



GE | Statoil Open Innovation Challenge Fact Sheet

Background

- GE and Statoil have launched an ambitious new collaboration to accelerate the development of more environmentally and economically sustainable energy solutions.
 - This joint technology-focused program is aimed at driving an industrial response to some of the outmost challenges facing global energy production, including flaring, CO₂ and methane emissions, and water usage, while also optimizing business operations.
 - In the spirit of this collaboration GE and Statoil are also launching a global Open Innovation Challenge. Knowing that great ideas can be conceptualized outside of their own companies, the Challenge will invite innovators, institutions and companies—large and small—to co-develop potential solutions to make energy production more sustainable by improving the use of sand and water in unconventional operations.
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Opportunity

- The Open Innovation Challenge specifically aims to address the use of sand in unconventional operations. Focusing on sand--which requires thousands of truck trips to transport this proppant onto the site when drilling new wells--has the potential to reduce the environmental impacts on local communities, lessen emissions and make energy production more efficient.
 - Drilling new wells requires hundreds of truck trips through neighboring communities, which creates increased traffic as well as noise, dust and exhaust fumes.
 - Trucks carrying sand account for a large percentage of the truck traffic to drilling fields. Weight limits on community roadways prevent sand delivery trucks from hauling maximum capacity loads, requiring even more trips.
 - In addition, trucking represents a significant business cost.
 - In some locations around the world, the impact of trucking is a key public and political concern related to development of new unconventional energy production sites.
 - By co-developing winning solutions, GE Oil & Gas and Statoil will not only maximize the efficiencies of their own unconventional energy production operations but also encourage the industry more broadly to pursue solutions that address the sustainability of energy production from both a business operations and community-focused perspective.
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The GE | Statoil Open Innovation Challenge

- To minimize the number of truck trips needed during the drilling process, GE Oil & Gas and Statoil are seeking innovative technologies to replace or reduce the amount of sand required for hydraulic fracturing of oil and gas wells.
 - The two companies are collaborating on an Open Innovation Challenge, a crowdsourcing challenge, to identify and then bring to scale solutions to help reduce the amount of sand trucked to well sites.
 - The objective is to reduce the need for trucking and thereby lessen the environmental impact of commercial trucking related to energy production on local communities by developing a diverse portfolio of technical solutions that reduce the volume of truck trips and improve operations/reduce costs.
 - At the conclusion of the challenge, GE Oil & Gas and Statoil will leverage their joint assets and resources to support the commercialization of the winning submissions.
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Open Innovation Challenge Details

- The challenge, hosted by Nine Sigma, will first focus on technologies that address use of sand. A subsequent phase of the challenge will focus on water.
- Submissions are sought within prioritized areas where GE Oil & Gas and Statoil are particularly well-positioned to fund and bring to scale, including:

- **Enabling more efficient use of sand.** Sand plays a critical role in hydraulic fracturing in enabling gas to flow freely from shale formations when used as part of a hydraulic fracturing solution. Proposed submissions should look to prevent or minimize sand from becoming separated from the hydraulic fracturing solution.
 - **Developing materials or additives to replace sand.** Types of submissions sought include materials or additives that are as strong as sand and have the potential to “prop open” rock fractures but weigh less than the equivalent volume of sand and can also create more permeability, allowing oil and gas to flow freely out of the rock.
 - The goal is to select a portfolio of technologies with commercialization timelines ranging from 1 to 5 years. Submitted solutions and technologies should demonstrate proof of concept within 6 - 24 months, however, technologies which might require longer than 24 months to show proof of concept may also be considered.
 - For full details on the Open Innovation Challenge, including how to enter, visit **www.poweringcollaboration.com**.
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Timeframe

- The first Open Innovation Challenge focused on sand will launch on January 28, 2015 and close on April 28, 2015. The winners will be announced in June 2015.
- Up to five winners will be awarded an initial cash prize of \$25,000 USD each, with an additional \$375,000 USD available as a discretionary prize pool of development funds. For full Challenge terms and conditions, please visit **www.poweringcollaboration.com**.

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