

# Climate Denialism AC

## Framework

**The Single Standard is Utilitarianism defined as maximizing the greatest good for the greatest number of people.**

**There's 5 reasons to prefer**

**1] The objective goodness of pleasure and badness of pain are undeniable and intrinsically motivating.**

**Nagel '97** [Thomas Nagel, University Professor of Philosophy and Law at New York University, The View From Nowhere, Book, <http://www.ucl.ac.uk/~uctytho/dfwVariousNagel.htm>, 1989]

I shall defend the unsurprising claim that **sensory pleasure is good and pain bad, no matter whose they are**. The point of the exercise is to see how the pressures of objectification operate in a simple case. Physical pleasure and pain do not usually depend on activities or desires which themselves raise questions of justification and value. They are just sensory experiences in relation to which we are fairly passive, but toward which we feel involuntary desire or aversion. Almost **everyone takes the avoidance of his [or her] own pain and the promotion of his [or her] own pleasure as subjective reasons for action** in a fairly simple way; they are not backed up by any further reasons. On the other hand if someone pursues pain or avoids pleasure, either it as a means to some end or it is backed up by dark reasons like guilt or sexual masochism. What sort of general value, if any, ought to be assigned to pleasure and pain when we consider these facts from an objective standpoint? What kind of judgment can we reasonably make about these things when we view them in abstraction from who we are? We can begin by asking why **there is no plausibility in the zero position, that pleasure and pain have no value of any kind that can be objectively recognized. That would mean that I have no reason to take aspirin for a severe headache**, however I may in fact be motivated; and that looking at it from outside, **you couldn't even say that someone had a reason not to put his [their] hand on a hot stove, just because of the pain**. Try looking at it from the outside and see whether you can manage to withhold that judgment. If the idea of objective practical reason makes any sense at all, so that there is some judgment to withhold, it does not seem possible. If the general arguments against the reality of objective reasons are no good, then it is at least possible that I have a reason, and not just an inclination, to refrain from putting my hand on a hot stove. But given the possibility, it seems meaningless to deny that this is so. Oddly enough, however, we can think of a story that would go with such a denial. It might be suggested that the aversion to pain is a useful phobia—having nothing to do with the intrinsic undesirability of pain itself—which helps us avoid or escape the injuries that are signaled by pain. (The same type of purely instrumental value might be ascribed to sensory pleasure: the pleasures of food, drink, and sex might be regarded as having no value in themselves, though our natural attraction to them assists survival and reproduction.) There would then be nothing wrong with pain in itself, and someone who was never motivated deliberately to do anything just because he knew it would reduce or avoid pain would have nothing the matter with him. He would still have involuntary avoidance reactions, otherwise it would be hard to say that he felt pain at all. And he would be motivated to reduce pain for other reasons—because it was an effective way to avoid the danger being signaled, or because interfered with some physical or mental activity that was important to him. [Imagine someone] He just wouldn't regard the pain as itself something he had any reason to avoid, even though he hated [it] the feeling just as much as the rest of us. (And of course he wouldn't be able to justify the avoidance of pain in the way that we customarily justify avoiding what we hate without reason—that is, on the ground that even an irrational hatred makes its object very unpleasant!) There is nothing self-contradictory in this proposal, but it seems nevertheless insane. **Without some positive reason to think there is nothing in itself good or bad about having an experience you intensely like or dislike, we can't seriously regard the common impression to the contrary as a collective illusion.** Such things are at least good or bad for us, if anything is. What seems to be going on here is that we cannot from an objective standpoint withhold a certain kind of endorsement of the most direct and immediate subjective value judgments we make concerning the contents of our own consciousness. We regard ourselves as too close to those things to be mistaken in our immediate, nonideological evaluative impressions. **No objective view we can attain could possibly overrule our subjective authority** in such cases. There can be no reason to reject the appearances here.

**2] Util is a lexical prerequisite to any other framework: Threats to bodily security and life preclude the ability for moral actors to effectively utilize and act upon other moral theories since they are in a constant state of crisis that inhibit the ideal moral conditions which other theories presuppose – so, util comes first and my offense outweighs theirs under their own framework.**

**3] Degrees of Wrongness only consequentialism explains degrees of wrongness— you can only explain why breaking a promise to take a dying person to the hospital is worse than breaking a promise to meet for lunch by appealing to consequences.**

**4] Maximizing all lives is the only way to affirm equality**

**Cummiskey 96** – Professor of Philosophy, Bates (David, Kantian Consequentialism, Ethics 100.3, p 601-2, p 606, jstor, AG)

We must not obscure the issue by characterizing this type of case as the sacrifice of individuals for some abstract "social entity." It is not a question of some persons having to bear the cost for some elusive "overall social good." Instead, the question is whether some persons must bear the inescapable cost for the sake of other persons. Nozick, for example, argues that "to use a person in this way does not sufficiently respect and take account of the fact that he is a separate person, that his is the only life he has."<sup>30</sup> Why, however, is this not equally true of all those that we do not save through our failure to act? By emphasizing solely the one who must bear the cost if we act, one fails to sufficiently respect and take account of the many other separate persons, each with only one life, who will bear the cost of our inaction. In such a situation, what would a conscientious Kantian agent, an agent motivated by the unconditional value of rational beings, choose? We have a duty to promote the conditions necessary for the existence of rational beings, but both choosing to act and choosing not to act will cost the life of a rational being. Since the basis of Kant's principle is "rational nature exists as an end-in-itself" (GMM, p. 429), the reasonable solution to such a dilemma involves promoting, insofar as one can, the conditions necessary for rational beings. If I sacrifice some for the sake of other rational beings, I do not use them arbitrarily and I do not deny the unconditional value of rational beings. Persons may have "dignity, an unconditional and incomparable value" that transcends any market value (GMM, p. 436), but as rational beings, persons also have a fundamental equality which dictates that some must sometimes give way for the sake of others. The formula of the end-in-itself thus does not support the view that we may never force another to bear some cost in order to benefit others. If one focuses on the equal value of all rational beings, then equal consideration dictates that one sacrifice some to save many. [continues] According to Kant, the objective end of moral action is the existence of rational beings. Respect for rational beings requires that, in deciding what to do, one give appropriate practical consideration to the unconditional value of rational beings and to the conditional value of happiness. Since agent-centered constraints require a non-value-based rationale, the most natural interpretation of the demand that one give equal respect to all rational beings lead to a consequentialist normative theory. We have seen that there is no sound Kantian reason for abandoning this natural consequentialist interpretation. In particular, a consequentialist interpretation does not require sacrifices which a Kantian ought to consider unreasonable, and it does not involve doing evil so that good may come of it. It simply requires an uncompromising commitment to the equal value and equal claims of all rational beings and a recognition that, in the moral consideration of conduct, one's own subjective concerns do not have overriding importance.

## 5] Extinction outweighs under any framework

**Pummer 15** [Theron, Junior Research Fellow in Philosophy at St. Anne's College, University of

Oxford. "Moral Agreement on Saving the World" Practical Ethics, University of Oxford. May 18, 2015]

There appears to be lot of disagreement in moral philosophy. Whether these many apparent disagreements are deep and irresolvable, I believe there is at least one thing it is reasonable to agree on right now, whatever general moral view we adopt: that it is very important to reduce the risk that all intelligent beings on this planet are eliminated by an enormous catastrophe, such as a nuclear war. How we might in fact try to reduce such existential risks is discussed elsewhere. My claim here is only that we – whether we're consequentialists, deontologists, or virtue ethicists – should all agree that we should try to save the world. According to consequentialism, we should maximize the good, where this is taken to be the goodness, from an impartial perspective, of outcomes. Clearly one thing that makes an outcome good is that the people in it are doing well. There is little disagreement here. If the happiness or well-being of possible future people is just as important as that of people who already exist, and if they would have good lives, it is not hard to see how reducing existential risk is easily the most important thing in the whole world. This is for the familiar reason that there are so many people who could exist in the future – there are trillions upon trillions... upon trillions. There are so many possible future people that reducing existential risk is arguably the most important thing in the world, even if the well-being of these possible people were given only 0.001% as much weight as that of existing people. Even on a wholly person-affecting view – according to which there's nothing (apart from effects on existing people) to be said in favor of creating happy people – the case for reducing existential risk is very strong. As noted in this seminal paper, this case is strengthened by the fact that there's a good chance that many existing people will, with the aid of life-extension technology, live very long and very high quality lives. You might think what I have just argued applies to consequentialists only. There is a tendency to assume that, if an argument appeals to consequentialist considerations (the goodness of outcomes), it is irrelevant to non-consequentialists. But that is a huge mistake. Non-consequentialism is the view that there's more that determines rightness than the goodness of consequences or outcomes: it is not the view that the latter don't matter. Even John Rawls wrote, "All ethical doctrines worth our attention take consequences into account in judging rightness. One which did not would simply be irrational, crazy." Minimally plausible versions of deontology and virtue ethics must be concerned in part with promoting the good, from an impartial point of view. They'd thus imply very strong reasons to reduce existential risk, at least when this doesn't significantly involve doing harm to others or damaging one's character. What's even more surprising, perhaps, is that even if our own good (or that of those near and dear to us) has much greater weight than goodness from the impartial "point of view of the universe," indeed even if the latter is entirely morally irrelevant, we may nonetheless have very strong reasons to reduce existential risk. Even egoism, the view that each agent should maximize her own good, might imply strong reasons to reduce existential risk. It will depend, among other things, on what one's own good consists in. If well-being consisted in pleasure only, it is somewhat harder to argue that egoism would imply strong reasons to reduce existential risk – perhaps we could argue that one would maximize

her expected hedonic well-being by funding life extension technology or by having herself cryogenically frozen at the time of her bodily death as well as giving money to reduce existential risk (so that there is a world for her to live in!). I am not sure, however, how strong the reasons to do this would be. But views which imply that, if I don't care about other people, I have no or very little reason to help them are not even minimally plausible views (in addition to hedonistic egoism, I here have in mind views that imply that one has no reason to perform an act unless one actually desires to do that act). To be minimally plausible, egoism will need to be paired with a more sophisticated account of well-being. To see this, it is enough to consider, as Plato did, the possibility of a ring of invisibility – suppose that, while wearing it, Ayn could derive some pleasure by helping the poor, but instead could derive just a bit more by severely harming them. Hedonistic egoism would absurdly imply she should do the latter. To avoid this implication, egoists would need to build something like the meaningfulness of a life into well-being, in some robust way, where this would to a significant extent be a function of other-regarding concerns (see chapter 12 of this classic intro to ethics). But once these elements are included, we can (roughly, as above) argue that this sort of egoism will imply strong reasons to reduce existential risk. Add to all of this Samuel Scheffler's recent intriguing arguments (quick podcast version available here) that most of what makes our lives go well would be undermined if there were no future generations of intelligent persons. On his view, my life would contain vastly less well-being if (say) a year after my death the world came to an end. So obviously if Scheffler were right I'd have very strong reason to reduce existential risk. **We should also take into account moral uncertainty.** What is it reasonable for one to do, when one is uncertain not (only) about the empirical facts, but also about the moral facts? I've just argued that there's agreement among minimally plausible ethical views that we have strong reason to reduce existential risk – not only consequentialists, but also deontologists, virtue ethicists, and sophisticated egoists should agree. But even those (hedonistic egoists) who disagree should have a significant level of confidence that they are mistaken, and that one of the above views is correct. Even if they were 90% sure that their view is the correct one (and 10% sure that one of these other ones is correct), they would have pretty strong reason, from the standpoint of moral uncertainty, to reduce existential risk. Perhaps most disturbingly still, even if we are only 1% sure that the well-being of possible future people matters, it is at least arguable that, from the standpoint of moral uncertainty, reducing existential risk is the most important thing in the world. Again, this is largely for the reason that there are so many people who could exist in the future – there are trillions upon trillions... upon trillions. (For more on this and other related issues, see this excellent dissertation). Of course, it is uncertain whether these untold trillions would, in general, have good lives. It's possible they'll be miserable. It is enough for my claim that there is moral agreement in the relevant sense if, at least given certain empirical claims about what future lives would most likely be like, all minimally plausible moral views would converge on the conclusion that we should try to save the world. While there are some non-crazy views that place significantly greater moral weight on avoiding suffering than on promoting happiness, for reasons others have offered (and for independent reasons I won't get into here unless requested to), they nonetheless seem to be fairly implausible views. And even if things did not go well for our ancestors, I am optimistic that they will overall go fantastically well for our descendants, if we allow them to. I suspect that most of us alive today – at least those of us not suffering from extreme illness or poverty – have lives that are well worth living, and that things will continue to improve. Derek Parfit, whose work has emphasized future generations as well as agreement in ethics, described our situation clearly and accurately: “We live during the hinge of history. Given the scientific and technological discoveries of the last two centuries, the world has never changed as fast. We shall soon have even greater powers to transform, not only our surroundings, but ourselves and our successors. If we act wisely in the next few centuries, humanity will survive its most dangerous and decisive period. Our descendants could, if necessary, go elsewhere, spreading through this galaxy... Our descendants might, I believe, make the further future very good. But that good future may also depend in part on us. If our selfish recklessness ends human history, we would be acting very wrongly.” (From chapter 36 of On What Matters)

## Offense

### Contention 1: Significance

### Warming causes extinction of the human species on earth

**Griffin 15** - emeritus professor of philosophy of religion at Claremont School of Theology and Claremont Graduate University, Co-Director of the Center for Process Studies (David Ray, “Unprecedented: Can Civilization Survive the CO2 Crisis?”, p142-143, Clarity Press)

Although the idea of extinction was mentioned a few times above, the issue deserves a section to itself. Indeed, even if it seldom makes the evening news, extinction is one of the major stories of our time, because **we are in the midst of one of the six mass extinctions** since the emergence of life on our planet. The previous five mass extinctions were: • The extinction at the end of the Ordovician Period (referred to as “the end-Ordovician extinction”), which occurred about 440 mya (million years ago)• The end-Devonian extinction, which occurred some 370 mya; • The end-Permian extinction, which was the worst of the extinctions thus far, occurred about 245 mya, having evidently been triggered by a massive lava flow in Siberia that increased global temperatures by 6 °C, which melted frozen methane deposits, which in turn raised the temperature even further. This “Great Dying,” as it is called, evidently caused about 95 percent of the planet’s complex organisms to go extinct – a catastrophe so great that “[it] took about 50 million years for life again to develop the diversity that it had prior to the event.”29• The end-Triassic extinction, which occurred some 210 mya (shortly after mammals and dinosaurs had evolved), and came about when “an increase in atmospheric CO2 caused acidification of the oceans and global warming” (which is believed to have been caused by volcanoes).30• The end-Cretaceous extinction, which occurred about 65 mya, eliminated (among other animals) the last of the dinosaurs. Whereas all of those extinctions were caused by various types of natural causes, **the sixth** mass extinction, which **may prove to be the worst ever**, is unique in being caused by human beings. It began about 100,000 years ago, when humans began spreading from Africa to the rest of the world. The extinction speeded up qualitatively after agriculture began in the Holocene epoch, and even more after the industrial revolution.31 In fact, **human beings** who now emit about 100 times more CO2 than volcanoes **are** evidently **extinguishing species** – according to a 2010 article in a special issue on biological diversity published by the Royal Society – **at a rate that “far exceeds anything in the fossil record.”**32 Another article in the same issue, written by Jeremy Jackson of the Scripps Institution of Oceanography, discussed extinction caused by ocean acidification. Explaining that “massive influxes of **carbon at the end of the Paleocene caused** intense global warming, ocean acidification, **mass extinction** throughout the deep sea and the worldwide disappearance of coral reefs,” Jackson said that **unless there is immediate**

and decisive conservation action, "another great mass extinction affecting all ocean ecosystems and comparable to the upheavals of the geological past appears inevitable."33 At the end of her 2014 book, *The Sixth Extinction*, Elizabeth Kolbert asked, "In an extinction event of our own making, what happens to us?" Many people seem to think that we self-named Homo sapiens are so wise and powerful that nothing could drive us to extinction. However, she points out, "When a mass extinction occurs, it takes out the weak and also lays low the strong." The famous anthropologist Richard Leakey, she added, warned that "Homo sapiens might not only be the agents of the sixth extinction, but also risks being one of its victims."34 There are now some scientists who believe that human extinction will happen in the near future. Kevin Anderson, director of England's Tyndall Centre for Climate Change, said in 2009 that if the global temperature rises by 4°C, about 90 percent of the Earth's people will die - although human extinction will not be total, because "a few people with the right sort of resources may put themselves in the right parts of the world and survive."35 Anderson's view is considered overly optimistic by others, such as atmospheric and marine scientist Ira Leifer of the University of California Santa Barbara. Asking what portion of the population would be able to adapt to a global temperature increase of 4°C, Leifer said he believed that it would be "just a few thousand people [seeking refuge] in the Arctic or Antarctica."36 Even Leifer's view is too optimistic for other scientists, such as Australian microbiologist Frank Fenner - who had announced the eradication of smallpox to the World Health Assembly in 1980. In 2010, Fenner, the author of 22 books and hundreds of scientific articles, said: "Homo sapiens will become extinct, perhaps within 100 years."37 Some scientists who expect an imminent extinction of the human race regard methane emissions from thawing permafrost as the most likely cause. A good introduction to the thinking of some scientists about the danger of extinction from methane is provided by a 2013 video called "Mass Extinction: Let's Not," which was narrated and co-authored by Thom Hartmann.38 Given the seriousness of the danger from methane, the present book might better have been subtitled, "Can Civilization Survive the CO2-CH4 Crisis?" Probably the scientist who has written the most about the demise of the human race within the next several decades is Guy R. McPherson, professor emeritus of evolutionary biology at the University of Arizona. In various articles, at a blog called "Nature Bats Last," and in a 2013 book entitled *Going Dark*, McPherson has presented an array of scenarios through which humanity could become extinct, one of which is due to methane emissions from thawing permafrost.39 The prediction of human extinction through methane emissions has been central to the thinking of retired Earth-systems scientist Malcolm Light. In 2012, Light wrote that the process of significant methane release, which began in 2010, "will accelerate exponentially, release huge quantities of methane into the atmosphere and lead to the demise of all life on earth before the middle of this century." From Light's point of view, the only hope for human survival is a massive reduction in CO2 emissions combined with the immediate use of geoengineering "as a cooling method in the Arctic to counteract the effects of the methane buildup."40

## Con 2: Inherency

**Journalists have a moral obligation to report objectively on matters of the climate - advocacy gets in the way and conflates fact and fiction.**

**Jude 21** Ellison, Jude. "Why Journalists – Not Just Advocates – Need To Report On Climate Change." *The City Journal*. March 31, 2021. Web. February 13, 2022. <<http://thecityjournal.net/opinion/why-journalists-not-just-advocates-need-to-report-on-climate-change>

As temperatures climb, rivers rise and fires burn, **the need for informed and effective coverage of climate change is clear.** But who should provide that coverage? Journalists specialising in it are few and far between, particularly in the Global South. **In the absence of journalistic coverage, Non Government Organisations (NGOs) have produced news releases and other content for their in-house media centres. These organisations are openly agenda-driven, leaving readers to question if their accounts are accurate and unbiased.** Further, unlike most journalistic news outlets, NGOs often publish pieces without bylines. Such work can be

difficult to trust – who writes them, and why aren't the writers credited? These uncertainties give readers reason to doubt what is reported. **Doubt compounds inaction,** which is an unacceptable outcome for an urgent topic like climate change. But even clear attribution and commitment to fact-based reporting isn't enough. **Journalistic coverage has actively harmed the public perception of climate change's seriousness and discouraged readers from taking action.** What went wrong? Ironically, one of the values that journalists use to earn trust – **balance – has caused result in the work becoming less trustworthy. One study found** that in a sample of articles from the United States' **"prestige press" between 1988 and 2002, not even 6% of articles stated that human activity alone was responsible for climate change.** Worse, **nearly the same proportion of articles said that human activity was not responsible for climate change. More than half the articles equivocated, stating that some sources believed human activity to be responsible and some did not.** Another piece said that journalists' sources on climate change issues are not only scientists and other subject experts, but also encompass "a broader range of stakeholders" that gives page space to public relations professionals and other non-experts. The situation is no better in the Global South. **A study from the Australian Centre for Independent Journalism found nearly one-third of the articles it examined "did not accept the scientific consensus** that human beings are major contributors to global warming". What could go right? So far, journalistic values have not been helpful in climate change reporting. But it doesn't have to be that way. For example, instead of perpetuating the illusion of a "he said, she said" debate about anthropogenic climate change, **journalists could honour their commitment to balance (and accuracy)** by quoting multiple experts who suggest different actions for readers to take. These differences do not need to be balanced in the sense of "put at odds," which may bewilder readers into inaction – rather, they can be balanced in the sense of "complementary," giving readers multiple paths to meaningful

engagement. Two additional journalistic values, **accuracy and fairness**, may also support climate change reporters. A University of Kansas study found a neutral tone is more likely than an angry one to convince readers of an issue's seriousness, so much so that "the more coverage used anger as a way to discuss the issue, the less people felt it was important". Also, journalistic norms around **attribution** (that it should be done) and **transparency** (that conflicts, payments and potential threats to independence should be disclosed) make journalists' work less susceptible to the **skepticism** mentioned earlier around **byline-free, agenda-driven NGO content**. Another thing that may alleviate readers' reservations is journalism's code of ethics. Codes vary between regions, but in democratic societies, practitioners pledge to observe a number of guidelines that hold their work to higher standards than that of non-journalists. Adherence to professional codes of ethics is imperfect because those who adhere to them are imperfect, but it is arguably better to have named writers striving to meet the codes' requirements – and sometimes facing career-ending consequences should they fall short – than to have unknown writers bound to no such codes and at risk of no such consequences.

### Con 3: Solvency

#### a. Doing the aff causes a change in corporate behavior because it calls out the perpetrators.

**Pellegrino 18** Pellegrino, Nicolette. "A Gap In Causation? Punishing Polluters For Contributing To Climate Change And Increasing Violent Cr." Pace Environmental Law Review. December 11, 2018. Web. February 13, 2022. <https://digitalcommons.pace.edu/pelr/vol35/iss2/6/>.

**Because climate change leads to migration and psychological stress**, which increases the rates of rape and other violence, **it is logical for the punishment of those who perpetrate environmental crimes that accelerate climate change to be greater.** The vast **consequences** of environmental crimes that contribute to climate change **authorize governments to enforce stricter sanctions.** Intensifying the repercussions of perpetrating environmental crimes is **likely to promote awareness of the severity of climate change and, in turn, deter individuals and businesses from hurting the environment.** Currently, if an individual partakes in illegal deforestation or logging, they will face a potential penalty.<sup>127</sup> However, if governments increase the severity of such punishments, individuals will be deterred from acting in damaging ways. The individuals participating in deforestation should not just face regulations and fines but should be criminally punished with prison time. Not only will jail time deter individuals from continuing their illegal acts, but it will also deter others from committing environmental crimes. Regarding businesses, the Supreme Court in Massachusetts v. EPA permitted the EPA to regulate GHG emissions once the Agency confirmed that GHGs contributed to climate change.<sup>128</sup> Today, certain corporations are forced to pay large sums of money because of their emissions.<sup>129</sup> **An example is when Hyundai and Kia violated the CAA and were mandated to pay a \$100 million** fine and roughly \$50 million to combat the damage done.<sup>130</sup> Both large and small businesses wish to make a profit, not face sanctions or lose proceeds.<sup>131</sup> **If companies are faced with massive fines upon hurting the environment, they will be less likely to act in a manner that carries harmful consequences.** However, to take it further, not only should the businesses be held liable for damaging the environment, but the individual actors who are partaking in the environmental crimes must be held personally liable, too.

#### B. We're approaching the tipping point, but there's time to avert it.

**Evers 19** Evers, Marco. "The Time To Save The Climate Is Now." Der Spiegel. December 12, 2019. Web. February 13, 2022. <https://www.spiegel.de/international/world/is-it-too-late-to-save-the-climate-a-1300898.html>

There is no longer any doubt: The pace of **climate change is accelerating.** Of the 20 hottest years measured since records began, 19 have occurred since 2000. The top five were the last five years. Summer 2019 saw a new temperature record set in Germany of 42.6 degrees Celsius (108 degrees Fahrenheit) and 46 degrees in France. Preliminary findings indicate that the world experienced its warmest average temperatures ever during the months of June, July, September and October of this year. Only the El Niño-fueled year of 2016 remains unsurpassed, with temperatures boosted by the natural weather phenomenon that heats up the eastern Pacific every few years. Indeed, 2019 could ultimately beat out 2015 for second place and will definitely exceed 2017, 2018 and, as has been clear for some time, each of the 1,000 years before that. It is, of course, not possible to accurately predict where 2020 will fit in. It is clear, however, that the coming year will once again be **marked by extreme weather** events such as **heat waves, excessive rainfall, thawing of permafrost, glacier melting, tropical storms, forest fires and droughts,** even though it remains difficult to attribute a single weather event to climate change. The Greenhouse Age The new Greenhouse Age is dawning irrevocably, and the state of the world is becoming increasingly precarious. In October 2019, global sea levels were at their highest ever since the start of satellite measurements in 1993. The oceans are warmer than ever before, and the ice sheets of Greenland and the ice shelves of West Antarctica have thinned to an even greater extent than predicted. The cause of the highest temperatures in a millennium can be found in the atmosphere. Never before in the past 3 million years has our atmosphere stored as much of the greenhouse gas carbon dioxide (CO<sub>2</sub>) as it does right now. **Before the Industrial Revolution, the concentration of CO<sub>2</sub> in the atmosphere remained relatively constant for thousands of years** at between 260



and 280 parts per million (ppm). But then, **mankind began burning ever-increasing amounts of fossil fuels and the CO2 content of the atmosphere rose.**

The planet reached a value of 320 ppm in May 1960. On May 9, 2013, that figure crossed the 400-ppm threshold for the first time. And in 2019, the concentration reached its record level of 415.7 ppm. The values decrease slightly from May to September owing to the abundance of plants growing in the Northern Hemisphere in summer that absorb CO2 through photosynthesis. Next spring, though, is sure to set a new record, because despite the Paris Climate Protection Agreement of 2015 and annual climate conferences like the one currently being held in Madrid, global CO2 emissions are still on the rise. After stagnating between 2014 and 2016, they have been growing ever since. This is the shocking truth about the “climate crisis” that the European Parliament and many countries and cities declared in 2019. At least since the Rio de Janeiro Earth Summit in 1992, researchers have been warning that CO2 emissions need to be reduced. But that hasn't happened. On the contrary, annual global CO2 emissions have increased by 60 percent since then. Four years ago in Paris, countries set the goal of limiting global warming to well below 2 degrees Celsius by 2100 or, if possible, even 1.5 degrees Celsius. **The Intergovernmental Panel on Climate Change (IPCC) calculated one year ago that it**

**is even still theoretically possible to meet the lower of the two targets.** but doubts persist about whether it is still feasible politically, economically and in practical terms. The world has already warmed by 1.1 degrees compared to pre-Industrial Revolution levels. The IPCC believes that meeting the 1.5-degree target would require an extremely ambitious effort, requiring that the world halve its CO2 to roughly the level of 1979. And we would have to do so by 2030, just 10 years from now. It would also require that CO2 emissions be further reduced to zero by 2040. For the more realistic 2-degree target, CO2 emissions would have to be reduced by a quarter by 2030. If both targets are missed, the only other possibility for a future with a climate that is still bearable would be for humanity to find a way to artificially extract hundreds of billions of tons of CO2 from the atmosphere at extremely high costs, using large-scale technologies for which there are no guarantees that they will work. 'Nowhere Near on Track' The prospects for reaching the 1.5-degree goal, though, are “on the brink of becoming impossible,” researchers warned in the annual “Emissions Gap Report” compiled by the UN Environmental Program and released on Nov. 26. The report takes a look at the CO2 reductions countries should be undertaking with those that they are actually achieving. Enormous discrepancies become apparent in the report. Even if the countries were to achieve all the climate change goals they have committed themselves to so far, global warming would still exceed 3 degrees Celsius by 2100, according to the report. This would cause a sea level rise of half a meter (1'8”), meaning cities like Miami or Shanghai might have to be abandoned. In order to achieve the 1.5-degree target, though, the countries of the world would have to multiply their efforts -- and ensure that they emit 32 billion tons less CO2 by 2030. The

UNEP report states that even just **2-degree target would require a rapid reduction of total CO2 emissions by around 15 billion tons. It's not impossible, but it is extremely difficult.** Researchers who worked on

the UN report say achieving the 1.5 degree goal would require that each country reduce its CO2 emissions by 7.6 percent each year between 2020 and 2030. In order to achieve the 2-degree target, reductions of 2.7 percent per year are necessary. “We are nowhere near on track to meet the Paris Agreement target,” said Petteri Taalas, secretary-general of the World Meteorological Organization, summing up the situation. Meanwhile, UNEP head Inger Anderson has said that “radical

**transformations” of economies and societies toward increased sustainability are now**

**needed.** Otherwise, she says, we will find ourselves facing a “planet radically altered by climate change.” There is no third option. The UNEP report is critical of lack of action taken by countries around the world despite the promises they have made. When the first “Emissions Gap Report” was released in 2010, many countries promised to phase out subsidies for fossil fuels, but little has happened since then. Others promised to stop deforestation, but often enough, words weren't followed by deeds. The organization is now urging G-20 countries to adopt a series of tough measures. The EU should stop generating power from coal, for instance, and forget about installing gas pipelines from Russia. Europe should also abolish the combustion engine, make buildings more energy-efficient more quickly and massively expand local public transportation everywhere. The new head of the European Commission, Ursula von der Leyen, announced a “European Green Deal” on Wednesday, which the commission said would likely require investments of over 1 trillion euros in additional climate protection measures by 2030. The aim is for the entire Continent to become carbon- neutral by 2050, at least according to the official plan. The measures that will ultimately be taken to achieve this, however, will

likely fall short of UNEP's demands. The tone of the UNEP report is largely pessimistic, but it does contain passages that leave some room for optimism. **The cost of producing renewable energy has fallen much faster than experts thought possible just a few years ago. The price of solar energy, for instance, has dropped by more than 75 percent since 2010, while the price of wind power has gone down by around 35 percent. In many parts of the world, renewables are already the cheapest source of energy. A surprising number of coal-fired power plants are therefore being shut down sooner than expected, or are simply not built in the first place. The report's authors see enormous -- and realistic -- potential for reducing CO2 by 2030 in the areas of green power generation, reforestation, electromobility and more energy-efficient industry.**

So, has the era of renewable energies finally dawned? Not entirely. Tipping Points UNEP and its partners, including the Stockholm Environment Institute, have published another report. This one examines just how many fossil fuels will be extracted from the earth in the foreseeable future on the basis of decisions that have already been made, investment commitments or permits that have been granted. The result: Unless governments intervene on a massive scale, the amount of oil, coal and gas being extracted and burned will be 50 percent more than otherwise permitted under the 2 degrees Celsius target, and more than twice as much as the 1.5 degrees Celsius target. At the moment, the global mean temperature is rising by 0.2 degrees Celsius per decade. From this, barring some radical about-face, it can be surmised that the earth will already be 1.5 degrees hotter in 2040 than in the pre-industrial era -- 60 years sooner than predicted by the Paris Climate Agreement. Prospects like these make some climate researchers nervous, because as global temperatures rise, so does the risk that so-called tipping points in the climate system will be reached. If these thresholds are exceeded, self-reinforcing and perhaps irreversible processes could occur that might lead to even more warming. A Stalled Gulf Stream This is already happening with sea ice in the Arctic. Because it's so bright, it reflects massive amounts of solar energy back into space. But if the ice melts due to global warming, like it is already doing in the summer months, that solar energy gets absorbed by the sea, which then heats up and melts even more ice. A warmer Arctic also results in more permafrost thawing, which allows huge amounts of methane, a particularly potent greenhouse gas, to escape into the atmosphere. In turn, the temperature rises even further and more ice melts on, say, Greenland. This fresh water then pours into the Atlantic, which could cause sea levels around the world to rise and could also alter the Gulf Stream, the strong ocean current that warms Western and Northern Europe. The Gulf Stream is primarily driven by the thick, heavy salt water that sinks along Greenland's coast. If this water is diluted by enough fresh water, the current could weaken, which would disrupt ocean circulation worldwide. In the scientific journal Nature, researchers from the Potsdam Institute for Climate Impact Research (PIK) and other organizations have now expressly warned against these and other tipping points. It is

conceivable that some of these could trigger others like dominoes; **if a critical mass is reached,** the earth's composition could be changed quite

abruptly. Our planet is already considerably warmer and it could be “dangerously close” to these tipping points. This possibility, though theoretical,

**constitutes “a planetary emergency” and “an existential threat to civilization.”** PIK founder Hans Joachim

Schellnhuber and his colleagues write. Does this count as alarmism? Absolutely. Other climate researchers have their doubts as to whether these tipping points are really that imminent. But what if they are?