

# **Researching with National Geographic Online**



**A user guide for the CAT Community**

**NatGeo: National Geographic**

Created by Lesley Johnson, Instructional Designer,  
with the assistance of Andrea Bravin, Library Coordinator

## **Table of Contents**

[Step-by-Step guide to enter National Geographic Online](#)

[Create an account](#)

[Conduct a simple search](#)

[Using "AND," "OR," and "NOT"](#)

[Filter your results by...](#)

[Term](#)

[Title](#)

[Subject](#)

[Publication Year](#)

[Term Clusters](#)

[Publication Year Bar Graph](#)

[Save a resource](#)

[E-mail a resource](#)

[Citation of a resource](#)

[Bookmark a resource](#)

[Print a resource](#)

[Appendix](#)

[Typical Lexile Levels by Grade](#)

[Library Contact Information](#)

[\[Return to Table of Contents\]](#)

Step 1: Enter the CAT webpage and choose the "Library" page from the "School" menu.

The screenshot shows the homepage of Colegio Americano de Torreón. The header includes the school logo, name, and social media icons. A dark blue navigation bar contains links for 'About CAT', 'School', 'Community', 'Joining', 'Technology', 'HECAT', and 'Aviso de Privacidad'. The 'School' link is circled in red. A dropdown menu is open under 'School', listing 'Early Childhood', 'Elementary School', 'Intensive English', 'Middle School', 'High School', 'Library', 'Sports', 'Music', and 'Cafeteria'. The 'Library' option is circled in red, and a large white arrow points to it from the left. On the left side of the page, there is a section for 'OLWEUS BULLYING PREVENTION PROGRAM' with the heading 'Cuatro Reglas en' and a list of four rules. A large white arrow points from this section towards the 'Library' option in the dropdown menu. The background features a group of students in superhero costumes.

Step 2: From the CAT Libraries webpage, select "National Geographic" and click anywhere on the NatGeo graphic to open CAT's online version of National Geographic.

The screenshot shows the 'CAT LIBRARIES' section of the website. The sidebar on the left lists various library resources, with 'National Geographic' highlighted in a red box. The main content area is titled 'NATIONAL GEOGRAPHIC VIRTUAL LIBRARY' and features a large black graphic with a yellow border. Inside the graphic, the text reads 'Now at CAT NATGEO Virtual Library' and 'Click here'. A red oval highlights the 'Click here' text, and three large white arrows point towards it from the left, right, and bottom. To the right of the graphic is the National Geographic logo. Below the graphic, there is a paragraph of text starting with 'Now National Geographic and Gale...'.

[\[Return to Table of Contents\]](#)

Created by Lesley Johnson, Instructional Designer, with the assistance of Andrea Bravin, Library Coordinator

### Step 3: Log in by using the using the information your librarian has already given to you.

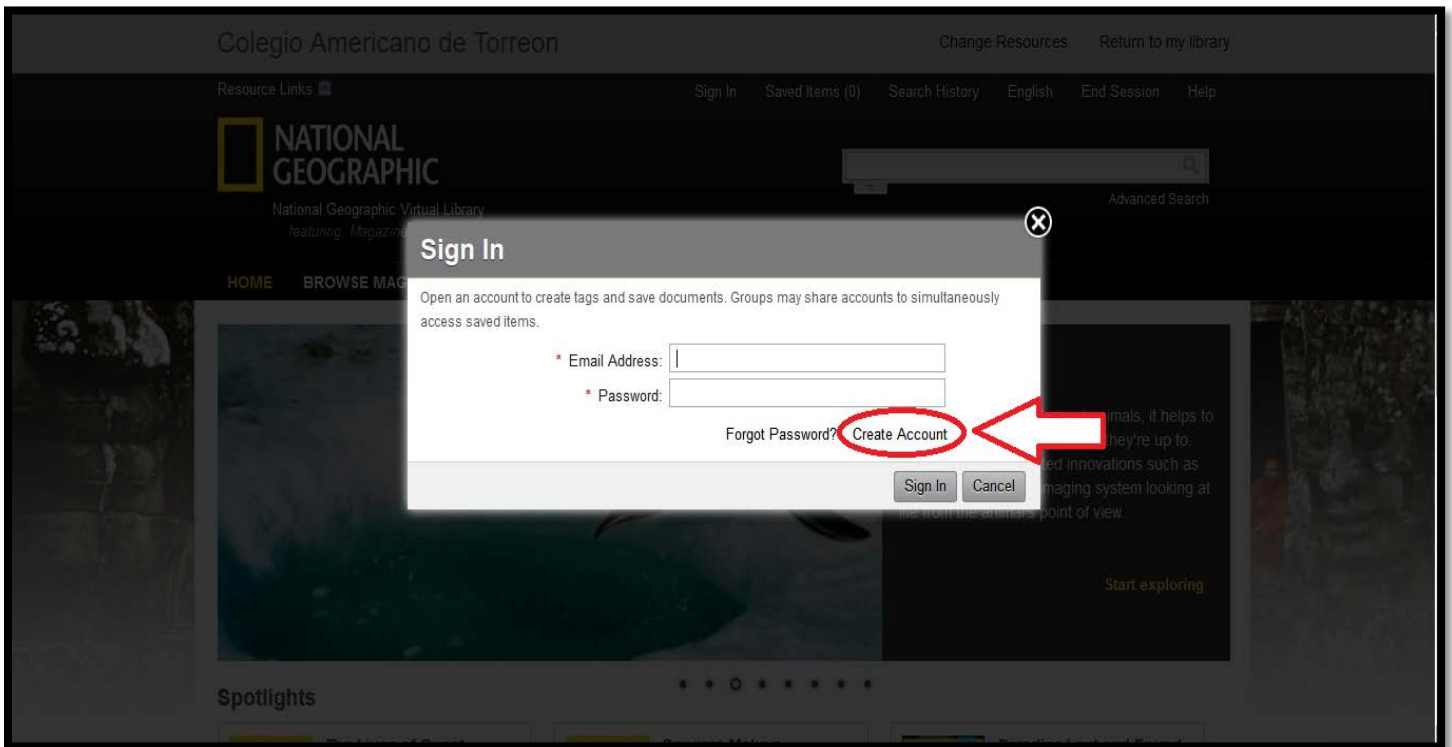
The screenshot shows the Cengage Learning Infotrac login interface. At the top left is the Cengage Learning logo. The main heading is "INFOTRAC®". Below this, the institution name "Colegio Americano de Torreon" is displayed in a red-bordered box. Underneath, there is a password prompt "Please enter your password" followed by a password input field with masked characters and a "Proceed" button. Two red arrows point towards the password field. Below the login area is an "Important User Information" section with text regarding remote access permissions. At the bottom left, there is a link for "Athens users click here". The footer contains navigation links for "Cengage Learning", "Contact us", "Copyright and Terms of Use", and "Privacy Policy".

### Step 4: Select the National Geographic Virtual Library.

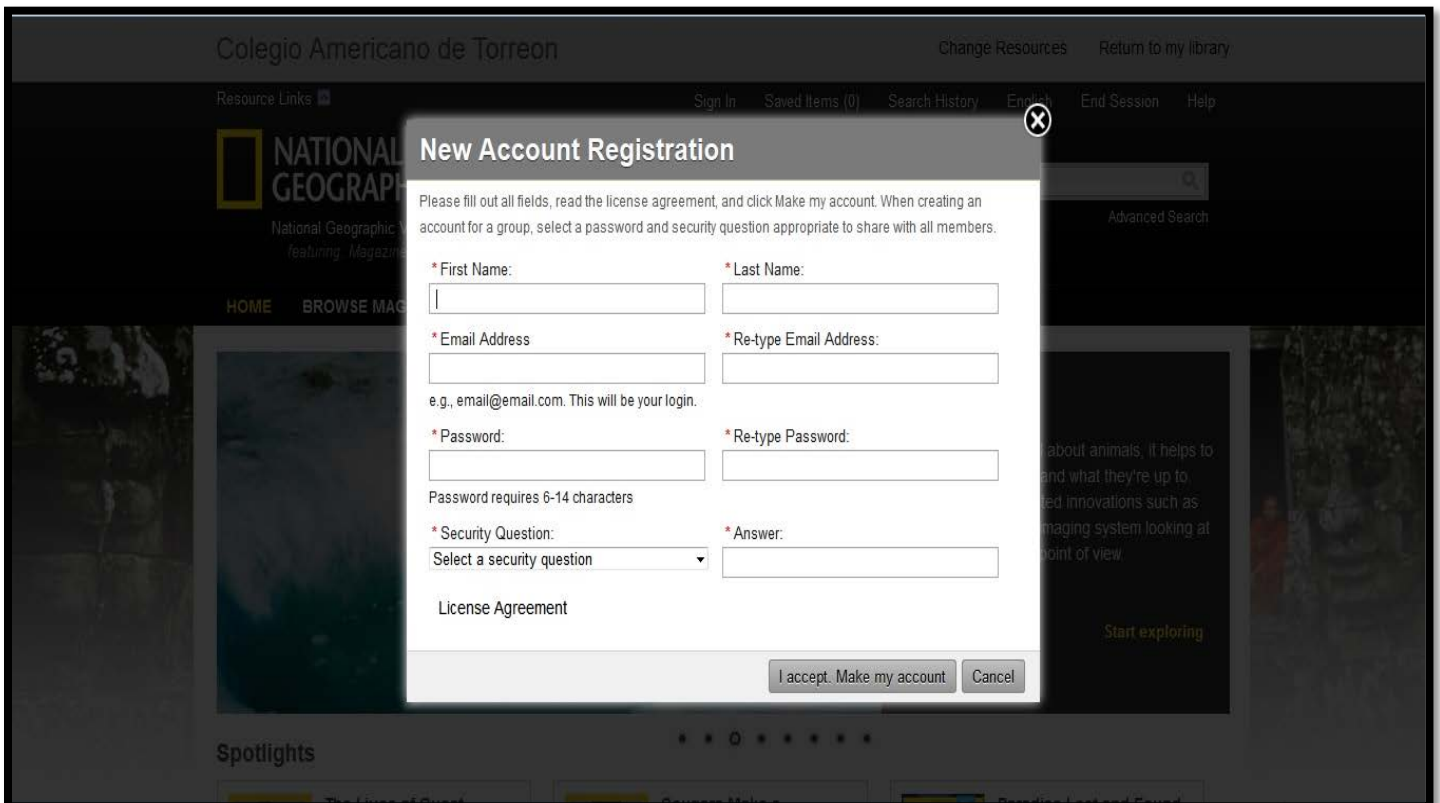
The screenshot displays the Gale Databases search results page. At the top, the Gale Cengage Learning logo is on the left, and navigation links for "Colegio Americano de" and "Return to Library" are on the right. The page title is "Gale Databases". A "Powered by InfoTrac®" notice is present in the top right. Below this, there are "Additional Links" for "Library Home page" and "Title List". The main content area shows two database entries. The first is "National Geographic Kids" with a small icon and a description. The second is "National Geographic Virtual Library" with a larger icon and a detailed description. Two red arrows point towards the "National Geographic Virtual Library" entry. The footer contains links for "Find Out More About PowerSearch", "Contact Us", "Copyright", "Terms of Use", and "Privacy Policy".

[\[Return to Table of Contents\]](#)

**Step 5: Sign in if you already have an account and skip to step 7. If you don't already have an account, click on "create account."**



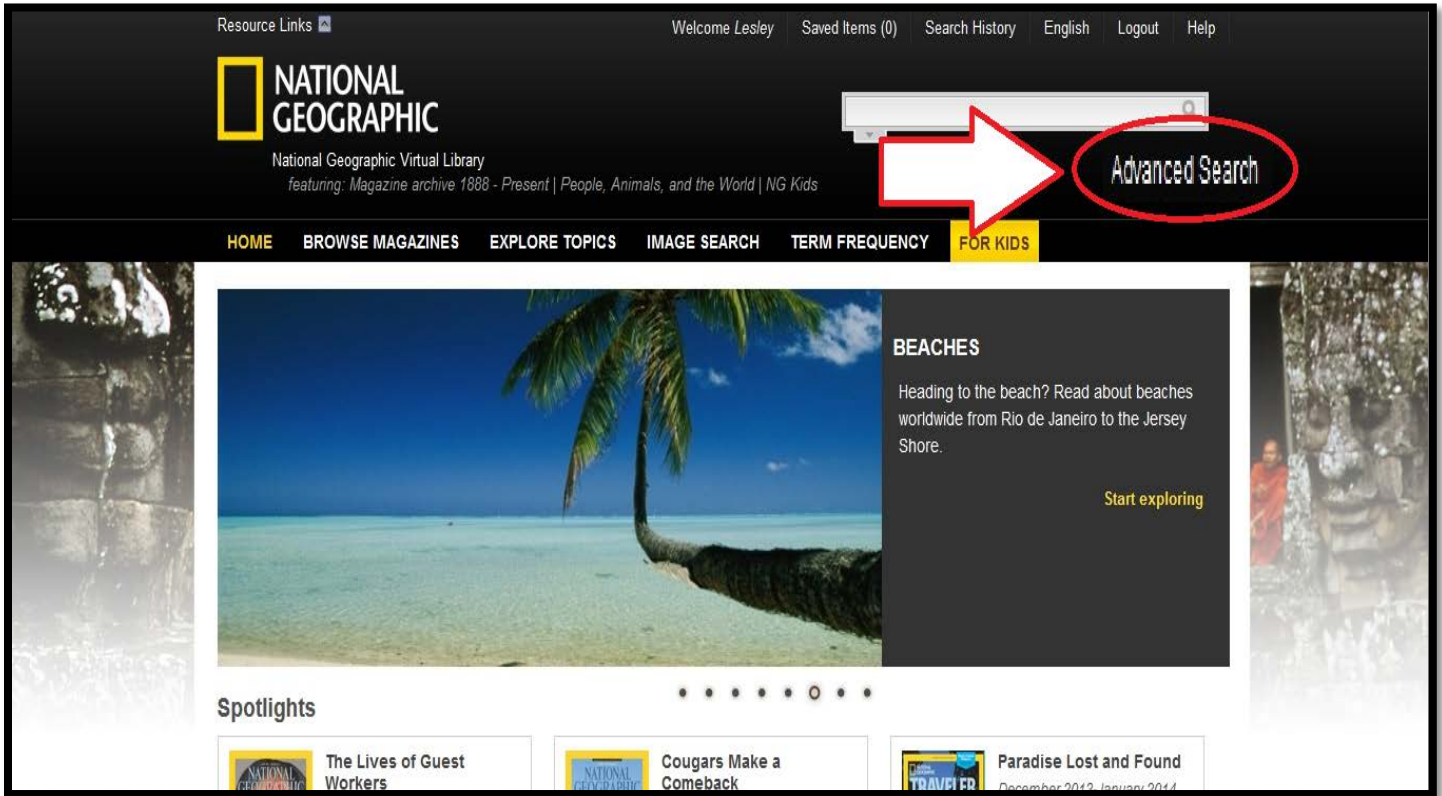
**Step 6: Follow the prompts to create your account.**



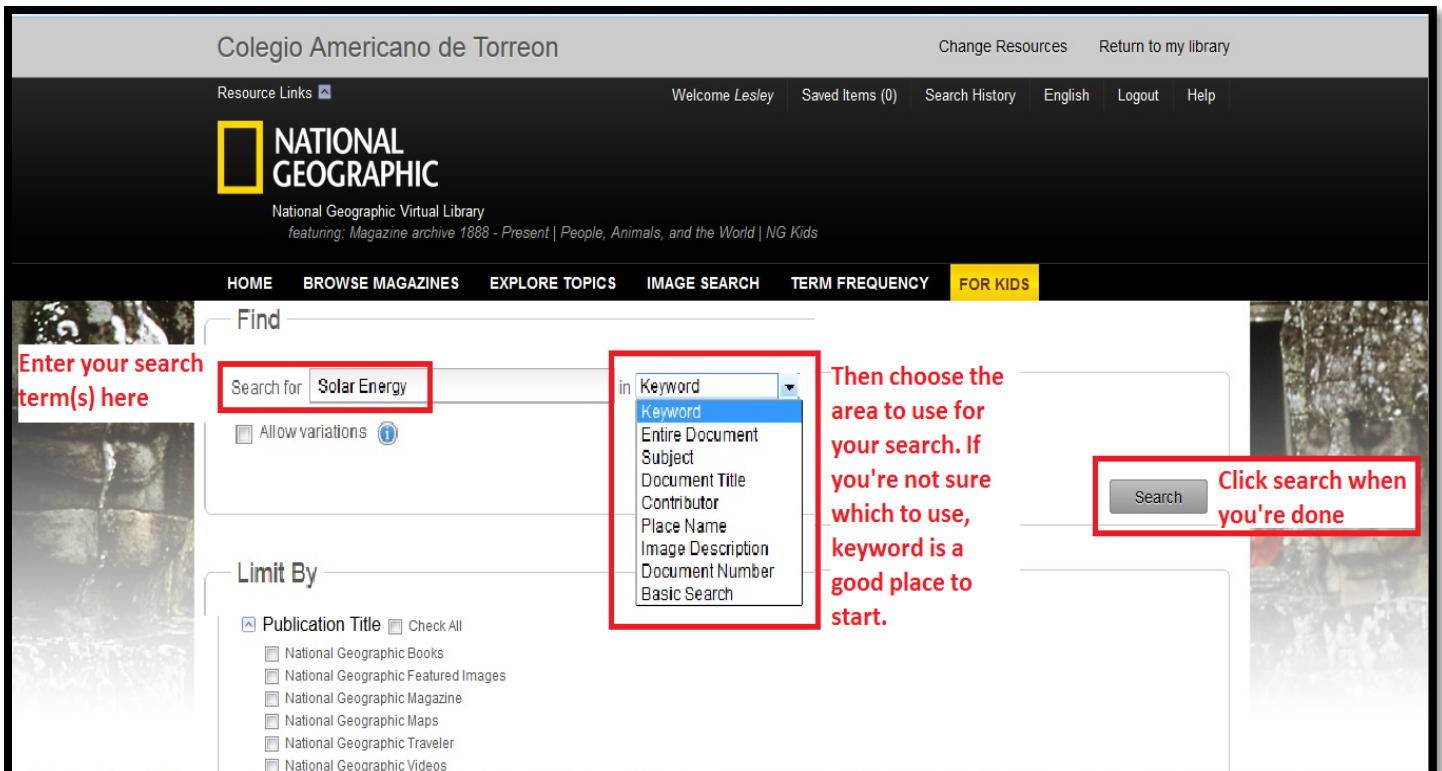
[\[Return to Table of Contents\]](#)

*Created by Lesley Johnson, Instructional Designer, with the assistance of Andrea Bravin, Library Coordinator*

**Step 7: Choose the "Advanced Search" link that is located in the top right corner below the search box.**



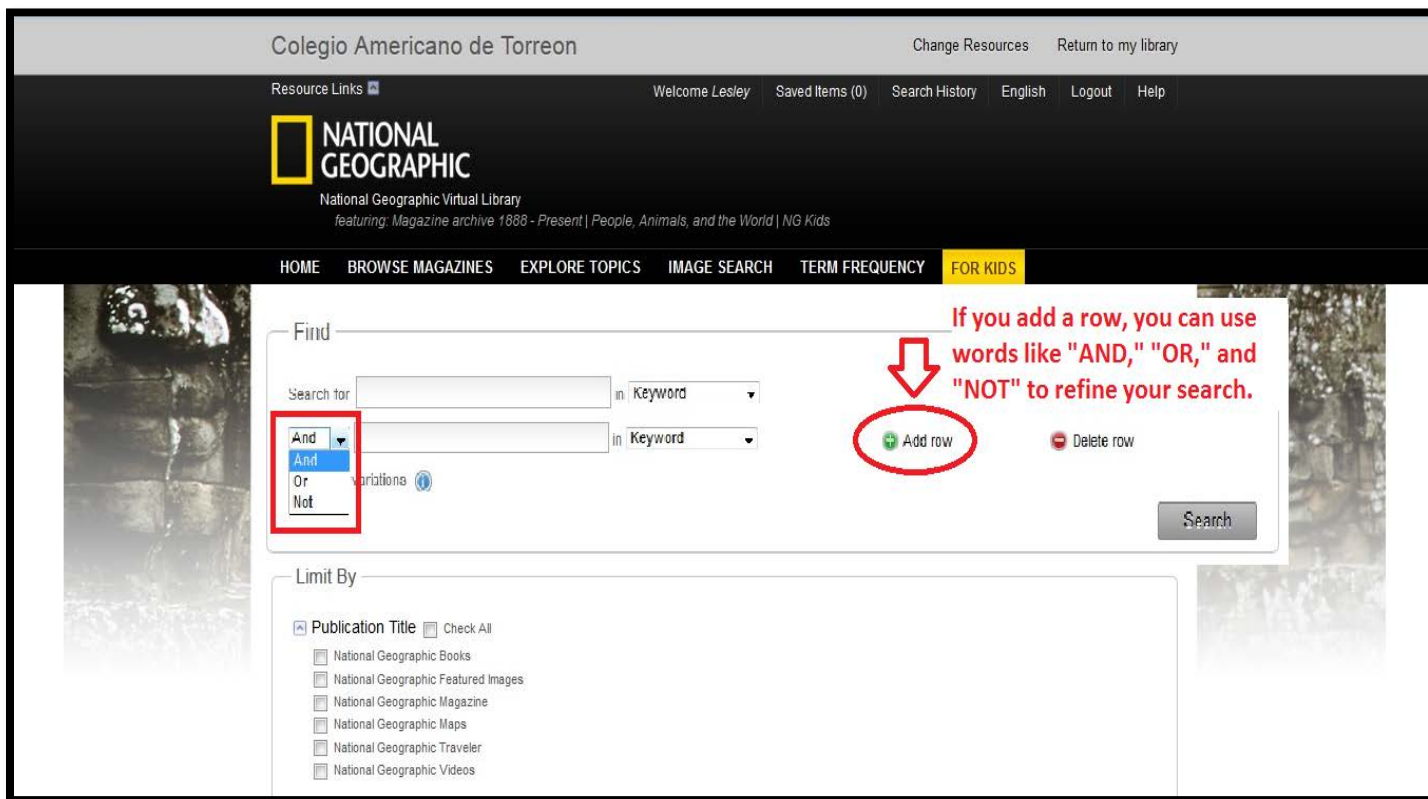
**Step 8: Complete a simple search by writing your search term(s) in the "Search for" box and then choose the area to use for your search.**



[\[Return to Table of Contents\]](#)

*Created by Lesley Johnson, Instructional Designer, with the assistance of Andrea Bravin, Library Coordinator*

If you choose to add a row, you can use keywords like "AND," "OR," and "NOT" to refine your search.

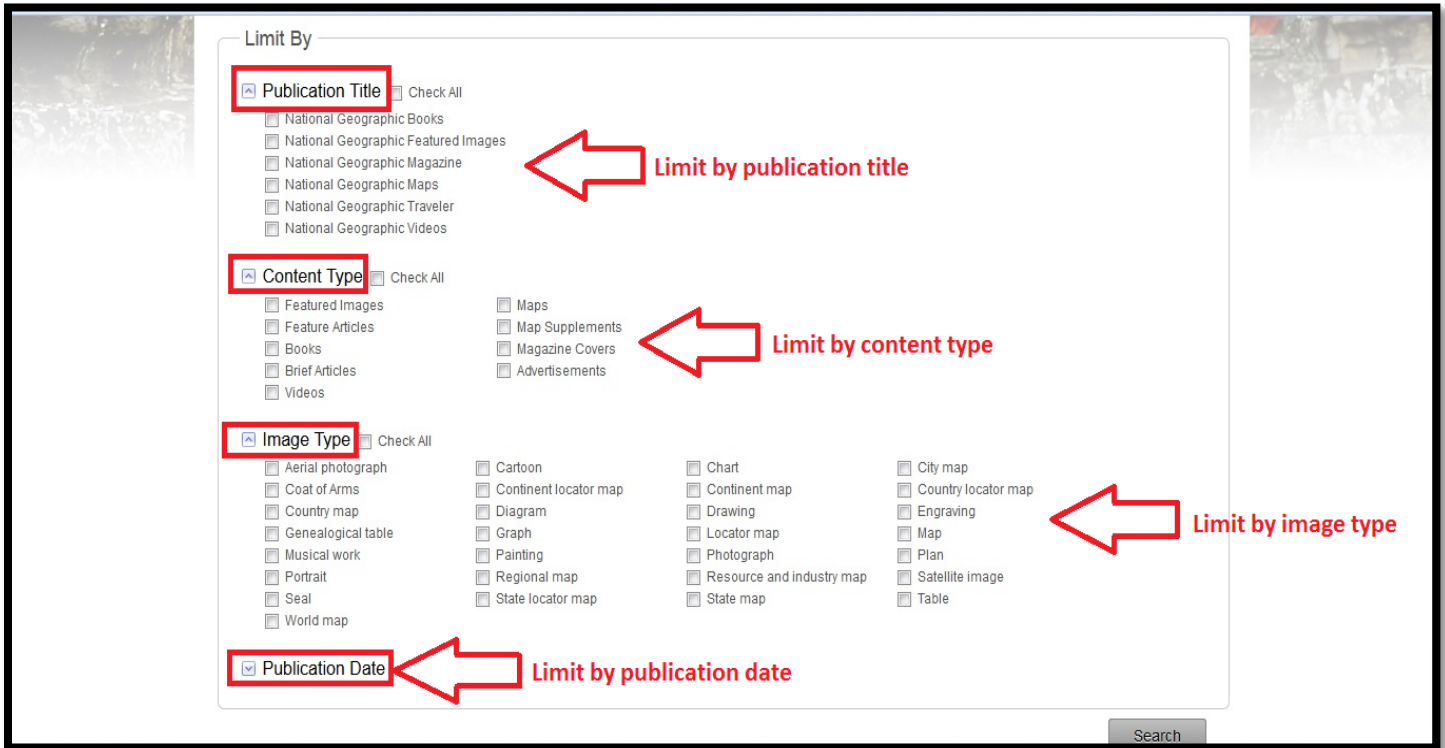


Additional Search Word	What it does	Example	Example Results
AND	<u>Narrows</u> your search by finding both terms in the resource.	cowboys AND rodeos	You will find only articles that contain the words cowboys and rodeos.
OR	<u>Broadens</u> your search by finding resources that include either term in the resource.	cowboys OR charros	You will find resources that contain the words cowboys or charros, the Spanish word for cowboys.
NOT or AND NOT	<u>Narrows</u> your search so it does not include the second term	cowboys NOT football	You will find resources that do not contain anything about football (or the Dallas Cowboys).

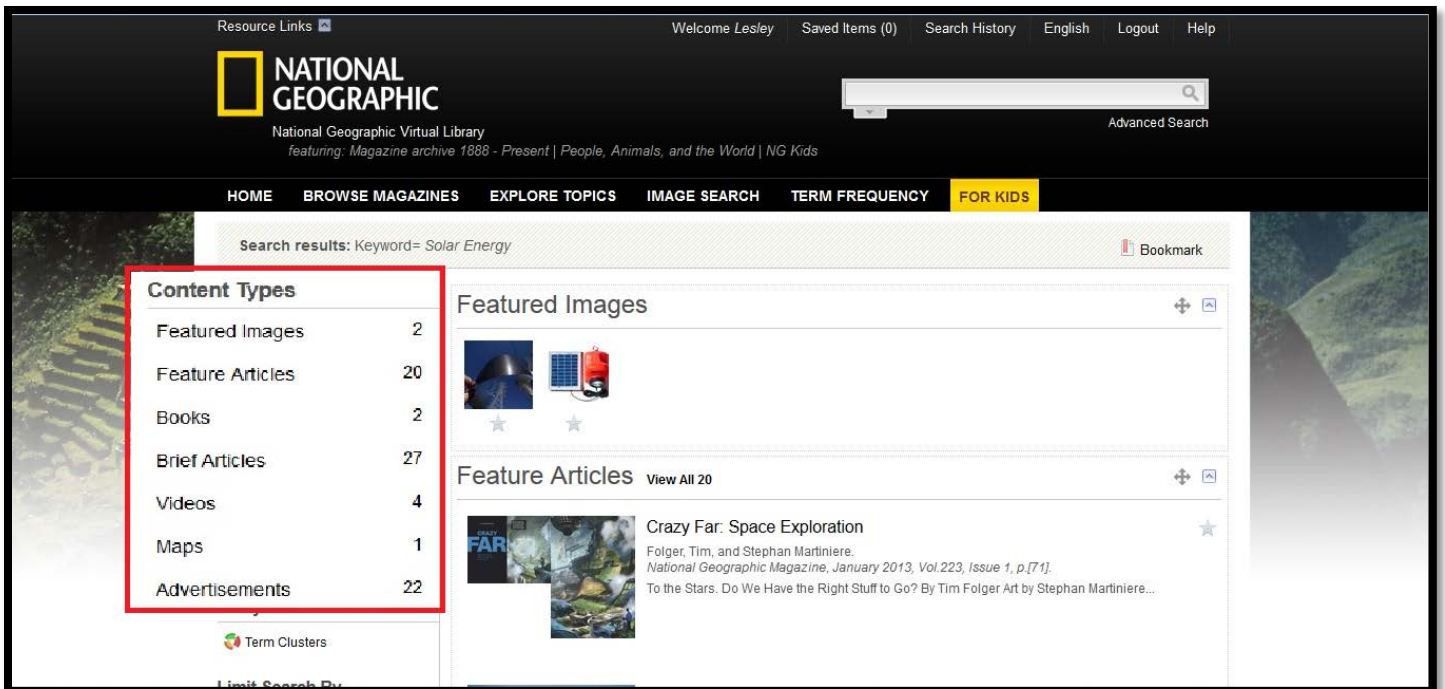
[\[Return to Table of Contents\]](#)

Created by Lesley Johnson, Instructional Designer, with the assistance of Andrea Bravin, Library Coordinator

**Refine your search: You can also limit your results by publication title, content type, image type, and publication date.**



**Step 9: After completing a simple search, you can also filter your results into content types for you, giving you the option of searching within one of those areas.**



[\[Return to Table of Contents\]](#)



**Or you can filter your results by term, title, subject or publication year.**

**Refine your search by using term clusters** →

**or by titles** →

**or by subjects** →

**or by year** →

Analyze

- Term Clusters

Limit Search By

Search within results

Publication Titles

National Geographic Magazine	66
National Geographic Videos	4
National Geographic Traveler	3
National Geographic Books	2
National Geographic Featured Images	2

View More


Subjects

Solar energy	49
Technology	15
Power resources	12
Aircraft industry	9
aircraft	8


View More

Publication Year


1926-2013



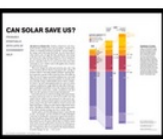
National Geographic Magazine, January 2013, Vol.223, Issue 1, p.[71].  
To the Stars. Do We Have the Right Stuff to Go? By Tim Folger Art by Stephan Martiniere...




Can China Go Green?  
McKibben, Bill, and Greg Girard.  
National Geographic Magazine, June 2011, Vol.219, Issue 6, p.[117].  
No Other Country is Investing So Heavily in Clean Energy. But No Other Country Burns as Much Coal...



The 21st Century Grid  
Achenbach, Joel, and Joe McNally.  
National Geographic Magazine, July 2010, Vol.218, Issue 1, p.[118].  
Can We Fix the Infrastructure That Powers Our Lives?...



Graphic: Can Solar Save Us?  
Carroll, Chris.  
National Geographic Magazine, September 2009, Vol.216, Issue 3, p.52.



Plugging Into the Sun  
Melford, Michael, and George Johnson.  
National Geographic Magazine, September 2009, Vol.216, Issue 3, p.28.  
The race is on to grab enough rays to power the planet. By George Johnson Photographs by Michael Melford 52 GRAPHIC: Can solar save us?...

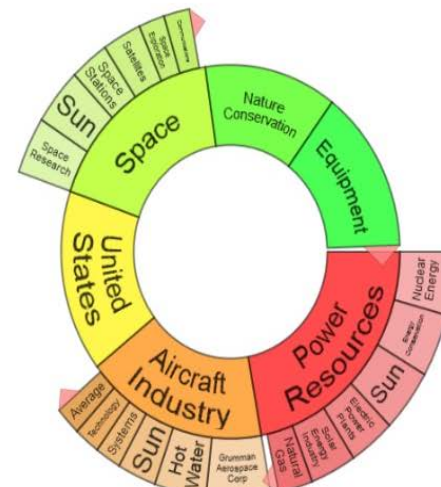
**If you chose "Term Clusters," you will be sent to a page with a pie chart of terms that you can select from to refine your search.**

HOME BROWSE MAGAZINES EXPLORE TOPICS IMAGE SEARCH TERM FREQUENCY **FOR KIDS**

**Term Clusters**

Categories are derived by an algorithm that creates clusters of terms based on the first 100 words of the first 100 search results per content type. By clicking on a category, you will be able to refine your search further.

Search results: Keyword= Solar Energy



- Tapping the Sun**  
O CI CO TJ D O CO 3 O V C o en 0 T3 w CO CD CO E o CO c O D i O CO CO n O co 3 c e O 0 TO CO o CO D O Q D CO CO 13 CU X CO CO co CO co A T3 CO is r o 5iSi Iti s... [Power resources] [Solar energy] [Science] [Technology] [Satellite communications] [Space] [Satellites (Spacecraft)] [Robotics] [Sun] [Earth]
- Space Elevator**  
SPACE ELEVATOR A fpViptprfl In 2009 NASAs Andrew Petro watched as 1 1 J a laserPowerec robotic device climbed CcUrO lOICE up a cable more than half a mile long sfil frw arjove the Mojave Desert A winner ... [Nanotechnology] [Contests] [Public works] [Solar energy] [Technology] [Engineering] [Lasers] [Transportation] [Space] [Robotics] [Space elevators] [Space research] [Earth]
- Sunlight in the Dark**  
NEXT Earth Neptune Launched in 1977 NASAs Voyager 1 spacecraft is now 108 billion miles from the sun At this scale the nearest star Proxima Centauri would be about 2000 pages past this one Voyager 1 Sun Proxima... [Electric power] [Solar energy] [Technology] [Solar energy industry] [Business enterprises] [Light] [East Africa] [Africa]
- Solar Magellan?**  
TECHNOLOGY TECHNOLOGY to Propelled solely by the sun the worlds largest solar yacht set off from Monaco last fall to Propelled solely by the sun the worlds largest solar yacht set off from Monaco last fall... [Circumnavigation] [Catamarans] [Yachting] [Watercraft] [Solar energy] [Technology] [Ships] [Navigation] [Earth]

[\[Return to Table of Contents\]](#)

If you select a section, it will highlight it and show resources containing those terms.

HOME BROWSE MAGAZINES EXPLORE TOPICS IMAGE SEARCH TERM FREQUENCY FOR KIDS

Term Clusters ⓘ

Categories are derived by an algorithm that creates clusters of terms based on the first 100 words of the first 100 search results per content type. By clicking on a category, you will be able to refine your search further.

Search results: Keyword= Solar Energy

Print Download

Results for cluster: **Nature Conservation** (8)

- Hamburg: Urban Harbinger**  
THE LEADING EDGE J HAMBURG URBAN HARBINGER THE LEADING EDGE J HAMBURG URBAN HARBINGER Known for many things high fashion high incomes the yes hamburger Germany's northern metropolis of Hamburg on the banks of... [Urban renewal] [Green technology] [Architecture] [Wind power] [Solar energy] [Energy conservation] [Hotels and motels] [Buildings] [Nature Conservation] [Sustainable urban development] [Germany] [Hamburg, Germany]
- Making Waves**  
Making Waves Making Waves Will cruise ships one day be powered by the sun The answer may be on the horizon with the launch in Germany of the worlds biggest solar powered boat a 100 foot catamaran named Turanor... [Solar energy] [Nature Conservation] [Boats]
- Apollo's Oven**  
TECHNOLOGY TECHNOLOGY Apollo's Oven In desert villages in Chile 250 families are glad to let the sun roast their goat meat The UN Development Programme paid 110 for the wood to build each solar oven Fuel is free... [Food] [Water] [Solar energy] [Technology] [Heat] [Cooking] [Nature Conservation]
- Geo News**  
GEO NEWS GEO NEWS COMMERCE Nelson Mandela has filed for trademark protection The South African statesman hopes to stop businesses from profiting

Some sections will expand when you select them so that you can see even more subcategories.

HOME BROWSE MAGAZINES EXPLORE TOPICS IMAGE SEARCH TERM FREQUENCY FOR KIDS

Term Clusters ⓘ

Categories are derived by an algorithm that creates clusters of terms based on the first 100 words of the first 100 search results per content type. By clicking on a category, you will be able to refine your search further.

Search results: Keyword= Solar Energy

Print Download

Results for cluster: **Aircraft Industry** (11)

- Grumman Aircraft Engineering Corporation**  
Invest in the sun Start collecting today Solar energy is here today With it comes a shining answer to soaring fuel costs the Grumman Sunstream Solar Domestic Water Heating System Sunstream wont eliminate all your... [Grumman Aerospace Corp.] [Aircraft Industry] [Engineering services] [Aircraft] [Aircraft design]
- Grumman Aircraft Engineering Corporation**  
government report sold me on solar energy u Heating water for bathing washing clothes and dishes can amount to 15 to 40 of an average familys total yearly heating bill So Victor Fiore installed a Grumman... [Grumman Aerospace Corp.] [Aircraft Industry] [Engineering services] [Aircraft]
- Grumman Aircraft Engineering Corporation**  
An answer to rising energy costs comes up every morning Water System you could save over 5 of your domestic hot water heating co Where else could you make an inve that not only may immediately add val your home but... [Grumman Aerospace Corp.] [Aircraft Industry] [Engineering services] [Aircraft] [Aircraft design]
- Grumman Aircraft Engineering Corporation**  
Own your own utility You can turn the suns free energy into hot water for your family the day you install a Grumman Sunstream Solar Domestic Water Heating System Youll save money because the hot water the average... [Grumman

[\[Return to Table of Contents\]](#)

Created by Lesley Johnson, Instructional Designer, with the assistance of Andrea Bravin, Library Coordinator

Use the small pink triangles (circled in red in the graphic) to expand or compress the term menus.

HOME BROWSE MAGAZINES EXPLORE TOPICS IMAGE SEARCH TERM FREQUENCY FOR KIDS

Print Download

### Term Clusters

Categories are derived by an algorithm that creates clusters of terms based on the first 100 words of the first 100 search results per content type. By clicking on a category, you will be able to refine your search further.

Search results: Keyword= Solar Energy

Results for cluster: **Aircraft Industry** (11)

- Grumman Aircraft Engineering Corporation**  
Invest in the sun Start collecting today Solar energy is here today With it comes a shining answer to soaring fuel costs the Grumman Sunstream Solar Domestic Water Heating System Sunstream wont eliminate all your... [Grumman Aerospace Corp.] [Aircraft Industry] [Engineering services] [Aircraft] [Aircraft design]
- Grumman Aircraft Engineering Corporation**  
government report sold me on solar energy u Heating water for bathing washing clothes and dishes can amount to 15 to 40 of an average familys total yearly heating bill So Victor Fiore installed a Grumman... [Grumman Aerospace Corp.] [Aircraft Industry] [Engineering services] [Aircraft]
- Grumman Aircraft Engineering Corporation**  
An answer to rising energy costs comes up every morning Water System you could save over 5 of your domestic hot water heating co Where else could you make an inve that not only may immediately add val your home but... [Grumman Aerospace Corp.] [Aircraft Industry] [Engineering services] [Aircraft] [Aircraft design]
- Grumman Aircraft Engineering Corporation**  
Own your own utility You can turn the suns free energy into hot water for your family the day you install a Grumman Sunstream Solar Domestic Water Heating System Youll save money because the hot water the average... [Grumman

To view any of the resources, simply click on the hyperlinked titles to view the article.

HOME BROWSE MAGAZINES EXPLORE TOPICS IMAGE SEARCH TERM FREQUENCY FOR KIDS

Print Download

### Term Clusters

Categories are derived by an algorithm that creates clusters of terms based on the first 100 words of the first 100 search results per content type. By clicking on a category, you will be able to refine your search further.

Search results: Keyword= Solar Energy

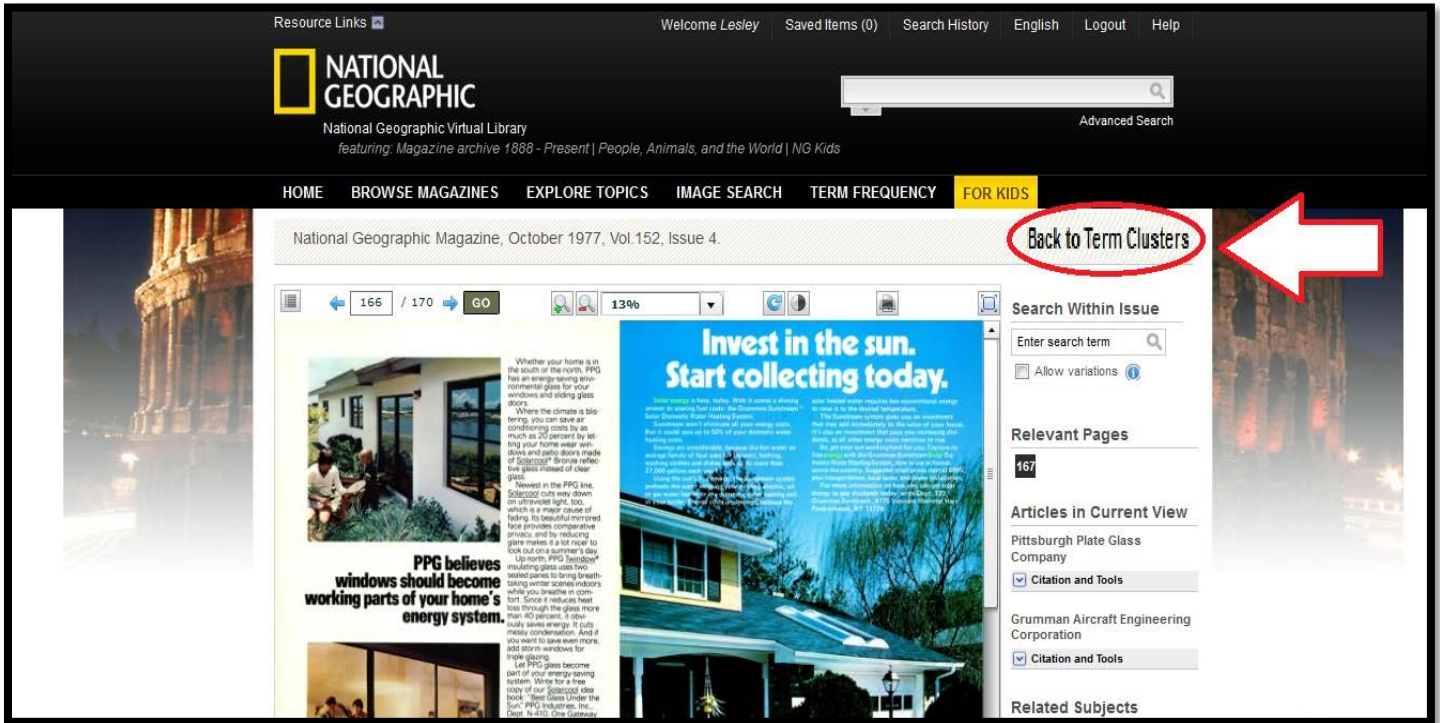
Results for cluster: **Aircraft Industry** (11)

- Grumman Aircraft Engineering Corporation**  
Invest in the sun Start collecting today Solar energy is here today With it comes a shining answer to soaring fuel costs the Grumman Sunstream Solar Domestic Water Heating System Sunstream wont eliminate all your... [Grumman Aerospace Corp.] [Aircraft Industry] [Engineering services] [Aircraft] [Aircraft design]
- Grumman Aircraft Engineering Corporation**  
government report sold me on solar energy u Heating water for bathing washing clothes and dishes can amount to 15 to 40 of an average familys total yearly heating bill So Victor Fiore installed a Grumman... [Grumman Aerospace Corp.] [Aircraft Industry] [Engineering services] [Aircraft]
- Grumman Aircraft Engineering Corporation**  
An answer to rising energy costs comes up every morning Water System you could save over 5 of your domestic hot water heating co Where else could you make an inve that not only may immediately add val your home but... [Grumman Aerospace Corp.] [Aircraft Industry] [Engineering services] [Aircraft] [Aircraft design]
- Grumman Aircraft Engineering Corporation**  
Own your own utility You can turn the suns free energy into hot water for your family the day you install a Grumman Sunstream Solar Domestic Water Heating System Youll save money because the hot water the average... [Grumman

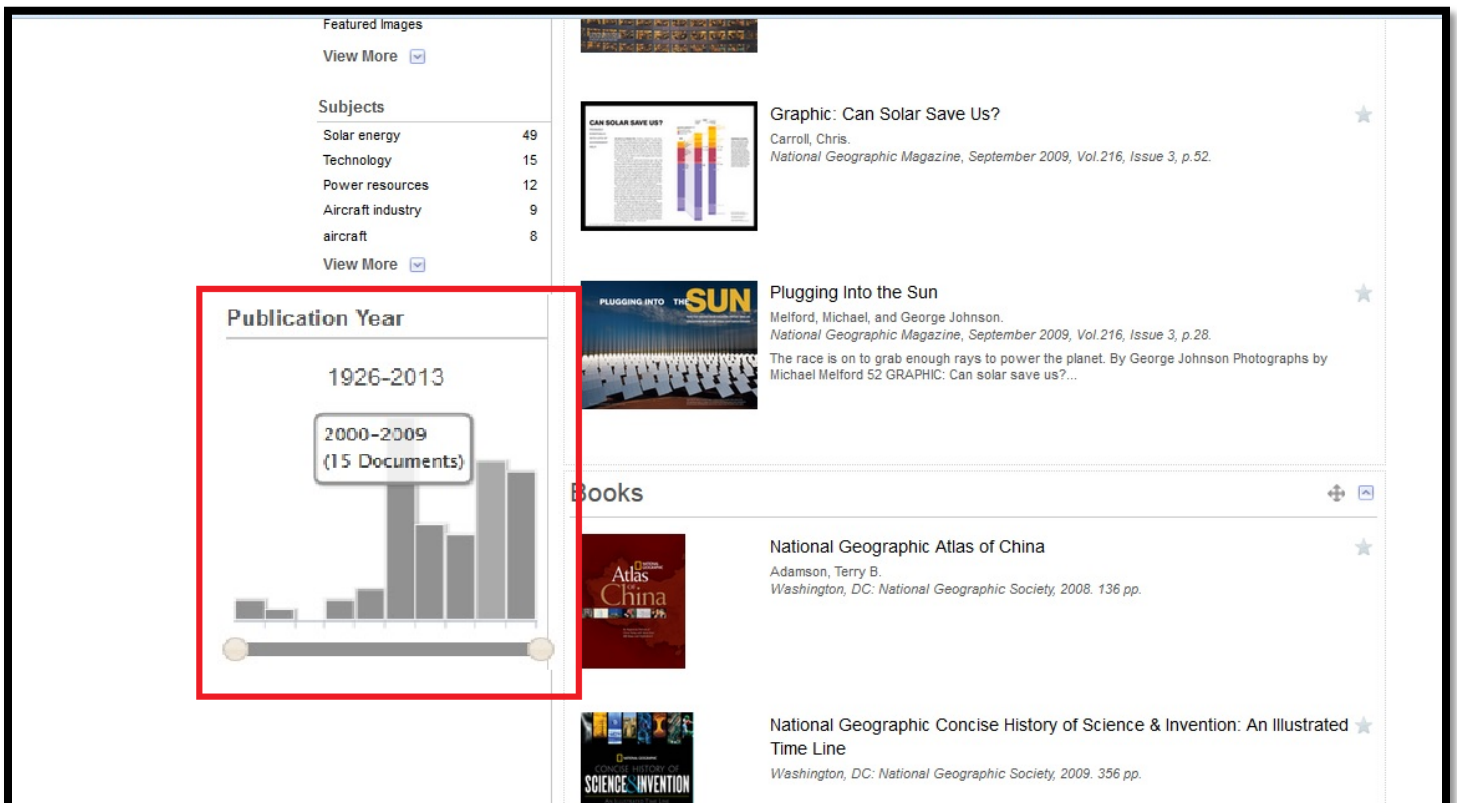
[\[Return to Table of Contents\]](#)

Created by Lesley Johnson, Instructional Designer, with the assistance of Andrea Bravin, Library Coordinator

Once you have selected an article, if you decide you would like to return to your search, click on the "Back to Term Clusters."



Another unique search feature is the Publication Year bar graph. If you hover the mouse over a bar, it will tell you the span of years and the number of documents published during those years. Click the bar to be taken to those resources.



[\[Return to Table of Contents\]](#)

If you choose to get rid of the year limitation, all you have to do is select the red delete button.

Resource Links Welcome Lesley Saved Items (0) Search History English Logout Help

**NATIONAL GEOGRAPHIC**  
National Geographic Virtual Library  
featuring: Magazine archive 1888 - Present | People, Animals, and the World | NG Kids

HOME BROWSE MAGAZINES EXPLORE TOPICS IMAGE SEARCH TERM FREQUENCY **FOR KIDS**

Search results: Keyword= Solar Energy LIMITER: Publication Date= Jan 1, 2000 - Dec 31, 2009 Bookmark

Content Types  
Feature Articles 3  
Books 2  
Brief Articles 6  
Advertisements 4

Analyze  
Term Clusters

Limit Search By  
Search within results

Publication Titles

**Feature Articles**

**Graphic: Can Solar Save Us?**  
Carroll, Chris.  
National Geographic Magazine, September 2009, Vol.216, Issue 3, p.52.

**Plugging Into the Sun**  
Melford, Michael, and George Johnson.  
National Geographic Magazine, September 2009, Vol.216, Issue 3, p.28.  
The race is on to grab enough rays to power the planet. By George Johnson Photographs by Michael Melford 52 GRAPHIC: Can solar save us?...

Once you have clicked on an article and you have read it and decided that you would like to save it for the future, click on the arrow that says "Citation and Tools." (Make sure you select the menu for the article or resource in current view!)

HOME BROWSE MAGAZINES EXPLORE TOPICS IMAGE SEARCH TERM FREQUENCY **FOR KIDS**

National Geographic Magazine, September 2009, Vol.216, Issue 3. Back to Search Results

102 / 194 GO 13%

**CAN SOLAR SAVE US?**

PROBABLY. EVENTUALLY. WITH LOTS OF GOVERNMENT HELP.

THE SUN IS A UTOPIAN FUEL: limitless, ubiquitous, and clean. Surely someday we'll give up on coal, oil, and gas—we hard on the climate, so unequally distributed worldwide—and go straight to the energy source that made fossil fuels. In a few sunny places where electric rates are high, like Italy and Hawaii, solar energy is already on the verge of being competitive. But in most places the sun remains by far the most expensive source of electric power—typically in the U.S. it costs several times more than natural gas or coal—which is why it still supplies only a fraction of a percent of our needs.

That won't change fast unless governments give solar a big boost. President Barack Obama campaigned with a pledge to institute a federal "renewable portfolio standard" requiring utilities to generate a quarter of their electricity from renewables by 2025. Yet even if Congress enacted that ambitious law, coal would still dominate the nation's electricity portfolio two decades from now, and solar energy would probably remain a minor contributor (chart). Cap-and-trade legislation that sets a price on carbon emissions would not be a magic bullet for solar either. Such measures would likely lead utilities to favor the cheapest renewables, like wind. Solar would make a sizable contribution only after 2025, once the expansion of wind energy had plateaued.

Some advocates say we need to encourage solar more directly. European nations have done so with "feed-in tariffs," laws that require electric utilities to pay premiums to solar-power producers, be they commercial power plants or private homes that pump energy to the grid. Such tariffs have made Germany and Spain solar leaders, creating a market that has helped drive down prices. The billions of dollars of tax credits and loan guarantees in the Obama stimulus package may have a similar effect.

Another option is for the federal government to invest directly in solar—the example, says Ken Zweibel of George Washington University, is funding the construction of giant solar plants in the desert Southwest, along with the high-efficiency transmission lines needed to carry the power nationwide. In Zwickel's version of the future, the sun would satisfy more than two-thirds of U.S. electricity needs by 2050, for an investment of about \$400 billion. "Compared to what we pay for the fossil fuel business, it's pocket change," he says. —Chris Carroll

**RENEWABLE FUTURES**  
Under current policies, solar energy is projected to supply about 10% of electricity by 2050. If it were to supply 25% of electricity by then, we would need more solar capacity expansion. Reaching utility to provide 25 percent of their power by 2050 would require a 10-fold increase in solar capacity.

**2005**  
ELECTRICITY GENERATION BY SOURCE (TERRA BYTES)  
NATURAL GAS & PETROLEUM  
COAL  
NUCLEAR  
HYDRO  
WIND  
SOLAR  
OTHER

**2020\***  
ELECTRICITY GENERATION BY SOURCE (TERRA BYTES)  
NATURAL GAS & PETROLEUM  
COAL  
NUCLEAR  
HYDRO  
WIND  
SOLAR  
OTHER

**SEARCH WITHIN ISSUE**  
Enter search term  
Allow variations

**Relevant Pages**  
102

**Articles in Current View**  
Plugging Into the Sun  
Citation and Tools

Graphic: Can Solar Save Us?  
Citation and Tools

**Related Subjects**  
Earth  
Electric power  
Electric power plants  
Energy conservation  
Heat  
Johnson, George  
More

[\[Return to Table of Contents\]](#)

Created by Lesley Johnson, Instructional Designer, with the assistance of Andrea Bravin, Library Coordinator

From there, you can choose to...

Add to saved documents (star icon) so you can access the resource when you are logged in to your account.

The screenshot shows a web browser displaying an article titled "CAN SOLAR SAVE US?". The article includes a bar chart comparing electricity generated in 2005 and 2009. A red box highlights the "Add to saved documents" button, which features a star icon. A red arrow points from the text "Add to saved documents" to the star icon. The page also shows a search bar, navigation links, and a sidebar with "Relevant Pages" and "Articles in Current View".

You can access your saved documents can be accessed by clicking on "Saved Items" at the top of the page.

The screenshot shows the National Geographic Virtual Library homepage. At the top, there is a navigation bar with "Home", "Browse Magazines", "Explore Topics", "Image Search", "Term Frequency", and "For Kids". Below this, there is a search bar and a "Saved Items (1)" link circled in red. The main content area displays the same article "CAN SOLAR SAVE US?" as seen in the previous screenshot.

[\[Return to Table of Contents\]](#)

Created by Lesley Johnson, Instructional Designer, with the assistance of Andrea Bravin, Library Coordinator

E-mail it (envelop icon).

National Geographic Magazine, September 2009, Vol. 216, Issue 3

Back to Search Results

102 / 194 GO 13%

# CAN SOLAR SAVE US?

PROBABLY. EVENTUALLY. WITH LOTS OF GOVERNMENT HELP.

**THE SUN IS A STORING FUEL:** limitless, ubiquitous, and clean. Surely someday we'll give up on coal, oil, and gas—so hard on the climate, so unequally distributed worldwide—and go straight to the energy source that made fossil fuels. In a few sunny places where electric rates are high, like Italy and Hawaii, solar energy is already on the verge of being competitive. But in most places, the sun remains by far the most expensive source of electric power—typically in the U.S. it costs several times more than natural gas or coal—which is why it still supplies only a fraction of a percent of our needs.

But won't change fast unless governments give solar a big boost. President Barack Obama campaigned with a pledge to institute a federal "renewable portfolio standard" requiring utilities to generate a quarter of their electricity from renewables by 2025. Yet even if Congress enacted that ambitious law, coal would still dominate the nation's electricity portfolio two decades from now, and solar energy would probably remain a minor contributor (albeit a cap-and-trade legislation that sets a price on carbon emissions would not be a magic bullet for solar either. Both mandates would likely lead utilities to favor the cheapest renewables, like wind. Solar would make a sizable contribution only after 2025, once the expansion of wind energy had plateaued.

Some advocates say we need to encourage solar more directly. European nations have done so with "feed-in tariffs," laws that require electric utilities to pay premiums to solar-power producers, be they commercial power plants or private homes that pump energy to the grid. Such tariffs have made Germany and Spain solar leaders, creating a market that has helped drive down prices. The billions of dollars of tax credits and loan guarantees in the Obama stimulus package may have a similar effect.

Another option is for the federal government to invest directly in solar—for example, says Ken Zweibel of George Washington University, by funding the construction of giant solar plants in the desert Southwest, along with the high-efficiency transmission lines needed to carry the power nationwide. In Zweibel's version of the future, the sun would satisfy more than two-thirds of U.S. electricity needs by 2050, for an investment of about \$400 billion. "Compared to what we just paid for the financial bailout, it's pocket change," he says. —Chris Corning

**RENEWABLE FUTURES**  
Under current policies, solar energy is projected to supply just over one percent of U.S. electricity by 2025 (middle bar). If demand for electricity rises, we will need fast one-and carbon emissions. Requiring utilities to generate 25 percent of their power from renewable sources (right bar) would level the growth of total supply of the nation's solar. It is projected to meet more than 10 percent of the total. Such forecasts are highly uncertain; policies and markets can shift soon in unforeseen ways.

Year	Renewable Energy	Coal	Natural Gas	Nuclear	Other	Total
2005	1.0%	50.0%	20.0%	20.0%	1.0%	100.0%
2025 (Current)	1.5%	45.0%	25.0%	25.0%	3.5%	100.0%
2025 (Target)	10.0%	35.0%	25.0%	25.0%	5.0%	100.0%

**E-mail the article** Web.

Document URL  
<http://www.natgeo.com/group.com/tinyurl/ESS32>

Gale Document Number:  
GALEXQ5GAF522081886

**Citation and Tools**

Graphic: Can Solar Save Us?

Citation and Tools

Then just follow the prompts to send the e-mail.

## Send Email

Required fields marked with \*

Sender email

Subject

To\*

(Type email addresses separated by commas)

Message

We will not sell any information you enter on this page or use it to send unsolicited email. Please see our [Privacy Policy](#) for more information.

Send Cancel

Enter search term

Allow variations

Relevant Pages

102

Articles in Current View

Plugging Into the Sun

Melford, Michael, and George Johnson. "Plugging Into the Sun." *National Geographic Magazine* Sept. 2009: 28+. National Geographic Virtual Library. Web. Mar. 2014.

Document URL  
<http://tinyurl.com/group.com/tinyurl/ESS32>

Gale Document Number:  
GALEXQ5GAF522081886

**Citation and Tools**

Graphic: Can Solar Save Us?

Citation and Tools

Related Subjects

- Earth
- Electric power
- Electric power plants
- Energy conservation
- Heat

[\[Return to Table of Contents\]](#)

Created by Lesley Johnson, Instructional Designer, with the assistance of Andrea Bravin, Library Coordinator

# Get citation information using the citation generator.

National Geographic Magazine, September 2009, Vol.216, Issue 3. Back to Search Results

102 / 194 GO 13%

## CAN SOLAR SAVE US?

PROBABLY. EVENTUALLY. WITH LOTS OF GOVERNMENT HELP.

**THE SUN IS A UTTERAN PUAL:** limitless, ubiquitous, and clean. Surely someday we'll give up on coal, oil, and gas—hard on the climate, so unequally distributed worldwide—and go straight to the energy source that made fossil fuels. In a few sunny places where electric rates are high, like Italy and Hawaii, solar energy is already on the verge of being competitive. But in most places the sun remains by far the most expensive source of electric power—typically in the U.S. 10 cents several times more than natural gas or coal—which is why it still supplies only a fraction of a percent of our needs.

That won't change fast unless governments give solar a big boost. President Barack Obama campaigned with a pledge to institute a federal "renewable portfolio standard" requiring utilities to generate a quarter of their electricity from renewables by 2025. Yet even if Congress enacted that ambitious law, coal would still dominate the nation's electricity portfolio two decades from now, and solar energy would probably remain a minor contributor (chart). Cap-and-trade legislation that sets a price on carbon emissions would not be a magic bullet for solar either. Both mandates would likely lead utilities to favor the cheapest renewables, like wind. Solar would make a sizable contribution only after 2025, once the expansion of wind energy had plateaued.

Some advocates say we need to encourage solar more directly. European nations have done so with "feed-in tariffs," laws that require electric utilities to pay premiums to solar-power producers, for their commercial power plants or private homes that pump energy to the grid. Such tariffs have made Germany and Spain solar leaders, creating a market that has helped drive down prices. The billions of dollars of tax credits and loan guarantees in the Obama stimulus package may have a similar effect.

Another option is for the federal government to invest directly in solar—for example, says Ken Zweibel of George Washington University, by funding the construction of giant solar plants in the desert Southwest, along with the high-efficiency transmission lines needed to carry the power nationwide. In Zweibel's version of the future, the sun would satisfy more than two-thirds of U.S. electricity needs by 2050, for an investment of about \$400 billion. "Compared to what we just paid for the financial bailout, it's pocket change," he says. —Chris Caswell

**ELECTRICITY GENERATION IN U.S.** Source: of solar/hour  
■ Natural Gas & Coal  
■ Nuclear and Wind  
■ Hydro Power

**RENEWABLE FUTURES**  
Under current policies, solar energy is projected to supply just over one percent of U.S. electricity by 2050 (middle bar). If mandated by electric-utility laws, it will reach just one-third current estimates. Requiring utilities to generate 25 percent of their power from renewable sources (right bar) would limit the growth of fossil fuels while pushing solar to a percent of the total. Such renewable-energy requirements, policies and markets can both make a carbon-emission edge.

Document URL: <http://tinyurl.com/tinyurl/ESS32>

Gale Document Number: GALEFXQSGAF22081986

**Citation and Tools**

- ★
- ✉
- 📄
- 📖
- 🖨️

**Citation and Tools**

Graphic: Can Solar Save Us?

Citation and Tools

# Choose the type of citation you would like and click download.

National Geographic Magazine, September 2009, Vol.216, Issue 3. Back to Search Results

102 / 194

## CAN SOLAR SAVE US?

PROBABLY. EVENTUALLY. WITH LOTS OF GOVERNMENT HELP.

### Citation Tools

Note: While the data elements for the following citations have been formatted to meet the latest citation standards set forth by the respective agencies, these citations provide the available publication data for the document cited and should only serve as a guide and not as a replacement for the latest guidebooks or those required by your instructor. Please refer to the provided examples for proper formatting.

- MLA 7<sup>th</sup> Edition (Modern Language Association)
- APA (American Psychological Association)

Export to third party software:

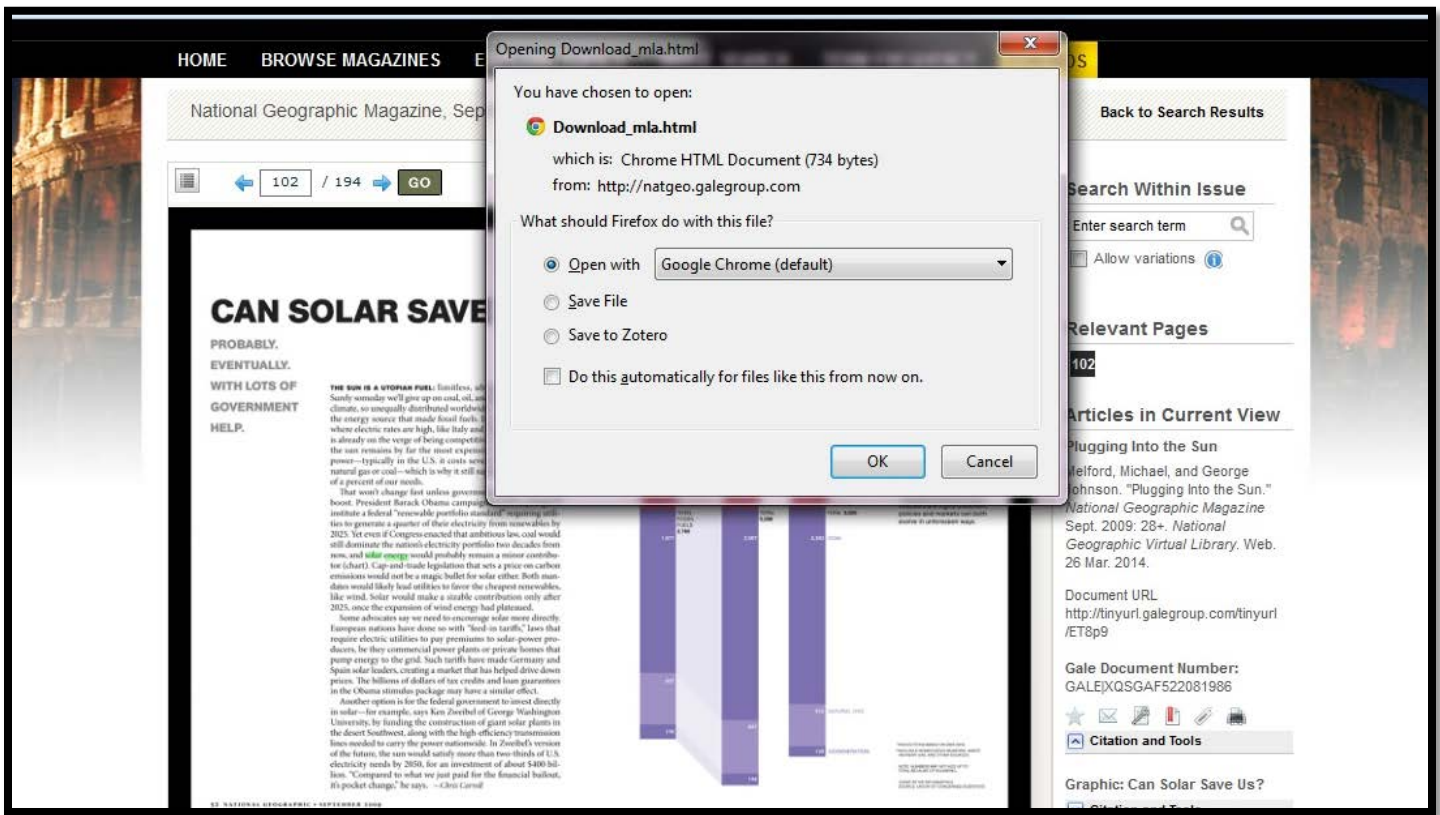
- EndNote
- ProCite
- Reference Manager
- RefWorks

Download Cancel

[\[Return to Table of Contents\]](#)



After choosing download, a popup will ask you how you want to open the citation.



If you choose a web browser like Google Chrome, this is what the citation will look like (highlighted in the red box). Be sure to check that all of the important parts of the citation are included. If you're not sure, ask your teacher.

Melford, Michael, and George Johnson. "Plugging Into the Sun." *National Geographic Magazine* Sept. 2009: 28+. *National Geographic Virtual Library*. Web. 26 Mar. 2014.

Document URL

<http://tinyurl.galegroup.com/tinyurl/ET8p9>

[\[Return to Table of Contents\]](#)

Created by Lesley Johnson, Instructional Designer, with the assistance of Andrea Bravin, Library Coordinator

# Bookmark the URL

National Geographic Magazine, September 2009, Vol.216, Issue 3. Back to Search Results

102 / 194 GO 13%

## CAN SOLAR SAVE US?

PROBABLY. EVENTUALLY. WITH LOTS OF GOVERNMENT HELP.

**THE SUN IS A UTOPIAN FUEL:** limitless, ubiquitous, and clean. Surely someday we'll give up on coal, oil, and gas—so hard on the climate, so unequally distributed worldwide—and go straight to the energy source that made fossil fuels. In a few sunny places where electric rates are high, like Italy and Hawaii, solar energy is already on the verge of being competitive. But in most places the sun remains by far the most expensive source of electric power—typically in the U.S. it costs several times more than natural gas or coal—which is why it still supplies only a fraction of a percent of our needs.

That won't change fast unless governments give solar a big boost. President Barack Obama campaigned with a pledge to institute a federal "renewable portfolio standard" requiring utilities to generate a quarter of their electricity from renewables by 2025. Yet even if Congress enacted that ambitious law, coal would still dominate the nation's electricity portfolio two decades from now, and solar energy would probably remain a minor contributor (chart). A top-end state legislation that sets a price on carbon emissions would not be a magic bullet for solar either. Both mandates would likely lead utilities to favor the cheapest renewables, like wind. Solar would make a sizable contribution only after 2025, once the expansion of wind energy had plateaued.

Some advocates say we need to encourage solar more directly. European nations have done so with "feed-in tariffs," laws that require electric utilities to pay premiums to solar-power producers, be they commercial power plants or private homes that pump energy to the grid. Such tariffs have made Germany and Spain solar leaders, creating a market that has helped drive down prices. The billions of dollars of tax credits and loan guarantees in the Obama stimulus package may have a similar effect.

Another option is for the federal government to invest directly in solar—for example, says Ken Zweibel of George Washington University, by funding the construction of giant solar plants in the desert Southwest, along with the high-efficiency transmission lines needed to carry the power nationwide. In Zweibel's version of the future, the sun would supply more than two-thirds of U.S. electricity needs by 2050, for an investment of about \$400 billion. "Compared to what we just paid for the financial bailout, it's pocket change," he says. —Chris Lane

22 NATIONAL GEOGRAPHIC / SEPTEMBER 2009

Year	Renewable Energy	Natural Gas and Coal	Nuclear Power
2006	1.0%	55.0%	44.0%
2025	15.0%	45.0%	40.0%

**RENEWABLE FUTURES**  
Under current policies, solar energy is projected to double and over the period of 2005, which by 2025 (middle bar). If mandated by legislation, it rises, we will reach 20 percent of total power needs. Requiring utilities to generate 25 percent of their power from renewables (source: IHS Inc.) would lead to the growth of total solar while pushing solar to 8 percent and wind to 12 percent of the total. Both forecasts are highly uncertain; policies and markets can turn out in a different way.

**Citation and Tools**

Graphic: Can Solar Save Us?

Citation and Tools

Copy the link given to you so you can access the document later.

**Bookmark**

Copy the Bookmark URL and paste it into another document.

<http://tinyurl.galegroup.com/tinyurl/ESS24>

Close

Articles in Current View

Plugging Into the Sun

Melford, Michael, and George Johnson. "Plugging Into the Sun." National Geographic Magazine Sept. 2009: 28- National Geographic Virtual Library Web. 26 Mar. 2014.

Document URL  
<http://tinyurl.galegroup.com/tinyurl/ESS24>

Document Number:  
GALEXQSGAF522081986

Citation and Tools

Graphic: Can Solar Save Us?

Citation and Tools

Related Subjects

- Earth
- Electric power
- Electric power plants
- Energy conservation
- Heat
- Johnson, George
- More

Feature Articles at a Glance

CAN SOLAR SAVE US? PLUGGING INTO THE SUN FUTURE POWER

[\[Return to Table of Contents\]](#)

# Print the resource

National Geographic Magazine, September 2009, Vol.216, Issue 3

Back to Search Results

102 / 194 GO 13%

## CAN SOLAR SAVE US?

PROBABLY. EVENTUALLY. WITH LOTS OF GOVERNMENT HELP.

**THE SUN IS A UTOPIAN FUEL:** limitless, ubiquitous, and clean. Surely someday we'll give up on coal, oil, and gas—so hard on the climate, so unequally distributed worldwide—and go straight to the energy source that made fossil fuels. In a few sunny places where electric rates are high, like Italy and Hawaii, solar energy is already on the verge of being competitive. But in most places the sun remains by far the most expensive source of electric power—typically in the U.S. it costs several times more than natural gas or coal—which is why it still supplies only a fraction of a percent of our needs.

That won't change fast unless governments give solar a big boost. President Barack Obama campaigned with a pledge to institute a federal "renewable portfolio standard" requiring utilities to generate a quarter of their electricity from renewables by 2025. Not even if Congress enacted that ambitious law, coal would still dominate the nation's electricity portfolio two decades from now, and fossil energy would probably remain a minor contributor (chart). Cap-and-trade legislation that sets a price on carbon emissions would not be a magic bullet for solar either. Both mandates would likely lead utilities to favor the cheapest renewables, like wind. Solar would make a stable contribution only after 2025, once the expansion of wind energy had plateaued.

Some advocates say we need to encourage solar more directly: European nations have done so with "feed-in tariffs," laws that require electric utilities to pay premiums to solar-power producers, be they commercial power plants or private homes that pump energy to the grid. Such tariffs have made Germany and Spain solar leaders, creating a market that has helped drive down prices. The billions of dollars of tax credits and loan guarantees in the Obama stimulus package may have a similar effect.

Another option is for the federal government to invest directly in solar—for example, says Ken Zweibel of George Washington University, by funding the construction of giant solar plants in the desert Southwest, along with the high-efficiency transmission lines needed to carry the power nationwide. In Zweibel's version of the future, the sun would satisfy more than two-thirds of U.S. electricity needs by 2050, for an investment of about \$400 billion. "Compared to what we just paid for the financial bailout, it's pocket change," he says. —Chris Carnell

Year	Coal	Natural Gas	Wind	Solar	Hydro	Nuclear	Other
2000 (Actual)	1,100	1,100	10	1	100	1,000	100
2050 (Actual)	1,000	1,500	1,000	100	100	1,000	100
2050 (Renewable Futures)	100	1,000	1,500	1,000	100	1,000	100

**RENEWABLE FUTURES**  
Under current policies, solar energy is projected to supply just over one percent of U.S. electricity by 2050 (middle bar). If demand for electricity rises, so will total fuel use—and carbon emissions. Requiring utilities to generate 25 percent of their power from renewable sources (right bar) would slow the growth of fossil fuels while pushing solar to 6 percent and wind to more than 10 percent of the total. Such forecasts are highly uncertain; policies and markets can both work in unforeseen ways.

102

Articles in Current View

Plugging Into the Sun  
Melford, Michael, and George Johnson. "Plugging Into the Sun." *National Geographic Magazine* Sept. 2009: 28+. *National Geographic Virtual Library*. Web 26 Mar. 2014.

Document URL  
<http://tinyurl.com/tinyurl/ESS32>

Gale Document Number:  
GALEXQSGAF522081986

**Print**

**Citation and Tools**

Graphic: Can Solar Save Us?  
Citation and Tools

[\[Return to Table of Contents\]](#)

Created by Lesley Johnson, Instructional Designer, with the assistance of Andrea Bravin, Library Coordinator

## Appendix:

### Typical Lexile Levels by Grade\*

Grade	Reader Measures, Mid-Year 25th percentile to 75th percentile (IQR)
1	Up to 300
2	140-500
3	330-700
4	445-810
5	565-910
6	665-1000
7	735-1065
8	805-1100
9	855-1165
10	905-1195
11 & 12	940-1210

\*Chart taken from <https://www.lexile.com/about-lexile/grade-equivalent/grade-equivalent-chart/>

**For passwords and information, please contact the school librarian at [catlibraries@cat.mx](mailto:catlibraries@cat.mx)**

[\[Return to Table of Contents\]](#)

*Created by Lesley Johnson, Instructional Designer, with the assistance of Andrea Bravin, Library Coordinator*