

## Fact Checking the Climate Clock

The New York City “Climate Clock” is the latest piece of climate fear mongering that has been recently unveiled. It follows the one erected in Oslo and the 2019 clock placed on the historic Gasometer in Berlin.

The site [climateclock.world](http://climateclock.world) states that the “*clocks are drawing the world’s attention to the urgency for action. But if our species is to survive, we need a constant, public reminder of our climate deadline — everywhere!*” This is pure brainwashing 101. Let’s leave the psychological pressure analysis and delve into the science.

At time of posting the climate clock site reports these numbers:

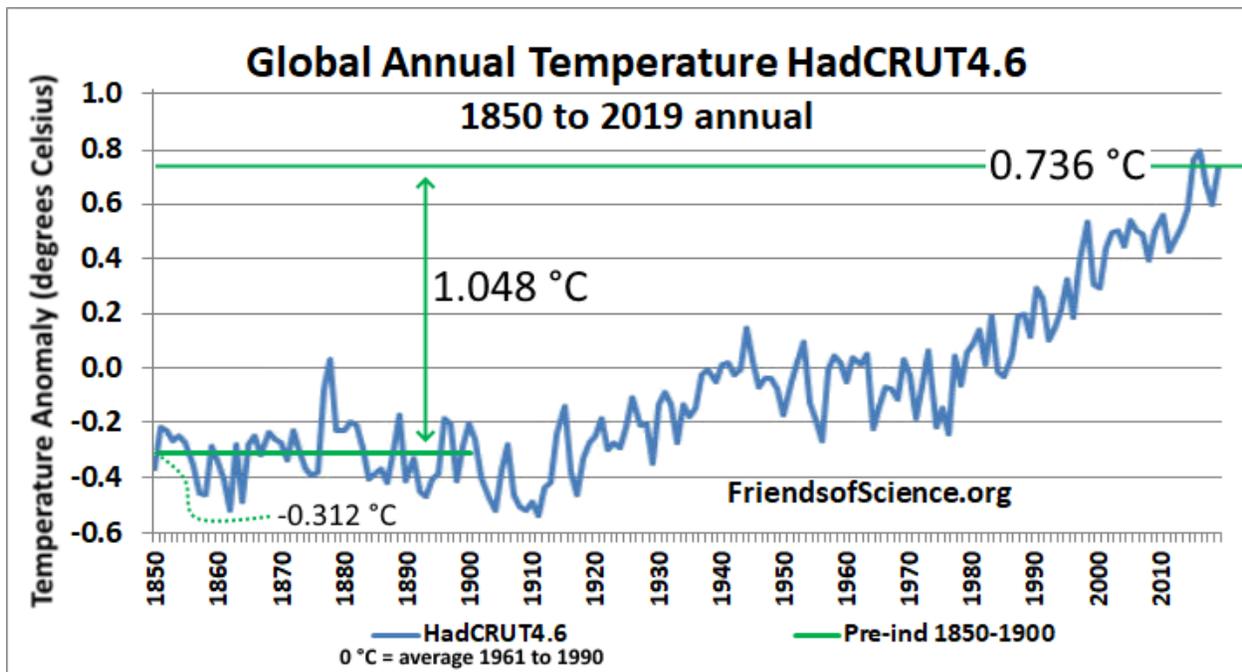


The [SEE THE SCIENCE](#) button gives us:

*The Climate Clock shows two numbers. The first, in red, is a timer, counting down how long it will take, at current rates of emissions, to burn through our “carbon budget” — the amount of CO<sub>2</sub> that can still be released into the atmosphere while limiting global warming to 1.5°C above pre-industrial levels. This is our deadline, the time we have left to take decisive action to keep warming under the 1.5°C threshold. The second number, in green, is tracking the growing % of the world’s energy currently supplied from renewable sources. This is our lifeline. Simply put, we need to get our lifeline to 100% before our deadline reaches 0.*

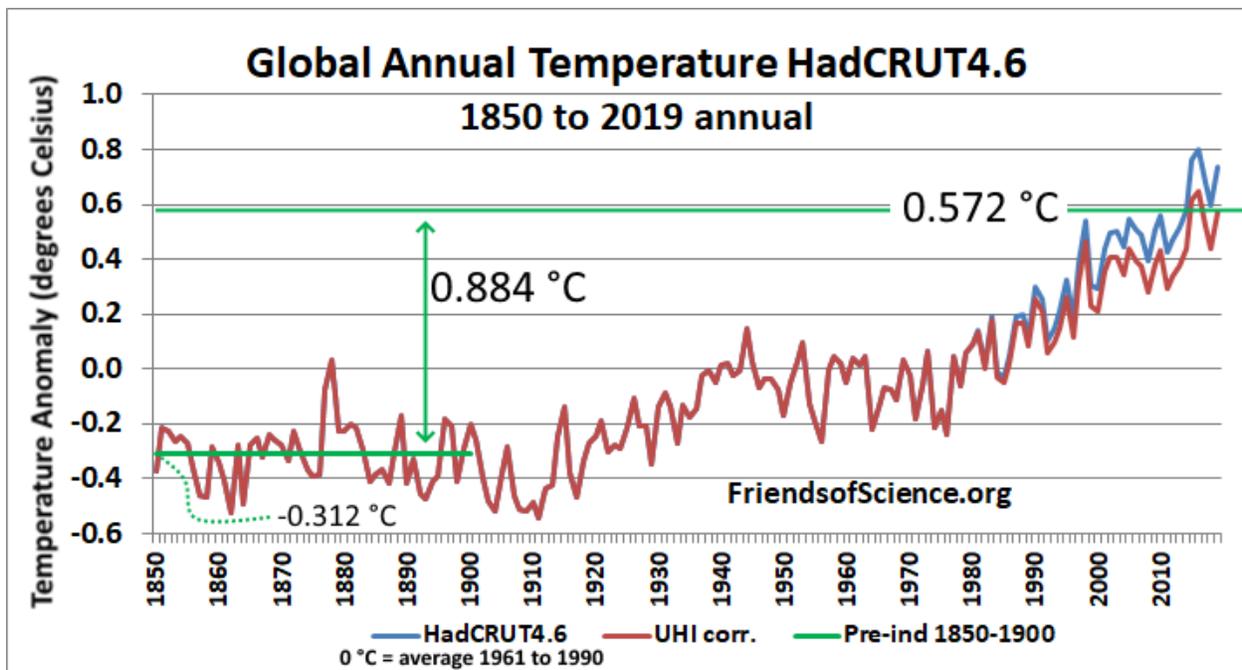
### Red “Deadline”

To evaluate how much time we have left before we *burn through our “carbon budget”* we must start with the commonly used temperature dataset which is the [HadCRUT4.6](#). Temperatures have negative values due to having been normalized to the temperature average from 1961 to 1990.



The IPCC SR15 report averages temperatures from 1850 to 1900 as an estimate of pre-industrial temperatures, which yields  $-0.312\text{ }^{\circ}\text{C}$ . Then since the annual temperature for 2019 was  $0.736\text{ }^{\circ}\text{C}$  we calculate that 2019 was  $1.048\text{ }^{\circ}\text{C}$  above pre-industrial times.

An issue with the HadCRUT dataset is that it is not corrected for the Urban Heat Island Effect (UHIE). The UHIE is the urban warming, primarily post 1970, that contaminates the surface temperature record and in turn results in exaggerated temperature trends.



The UHIE is removed by simply subtracting  $0.0042\text{ }^{\circ}\text{C}/\text{year}$  starting in 1980. The result for 2019 then is that the temperature becomes  $0.572\text{ }^{\circ}\text{C}$  once corrected. Consequently the corrected estimate for 2019 becomes  $0.884\text{ }^{\circ}\text{C}$  above pre-industrial times.

Now we have two temperature ranges for an estimate above pre-industrial times:

1. The pessimistic scenario of 1.048 °C from the blue uncorrected dataset
2. The optimistic scenario of 0.884 °C from the red corrected dataset

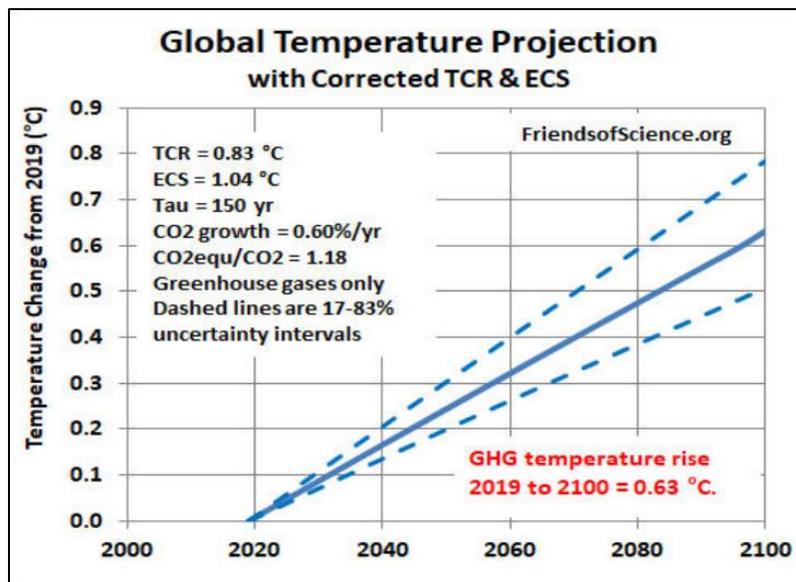
These in turn yield the amount of temperature increase we have left to reach 1.5 °C:

1. The pessimistic scenario is 0.452 °C
2. The optimistic scenario is of 0.616 °C

Following from Gregory (2020) [Climate Sensitivity by Energy Balance with Urban and Natural Warming](#) we can calculate when we reach 1.5°C above pre-industrial times following these assumptions:

- CO<sub>2</sub> increases exponentially with no meaningful mitigation policies
- Non-CO<sub>2</sub> Green House Gases (GHG) stay constant at 0.18% of CO<sub>2</sub> forcing
- CO<sub>2</sub> climate sensitivity parameters are
  - Transient Climate Response (TCR) = 0.83 °C
  - Equilibrium Climate Sensitivity (ECS) = 1.04 °C
- Temperatures are corrected for UHIE
- No natural climate change occurs after 2019.

As presented by Gregory “the exponential GHG growth is offset by the logarithmic radiative forcing so that the temperature forecast is nearly a straight line.” Figure 6, copied here below from the paper, summarizes the findings as a forecasted warming of 0.63 °C from 2019 to 2100, or 0.00777 °C/year.



Now taking our two scenarios we have:

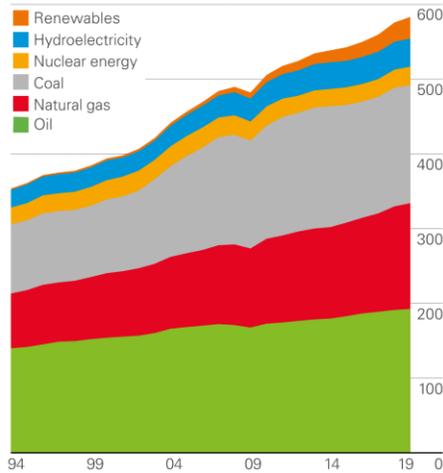
1. The pessimistic uncorrected scenario of 0.452 °C / 0.00777 °C/year = ~58 years from 2019 or 2077
2. The optimistic UHIE corrected scenario of 0.616 °C / 0.00777 °C/year = ~79 years from 2019 or 2098

Both of these numbers are a far cry from the ~7 years presented on the clock. Obviously, giving people almost a lifetime would not be frightening enough.

### Green “Lifeline”

To evaluate how much of the world’s energy is currently supplied from renewable sources we need some facts. BP p.l.c. provides an extremely detailed annual report that summarizes world energy consumption and generation; [website](#) and the 2020 full [pdf report](#). Graphics and data below are sourced from their full report.

**Primary Energy – World Consumption (exajoules) for 1994 to 2019**



Source: page 10

**Primary Energy Consumption by Fuel 2019 World Totals**

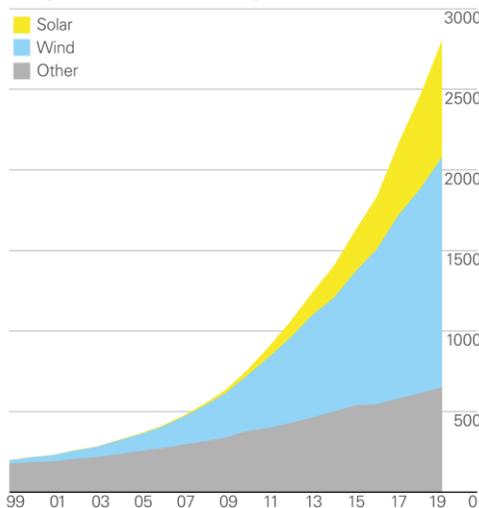
Energy Source	exajoules	%
Renewables (Solar, Wind, Biofuels)	28.98	4.96
Hydroelectricity	37.66	6.45
Nuclear	24.92	4.27
Coal, Gas, Oil	492.34	84.32
<b>Total</b>	<b>583.90</b>	<b>100.00</b>

Source: 2019 Total World from table on page 9

As shown, renewables only produce 4.96% of the energy consumed worldwide.

Some may disingenuously think that electricity generation may be used as a proxy for world energy. We see once again from the data below that electricity generated from renewables is only 10.39% of the total world electricity generation.

**Renewables Generation by Source (terawatt-hours) 1999 to 2019**



Source: page 52

**Electricity Generation by Fuel 2019 World Totals**

Energy Source	terawatt-hours	%
Renewables (Solar, Wind, Biofuels)	2805.5	10.39
Hydro	4222.2	15.64
Nuclear	2796.0	10.35
Oil, Gas, Coal	16947.3	62.76
Other	233.6	0.87
<b>Total</b>	<b>27004.6</b>	<b>100.00</b>

Source: 2019 Total World from table on page 61

## Do we need to take “decisive action”?

The climate clock activists assume that a global temperature rise of 1.5 °C above pre-industrial temperatures will trigger “*global climate catastrophes*” and that we only have this short time to take “*decisive action*”. Actually, the social net benefits of emissions are positive and continue to increase long above the assumed 1.5 °C threshold according to the FUND economic model results as specified in Gregory (2020).

In our two cases we have GHG induced global annual net benefits accrued after 2019 in constant 2019 US dollars of:

1. US\$865 billion for 2077 (58 year pessimistic uncorrected scenario)
2. US\$1318 billion for 2098 (79 year optimistic UHIE corrected scenario)

The benefits do not stop once we reach the magical 1.5 °C temperature threshold. For example a further 10 years of emissions after reaching 1.5 °C gives global net annual benefits of:

1. US\$1079 billion for 2087 (pessimistic uncorrected scenario)
2. US\$1649 billion for 2108 (optimistic UHIE corrected scenario)

## Conclusion

It is apparent that the deadline of just over 7 years and the lifeline of 27.7% being touted by the Climate Clock are gross exaggerations not based on factual data. It is also incredible that we would want to stop a warming trend that will actually enrich people all over the globe. So, NO we should not pursue this foolish decisive action.

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