

**HIGH SCHOOL
STUDENT GUIDE**

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Introduction

Have you ever wondered why **energy efficiency** and **environmental conservation** are such hot topics in our country and around the world? Terms like “renewable energy” show up on various local and national media outlets on a regular basis and experts debate what citizens, corporations and governments of the world should and shouldn’t do to care for and preserve our environment for the near and distant future. But, have you ever actually devoted time to study and understand the issues, explore who is passionate and involved in creating solutions and/or determine how it all impacts you and what you can do about it?

This *I AM EM-Powered* (IAE) program is designed to empower high school students to research and identify environmental issues and solutions to problems facing Long Island, Rockaways and the surrounding geographic region, and then create a Public Service Announcement (PSA) to educate and advocate for an environmental issue or promote the work of a local environmental group that is making a difference to preserve our world for the future.

THE FUTURE IS YOU! The future world is yours. Now is the time to use your voice to educate others in your sphere of influence. You have the biggest impact with your peers. You do not have to wait until you graduate to make a difference in the world. Now is the time to truly understand the importance of things





like energy efficiency, renewable energy and advocacy for the environment. Just as the ripple in a calm pond begins with a single pebble, so does the ripple of understanding and action begin with one person. That person is YOU!

Remember to have fun, be creative and challenge yourself. You can make a meaningful difference! You can influence others! Your voice matters! BE EMPOWERED to use your voice and share your message to encourage and inspire others to take action to care for and preserve the Earth!

You will:

1. **Cultivate awareness** about energy efficiency, renewable energy and environmental conservation.
2. **Conduct research** to explore some of the key issues and investigate professions and organizations that support energy efficiency, renewable energy and environmental conservation.
3. **Connect what you learn** about energy and the environment to your personal values and beliefs as you explain why you (and others) should care.
4. **Construct a plan to advocate** for an issue or organization related to energy or the environment that includes potential solutions.
5. **Create a Public Service Announcement (PSA)** to educate and/or advocate for a specific issue or organization related to energy in the environment that includes a "call to action" for a targeted audience.



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LESSON

1 CULTIVATE AWARENESS

ACTIVITY 1: Environmental Impact Bingo

Every big and small action to be energy efficient and conserve the environment makes a big difference in creating a better world for today and the future. Think about all the ways you already make a difference.

DIRECTIONS ▶ You have 5 minutes to mingle and find people who can answer "YES" to the statements in each box on the Bingo card. Students in your class may only type their name in one of your boxes that is true for them. You may type your name in the "FREE SPACE" box. The student who fills five boxes in a row (across, down or diagonal) yells "Bingo!" and wins the game. (If there is time, continue to see who can get all the boxes completed first.)

BINGO CARD

I have visited a national, state or local park in the past year.	I use a reusable water bottle.	I do my own laundry.	I pick up trash when I see it (even if it is not mine).	I like to go fishing.
I turn off lights when I leave a room.	I eat leftovers (instead of throwing food away).	I use both sides of my paper.	I donate items I no longer use.	I recycle at my school.
I do not leave the fridge open.	I volunteer with an environmental organization.	FREE SPACE	I like to read books.	I use a reusable bag when I go shopping.
I unplug my battery charger when not in use.	I take a shower instead of a bath.	I recycle at my home.	I turn off water when brushing my teeth.	I walk or ride a bike to school.
I like to go hiking.	I have planted a tree.	We use LED bulbs at home and/or school.	I take care of a plant or garden.	I like to go camping.

QUICK THOUGHT


What are two action items listed on this Bingo Card that I want to start doing (or do more often)?

ACTION #1:

ACTION #2:

ACTIVITY 2: Energy & Environment Pre-Test

Did you know that there are thousands of students across the country and around the globe who are currently making this world a better place now and for the future simply by turning off lights and electronics when they leave a room? There are many big and little things we all can do at home and school to conserve energy and protect the environment. Let's find out what you know about energy efficiency, renewable energy and environmental conservation.

 Read each statement about energy and the environment. Circle T for "true" or F for "false" next to each corresponding statement based on your current knowledge and understanding.

- | | | |
|----------|----------|---|
| T | F | 1. Brightening rooms with efficient LED bulbs can save households about \$100 a year, adding up national savings of around \$12.5 billion (if LEDs were universally adopted). |
| T | F | 2. More than 150 varieties of LED bulbs--the most efficient lighting choice—are on the market. |
| T | F | 3. LED bulbs use up to 90 percent less energy than older, incandescent bulbs. |
| T | F | 4. Every time the refrigerator door is opened, approximately 30% of the cold air escapes. |
| T | F | 5. Almost 75 percent of electricity used to power home electronics is consumed while the products are off. |
| T | F | 6. According to the Bureau of Labor and Statistics, there are more than 3.4 million jobs in the United States related to clean energy initiatives. |
| T | F | 7. The United States is the second biggest consumer of energy in the world, after China. |
| T | F | 8. A single wind turbine can create enough energy to power as many as 300 American homes. |
| T | F | 9. Agriculture, industrial processes, untreated waste and degraded lands are leading causes of pollution in freshwater systems. |
| T | F | 10. Nearly 97 percent of all the world's water is salty or otherwise undrinkable. |
| T | F | 11. Many disease-battling medicines sold worldwide are derived directly from plants found in rainforests. |

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- T** **F** 12. In 2018, the U.S. total primary energy consumption was about 7% of the total world consumption.
- T** **F** 13. Tropical forests cover roughly 10 percent of Earth's land mass but are home to at least half of all living species on the planet.
- T** **F** 14. The microwave is the most energy efficient appliance in most kitchens. It uses one-third of the wattage that the average oven uses.
- T** **F** 15. The average total home water use for each person in the U.S. is about 50 gallons a day.
- T** **F** 16. A five-minute shower uses 10 to 25 gallons of water.
- T** **F** 17. Landfills are composed of approximately 35 percent packaging materials.
- T** **F** 19. Using a dishwasher to wash dishes is more efficient than washing dishes by hand.
- T** **F** 20. Freshwater ecosystems are home to more than 100,000 known species of plants and animals, and are now one of the most endangered habitats in the world as a result of human development, pollution, and climate change.

QUICK THOUGHT

Complete the 3-2-1 reflection below.

3 THINGS I LEARNED :

2 THINGS THAT
SURPRISED ME:

1 QUESTION
I HAVE:




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LESSON

2 CONDUCT RESEARCH

ACTIVITY 1: Common Understanding of Key Concepts

As you prepare to explore key issues related to energy and the environment, it's important to understand key concepts that will appear throughout your research. While most of these concepts may be familiar, having a deeper understanding of each will serve you well.

 Utilize research and reference resources available to you to answer the questions below. Cite your source(s) for each.

What is energy efficiency?	What is environmental conservation?
What is renewable energy?	What is a Public Service Announcement (PSA)?
What are some energy and environmental related careers?	What organizations in your community address energy and the environment?

QUICK THOUGHT

As you reflect upon what you learned, complete the sentences below.

One thing I learned is:

One thing that surprised me is:

One question I have is:

ACTIVITY 2: Difference Makers Who Care About Energy Efficiency, Renewable Energy and Environmental Conservation

There are many pioneers, innovators and leaders from around the world who have devoted their lives to making a difference as advocates for energy efficiency and environmental conservation. They have passionately devoted their lives to research, explore, educate, advocate, and inspire. They use their influence to share messages about the importance of these issues and encourage others to care as well.

Read each quote from leaders who care about energy efficiency, renewable energy and environmental conservation. Use one or more of these quotes (or cite other quotes and/or excerpts you find on your own) to support your response to the question: **Why does energy efficiency and environmental conservation matter?** Write your response in the space provided or type it. (Use additional paper as needed.) Be prepared to share your response.

"As the saying goes, the Stone Age did not end because we ran out of stones; we transitioned to better solutions. The same opportunity lies before us with energy efficiency and clean energy."

Steven Chu

Steven Chu - American physicist who, with Claude Cohen-Tannoudji and William D. Phillips, was awarded the 1997 Nobel Prize for Physics for his independent pioneering research in cooling and trapping atoms using laser light. He later served as secretary of energy (2009–2013) in the administration of U.S. President Barack Obama. www.nobelprize.org

"You cannot get through a single day without having an impact on the world around you. What you do makes a difference, and you have to decide what kind of difference you want to make."

Jane Goodall

Jane Goodall - Through nearly 60 years of groundbreaking work, Dr. Jane Goodall redefined species conservation to include the needs of local people and the environment. Today she travels the world, speaking about the threats facing chimpanzees and the environment, urging each of us to take action on behalf of all living things and the planet we share.

www.janegoodall.org

"Let us be good stewards of the Earth we inherited. All of us have to share the Earth's fragile ecosystems and precious resources, and each of us has a role to play in preserving them. If we are to go on living together on this earth, we must all be responsible for it."

Kofi Annan

Kofi Annan - Kofi Annan, from Ghana, was the seventh Secretary-General of the United Nations, serving from 1997 to 2006. He was awarded the 2001 Nobel Prize for Peace, jointly with the United Nations. He has also received numerous honorary degrees and many other national and international prizes, medals and honors. www.un.org

"You cannot protect the environment unless you empower the people, you inform them and you help them understand that these resources are their own; that they must protect them."

Wangari Muta Maathai

Wangari Muta Maathai - Born in Kenya, Professor Wangari Maathai was the first woman in East and Central Africa to earn a doctorate degree (Biological Science). When she served in the National Council of Women, Wangari introduced the idea of planting trees with the people in 1976, and continued to develop it into a broad-based, grassroots organization with the main focus of planting trees with women groups in order to conserve the environment and improve their quality of life. Through the Green Belt Movement she has assisted women in planting more than 20 million trees on their farms and on school and church compounds. Wangari Maathai is internationally recognized for her persistent struggle for democracy, human rights and environmental conservation. She and the Green Belt Movement have received numerous awards, most notably the 2004 Nobel Peace Prize. greenbeltmovement.org

"The greatest danger to our planet is the belief that someone else will save it."

Robert Swan

Robert Swan - Robert Swan is the first person in history to walk to both the North and South Poles. After seeing first hand the effects of climate change, Robert has dedicated himself to protecting Antarctica and our planet at large. His contribution to education and the environment have been recognized through his appointment as UN Goodwill Ambassador for Youth, a Visiting Professorship of the School of Environment at Leeds University and, in 1994, he became Special Envoy to the Director General of UNESCO. 2041foundation.org



MY RESPONSE TO: ***Why does energy efficiency and environmental conservation matter?***

What is advocacy?

the act of speaking
on the behalf of or in
support of another
person, place, or thing

What is an advocate?

a person who
publicly supports
or recommends a
particular cause
or policy


LESSON



CONNECT LEARNING TO PERSONAL VALUES


ACTIVITY 1: *What are the issues?*

Now that you know how to explain key concepts (i.e. energy efficiency, renewable energy, environmental conservation), it's time to dig a little deeper and identify specific issues and challenges related to each one. Utilize the awareness you cultivated during the Bingo Game and Pre-Test, along with the research you conducted about organizations and careers related to energy and the environment.

 Create a list of as many issues related to energy and the environment as you can. Be prepared to share your list with the class.

ACTIVITY 2: What do I value?

Personal values have a direct impact on how people care for the environment. Everyone has values, but each person has a different set of values. These differences are affected by an individual's culture, personal upbringing, life experiences and a range of other influences. Personal values shape a person's **attitude** towards an entity, which ultimately affects their overall **actions**. This includes environmental attitudes and actions.

 In the space provided, make a list of your values as they relate to the environment.
(Be prepared to share with the class.)

PERSONAL
VALUES



ATTITUDE
ABOUT THE
ENVIRONMENT



ACTIONS



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ACTIVITY 3: Why should I (and others) care?

Reflect upon everything you have learned about the people and organizations you have explored and your personal values as they relate to energy efficiency, renewable energy and environmental conservation. Write or type a thoughtful response to the following question: **Why does energy efficiency, renewable energy and environmental conservation matter to me and why should it matter to others?** Be sure to include information that you have learned in the previous activities to support your response.

LESSON



CONSTRUCT A PLAN

ACTIVITY 1: What are the issues?

Have you ever heard the expression, “Proper planning leads to peak performance!”? Now that you are clear about what you value and why energy efficiency, renewable energy and environmental conservation are important, it is time to identify a specific issue that matters to you and create an action plan to make a difference. As you create your plan, think about how you can inspire others in your sphere of influence to take action with you. This will be your action plan to advocate for the issue that matters to you most!

▶ Complete each step listed below as you construct a plan. Use the guiding questions to move you through your research of a specific topic as you create or highlight a solution. Feel free to add and/or expand on the questions as you research the topic. (NOTE: You will use this information when you create your PSA.)

STEP 1: SELECT YOUR TOPIC.

- What is the issue/topic that matters to me most?

STEP 2: LIST RESOURCES FOR RESEARCH AS YOU LEARN MORE ABOUT THIS TOPIC.

- What specific resources will I utilize to find out more about this topic? (i.e. Internet, textbooks, teachers, experts, etc.)

- Who do I know or who can I contact to learn more about this topic?





STEP 3: LIST ONE OR MORE LOCAL ORGANIZATIONS THAT ADDRESS THIS TOPIC AND EXPLAIN WHAT THEY ARE DOING ABOUT IT.

- What is the name of the organization?

- What is the mission of the organization?

- How does the organization address the issue?

- What positive impact are they having on this issue? (Share data to support, if available.)

- How can people get involved with this organization?

- What else should people know about this organization?

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STEP 4: RESEARCH THE TOPIC.

- Why is this topic/issue important as it relates to energy and/or the environment?

- How does this topic/issue impact me? My community? My state? My country?

- What data helps to communicate the issue?

- What are the three most important points about this topic?

- What else should people know about this topic?

STEP 5: IDENTIFY SOLUTIONS AND/OR SHARE A SOLUTION YOU HAVE FOR THIS ISSUE. (THIS IS WHERE YOU AND OTHERS CAN "TAKE ACTION" TO MAKE A DIFFERENCE—YOUR ACTION PLAN!)

- What is being done or can be done related to this topic to conserve the environment?

- What is being done or can be done related to this topic to make a difference in my community?

- What can you and others specifically do to make a difference now and in the future?

LESSON



CREATE A PUBLIC SERVICE ANNOUNCEMENT (PSA)

You have chosen a topic and researched details and data to understand the issue(s) and identify a solution(s). In addition, you have constructed an “action plan” for you and others to follow in order to make a difference. Now it is time to create a Public Service Announcement (PSA) to share an important message related to your topic.

STEP 1: CHOOSE A THEME FOR YOUR PSA (Choose one.)

- ☐ Advocate for OR educate about a specific environmental or energy topic/issue.
- ☐ Promote the mission of a local environmental organization.

STEP 2: CREATE YOUR MESSAGE

You will create a Public Service Announcement (PSA) to share your message with others. PSAs are like commercials because they are short videos that are often viewed on television. Unlike commercials that are one of the marketing tools to sell products and services, PSAs are designed to educate people about a cause or issue. You will use your PSA to inspire other people about the specific issue or organization you select. The goal of your PSA is to inspire people in your community and bring people together to take action and save the environment.





Use the questions below to guide you as you create your PSA:

If your PSA will focus on an ISSUE	If your PSA will focus on an ORGANIZATION
What is the problem we are addressing?	What is the organization we are promoting?
What is the solution we are offering?	What is the work they are doing to save the environment?
What is the action we want people to take?	What is the action we want people to take to support/get involved with this organization?


Just like a commercial, PSAs are very short; so, you will have to communicate your message quickly with maximum impact. Most PSAs are approximately 30 seconds in length. You should aim for 30 seconds (official submissions must be 45 seconds or less). It will take careful and intentional planning to include your important message, grab the attention of the audience and stay within the time limit.

***** Use the "Creating a PSA Guide" to create, film and submit your PSA. *****
www.iamempoweredpsegli.com

OPTIONAL ACTIVITIES

OPTIONAL ACTIVITY 1: Organizations That Make a Difference in My Community

There are organizations across the globe with the mission to provide solutions for issues and challenges related to energy and the environment. Many of these organizations are located right here in Long Island and the Rockaways, providing a wide variety of resources, services and support to address these issues. They educate, research and advocate for energy efficiency and environmental conservation. Many times there are opportunities for local students to volunteer and/or intern to support their efforts. The opportunity for these organizations to be featured in a Public Service Announcement (PSA) and share their mission could help to expand their reach and multiply their efforts.

 Choose one of the local organizations from the list on the resource tab at www.iamempoweredpsegli.com. Gather information about the organization from their website, local press, social media, etc. Be prepared to share your findings with the class. (NOTE: You may choose to use this information for the PSA Project.)

NAME OF ORGANIZATION

ADDRESS

WEBSITE

MISSION STATEMENT

WHAT DOES THIS ORGANIZATION ADDRESS? (Circle all the apply.)

Environmental
Conservation

Renewable
Energy

Energy
Efficiency

Other*

*List the other topic(s) this organization addresses if you circled "other."



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WHAT IS/ARE SPECIFIC ISSUE(S) THIS ORGANIZATION ADDRESS(ES)?

HOW DOES THIS ORGANIZATION MAKE A DIFFERENCE IN THE COMMUNITY?
(Circle all that apply and give specific examples.)

Service Projects

Fundraising

Advocacy

Education

Other

WHAT OPPORTUNITIES ARE THERE FOR STUDENTS TO GET INVOLVED/VOLUNTEER?

WHAT ARE TWO FACTS YOU LEARNED WHEN EXPLORING THIS ORGANIZATION THAT YOU THINK OTHERS SHOULD KNOW?

1.

2.

OPTIONAL ACTIVITY 2: Interview Someone Who Really Cares (optional)

Refer to the list of careers related to energy and the environment on the resource tab at www.iamempoweredpsegli.com. Identify someone who has chosen one of these careers and schedule a phone or in-person interview to learn more about what they do and why. (It may work for you to reach out to the local organization that you just researched.) You may want to use this interview to gain more information for your Public Service Announcement (PSA).

(NOTE: If you are unable to schedule an interview on the phone or in person, feel free to send an email with your questions. If that doesn't work, do a little research on your own about that specific career.)

NAME OF PERSON I WILL INTERVIEW

CAREER

STEP 1: MY QUESTIONS

Sample questions to ask during the interview:

Why did you choose this career?

What are you most passionate about?

What is the best part of what you do?

What energy/environmental issue matters most to you?

What did you do to prepare for this career (i.e. education, volunteering, internship, etc.)?

Would you recommend this career to others? Why or why not?



STEP 2: SUMMARY AND ANALYSIS OF MY FINDINGS

Write or type a summary of your findings about this career. What does a person with this career actually do? What is most interesting? What are the challenges? How does this career impact the environment in a positive way? How can someone be successful in this career? Would you recommend this career to anyone? Why or why not? Is this a career you would consider pursuing? Why or why not?



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