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[00:00:00] I am most grateful to Tom Nelson for kindly hosting this talk in which I raise the question whether the entire concern about climate emergency arose from a single catastrophic error of physics right at the heart of climate scientists calculations of how much global warming we may cause. That is the remarkable proposition that I shall be putting to you and proving by mathematics today.

But if you haven't got an hour and a bit to spare, this will be a full academic lecture. I'm going to give you a six or seven minute summary. This is the costliest error in the history of science. In 1984, climatologists borrowed the mathematics of feedback amplification in dynamical systems. Those are systems that changed their ti their.

The state over time in a mathematically representable [00:01:00] way from a discipline in engineering physics known as control theory with which they were unfamiliar, they misunderstood and misapplied what they borrowed in effect. Remarkable though it may seem and silly though it may sound at the outset, they forgot the sun was shining.

They predicted that feedback response, as it's called, we'll define it later, represented two thirds of all the warming we cause. Yet in 1850 it only represented one 12th of global temperature. So what did they got wrong? Well, they neglected the emission or sunshine temperature. That drives almost all feedback response.

They left it outta the feedback loop. They miscounted the large feedback response to the large predominant emission temperature as though it were part of the small feedback response to the small direct anthropogenic warming. Now we're going to look at an example of this so that you can get an immediate idea of what we're talking about here, and we're going to go back to [00:02:00] 1850 when the temperature was at equilibrium, and that's useful.

Because there would be no trend in global temperature for 80 years thereafter. And this was also the first year for which an, uh, a global temperature was derived and it was 288 kelvin and that had three components. First of all, the overwhelmingly predominant 255 Kelvin emission or sunshine temperature.

Secondly, the natural reference sensitivity, NRS, that's the direct warming. The reference warming. The warming before you had feedback response from the pre-industrial non-condensing, non-water vapor greenhouse gases that were in the air in 1850 when we really weren't influencing the climate much, if at all.

That's eight Kel. And then you have the rest of it is feedback response 25 Kel. Therefore. So the reference temperature in 1850,

which is the temperature before you add any feedback response, the direct temperature was 263 kelvin and the greenhouse effect [00:03:00] was 33 kelvin. And you can see how we arrive at those values there, which are mainstream mid-range values.

But the question is this feedback response, what is it? Feedback response to feedback response to what? Well, I asked Sir John Horton that when a merchant bank had asked me to find out whether global warming was a problem, and I spoke to both sides, and Sir John Horton was then the. Head of the IPCCs science panel and I said to him, look, I've got a question.

The direct warming, by us doubling the CO2 in the atmosphere is about one kelvin. That's the reference double CO2 sensitivity RCS. But the final warming that you boys predict is two to five kelvin. That's ECS, the equilibrium sensitivity to double CO2. After all the feedback processes have acted, the feedback response has been added and the climate has settled down to equilibrium again.

So one Kelvin, you start with, you end up with two to five Kelvin. Why do you think that the feedback response, which is the difference between those two's so [00:04:00] big, and he said, well, you take the greenhouse effect in 18 50, 33 Kelvin. You divide it by the eight Kelvin natural reference sensitivity, and that gives you a multiplier.

Which is the closed loop gain factor of 4.1. So we said you're gonna get about four kelvin of final warming by doubled, um, CO2. And it wasn't until sometime later that I realized what he got wrong. I. And the whole of climatology has got this wrong. We can't find a single paper anywhere that gets this right.

He had forgotten and so had they, that you have to include the emission or sunshine temperature, which is so overwhelming and predominant in the climate as the input to the feedback loop. And that means it must appear top and bottom in the ratio. That is that feedback multiplier or closed loop gain factor.

And at the bottom of the screen from our paper, you can see how this ought to be done and ought to have been done. And that means that the feedback multiplier comes down from 4.1 to 1.1 and say a final warming is 1.1 Kelvin and [00:05:00] not 4.1. And as we'll see, because of this huge error of leaving out the sunshine from the input to the feedback loop, they predict between two and five times too much global warming.

Correct that mistake. And the climate emergency vanishes. Now the first explicit instance of the error was in 1984, appropriately enough in a paper by James Hansen at nasa, where again, just like Horton, he left out the sunshine temperature. And as you can see, his calculation is broadly similar to that of HA of Horton, and he comes to much the

same conclusion.

The error as stated in IPCCs 2021 report. They define climate feedback by which they mean temperature feedback has an interaction in which a perturbation causes a change and the change causes an additional change, and the initial perturbation is weakened or strengthened by the changes in the perturbation of the perturbation of the perturbation.

It is all about changes in perturbations. Nothing about the fact that [00:06:00] what is really going on is that the feedback processes in the climate, which are inanimate, they can't pick and choose between one kind of one kelvin of temperature and another. They must respond to the entire reference temperature that they find at a given moment.

They cannot pick and choose and say, we're not going to respond to the sunshine temperature, and we'll see exactly why. This is mathematically later on. It's almost as though they're pointing away from realizing it is the absolute sunshine temperature That is the key to understanding the feedbacks in the climate.

Now, after correction of their grave error, which has been universal in climate sensitivity since 1984, they predict at least twice the warming they should, and therefore their error leads them to imagine incorrectly that unabated global warming will be large, rapid, harmful, and catastrophic. When after correction, it will continue to be as it has been, small and slow, harmless and net beneficial.

There is no climate emergency, and there's your six minute summary. Now we go into the detail. First of all, what is temperature feedback response? [00:07:00] Well, it's an additional indirect temperature, engendered by and proportional to a direct temperature and in official climatology. About two thirds of predicted warming at mid-range is thought to be feedback response.

Why? Because they say RCS is about one kelvin ECS at mid-range they predict is three kelvin and they've predicted that since 1979, more or less consistently. And that means the difference is the feedback response of to Kelvin. And you can see the uncertainties there, but therefore. Two thirds of all the final warming that they predict.

The ECS is in fact feedback response are not the directly forced warming by our sins of emission of various greenhouse gases. And that is why IPCC uses the word feedback 1100 times in its 2013 report and more than 2,500 times remarkably in its 2021 report because it thinks that that's where [00:08:00] most of the warming we cause is going to come from and as we'll see it.

And climatology as a whole is almost certainly wrong about that. So now what are these temperature feedback processes? Well, it's only the

short acting feedbacks that operate in, in timescales of hours to years, decades at most, that are sensitivity relevant. And these are the water vapor lapse rate cloud and albedo feedbacks.

However, the present result requires no knowledge of the intensity of any individual. Feedback. Now, the only one that really matters here is the water vapor feedback, which is the principle temperature feedback, simply because there's so much water vapor in the air and because all other sensitivity relevant feedbacks, broadly speaking, self cancel.

And directly warmed air by a process known as the Clases Clap. Iran relation, which is well established result in physics, may carry more water vapor, which is itself a greenhouse gas, which amplifies the direct warming that caused the extra water vapor to be there. So the water vapor feedback does exist, is a real [00:09:00] thing.

It is positive, but as we'll see, it's nothing like as big as they imagine it to be. TI Hins, a Swedish research chemist who won the No World Prize in 18 18 96. He first tried to allow for water vapor feedback and he predicted five to six Kelvin ECS at or somewhat above the top end of the range, which is canonical in topology today.

However, control theory, the theory of feedback amplification, which is applicable to all feedback moderated dynamical systems from electronic circuits to steam engines, rockets, and climate. So this is rocket science. We are going to be doing some fairly difficult mathematics as we go through this, but don't worry, I'll hold your hand and the results are so explosive that you will want to stay with this all the way.

It would not be derived and formalized until Harold s Black's paper of 1934 at Bell Labs, then in New York, uh, on feedback amplification and the subsequent textbook by his colleague Hendrick Wade Boda [00:10:00] also in 1945, and this was one of the best. Selling textbooks in the world. It went through several editions every year for 30 years.

And here is Black's feedback amplifier block diagram from his original paper of 1934. You'll see there, there is a, uh, a square feedback loop and there are four elements attached to it. The input and output signals at left and right and the two multipliers, the direct game block at the top, and the feedback block at the bottom.

And then also he has put at the top right of his, of his slide, uh, the output over the input, that's ET over R zero. And that is, he calls it a And so we, in his honor will also call it a, that is the closed loop gain factor. And you'll see he calls it mu of a one minus mu beta. We'll use the modern notation, G over one minus gh.

And here the subscript T is for time. So t if it equals one is 1980,

and if it equals two, [00:11:00] it's the present day. So there is the feedback block, and we're going to see how the, how the feedback loop I should say. And we're going to see how this works in more detail a bit later on. And here is bode's diagram.

And it was seeing this diagram when I realized that there was an input voltage going into this, which was an absolute quantity and not. A mere gain signal that I realized that climatology had left out the sunshine. And that's when our research project on this began. And here then is we're now going to start getting into more detail.

We're going to look at the initial conditions that we need to understand what we're doing here. And these are the basic quantities. We need to understand the basic variables that are used in climatology, and we're going to be using mainstream methods to derive these, and we're going to derive mainstream mid-range values unless we say otherwise.

So first of all, the net inbound radiative flux density, and this is obtained by the equation you [00:12:00] see there, 241 watts per square meter, and it's derived from the total solar irradiance and today's albedo or reflectance, by which about 30% of the total solar irradiance is thrown harmlessly straight back into space.

So this equation allows for that to happen. And that's a standard equation of standard value. Then we have the Stefan Botsman constant, and this is Sigma. And it's the constant of proportionality between the net inbound radiative flux density that we've just seen, and the emission temperature R Sub-Zero, which we're about to see.

And here pi is the circumference diameter ratio. K is the boltman constant, H is planks constant, and C is the speed of light in a vacuum. Now, you will not find many climate papers that go into this kind of detail about the fundamental physics underlying how much warming we may cause, but in this paper we do do that.

So we're gonna work you fairly hard, but don't worry, the result is a very cheerful one. So [00:13:00] here then is the big enchilada, the emission temperature, 255 Kelvin. And you see there's an additional term we haven't mentioned yet in the Stefan Boltman equation. And this equation incidentally, was first derived empirically by Stefan Lovine.

It's the only equation, um, that has, that Lovine has given his name to. And it was proven 10 years later by his Austrian pupil Ludwig Mann by reference to plank's radiation law. And you'll see there is a term for emissivity there, because the emissivity of the earth's surface is not unity. It's about North 0.936.

However, a climatologist simply assume that it's unity and that gives them a, an emission temperature of 255 kelvin. That's the standard

value. Now since the emission temperature much exceeds other temperature signals, the present result isn't affected even if the emission temperature is quite a lot greater or less than shown.

For instance, if we were as one strictly should to allow for holders [00:14:00] inequalities between non-linear integrals by. Uh, taking, uh, examples of this equation and applying them at each latitude to the cosine of the solar zenith angle and then integrating over the entire spherical surface, then you would get sort of 241 to 200 and, um.

Sorry, 247, I should say, to 251 Kelvin of emission temperature. A little bit less than shown here. If on the other hand we were to include the proper emissivity of oh 0.936 from the I-S-C-C-P data, that would take it up to 260 kelvin. But we're just going to use climatologist's value because it leaves them less to argue about.

And now we're going to look at another quantity, which is very important. This is the plank response P, and this is the scaling factor between the net inbound radiative flux density from the sun, and today's 289 Kelvin surface temperature, which replaces emission temperature [00:15:00] in the reciprocal shown at the bottom of the slide of the derivative of the Stefan Boltman equation that we've just seen.

And why do we make this as a reciprocal of the. Derivative. That's because then you can use the plank response as a multiplier. So you multiply the plank response by any direct radiative forcing such as that, which we have caused since 1850. And that will tell you the direct temperature caused by that, uh, forcing before you add any feedback response.

But then if you have a feedback forcing, which is denominated in WATS per square meter per Kelvin, and you multiply that by the plank parameter, then what you get is a feedback factor, which is unitless. So both on the direct temperature and on the feedback amplification side of the global warming equation, the plank response is crucial.

It is therefore part of the reference frame within [00:16:00] which we calculate how much global warming we may cause. So that's why we take the reciprocal there, simply an easier way to understand it. Now, the IPCC. Uh, it doesn't take the reciprocal, it just says it's 3.22 kelvin wa per square meter per kelvin. So if we were to take the reciprocal of that, it's nor 0.311.

That value is marginally more helpful to the official case than our value, so we're going to use their value again to minimize conflict. Now, the initial conditions in 1850 time subscript T is one, are NRS, which is eight Kelvin, and that's simply the product of the 25.3 watts per square meter rated to forcing from the natural, pre-existing, non-

condensing non-water vapor greenhouse gases as they were in 1850 and the plank response.

And then you have the reference temperature. This is the temperature before you add any feedback response, and that is simply the sum of the emission temperature and the eight kelvin of NRS 263 kelvin. Then [00:17:00] the open loop gain factor is simply R one divided by R zero. It's 1.0314, which is very close to unity, and that will be useful to us later.

Then you have the observed equilibrium temperature of 288 kelvin, which we've already talked about, and using these initial conditions, and this is why we use initial conditions, you can immediately work out what the feedback response actually was in 1850 and it was 24.2 Kelvin. But that's only 8.4% of the equilibrium temperature that year.

And precisely because it was an equilibrium temperature, we know that therefore, using the data for that year, it would be 8.4% of ECS, which would give you the 1.1 uh, kelvin of ECS that we saw when we were correcting Horton's calculation. And so they think it's 67% of global warming, and actually it's 8.4%.

Now, what about the initial conditions today? Well, here we have the double CO2 equivalent radiative forcing since [00:18:00] 1850 3.5 watts per square meter. That's the mid-range value in the current CIP six, as it's called, generation of these enormous, um, general circulation models of the climate. And it's also broadly equivalent to the forcing from all the various anthropogenic greenhouse gases since 1850.

And that coincidence will be useful to us later as well. Now, the RCS is one Kelvin. How do we get there? You multiply 3.5 by the plank response and you'll get a little bit more than one Kelvin, but one will do, uh, for, for rounded numbers here then. Reference temperature before feedback response is simply one Kelvin RCS added to the reference temperature in 1850.

So 264 kelvin. The open loop gain factor, that's the direct gain factor before feedback response. That is the, the feed the gain block at the top of black's diagram, if you remember, that is R two over R zero 1.0353, just a bit more than the 1.0314 we saw for [00:19:00] 1850, but again, close to unity. So those are the initial conditions we're using and there would be no great argument in climatology about any of these.

Then we have the feedback variables. Here's where the arguments really would begin to start. But at the moment, we're just gonna look at the formula for these and we're going to look at the corrected feedback variables. And we use upright characters to designate feedback variables rather than any other kind of variable.

And if they're capitals, they're the corrected ones. And if they're lowercase, upper, upper, uh, upright characters, then those are the wrongheaded erroneous ones used by climatology. See, here are the correct ones. Feedback intensity. Lambda is designated in watts per square meter per Kelvin of the reference temperature that engendered it or of course of the final, um, temperature to which it is a contributor.

And you can, you can do it either way and it's the sum of the short acting feedback intensities whose values, for the purposes of this presentation, we don't need to know. And [00:20:00] now we have the feedback factor, the operant in the feedback loop. That's what does the business inside the loop, and it's simply the product of the feedback intensity and the plank response.

But you'll also see a control theoretic formula for that and for the next two as well. And these control theoretic formula virtually don't appear at all in any climate paper 'cause they don't know these. Now, the closed loop gain factor, the feedback multiplier that a, if you remember at the top right in black's drawing, that's the ratio of the output to the input signal of equilibrium temperature to emission temperature.

And it's equal to G over one minus D eight, exactly as we saw on black's slide. Then the feedback response in Kelvin is simply the ratio. Of the feedback factor to the equilibrium temperature. And so that gives you, uh, the feedback variables. That's how they should be derived. Now we're going to look at three different ways of [00:21:00] working a feedback loop.

And the first one is the correct one. This is the normative, um, net method, which is used in, which would be used in control theory itself. You can see this diagram looks very like black's diagram and bode's diagram. You have the input signal coming at the left, the output signal at right, and the two blocks there, the direct game block and the feedback block.

And what you're seeing here with all these different equations that we've dotted around this. Um, presentation is, you are looking at this at a particular moment, which is after the temperature signal has been an infinite number of times around the feedback block, and therefore the direct gain signals have been taken into account by the open loop gain factor.

The feedback signals have been taken into account by the feedback block and the feedback factor, and the whole thing has settled back down to equilibrium as it would be today once all these feedbacks [00:22:00] had acted and the climate has settled down. So you're looking at this as a kind of photograph of what has happened once the

feedback amplifier has finished operating.

These are the equations you get. And so how do we get ECS out of this? Because, you know, if you, if you, you've got your output signal, which is just the equilibrium temperature that is then multiplied by the, uh, feedback factor. And the feedback factor itself is the product feedback intensity and the plank response that gives you the feedback response, which is added to, uh, the emission temperature, R zero at the summative input node.

It's as those were an electronic circuit, and then those go forward and are multiplied by the open loop game factor. And so round and round it goes, how do you get ECS out of this? Because these are all absolute quantities as they should be with the, the absolute sunshine temperatures, the input and an absolute temperature is the output.

But what you do is you take the, uh, you work out what E two is, the equilibrium temperature as it would be today. You deduct E one [00:23:00] in 18 5288 kelvin from that, and that gives you ECS. Because of that coincidence that all the forcing we've caused since 1850 for all greenhouse gases is coming up to the, um, forcing that they would predict from doubling the CO2 on its own.

So that's how that works. Now we look at two further. Loops and these are the methods B and C. And you'll notice the immediate difference between them and what we've just seen, there is no gain block. Now why is this? That is because in their way of doing it, which is in red, at the bottom, they have got rid of the sunshine temperature.

They don't realize you have to have it in. They've even left out the NRS as well, the eight Kelvin of directly forced warming by the natural greenhouse gases. And so they, they have taken the smaller of the two gain signals, which is the one Kelvin, RCS. And they've used that as though it were, I. The input signal so there's no room for a gain block.

And so we to try and give [00:24:00] a more direct comparison between how it should be done and how they do it. We have taken out the gain block as well, but we have not ditched the sunshine temperature. We've also included NRS as well as US S so that the 264 Kelvin reference temperature R two becomes the input signal.

And if you do that, then you get answers very, very close as we'll see later to what you'd get if you use the strictly normative formula. So you can use the simplified normative formulas and it gives you equations that look very similar to those that are used by climatology, except that, of course, ours are all with absolute quantities and theirs are all with deltas.

And we'll see the catastrophic effect of using deltas rather than

remembering the sunshine as we get through this. So now here just to look at, not to study in detail at this point are. The various control theoretic equations. The ones in Greek at the top are the definitional equations, and only one of these is specific only to climatology.

That's [00:25:00] the one for the feedback factor eight, the product of feedback intensity and the plank response. All the others are what you'd get in. Any feedback amplifier. Now, from those, there are various equations you can derive and we've derived just a few of them here because they are useful to us in our calculations later.

But the, and, and you can come back and look at this at your leisure to make sure that these have been derived correctly, but these are indeed correct, and the only one we're going to look at in more detail now is the one at the bottom. So let's look at that. And this equation tells us why it is that you simply cannot ignore the sunshine temperature when you are trying to calculate how much global warming we may cause.

If in doing that you are using feedback formulas to do it. And so we take, uh, the equilibrium temperature E on the top left here, and that of course is the product of the emission [00:26:00] temperature and the closed loop gain factor A. And we know that A is equal to G over one minus GH reading across that top line there.

And then because G is equal to G two is equal to R two divided by R zero. If you multiply R zero by G two, you get R two. But then what you get is R two times one over. One minus the quantity G, two times H two, and that you will recognize as the closed form sum of an infinite aedan geometric progression of the powers of that common ratio, which is the product of the.

To multiply blocks in the feedback loop G two and H two, and so let's now actually do the explicit spelling out of what's going on each time. That signals, they were an electronic signal. It's a temperature signal goes round and round and round. That feedback circuit, that feedback loop there is added. To it, the product [00:27:00] of the entire reference temperature R two, in which 97% is the emission temperature, R zero and a successively higher power of the product of the two game blocks, G, the direct game block and the feedback game block G two and H two.

And so you can see that spelled out there, uh, to the power north, then to the power one, and all the way up to the power of infinity. And that comes to this closed form, sum subject to the convergence criterion, which however, is always applicable in the climate and amply. So provided that you remember that the sunshine temperature is the input to the feedback loop and that converted criteria is that the product of GNH shall be less than one, any real number less than one will do, but it must be less than one.

So that then is why it is that mathematically speaking, you cannot ever leave out our theory. You cannot do what they tend to say in their reviews of our paper. Oh, but we can linearize about the present state of the [00:28:00] climate by using Taylor series expansions for the reasons we shall see very clearly.

You can't do that and expect to get a right answer if you leave out the sunshine temperature. So now what are the values of the various feedback parameters? We're going to work backwards from the um, projected two to five kelvin of ECS in order to derive these values one by one. And first of all, we're going to look at what is the equilibrium temperature for each of these two to five Kelvin projected ECS.

Well, we simply add the 288 Kelvin of. Uh, equilibrium temperature in 1850 to the two to five Kelvin, and that gives you 290 to 293 kelvin. That broadly speaking with equilibrium temperature today for each of those predictions of global warming. And from that, we can immediately work out by dividing the equilibrium temperature by the, um, input temperature, which is of course [00:29:00] the sunshine temperature.

You get, um, a closed loop gain factor A of 1.14. Giving you two Kelvin of ECS and 1.15, giving you five kelvin of ECS 1.14 to 1.15. Dear, begin to see the problem. You would need to know these feedback variables to precision, which as we shall see is entirely unattainable. If you wanted to use feedback formulas even to tell you whether or not you fall in that two to five kelvin range, let alone where in it that you come and the same is, is going to, you get the same result if you use the simplified formalism with a two asterisk, and then if you use their method in red, then you get.

Closed loop gain factors of 2, 3, 4, and five. So their closed loop gain factors and therefore their predictions of ECS are 2, 3, 4 or five times too big. And now you have the same problem with the unitless [00:30:00] feedback factor, which we derive using the control theoretic formalisms we, we looked at briefly earlier formula, I should say we used earlier.

And you'll see that in particular their value is 10 times too big. So this is an order of magnitude error or an order of magnitude in physics or mathematics being approximately a factor of 10. So this is a large and serious. Error. And now we get to the originating feedback variable. We've worked our way slowly backwards so that we can find it.

And this is Lambda, and it is simply the ratio of the feedback factor H to the plank response P. And again, you would need it to note to a very high precision to get your ECS to the nearest Kelvin, but you can't do it to that precision because you'd need to know it to nort

0.03, precision to fall within the two to five Kelvin range.

And actually the uncertainty in absolute terms is 1.3 as published by the IPCC in the pink row there. [00:31:00] Now notice that they use negative uh, quantities when they really mean positive ones, and they likewise use a negative. Plank response, which we have simply taken the absolute value of, and then added it back to their negative, um, estimated feedback variables that then gives you values, which are very similar to what you would get using formulas C, which is basically the formulas they're using.

We have therefore understood their method of doing things, but their method of doing things, it's almost as though it was designed to be so absurdly complicated by using negatives when everything should really be positive, that they have confused generations of climate scientists into not understanding this huge mistake that they've made.

So then we take the derivative of the system response curve of ECS against feedback intensity. 'cause you know what? Feedback intensity, you can immediately work out what ECS is. However, actually it doesn't, it's not quite as easy as that because you see, [00:32:00] if you do this by the corrected method, then each extra unit of feedback intensity that you have along the bottom, along the, the ordinance, along the X axis, if you like, will add 100.

Kelvin to ECS, which is only supposed to be in, in their way looking at it two to five kelvin. Anyway, so that means that Houston, we've got a problem, which is that if you use the corrected method, then the climate proves to be as, in fact, it is hyper hypersensitive even to the very tiniest changes in net aggregate feedback intensity over time.

If you have time variance and feedback intensity, it would have a very, very large effect on global temperature. But then you may say what you're doing is making their point for them. You're saying, well, you know, we might be approaching some terrible tipping point. But no, we've been running this experiment for 175 years, since 1850, and yet the climate hasn't gone up [00:33:00] by a hundred degrees.

It hasn't fried. So we know therefore that this is indeed a very near, perfectly thermostatic system where you wouldn't expect, and you don't get very much change in feedback, strength over time. But if you do it their way, you can't make predictions either. Even if you forgive them for having forgotten, the sun is shining and you can't do that because then you see that you don't get a nice uniform value of the derivative.

It increases very rapidly with the the feedback intensity, and therefore you'd have to know exactly what your feedback intensity was to work out how much warming you were going to cause from that point

on. Why is this? It's because the curve of system response is a rectangular hyperbole. Here's a picture of it, and you can see that if you use the curve on the left, which is also, believe it or not, a rectangular hyperbole, but then a very small part of one, so it looks like a straight line, you would need to know doing it the corrected way, exactly where on that tiny little horizontal green line [00:34:00] between the points of the two green arrows at bottom left there, whose length is only north 0.03 units of feedback intensity.

You need to know exactly where we're on that line in order to tell whether it was two to five kelvin of ECS. You were going to get. And indeed you'd need to know that you were on that line at all, which is not easy. So you can't use the corrected method for predicting global warming by using feedback formulas.

But you can't use it using the wrongheaded way either. Not only because they've left out the sunshine temperature and that heaven nose is bad enough, that throws out all their calculations to meaningless anyway. But then even though they have a much larger range of feedback intensities to play with, they also have a constantly changing slope.

So you'd have to know exactly where you were in feedback intensity terms in order to tell what the slope was, and to tell how fast the global warming was going to increase from then on. So you can't use either of these methods to predict global warming. That's the lesson here, and they've known since 1988 when Schlesinger [00:35:00] published this paper trying to support.

Uh, Hansen, who was a friend of his, they were fellow left wing campaigners on this, um, in his feedback analysis. And he knew that you've got, you've got this rectangular hyperbolic response, and yet he thought that it was worth writing a paper about using feedbacks to predict how much level warming we may cause.

It's a valueless exercise precisely because of the, the shape of that curve, which as you can see here, rapidly goes off towards infinity. And he also doesn't understand what he's doing because he imagines you can have a feedback factor H, which is one or above, which is actually impossible in the climate, particularly if you remember to put the sunshine in.

But it isn't possible anyway. And therefore that absurd curve at the bottom right is just meaningless. They really don't understand what they're doing when they deal with feedback formulas in climatology. Then here is a more intelligent paper by Jared Rowe in 2009, and this. He again shows this rectangular hyperbola, [00:36:00] and he says that the uncertainty in the response depends enormously on the mean feedback strength.

Well, we've just shown that by saying it goes from 1.2 to 7.8 kelvin

per unit of feedback intensity, depending on where you are. But here's the problem. He's forgotten the sunshine temperature too, even though he is a pupil of Dick Lindzen himself, the greatest climatologist that's ever walked the earth.

But he does come closer, as you would expect, from a pupil of dick lindzen than anybody else in climatology to, uh, admitting that you can't use feedback analysis, feedback formulas to predict global warming at all. And for that we give him full marks. Now we've seen what a mess climatology makes of this and the extraordinary large errors that result.

But this compounds an existing error, which is inherent in these general circulation models of climate because they operate, uh, over. Timescales of one hour at a [00:37:00] time across decades to centuries. So they are time step algorithms. And if you remember from your physics 1 0 1, if you have a time step algorithm, then any uncertainty in the initial conditions, uh, specifying.

That algorithm will propagate in Quadrature across the time steps. And the more time steps you have, the more propagation you'll get and the more uncertainty you'll get. And Pat Frank from the Stanford Linear Accelerator Laboratory gave a fascinating talk on this at the World Federation of Scientists Conference on planetary emergencies at Erit and Sicily in 2016.

I had the honor to be there when he announced that he had first of all, adopted a technique that we had pioneered in an invited paper for the science bulletin of the Chinese Academy of Sciences the year before, in which we had reduced the outputs of the general circulation models to a single simple equation.[00:38:00]

And then you could study the characteristics of that equation to learn many things about global warming. Notably that, uh, there appeared to be a problem with. The way they were handling feedbacks. But now what Pat Frank did was he took the same technique, found his own equation, which in a very sophisticated way, replicates the outputs of these complex models over time.

And you can see the coincidence between the blue and red blobby lines there that show how good his equation was at this. And then he said, and we didn't do this and we kick ourselves for not having thought of it, but he gets the credit. Um, he said, well, why don't we just take a single uncertainty and a single one of the hundreds of, uh, initial conditions that are specified in these.

Time step models, and that is the global cloud fraction that gives you, among other things, the albedo and the uncertainty is plus or minus four watts per square meter. Let's propagate that in quadrature through a a hundred years, and let's see what [00:39:00] envelope of

uncertainty you get, and that's what that orange blob is.

It's not an envelope of predictions, it's an envelope of uncertainty. If you make any prediction of ECS, that falls within that envelope of uncertainty as every single prediction of every single climate model does. Then that prediction is meaningless. It is statistically valueless. It tells you nothing.

Nothing whatsoever about how much global warming we may cause. And when he put it in those terms to that audience of true believing climate extremists in the World Federation of Scientists, they howled him down with fury and rage. They spattered him. They yelled at him, they called him names. They said he didn't know what he was talking about, and they showed their own bottomless ignorance of elementary physics and elementary statistics in saying so, because he was plainly right, and I had to intervene in the end and say, so I said, look, he's obviously correct about this.

You are going to have to accept that whatever value these huge climate models have, they are valueless in telling us how much global warming we may cause. He has proven that and proven it convincingly and [00:40:00] definitively by a well established. Preexisting method and statistics known as the propagation of error in Quadrature.

Now leave him alone. And he came up to me afterwards. I'd not met him before and he was almost in tears because he had been so cruelly treated by these brute who are the saw themselves as the guardians of the Communist party line on the climate. And I call it the Communist party line with more than a little justification, but we won't talk about that today.

So we became friends and I, I encouraged him all the way because it took him three years to get this paper published. 'cause he was rejected 13 times by these horrible gatekeepers. Eventually the paper fell into the hands of Professor Carl Walch, which who was an honest man. On the other side of the debate, there are a few still left, thank God.

And he said, I hate this result, but it is plainly correct. It is to be published. And so through gritted Teeth, teeth, the journal had to publish what is the most important and explosive paper to date in climatology, which is showing that all their predictions are simply [00:41:00] meaningless. So how can we then derive ECS without using these downfall general circulation models, and without using their damn full erroneous method of working feedback formulas, which is in any case, not suitable for the purpose.

Well, why does Pat Frank's result matter so much to us? The reason is that the way they implement feedback in the, uh, in their calculations of climate sensitivity is they don't. Implement feedback formalism in

the models themselves. They don't work that way at all. They take the various outputs from the models, and then they run them through a feedback equation in order to work out what the feedback intensities are, and then from that to predict global warming.

So in other words, what they're doing is they're taking garbage out of the models, which are garbage because they. Don't allow for propagation of uncertainty. And if they did, then they would know that they couldn't make any predictions using the method they use, which is the time step algorithm, then that garbage that comes outta the [00:42:00] models goes into the garbage implementation of the feedback equation.

An equation which is in any case, garbage in this context, because it cannot tell you anything useful about global warming because the climate is so hypersensitive to, um, changes in feedback intensity once you realize that the sun is shining. So that's why these errors compound one another, and they mean that effectively, everything that climatology has said to date about global warming, very, very nearly all.

It's utter rubbish. It tells you absolutely nothing useful. But there is a method which can be used, which is known as the energy budget method, where you take a simple equation representing climate sensitivity, just as we did in our paper, in the Chinese Academy of Sciences bulleting, which incidentally has now been downloaded more times by a factor 12 than any other paper in that 75 year, uh, long journal.

Um, and you can [00:43:00] then take the published uncertainties in this, um, in these four or five parameters, and then you run the equation a billion times. But what you do is you choose random values of the, of each of these five parameters here, as long as those random values fall within the published uncertainty bound.

So we're using their values here and we're producing what is called a Monte Carlo simulation. Now, you very seldom see this in climatology because they don't really know this kind of statistical technique. But it was invented by Stanis for the Manhattan Project, and it's a very, very good technique. And so, sure enough, when we ran the equation a billion times, uh, and used these random values, we got as we expected, a Gaussian distribution.

We got as we also expected, a somewhat right skewed gas in distribution. 'cause we were using climatology um, bounds here for these values and they have been pushing the [00:44:00] upper bounds to try to make the problem look worse than it is and justify their enormous amounts of money they get. And so we have got this right skewed rather than symmetrical gaia or normal distribution that you would expect to get outta this technique.

And that tells you the data are being pushed. But also you can see that the mid-range, which is the peak of the normal distribution, is indeed 1.8 calv, which is exactly what you'd get if you put the mid-range published values into this equation. So that then is an A, a very sophisticated technique and it shows 1.4 to 2.6 kelvin of warming.

Now, 2.6 at least falls within that two to five Kelvin range, but it's very unlikely to be anywhere up there. Not only because as you can see between about two and 2.6, you've only got a very small area under the curve. But also because they've pushed all the numbers rightwards and also because the temperature input here is strongly [00:45:00] influenced by the last two or three years since the eruption, which caused enormous amount of water vapor to go into the atmosphere causing a water vapor.

A direct forcing by water vapor, which has nothing to do with us. So you would probably bring that down to more like two or 2.3 as the top end. But nevertheless, that's all it is and that wouldn't be a crisis, frankly. There are three further methods we can use, one of which we've already seen, which is the 1.1 Kelvin you get by using the data for 1850 and provided there'd been no great variance in feedback intensity since then.

And then you've got. Uh, another one which is since the anthropogenic forcing from all greenhouse gases since 1850 is coincidentally similar to that from double CO2. Forcing that is predicted on its own then ECS is equal to the 1.6 Kel warming since 1850. Then there's a third method, though nor 0.2 to nor 0.5 kelvin per decade of warming, and therefore two to five [00:46:00] Kelvin to 2100, which is coincidentally broadly equal to the two to five kelvin range of ECS that they predict is projected since 1976.

Only nor 0.15 to nor 0.25 kelvin per decade is observed implying ECS therefore of order 1.5 to 2.5 kelvin, and notice how that fits exactly within the brands of 1.4 to 2.6 that we found by using the Montecarlo method, which is more sophisticated. So all four of these methods, three of which are rather rough and ready, but still.

Uh, much more likely to be accurate than the computer models. They all cohere, and that coherence is important in science. It means that you only get these wrongheaded very high predictions of global warming. If you use a, the wrongheaded computer models, and B, the wrongheaded feedback analysis that they use by forgetting the sun is shining, take away those two huge fundamental errors in the way they do things.

And global warming becomes a non-problem, and that's the end of the climate emergency. But how can we be sure that we [00:47:00] really understood how these feedback, uh, loops actually work? Well, I. What

we did is we got, uh, a guy who eventually became a co-author to build an electronic feedback amplifier to emulate temperature feedback and confirm that feedbacks must indeed respond to the input signal, and that if the feedback signal is, uh, uh, is the input signal is.

The predominant signal, it's far larger than any other signal in the feedback amplifier. Then you simply can't leave it out. You have to have it there and the feedbacks will respond to it. And so he did this and he didn't originally expect that we were right about this because he had mainly been building, um, negative feedback amplifiers all he he liked, and a lot of control theories, uh, control theories, I should say, think that because they're dealing with negative feedback amplifiers.

If you have a positive feedback amplifier, it must always blow up and go to infinity. But it only does that if you have a feedback factor of one or greater. And [00:48:00] we don't have that in the climate and therefore it doesn't blow up. So he became a co-author having done this result because effectively his, his, his research confirmed our results and then we thought we'd better go to a national laboratory.

And so we did. And it built its own apparatus. It did 23 experiments that we'd specified. And it confirmed of course, that temperature feedback must respond to any sufficiently large input signal. You cannot leave it out without getting a very large error. And that fact, of course, is inherent in the equation of control theory, as we've already seen.

And so we then, uh, rang up the director of the laboratory and I said, well, I'm very grateful you've done this research. Your scientist did a super job. He worked with us because so tiny with the, um, the effects that we were getting, that he had to, we had to round all the numbers for him so that he could run them through.

He hadn't thought of doing what our guy did was just to run wires from the rig outside the room. So he control it from outside the room because his body temperature was affecting the, the rig. So the very, very tiny [00:49:00] amounts of warming that we might cause, um, simply couldn't be shown on the rig if he was in the room.

And they hadn't thought of that. So we rounded the quantities for them and they then. Confirmed our results exactly in every single one of 23 experiments. So we said, thank you very much and we'd be happy to pay your bill. And they said, whatcha gonna do with the, the, uh, the report that we've done? We said, we're going to run it as an annex, as our, uh, letter of contract said originally in a alone, a journal.

And they said, oh, which journal you thinking of? I said, well, one of the journals of climate, but we don't know which. And he said, climate is this to do with the climate? And I said, well, yes. He said, why

didn't you tell us that? I said, well, am I not correct in thinking that the feedback formulas is exactly the same whether you do the climate or an electronic circuit?

He said, oh, yes, it's exactly the same. And I said, and, uh, you are accepting that your scientist did this correctly. He said, yes, yes, yes. So I said, what's the problem? He said, you know what the problem is if we ever. We, this result is devastating to the official party line on the climate, [00:50:00] but we are paid for by our government.

And our government is a true believer in, in, in the global warming crisis. And this result, it, it's fascinating. It shows there isn't a global warming crisis. And, uh, we can't be the ones to have anything to do. Oh, no, no, no, no. They take away all our funding. We'd all be fired. We'd be vilified by fellow scientists all around the world.

We, we, please, please, please don't make us. Uh, I said, look, here's what we'll do. I said, we will use your report. You're under contract. You accepted the contract. That's it. Game over. But we're going to be nice to you. Because we know because of the appalling bullying to which we've been subjected, just how difficult this is for anyone who daress to question the party line on climate.

So we won't mention that it was your national laboratory. We'll say it's a national laboratory. And, uh, therefore we will use your report, but we won't use your name and because you won't put your name to it, we won't pay your fee. Is that clear? And with enormous relief, he [00:51:00] said Yes. Yes. Thank you. Oh, oh.

The laboratories still has a future. Now this is horrifying that these brutes who are driving politically this supposedly scientific case for alarm about warmer weather, are now bullying even national scientific institutions in the way that they have everybody terrified of departing from the party line.

And it's only people like me who are retired and therefore untouchable, who could dare to take on the party line. And even then we have our reputations trashed, but know this four of my fellow. Authors had their names found on this paper by various reviewers, and all four of them were pushed out of their institutions as a direct result of having their names found on this paper.

And in each case they said, but is there anything wrong with the paper? And in no case did any of the institution concern say there was anything wrong with the paper. They knew perfectly well the paper was [00:52:00] right, and that's why they wanted to force our people out so that they could try to keep the scam going for just a little bit longer.

And I'm hoping that Tom will give me another, but. Much shorter

presentation a little bit later on where we will talk about what was done to my co-authors because it will make you weep for the state of science in the West. So here is the National Laboratories test circuit as a concept on the left and as built on Z using standup international components.

And then here is a test rig, which they very meticulously, it is a meticulous nations. This one, they took the photographs from top and and from the bottom. But I'm not giving you any clue as to which national Labor laboratory it was that did this work. And we were particularly pleased to see that they had used, um, we'd actually done a real experiment rather than just playing endlessly with models because King Charles II in founding the Royal Society in his charter, says that we smile with particular [00:53:00] favor.

On investigations in the sciences, and especially those which are carried out by way of real world experiments, either to hammer out a new theory, undre, a wonderfully expressive word, it means to hammer out to pro pound would be a good word in English, a new theory, or to. Polish up and and correct and perfect an old one expo from which we get the word to polish.

So that's what he said, and that's what we're doing here. And no doubt our fellowships of the royal society for our 10 years of struggle and for the humiliations to which we have all been subjected for having been part of this project are in the post or less, perhaps not. So now there's a further way in which we can verify what's going on in the climate, and that is by looking at the atmosphere itself.

And in particular, its altitudinal profile in the [00:54:00] tropics because. Uh, all the models predict that, uh, because of warming, what you will get is twice as much warming in the tropical mid troposphere at an altitude of 200 to 300 millibars of pressure, or 30,000 to 40,000 feet or nine kilometers than you would get at the tropical surface.

And we can see that here in this prediction by James Hanson in that rather confused paper of his of 1984. There is the hotspot at the right pressure altitude, and in the tropics here it is in a Canadian model. This is, uh, one that's very ly drawn for us by John Christie at University of Alabama at Huntsville.

Here is. Uh, the IPCCs rather, the crude drawing of the same thing, making it clear that they think that manmade greenhouse gas forcing is the main reason why you have this hotspot. And here are four more models collected in AL 2007 showing the same phenomenon. And you'll find this in all of the various [00:55:00] climate models, however.

It doesn't exist in reality, there is no hotspot. We've got tens of millions of measurements from satellites and radio signs and drop on

of the tropical troposphere, and of course also the tropical surface. And there is no hotspot up there. It does not exist. It is a non hotspot, and so I've named something that is non-existent.

There is one data set that tries to show it, but I'm gonna show you why we know that that data set is wrong, because as you can see, since 1948, there has been a more or less continuous decline in the specific humidity in the mid troposphere, and therefore, there cannot be a hotspot because the hotspot is predicted in the models.

Because of water vapor feedback and therefore the water vapor feedback is a great deal less than what they think it is. And that is consistent with our result. [00:56:00] 'cause it's only the water feedback that matters. And here John Christie takes I think 52 different models and he checks the predictions that they made for 1981 to 2016 in the mid troposphere.

And he finds that they on average, predicted three times as much warming as they should. Confirming everything we've just said and confirming our result as well. Before we finish this, let's have a little fun. Let's look at some love graphs. These are graphs where climatologists have tried to draw the feedback Amplifi loop diagram, and bless the little cops up.

They made a pretty good holics of it. In none of these graphs, will you see the sunshine temperature represented at all, because no single paper in climatology gets this right, but they make a number of mistakes, all of which are encapsulated in this first graph, which is the first we can find, which is Schlesinger in 1988.

Which he not only doesn't have the sunshine temperature, he actually puts in a forcing rather than a temperature into a temperature feedback [00:57:00] loop. Remember that feedbacks are denominated in watts per square meter per Kelvin of the originating temperature, not per wat, per square meter of some forcing or another.

So he, he uses the wrong unit. They then go into the summative input. No. Then he has what looks like a game block, but it isn't, it's a converter to turn the forcing back into a temperature. So it's not really clear how you get any sort of feedback outta this at all. Anyway, he has a delta temperature coming out that is then fed into the feedback block, which remember the feedback factor is unitless.

We saw why in the definition of the plank response and how the feedback factor works. It's unitless, but if you have a temperature multiplied by a unitless factor, then you get a temperature out the other side. So then he's adding a temperature. Into the summative input node against adding in also a, a forcing in what's per square meter.

And you [00:58:00] can't mix units when you're adding them together like that. You learn that in middle school, for heaven's sake, elementary physics, you really can't do that. So what we think is going on is that he's using the feedback block. Not as a feedback block, but as an anticon converter. So this is a real muddle.

It's very unlike you can get any sensible numbers outta this particularly 'cause there's no sunshine temperature, but let's just look at how many other people get this wrong. Here, for instance, is a paper from 2001. Again, no sunshine temperature. Here is Ray Bates in 2007. Now he regarded himself as something of an expert on feedback in the climate.

He'd written many papers on it and when he and I debated this issue in front of the Law Society of Ireland in 2016, he ended up afterwards saying, actually, you know, Moncton is right about this. And he wrote to me afterwards, he said, I need to see your paper. He then realized that broadly speaking, we were right and he had me back to Ireland and we went on the radio and he said, actually, you know, we are wrong about [00:59:00] this.

There isn't really a problem with the climate once you correct for the way the feedback, uh, is handled. And so that he was a very great man. He's now married in heaven and I miss him to bit, 'cause he was a, a very charming man and we had a very civilized debate. And then here's Jared Rowe again. He's got a Delta input, at least it's a temperature as it was with Ray Bates, but not with some of the others.

Here again, 2010, they get it wrong. 2011, unless this is Dick Linson himself, he's borrowing from Schlesinger here and it's perfectly appropriate to borrow from somebody else. But if that somebody else happens to have got it wrong, then you know you get caught up too. It's not your fault, but it just happens.

Life's like that. And then you have, um, Sherwood etal. These are the, they regard themselves as the hotspots of climate sensitivity, but again, they, they get this wrong. They, it's a really muddled picture, but again, there's no sunshine temperature in there. Here's another one from China going round and round.

Futile another one from India, doing much the same. Then you [01:00:00] get another one from 2019 this time with a delta delta forcing and a converter, and then you have a delta forcing with a converter again in 2021. Then another one in 2023 with a delta input and 2024, and these are getting increasingly childish, these diagrams.

And then finally another university one from 2025. And there are a lot of baby-ish diagrams like this because it shows they really haven't any idea what they're doing when it comes to feedback. Well now what are the strategic consequences of the error and of its correction?

Well, first of all, the economics of net zero are fascinating.

'cause once you correct for this error, even global net zero would obey just a 10th of a Celsius degree by 2050. Indeed, it would only be a fifth of Celsius degree even if you didn't correct the error. That's how little effect we really have on the climate and how little we could do about it. But the cost of getting that one 10th of a Celsius degree will be two quadrillion dollars.

We worked that out pro-rata from the $3.8 [01:01:00] trillion cost estimated by the British National Grid Authority of just net zero, I think the National Grid. Which is only a quarter of UK emissions were to North 0.8% of global emissions. So that would equal 20 years global GDP. Well, good luck with that. And then the short wind and solar lifespans make it even worse because sustaining net zero, even if you got there, which we're not going to 'cause only the west is doing so the rest of the world of no of our result and they're paying no attention.

That would cost another 20 years. GDP. Every 10 to 15 years, each billion we spent therefore would debate only one 20000000th of a degree by 2050. The worst value for money in human history since the. Construction of the Great Wall of China, these numbers on their own, even if you didn't worry about the mistakes they've made in climatology itself.

These economic numbers show how utterly pointless it is to do anything at all about global warming, particularly if only the west does it. In this case, you have to divide all these numbers by 10 because we're just not going to get any real effect [01:02:00] from, um, stopping global warming if only the West implements this.

But another problem is that we put ourselves in hock to China, which is now the world's 90%. Largest supplier of all these rare techno metals, which you need, particularly if the battery storage to back up your wretched windmills and solar panels and the batteries in your electric buggers and your electric trains, and even if you're really fanciful and idiotic in electric planes.

So. Um, just as we were in HK to Saudi Arabia until we found the back and shale and the Alberta Shale and the North Sea oil. So we're now putting ourselves deliberately and stupidly and completely unnecessary in HK to China, communist China, whose leaders know of our result because they asked for a briefing from our team and we gave them one.

And they've seen our paper in the Chinese Academy of Sciences Bulletin. So they know this is all nonsense and they're very happy to see the west trash its economies. But look how much you'd need 9,400 years of [01:03:00] lithium just to get to a single 15 year generation of net zero 9,400 years of the total current annual output.

And if you wanted vanadium for vanadium steel in the batteries and you need that, or it's not gonna work very well, you'd need 67,000 years worth. Every 15 years, and it was Professor Ami show of the, uh, Gail Log, which is the finished geological survey who first thought this out and he rang me after he'd given testimony in front of the House of Lord's economic committee of this, and he said, why did the Lord chips say that I was being negative?

He said, all I was trying to do was tell it like it is. He said, I've spent. Four years on this. It's a thousand page paper. The left have attacked it at every stage. I've had to make it longer and longer to plug up all the holes they tried to find in it. There's really no doubt about this. I don't think anybody else has done anything so detailed and they haven't, I can't find anything else.

It's a superb piece of work, and what it shows is that net zero by anything like [01:04:00] the methods they're trying to use now, wind and solar, chiefly, uh, and electric cars, they, it simply can't be done because the resources do not exist on earth to do it. And then there's already huge overbuild of wind and solar in those Western countries stupid enough to go for it.

In particular, in Britain, we're now almost a third over the total mean hourly demand on the grid. In terms of the nameplate capacity of wind and solar, we've already installed on the ground and we're still installing more. And the effect of installing more once you reach what is called the, the Pollock limit for it was Douglas Poller, a researcher on the energy systems in, uh, Chile, who first came across this and began to realize how much overbuild was happening.

I'm very grateful to him for this graph. Um. You if you add more wind and solar and you are already overbuilt as look at Germany, you know, 2.6 times the, the total mean hourly demand on the grid and they're still building more. The effect of that is you're gonna [01:05:00] hardly reduce the global warming at all.

But what you will do is vastly increase the cost to the users and you'll also reduce the revenues to each new as well as existing solar and wind operator. So there's the equation. Excess capacity equals nameplate capacity minus ALI amount, E equals N minus D, and that's the E equals N minus D, the end of wind and solar as a way of contributing anything useful.

And now you'll see also the consequence of the overpriced electricity from wind and solar is you get a collapse in manufacturing and this is actually the UK um, department of net zero advertising the destruction it is causing to the British economy. As our manufacturing industries collapse and go overseas 'cause they can't afford to turn on the machines here.

Our last two tiny steel works at S Scunthorpe are closing down in the next few months because Junior Steel, which owns them, has said they can no longer afford the electricity to turn the furnaces on. The same has already happened at Port Bert in our last major steel works that closed a few months ago.

[01:06:00] 'cause we're no longer allowed to use coke and coal because we've gotta save the planet. And the result is that manufacturing industry here and elsewhere in the west is collapsing. And this is of course meet and drink to the communist countries who know of our result and are pushing this agenda because that means they don't have to compete with us for the natural resources which they have foreseen will be the occasion of wars in the coming century.

Now why do I say other nations know this result? But first of all, in 2017, president Trump's um, advisor on these matters rang up from the White House and he said, we've seen your paper in the. Well in the, uh, climate science bulletin of the Chinese Academy of Sciences, and you said, you, you, you were add on rating there, there was some error which you were working on, and I said, yes, we've now found the error.

We know what it is. We know how big it is. It's, they forgot the sun is shining. He said, right, do me a one pager. I'll put it in front of the president's nose. He did that and one week later, president Trump [01:07:00] pulled out America from the Paris Climate Agreement and he's now done the same again because his regime knows of our era and it knows therefore that there isn't a problem with global warming.

But the Russians also know because they invited him at the same year to Moscow. And I gave a talk in the Kremlin and all the world's scientists were there and there were some young people there. They gave me a standing ovation because they said afterwards we were, we were the only people who were giving them any hope.

All the rest were saying it was all Du. And then I was invited to a high level session, technical session, uh, by the deputy head of the Russian Academy of Sciences, academicians, so many of it, which he raised the question why we couldn't narrow that two to five kelvin range of ECS. Why couldn't we get it to the nearest Kelvin?

And they all waffled and couldn't provide an answer. And the IPCC and all the pressure groups, they all waffled on. So eventually I said, well, it's 'cause of this error. And at the end of the session, he made a beeline for me. Did sound off. He said, come and tell this to IPCCs representative Professor Moji Latif.[01:08:00]

So I did, and Latif didn't like it, didn't understand it, didn't want to understand it, but the important thing was that OV realized he couldn't refute it. So he got rid of him and he said, now you've

proved your point. If he couldn't refute it, then um, you know, you're right about this. So what we're gonna do is get, uh, you to brief our chief climate modeler.

So he was produced and I told him, and in 20 seconds he got the point. He clapped the hand to his fre, he said, he said, we can't leave it like this. And he rushed off to correct the model. And sure enough. Uh, Roy Spence did a, a recent survey, uh, of 36 models, and the one that comes closest to reality over the past 50 years is the Russian model where he did a HD cast of that.

You can see there, uh, in this graph of all 36 models. And, uh, curiously enough, just a few weeks ago, uh, Dick Linson got in touch. He said, you may like to see this paper that we've just, um, produced and I've given in Hungary. And there was a list of, I think about 18 different models and how much global warming they predicted how much ECS each model [01:09:00] predicted.

And the one that predicted the least was the Russian model. The English ones, of course, ones were the ones that predicted the most, but the Russian model predicted the least and it predicted, guess what? 1.8 Kelvin of warming per doubling of CO2, exactly As our sophisticated Monte Carlo distribution demonstrated.

So they know our result. The Chinese know our result. The Indians know our result. I was invited to India too to give a talk on this, and they too now know there isn't a problem with the climate and they too are, uh, greatly expanding their fossil fuel generation, as is Pakistan, which is increasing it by 300% compared with India's 60%.

And likewise, China continues to build more and more Cofi power stations and faced with that, it doesn't matter what we do in the West, it's not gonna make any difference anyway. So the conclusion is that mitigation of global warming is unaffordable, unattainable, unsustainable, unsafe, unstrategic, and after correcting climatologists error unnecessary.

So if you have been, [01:10:00] thank you for watching this and God bless you.