINABLE INNOVATORS

Swarm behavior and the Grid

Model prosumer behavior to enable sustainable grid management

SIEMENS

FOR A SUSTAINABLE WORLD

Tech for Sustainability Campaign 2023

Tech for Sustainability is a global initiative for students, researchers, startups, and innovative individuals to leverage technology to solve real-world sustainability challenges and shape our future alongside Siemens.

Leverage technology to shape a sustainable future

Siemens AG is a technology powerhouse that brings together the digital and real worlds to benefit customers and society and thus people around the globe. The company - having shaped each of the four industrial revolutions - focuses on intelligent infrastructure for buildings and decentralized energy systems, on automation and digitalization in the process and manufacturing industries, on water solutions, and on smart mobility solutions for rail transport, but also in financial services and software development.

As a global ideation campaign, Tech for Sustainability is designed to engage innovators outside of Siemens in order to come up with unique solutions for problems with a focus on sustainability. In a hackathon, the innovators who have been particularly successful in the early stages of the Campaign will have the opportunity to create a proof-of-concept and proof-of-feasibility for their ideas. The different phases of the campaign and their timeline are shown in figure 1.

"Sustainability is in our very DNA. It is not an option. It is a business imperative."
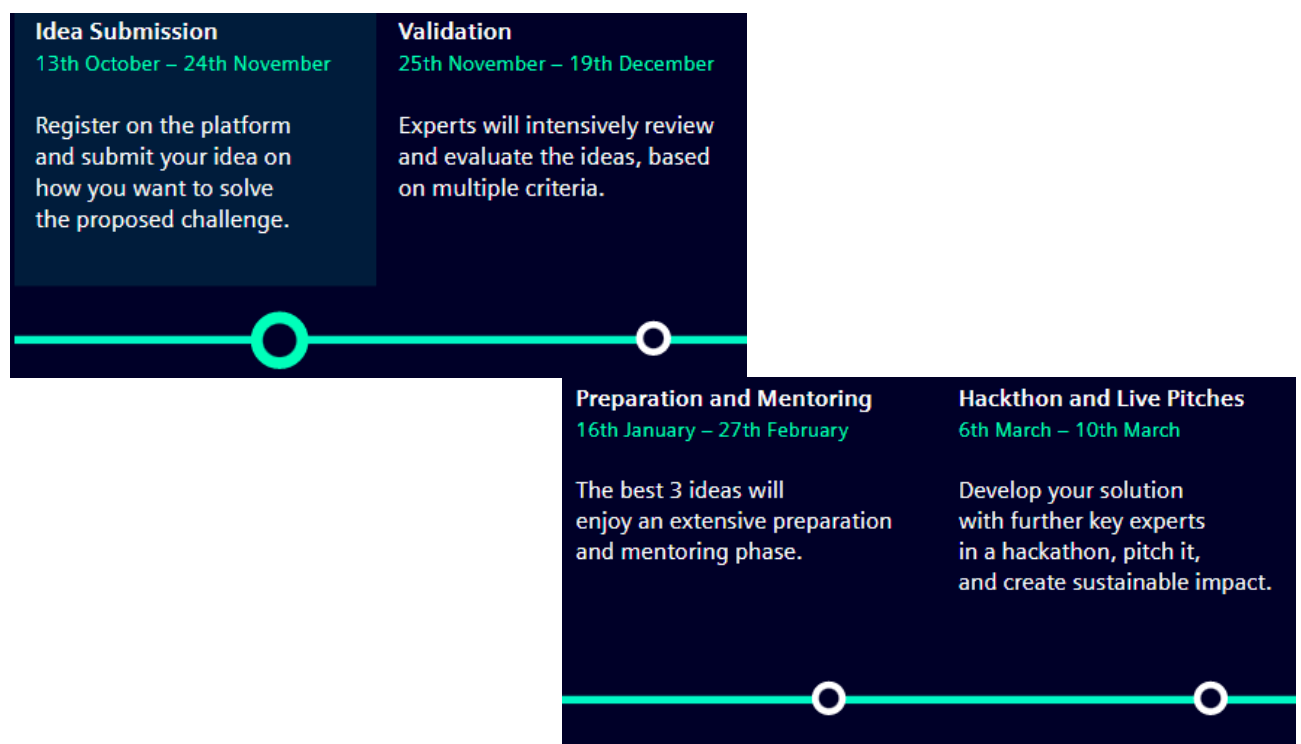*Judith Wiese, Chief People and Sustainability Officer, Member of the Managing Board of Siemens AG*

Idea Submission
13th October – 24th November

Register on the platform and submit your idea on how you want to solve the proposed challenge.

Validation
25th November – 19th December

Experts will intensively review and evaluate the ideas, based on multiple criteria.

Preparation and Mentoring
16th January – 27th February

The best 3 ideas will enjoy an extensive preparation and mentoring phase.

Hackthon and Live Pitches
6th March – 10th March

Develop your solution with further key experts in a hackathon, pitch it, and create sustainable impact.

Figure 1 - Timeline and phases of the campaign

What's in for you?

1. Work with us - Let's solve real problems together to move towards sustainability.

2. Work on-site - The teams with the best ideas will develop their applications further during a hackathon. They will get to work on-site or remotely for the development of their proof-of-concepts.

3. Win Prizes - Three winning teams per challenge – 1st 5,000€, 2nd 3,000€ and 3rd 2,000€

How do you get to the next phase?

All ideas will be evaluated by Siemens experts based on the following criteria. So, keep them in mind:

a) Innovativeness: Incremental or disruptive innovation

b) Sustainability: DEGREE and impact on the UN Sustainability Development Goals

c) Feasibility: Degree of technical and/or economic feasibility

d) Potential: Fit to Siemens processes, products and markets

e) Implementation: General implementation efforts (Time to market, R&D costs, etc.).

Join the campaign and create impact on real problems together with go-getters and solution seekers of the world by submitting your ideas.
https://siemens.com/techforsustainability

SIEMENS SMART INFRASTRUCTURE CHALLENGE

Swarm behavior and the Grid

Model prosumer behavior to enable sustainable grid management

As renewable energy sources become affordable, their implementation is leading to more decentralized production. Additionally, energy consumers are evolving to prosumers hosting various smart energy assets. The complexity of energy management is increasing significantly. To handle this complexity we need to gain a better understanding of people's behavior and incorporate it into grid management.

Consumer and prosumer behavior is massively affected by factors - such as sports events, vacations, or geopolitical events - whose impact is difficult to predict. This leads to rising uncertainty in managing the stability on the grid. The question is how to maximize everyone's contribution to NetZero while minimizing the burden on energy network operations.

Siemens Grid Software helps grid operators decode and shape the future of their energy landscape by accelerating the energy transition of grids. We are developing software for efficient and sustainable grid planning and operation, managing the impact of the exponential growth of distributed energy resources.

How can you create impact?

Over the last decades electrical measurements and standard models were used to plan and operate grids. As the energy system is changing, we need to integrate new dimensions of socio-economic & individual factors, behavioral strategy, and IoT data.

People are in the center of the change and shape the energy system.

We think, that it is not possible to manage the grid without knowing what they do and why. This is where we need your support. Help us to build models of peoples' swarm behavior by identifying, collecting and incorporating undiscovered dimensions of big data for grid planning and operation.

Understanding peoples' behavior ultimately enables everyone's contribution to NetZero.

We need you, the smart heroes out there, who are brave enough to tackle this challenge together with us!

A solution that models peoples' swarm behavior can lead to more resource efficient planning and improve the predictability of the operational state of the grid. We believe that understanding people's swarm behavior ultimately enables prosumers to maximize their contribution to sustainability while minimizing the strain they are putting on grid operations. This can help to reduce the carbon footprint of the entire energy system.

Do you want to be part of a sustainable and smart grid eco-system with Siemens? What are you waiting for? Tune in on the kick-off event on the 13th of October at 4:30 p.m. (CET) and submit your solution!

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