



International Partnership for Hydrogen and Fuel Cells in the Economy Student Infographic Challenge 2020

The Challenge: Are you a student looking to learn more about hydrogen and fuel cells? IPHE wants to hear from you! Don't miss out on this chance to apply your research and creative design skills to learn more about the world of hydrogen and win a cash prize.

As part of the IPHE Student Infographic Challenge, participants will research, interpret, and create a succinct, engaging infographic about a topic related to hydrogen and fuel cells. Through this challenge, students gain foundational knowledge about the field of hydrogen and fuel cells, develop research and design skills, and explore their creativity. This challenge provides a great opportunity to learn about this important field of energy research in a fun, engaging way. It also offers you the chance to expand your portfolio, connect with other students and professionals, and work alongside the next generation of hydrogen and fuel cell advocates, scientists, and engineers.

Who Can Enter: Secondary- (ages ~13 to 18) and university-level students from IPHE member countries are eligible to enter. Each pool of applicants will be judged separately. Students may work alone or in groups of 2-4.

Submission Details: Infographics are an important tool for delivering information in a quick, accessible, and visually appealing format for all audiences. The combination of text and visuals can serve a variety of purposes, from constructing an engaging narrative to expressing dense or technical information in a concise, straightforward way.

Students will research and design an infographic that is suitable for a public audience and is related to hydrogen and fuel cells in some way. Some possible topic areas include:

- Basics of hydrogen and fuel cells
- International status of hydrogen & fuel cells
- Status of hydrogen & fuel cells within student's or team's home country
- Hydrogen and fuel cell applications
- Current field research
- History of fuel cell technology development
- Hydrogen safety

We encourage students to make use of the resources available on the [IPHE website](#), especially country-specific statistics about the status of hydrogen and fuel cells. These statistics can be found on member country pages under the "Partners" tab. Other resources include webinars, reports, and presentations, which can be found under the "Resources" tab.

We also encourage students to join the [IPHE Youth Chapter](#), to match with potential team members, share information, and ask questions about the challenge or hydrogen and fuel cells in general. We will also be using the Youth Chapter to share additional information and resources for teams to use while designing their infographic. The IPHE Youth Chapter is a great opportunity to connect with other students and immerse yourself in the world of hydrogen and fuel cells!



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How to Submit: Participants will email their completed infographics to media@iphe.net with the subject line “IPHE Infographic Challenge Submission.” Your infographic should be in English, submitted as a high-resolution PNG, PDF or JPEG file and labeled as follows: “Country name_institutionname_last name.” Please note that submitting a version of the infographic in your native language is optional and will not impact judging or selection decisions.

When you submit your infographic, please include the following information in the body of the email message:

- Your full name (or the full names of all your team members)
- Your age (or the ages of all team members)
- Institution
- Country
- Email address

Timeline: Entries are accepted on a rolling basis until the final deadline:

- Please submit your infographic by Hydrogen and Fuel Cell Day on **October 8, 2020**. Submission reviews will be conducted during October and November. Winners will be announced in late November.

The winner and runner-up of each age pool will be notified via email and announced on the IPHE website.

Winners: One winner and one runner-up will be chosen from each age pool. The winning team for each age pool will receive a \$250.00 cash prize, t-shirts with the IPHE logo, and certificates of recognition. The runner-up team will receive IPHE t-shirts and certificates of recognition.

Additionally, IPHE will feature winning infographics on its website and social media accounts as part of its education and outreach efforts.

Where possible, the winning team in each category will have a meet-and-greet with IPHE representatives from their country. While every effort will be made to make this happen, the meet-and-greet is not guaranteed.

Judgement Criteria: A panel of judges, composed of members of the IPHE Education and Outreach working group, will evaluate the content and design of all submissions. Key aspects that will be judged are:

- **Content.** The infographic presents evidence-based data from reliable sources and includes proper citations. Iconography, illustrations and photography used as part of your infographic must have the appropriate rights and permissions to be used in public facing communications channels including IPHE social media and website platforms.



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- Creativity. The infographic's choice of data visualization is clear, neat, and understandable. The layout is attractive and well-designed.
- Mechanics. The infographic is free of spelling, punctuation, and grammar errors.
- Shareability across media. Entries should be scalable for viewing on a website, on a handheld device or in print.

Refer to Appendix A for the detailed rubric that will be used to score the infographic.

Contact for more information: media@iphe.net

Resources for researching and creating infographics: Well-researched infographics will require data from a variety of peer-reviewed sources, whether academic, professional, or governmental. Refer to Appendix B for information on conducting successful research. Refer to Appendix C for five steps to build a successful infographic. There are some free online tools for infographic creation that **may** be useful for students unfamiliar with design software. Some of these tools include, but are not limited to:

- Canva
- Easelly
- Piktochart
- Infogram
- Venngage
- Visualy

These tools are only suggestions, as some are limited in capability and features. For example, some programs may require you to have a paid account to export as a hi-resolution file. We recommend creating a test document and attempting to export it as a hi-res PNG, PDF, or JPEG file before committing to any program. Using an industry-standard graphic design software, such as Photoshop, Illustrator or Sketch, will give students access to more design features and options for creativity. However, students are free to use whatever tool or software they may choose, as long as they submit their final product in a high-resolution PNG, PDF or JPEG format. Remember to keep in mind that the infographic may be viewed across platforms (mobile, desktop, or print) and reproduced at different sizes.

How to Collaborate Virtually with Your Team: If you are competing as part of a team, you may choose to collaborate virtually via conference call or video call. Some examples of apps include: Aggie.io, Discord, Google Hangouts, Slack, Zoom. They are not the only available programs. These programs are listed because they are free and easy to use. Some include tools such as screen sharing and whiteboards where team members can write or sketch out ideas for others to see. Choose any app that works well for your team needs.

About IPHE: The International Partnership for Hydrogen and Fuel Cells in the Economy (IPHE), formed in 2003, is an international governmental partnership currently consisting of 19 member countries and the European Commission. IPHE informs stakeholders, including policymakers and the public, on the benefits and challenges to widespread commercial hydrogen and fuel cell technologies. Our mission is to accelerate progress on clean energy using hydrogen and fuel cells.

Appendix A

Infographic Rubric				
Research Content	<ul style="list-style-type: none"> Evidence based Clear analysis and explanation Logical flow 	3	2	1
		<ul style="list-style-type: none"> The data and facts presented are evidence based from reliable sources. All sources are referenced. All content is accurate. There is clear analysis and explanation of the research prompt selected. The information and messages present a logical flow. 	<ul style="list-style-type: none"> The content contains one inaccuracy, and content is partially cited with credible sources. The analysis and explanation are incomplete. One of the elements of the infographic does not logically flow with the subject matter. 	<ul style="list-style-type: none"> The content contains more than one inaccuracy, content is occasionally cited, and/or credible sources are visibly lacking. Lacking analysis and explanation. More than one of the elements of the infographic does not logically flow with the subject matter.
Design	<ul style="list-style-type: none"> Aesthetics (font, color, shape) Correct use of data visualization Relevance of graphics 	3	2	1
		<ul style="list-style-type: none"> The infographic is highly attractive in terms of layout, design, and neatness. The color choices enhance the visibility of the infographic, and the fonts used are readable and complement the content. The chosen data visualization formats make the data presented clear and simple for the viewer to understand. The images and illustrations match the tone and subject matter of the infographic. 	<ul style="list-style-type: none"> The infographic is adequately attractive in terms of layout, design, and neatness. Color and font choices do not add or detract from the infographic. The chosen data visualization formats illustrate the data correctly, but some may be difficult for the viewer to understand. The images and illustrations are relevant but may distract attention away from the content of the infographic. 	<ul style="list-style-type: none"> The infographic lacks attractiveness in terms of layout, design, and neatness. Fonts used are difficult to read, and color choices are distracting. Data visualizations are seen, but other formats could have been chosen to better illustrate the data for the viewer. The images and illustrations used do not match the subject matter of the infographic and take away from the content of the infographic.
Mechanics	<ul style="list-style-type: none"> Grammar Guideline/format 	2	1	
		<ul style="list-style-type: none"> The writing is free of errors. 	<ul style="list-style-type: none"> The writing contains one or more errors. 	

PRACTICAL RESEARCH TIPS



Successful research requires thinking and planning. To help ensure your success, this research guide will help participants tackle tough research questions.



Select your Topic/Prompt

Begin by selecting a hydrogen and fuel cells topic that you are interested in learning about. If you are not familiar with the topic, start gathering background information by exploring encyclopedias, dictionaries, or scholarly web sites.



Plan Your Research Strategy

Plan how you will conduct research. A research strategy should take into account the time and resources that your research will require.

Suggested key words, subject headings, and/or search phrases: "how to create a research strategy"



Select Scholarly Resources

Evaluate the credibility of your resources and make sure they are "scholarly," which generally means they are written by experts in the field and are vetted for accuracy and scientific rigor via accepted scholarly publishing standards, such as peer review or editorial processes.

Suggested key words, subject headings, and/or search phrases: "peer review" or "editorial process" and "evaluating resources"



Internet Research

Picking internet resources from an internet browser list gives no guarantee of credibility, but it can be used to guide you to resources that are published by experts or by established institutions who are interested in providing reliable public knowledge. You may use web-based encyclopedias, like Wikipedia, to learn about your topic and find credible resources, but they should not be cited as credible resources in your infographic.



Search Tips

Suggested key words, subject headings, and search phrases can be useful when searching databases and the internet.

Suggested key words, subject headings, and/or search phrases: "finding and evaluating resources"

Research Aids

Suggested key words, subject headings, and search phrases are included throughout this toolkit to assist users in finding credible research sources. Insert these words or phrases into the URL address bar or web browser search field.

Cite your Research Resources

Learn how to, and make it a priority to, respect the intellectual property rights of those who produced the information you are researching. Be consistent in following the citation guidelines your teacher requires, or learn a new citation method.

Suggested key words, subject headings, and/or search phrases: APA, MLA, AP Stylebook, Chicago Manual of Style

Persistence and Networking

Demonstrate resilience by pursuing information in spite of challenges. Use social networks and other tools to explore your topic. Learn appropriate information-sharing skills and avoid plagiarism.

Suggested key words, subject headings, and/or search phrases: "research skills for students"

Consult with a Reference Librarian

Get expert research guidance from a reference librarian at your school, public or college library, or the U.S. Library of Congress. Reference librarians can help identify useful keywords, subject headings, and search phrases, as well as provide guidance on taking research notes and evaluating and citing your sources.

Budget your Time and Have Fun!

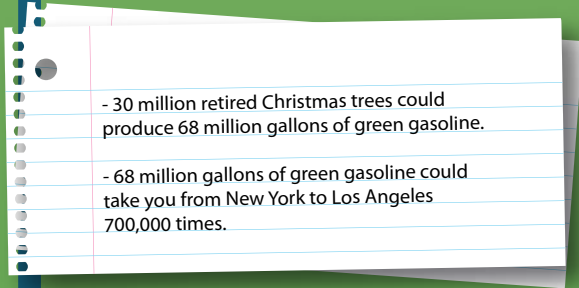
Remember to balance your time between research and infographic development. Selecting a topic area that you are interested in will make your research and your infographic more engaging.

5 STEPS FOR BUILDING AN INFOGRAPHIC

1

RESEARCH

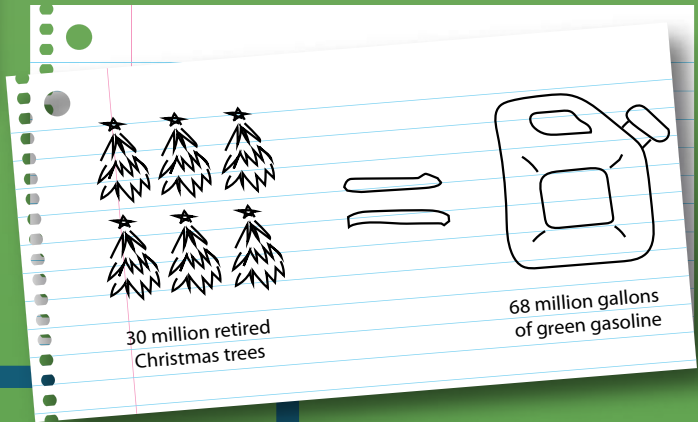
Research your topic fully. Pull together a list of thought-provoking facts that you think are important. Make sure to use credible sources.



2

SKETCH

Ultimately, you are going to share facts and data that tell a story. Outline the story, and draw a sketch for each key point.



3

DESIGN

Now it's time to bring everything together in one cohesive design. Create the layout, and choose a color scheme. Bring your sketches to life with hand-drawn or digital illustrations and icons. Be sure to use a consistent design style throughout the infographic.

4

TEST

Share your infographic with others and ask them for feedback.

5

FINALIZE

Consider the feedback that you receive, and implement constructive changes as you see fit to produce a final version of your infographic.

