

Sustainable Off-Grid Energy from Free Flowing Rivers

Produced by [Ocean Renewable Power Company](#)

Duration
3:38(cc)

STEAM Curriculum Lesson Extension:
Lunar Energy, Grade 8

Goal

Students will learn the importance of incorporating the new technology of harnessing the energy of river currents for a remote Alaskan village in a way that is mindful of the culture of the people living there.

Overview

Students will see how a community living on the Kvichak River in Igiugig, Alaska, work with a power company to use renewable energy created from the river's currents as the source of the power that will create their electricity. They will learn about the importance of the river in their culture and why it was important for the power company to fully understand the values of this indigenous community.

Connections to EarthX STEAM Curriculum Lesson: *Lunar Energy*

Students learn in the STEAM lesson that electricity can be generated from the tidal movements created by the moon. The video explores another solution to providing renewable energy, this time by using the continuous currents of a river.

Guiding Questions

- The Kvichak River is very important to the people of Igiugig. What one word best describes it and why?
- Analyze the section of the video from 2:27-2:57. Describe how the RivGen system works to create energy for the community's grid. What are advantages to this system? What might be drawbacks?
- Discuss ways the river is a powerful part of the culture of the community and how the people have respected it. What/who has had a powerful impact in your life in a positive way, and how do you show respect?

Vocabulary

- Sustainability
- Proof of concept
- Indigenous values

Standards

Next Generation Science

- 5-ESS3-1
- MS-PS3-5
- HS-ESS3-2
- HS-ESS3-4
- HS-ETS1-1

TEKS Science Objectives

- 5.b.6A
- 6.b.7
- 112.37.c.5C
- 112.37.c.6B
- 112.37.c.9I