Alabama – 39 Articles

Document 1

**Alabama Power eyes future renewable energy projects**

Updated on September 29, 2016 at 7:02 AM Posted on September 28, 2016 at 3:57 PM

Solar Panel Ordinance

**By**[**Dennis Pillion**](http://connect.al.com/staff/dpillion/posts.html)

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Alabama Power Company posted a [request for proposals](http://www.alabamapower.com/environment/renewable-energy/rfp.asp) this week for renewable energy projects that could bring additional solar, wind, geothermal or other kinds of renewable energy to Alabama.

Alabama's largest utility has announced more than 90 megawatts of solar power projects since late last year, and John Kelley, Alabama Power's director of forecasting and resource planning, said the company wanted to weigh its options for additional renewable energy projects in the future.

"Alabama Power supports renewable energy, where it makes sense for our customers," Kelley said in a news release announcing the RFP. "Renewable markets change a lot, and this proposal gives us a chance to see what may be out there in the 2017 and 2018 time frame."

Last year the utility received approval from the Alabama Public Service Commission to develop [up to 500 megawatts](http://www.al.com/news/index.ssf/2015/09/psc_approves_alabama_powers_re.html) of renewable energy projects, and has since moved forward with a handful of those, including solar power installations at [Anniston Army Depot and Fort Rucker](http://www.al.com/news/index.ssf/2015/11/psc_approves_alabama_power_sol.html) and a 72 megawatt solar farm in Chambers County [developed with Walmart](http://www.al.com/news/index.ssf/2016/06/walmart_alabama_power_get_appr.html).

Those projects were planned with specific customers in mind, to meet the customers' renewable energy goals.

Walmart has a long-term goal of being supplied by [100 percent renewable energy](http://corporate.walmart.com/global-responsibility/sustainability/), and aims to produce or procure 7 billion kilowatt hours of renewable power by 2020.

The U.S. Department of Defense aims to offset 25 percent of the power used in all its facilities with renewable generation by 2025, and the Army, Navy and Air Force have been instructed to secure one gigawatt of renewable energy each.

Alabama Power's RFP calls for several kinds of renewable projects including solar, wind, geothermal, tidal or ocean current projects, low-impact hydro, gas derived from sewage treatment processes, gas derived from solid municipal waste or landfill projects, hydrogen sourced from renewable resources, biomass materials and/or gases derived from biomass materials.

The projects could range in size from 5 to 80 MW, and could be "turnkey" proposals that Alabama Power would own upon completion, or power purchase agreements lasting 10 or 25 years. In addition to its own resources, Alabama Power purchases substantial amounts of wind energy from facilities in the Midwest.

Alabama Power spokesman Michael Sznajderman said via email that any projects selected through the RFP process would count under the 500 megawatt certificate received last year. Individual projects would still have to be approved by the PSC.

Notice of intent to bid must be received by 6 p.m. CDT on Oct. 14, 2016. Completed bids must be received by 6 p.m. CST on Nov. 15, 2016.

Document 2

**PSC approves Alabama Power's renewable energy project request, with modifications**

Updated on September 1, 2015 at 2:17 PM Posted on September 1, 2015 at 2:01 PM

Solar Panel Ordinance

**By**[**Dennis Pillion**](http://connect.al.com/staff/dpillion/posts.html)

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The Alabama Public Service Commission voted 3-0 to approve a proposal by Alabama Power to construct up to 500 megawatts of renewable energy generation projects in the state over the next six years.

Alabama Power spokesman Michael Sznajderman said the decision will allow the company to meet the demands of larger customers, primarily businesses and military facilities, that wish to add renewable energy to their portfolio.

The projects will be designed to meet the needs of specific Alabama Power customers and could include, but would not be limited to, solar and wind installations of up to 80 megawatts each, or purchase agreements for renewable energy generated outside of the state.

"We've had some ongoing conversations with customers that are interested in renewable projects, some of the military bases among those," Sznajderman said. "Now that we've gotten the PSC's approval, we can sort of move quickly to hopefully bring some of these together."

During a [public hearing last month discussing the proposal](http://www.al.com/news/index.ssf/2015/08/psc_hears_testimony_on_propose.html), Alabama Power regulatory policy manager Noel Cain stated that the military and many Fortune 500 companies have instituted renewable energy mandates, and that having the ability to complete these types of projects will help attract businesses to the utility's service area. Cain said some customers have deadlines to meet their renewable goals, making time a factor.

Cain also said the customers involved would pay premium rates for the special generation and that the cost of the projects would not be passed on to the rest of Alabama Power's customer base.

The commission staff did include some modifications to the proposal as first submitted by Alabama Power, including requirements that the company submit generic requests for proposal on a biennial basis for projects submitted, that individual projects must be approved by a vote of the commission and limits that no more than 160 megawatts be submitted and approved in a calendar year, without a written request to the commission.

Sznadjerman said Alabama Power did not object to any of the modifications to the proposal.

Representatives from several conservation and green energy advocacy groups were on hand for the meeting and expressed optimism about the future of renewable energy in Alabama.

"We're excited that this has been approved and we look forward to working with Alabama Power and others to expand renewables in the state," said Conservation Alabama executive director Tammy Herrington. "We think it's a good first step. We're excited to see what comes next."

Keith Johnston of the Southern Environmental Law Center said that he was pleased to see the commission approve the request, though he said there were lingering questions about the proposal that warranted review and further consideration.

"It's time that renewables have a place," Johnston said. "We're still looking at the process, but the bottom line is we're happy that they're making this step forward."

Document 3

**Alabama Power proposes up to 500 megawatts in renewable energy projects, including solar**

Posted on July 14, 2015 at 6:21 PM

Solar Panels

**By**[**Dennis Pillion**](http://connect.al.com/staff/dpillion/posts.html)

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Alabama Power petitioned the Alabama Public Service Commission last month for permission to install up to 500 megawatts of renewable energy projects, including solar power, company spokesman Michael Sznajderman confirmed Tuesday.

Sznajderman said the company is seeking a way to provide renewable energy for corporate customers who desire it in their energy portfolio or have renewable energy mandates to meet. The proposal must still be approved by the PSC.

"This allows us to negotiate with these companies so that we can find ways to provide them with renewable energy, either by building our own projects, or possibly purchasing renewable energy from other sources," Sznajderman said.

Sznadjerman said that the renewable electricity would come at a premium cost, which would not be passed on to the broader customer base, and that the program was not designed for residential customers, at least at the start.

"This is kind of a first step to try to work more aggressively with a portion of our customer base to provide renewables and predominantly solar," Sznajderman said. "There's a growing interest in solar. The price has been coming down, but it's not quite to that point where it's at parity with conventional sources of power.

"We're hoping that the Commission will give us this sort of broad ability to work with customers and get up to that 500 megawatt number."

The individual projects could be up to 80 megawatts each, but Sznajderman said that if the PSC signs off on the broader package, it would save the company from having to seek approval for each individual smaller project.

According to an [announcement on Alabama Power's news site](http://alabamanewscenter.com/2015/07/14/alabama-power-seeking-up-to-500-megawatts-of-renewable-generation-including-solar/), 500 megawatts of solar power is roughly four to five percent of the company's total capacity.

"This proposal provides a common-sense path for expanding renewables in Alabama," Nick Sellers, Alabama Power vice president of regulatory and corporate affairs said in the announcement. "The Public Service Commission has been clear that they do not want renewables to be subsidized by all of our customers. This filing achieves that policy directive while also allowing for solar and new renewable energy projects that are expected to provide economic benefit for all of our customers."

Alabama Power has previously lagged behind other regional utilities in solar capacity, even within its parent organization, Southern Company. Georgia Power, also owned by Southern Company, reported [900 megawatts of solar capacity](http://www.georgiapower.com/promos/Green-Energy-Newsletter/Spring-2014/ASI-update.html) and growing as of last year.

Keith Johnston, managing attorney for the Southern Environmental Law Center -- who earlier this month co-authored a [guest editorial on AL.com](http://www.al.com/opinion/index.ssf/2015/07/solar_surges_in_the_south_but.html) criticizing Alabama Power's lack of investment in solar energy -- said the announcement sounded like a positive step, although he would like to know more details about the proposal.

"Renewables are going to be a part of utility portfolios going forward," Johnston said. "It's adding diversity to the fuel mix and it's adding jobs as we saw with Google up in north Alabama. I'm glad Alabama Power is finally coming around to seeing it that way."

Non-profit group Conservation Alabama released a statement Tuesday afternoon praising the proposal.

"This is the beginning of what we would like to see as a long-term change in how Alabama produces and uses energy," said Tammy Herrington, executive director of Conservation Alabama in a news release. "Alabama Power is signaling their commitment to renewable energy, and we look forward to working with them to expand this program to make our state a leader in solar energy."

Document 4

**When it comes to renewable energy, is Alabama closed for business?: guest opinion**

By [Guest Voices](http://connect-stage.al.com/user/bamaguestopinion/posts.html)  
on September 02, 2014 at 7:36 AM

By Andy Bowman

For decades Alabama has been a jobs and investment juggernaut, one of the country's fiercest competitors for new industry.  The state can rightfully crow about its successes drawing new business in the auto, aerospace and aviation sectors, to name a few.  But one industry – renewable energy, one of the fastest growing in the U.S. and worldwide – won't be coming to Alabama any time soon, despite studies confirming Alabama's potential for wind and solar deployment.

Alabama's business climate of late has been downright hostile for renewable energy.  One wind company tried to develop a project near Alabama's windy coast, only to see a special law passed banning wind projects in the whole county.   My company spent four years and $2 million developing wind projects in Etowah and Cherokee counties, only to come to the same end.  Two companies were sued recently just for planning a wind project in Cleburne County.  And solar is doing no better – Alabama's solar policies earned an "F" in one recent national comparison.

Why is Alabama's business climate so bad for renewable energy?  In part because some elected officials are putting politics ahead of common sense.  Gadsden, the fourth poorest city in America in 2013, and Etowah County would have reaped millions of dollars in tax revenues and economic benefits from new wind projects, without a penny of state or local incentives – a big deal in the state that paid Hyundai $117,000 per job.  Instead, special laws were passed by local legislators making the projects impossible, in part because opponents couldn't stand that wind projects are eligible for federal tax credits.  The hypocrisy is breathtaking – this same group of legislators led the latest bailout, including $3 million from Etowah County taxpayers, of Goodyear's Gadsden plant which has failed for years to operate without taxpayer support.

Politics is a fact of life and we all know politicians will do just about anything to get re-elected.  Rather, it is the silence of those who know better that is the bigger reason why renewable energy is going nowhere in Alabama.  Not one of Alabama's business recruitment champions – the Governor's office, the Department of Commerce, the Business Council of Alabama – spoke up in defense of wind or solar investment.  Democratic leaders and most environmental groups supporting clean energy were also silent; apparently, they had higher priorities.  But this should be troubling for business leaders, because nothing says poor business environment like bad politics trumping good business, and everyone going along with it.

Some can try to explain all this by saying that Alabama just doesn't like renewable energy: politically speaking, Alabama is a "red" state, Obama likes renewable energy, so therefore Alabama doesn't.  But clearly it is not that simple.  Fifteen Alabama businesses around the state already employ more than 100 people manufacturing wind and solar components (to be used elsewhere).  Neighboring "red" states like Georgia and Tennessee are plunging ahead with renewables.  Alabama Power, Georgia Power and TVA already buy large amounts of wind energy from other states, and Georgia is studying its off-shore wind potential.  Wal-Mart, one of Alabama's largest employers, recently agreed to purchase wind power from one of my company's Texas projects.

Renewable energy is a big opportunity for Alabama.  It is happening already all around the country and in states right next door, and Alabama is getting left behind.  The situation will change only if people make their voices heard in support of clean energy investment.

*Andy Bowman is president of Pioneer Green Energy.*

Document 5

**Alabama A&M professor leading the charge in renewable energy**

By [Mike Kelley](http://connect.al.com/user/mikekelley42/posts.html)  
  
on September 01, 2014 at 1:01 PM, updated September 01, 2014 at 1:05 PM

[HUNTSVILLE, Alabama](http://www.al.com/huntsville) -- Alabama may not yet be at the forefront of the renewable energy movement, but an Alabama A&M University mechanical engineering professor isn't waiting around.

Dr. Showkat Chowdhury, who's been teaching mechanical engineering at A&M for the past dozen years, has launched a new series of courses this fall term aimed at getting engineering students geared up in the basics of renewable energy technology.

"The energy crisis has just started, and we're not going to easily get out of it. Renewable energy is one of our best solutions."

Funded by a $300,000 National Science Foundation grant, the two new courses will ground A&M engineering students in the growing renewable energy field. They include:

* ME 441 Renewable Energy, a survey course touching on all renewable technologies:  solar, wind, geothermal, biomass, and hydroelectric.
* ME 442, offered in Spring 2015, will take a deeper plunge into solar thermal, solar photovoltaic (i.e. solar electricity) and wind power.

Both courses will have additional work options for graduate students.

Chowdhury says the energy situation in the U.S. is bad and getting worse.

 "The energy crisis has just started, and we're not going to easily get out of it. Renewable energy is one of our best solutions."

About $100,000 of the grant has been used to buy renewable energy research equipment to support the course and Chowdhury's ongoing research.  A six-foot long wind tunnel will allow various windmill scenarios to be tested.

 "We can change the number of blades, the pitch of the blades, and wind velocity."

A unique solar testing device will allow researchers and 15 student assistants to study how changes in solar radiation intensity and electrical loads affect solar energy output and efficiency.

Chowdhury heads a energy research team consisting of himself as principle researcher assisted by his wife Tamara and fellow A&M engineering professor Dr. Wing Chen.

Document 6

**Finding the cool in the sun, renewable energy lab opens at Drake State**

By [Paul Gattis | pgattis@al.com](http://connect-stage.al.com/staff/pgattis/posts.html)  
on June 18, 2012 at 4:17 PM

HUNTSVILLE, Alabama  --Monday's warm sunshine made for a cool morning at [Drake State Technical College.](http://www.dstc.cc.al.us/homepage.aspx)

The school formally opened its Renewable Energy Laboratory on campus, showing off a small house cooled by a two-ton unit operating solely on solar energy.

"What was your first feeling when you walked in the door?" said Ricky Willingham, director of workforce development at Drake State. "This is cool. The sun is cooling this building. This sells itself."

Along with the renewable energy lab, the school also cut the ribbon on its original building that is now known as the Salon Management Technology Building.

The ceremony included remarks from Huntsville Mayor Tommy Battle, state school board member Mary Scott Hunter as well as Susan Price, chancellor of the state community college system, to a crowd of local business leaders and Drake State supporters.

"The event today heralds Drake State's success at keeping pace with the rapid changes occurring in technology that impact America's quality of life and influence the workforce with increasingly higher levels of entry level skill requirements," said Helen McAlpine, president of Drake State.

While the renovation of Building 600, the cosmetology building, is one of Drake State's largest programs and considered "recession-proof," McAlpine said, the renewable energy lab was the crown jewel of Monday's activities.

The lab isn't expansive -- perhaps the size of a large living room -- Willingham said it makes its point as a solar-sustaining building. It is not connected to the electrical grid, he said, and all energy is derived from the sun.

In addition to the two-ton heating and cooling unit, the lab operates a 60-gallon water heater as well as powering lights and electrical outlets.

The heating and cooling unit draws air from underground that is consistently about 55 to 60 degrees, Willingham said. That's much more efficient than cooling outside air on a 90-degree day or heating outside air on a 30-degree day, he said.

The white lab, financed through a $458,000 Department of Labor grant and built to resemble a home complete with the details of a front porch and hanging baskets, will be used as a training facility. It also includes a charging station for electric cars.

Willingham said 200 people are expected to undergo renewable energy training during the summer.

"We're on the proactive, front side of it," Willingham said. "A lot of time with training like we do, there's a need and we try to meet the need. (Renewable energy) is a buzzword. People in the program are either going to work as installers or they are going to be contractors."

So what does renewable energy mean for consumers? A greater cost on the front end, Willingham said, with significant savings on the back end.

The cost in a home would be about $5,000 extra for each ton of a heating and cooling unit, Willingham said. Homes typically have heating and cooling units of about four or five tons. The savings, however, come in utility bills cut by about 50 percent.

The renewable energy training offered at Drake State is also available cost-free, funded by the federal grant, Willingham said. Veterans looking for training are a target audience for the program as well as the unemployed or even contractors eager to learn more about renewable energy.

"We spent a lot of time training to ascertain what's important for this community," McAlpine said. "The renewable energy piece is something that's being talked about across the country."

Document 7

**TVA ranked in top 10 nationally in renewable energy sales**

By [Brian Lawson](http://connect.al.com/staff/blawson/posts.html)  
  
on July 15, 2014 at 1:12 PM, updated July 15, 2014 at 1:54 PM

[HUNTSVILLE, Alabama](http://www.al.com/huntsville/#/0)-- The Tennessee Valley Authority announced today it was ranked in the top 10 nationally for renewable energy sales among U.S. utilities in 2013.

It marks the first time since 2003 that TVA has made the list. The utility cited customer support for its [Green Power Switch program](http://www.tva.gov/greenpowerswitch/index.htm) as a key reason for the sales performance listed ninth in the U.S. Department of Energy [rankings](http://apps3.eere.energy.gov/greenpower/resources/tables/topten.shtml).

TVA was the only utility in the southeast to make the top 10.

Green Power Switch, which began in 2000, gives utility customers [the option of buying a small amount of green power](http://www.tva.gov/greenpowerswitch/green_formres.htm)as part of their monthly bill. That money is then used by TVA to buy power from renewable sources – like solar and wind – in the Tennessee Valley.

The program has grown, but only a small fraction of TVA's overall customer base has signed up.

TVA said it has 12,600 Green Power Switch residential or business customers. The utility serves about 4 million households in all or part of seven states.

There are nearly 1,100 residential and 14 business Green Power Switch customers in Alabama. Those figures include 939 Huntsville Utilities customers, TVA said today.

The program offers customers a chance to buy defined percentages of their estimated monthly electricity use from green sources, on top of their current rates.  A given home's participation doesn't mean green power goes directly to that customer, but rather to TVA's overall system.

TVA offers six options, in blocks of 150 kilowatt hours – about one-tenth of a monthly power bill – for green power purchases, starting a $4 a month for 12 percent green power, up to $32 a month for 100 percent green power support.

TVA spokesman Duncan Mansfield said [solar power is the most common source for renewable energy purchased by the utility](http://www.tva.com/environment/technology/solar_photovoltaic.htm)in the Tennessee Valley.

He said there nearly 2,000 [solar photovoltaic](http://www.nrel.gov/learning/re_photovoltaics.html)installations in the valley and TVA has approved 340 more that are "on the way." TVA will buy the power and offers incentive programs to encourage solar installations in homes and small businesses.

"There is a great deal of activity on the side of (renewable  power) generators," Mansfield said. "People want to sell their electricity."

TVA also has a program encouraging solar farms, that provided incentives for generation of up to 20 megawatts. The size of the program was increased this year, Mansfield said, and incentives for solar farms up to 100 megawatts are available.

He said that program has four installations with 11 more applications currently.

Mansfield said TVA will spend about $25 million this year to buy solar energy through the programs.

TVA spends just over $460 million on renewable energy annually, Mansfield said, with much of that spending going to wind farm power purchases from providers in the Midwest, from states like Illinois and Kansas.

TVA didn't find enough consistent wind available in the valley to expand aggressively into wind farms. The Midwest has proven to be a better region for that power, he said.

Those purchases don't relate to the Green Power Switch program, but there are wind farms in the Tennessee Valley, with the largest site near Oak Ridge, Tenn. at [Buffalo Mountain](http://www.tva.com/greenpowerswitch/wind.htm). TVA developed the site with three turbines, but it has expanded. Invenergy, which installed and runs the turbines, has installed 15 more turbines.TVA buys the power from the company.

TVA is also working with a company called Strata Solar [in the development of two joined wind farms in western Tennessee](http://www.tva.com/environment/reports/strata/), Mansfield said.

 The utility is currently working on its integrated resource plan -- its guideline for how it will generate power for the next years -- and Mansfield said the TVA board is expected to vote on the plan next fall.

 There will be public forums and other opportunities for public comment on the plan in the coming months, he said.

Document 8

**Public Service Commission hears testimony on proposed 500 MW renewable energy project**

Posted on August 12, 2015 at 6:50 PM

**By**[**Dennis Pillion**](http://connect.al.com/staff/dpillion/posts.html)

[dpillion@al.com](mailto:dpillion@al.com)

The Alabama Public Service Commission heard testimony for more than three hours Wednesday about a [petition submitted by Alabama Power](http://www.al.com/news/index.ssf/2015/07/alabama_power_proposes_500_meg.html) seeking permission to offer up to 500 megawatts of renewable energy to its customers, either through new installations or purchase-power agreements with providers in other states.

The small-scale renewable energy projects would be up to 80 megawatts each, and could include new solar and wind energy projects, according to details of the proposal provided by Alabama Power.

According to Alabama Power, the proposal has specific customers in mind and would allow Alabama Power to serve those customers renewable energy at a premium price without increasing electricity costs for the rest of its rate-payers.

Noel Cain, Alabama Power's regulatory policy manager, testified at the public hearing that Alabama Power had been contacted by multiple customers, including military installations and private businesses, that are seeking the option to purchase renewable electricity for their facilities, and that the petition would allow Alabama Power to meet those needs.

Cain said that the military facilities were under a mandate to generate up to 25 percent of their electricity from renewable sources by 2025. She noted that many Fortune 500 companies, including Google, Facebook, Amazon, Apple, Wal-Mart and others have similar internal mandates for renewable energy, and that offering renewable energy options would help to attract those kinds of businesses to the state.

She cited as an example the [$600 million data center Google plans](http://www.al.com/news/index.ssf/2015/06/google_building_600_million_da.html) to build in Jackson County, Ala., which will be powered entirely by renewable energy.

The petition did not disclose details about individual projects, which would be negotiated between Alabama Power and the prospective customers. Cain said that the deals would be only be executed that would show an anticipated "positive economic benefit" to all Alabama Power customers and putting downward pressure on rates.

Cain said the proposal could also help Alabama Power and the state of Alabama comply with environmental regulations like the [Environmental Protection Agency's Clean Power Plan](http://www.al.com/news/index.ssf/2015/08/obama_epa_clean_power_plant_ru.html), which was finalized last week, although she referred to compliance as a "secondary benefit."

The PSC is expected to include the petition on the agenda for its next meeting on Sept. 1.

"We're hopeful that the commission will find this proposal beneficial," Alabama Power spokesman Michael Sznajderman said after the meeting. "Obviously we brought it to them thinking it is (beneficial), meeting a growing interest among our customers for renewables.

"We believe this proposal gives us the flexibility to move quickly to meet some of the interest our customers have for renewables in a way that benefits not only them, but benefits our entire customer base."

Time is a key factor, as a federal tax credit for renewable energy is set to expire after 2016. Projects not completed by then risk losing the tax credit if it is not reauthorized by Congress.

Sznajderman said that since the announcement was made about the petition, the company has received additional inquiries from customers interested in purchasing renewable energy and from those interested in installing the projects.

The plan was designed for commercial rather than residential power customers, but Cain testified that nothing in the proposal prohibited a community-scale solar project from being part of the project.

Cain testified and answered questions by representatives from the PSC, Alabama Power, the Alabama Attorney General's office, and multiple private groups in Wednesday's hearing.

"We're really excited to see Alabama invest in renewable energy," said Amelia Shenstone, organizing manager for the Southern Alliance for Clean Energy. "We know that that works in Alabama and we're really excited for it to start happening here."

The SACE was one of several groups sending representatives to the hearing to ask questions, including the Jobkeeper Alliance, the Alabama Environmental Council, and the Alabama Industrial Energy Consumers.

"We appreciate the chance to participate in these hearings, and would like to continue the conversation about how Alabama can approach smart investments in clean energy," said Michael Churchman, executive director of the Alabama Environmental Council, which was represented at the hearing by the Southern Environmental Law Center.

"While many questions remain about the details of the proposal, it is clear that utilities are acknowledging the energy shift already underway and the cost-savings and benefits that come with renewables like solar and wind."

"As evidenced by Google's decision to expand into northern Alabama's TVA territory, we are witnessing an increasing demand for clean energy options from business leaders," said Keith Johnston from the Southern Environmental Law Center.  "Our hope is that Alabama Power will take this opportunity and make renewable generation a more widely used and available resource, while also making sure those energy decisions benefit customers across the state."

Document 9

**Electrical and HVAC contractors to students: Want a job? Know about renewable energy**

By [Mike Kelley](http://connect.al.com/user/mikekelley42/posts.html)  
  
on September 05, 2014 at 1:07 PM

[HUNTSVILLE, Alabama](http://www.al.com/huntsville) -- Want a good job in heating/air-conditioning? Make sure you get some training in energy conservation and renewable energy.

It can make a difference in getting that first job, officials at Calhoun Community College and Drake State Technical College say. Presidents and program directors at both schools say the energy training programs and training facilities put in place in 2012 have paid off big for their graduates.

"We had area contractors coming to us and saying they need graduates with training in renewable energy," says Drake State President Dr. John Reutter.  "We're seeing more future jobs that require energy training."

"We had area contractors coming to us and saying they need graduates with training in renewable energy."

Time spent in Drake State's [Renewable Energy Laboratory](http://blog.al.com/breaking/2012/06/finding_the_cool_in_the_sun_re.html), designed to help teach students the basics of solar photovoltaic, solar thermal, and geothermal installation, is part of both the HVAC and electrical technology requirement. Packed into the lab's 800 square feet is control and monitoring equivalent for a large geothermal loop and the roof-mounted solar array.

Solar power, just beginning to catch on in north Alabama, uses a "photovoltaic" process to convert sunlight shining on solar panels into electrical energy. A geothermal loop uses the ground's constant temperature for heating and cooling.

Calhoun Community College, with campuses in Huntsville and Decatur, has also been quick to jump into renewable energy training. Motorists passing the main campus on U.S. 31 north of Decatur can hardly miss the large 100 kilowatt solar array adjacent to the [Alabama Center for Excellence in Clean Energy Technology](http://www.al.com/42/index.ssf/2011/11/students_learn_energy_efficien.html). The center provides HVAC students additional training in renewable energy technologies such as photovoltaic, geothermal, and wind power.

Calhoun's Applied Technology in Renewable Energy program graduates about 30 students per year, says program director Jerry Adams. Students also get specialized training in industry-focused classes such as the "building envelope tightness verifier" class, which trains students in the fast-growing field of building energy tightness.

Energy knowledge gives students an edge when looking for work with Huntsville area contractors. Jim Batson of Huntsville's H.C. Blake Co. says today it's all about home performance. "That helps us give better value to our customers. Some customers are very concerned about how tight their homes are, and employees who understand that help us."

All Season's 1-Hour Heating and Air Conditioning wants employees who know something about solar and geothermal as well as basic air conditioning. New standards for HVAC ducting require workers who understand the new requirements. "The students who know this are more valuable to us," says manager Todd Little. "They're trained before going out into the field, and it gives them a much better grasp."

To find out more about Calhoun's Applied Technology in Renewable Energy program, [click here.](http://calhoun.edu/programs_of_study/division_of_businesscis_technologies_workforce_development/technologies/renewable_energy.aspx)

To learn more about Drake State's Electrical Technologies and HVAC programs, [click here.](http://www.dstc.cc.al.us/programs/heating_and_air_conditioning_technology.aspx)

Document 10

**Southern Co. enters sixth solar deal with Ted Turner's Turner Renewable Energy**

By [Stan Diel](http://connect.al.com/staff/srdiel/posts.html)  
  
on November 05, 2013 at 4:44 PM, updated November 05, 2013 at 4:45 PM

BIRMINGHAM, Alabama – Southern Power, a subsidiary of [Southern Co.](http://www.southerncompany.com/) ([NYSE: SO](http://www.bloomberg.com/quote/SO:US)), has agreed to acquire a 20-megawatt solar facility in California in partnership with [Turner Renewable Energy](http://www.tedturner.com/renewable-energy/).

The acquisition of the Adobe Solar Facility will be the sixth for the partnership. The deal, the terms of which were not disclosed, is expected to close when construction of the facility is completed in the spring, Southern Power said in a prepared statement.

Southern Co. CEO Thomas Fanning said the deal reflects the company’s commitment to developing a “full portfolio of energy resources.”

The company has added more than 1,700 megawatts of renewable energy resources since January, 2012, Fanning said.

The new facility, being built on 160 acres in Kern County, Calif., will be operated by [SunEdison](http://www.sunedison.com/wps/portal/memc/memc/!ut/p/b1/04_Sj9CPykssy0xPLMnMz0vMAfGjzOINDQO8fb3dDQ0MPPwtDDx9zYwtnULNDA2MzIEKIoEKDHAARwNC-r30o9Jz8pOAVoXrR4EVGxu6GhgZmxh6uHtbGBh4WrqEGrp7-Rm7GxtBFeCxzM8jPzdVvyA3ojI4IF0RAHk9KeU!/dl4/d5/L2dBISEvZ0FBIS9nQSEh/).

Turner Renewable owner Ted Turner said in a statement that his company is dedicated to the development of renewable energy.

"Renewable energy is playing an increasingly important role in meeting America's energy needs," he said.

Last week Southern Power [announced it had begun commercial production](http://www.al.com/business/index.ssf/2013/11/southern_co-turner_solar_power.html) at its Campo Verde Solar Facility, which also is a joint-venture with Turner Renewable.

Document 11

**More solar panels pop up on South Parkway; 50kW system producing about $14,000 in annual renewable energy**

By [Paul Huggins](http://connect-stage.al.com/staff/paulhuggins/posts.html)   
on April 03, 2013 at 10:45 AM, updated April 03, 2013 at 10:51 AM

[HUNTSVILLE, Alabama](https://blog.advance.net/mt-static/html/www.al.com/huntsville) -- The solar panels that began rising two weeks ago on South Memorial Parkway are already on line and producing renewable energy for the Tennessee Valley Authority.

The 50kW system located just north of Charlotte Drive passed inspection last week as part of [TVA's Green Power Providers program](http://www.tva.com/greenpowerswitch/providers/index.htm), said Chris Shearburn, owner of Southern Solar Systems, the Huntsville company that installed the panels.

It's the second highly visible solar system to begin operating in South Huntsville in the past year. [The Redstone Park and Energy Demonstration Center](http://blog.al.com/breaking/2012/06/ask_us_what_about_all_those_so.html)at the northeast corner of Airport Road and South Memorial Parkway went up last spring to showcase market-ready technology.

Shearburn said the system he just installed was part of the initial phase of a TVA program that paid 12 cents above the current hourly retail rate, which he noted has now been reduced to 9 cents. The 20-year TVA contract agrees to pay the above retail rate for 10 years and then pay a retail rate the second 10 years.

Combined with 30 percent federal tax credits and depreciation tax credits, the system should pay for itself in six to seven years, he said.

A 50 kw system can cost between $3 to $4 per watt based on the type, location and complexity of the installation, Shearburn said, so normal price range may be from $150,000 to $200,000.

"With prices dropping, we are beginning to see some systems start to come in under $3/watt at this size for simple installations," he said.

A 50 kw system will produce about 70,000 kwh or $13,000 to $14,000 per year under the current TVA Green Power Providers program. The average annual electricity consumption for a U.S. residential utility customer was 11,280 kWh in 2011, meaning the South Parkway panels could support about seven homes for a year.

The system comes with a 25-year warranty, so with the TVA guaranteed price, it looks like it would be a popular choice by commercial businesses.

But it's not as simple as it sounds, Shearburn said, because it has significant up-front costs and it's not easy to get financing for it.

"For a commercial business to wait six to seven years to get its money back, that's a long wait," he said, noting paying off a residential system could take 10 years.

Southern Solar has been in business since 2007 and since has seen most of its solar business in Tennessee, particularly farming operations. Tennessee saw rapid expansion of solar systems, Shearburn said because it offered a variety of incentives to spur development.

Alabama has never offered state-sponsored incentives, he said, but solar systems are slowly catching on because equipment prices dropped, particularly on silicon used in the construction of solar modules.

"The bottom fell out on silicon prices," Shearburn said, explaining since 2007, the cost for each solar module dropped from $4.20 to 70 cents.

Southern Solar didn't disclose and owner of the system. Madison County property records show the land belongs to Joe Aaron Fleming and Louis Strong Fleming. Attempts to reach them were unsuccessful.

Document 12

**Byrne proposes eliminating alternative energy program; more modest cuts draw veto threat**

By [Brendan Kirby](http://connect.al.com/staff/bkirby/posts.html)  
on July 09, 2014 at 10:59 PM, updated July 09, 2014 at 11:00 PM

U.S. Rep. Bradley Byrne on Wednesday unsuccessfully sought to eliminate funding for a renewable energy initiative. The White House threatened to veto the bill because of more modest cuts to the program.

The [veto threat](http://www.whitehouse.gov/sites/default/files/omb/legislative/sap/113/saphr4923h_20140709.pdf)issued Wednesday comes as Congress debate the Energy and Water Development and Related Agencies Appropriations Act of 2015. The White House expressed its displeasure with a proposal to spend $546 million less than the administration proposed for the Department of Energy's Office of Efficiency and Renewable Energy.

Byrne, R-Fairhope, argued that the cuts do not go far enough. He said the program unwisely spends money on alternative energy sources that are costly and make up only a tiny fraction of the nation's energy needs.

"At a time when our economy continues to recover and many Americans continue to struggle to make ends meet, including paying their energy bills, we must focus on reasonable energy strategies that allow for the most affordable and reliable energy resources for consumers and businesses alike," he said on the House floor.

The House, which rejected Byrne's amendment, is expected to vote this week on the $34 billion spending bill. The bill funds the Department of Energy, the U.S. Army Corps of Engineers and provides money for some Interior Department programs and several independent agencies, such as the Nuclear Regulatory Commission.

The veto statement issued by the White House on Wednesday said the administration is "strongly opposed" to the cut.

"This reduced funding level will stifle Federal investment in innovative clean energy research and development (R&D) at a time of significant global competition and progress," the statement reads.

The White House also indicated that the bill would excessively restrict nonproliferation contacts with Russia and prevent the development of lower-cost methods for disposing plutonium waste. In addition, the White House said, the bill would put the nation's nuclear-powered fleet at risk and jeopardize the Navy's ability to train nuclear-qualified sailors.

The administration did express appreciation for the bill's "support for offshore wind technology demonstrations and for the Clean Energy Manufacturing Innovation Institutes.

But Byrne argued that program allows the government to invest millions of taxpayer dollars on "high-risk research-and-development schemes" for green energy projects that have a low chance of paying off.

"The government should not be subsidizing the research-and-development initiatives of individual companies," he said. "Competition and innovation have been key aspects of private sector success from day one, in the energy sector and other parts of our economy, and the government should not take the role of the private investor."

Byrne cited examples of a $2.5 million grant to a Massachusetts company to work with Green Mountain Coffee to reduce the energy used in roasting coffee beans, and millions of dollars given to large chemical and auto companies. Ford Motor Co., for instance, received a subsidy to develop a new sheet metal forming tool.

"Now I have nothing against those companies, but why should the government be picking and choosing winners and losers?" Byrne asked.

Document 13

**7 questions with John Christy and Roy Spencer: Climate change skeptics for 25 years**

By [Paul Gattis | pgattis@al.com](http://connect.al.com/staff/pgattis/posts.html)  
  
on April 01, 2015 at 8:07 AM, updated April 01, 2015 at 8:10 AM

A chart put together by John Christy, director of the Earth System Science Center at the University of Alabama in Huntsville, that reflects how the temperature satellite data (the green line) contrasts with temperature models.*Paul Gattis | pgattis@al.com*

The silver anniversary of Roy Spencer's career-defining moment arrived with no expectation in March. He didn't realize it until someone mentioned it to him.

For John Christy, he had no idea that a discovery announced in 1990 would not only still resonate 25 years later but would be at the center of a raging debate.

The date was March 29, 1990. That was the day - though unbeknownst to either Christy or Spencer - they publicly became climate change skeptics.

The scientists at the [University of Alabama in Huntsville](http://www.uah.edu/) are known throughout the environmental community as being skeptical that climate change (or global warming) will have a catastrophic effect on the earth. The crux of the matter is that their research, using satellite data to measure temperatures in the atmosphere, disagrees with climate models they say that overstates the earth's warming.

"We are in the minority, there's no question about that," Christy said.

Yes, they agree, that there is climate change. Yes, they agree, humans play a role in that climate change. No, they agree, it's not a catastrophic event.

"We had no clue at that time, 25 years ago, we would be in the center of a huge controversy almost 25 years to the day with congressional investigations, the secretary of state, the vice president telling us we don't even believe in gravity," Christy said. "Who would have thought that 25 years ago?"

Still, they carry on - comfortable in their research and data that has remained true to their findings 25 years ago.

What Christy and Spencer (who then worked for NASA at Marshall Space Flight Center just down the street from UAH) announced at that press conference on March 29, 1990, was that their study of temperature data from satellites indicated the world was not warming as much as was believed.

These days, such an opinion is ridiculed from President Obama on down.

"I think we knew it was going to be an important new way of monitoring the climate," Spencer said. "But you just never know if something like that is going to have legs scientifically. Whether somebody will come up with a new way of doing it better in two years.

"Looking back, I'm kind of surprised this is still the leading way of doing this. Really our only competitors in the field have the same answer we do, very close to the same answer."

AL.com recently sat down with Christy and Spencer for extended interviews as the anniversary approached. Here are excerpts of those conversations:

**AL.com:** So how did this research get started?

**Spencer:** John came here to work on a different project. It wasn't too long after he came here that we were at a meeting -- I think it was in New Hampshire -- and we were discussing things over lunch. And the subject came up, Hey, don't we have satellites? [Jim Hansen](http://www.nytimes.com/2013/04/02/science/james-e-hansen-retiring-from-nasa-to-fight-global-warming.html?pagewanted=all&_r=0) (a climate scientist who sounded perhaps the first alarm about climate change in the 1980s) had just done his testimony for Al Gore in Congress. That's sort of when global warming became public knowledge, when Hansen testified. We were discussing, Don't we have something better than the thermometer data to monitor global temperatures? (UAH scientist) Dick McNider said, 'What about the microwave sounders we have on the weather satellites? We got back to Huntsville and we started looking at how we could get all that data."

**AL.com:** President Obama recently said that [Republicans are going to have to change their opinions](http://thehill.com/blogs/blog-briefing-room/235856-obama-guarantee-gop-will-flip-on-climate-change)on the dangers of climate change. Is this a partisan issue?

**Christy:** Numbers are numbers. That's what we produced. Those aren't Republican numbers or Democratic numbers. Those are numbers. Those are observations from real satellites. Roy and I were the pioneers. We discovered how to do this with satellites before anyone else did. You can see this very strongly in the administration. Secretary of State John Kerry comes out and says it's like denying gravity. The attack on skeptics was ramped up in the past month. It was a very orchestrated plan having the [congressional investigation](http://www.al.com/news/huntsville/index.ssf/2015/03/climate_expert_john_christy_on.html)(by U.S. Rep. Raul Grijalva, D-Arizona).

**AL.com:** How do you respond to the perception that [97 percent of scientists](http://climate.nasa.gov/scientific-consensus/) agree on climate change? (The Wall Street Journal in 2013 [reported on the "myth"](http://www.wsj.com/articles/SB10001424052702303480304579578462813553136)of the 97 percent).

**Christy:** The impression people make with that statement is that 97 percent of scientists agree with my view of climate change, which typically is one of catastrophic change. So if a Senate hearing or the president or vice president says 97 percent of the scientists agree with me, that's not true. The American Meteorological Society did their survey and they specifically asked the question, Is man the dominate controller of climate over the last 50 years? Only [52 percent said yes.](http://www.forbes.com/sites/jamestaylor/2013/11/20/the-latest-meteorologist-survey-destroys-the-global-warming-climate-consensus/)That is not a consensus at all in science.

Then when you look at the core of that question, the core is do you believe that man has some influence on the climate. I don't know anyone who would say no to that. Who are the 3 percent who didn't agree with that? Roy and I have both made the statement that we are in the 97 percent because we believe in some (man-made) effect. It wasn't quantified and it wasn't this dangerous thing. That wasn't part of the question.

**Spencer:** Whoever came up with that, it was very powerful. It was a good idea. It was very misleading, but it was a good idea. There are different ways people handle that. I use the angle that based on the way they come up with the 97 percent, John and I could be considered part of the 97 percent. This is where things get all muddy. They call us global warming deniers. It's a great soundbite except what do we exactly deny? Or the science is settled. OK, what science is settled? You never hear the specifics.

"That's the great thing about politics. People throw out these platitudes and you could read into them whatever you want. It's so generic or non-specific in the thing that they're saying that you can interpret it anyway you want. You turn it into your own thing because you fill in the details. So being a global warming denier, the truth is we don't know global warming. The science is settled? Well, some of it is. Adding CO2 to the atmosphere probably adds some warming. The science on that is pretty solid. But then the devil's in the details. How much warming does it actually cause? It makes a huge difference.

**AL.com:** When you hear about the catastrophic effects of climate change, data from reputable organizations such as National Oceanic and Atmospheric Administration ([NOAA](https://www.ncdc.noaa.gov/monitoring-references/faq/global-warming.php)) or [NASA](http://climate.nasa.gov/evidence/)is frequently cited. How do you respond to that?

**Christy:** NASA, NOAA, EPA, DOE, those are agencies. Agency leaders are appointed by the government, by the current administration. They do not represent objective independent scientific organizations. They can't. They are appointed by the head. They try. People who come out with different views in their organizations are found to be squashed. There is an agenda in those agencies, so it does not surprise me when they go full bore on something like climate change. They are marching to the drum of the administration. It's always been that way. But this administration has been extremely opaque. When you try to go provide information to EPA like these pictures, they will just dismiss it. They will come up with their findings and will not provide you with background for information so that you will know they made a scientific finding.

There are skeptics in NASA and NOAA, a good number. But they are quiet. They know in this administration, they don't speak out.

**Spencer:** I know that they're not unbiased. Most of them probably really do believe we're destroying the earth. When I talk to scientists who should be objective over a beer at the end of the day, I will argue with them and their final position will always be, 'Yeah, but we need to get away from fossil fuels anyway.' Where did that come from? Are you an expert in alternative energy sources and what they cost? How many poor people are you going to hurt? How many more people are you going to make poor through energy poverty because they are paying five to 10 times as much for their energy?

These guys in government are not unbiased and they have pressures from above. Those organizations, NASA and NOAA, they are part of the executive branch. So the White House has some influence over what direction they go. The heads are political appointees so you have political influence from the top down on scientists. And that's a problem.

**AL.com:** What about the value of renewable energy sources?

**Christy:** I am for any energy source that is affordable and doesn't destroy the environment. If carbon dioxide was a poisonous gas, I'd be against it. Carbon dioxide makes things grow. The world used to have five times as much carbon dioxide as it does now. Plants love this stuff. It creates more food. CO2 is not the problem.

Why would you go to wind energy that is so much more expensive or solar? The point here is that if it's not economically sustainable, it's not sustainable. And you have to have an energy plan that's sustainable, that people can afford. Right now, wind and solar, you can't afford. And so the only wind and solar that exists is because of huge government subsidies.  I'm not against renewables or any other source of energy. Can we afford it? Solar and wind are so low density that it takes acres and square miles to do anything. And that's not environmentally smart.

There is absolutely no question that carbon energy provides with longer and better lives. There is no question about that. Anyway scientific way you toss that. Any scientific way you toss that question, you come out that people live better and longer lives. And to suppress, to me, is immoral.

**AL.com:** Why is your research using satellite data a more effective way of measuring climate change than surface temperature? After all, humans live on the surface, not in the upper atmosphere.

**Christy:** Carbon dioxide is a greenhouse gas. When you put more of it in the atmosphere, the radiation budget will respond appropriately. It's just that what we found with the real data is that the way the earth responds is to shed a lot of that heat, not keep it in, which climate models do. So I'd rather base policy on observations than on climate models.

Where is the biggest response to greenhouse gases? It's in the atmosphere, not on the surface. So if you want to measure the response and say that's the greenhouse gas response, you would look in the atmosphere. That's precisely where satellites measure it. So the scientific to how does the world respond is found here. The response of the climate system is stronger in the atmosphere than on the surface.

**AL.com:** What's it like to be labeled as a "denier" of the dangers of climate change?

**Spencer:** I don't mind being defined that way. I've done other research that I've published and I always get a little pushback on, Why are you dabbling in that? You're supposed to be in global temperature monitoring. Because of us doing the satellite temperature dataset, people expect that's all we can do. And they pigeonhole you and expect you to stay in that.

I've come to terms with and accepted that this is the most important thing probably I'll be known for. I have to keep doing it, which I don't mind. On the positive side, I could have just been an average researcher who never did anything of note. So I feel blessed to be in the position that I'm in.

Document 14

**Alabama climate change skeptic believes shots 'targeted' his office floor**

Updated Apr 25, 2017; Posted Apr 25, 2017

Dr. John Christy, Alabama state climatologist and atmospheric science professor at the University of Alabama in Huntsville, points to bullet holes in the side of the building containing his office. Christy believes the floor he works on may have been "targeted" by people objected to his prominence as a climate change skeptic. (Lee Roop/lroop@al.com)

**By**[**Lee Roop**](http://connect.al.com/staff/lroop/posts.html)

Nationally prominent climate change skeptic Dr. John Christy believes his office floor at the University of Alabama in Huntsville was "targeted" by gunshots over the national March for Science weekend.

"To me, it looks like the fourth floor was targeted," Christy said Tuesday. The pattern of the damage "does raise the possibility it was a little more than a coincidence," he said.

However, UAH police think the shooting was a "random, isolated" act. They found cartridge casings beside Sparkman Drive in front of Cramer Hall, where Christy's office is on the fourth floor. Bushes and trees between the hall and the street make it likely someone wanting to shoot from the street into the building would aim at the top two floors, they said.

"UAH police are investigating an incident where seven bullets struck Cramer Hall on the university's campus while the building was unoccupied sometime between Friday night and Monday morning," the university said in a statement today. "Investigators believe the incident to be a random, isolated event unlikely to be a premeditated act. Anyone with any information about this crime is encouraged to email the UAH Police at [police@uah.edu](http://www.uah.edu/police/contact)."

The university police say they found no relevant images from campus security cameras or the cameras at a nearby defense contractor. They have marked the case "inactive" pending new information.

Cramer Hall is a complex of two large buildings connected by a glass connector. A total of seven bullet marks were visible in the sides of both buildings and the glass connector Tuesday. One went through a window in the office next to Christy's.

Christy's colleague and fellow climate change skeptic Dr. Roy Spencer, whose office is also in the building, [posted to his blog about the shooting](http://www.drroyspencer.com/2017/04/shots-fired-into-the-christyspencer-building-at-uah/).

"Given that this was Earth Day weekend, with a March for Science passing right past our building on Saturday afternoon, I think this is more than coincidence," Spencer wrote.

"When some people cannot argue facts, they resort to violence to get their way," Spencer wrote. "It doesn't matter that we don't 'deny global warming'; the fact we disagree with its seriousness and the level of human involvement in warming is enough to send some radicals into a tizzy."

Spencer said all of the bullets hit the fourth floor, but UAH Chief of Staff Ray Garner said some shots hit the third floor. Garner also the science march did not pass Cramer Hall, but started farther south at Shelbie King Hall.

Police say they found seven 5.8 x 28 mm cartridge casings beside Sparkman Drive after being called to the scene Monday morning by a colleague with the office next to Christy's. She found a large hole in her double-pane window and broken glass on the floor when she arrived for work. Police recovered bullet fragments inside the office.

The 5.8 x 28 mm cartridge is a small, high-velocity round used in military and police weapons around the world.

The shots made national news on some outlets including [the Breibart website,](http://www.breitbart.com/big-government/2017/04/24/shots-fired-at-climate-skeptics-office-during-march-for-science/)because Christy is one of the nation's best-known skeptics of the science behind many climate change predictions. He testifies frequently before Congress including as recently as March 29 before the U.S. House Committee on Science, Space & Technology.

Document 15

**Climate change? Alabamians in Congress bet on doing nothing**

Updated November 2, 2016 at 9:11 AM; Posted November 2, 2016 at 7:41 AM

**By**[**John Archibald**](http://connect.al.com/staff/jaarchib/posts.html)

Three words for Alabama's Congressional Delegation.

Are. You. Sure?

Are you willing to bet the future of your kids and mine? Are you sure enough to risk the planet on the word of a few status quo-backed scientists? Are you willing to go down in history - if there is to be such a thing -- as leaders who had power to save so much, but instead turned away?

Turned away, as the story will be told, to count pieces of silver from energy interests?

Are you sure?

A group that monitors the politics of climate change - the Center for American Progress Action Fund - this year [created a list of 182](https://thinkprogress.org/most-americans-disagree-with-their-congressional-representative-on-climate-change-95dc0eee7b8f#.hri97l32u) "climate change deniers" in Congress. Alabama Sens.  Jeff Sessions and Richard Shelby were on the list. So were Reps. Robert Aderholt, Mo Brooks and Gary Palmer. That's 55 percent of the state's delegation.

I wanted to know what they really thought, so I asked the whole delegation to explain their positions on climate change. Only the named "deniers" got back to me. Only Brooks got back in person.

Brooks said he does not deny that climate changes, because earth has always changed. He said there are many factors, and humans are one. But he questions past data, argues that public opinion is tainted by faulty "climate scares," and recommends more study because action must be balanced against cost.

Does he worry that he could be - dare I say it -- wrong?

"I worry about a lot of public policy issues," he said. "The climate change issue is on the list. But it's a long list."

Aderholt's office referred me to an op-ed the congressman wrote for the Jasper Daily Mountain Eagle - a newspaper in coal country - way back in 2010.

"I fall into the second group of people who believe, as do many very credible scientists, that the earth is currently in a natural warming cycle rather than a man-made climate change," he wrote.

Denier.

Congressman Gary Palmer's office issued this statement: "I am a firm believer in sound science. There have been new findings that clearly show the science is not settled on climate change."

Equivocator.

Shelby's office said "the Senator's position is that any action on this topic must follow a robust economic analysis and have the consent of Congress to ensure the appropriate balance between protecting our environment and the effects on our economy."

I don't even know.

And Sessions' office referred me to his statements in the Congressional Record from 2015, which questioned models used by "global climate change advocates."

The models "predict not only increasing temperatures but increasing droughts, increasing flux - droughts and flux - increasing severe weather events such as hurricanes and tornadoes," Sessions said then. "These models have long predicted this. ... A critical measure of the validity of any model is how well it compares to actual data. So the actual weather data, I tell my colleagues, is proving that the models have not been accurate."

Which might sound better if we weren't in the throes of the second hundred year drought in a decade, if the world weren't in a wash of fires and storms that many scientists believe were triggered by climate change.

Temperature is objectively rising, carbon dioxide is definitively increasing in the atmosphere, trapping warmer temperature on the planet, and we produce the carbon dioxide by burning all the fuels we burn.

Scientists overwhelmingly agree that climate change is caused in part by humans, yet - according to that "Climate change denier" study - some 60 percent of Americans are represented by politicians with their heads stuck in the sand.

Because the science is "not settled."

What is settled is where Alabama's congressional delegation's bread is buttered.

The Southern Co., the parent company of Alabama Power, is by far the leading contributor to Alabama campaigns for Congress, having given $825,458 to current senators and representatives, according to [Opensecrets.org](https://www.opensecrets.org/politicians/contrib.php?cycle=Career&cid=N00030910&type=I). Add other energy interests - and lawyers who represent them -- and the number tops $2 million.

Alabama Power Spokesman Michael Sznajderman said his company has worked to reduce greenhouse emissions, lowered its use of coal and is embracing more use of solar power.  But he defended the political contributions.

"We believe it is important to be involved and engage with our public officials when there are issues on the table that can affect our customers, potentially affect the energy prices our customers pay, or affect Alabama's economy," Sznajderman said.

Which is all well and good.

As long as Alabama's public officials can forget about the cash when they look at their children. As long as they can look their grandchildren in the eye and honestly say to themselves:

"I'm sure."

Are you sure?

Document 16

**Build a monument to climate change deniers**

Updated Sep 15, 2017; Posted Sep 15, 2017

**By**[**John Archibald**](http://connect.al.com/staff/jaarchib/posts.html)

It's time to build another monument.

A big one. In granite or marble, with names etched so deep they'll last a millennium. If we have that long.

A monument to Alabama Public Service Commission President Twinkle Cavanaugh. That's right. And to U.S. Reps. Mo Brooks and Robert Aderholt. To Sen. Richard Shelby and darn near the whole congressional delegation.

A monument to recalcitrance and opportunism. A monument to willful ignorance and blatant disregard for the future.

A monument that stands for future generations like a big stone reminder of who is to blame.

Yeah that's right. A marker naming for eternity those who could have stood up for the future, but instead stood for doing nothing as the earth's climate changed.

Like Cavanaugh berating the "bogus science of global warming." Like Brooks perpetuating the notion that it's all a "cyclical pattern" we can do nothing about.

Like all those who thought it better to equivocate, who thought it better to bet everything on the chance they are right than to bet a little to be safe.

Twinkle Cavanaugh, Richard Shelby, Mo Brooks and John Christy, skeptics, deniers or simply head in the sand.

You want a place on that monument, right there with the skeptics and deniers and wishful thinkers? Take it. You want to risk future generations because you are convinced scientists all over the world are part of a grand conspiracy? We'll save you a spot on the monument. So your kids and grandkids, bless their souls, can know you did not care.

Enough.

There's a place on our monument for University of Alabama at Huntsville scientists Roy Spencer and John Christy, Alabama's "official climatologist." They're so sure in their own work that they discount the work of others. The Alabama way. They have a place on that marker.

And a place in history.

It's not about this spate of hurricanes. It's about a bigger picture in which the department of defense has made plans to deal with the effects of climate change, in which - this [according to NASA](https://weather.com/science/environment/news/trump-team-climate-change-global-warming) -- more than 95 percent of scientists agree that warming is caused by humans.

But what it's about is not the argument. What it's really about is being a good steward of the planet, in being people as eager to invest in our children's earth as we are in their education and trust funds.

[Pope Francis said it best](https://www.vox.com/identities/2017/9/11/16290546/pope-francis-climate-change-deniers-daca) last week when he urged skeptics to talk to scientists.

"Climate change is having an effect, and scientists are telling us which path to follow," he said. "And we have a responsibility -- all of us. Everyone, great or small, has a moral responsibility ... we must take it seriously ... history will judge our decision."

As if on a monument.

That's the Pope. But you don't have to be a Christian to see it. [The Dalai Lama](https://www.theguardian.com/environment/2015/oct/20/dalai-lama-says-strong-action-on-climate-change-is-a-human-responsibility) said much the same, that humans made this mess and it's not enough to pray to God or Buddha to make it go away.

"This is not a question of one nation or two nations. This is a question of humanity," he went on. "Our world is our home. There's no other planet where we may move or shift."

Feel free, of course, to disagree.

Hope and pray and decide there's little you can do. Deny the whole thing and argue that we just can't know enough to know. Stand for nothing but the status quo.

Feel free. But know, when you do, that you're buying a spot on that monument. So be sure.

Let the future know where you stand.

*John Archibald's column appears in The Birmingham News, the Huntsville Times, the Mobile Register and AL.com. Write him at*[*jarchibald@al.com*](mailto:jarchibald@bhamnews.com)*.*

Document 17

**Climate change down on the Alabama bayou**

Updated Sep 11, 2017; Posted Sep 10, 2017

A man walks by a shrimp boat tossed upon a dock by Hurricane Katrina, in Bayou La Batre, Ala. The storm left dozens of shrimpers atop docks and marshes in the town, where about 75 of homes were damaged or destroyed.*(Associated Press)*

**By**[**Guest Voices**](http://connect.al.com/user/bamaguestopinion/posts.html)

**By Regina M. Benjamin, MD, MBA,***the 18thU.S. Surgeon General, founder and CEO, BayouClinic, Inc, Bayou La Batre, Alabama;***and James B. McClintock, Ph.D.,***Endowed University Professor of Polar and Marine Biology, University of Alabama at Birmingham, Author of*Lost Antarctica*and*A Naturalist Goes Fishing

Alabama's 230-year old shrimping village of Bayou La Batre - of Forrest Gump fame - lies within a fragile network of bays and salt marshes and is vulnerable to sea level rise. Its shores sit just five feet above sea level on Alabama coastal soil that is slowly, but surely, being covered by water.

In 2005 Hurricane Katrina brought a 16-foot storm surge that left a trail of gutted homes and seafood processing plants, along with shrimping boats capsized and stranded in the pine trees. Despite recent efforts to build a mile-and-a-half long protective breakwater on a small island south of Bayou La Batre, large areas of coastal marsh continue to erode.

The waters of the Gulf of Mexico are warming more rapidly than similarly sized bodies of water, and for the first time on record, this past winter the waters did not cool. As we just experienced this past month with Houston's Hurricane Harvey, future hurricanes will use this additional heat to intensify, become stronger and produce storm surges that go further inland, causing more damage.  Just as water heated in a pot to a boil expands and bubbles over, Gulf waters are expanding as they warm, contributing to sea level rise.  Melting waters from the distant ice caps of Greenland and Antarctica also add to this rise in sea level.

The economy of Bayou La Batre's seafood industry, including our once-plentiful oyster harvest depend on a balanced ecosystem.  Torrential rains can flood the marshes with too much fresh water and kill the oysters.  On the other hand, too little rain can raise the salt content of bays and estuaries, which will attract snails that drill into the oysters and eat their flesh.  Also with warmer waters and higher salt levels, oysters are more likely to carry *Vibrio* *vulnificus,*a bacteria that can cause serious skin, and gastrointestinal infections, making the oysters unsafe to eat.

There are health effects as well.  A combination of greater humidity and higher temperature can increase the potential for heat cramps, heat exhaustion, heat stroke, and even heat-induced death.  As we experience warmer Gulf Coast winters, mosquitoes and other insects are at greater risk of carrying diseases such as Zika, West Nile, and Dengue.  Locals have recently noticed more swarms of termites; one swarm was so thick it delayed a little league softball game.

Whether you believe in global warming or not, and regardless of your politics, something is happening to our Bayou and other coastal communities.  Last month, the governor of Louisiana declared the disappearance of their coast a national emergency.  Changes to the environment are no longer far from home, or someone else's problem.  It is happening in our own backyard, along our coasts, and in our Bayou, affecting our lives and our livelihoods.

As we pursue a more humane and just society, each of us has the responsibility to protect our planet for future generations.  Pope Francis said it succinctly in his 2015 speech to the United Nations,

"The ecological crisis, and the large-scale destruction of biodiversity, can threaten the very existence of the human species, .... Any harm done to the environment, therefore is harm done to humanity."

Document 18

**Alabama will require students to learn about evolution, climate change**

Updated on September 13, 2015 at 7:04 PM Posted on September 13, 2015 at 9:30 AM

**By**[**The Associated Press**](http://connect.al.com/staff/bamaap/posts.html)

Alabama is updating its decade-old science standards to require that students understand evolution and learn about climate change, topics that can still be controversial in the Bible Belt state.

Educators say the new rules -- part of a major change that includes more experimentation and hands-on instruction and less lecturing -- don't require that students believe in evolution or accept the idea that climate is changing globally.

But public school students will be required for the first time to understand the theory of evolution. And teachers will be required to address climate change, which wasn't a focus the last time the state set science standards in 2005.

The new standards take effect in 2016 after being unanimously approved by the Republican-controlled Alabama State Board of Education on Thursday.

No one spoke against the new standards when they were discussed at a board meeting in August, but supporters praised them as a step forward for the state.

A 40-member committee that developed the new course of study included people with "very strong religious beliefs" who considered the state's faith traditions and worked together to develop the new guidelines, said Michal Robinson, science specialist for the state education agency.

"We still have to teach what the science is," Robinson said in an interview Friday. "If students want to go into a science field in college or beyond, they have to have a foundation."

The current state standard says students "should understand the nature of evolutionary theories," but such knowledge isn't required.

The new standard goes further, stating in the preface: "The theory of evolution has a role in explaining unity and diversity of life on earth. This theory is substantiated with much direct and indirect evidence. Therefore, this course of study requires our students to understand the principles of the theory of evolution from the perspective of established scientific knowledge. The committee recognizes and appreciates the diverse views associated with the theory of evolution."

Steve Ricks, director of the Alabama Math, Science and Technology Initiative, said the biggest changes under the new standards are the teaching methods that will now be used in science classrooms.

Rather than relying solely on lectures and memorization of facts from textbooks, teachers will now be required to let students figure out things on their own through observation and experimentation, just like real scientists.

"I don't see how students would be able to learn this material without doing the science," he said. "We are trying to teach kids to reason and solve problems."

The state course of study only sets minimum standards. Local school officials will still make curriculum decisions.

Textbooks used in Alabama science classes have carried a disclaimer sticker for years stating that evolution is a "controversial theory," not fact, and the new course of study doesn't change the warnings, which were advocated by Christian conservatives.

A committee that will review science texts could consider whether to remove or alter the stickers, officials said. A public hearing is set for Nov. 9 in Montgomery.

**JAY REEVES, Associated Press**

Document 19

**2 UAH professors take national stage to dispute climate change science, rebuke John Kerry**

By [Paul Gattis | pgattis@al.com](http://connect-stage.al.com/staff/pgattis/posts.html)  
  
on February 20, 2014 at 10:15 AM, updated February 20, 2014 at 11:04 AM

[HUNTSVILLE, Alabama](http://www.al.com/huntsville/#/0)-- Two [University of Alabama in Huntsville](http://www.uah.edu/index.php)professors used a national platform today to fire back at comments U.S. Secretary of State John Kerry made in a recent speech regarding climate change.

In an [opinion piece](http://online.wsj.com/news/articles/SB10001424052702303945704579391611041331266?mod=WSJ_Opinion_LEADTop&mg=reno64-wsj&url=http%3A%2F%2Fonline.wsj.com%2Farticle%2FSB10001424052702303945704579391611041331266.html%3Fmod%3DWSJ_Opinion_LEADTop)today on [The Wall Street Journal website,](http://online.wsj.com/home-page)Richard McNider and John Christy took issue with "consensus science" in the climate change community that belittles differing points of view. The McNider/Christy commentary is posted under the headline: "Why Kerry is flat wrong on climate change."

Christy, a longtime dissenter on some of the most commonly-accepted theories of human influence affecting climate change, is the director of the [Earth System Science Center](http://www.uah.edu/essc)at UAH and the state of Alabama's climatologist. McNider is a distinguished professor of science in the ESSC.

McNider and Christy were responding to remarks Kerry made Sunday in Indonesia in which Kerry, according to the UAH professors' commentary, said, "We should not allow a tiny minority of shoddy scientists" and "extreme ideologues to compete with scientific facts."

McNider and Christy maintain in their commentary that climate change scientists who believe the earth is on a catastrophic path to global warming frequently shape their research and conclusions to fit that narrative.

The UAH scientists also caution against the dangers of consensus-building focusing on one scientific perspective to the exclusion of other opinions and research.

"'Consensus' science that ignores reality can have tragic consequences if cures are ignored or promising research is abandoned," McNider and Christy wrote in The Wall Street Journal commentary. "The climate-change consensus is not endangering lives, but the way it imperils economic growth and warps government policy making has made the future considerably bleaker."

The UAH scientists concluded their commentary by firing back directly at Kerry.

"We should not have a climate-science research program that searches only for ways to confirm prevailing theories," McNider and Christy wrote, "and we should not honor government leaders, such as Secretary Kerry, who attack others for their inconvenient, fact-based views."

Document 20

**Conservatives make case for market-based approach to tackling climate change**

Updated on October 17, 2016 at 9:09 AM Posted on October 15, 2016 at 7:00 AM

**By**[**Dennis Pillion**](http://connect.al.com/staff/dpillion/posts.html)

As a conservative-leaning independent, Peter Bryn believes the government should play a limited role in the lives of its citizens, only getting involved where absolutely necessary to safeguard the lives and rights of its citizens.

As a former engineer for ExxonMobil and current conservative outreach director for the Citizens' Climate Lobby, Bryn believes that reducing carbon pollution that leads to climate change is one of those areas.

"I was with Exxon for about eight years, and I was concerned about how we manage climate change and provide energy to the world affordably at the same time," Bryn said. "I'm a big believer in the policy approach that Exxon supported, which is very similar to what we at CCL support, which we call a carbon fee and dividend."

Bryn and other representatives of the Citizens' Climate Lobby are touring the Southeastern states of Alabama, Mississippi, Florida and Louisiana this month as part of the group's [Southern Energy Freedom Tour](https://citizensclimatelobby.org/southern-energy-freedom-tour/) to make the case for their policy, which they see as a market-based approach to battling climate change that is preferable to increased regulations from the U.S. Environmental Protection Agency.

The tour kicked off in Alabama with an event at Saint John's Episcopal Church in Mobile Thursday night, before heading to Pensacola Friday. The CCL tour will meet with church, civic or college groups in Dothan, Auburn, Montgomery, Tuscaloosa, Birmingham and Huntsville over the next several days.

Bryn said the CCL is a strictly non-partisan group that understands the importance of building conservative support for their proposals.

That can be tricky business when many prominent Republicans, including [GOP presidential nominee Donald Trump](http://www.politifact.com/truth-o-meter/statements/2016/jun/03/hillary-clinton/yes-donald-trump-did-call-climate-change-chinese-h/), have expressed skepticism or outright denial that carbon emissions are contributing to climate change, despite a large body of scientific evidence pointing to that conclusion.

"When we talk about climate, what a lot of conservatives hear, or what we've traditionally heard in the past, is kind of a big government solution, a bunch of regulations, new taxes, all that kind of stuff," Bryn said. "It has traditionally been I think, a lack of policy options that align with the ideals of conservatives that has really kind of, strangely enough, backed itself into skepticism that there is a problem in the first place.

"That's not the right way to deal with it, but nevertheless, that's what's happened, I think."

Bryn also believes there is a generational gap in climate skepticism among Republicans. He cited [surveys and focus groups conducted by the College Republican National Committee](http://millennial.gop/) showing clean energy and climate change to be among the top priorities of young voters.

"I think that there are a lot of younger conservatives that want their party to be relevant on this," Bryn said. "And what they're hungry for is a solution."

The Citizens' Climate Lobby's solution involves three basic steps. First, setting a price on carbon that escalates over time in a steady, predictable, transparent manner.

Next, the group proposes returning the fees collected to U.S. households equally through what the CCL calls a dividend check. Bryn said that would help offset increased fuel costs, and for many would serve as an economic stimulus, if the households receive more than they spend in higher fuel prices.

"First we like it because it doesn't grow the government," Bryn said. "Second, we like it because it protects low- and middle-income households from cost of living increase."

The third step would be to impose a tariff on imports from countries that do not have a comparable price on carbon and a rebate for American-made goods exported to those countries. Bryn said that would level the playing field for American manufacturers and motivate other nations to adopt similar policies to avoid the tariff.

"That sends a pretty clear signal to other countries that it makes sense to follow   
suit," Bryn said. "Having said that, of the top 10 world economies, we're one of just three countries that have not enacted a national carbon price legislation."

In a move that can't hurt in the appeal to conservative voters, many of the tour events will be held at churches, as religious leaders locally and worldwide have shown interest in [proactively addressing climate change](http://www.al.com/news/index.ssf/2015/06/pope_francis_prepares_bold_sta.html).

The Rev. Thomas Heard, pastor at Saint John's Episcopal Church in Mobile, said he was happy to let his members use space in his church for a meeting with the Climate Lobby.

"According to one of the creation accounts, humankind was to be given mastery, by one translation, over the Earth and all its creatures," Heard said. "We were supposed to take care of it. We were supposed to be good stewards over that incredible bounty that God had given us."

Heard also said environmental pollution has a well-known impact on human populations, and especially the poor.

"You can't look at London in the Industrial Revolution or Pittsburgh during the steel era, or China today, with all the industrial pollution and think it doesn't matter," Heard said. "It certainly has an effect on the climate and the people, and what we do here affects other places.

"It's motivated out of our sense of needing to step up our stewardship, if it's not too late."

The tour's Oct. 19 stop in Birmingham is being co-hosted by eight different faith groups: First United Methodist Church; Alabama Faith Council, Birmingham Islamic Society, Birmingham Shambhala Meditation Center, Episcopal Diocese of Alabama Task Force for Stewardship of Creation, Greater Birmingham Ministries, Justice Committee of the Unitarian Universalist Church of Birmingham and Temple Emanu-El.

The CCL's Southern Energy Freedom Tour will make the following stops in Alabama:

* [Dothan](https://www.facebook.com/events/317048305329458/)-- Saturday Oct. 15, Shoney's Restaurant, 12-1 p.m.
* [Auburn](https://www.facebook.com/events/595713803964199/)-- Sunday Oct. 16, Unitarian Universalist Fellowship, 4-5 p.m.
* [Montgomery](https://www.facebook.com/events/109553316171632/)-- Monday Oct. 17, Unitarian Universalist Fellowship, 7-8 p.m.
* [Tuscaloosa](https://www.facebook.com/events/1200173653358164/)-- Tuesday Oct. 18, Forest Lake United Methodist Church, 6:30-7:30 p.m.
* [Birmingham](https://www.facebook.com/events/973847749408370/)-- Wednesday Oct. 19, First United Methodist Church, 5:30-6:30 p.m.
* [Huntsville](https://www.facebook.com/events/1679792792347327/)-- Thursday Oct. 20, Madison Church of the Nazarene, 7-8 p.m.

Document 21

**'Very bad tick year' expected for Alabama in 2017, and climate change a factor**

Updated Apr 11, 2017; Posted Apr 11, 2017

**By**[**Dennis Pillion**](http://connect.al.com/staff/dpillion/posts.html)

2017 could be a record year for ticks and tick-borne illnesses according to one researcher who studies the arachnids in Alabama.

"I would say this is going to be a very bad tick year because it was a very mild winter," said Tim Sellati, chair of Southern Research's Infectious Diseases Department.

The warm, wet winter and spring have created conditions for dense undergrowth in forests, which allows ticks to thrive.

In addition, Sellati said a warming climate has let certain species of ticks expand their range and those changes are reflected in tick surveys in Alabama and other parts of the United States.

"The winters are warmer and the ticks recognize this, they sense this change in their environment," Sellati said. "We are seeing, year over year, ticks migrating into areas they would not normally venture into.

"The ticks take advantage of this change in climate that allows them to expand their range. When ticks expand their range, they also increase the likelihood of coming in contact with humans."

**You can get Lyme disease in Alabama**

There's a persistent myth that Alabama doesn't have Lyme disease or the ticks that carry it, but Sellati and others say that is absolutely false.

Alabama has both the black-legged tick (often called the deer tick) and the bacteria that causes Lyme disease, Borrelia burgdorferi.

Sellati said that biological surveys conducted by Auburn University show the most common tick in Alabama is the lone-star tick, with adults carrying a distinctive white spot on their back, but Alabama also has black-legged ticks, American dog ticks and Gulf Coast ticks in the southern part of the state.

The most commonly found ticks in the Southeast are (clockwise from top left) the black-legged tick (commonly called deer tick), the American dog tick, the lone-star tick, and the Gulf Coast tick.

Sellati said it may just be a matter of knowing where and how to look for the ticks. The more aggressive lone-star ticks may respond better to the most common method of tick sampling, which is to place dry ice (carbon dioxide) on a white sheet in the woods and wait. The ticks are attracted to the CO2 from the dry ice and can easily be collected from the white sheet.

When researchers collected samples from deer, they predictably found more deer ticks than lone-star ticks.

**The genetics of Lyme disease**

While entomologists track ticks in the wild, and the Alabama Department of Public Health collects data on tick-borne illnesses, Sellati and his team at Southern Research are interested in how genetics impacts a person's reaction to the bacteria that causes Lyme disease.

Sellati said 20 to 30 percent of people who are infected with the Lyme bacteria, show no symptoms or complications whatsoever.

"It's as if they weren't even infected, but they were," Sellati said. "Their immune system has the ability to recognize that bacteria, kill it and clear it very effectively."

Fifty to sixty percent show the trademark bullseye rash, as well as arthritis, carditis, nervous system effects, or other symptoms, but are treated with antibiotics and show no permanent ill effects.

The remaining 20 to 30 percent, even if they receive the same antibiotic treatment as the majority group, experience symptoms that persist even after their treatment.

"The combination of their immune response and the antibiotics is not enough to eliminate the symptoms of Lyme disease," he said. "These individuals have a significant decrease in their quality of life after infection."

Sellati said there is still debate among the scientific community as to whether this happens because the antibiotics don't completely kill the bacteria, or whether permanent damage was done before the antibiotics were administered.

Regardless, Sellati said he is working to understand whether genetic differences could be responsible for the varied reactions to the bacteria.

Sellati said he has identified one strain of mouse that develops a "very severe Lyme arthritis," and another strain that exhibits "very mild if any symptoms" when exposed to the Lyme-causing bacteria.

"This gives us a beautiful model to study the genetics of these mice and what makes them so different in how they respond to the bacteria," Sellati said. "We're starting to understand these key genetic differences that influence the severity and the persistence of the symptoms.

"So we can test drugs in mice that will complement their immune response, which is lacking, and hopefully these new drugs will help those individuals that are predisposed to developing those Lyme disease symptoms."

Sellati said the researchers could be close to identifying genetic markers that would lead to better treatments for the 300,000 people diagnosed with Lyme disease diagnosed each year in the United States.

"When you go to your physician with a tick bite, we could test you rapidly to see whether antibiotics alone are likely to kill and clear all the bacteria," Sellati said. "Or does your genetic profile suggest that antibiotics are not going to be enough."

Document 22

**Ex-Marine: America needs to focus on the enemy of climate change**

on January 20, 2016 at 8:00 AM, updated January 20, 2016 at 8:04 AM

**By Joshua Morgan Folmar,***(@joshuafolmar) a writer, and regional organizer for the Truman National Security Project. He served as a Corporal in the United States Marine Corps and is a native of Tuscaloosa, Alabama.*

"To locate, close with, and destroy the enemy..."

Those words--describing the mission of the Marine Corps rifle squad--are as engrained into an infantry Marine's psyche as the Eagle, Globe, and Anchor, and the scars on our bodies. Yet we have learned firsthand in Iraq and Afghanistan that our 21st century enemies are not as easily recognizable as those of past generations: no uniforms, no clear territorial lines. But does that prevent us from accomplishing our mission?

No. The mission of the Marine Corps rifle squad is "to locate, close with, and destroy the enemy *by fire and maneuver*" (emphasis mine). And so we have. By adapting and learning to recognize the signs--the IED wire sticking out of a sandbag, the abandoned market during the busiest hour of the day, or the sound of a hollowed wall or floor where a weapons cache is buried--we have been able to fight the enemy that hides in plain sight.

So why should it be any different with the dual threats of climate change and oil dependence? Seven years ago--long before I understood the global reach of what the Department of Defense calls a "threat multiplier"--I saw one aspect of this enemy, on patrol in Iraq, firsthand. Whether it was protecting the hydro-electric dam in Haditha or hunting down the source of the black market oil trade in Iraq, it was painfully clear that our dependence on oil was a weakness, and I would soon begin to recognize the signs of our faceless global enemy.

The first time I truly saw the dangers of climate change, though, it didn't come in the form of record high temperatures, though my hometown in Alabama saw theirs in 2007 as I was training in California to go to Iraq. Nor did it come in the form of the plunging lows that I have experienced since moving to my adopted state of New Hampshire in 2013.

Instead, I saw the effects of climate change firsthand on Wednesday, April 27, 2011, when one of the worst tornado outbreaks in history destroyed large portions of my state, including my neighborhood and home of six years in Tuscaloosa. By the end of those three days of unnatural disaster, 355 people were dead (64 in Tuscaloosa alone). If one of the six trees that went into my home had blown less than a foot to the right of where it landed, my roommate, a Navy veteran, would have been number 356.

So I ask our candidates and their constituents to adapt to this enemy that is threatening our national security. Climate change and oil dependence will continue to create conflict until we are eradicated unless we face this enemy head-on. Common-sense solutions, such as the Clean Power Plan and the #50by30 initiative to use at lest 50% renewable energy by 2030, are a step in the right direction for strengthening our nation's security.

Document 23

**Donald Trump's outlook on climate change could help economy, Alabama expert says**

Updated on November 25, 2016 at 12:10 PM Posted on November 25, 2016 at 10:52 AM

**By**[**Paul Gattis**](http://connect.al.com/staff/pgattis/posts.html)

The opinions of President-elect Donald Trump on the issue of climate change [have varied dramatically](https://www.washingtonpost.com/news/the-fix/wp/2016/11/22/whats-donald-trumps-position-on-climate-change-all-of-them/?postshare=21479846339713&tid=ss_tw) over the years.

Most recently, though, Trump fervently campaigned on the stance that any increase in global temperatures were not the result of human influence.

Of course, in an interview earlier this week with The New York Times, Trump said there may be some connection between increasing global temperatures and humans.

John Christy, the director of the Earth System Science Center at the University of Alabama in Huntsville and a renowned skeptic on human influence of climate change, said that the position Trump took during his campaign could help improve the economy.

Christy spoke to AL.com before Trump's interview with The New York Times.

"We can only talk about intentions right now," Christy said of Trump's views on climate change. "We don't know what is actually going to happen. The intentions are to roll back the regulatory activities that have been going on the last four years or so. Now as a scientist, I can say I don't have any problem with that because we can test the impact of these regulations and they will have no impact on the climate. They are so tiny to what happens globally.

"But they will have a pretty strong economic impact. And I think that's what the president-elect is going for - he's very concerned about the economic effect and get those regulations off, that that would really help the economy."

Christy has long said that, even if humans are influencing climate change, the impact of the United States is virtually non-existent.

"Let's make the United States disappear - no more people, no more cars, no more factories," said Christy, echoing testimony he has given in hearings before Congress. "And the climate models tell us the impact of global temperature will be just a tiny fraction - you couldn't measure that fraction hardly at all, it's so small. That then tells you the United State isn't the big player.

"It's what's happening in China, it's what's happening in India and the rest of the developing world. They are going for carbon as their source of energy and quite rapidly."

Christy said he has studied the data himself, confirming the lack of influence the U.S. might have on possible climate change. And that makes the regulations reducing carbon emissions, pushing the country away from cheap energy such as coal and oil, costly to the economy for no apparent benefit.

"When you look at what these regulations will actually do to the climate system - and we've done that actual work," Christy said. "I've presented in federal court and no one rebutted the numbers, it will have a minuscule effect. You can't even attribute anything to these regulations as having an environmental effect."

Christy pointed to China as being among the world leaders in fossil fuel production. A report earlier this year by [Forbes](http://www.forbes.com/sites/wadeshepard/2016/07/08/if-china-is-so-committed-to-renewable-energy-why-are-so-many-new-coal-plants-being-built/#6996999265f7)confirmed that perspective, though the magazine said that China is being more efficient in its coal burning and has also increased its clean energy production.

India is another country producing far more carbon emissions than the U.S., Christy said. A report earlier this month by The Economic Times said [India is planning to double its coal production](http://economictimes.indiatimes.com/industry/indl-goods/svs/metals-mining/rising-coal-production-in-india-may-push-up-atmospheric-co2-levels/articleshow/55419794.cms)by 2020.

Trump has also promised to remove the U.S. from the [Paris Accord](http://www.nytimes.com/2015/12/13/world/europe/climate-change-accord-paris.html?_r=0), which 196 countries signed last year in what was hailed as a landmark document addressing the effects of climate change.

"That's more optics than anything," Christy said. "If you remember, the Paris Accord was only signed by the president as an agreement. It does not have force of law because it was not approved by the Senate. So President Trump can just withdraw the signature or ignore it. It's only an agreement the previous president made. (Trump) doesn't have to go along with it."

Document 24

**Apple CEO Tim Cook says climate change deniers can 'get out of Apple stock'**

By [Cassie Fambro](http://connect.al.com/user/CassieFambro/posts.html)  
on March 01, 2014 at 2:39 AM, updated March 01, 2014 at 4:15 PM

[Robertsdale, Alabama, former resident](http://blog.al.com/live/2014/02/tim_cook_--_apple_ceo_and_robe.html) and Apple CEO Tim Cook has zero patience for people who deny climate change.

The National Center for Public Policy Research issued a statement to Apple deriding stricter government controls on environmental standards, prompting Cook to weigh in on shareholders trying to affect Apple's green initiatives, according to [CNET.](http://news.cnet.com/8301-13579_3-57619770-37/tim-cook-advises-climate-change-deniers-to-get-out-of-apple-stock/)

Apple hired the former head of the Environmental Protection Agency and has committed to green energy.

The NCPPR proposal to combat green initiatives was shot down, but not before Cook added his opinion.

To any who found the company's environmental dedication either ideologically or economically ill-advised, they can "get out of the stock," Cook said in the CNET report.

As CEO, he hopes Apple will learn more ways to be green. "We want to leave the world better than we found it," he said.

Document 25

**Alabama climatologist Dr. John Christy questions Pope's take on climate change: guest opinion**

on June 22, 2015 at 1:33 PM, updated June 22, 2015 at 1:35 PM

**By Dr. John R. Christy,***Distinguished Professor of Atmospheric Science at the University of Alabama in Huntsville. He was awarded NASA's Medal for Exceptional Scientific Achievement for satellite research, has testified before the U.S. Congress numerous times, and served as a Lead Author of the U.N. Intergovernmental Panel on Climate Change. He also holds a Master of Divinity from Golden Gate Baptist Seminary and served in Kenya.*

The issuance of Pope Francis' encyclical (Laudato Si', "Be praised") [addressing climate change last week](http://www.al.com/news/index.ssf/2015/06/pope_decries_irresponsible_use.html) was intriguing to me -- a climate scientist involved in the contentious issue of global warming, yet one who holds a seminary degree with former service as a missionary in Africa. Science and faith cross paths often in my world.

Frankly, I'm puzzled by this encyclical. The language it uses to describe our current world is frightening, "The exploitation of the planet has already exceeded acceptable limits." According to the document, we are "witnessing a disturbing warming ... an increase in extreme weather events."

Are we doomed to an apocalyptic disaster befitting the biblical calamities described in the Revelation of John? The encyclical seems to think so.

And the reason? People want to live longer and better lives.

'We are not morally bad people for taking carbon and turning it into the energy that offers life to humanity...'

And there's the dilemma.

On the one hand, the encyclical calls for renewed attention to the "wisdom" that all human life is sacred, having "infinite dignity." Each of us is "a thought of God ... willed, ... loved, ... necessary." Non-catholic Christians around the world can say "Amen" to that.

On the other hand, we are asked to forgo the fundamental means by which human life flourishes today - carbon-based energy (coal, oil, natural gas). Why? ... because the by-product of this energy, carbon dioxide, must be "drastically reduced" to thwart a theorized "... extraordinary climate change and an unprecedented destruction of ecosystems."

But what has this "exploitation of the planet" wrought? Simply put - human life, in both length and quality. Carbon is the most affordable and reliable source of energy in demand today, renewables like solar and wind are neither by comparison. This is why over 85 percent of energy comes to us from carbon and why its use is growing around the world. This will not stop anytime soon.

Scientifically, I will admit that the complexity of the climate system baffles me. But I'm not alone. The hundreds of millions of dollars spent to understand the climate system though computer modeling (on which the catastrophic claims are based) have yet to generate results that give us confidence that dangerous warming will occur.

I am one of those climatologists who builds datasets so we can measure what the climate system is doing and why. In my reading of the results, I don't see disasters ahead - the world's atmosphere has warmed little since satellites began estimating global temperatures and extreme events like droughts and hurricanes aren't increasing.

To be sure, others see it differently. However, I tend to focus on the fundamental metrics that, according to theory, should be measurable if the extra carbon dioxide we are emitting into the atmosphere is actually causing huge changes. The real world simply doesn't align with the theory. Whether you are a Baptist (like me), a Buddhist or a Baha'i, the numbers come out the same ... and "science" is all about the numbers.

The moral question is differently addressed. In science we measure things, but we cannot take a human life to the laboratory and measure its real value. Here is where the Pope, my Catholic friends, and I stand together by understanding that our faith is the source of our belief (yes, belief) that human life is of infinite value.

Therefore, we are not morally bad people for taking carbon and turning it into the energy that offers life to humanity in a world that would otherwise be brutal (think of life before modernity). On the contrary, we are good people for doing so. As the Indian Environmental Minister P. Javadekar stated in 2014, "The moral principle ... cannot be washed away. India's first task is eradication of poverty ... our first priority", so that "... our CO2 emissions will rise."

When I look at the scientific results I and others generate, and then hold fast to what my faith earnestly speaks, I view sensible carbon-use as today's liberator of precious humanity from the dangerous vagaries of nature. Carbon becomes, therefore, a positive moral imperative to consider.

Document 26

**Audubon study: Climate change threatens half of North American bird species, including eagles, pelicans, turkeys**

Updated on September 9, 2014 at 4:07 PM Posted on September 9, 2014 at 12:49 PM

**By**[**Dennis Pillion**](http://connect.al.com/staff/dpillion/posts.html)

A [National Audubon Society study](http://climate.audubon.org/) seven years in the making warns that nearly half of all North American bird species will have their habitats severely restricted or altered due to climate change over the next several decades. Popular species like the bald eagle, osprey, brown pelican, wild turkey, mallard and white-breasted nuthatch are among the 314 species projected to lose at least 50 percent of their current range by the year 2080.

"The greatest threat our birds face today is global warming," Audubon chief scientist Gary Langham said in a news release. "That's our unequivocal conclusion after seven years of painstakingly careful and thorough research."

A team of National Audubon Society ornithologists, led by Langham, used decades of bird-watchers' observations and climate data to establish climatic and seasonal requirements for 588 species of birds native to the United States and Canada.

They plotted those requirements against the United Nations' projected climate change estimates for the years 2020, 2050 and 2080 to determine where those birds might still find the temperature, precipitation and seasonal conditions they need.

Of the 588 species in the study, 126 were designated as climate-endangered, meaning at least 50 percent of their current winter or summer habitat is projected to fall outside the range of acceptable climate conditions by the year 2050 with no net gain from range expansion. Another 188 species are designated as climate threatened. These birds are projected to lose half their current range by 2080, but have the potential to shift into new areas.

When climate conditions force birds to shift their habitat, there is no guarantee they will be successful in doing so. Conditions like land use, plant cover, human development, elevation and access to the sea could impact a species' ability to find new habitat that also meets its climatic requirements.

"It's alarming that nearly half of the birds that regularly occur in the U.S. could be imperiled by climate change," said Melanie Driscoll, the National Audubon Society's director of conservation for the Gulf Coast and Mississippi Flyway, which includes Alabama. "That's bad news for birds, and as birds have always been indicators of our environmental health and the resources that are available to humans, it's not good news for human communities either."

Driscoll said that Alabama could see reductions in familiar "backyard" species like the hairy woodpecker or white-breasted nuthatch, and game species like the wild turkey.

"What the data is telling us is that the overall climate in Alabama will become much less suitable for turkeys by 2080," Driscoll said. "For the turkeys (by 2080) Alabama is no longer really within its ideal zone, so I would expect they would become either much less abundant, would be seen much more rarely, or would just survive or reproduce poorly.

"They could be rare to missing in Alabama by 2080, which is just astonishing for a bird that we consider to be so ubiquitous in the U.S."

Some of the large birds listed as endangered or threatened by climate change -- bald eagles, brown pelicans, ospreys -- suffered severe population declines attributed to DDT pesticides before the chemical was banned in the U.S. in 1972. Numbers have rebounded for all three species, but all three are expected to see a climatic range shift in the decades ahead.

"It's sobering to see changes this study predicts for some of Alabama's favorite backyard birds, game birds that are currently part of successful conservation efforts, and resident birds that contribute to the strong nature-based tourism industry here," said Suzanne Langley, executive director for Birmingham Audubon Society.

The report is not just about doom and gloom, however. Langley said the group hopes that by identifying the species that are most likely to be displaced by climate change, Audubon can better target conservation efforts for individual species.

"From our perspective, we work toward conservation and we can restore habitat, if we are over-hunting or poisoning our birds, we can change our behavior," Langley said. "But it is deeply troubling to see, based on this modeling, what impact climate change is going to have."

Maps are available on the [Audubon Society web site](http://climate.audubon.org/) in .gif form, showing each of the 314 endangered or threatened species with its observed range in the year 2000, and the estimated ranges for the years 2020, 2050 and 2080.

Document 27

**Should Exxon Mobil be held responsible for misleading the public about climate change?**

Updated Aug 29, 2017; Posted Aug 29, 2017

**By**[**The Tylt**](http://connect.al.com/user/TheTylt/posts.html)

A Harvard study says [Exxon Mobil has been misleading the public](http://money.cnn.com/2017/08/23/investing/exxon-misled-climate-change-harvard-study/index.html) for 40 years about climate change. Despite internal research warning that climate change is real and a threat to its business, Exxon Mobil conducted a huge campaign to sow doubt about climate change. Some want the company to be held responsible for its actions -- like how Big Tobacco held responsible for spreading misinformation. But Exxon Mobil says it did nothing wrong and the accusations are false. **What do you think?**

**PERSPECTIVES**

A Harvard study went through 40 years of internal communication at Exxon Mobil and compared it to the scientific studies researchers published. The authors of the study found that Exxon Mobil was quietly researching the dangers of climate change and how it would affect its business at the same time it was loudly conducting a campaign to discredit climate change.

To address worries that information was cherry-picked to prove a point against Exxon Mobil, researchers looked all the data available. This means researchers examined all of the released Exxon Mobil internal communication as well as everything Exxon Mobil researchers published. Here's [what they found](https://www.wired.com/story/more-evidence-exxon-misled-the-public-about-climate-change/):

*Their content analysis examines how 187 company documents treated climate change from 1977 through 2014. Researchers found that of the documents that address the causes of climate change, 83 percent of its peer-reviewed scientific literature and 80 percent of its internal documents said it was real and man-made, while the opposite was true of the ads. The researchers analyzed ads published in the New York Times between 1989 and 2004. In those ads, 81 percent expressed doubt about the scientific consensus, tending to emphasize the "uncertainty' and "knowledge gap," while just 12 percent affirmed the science.*

Exxon Mobil is facing investigations in several states, as well as a class-action lawsuit from shareholders. Exxon Mobil should be held responsible for their actions. Like the tobacco industry, the company willfully spread lies for its own profit. Like the tobacco industry, Exxon Mobil should pay up.

[Harvard study: Exxon 'misled the public' on climate change for nearly 40 years](http://money.cnn.com/2017/08/23/investing/exxon-misled-climate-change-harvard-study/index.html)

ExxonMobil said it did nothing wrong. The company argues this campaign is part of a conspiracy against ExxonMobil conducted by the Rockefeller family. In fact, many of the investigations alleging ExxonMobil did something wrong were funded by descendants of John D. Rockefeller.

*The company is attacking the role of the Rockefeller family in encouraging, and in some cases bankrolling, the investigations and campaigns against it. Both journalism organizations that investigated the company were financed, at least in part, by Rockefeller philanthropies, though the organizations say that their donors have no control over what they write.*

The key thing to note is that Exxon Mobil didn't bury its research. Exxon Mobil scientists have been published in over 50 peer-reviewed studies on climate science. Exxon Mobil didn't keep any secrets. According to [Michael Gerrard](https://www.bloomberg.com/news/articles/2016-09-07/will-exxonmobil-have-to-pay-for-misleading-the-public-on-climate-change), the director of the Sabin Center for Climate Change Law at Columbia, people have to prove that Exxon Mobil willfully hid information.

*It's not enough to show that Exxon had internal knowledge of climate change when external knowledge was widespread. The government would have to show that there were things that only Exxon knew and that were material to investors and that Exxon kept from investors. Such evidence might be there, but we don't know yet.*

[Can Exxon Mobil be found liable for misleading public?](https://www.bloomberg.com/news/articles/2016-09-07/will-exxonmobil-have-to-pay-for-misleading-the-public-on-climate-change)

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Document 28

**Is it getting hot in here? Climate change denial, apathy and Alabama (commentary and live chat)**

By [Kyle Whitmire | kwhitmire@al.com](http://connect-stage.al.com/staff/KyleWhitmire/posts.html)  
on May 13, 2014 at 1:00 PM

Perhaps we in the media owe you an apology. Maybe it's our fault.

[One in four Americans are strongly skeptical when it comes to climate change](http://www.gallup.com/poll/168620/one-four-solidly-skeptical-global-warming.aspx). No matter the research, evidence and the scientific community's consensus that climate change is real, man-made and a threat to the future of humanity, some folks just don't want to believe it, and they'll cling to that sliver of climate change denial like it's a tall tree branch in a flash flood.

On Sunday night, TV funnyman John Oliver blasted Americans for our ambivalence. But more to the point, Oliver blamed the American media for perpetuating a debate that has been over for more than a decade.

(And you thought we were done with smarmy Brits brow-beating us, just because CNN fired Piers Morgan.)

"I think I know why people think this issue is still open for debate – because on TV, it is," Oliver said. "And it is always one person for, one person against."

American media try to be "fair and balanced," to borrow that old saw from Fox News, but rather than presenting "debates" in proportion to the evidence and expert consensus underlying them, media have been lazy – falling back on a he-said/she-said style of Crossfire-like entertainment that lazily presents different sides of an issue with false equivalence. There's always two sides to every story right? Well, that's what you're given, no matter if there's three, four, a hundred or, in the case of climate change, just one.

Last week, the federal government released the National Climate Assessment, [emphasizing present-day effects of climate change](http://www.cnn.com/2014/05/06/politics/white-house-climate-energy/), and already the [United State Department of Defense is planning around climate change](http://www.nbcnews.com/news/military/climate-change-real-pentagon-sure-thinks-so-n101701), which it sees as a reality, not a debate, and as something that could destabilize the world, leading to new conflicts.

As the Associated Press explained last year, that degree of consensus means [scientists are as certain about climate change as they are that smoking is bad for your health](http://bigstory.ap.org/article/what-95-certainty-warming-means-scientists), but too often the media give it the same odds as a coin toss.

"More often than not, it's Bill Nye the Science Guy versus some dude," Oliver said. "When you look at the screen, it's 50-50, which is inherently misleading."

So what did Oliver do? He gave a mathematically fair and balanced debate – with three climate change skeptics on one side, and Nye and 96 other scientists on the other.

"It's a little unwieldy, but it's the only way you can actually have a representative discussion," Oliver said.

So if the "debate" over climate change is a media invention, let me say on behalf of all of us, our bad. Sorry.

But it's not only the media. A major problem with the climate change "debate" is that the effects seem so far off that it falls into that bag of long-term problems we could fix today, but would rather dealt with after it's too late.

There's a whole host of issues in that same mix, with tabs that will come due a long time before the Statue of Liberty needs a snorkel -- entitlement reform, underfunded pensions, the deterioration of national infrastructure, etc.

You see, all that business politicians like to jabber on about leaving a better world for our children and dire warnings about this being the first generation not to be better off than the one before – it's all bunk. Again and again, we're [Wimpy from Popeye](http://youtu.be/NJ6xBaZ92uA) --  we'll take that hamburger today, which the next generation will not-so-gladly pay for after we're dead. Dealing with immediate issues while ignoring or minimizing distant ones until it's too late isn't the aberrant behavior of our generation. It's the default function of our species.

But let's assume for a second that maybe climate change is real but not caused by us, or that we're too stubborn to do anything to prevent it. We still have to deal with the effects – rising sea levels, more erratic weather patterns, unpredictable crop yields, etc.

"More often than not, it's Bill Nye the Science Guy versus some dude. When you look at the screen, it's 50-50, which is inherently misleading."

(If [two papers published this month predicting the inevitable collapse of the West Antarctica ice sheet prove correct](http://www.nytimes.com/2014/05/13/science/earth/collapse-of-parts-of-west-antarctica-ice-sheet-has-begun-scientists-say.html), that's exactly what we're dealing with – at least a 10 ft. rise in sea levels, which is now inevitable.)

At the very least, shouldn't we invest in some sandbags?

In Sweet Home Alabama, we convince ourselves that the best way to fight the future is to stubbornly live in the past.

Kevin Harrison, the transportation director for the South Alabama Regional Planning Commission, [explained to the Bloomberg news service](http://www.bloomberg.com/news/2014-05-12/alabama-avoids-preparing-for-rising-seas-menacing-mobile.html) that, when pitching flood mitigation and infrastructure reinforcement to public officials in Alabama, it's best not to mention climate change, or public officials will tune you out.

"What are the costs of us going on these crusades, these environmental crusades?" state Sen. Trip Pittman, R-Fairhope, told Bloomberg. "We've elevated environmentalism into some kind of religion."

Our political leadership here treats the consensus on climate change with the same incredulousness they would someone selling them beachfront property.

Let's just hope that one day that beachfront won't be somewhere in Conecuh County.

Document 29

**EPA: Aircraft emissions contribute to climate change, endanger public health**

Updated on July 25, 2016 at 1:25 PM Posted on July 25, 2016 at 11:57 AM

**By**[**Dennis Pillion**](http://connect.al.com/staff/dpillion/posts.html)

The U.S. Environmental Protection Agency today [finalized a determination](https://www3.epa.gov/otaq/aviation.htm) that emissions from aircraft engines are contributing to climate change, in what could be the first step towards creating emissions standards for large commercial aircraft.

The EPA findings involve "six well-mixed [greenhouse gases] that together represent the largest driver of human-caused climate change: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride."

The findings released Monday do not include small, piston-engine planes or military aircraft, but were called "an important step" before adopting domestic greenhouse gas engine standards on the types of large engines used on commercial airliners.

"Addressing pollution from aircraft is an important element of U.S. efforts to address climate change," said Janet McCabe, EPA's Acting Assistant Administrator for Air and Radiation, in a news release. "Aircraft are the third largest contributor to GHG emissions in the U.S. transportation sector, and these emissions are expected to increase in the future.

"EPA has already set effective GHG standards for cars and trucks and any future aircraft engine standards will also provide important climate and public health benefits."

The EPA says it will work with industry and non-government organizations through the public comments as part of the rule-making process.

EPA expects the International Civil Aviation Organization (ICAO) will formally adopt its environmental committee's February 2016 agreement on international aircraft CO2 standards in March 2017, and "anticipates moving forward on standards that would be at least as stringent as ICAO's standards."

According to EPA, U.S. aircraft emit roughly 12 percent of GHG emissions from the U.S. transportation sector and 29 percent of GHG emissions from all aircraft globally.

Document 30

**Republicans take aim at Obama's 2016 NASA spending plan for climate change research**

By [Lee Roop | lroop@al.com](http://connect.al.com/staff/lroop/posts.html)  
  
on April 30, 2015 at 5:46 PM, updated April 30, 2015 at 5:50 PM

The House committee charged with authorizing NASA spending took aim at a key Obama administration priority Thursday with a party line vote slashing spending on Earth science - the missions that study issues such as global climate change. Protected and expanded were NASA's development of a big new deep-space rocket and missions to other planets.

Republicans on the House Science, Space and Technology Committee, including bill co-sponsor Rep. Mo Brooks (R-Huntsville), said the measure "restores balance." Democrats and NASA Administrator Charles Bolden said the bill "guts" critical science missions to understand the climate and threatens NASA's broad support on Capitol Hill.

The vote today is just one step in a congressional process of approval for NASA spending. It authorizes spending levels for FY 2016 and FY 2017 but does not appropriate any money to fund those authorizations.

The committee bill authorizes NASA to spend $1.45 billion for Earth science in the fiscal year that begins Oct. 1 and for fiscal year 2017. The White House wanted $1.95 billion for next year. The committee authorizes $1.5 billion for planetary science in 2016 and 2017, up from the $1.36 billion the White House wanted next year.

The House committee's budget keeps in step with the White House on spending for commercial crew carriers to the International Space Station in 2016, authorizing $1.24 billion ($1.84 billion in 2017), but gives more to the Space Launch System program. It authorizes $1.7 billion for the rocket and $400 million for ground support in 2016 and $1.9 billion for SLS and $432 million for ground support in 2017. The White House proposed $1.35 billion for the rocket and $410 million for ground support next year.

The Orion capsule would be authorized $1.2 billion from the House panel in 2016 and $1.35 billion in 2016. That's against $1.1 billion requested from the White House for 2016.

"This NASA authorization bill seeks to maintain America's leadership in space by robustly funding a well-balanced mix of programs in areas such as space exploration, science, and aeronautics," Brooks said in a statement. "It fully funds the Space Launch System, which will be America's means for future exploration beyond Low Earth Orbit. This budget-neutral bill is an investment in our future, providing NASA with the funding authorization and policy direction it needs to maintain our preeminence in space and aeronautics."

NASA Administrator Charles Bolden focused on Earth science in a statement after the vote. "The NASA authorization bill making its way through the House of Representatives guts our Earth science program and threatens to set back generations worth of progress in better understanding our changing climate, and our ability to prepare for and respond to earthquakes, droughts, and storm events," Bolden said. "NASA leads the world in the exploration of and study of planets, and none is more important than the one on which we live."

Ranking committee Democrat Eddie Bernice Johnson (D-Texas) said this: "There are those in this country, and in this Congress, who don't think NASA should be a priority. NASA has survived and thrived over the years only because of the strong bipartisan backing of those who understand the importance of NASA to our national well-being. The bill before us will never become law. But the majority's willingness to walk away from bipartisanship in order to appease their own most ideologically driven members, risks eroding support for NASA in general."

Endorsing the bill was the Coalition for Space Exploration and the Commercial Spaceflight Organization, both groups representing aerospace companies.

Document 31

**Sen. Jeff Sessions can't find any takers when it comes to endorsing president's climate change agenda**

Updated on June 18, 2014 at 9:07 PM Posted on June 18, 2014 at 8:59 PM

**By [Leada Gore](http://connect.al.com/staff/LeadaGore/posts.html" \o "Visit Leada Gore's Author Page)**

sessions.JPGSen. Jeff Sessions speaks during a Senate committee hearing on climate change and proposed EPA changes.

Alabama lawmakers – one state and one federal – [took center stage today as a Senate panel](http://www.al.com/news/index.ssf/2014/06/attorney_general_luther_strang_1.html) met to talk climate change and new restrictions on power plant carbon emissions proposed by the Obama administration.

Attorney General Luther Strange and Sen. Jeff Sessions both took part in the hearing, titled "Climate Change, the Need to Act Now." Strange said the rules proposed by the Environmental Protection Agency would be unlawful because they are outside the authority Congress gave the EPA under the Clean Air Act.

Strange also said the rules would lead to higher electricity rates.

One of the hearing's most dramatic moments came when Sessions, R-AL, asked the four former EPA administrators attending the hearing if they agreed with the comments President Barack Obama has made regarding climate change.

"The President on Nov. 14, 2012 said, 'The temperature around the globe is increasing faster than was predicted, even 10 years ago.' Then on May 29, 2013 (President Obama) said, 'We also know that the climate is warming faster than anybody anticipated five or ten years ago.

"I would ask each of our former administrators if any of you agree that that's an accurate statement on the climate? If you do raise your hand," Sessions asked the panel.

"Let the record reflect no one raised their hand," he said a moment later.

Document 32

**'Global warming,' 'climate change,' not off-limits terms at Alabama's environmental agency**

Updated on February 10, 2016 at 5:21 PM Posted on February 10, 2016 at 5:17 PM

**By**[**Connor Sheets**](http://connect.al.com/staff/casac8/posts.html)

Alabama's state environmental agency has no documented concerns about its employees using the terms "global warming" and "climate change," a recent records request shows.

The Alabama Department of Environmental Management (ADEM) has not directed its employees to avoid using the terms, according to S. Shawn Sibley of the department's office of general counsel.

Some critics decry the use of such terminology as inaccurate, alarmist and politically loaded, though the vast majority of the world's climate scientists agree that climate change is a real phenomenon and that global temperatures are on the rise.

"I've checked again with my client and have confirmed that [there] are no public documents responsive to your request and that there have been no directives to ADEM staff to refer or not refer to 'global warming' or 'climate change' in any particular manner," Sibley wrote in a Wednesday email response to an AL.com request for any ADEM documents dictating if or how the agency's employees should use the terms.

The records request was inspired by a controversy in Florida, where [the Florida Center for Investigative Reporting revealed](http://www.miamiherald.com/news/state/florida/article12983720.html) last year that officials with the Sunshine State's Department of Environmental Protection (DEP) had been ordered not to use the terms "global warming" or "climate change." The report was particularly explosive in Florida, which is highly susceptible to rising ocean levels and other potential impacts of environmental shifts.

"We were told not to use the terms 'climate change,' 'global warming' or 'sustainability,'" Christopher Byrd, a former attorney with the Florida DEP's office of general counsel, told the Florida news outfit. "That message was communicated to me and my colleagues by our superiors in the Office of General Counsel."

There is no such clampdown on the use of the terms at ADEM, Sibley said in a previous email.

"In response to your request for '...any document, record, transcript, or other written or recorded material that touches on the topic of how to discuss or address terms or concepts including "global warming," "climate change" and/or "greenhouse effect."', there are no public records responsive to your request," Sibley wrote.

Document 33

**UAB Antarctic researcher Jim McClintock to speak on climate change, drought tonight**

Updated on December 6, 2016 at 1:43 PM Posted on December 6, 2016 at 1:13 PM

**By**[**Dennis Pillion**](http://connect.al.com/staff/dpillion/posts.html)

UAB Antarctic researcher Jim McClintock will be the keynote speaker for tonight's installment of [Bham Now's BOLD Lecture Series](http://bhamnow.com/index.php/2016/12/05/think-globally-act-locally-hand-in-paw-and-bham-now-bold-series-slideshow/) at Avondale Brewing Company.

McClintock, who has led 14 research expeditions to Antarctica over the past 30 years as well as numerous educational tours, will take attendees on a virtual trip to the southernmost continent, and discuss the impacts that climate change has had on Antarctica as well as Alabama, with the recent drought.

Doors open at 5 p.m. for networking and the program, sponsored by EBSCO, is slated to run from 6-7 p.m. Tickets are $10 at the door, with 10 percent of proceeds going to [Hand in Paw](http://www.handinpaw.org/).

According to his UAB biography, McClintock has authored more than 200 scientific publications, and co-edited and co-authored several books related to a multitude of aspects dealing with marine invertebrates.

He is also the author of the books "[Lost Antarctica: Adventures in a Disappearing Land](https://www.amazon.com/Lost-Antarctica-Adventures-Disappearing-MacSci/dp/1137278889)," and "[A Naturalist Goes Fishing: Casting in Fragile Waters from the Gulf of Mexico to New Zealand's South Island](https://www.amazon.com/Naturalist-Goes-Fishing-Casting-Zealands/dp/1137279907/)."

Document 34

**Does Alabama's failure to address climate change threaten Mobile?**

By [John Archibald | jarchibald@al.com](http://connect-stage.al.com/staff/jaarchib/posts.html)  
  
on May 13, 2014 at 8:02 AM, updated May 13, 2014 at 9:34 AM

Studies show Dauphin Island faces a wet and uncertain future, and Alabama -- thanks in part to the politics of climate change denial -- has so far failed to address the possibility.

Bloomberg lays it out in a story this week under the heading ["Alabama Avoids Preparing for Rising Seas Menacing Mobile."](http://www.bloomberg.com/news/2014-05-12/alabama-avoids-preparing-for-rising-seas-menacing-mobile.html)

In a day and age in which candidates for Alabama's Public Service Commission campaign with phrases like ["the so-called climate change crisis is about as real as unicorns and little green men from mars,"](http://www.al.com/opinion/index.ssf/2014/05/what_do_alabama_psc_candidates.html) it is worth a read.

And the debate that is sure to follow.

*John Archibald is a columnist at Alabama Media Group.*[*jarchibald@al.com*](mailto:jarchibald@al.com)

Document 35

**Design a climate change coping app and win cash in NASA's new $35,000 challenge**

By [Lee Roop | lroop@al.com](http://connect.al.com/staff/lroop/posts.html)  
  
on December 11, 2014 at 1:48 PM, updated December 11, 2014 at 1:50 PM

NASA and the U.S. Geological Survey (USGS) are offering more than $35,000 in prizes to citizens who design apps - computer applications - to make use of available climate data to respond to climate change. The competition opens Dec. 15.

The challenge stems from the latest National Climate Assessment that says the U.S. already faces or will face challenges because of climate change. Coastal flooding, ocean acidification and weather changes such as drought are all on the the list of issues the nation could face. The challenge is to use available climate data to help local communities prepare.

"With this challenge ... we are intentionally looking outside the box for transformational ways to apply the data that we have already carefully assembled for the benefit of communities across the nation," Virginia Burkett, acting USGS associate director for Climate Change and Land Use, said in a statement.

The Climate Resilience Data Challenge will be conducted through the NASA Tournament Lab in partnership with Harvard University and hosted on Appirio/Topcoder. It runs through March 2015, and [you can learn more about it here.](http://www.topcoder.com/earthscience/crdc/)

Document 36

**A Factory-Made Solution to Global Climate Change By Dick Resch**

on March 20, 2014 at 11:16 PM, updated March 20, 2014 at 11:50 PM

Opinion by Dick Resch

The United Nations recently released a 2,000-plus-page report on climate change with a straightforward conclusion -- global temperatures are rising, and human activity is the primary cause.

The report's 259 authors warn that catastrophic heat waves, droughts, and floods will grow more common unless governments take steps to limit greenhouse gas emissions. But there are serious political limits to what governments can do -- especially with the global economy flagging.

Fortunately, some private firms are picking up the slack -- even notorious emitters like manufacturers. But if we're to solve the climate change problem, more businesses worldwide will need to join them -- and voluntarily reduce their own carbon emissions.

Make no mistake -- the time for action is now. In May, scientists at the National Oceanic and Atmospheric Administration reported that the concentration of carbon in the earth's atmosphere had reached record-high levels. The American Meteorological Association recently noted that 2012 was one of the 10 warmest years on record.

But those findings are unlikely to move many governments to action. According to Alden Meyer, an environmental policy expert at the Union of Concerned Scientists, the IPCC's latest assessment "would not be a huge shot of adrenalin" for governments to reduce carbon emissions.

Many private firms aren't waiting for the government to take the lead on emissions reduction. And the companies that are doing the most to reduce emissions are those who contributed the most in the first place manufacturers.

It's now widely understood that the Industrial Revolution was a turning point in our planet's history, causing carbon emissions to rise by one-third. More recently, the rapid development of manufacturing industries in emerging economies like China, India, and Brazil has proven to be a key driver of emissions.

But, as the Center for American Progress points out in a new report, the manufacturing sector today "is actually vital to the process of building a low-carbon economy."

Consider Unilever, one of the world's largest consumer-goods companies. Between 2008 and 2012, the firm reduced its carbon emissions from manufacturing by 838,000 tons. It plans to open seven new eco-efficient factories this year.

Hewlett Packard has reduced the carbon footprint of the plastic in its printer cartridges by 33 percent by switching to what it calls a "closed loop" recycling process.

At my company, KI Furniture, we've dramatically cut the amount of waste that we produce. Between 2011 and 2012, we diverted more than 500,000 pounds of waste from landfills and reduced our materials usage by more than 6 percent.

Innovative materials are also helping manufacturers shrink their carbon footprints in ways that weren't possible just a few years ago.

For instance, Irvine, California-based start-up Newlight Technologies has developed AirCarbon -- a material derived from recycled greenhouse gases. The manufacturing process takes methane and carbon dioxide out of the atmosphere and transforms them into durable plastic. The entire process is carbon negative -- it actually reduces the amount of carbon in the atmosphere.

The trend toward environmental consciousness is catching on. A recent report from HSBC found that 84 percent of the world's largest companies have emissions targets. This might help explain why the total carbon emissions of 42 industrialized nations actually fell in 2011.

The only way that such efforts will have a significant effect on climate change is if more businesses join in the cause. Public policy alone won't be enough. It's the responsibility of carbon-emitting enterprises to do their part in preserving our planet.

*Dick Resch is CEO of KI Furniture.*

Document 37

**Alabama heats up as climate change gathers steam, scientists say**

By [Ben Raines | braines@al.com](http://connect.al.com/user/braines/posts.html)  
  
on January 18, 2013 at 3:07 PM, updated January 19, 2013 at 6:56 AM

 A new federal report suggests that Alabama is going to get a lot hotter.

In fact, by 2040, the state could be experiencing an additional 40 days a year with temperatures above 95 degrees, according to the [National Climate Assessment](http://ncadac.globalchange.gov/download/NCAJan11-2013-publicreviewdraft-chap2-climate.pdf) released on January 11.

Alabamians could be forgiven for harboring some doubts when it comes to the question of climate change.

It turns out the state is one of the only parts of the country that has not experienced an overall warming trend in the last 20 years. Temperatures over most of the state have apparently remained about the same as they were between 1901 and 1960, according to data gathered by federal climate researchers.

The rest of the country has not been so lucky. It has gotten warmer almost everywhere else, according to the climate assessment, produced by the U.S. Global Change Research Program.

A panel of scientists from all over the nation drafted the report, which noted rising temperatures, more severe storms, and longer droughts, among other changes. Alabama was among seven states, all in the Southeast, that have each experienced more than 33 billion-dollar weather related disasters since 1980

"Americans are noticing changes all around them. Summers are longer and hotter, and periods of extreme heat last longer than any living American has ever experienced," read a letter accompanying the report. "Winters are generally shorter and warmer. Rain comes in heavier downpours, though in many regions there are longer dry spells in between."

The researchers state that "the evidence for a changing climate has strengthened considerably since the last National Climate Assessment report, written in 2009."

Overall, the report concludes the Southeast experiences about five fewer frost free nights per year today, as compared to the average between 1901 and 1960.

The portion of the state north of Montgomery is expected to experience 20 fewer frost free nights a year between 2040 and 2070. The northernmost part of the state, including Birmingham, Huntsville, and Tuscaloosa, will have 25 fewer cold nights.

But it is the change expected on the other end of the thermometer that will hurt the most. Alabama currently experiences 30 days or less per year where the mercury hits the 95 degree mark. That could jump to 70 days each year with temperatures that high, according to the report.

The idea of twice as many days above 95 degrees is an arresting one.

Those hotter temperatures will lead to a range of other changes, few of them positive, according to the report. The resulting increase in water temperatures could mean more months of the year when oysters have high levels of bacteria in them. And the increased temperatures will likely be a boon for creatures like mosquitoes and pests like pine bark beetles, according to the report.

Document 38

**What happened during House Science committee hearing on climate change? Tell us what you think**

By [Paul Gattis | pgattis@al.com](http://connect-stage.al.com/staff/pgattis/posts.html)  
on May 30, 2014 at 9:00 AM

WASHINGTON - The U.S. House Science, Space & Technology Committee, of which U.S. Rep. Mo Brooks, R-Huntsville, is a member, held a hearing Thursday "to examine the methodology and reliability of the United Nations [Intergovernmental Panel on Climate Change's Fifth Assessment Report](http://www.ipcc.ch/)."

The takeaway for what happened in the hearing depends on your point of view.

Brooks' office issued a press release late Thursday about the hearing, which included this paragraph:

During the hearing, Brooks questioned the expert witnesses about climate models used by the Obama Administration to justify costly policies that stifle economic growth, cost jobs, and burden American families with higher costs of living. Brooks asked whether these climate projection models should be relied on given that past, real climate data (referenced in the below chart created by Dr. John Christy at the University of Alabama in Huntsville) proves the climate models have been notably inaccurate in predicting future climate change.  The witnesses' response:  excellent question.

Meanwhile, one of the witnesses at the hearing -- Michael Oppenheimer, Albert G. Milbank Professor of Geosciences and International Affairs, Department of Geosciences, Princeton University - summed up his views on Twitter that linked to his blog about the hearing.

The Washington Times [covered the hearing.](http://www.washingtontimes.com/news/2014/may/29/unsettling-house-panel-hears-debate-on-climate-cha/?page=all#pagebreak)Committee chair Lamar Smith, R-Texas, released [this statement](http://science.house.gov/sites/republicans.science.house.gov/files/documents/HHRG-113-%20SY-WState-S000244-20140529.pdf)about the hearing, which included this conclusion:

"The Obama administration should stop trying to scare Americans and then impose costly, unnecessary regulations on them. The President says there is no debate. Actually the debate has only just begun.

"When assessing climate change, we need to make sure that findings are driven by science, not an alarmist, partisan agenda."

Brooks' press release included a Q&A between Brooks and panelists Roger Pielke Sr.,Senior Research Scientist, Cooperative Institute for Research in Environmental Sciences, and Professor Emeritus of Atmospheric Science, Colorado State University, and Daniel Botkin, Professor Emeritus, Department of  Ecology, Evolution, and Marine Biology, University of California, Santa Barbara.

Here is that Q&A:

**Congressman Brooks**:  Why does it matter that these climate models have failed so frequently?

**Dr. Pielke**:  Well it's one of the tests of the model.  I mean, if you're going to use these models to try to predict what will happen in the next several decades, you want to have some confidence that they're robust tools, and I think the models have failed to show that.  In fact, I think they've been a cause for a lot of the debate and discussion.  And I think, what Michael was saying, we don't probably need the models, because the models are misleading us.  They're talking about a future that may not occur.  It certainly hasn't shown that the models are able to replicate what's happened in the last several decades.  And so you wouldn't believe a weather prediction model that was forecast for tomorrow or the next day if it kept failing all the time.  I think that's what we have with these climate models.  They're not ready for prime time.  Models are very useful.  They understand processes, they can help assimilate data, but as forecasting tools decades into the future, they're not ready.

**Brooks**:  Dr. Botkin, do you have anything to add?

**Dr. Botkin**:  Yes, first of all, the models are well known not to be very well validated at any level.  And there's work, such as by [J.] Scott Armstrong, who's an expert on model validation mainly for businesses, and he says that these climate models meet hardly any of the criteria for legitimate validation.  And so, you have to question the validity of the model.  And I say this having worked on some of the models.  I had a graduate student who added vegetation to one of the climate models as his Ph.D. thesis.  So I think that the models, since they are so much failing to come close and haven't been well-validated, they're not a good guide now.

**Brooks**:  Well we've used this "97% of scientists agree" kind of number--is it fair to say that close to 100% of scientists agree that our models are failures?

**Pielke**:  No, a lot of people--look, obviously they don't believe they're failures because they base the IPCC and national climate assessment on it.

**Brooks**:  Well let me be more specific, that for the time frame from 2000 to 2014 that they have failed?

**Pielke**:  I would think some would still disagree.  They've been trying to explain why they're not agreeing, why there's less warming.  They say now the warming has gone deeper into the ocean, for example, which obviously raises the question, if it's gone deeper in the ocean, why didn't they predict that?  But I would think there are people who are still arguing that the models are robust.

**Brooks**:  Well I'm looking at the graph, [is this graph accurate](http://i.imgur.com/oefJuhN.jpg)?

**Pielke**:  Yes, the graph is accurate.

**Brooks**:  Well the graph shows that the models don't correspond with actual temperatures.  So how can people contend that the models are good if they're way off base with the temperatures, with the exception of perhaps one or two out of all the models being run?

**Pielke**:  That is an excellent question.  But I think it's even broader than that because as I showed in my written testimony, there are a range of peer-reviewed papers that have shown when these models have run over the last several decades, they can't predict regional statistics well at all, they can't predict changes in regional climate statistics, and therefore there's a whole range of reasons they shouldn't be accepted.  But the problem is this issue is not being discussed, and it wasn't discussed at the NIPCC.

Document 39

**The other side of climate change: Report slams views of John Christy, Roy Spencer**

By [Paul Gattis | pgattis@al.com](http://connect.al.com/staff/pgattis/posts.html)  
  
on April 07, 2015 at 6:00 AM, updated April 07, 2015 at 6:01 AM

A [report](http://www.theguardian.com/environment/climate-consensus-97-per-cent/2015/apr/06/revealing-interview-with-top-contrarian-climate-scientists?CMP=share_btn_tw)in [The Guardian](http://www.theguardian.com/us)on Monday picked apart comments by climate experts John Christy and Roy Spencer the [scientists made in an AL.com story](http://www.al.com/news/huntsville/index.ssf/2015/04/7_questions_with_john_christy.html) last week.

Christy, director of the Earth System Science Center at the University of Alabama in Huntsville, and Spencer, a research scientist at UAH, recently celebrated the 25th anniversary of their climate research using data from satellites rather than ground-based data.

The two collaborated on the research announced in 1990 that indicated global temperatures were rising at a slower rate than believed by other scientists.

That research, as well as subsequent research, has led Christy and Spencer to downplay the potential dangerous effects of global warming. That perspective has led Christy and Spencer to describe themselves as climate change "skeptics."

* [7 questions with John Christy and Roy Spencer: Climate change skeptics for 25 years](http://www.al.com/news/huntsville/index.ssf/2015/04/7_questions_with_john_christy.html).

The Guardian article was written by Dana Nuccitelli, who co-authored a paper two years ago that concluded that 97.1 percent of scientists who endorsed the idea of global warming "endorsed the consensus position that humans are causing global warming." The paper also found that 66.4 percent of 11,994 abstracts reviewed from 1991-2011 expressed no position on global warming.

Nuccitelli also published a book last month titled: "Climatology versus Pseudoscience: Exposing the Failed Predictions of Global Warming Skeptics."

The book "debunks myths such as the idea that climate scientists and climate models have grossly over-predicted global warming," according to its [ad on Amazon.com](http://www.amazon.com/Climatology-versus-Pseudoscience-Exposing-Predictions/dp/1440832013).

The Guardian article also said that "much of Spencer and Christy's contrarian research has not withstood subsequent scientific scrutiny."

The Guardian article concludes: "Spencer and Christy made a valuable scientific contribution by creating their atmospheric temperature data set. However, given how few climate scientists dispute the expert consensus on human-caused global warming, it's useful to examine their research and comments with a critical eye. When we do, it becomes clear that they have less in common with Galileo than with the scientists who disputed the links between smoking and cancer."