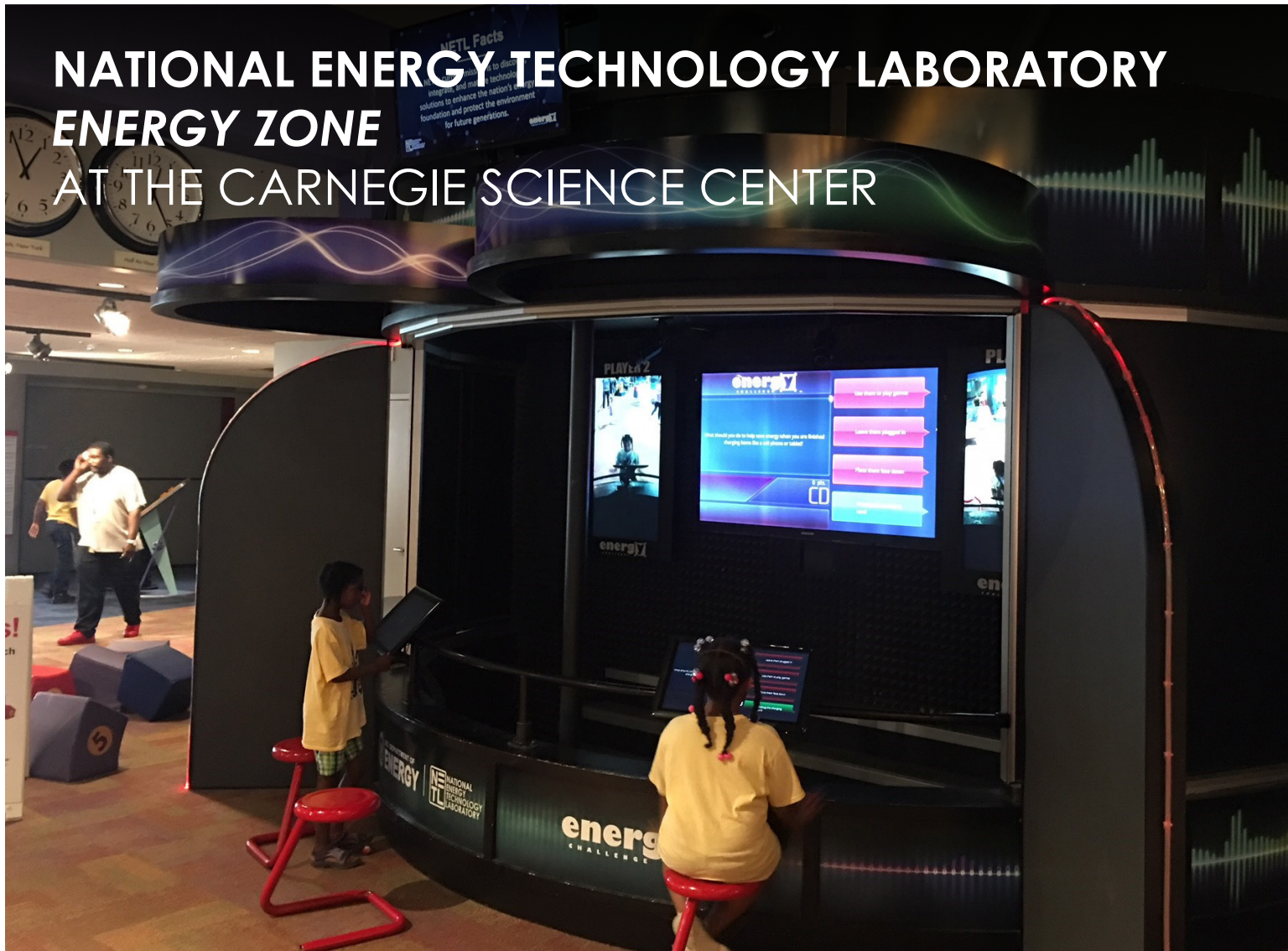


NATIONAL ENERGY TECHNOLOGY LABORATORY ENERGY ZONE AT THE CARNEGIE SCIENCE CENTER



NETL

NATIONAL ENERGY TECHNOLOGY LABORATORY

BACKGROUND

Located on the fourth floor of the Carnegie Science Center, the NETL Energy Zone includes a variety of hands-on, minds-on experiences designed to help children think early about STEM (science, technology, engineering, and math) careers in energy science and engineering. The Energy Challenge is the centerpiece exhibit. Since 2010, this fun, quiz-style game has been educating visitors of all ages on energy use and production. In 2017, the exhibit received approximately 400,000 visitors, making the Energy Challenge one of NETL's most popular educational outreach activities. In 2018, NETL revamped the Energy Challenge to modernize the look and feel of the exhibit. In addition, content was refreshed to reflect current energy topics, trends, and challenges. The exhibit is geared toward STEM, which is a core value of DOE.

NETL'S ENERGY ZONE AT THE CARNEGIE SCIENCE CENTER

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NETL'S ENERGY ZONE

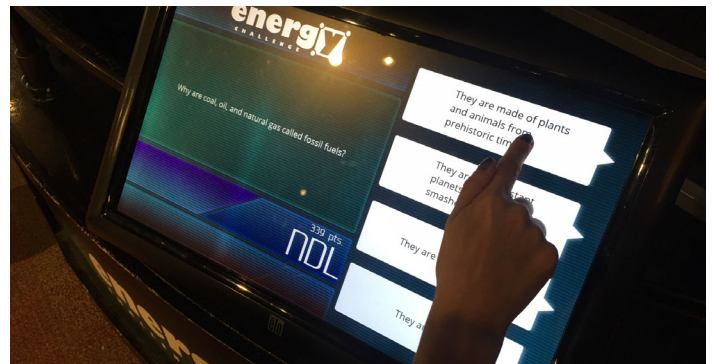
NETL's Energy Zone is a vital component of the Lab's STEM Education Program, advancing the Lab's goals to inspire the next generation of energy researchers, engineers and scientists and proactively develop and support education initiatives at all levels. The Energy Zone effectively educates the public about many aspects of energy and offers positive visibility for NETL and its broad mission in a popular, regional venue. The "Energy Challenge" is the centerpiece exhibit, anchoring eight energy-focused exhibits, collectively displayed as the NETL Energy Zone:

- **NETL Energy Challenge** – the cornerstone exhibit, in which participants can challenge each other by buzzing in to answer questions on energy – how it works, and how we can conserve and reduce our energy use.
- **NETL Power Station** – participants turn cranks to "power" various electric appliances (e.g., LED bulb, fan, hair dryer) requiring varying amounts of energy.
- **NETL Power House** – participants flip toggle switches associated with household appliances to learn about relative energy consumption on an electric usage meter.
- **NETL Circuit Station** – participants use red and black cable wires to connect complete circuits to power a light, spinner, or buzzer.
- **Energy Quiz**– a single-user activity in which a participant answers energy questions and is scored on correct responses.
- **Laz-R Graph** – participants make their own laser design.
- **Rebound** – participants ricochet balls on a tabletop!
- **Ring Launcher** – participants press a button to initiate an electric current, producing an electromagnet that forces a metal ring to be swiftly launched up a pole.



The Energy Challenge

The Energy Challenge teaches Science Center visitors about the importance of energy in our daily lives, how energy works, and how we can conserve and reduce our energy use. It also illustrates the unique collaboration among the region's academic, government, business, and nonprofit organizations in addressing the challenges posed by energy use. To play, participants answer questions on all aspects of energy, which are divided into the following age groups to permit all levels of play: kindergarten through fourth grade, fifth through eighth grade, ninth grade through adult.



Outcomes

From its launch in 2010 to its refresh in 2018, the NETL Energy Zone has remained a popular stop at the Carnegie Science Center. The Energy Zone has welcomed more than 3.4 million guests, a high percentage of which were K-12 students. In 2017, the approximate visitor traffic was 500,000, and it is estimated that at least 80 percent of all Science Center guests visit the fourth-floor gallery where NETL's interactive exhibits are housed.

The NETL Energy Challenge hosts a wide range of demographic users, from multi-generational families competing against each other, student-versus-student use, and even teachers competing against their students.

Statistics collected by NETL show that more than 133,000 games have been played since 2015. Each year, from March to June, the exhibit is in almost constant use and entertains approximately 1,500 kids per day.

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