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Why Elon Musk's Batteries Frighten Electric Companies 417 More Prefs

Why Elon Musk's Batteries Frighten Electric Companies

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Are they really that scared? (Score:4, Insightful)

by Mr D from 63 (3395377) Alter Relationship
So, what evidence is there that electric companies are scared? Sounds like just the contention of a greeny.

Re: Are they really that scared? (Score:5, Insightful)

by Anonymous Coward

How much money they spend on protecting their status quo.

Re: (Score:3, Interesting)

by Immerman (2627577) Friend of a Friend

Do they really? The fossil fuel industry throws money around like it's confetti to undermine alternatives, but the electric companies? Do they really do any more than the usual profit-enhancing lobbying done by every government-sanctioned monopoly in the country?

--
I will miss Slashdot if Beta destroys the comment system as planned, but there won't be any reason to stick around.

Re: (Score:5, Insightful)

by disposable60 (735022) Alter Relationship

Apart from the handful of nukes and hydro installs, the electric companies are a segment of the fossil fuel industry.

--
You're looking for quotes? See my journal.

■

Re: (Score:5, Insightful)

by lgw (121541) Alter Relationship

Can you really not distinguish between *sellers* and buyers? Electric companies have no love for any particular means of generating power, they just want it cheap, and for most of them their primary concern in life is the NIMBY problem.

Electric companies, at least in some latitudes, are certainly worried about practical rooftop solar eating into their business, but for reasons that have nothing at all to do with love of fossil fuel.

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Re: (Score:3)

by pixelpusher220 (529617) Alter Relationship
It's not the mining of coal that's the major environmental problem, it's the burning of it. That's the Electric companies by and large.
--
People in cars cause accidents....accidents in cars cause people :-D

■

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Re: (Score:5, Interesting)

by lgw (121541) Alter Relationship

Yes, and? The Electric companies have no love of coal or anything else. They'll make power however it's cheapest to make it, limited in their ability to switch to new powerplants by the NIMBY problem, and limited in their ability to improve existing plants by the crazy perverse incentives in the environmental regs in most places. Natural gas is incredibly cheap right now, and generating would switch to it completely if it were practical.

(I had college roommate who was an environmental engineer who worked

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Re: (Score:4, Insightful)

by pixelpusher220 (529617) Alter Relationship

They'll make power however it's cheapest to make it

And they fight attempts to change this because it's cheaper to stand pat. Which was the point you said wasn't true. They are dumping the costs of their power production on the environment and it's time they (& we) started paying for it.

--
People in cars cause accidents....accidents in cars cause people :-D

-
-
  ›

Re: Are they really that scared? (Score:3)

by Jane Q. Public (1010737) Friend of a Friend on 2014-12-05 13:46 (#48534393)

And they fight attempts to change this because it's cheaper to stand pat. Which was the point you said wasn't true. They are dumping the costs of their power production on the environment and it's time they (& we) started paying for it.

And what costs are those, which are not already regulated, at least in the U.S. and most "Western" countries?

They (& we) **have been** paying for it, for a long time. Should they pay a bit more for the environmental damage they do? Possibly. But they already spend a fortune on smokestack scrubbers, land reclamation, etc. Which cost is passed on to you, the consumer.

The United States is among the cleanest and greenest industrialized countries on Earth, and has been for

some time.

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Re: Are they really that scared? (Score:2)

by pixelpusher220 (529617) Alter Relationship
on 2014-12-05 14:00 (#48534543)
What costs? Specifically the release of millions of years worth of CO2 into the atmosphere in just a couple centuries.

As far as scrubbers, are you saying acid rain wasn't a problem? Or Sulfur Dioxide? Or Nitrogen oxides? Mercury? Estimates are that coal plants kill thousands annually. So yes, pollute and you, and I did say we, should pay for it.

The United States is one of the leading producers of CO2 emissions. China only recently surpassed us. You seem to be both claiming we're great (clean/green) and decrying the very things that made us that 'great', the scrubbers and other requirements to NOT pollute the environment.
--
People in cars cause accidents....accidents in cars cause people :-D
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Re: Are they really that scared? (Score:0, Troll)

by Jane Q. Public (1010737) Friend of a Friend
on 2014-12-05 14:36 (#48534903)

What costs? Specifically the release of millions of years worth of CO2 into the atmosphere in

just a couple centuries.

Nobody has proved beyond reasonable doubt -- and I emphasize the word *reasonable* -- that it has caused ANY harm, at all.

Nobody has been able to **show**, convincingly, that ANY weather pattern, or either singular or collective weather events, have been caused by "CO2-based warming". Lots of stuff has been BLAMED on it, but I'm talking about actual evidence.

So I repeat: show me the costs. We do not know - and I mean very literally do not know -- that there have been any. Any at all.

As far as scrubbers, are you saying acid rain wasn't a problem? Or Sulfur Dioxide? Or Nitrogen oxides? Mercury? Estimates are that coal plants kill thousands annually. So yes, pollute and you, and I did say we, should pay for it.

I didn't say anything like that. They DID pay to clean that shit up. Or rather, you and I did. None of those things are emitted at more than a tiny fraction of what they used to be.

Is it pristine? No, it's not. But it's ONE HELL OF A LOT BETTER than it used to be, and yes, we paid for that.

If you want 100% renewables right now, you're dreaming. And while I agree that we definitely should work toward that goal, I'm not willing to pay for your dream of having it this year. That's an unrealistic dream.

And I'm sure as hell not willing to pay to clean up some CO2 demon which science says is largely imaginary. Not the CO2. That's real enough. But any "harm" is so far only theory, and that theory is looking shakier every day.

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Re: Are they really that scared? (Score:2)

by pixelpusher220 (529617) Alter Relationship
on 2014-12-05 15:27 (#48535291)
The frog in the pot says the same thing as the temp slowly warms. No concrete provable harm right now so why jump out?

But lets throw this back...
How would you prove that something going on TODAY is going to cause massive harm in 50-100 years?

Because, assuming the VAST majority of science and scientists, that is what's happening now. If we assume for a minute this is fact. That what we're doing now will cause these problems, what proof is available now to show these future results?

Is it really worth the risk to wait until absolutely concrete evidence exists when that might very well be too late?
--
People in cars cause accidents....accidents in cars cause people :-D
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Re: Are they really that scared? (Score:2)

by pixelpusher220 (529617) Alter Relationship
on 2014-12-05 15:30 (#48535309)
Nice straw man. Never said 100% renewables right now. But until you start a journey you'll never get there - which you seem to claim to want to go. Nothing for free, so we need to start paying now to get where you say you want to go. Scratch that, solar energy is free...

I'm sure as hell not willing to pay to clean up some CO2 demon which science says is

largely imaginary.

Wow, totally missed this. The science claims CO2 effects on future climate is largely imaginary? just wow. we're done here, you truly are a denier.

--
People in cars cause accidents....accidents in cars cause people :-D
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Re: Are they really that scared? (Score:1)

by khayman80 (824400) on 2014-12-05 16:25 (#48535633) Homepage Journal

> Nobody has proved beyond reasonable doubt -- and I emphasize the word *reasonable* -- that it has caused ANY harm, at all. Nobody has been able to **show**, convincingly, that ANY weather pattern, or either singular or collective weather events, have been caused by "CO2-based warming". Lots of stuff has been BLAMED on it, but I'm talking about actual evidence. ***[Jane Q. Public, 2014-12-05]***

Jane wouldn't be able to recognize actual evidence because he's a Sky Dragon Slayer who strenuously denies that "CO2-based warming" even exists. A reasonable skeptic who took this position would feel obliged to explain why Venus is hotter than Mercury. Is Venus hotter than Mercury because of CO2, gray Oreos, or basketball player gloves?

> ... And I'm sure as hell not willing to pay to clean up some CO2 demon which science says is largely imaginary. Not the CO2.

> That's real enough. But any "harm" is so far only theory, and that theory is looking shakier every day. ***[Jane Q. Public, 2014-12-05]***

An imaginary and shaky "demon"? Really? Then why did over a dozen national science academies say with one voice that "the need for urgent action to address climate change is now indisputable"?

Ironically, Jane probably **won't even have to pay** when we take action to address climate change. This study calculates that a revenue-neutral carbon fee and dividend will save lives **and** add jobs while **increasing** Americans' real disposable income. Even though fossil fuel companies pass the cost of the carbon fee onto consumers, that fee is just returned to the consumer anyway.

For a regional analysis, see figure 3.25 on page 38. Out of nine regions, real disposable income per capita only decreases in one (the western north central states). That one regional decrease is much smaller than the increases in other regions like the pacific region which includes Washington.

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Re: Are they really that scared? (Score:0)

by Anonymous Coward on 2014-12-05 20:54 (#48536763)

Re the US being the previous biggest CO2 emitter.

It's funny that The EU member countries like to trumpet that the EU has a cumulative economy bigger that the US's, but when talking about CO2 emissions they split the

figures up into individual countries...

As a matter of fact, China is currently #1, the EU #2 & the US #3

Posting as ac to conserve previous mods.

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Re: Are they really that scared? (Score:3)

by quenda (644621) Alter Relationship on 2014-12-06 2:03 (#48537395)

It is all a conspiracy, like the anti-tobacco lobby.
Noone has ever been able to point to a single case of lung cancer that can be proved to have been caused by smoking.

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Re: Are they really that scared? (Score:2)

by lgw (121541) Alter Relationship on 2014-12-06 11:11 (#48538983) Journal

How would you prove that something going on TODAY is going to cause massive harm in 50-100 years?

With science! But climate science isn't yet mature enough to make any sort of useful prediction (even the vaguest, like average world temperature, they only get right when the prediction overlaps the null hypothesis). It's hypothetically possible to have climate models so good that we can predict "sea levels will rise 10 cm by DATE given N_TONS of new CO2", and economic models good enough to predict

"a sea level rise of 10 cm will cost $X, reducing emissions by N_TONS will cost $Y, X-Y=Z".

Z tells us whether we should change anything (or rather, whether China and India should change, likely meaning a war to enforce that). We're a *long* way from science that mature. But it's *possible.*

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Re: Are they really that scared? (Score:2)

by lgw (121541) Alter Relationship on 2014-12-06 11:24 (#48539047) Journal

FYI, The tempuratures on Venus are kept so high by a *different* effect of CO2, one not at all relevant to Earth's atmosphere. At combustion-chamber temperatures, CO2 actually *reflects infrared, vs absorbing it, which is a much more dramatic effect. (Winter days are noticeably warmer when skies are overcast because of this effect from the clouds.)*

Venus has about as much carbon in the air as Earth has in it's rock cycle (all the carbon in the air, oceans, and all known fossil fues combined is a rounding error by comparison). The Earth's geological-scale carbon cycle is reasonably well understood, and quite powerfully self-regulating. There's a whole sub-field studying why Venus is different - what we learned 15-20 years ago from probes was completely unexpected (the surface of Venus has almost 0 angular momentum, and no features look older than ~100 M years - WTF?).

In any case, it's a bit silly to use as an example - it only really highlights how much we don't

know about Earth's climate.

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Re: Are they really that scared? (Score:2)

by khayman80 (824400) on 2014-12-06 11:33 (#48539093) Homepage Journal
Venus is hotter than Mercury because Venus's effective radiating level is far above its surface due to its CO2 atmosphere, while Mercury's effective radiating level is at its surface.
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Re: Are they really that scared? (Score:2)

by lgw (121541) Alter Relationship on 2014-12-06 11:47 (#48539159) Journal

But the CO2 atmosphere only has such dramatic effect because it's so hot. Why is all that CO2 in Venus's atmosphere in the first place? Does the entire surface of Venus melt several times every billion years? Why doesn't the surface rotate? It's not tide-locked to the Sun, it actually rotates slower than that, which makes no kind of sense. Is the slow rotation dominant in producing Venus's climate? The geology of the surface? It's a rich field for study, and I hope we'll be sending more probes soon, but its largely irrelevant to conversations about Earth.

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- **Re: Are they really that scared? (Score:0)**

  by Anonymous Coward on 2014-12-06 11:51 (#48539173)

  Venus just needs a sizeable moon....I'll get right on that.

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  - **Re: Are they really that scared? (Score:2)**

    by khayman80 (824400) on 2014-12-06 11:58 (#48539207) Homepage Journal
    Jane's "conversations" about Earth rely on Sky Dragon Slayer denial that CO2 warms the surface. It's quite relevant that Venus is hotter than Mercury. Sky Dragon Slayers should explain why Venus is hotter than Mercury if CO2 can't warm the surface. They usually respond by fantasizing about gray Oreos or basketball player gloves.
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    - **Re: Are they really that scared? (Score:2)**

      by lgw (121541) Alter Relationship on 2014-12-06 12:51 (#48539435) Journal

      You're only making yourself look foolish here, by oversimplifying the issue so much that you're actually wrong.

      Put in the simplest terms: if CO2 in Venus's atmosphere acted like it does in Earth's atmosphere, Venus would be quite a bit cooler. If the direct blackbody effect of CO2 being warmed by IR, and in term warming the Earth

via IR, was the primary warming concern in Earth's atmosphere *it would not be a concern.*

These High School Physics explanations of why CO2 causes warming of the Earth's surface *are wrong,* because the simple effect supports the "nothing to worry about" argument. The truth is more complex, vastly harder to model, and the results are not so obvious as you seem to think.

--
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Re: Are they really that scared? (Score:1)

by gzuckier (1155781) Alter Relationship on 2014-12-06 13:28 (#48539589)
More and more scientists are beginning to disagree that cigarettes cause global warming.
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Re: Are they really that scared? (Score:2)

by khayman80 (824400) on 2014-12-06 14:35 (#48539843) Homepage Journal

> You're only making yourself look foolish here, by oversimplifying the issue so much that you're actually wrong.

Oversimplifying the issue would be claiming there's "nothing to worry about" while over a dozen national science academies say with one voice that "the need for urgent action to address climate change is now indisputable."

> Put in the simplest terms: if CO2

> in Venus's atmosphere acted like it does in Earth's atmosphere, Venus would be quite a bit cooler. If the direct blackbody effect of CO2 being warmed by IR, and in term warming the Earth via IR, was the primary warming concern in Earth's atmosphere *it would not be a concern.*

What scientific literature supports your opinion that CO2 emissions aren't a concern? When atmospheric CO2 is doubled, what equilibrium temperature rise results? Please cite peer-reviewed papers with equilibrium CO2 climate sensitivities that you actually accept. Otherwise it's not clear what sensitivity study prompted you to claim *"it would not be a concern."*

Also, please cite peer-reviewed papers showing that CO2 emissions don't result in ocean acidification. That's also necessary before claiming *"it would not be a concern."*

> These High School Physics explanations of why CO2 causes warming of the Earth's surface *are wrong,* because the simple effect supports the "nothing to worry about" argument. The truth is more complex, vastly harder to model, and the results are not so obvious as you seem to think.

High school physics explanations? I've explained: greenhouse gases re-emit some of the upwelling long-wave IR, and it bounces around the troposphere until it gets to a height known as the "effective radiating level". Above this height (roughly 7km), there aren't enough greenhouse gases to keep "most" of the IR from escaping to space altogether. This effective radiating level controls the outflow of heat from the Earth. Stefan-Boltzmann tells us that power radiated is proportional to temperature^4, and temperature decreases with height in the troposphere. Adding greenhouse

gases raises the height of this effective radiating level, where it is cooler, which therefore decreases the outflow of heat from the Earth. This is the greenhouse effect, and it isn't saturated because the effective radiating level can just keep getting higher (e.g. Venus).

I've also repeatedly noted complex factors like pressure broadening, which makes the greenhouse effect different on Venus, Earth and Mars.

I've also told the Sky Dragon Slayers that anyone who wants a more in-depth explanation should watch this video. Note that my explanations are similar to those from Rasmus Benestad and Ray Pierrehumbert:

"Despite the fact that Venus has vastly more CO2 in its atmosphere than Earth, the same basic principles govern the operation of the greenhouse effect for both planets: the fact that air cools by expansion as it rises means that the upper parts of the atmosphere are colder than the surface, while the opacity of greenhouse gases to infrared means that infrared radiation can only escape from the upper portions of the atmosphere. Since the rate of radiation goes down with temperature, the net effect allows the planet to lose energy at a rate much lower than it would if the radiation from the surface escaped directly to space. Although most of the warm surface temperature of Venus is accounted for by its CO2 greenhouse effect, there are suggestions that it is warmer than it should be on the basis of CO2 alone. There are various theories that have been proposed for the source of the additional greenhouse effect, and sorting this out will be one of the major objectives of Venus Express."

But none of those complexities are necessary to debunk Jane's Sky Dragon Slayer insistence that CO2 doesn't warm the surface. That's because Jane and the Slayers aren't quibbling about the specific properties of CO2; they're flat-out denying conservation of energy. In

fact, they make the same mistaken claim about vacuum chamber temperatures in a simple thought experiment. I solved that thought experiment, then told Jane:

Maybe it would help if we checked my calculations step by step. Start with conservation of energy just inside the chamber walls at equilibrium: power in = power out.

The plate is heated by constant electrical power flowing in. The cold walls at 0F (T_c = 255K) also radiate power in. The heated plate at 150F (T_h = 339K) radiates power out. Using irradiance (power/m^2) simplifies the equation:

electricity + sigma*T_c^4 = sigma*T_h^4 (Eq. 1)

(Eq. 1 looks better in LaTeX, but hopefully this version is legible.)

Yes/No: can we agree that Eq. 1 is based on the Stefan-Boltzmann law and correctly describes conservation of energy just inside the chamber walls at equilibrium?

I repeatedly asked Jane this simple question, regarding the very first equation necessary to solve this undergraduate thermodynamics problem. Months later, Jane finally answered... with an incorrect Sky Dragon Slayer equation:

> My energy conservation equation is this: electrical power in = (epsilon * sigma) * T^4 * area = radiant power out ***[Jane Q. Public, 2014-10-08]***

Jane's "T" is my "T_h" (temperature of the heated source) but Jane doesn't even have a term with "T_c" (temperature of the chamber walls). As you can tell, Jane's Sky Dragon Slayer equation violates conservation of energy because Jane doesn't account for radiation flowing in through the boundary. That's why I'm asking Jane to explain why Venus is hotter than Mercury. Jane's Sky

Dragon Slayer denial of basic physics like conservation of energy isn't dependent on the specific properties of CO2, because Jane and the Slayers even deny conservation of energy in a vacuum chamber.

Sadly, neither Jane nor any of the Slayers at WUWT would answer this question: would Venus have the same surface temperature if its atmosphere were pure nitrogen, which isn't a greenhouse gas?

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Re: Are they really that scared? (Score:3)

by lgw (121541) Alter Relationship on 2014-12-06 15:29 (#48540023) Journal

There are *two* way in which CO2 interacts with IR radiation:

1) It can *absorb* IR, becoming warmer, and in turn emit IR as a blackbody.

2) It can *reflect* IR.

The energy transferred by effect 1 *depends on the temp of the CO2.* The energy transferred by effect 2 *depends instead on the temp of what's being reflected.* As these are "4th power of temp" effects, the difference is critical. **Effect 2 is important to Venus's climate, and is irrelevant to Earth's climate,** because CO2 does not meaningfully reflect IR at low temperature.

Saying "but what about Venus" gets the physics wrong (and also implies that the Earth could somehow one day become like Venus, when there's no mechanism for that).

As far as the Earth:
1) Most of the heat transfer away from the surface of the Earth is by convection - radiative

heat loss is a small effect by comparison.

2) Most of the IR energy that is radiated from the surface escapes, and the primary way in which the radiated heat interacts with the atmosphere to warm the Earth instead of escaping is by *reflection* of the IR - from water vapor, CO2 isn't in play here (and, BTW, this reflective property of clouds has a net *cooling* effect globally, since it works both ways, but still has a quite noticeable warming effect locally on a winter day, when you're the one under the clouds).

3) CO2 plays a role in absorbing a small percentage of the IR that is not reflected (which is itself a small percentage of the heat loss from the surface), and becoming warmer.

4) The increase in blackbody radiation from the warmer CO2 is trivial. Thinking of this as "look, simple physics at work here" gets it wrong.

5) The effect that does matter is this: a warmer upper atmosphere means less energetic convection (that's right: less extreme weather), which *can* have a significant effect in making the surface warmer!

If you think the process is simple and obvious, that just means you don't understand it. If you believe it without understanding it, you're acting on faith, not reason, regardless of your choice in high priests. Don't do that - either study the subject, or admit it's not important to you.

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Re: Are they really that scared? (**Score:2**)

by khayman80 (824400) on 2014-12-06 15:33 (#48540039) Homepage Journal

You still haven't cited any scientific literature to support your opinion that CO2 emissions aren't a concern. When atmospheric CO2 is doubled, what equilibrium temperature rise results? Please cite peer-reviewed papers with equilibrium CO2 climate sensitivities that you actually accept. Otherwise it's not clear what sensitivity study prompted you to claim *"it would not be a concern."*

Also, please cite peer-reviewed papers showing that CO2 emissions don't result in ocean acidification. That's also necessary before claiming *"it would not be a concern."*

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Re: Are they really that scared? (**Score:2**)

by lgw (121541) Alter Relationship on 2014-12-06 19:34 (#48540899) Journal

You simply aren't reading my posts.

It's not "CO2 emissions aren't a concern"; it's "CO2 emissions aren't a concern if all you use is high school physics". It's all explained above.

--
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Re: Are they really that scared? (**Score:2**)

by khayman80 (824400) on 2014-12-06 20:49 (#48541153) Homepage Journal

> You simply aren't reading my posts. It's not "CO2 emissions aren't a concern"; it's "CO2 emissions aren't a concern if all you use is high school physics". It's all explained above.

Nobody here is only using high school physics. I just showed that my explanations of the greenhouse effect match that of Ray Pierrehumbert, author of Principles of Planetary Climate. (Just in case you've never heard of this textbook, it **isn't** a high school textbook.)

It's disappointing (but sadly not surprising after meeting Sky Dragon Slayers like Jane) to find that lgw can't or won't cite even a single peer-reviewed study of equilibrium CO2 climate sensitivities that he actually accepts. And, frankly, ocean acidification is pretty close to being high school chemistry. Does lgw dismiss ocean acidification like Jane and the Sky Dragon Slayers do?

> At combustion-chamber temperatures, CO2 actually reflects infrared, vs absorbing it, which is a much more dramatic effect.
>
> There are *two* way in which CO2 interacts with IR radiation:
>
> 1) It can *absorb* IR, becoming warmer, and in turn emit IR as a blackbody.
> 2) It can *reflect* IR.
>
> The energy transferred by effect 1 *depends on the temp of the CO2.* The energy transferred by effect 2 *depends instead on the temp of what's being reflected.* As these are "4th power of temp" effects, the difference is critical.

If this is such a critical and dramatic effect, you should easily be able to cite peer-reviewed

articles (other than G&T) supporting and quantifying it. Right?

> Saying "but what about Venus" gets the physics wrong (and also implies that the Earth could somehow one day become like Venus, when there's no mechanism for that).

No, I've actually emphasized that:

"I'm not saying that the Earth will turn into Venus. That would be absurd. We have no reason to think that the 'runaway greenhouse' on Venus is even possible on Earth."

Rasmus Benestad and Ray Pierrehumbert agree:

"The Earth may well succumb to a runaway greenhouse as the Sun continues to brighten over the next billion years or so, but the amount of CO2 we could add to the atmosphere by burning all available fossil fuel reserves would not move us significantly closer to the runaway greenhouse threshold. There are plenty of nightmares lurking in anthropogenic global warming, but the runaway greenhouse is not among them."

> CO2 plays a role in absorbing a small percentage of the IR that is not reflected (which is itself a small percentage of the heat loss from the surface), and becoming warmer. The increase in blackbody radiation from the warmer CO2 is trivial. Thinking of this as "look, simple physics at work here" gets it wrong.

I've already explained complex factors like pressure broadening, which don't change the fact that CO2 warms the surface. For instance, how would surface temperatures change if all the CO2 in the atmosphere suddenly vanished? Sky Dragon Slayers have a simple (and wrong) answer: it wouldn't. What's yours?

> Most of the heat transfer away from the surface of the Earth is by convection - radiative heat loss is a small effect by comparison.

I've explained that to a first approximation, convection establishes the lapse rate (the rate at which temperature drops with altitude in the troposphere). That establishes the slope. Adding greenhouse gases increases the effective radiating level, which increases the "y-intercept" of the temperature vs. altitude line. Both are necessary to determine the surface temperature (along with the Sun's brightness and the Earth's albedo, etc.)

> If you think the process is simple and obvious, that just means you don't understand it. If you believe it without understanding it, you're acting on faith, not reason, regardless of your choice in high priests. Don't do that - either study the subject, or admit it's not important to you.

By "study the subject" do you mean reading crackpot websites, or getting physics training from an accredited university, leading to a physics PhD and a career studying Earth science? I ask because I've wasted years "talking" with anonymous internet ninjas who lack the physics training to even recognize that they lack physics training. Since you know my name and my physics training, what's yours? Knowing your physics training will help me calibrate my explanations to your educational background.

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Re: Are they really that scared? (Score:2)

by Jane Q. Public (1010737) Friend of a Friend

on 2014-12-07 15:18 (#48544541)
Public Service Announcement

Readers: It is my policy to not respond to this person, and I want other people to understand why. There are records right here on Slashdot, in black and white, showing him to have violated clear agreements he made, and to have rather blatantly misrepresented the words of others, in order to try to bulldoze away dissent.

When I have solid, unimpeachable evidence that someone is willing to lie and be a hypocrite, and commits other unethical acts I will not mention here. It would serve no genuine purpose. He started harassing me when I challenged his incorrect answer to a physics problem several years ago, and as you can see he has not yet ceased. When I showed him that textbooks on the subject contradicted his answer, he merely doubled down on what I consider to be continued harassment.

(He also knows that the Venus argument is a prime example of circular reasoning: greenhouse gas theory says that is the reason Venus is hot, therefore Venus proves greenhouse gas theory on Earth. It's a ludicrous argument.)

Those are examples of why I do not reply directly to this person. Whenever I have, he merely doubled down on the nonsense, misrepresentation, and what I consider to be harassment. So it would serve no purpose.

End of PSA. Have a nice day.
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Re: Are they really that scared? (Score:2)

by Jane Q. Public (1010737) Friend of a Friend
on 2014-12-07 15:25 (#48544563)

Jane's "conversations" about Earth rely on Sky Dragon Slayer denial that CO2 warms the surface.

CEASE misreprenting my position and my words.

We had an agreement: when we discussed Spencer's "back radiation" experiment, I made it abundantly clear that we were discussion ONLY Spencer's experiment, not "greenhouse warming".

Since then, you have consistently, improperly, and dishonestly misrepresented argument as including "global warming" even after repeated statements that I did not make that argument, and in fact you agreed that you understood this before we had our long discussion of Spencer's experiment..

If you cannot represent my position correctly and honestly (and you have repeatedly demonstrated your unwillingness to do so), then don't try to tell other people what my arguments are. Quotes taken out of context from 5 years ago also count against you, not for you.

CEASE misrepresenting my words. You have been warned repeatedly.

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Re: Are they really that scared? (Score:2)

by Jane Q. Public (1010737) Friend of a Friend on 2014-12-07 15:38 (#48544613)

There are two way in which CO2 interacts with IR radiation:

In the interest of goodwill I would warn you about trying to argue with this person. I have

documented proof that (a) he doesn't argue honestly, (b) he will personally hound and harass people, *especially* if they prove him wrong. He doesn't seem to be able to accept being wrong.

For example: he insisted on debating Roy Spencer's radiation experiment. I agreed to do so only on the condition that it was *understood* that I was debating only Spencer's experiment, not global warming.

When I showed him that the mainstream physics, textbook solutions to the temperatures in Spencer's experiment disagreed with his (and Spencer's) conclusions, he hasn't ceased demanding that I solve it a different way of his own devising, which doesn't appear in any textbook on radiative heat transfer, anywhere.

He is still doing so, when the whim strikes him; he did it again just a few days ago. And as you can see, even though I told him in no uncertain terms that we were debating **only** Spencer's experiment (his agreement can still be seen here on Slashdot), he insists that I am a "Sky Dragon Slayer", simply because I stated that Pierre Latour's radiation physics were correct. (For the record, I have never read the "Sky Dragon" books.)

I do assert that there is no solidly demonstrated cause for concern over CO2. This person conflates that position of mine, with my use of **textbook** physics to refute Spencer, as somehow proving I am a Sky Dragon Slayer.

If you insist on arguing with him, prepare to have your words repeated -- for years -- out of context and in distorted and misleading ways. I suppose it's possible that it's some kind of personal vendetta against just me, but I suspect an actual personality flaw.

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Re: Are they really that scared? (Score:2)

by lgw (121541) Alter Relationship on 2014-12-07 16:00 (#48544667) Journal

Have fun beating some strawman to death - you're certainly not arguing against anything I've posted.

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Re: Are they really that scared? (Score:2)

by lgw (121541) Alter Relationship on 2014-12-07 16:07 (#48544693) Journal

Yep, the guy's at least 800 milli-Timecubes!

The interesting thing to me is that Spencer seems to be missing the point. Direct radiative heating of the Earth's surface by CO2 in the atmosphere is a Lie-to-children in the first place, and people who defend it based on religious faith really make themselves look silly.

The point people should get about global warming is that it's quite a complex process, not easily modeled, and all current hypotheses about it could well be seriously wrong (as is normal for a young science). But you can't build religious faith around that, can you?

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Re: Are they really that scared? (Score:2)

by Jane Q. Public (1010737) Friend of a Friend
on 2014-12-07 21:20 (#48545481)

The interesting thing to me is that Spencer seems to be missing the point. Direct radiative heating of the Earth's surface by CO2 in the atmosphere is a Lie-to-children in the first place, and people who defend it based on religious faith really make themselves look silly.

Well, the fact is that mainstream textbooks which deal with radiative heat transfer (I have at least 3 of them, maybe 4 if I look around) show Spencer's conclusion about his little *gedankeneksperiment* to be quite wrong.

As I have stated to that person (I prefer not to mention names in this case) many times: I do not deny that there may be a greenhouse effect of some sort, but if there is, it doesn't work via the simple back-radiation mechanism that is usually given as the explanation. That explanation violates the Second Law of Thermodynamics. (Latour's original written explanation was rather short and rough; one could wish he had been more thorough. Then there might have been less controversy about it.)

Nevertheless I did not merely echo his statements but took the trouble to research the subject myself. My textbooks do agree with Latour about his main point, which is that direct warming of a surface via back-radiation from a cooler atmosphere is impossible, just as Spencer's warming of the only heat source by a cooler passive plate is impossible.

I've been all over this topic with many people. Some compare the back-radiation concept to an insulator such as a blanket (100% incorrect), or even worse, a reflector. Also 100% incorrect, but worse because there seems to be more of an intuitive connection... which is quite false. Most people just don't really

understand radiative heat transfer. So much is clear. One person tried to tell me that IR *reflection* from the underside of a cloud was proof of back-radiation.

Sigh. It has been an uphill battle.

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Re: Are they really that scared? (Score:0)

by Anonymous Coward on 2014-12-08 9:46 (#48548531)

Points wrong:

Most of the flux IS NOT via convection. Do you know why not? There's no way to get rid of heat into a vacuum via convection.

Most of the loss is via IR radiation from the TOA, as defined by optical opacity. And the more CO2, the higher the TOA and since it gets colder the higher you get, due to stephan's law, it radiates much less.

Reflection has little effect in IR, but does reduce the recieved solar radiation in visible. Most solids are "black" to IR and are good absorbers and poor emitters/reflectors.

The claim #3 is wrong
The claim #4 is merely a claim
Claim 5 does not compute. Weather includes rain and clouds, and Cassius-Clapeyron means that as the earth warms, more H2O vapour and hence more weather.

If you think you know better than 98% of the climate scientists what is going on in the climate, you're wrong.

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Jane/Lonny Eachus goes Sky Dragon Slayer (Score:2)

by khayman80 (824400) on 2014-12-09 21:20 (#48561969) Homepage Journal

Sadly, lgw still hasn't objected to Jane's Slayer misinformation even though I gave lgw a generous two days to show that he's a true skeptic. So let's review the basic physics in this thought experiment. A source is heated by constant electrical power inside a vacuum chamber with cooler walls.

Here's how to use the principle of conservation of energy. Draw a boundary around the heat source:
power in = electrical heating power + radiative power in from the chamber walls
power out = radiative power out from the heat source

Since power in = power out through any boundary where nothing inside is changing:

electrical heating power + radiative power in from the chamber walls = radiative power out from the heat source

For a simple example, blackbody cold walls are at 0F (T_c = 255K) and the heated blackbody source is at 150F (T_h = 339K). Using irradiance (power/m^2) simplifies the equation:

electricity + sigma*T_c^4 = sigma*T_h^4 (Eq. 1)

See? Applying conservation of energy isn't that complicated. In contrast, Jane's incorrect Sky Dragon Slayer equation violates conservation of energy:

> My energy conservation equation is this: electrical power in = (epsilon * sigma) * T^4 * area = radiant power out ***[Jane Q.***

> ***Public, 2014-10-08]***

Jane got the very first equation wrong, because Jane refuses to write down an energy conservation equation for a boundary around the source without wrongly "cancelling" terms.

> ... pick up a textbook on heat transfer, and **see what the accepted, textbook, "consensus" science says about it.** Hint: they don't agree with you. ***[Jane Q. Public, 2014-10-05]***

Once again, mainstream physics is based on conservation of energy. That means power in = power out through any boundary where nothing inside is changing.

> ... I have no obligation -- or reason -- to engage in your game of "No, but you HAVE TO do it this way...". Especially when "mainstream physicists" and textbooks on the subject say I don't. No, I don't have to do it according to your own ill-conceived notions. I already did it, my way... that is to say, the "mainstream physics" way. ... ***[Jane Q. Public, 2014-11-27]***

> ... My textbooks do agree with Latour about his main point, which is that direct warming of a surface via back-radiation from a cooler atmosphere is impossible, just as Spencer's warming of the only heat source by a cooler passive plate is impossible. ... ***[Jane Q. Public, 2014-12-07]***

Once again, I'm trying to point out that you and the other Slayers misunderstood your textbooks. Electrical heating power depends on the cooler chamber wall temperature. "Radiant power output" doesn't. Sky Dragon Slayers have confused two completely different fundamental concepts.

> ... When I showed him that the mainstream physics, textbook solutions to the temperatures in Spencer's experiment disagreed with his (and Spencer's) conclusions, he hasn't ceased demanding that I solve it a different way of his own devising, which doesn't appear in any textbook on radiative heat transfer, anywhere. ... ***[Jane Q. Public, 2014-12-07]***

Once again, it's not an ill-conceived notion of my own devising. It's a general principle called "conservation of energy". Here are some introductions: example (backup), example (backup), example (backup).

> Well, the fact is that mainstream textbooks which deal with radiative heat transfer (I have at least 3 of them, maybe 4 if I look around) show Spencer's conclusion about his little *gedankeneksperiment* to be quite wrong. ... ***[Jane Q. Public, 2014-12-07]***

Once again, Jane just has 4 textbooks that say "radiative power out = (epsilon * sigma)*T^4*area". I bet Jane $100 that his textbooks **don't** claim that electrical heating power = radiative power out. That's Jane's incorrect Slayer assumption. Even Jane should be able to recognize that his 4 unnamed textbooks don't support him, because deep down even Jane should be able to tell that he's just endlessly blustering to cover up the fact that he can't produce any textbook quotes saying that electrical heating power = radiative power out.

Jane also completely ignores Prof. Grant Petty, Prof. Brown, Dr. Joel Shore, and Prof. Steve Carson who also tried to educate a Sky Dragon Slayer. Notice that his eqn 9 with negligibly similar areas is equivalent to my equation, not

Jane's Sky Dragon Slayer equation.

Jane, don't you see how absurd it is for you to simultaneously insist that your Sky Dragon Slayer nonsense is "mainstream physics" while completely ignoring the fact that mainstream physicists are telling you the Sky Dragon Slayers are wrong? Doesn't that self-contradiction bother you even a little bit?

> Yep, the guy's at least 800 milli-Timecubes! The interesting thing to me is that Spencer seems to be missing the point. Direct radiative heating of the Earth's surface by CO2 in the atmosphere is a Lie-to-children in the first place, and people who defend it based on religious faith really make themselves look silly. ... ***[lgw, 2014-12-07]***

Like most physicists, I accept that energy is conserved. I'm defending this fundamental principle not because of "religious faith" but because of Noether's first theorem and the fact that our Universe exhibits time translation symmetry. If lgw seriously thinks defending one of the most fundamental principles in physics makes me look silly and at least 80% Timecube, then that says more about lgw than about me.

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Re: Are they really that scared? (Score:2)

by khayman80 (824400) on 2014-12-09 21:53 (#48562091) Homepage Journal

> Most solids are "black" to IR and are good absorbers and poor emitters/reflectors.

Perhaps you meant that most solids are "black" to IR and are good absorbers/emitters and poor reflectors.

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Re:Jane/Lonny Eachus goes Sky Dragon Slayer (Score:2)

by Jane Q. Public (1010737) Friend of a Friend on 2014-12-14 20:51 (#48598147)

Once again, Jane just has 4 textbooks that say "radiative power out = (epsilon * sigma)*T^4*area". I bet Jane $100 that his textbooks don't claim that electrical heating power = radiative power out. That's Jane's incorrect Slayer assumption. Even Jane should be able to recognize that his 4 unnamed textbooks don't support him, because deep down even Jane should be able to tell that he's just endlessly blustering to cover up the fact that he can't produce any textbook quotes saying that electrical heating power = radiative power out.

This is one of the rare times I will deign to respond to your nonsense any longer.

Your own insistence that power in = power out (assuming perfect conversion and no entropic losses) belies this argument. You are arguing against yourself and you refuse to see that.

If power in = power out (your own stipulation), and the only NET power INTO a defined spherical region is electrical, and the only NET power OUT of that region is radiative, then net radiative power out **at steady-state** must therefore be equal to the net electrical power consumed.

This is so **fucking** simple it is almost a tautology. As I have pointed it out to you

before.

Since this is a simple statement of conservation of energy, it is up to YOU to disprove it, and you have not. If you disagree, then point out where the other energy is coming from or going. We have already established that there is no NET radiative energy input to the sphere from the surrounding cooler walls.

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Re:Jane/Lonny Eachus goes Sky Dragon Slayer (Score:2)

by Jane Q. Public (1010737) Friend of a Friend on 2014-12-14 20:56 (#48598189)

Sadly, lgw still hasn't objected to Jane's Slayer misinformation

And perhaps not so sadly, it is quite possible -- I think even likely -- that Igw did not do so because he recognized that you were spewing nonsense.

I suggest you learn what "800 milli-timecubes" means. I doubt you will be pleased.

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Jane/Lonny Eachus goes Sky Dragon Slayer (Score:2)

by khayman80 (824400) on 2014-12-14 21:46 (#48598463) Homepage Journal

> Your own insistence that power in = power out (assuming perfect conversion and no entropic losses)

> belies this argument. You are arguing against yourself and you refuse to see that. If power in = power out (your own stipulation) ... ***[Jane Q. Public, 2014-12-14]***

I'm not the only one insisting that power in = power out through any boundary where nothing inside is changing. Once again, that's a fundamental principle called "conservation of energy". Here are some introductions: example (backup), example (backup), example (backup).

As you can tell, conservation of energy is a fundamental physics principle. Assumptions of "perfect conversion and no entropic losses" aren't applicable, and anyone who mistakenly thinks they are should read through those examples to learn about conservation of energy.

> If power in = power out (your own stipulation), and the only NET power INTO a defined spherical region is electrical, and the only NET power OUT of that region is radiative, then net radiative power out **at steady-state** must therefore be equal to the net electrical power consumed. ***[Jane Q. Public, 2014-12-14]***

Jane seems to be saying that at steady-state:

net electrical power consumed = net radiative power out

But net radiative power out of a boundary around the source = "radiative power out" minus "radiative power in", so the equation Jane just described also says:

net electrical power consumed = "radiative power out" minus "radiative power in"

However, this new equation doesn't match Jane's earlier equation:

> My energy conservation equation is this: electrical power in = (epsilon * sigma) * T^4 * area = radiant power out *[Jane Q. Public, 2014-10-08]*

Notice that Jane's earlier equation doesn't describe net radiative power out, which is why it violates conservation of energy. Is Jane retracting his earlier incorrect equation, or does Jane dispute the definition of the word "net"?

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Re:Jane/Lonny Eachus goes Sky Dragon Slayer (Score:2)

by Jane Q. Public (1010737) Friend of a Friend on 2014-12-16 15:58 (#48613341)

As you can tell, conservation of energy is a fundamental physics principle. Assumptions of "perfect conversion and no entropic losses" aren't applicable, and anyone who mistakenly thinks they are should read through those examples to learn about conservation of energy.

Utter nonsense. They are perfectly applicable in the kind of THOUGHT EXPERIMENT we were discussing, which is the ONLY context relevant to this discussion. Your own equations were proof of this... nowhere did you factor in conversion inefficiences. NOT ONCE.

Stop being a goddamned hypocrite, and go away.

But net radiative power out of a boundary around the source = "radiative power out" minus "radiative power in", so the equation Jane just described also says:

NO!!!!!

As I have explained to you **innumerable times** now, you can also consider your heat source, by itself, that "sphere". The only NET radiative power out comes from the electrical power in.

Further, the cooler walls do not contribute any of that NET power out. That's what net means.

If the sphere under consideration **is the spherical power source itself**, and no NET radiative power is absorbed from the cooler outside objects (a requirement of thermodynamics), then the only NET radiative power out ultimately comes from the electrical power in.

Power in = power out.

You don't understand what NET means. **That is your failure, not mine.** As I have explained to you many, many times now, you are counting some radiation twice, which is simply bad math.

END. You are wrong. You were proved wrong long ago. GO AWAY and stop bothering me with your nonsense.

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Jane/Lonny Eachus goes Sky Dragon Slayer (Score:2)

by khayman80 (824400) on 2014-12-16 17:31 (#48613841) Homepage Journal

> But net radiative power out of a boundary around the source = "radiative power out" minus "radiative power in", so the equation Jane

> just described also says:
>
> > NO!!!!! As I have explained to you innumerable times now, you can also consider your heat source, by itself, that "sphere". The only NET radiative power out comes from the electrical power in. Further, the cooler walls do not contribute any of that NET power out. That's what net means. ***[Jane Q. Public, 2014-12-16]***

As I suspected, Jane disputes the definition of the word "net". Jane didn't get his nonsensical definition from any of his textbooks, because in physics, net power through a boundary around the source = "radiative power out" minus "radiative power in".

That's what net means. But after it became clear that Jane is hopelessly confused about the very term "NET" which he keeps capitalizing, I explained conservation of energy in a way that didn't require using that troublesome word. Draw a boundary around the heat source:

power in = electrical heating power + radiative power in from the chamber walls
power out = radiative power out from the heat source

Since power in = power out through any boundary where nothing inside is changing:

electrical heating power + radiative power in from the chamber walls = radiative power out from the heat source

Notice that this equation is equivalent to the equation Jane just described, but only if Jane uses the physics definition of the word "net". And in order to derive it, I didn't even have to use that word which has Jane hopelessly confused. All I had to use was conservation of energy.

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Jane/Lonny Eachus goes Sky Dragon Slayer (Score:2)

by khayman80 (824400) on 2014-12-19 12:06 (#48637161) Homepage Journal
Continued here, here, and here.
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