Frequently Asked Questions

What is the Nutrient Recycling Challenge looking for?

The Nutrient Recycling Challenge is seeking ideas for cost-effective technologies that extract valuable nutrients (nitrogen and/or phosphorus) from dairy or pork manure and concentrate them into a usable or marketable form. Judges will be looking for transformative ideas that either improve upon existing technologies or recycle nutrients in an entirely new way.

For more information on the Nutrient Recycling Challenge, please visit www.nutrientrecyclingchallenge.org.

Why is EPA interested in nutrient recovery technologies?

EPA encourages the development of technologies that would be a win-win for the environment, farmers and the economy. Every year, livestock producers manage over a billion tons of animal manure containing valuable nutrients—nitrogen and phosphorus—that plants need to grow. Manure can be a resource as a renewable fertilizer, but should be used properly to minimize water pollution and build healthy soils. Technologies that can recovery nutrients from manure have the potential to offer environmental benefits, such as improved water quality and reductions in greenhouse gas emissions.

Nutrient recovery can also provide animal agriculture producers with a product they can use or sell, which can in turn offset their operational costs. Producers would be incentivized to adopt these technologies if they made economic sense, and if they could convert manure into products like fertilizers that are more usable and lightweight, and therefore more marketable.

For more information on nutrient recovery technologies please see the pdf file- *Background Information on Nutrient Recovery Technologies and Pork and Dairy Production* here, or once registered on InnoCentive's platform, here.

Why are farmers interested in nutrient recovery technologies?

Because of its weight, wet manure can be difficult and costly to manage and transport. Nutrient recovery technologies could offset producers' costs by extracting and/or transforming the nutrients in manure into products that could be used onsite, transferred or sold.

Why is EPA hosting a competition to find nutrient recovery technologies?

Scientists and engineers are already developing technologies that can recover significant percentages of nitrogen and phosphorus from manure for beneficial uses, but these technologies are not yet economically viable, and the markets for the products they yield are immature or non-existent.

More development is needed to drive down the price of the technologies, and to develop them to generate the products that the market is calling for. Competitions are an exciting way to find solutions by tapping into the ingenuity and creativity of innovators across the globe. Now is an optimal time to help cutting-edge innovations advance to the next level.

Why is the Nutrient Recycling Challenge focused on pork and dairy producers? Couldn't other types of animal agriculture benefit from nutrient recovery technologies?

This challenge is initially focused on the dairy and pork industries because the manure generated at these livestock farms is typically wet. Wet manure is handled differently than manure from other livestock sectors; therefore, it makes sense to work with the dairy and swine sectors simultaneously to find potentially common solutions. Also, considerable research already exists on nutrient recovery technologies for dairy and swine manure. Although the initial scope of the Nutrient Recycling Challenge is focused on pork and dairy industries, it could be expanded to include other sectors in the future.

Why should innovators be interested in developing solutions for nutrient recovery?

With over a billion tons of manure managed by livestock producers across the country each year, the potential market and environmental benefits could be tremendous. For more information on the pork and dairy industries, see the pdf file- *Background Information on Nutrient Recovery Technologies and Pork and Dairy Production* here, or once registered on InnoCentive's platform, here.

How will the Nutrient Recycling Challenge work?

There are four phases planned for this innovation challenge, in which innovators will be invited to turn their concepts into designs, and eventually, into working technologies to be piloted on livestock farms:

Phase I:	Concept papers	Nov. 16, 2015 – Jan. 15, 2016
	First-round awards and DC Summit	March 2016
Phase II:	Designs	Spring 2016
Phase III:	Prototypes/Proof of Concept	Summer 2016
	Final submissions	Fall 2016
	Final award ceremony	January 2017
Phase IV:	Finalists' demonstration pilots on farms	Spring 2017

Phase I: Call for concept papers opens on November 16, 2015 at 9:00 am EST. Innovators will have until January 15, 2016 at 11:59 pm EST to submit concept papers up to 10 pages in length introducing their idea for a nutrient recovery technology and discussing how it would meet the challenge's criteria.

Once the submission period ends, there will be a 30-day judging period. Applicants will hear about the decision on their submission in late February, and those applications that win awards and/or are selected for the next round will be invited to the two-day summit in Washington, DC, in March 2016.

Innovators with promising submissions will be invited to proceed into subsequent Phases. Applicants will have opportunities in each phase to secure funding to progress their technologies to the next round.

Note: If it is determined by the Seekers that there is insufficient potential among the entries to achieve/demonstrate the stated goals of the Nutrient Recycling Challenge, the Challenge may be re-opened or canceled at the Seekers' discretion.

What can Solvers win?

For Phase I, up to $20,000 in cash prizes will be awarded, to be split among up to four concepts (up to two for dairy farms and two for pork farms). Cash prizes provided by EPA, World Wildlife Fund, and partners. Promising applicants will also be invited to a two-day partnering and investor summit in Washington, DC (with additional travel awards), and gain entry to subsequent phases of the challenge with larger awards.

Potential awards for promising submissions and subsequent phases include further funding, incubation support, connections to other innovators, media and publicity, and opportunities to have technologies demonstrated on farms that supply the largest dairy and swine cooperatives and processors in the U.S. For more information on dairy cooperatives and pork processors, please see the pdf file- *Background Information on Nutrient Recovery Technologies and Pork and Dairy Production* here, or once registered on InnoCentive's platform, here.

Who is eligible to compete?

Anyone with an interesting idea! The Nutrient Recycling Challenge is open to innovators around the world. We also encourage collaboration between multiple individuals or groups. Employees of federal agencies must abide by their employers' policies for participating in a challenge or prize competition. Members of the planning committee or judging panel for the Nutrient Recycling Challenge and their immediate family members cannot participate.

How can Solvers submit ideas?

Solvers should begin by reading through all of the information and instructions posted here and here.

Solvers should submit a concept paper up to 10 pages in length that introduces their idea for a nutrient recovery technology, and discusses how it would meet the criteria. All Solvers must register and submit concept papers by using the Concept Paper Cover Sheet and Template available on InnoCentive's online challenge platform here:

https://www.innocentive.com/ar/challenge/9933114

Can I team up with other innovators to compete?

One of the goals of the Nutrient Recycling Challenge is to connect innovators around the globe. We encourage you to submit ideas individually or as teams. Whether you have an idea and need a team to bring it to life, or you have a team but need an expert, you can look for potential partners and learn more about submitting solutions as part of a team on InnoCentive's website:

- Webpage on "Teaming with Peers"
- FAQ on teams and requirements for teams
- InnoCentive's "Solver Forum"

How is this challenge related to innovation around anaerobic digesters?

While the primary focus of this challenge is technologies that recover nutrients, nutrient recovery technologies sometimes accompany digesters. The biogas industry has been exploring new ways to derive and market value-added products from organics, including manure, to improve the overall economics of biogas projects. This challenge includes criteria for compatibility with other systems that currently exist on livestock operations

(including digesters) as desirable characteristics, and allows submitters to note whether their technology would be suitable for use with digestate.

How will submissions be judged?

For information on the judging process, please visit www.nutrientrecyclingchallenge.org, or once registered on InnoCentive's platform, see https://www.innocentive.com/ar/challenge/9933114.