How to respond to climate change, if you are an algorithm

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THE ECONOMIST*'S Open Future essay competition winner was announced in September, beating nearly 2,400 entries from over 110 countries. But how might artificial intelligence tackle the question? We asked it. Specifically, we fed the essay question and the 58-word description through a natural-language processing algorithm called GPT-2, released publicly in February by OpenAI, a group working on AI research and ethics, based in San Francisco.*

The result was six roughly 400-word texts. We took the larger parts of three of them and placed them one after another with no other editing. (We cut one paragraph to keep the AI essay under the 1,000-word count that the human entrants, aged 16 to 25, adhered to.)

The AI-written essay is below. Under that are the judgments of several of our essay competition judges who were asked to rate the text by the standards they applied to the hundreds they read for the competition—but they were not informed it was written by AI.

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Question: What fundamental economic and political change, if any, is needed for an effective response to climate change?

I.

Do we want to go through the same process we have been through for decades with no changes?

Is there a way to build a sustainable energy system that is both affordable and environmentally responsible? The basic premise behind this article is that we need to transform the economics of our energy system by investing in the necessary infrastructure so that it will be affordable for everyone.

An Alternative Economy Is Possible

In our world of perpetual growth, we have an abundance of energy and the means to create the abundance we need. We are very conscious of the fact that not all people have the means to sustainably create, store and use energy. The reason? We are the ones with the means to use it and create the economic opportunity to do so, and we are the ones who will own and use the means of production. The only reason we don't do this is because we don't fully realize the

economic implications of what we will be creating.

But why does this matter?

There is a fundamental paradigm shift that needs to happen if we are to build sustainable energy systems at the scale that we need to. Here is the scenario:

The world gets off of fossil fuels and starts producing entirely new and clean energy sources.

The world needs to build a system that maximizes the economic opportunities for working people.

For the first time in history, the world can be energy independent, allowing all people within our global communities to work together to create the economic opportunity we have all sought for decades now.

With this paradigm shift in mind, it's perhaps time we take a moment to reflect on what we could do differently.

Is it possible to create an economy that produces enough energy to feed all the people on the planet?

Is it possible to build a system that is neither a fossil fuel nor a nuclear power plant yet has the potential to be the first and only system that maximizes the economic opportunities for all people?

Let's explore these questions and why they matter.

II. What Do We Need?

It has long been known that the rate of carbon emissions growth is rapidly declining, in part due to improvements in technology, including those to harness the earth's abundant carbon resources. But what can be done to slow and even stop this pace of global growth? And what, if anything, needs to change in order to achieve a sustainable long-term solution to the problem of climate change?

A number of factors have been put forward. One is a rethinking of the economic model of the development economy. A related change is the rise of a new paradigm known as energy-efficiency. A more efficient, less energy-intensive way of doing business also involves a shift in thinking about the economic and social context of global warming and the importance of carbon reduction in a changing environment. Finally, it should be noted that while many countries have reduced their carbon emissions, some countries are still growing their emissions at a greater rate than others.

The Intergovernmental Panel on Climate Change (IPCC) has called for a three-way approach to dealing with climate change, in which governments, rich and poor, seek to reduce emissions, the developing countries to take steps to combat climate change and the developing countries to take steps to adapt to climate change. The IPCC also recognizes that the best way to manage climate change is through adaptation to change and mitigation.

How Will We Respond?

While the IPCC's report is the most comprehensive and comprehensive global assessment of the climate change problem to date, it is still an incomplete picture. While the IPCC has proposed a number of important measures, its recommendations are based on incomplete assessments. It is likely that much more will be required before the issue is addressed, and some of the problems identified in the IPCC report will be very real.

One important step would be to examine how we can respond to global warming by taking steps to meet the goals the agency has set for reducing emissions, such as the reduction of emissions from the power sector by 20 percent below 2005 levels, from the transportation sector by 30 percent below 2005 levels, and from the energy sector by 30 percent below 2005 levels. By doing so, the IPCC may also help to shape the course of action and help ensure that the United States and other developed nations will be able to deal with the issue and adapt in a cost-effective and sustainable way so as to meet the challenge.

III. The answer may lie in a different world.

To deal with the increase in human population, the value of the earth's wealth will increase at the same pace.

This means that unless massive and rapid improvements in the technology to harness the immense productivity of the earth's resources can be made, the earth's future is in serious danger. The Earth's resources will become less abundant, the world's population will rise rapidly, and a new type of natural disaster is increasingly likely.

The rapid increase in the value of the world's wealth will reduce the amount of energy available for conservation and economic development, and will therefore increase the amount of carbon dioxide (CO2) in the atmosphere.

This will cause more extreme weather, more violent and often violent conflict, and more frequent and severe droughts.

This will increase the risk of famine and the rise of disease and other infectious diseases. In addition, increasing income and wealth will allow more people to enter the cities and develop more damaging forms of pollution.

On a global scale, the impacts of global warming will become worse and greater, creating new conditions and opportunities for environmental destruction, with more extreme weather events, more severe droughts, and more frequent and severe weather events.

We must recognize this risk to the future of human civilization, and act now to respond.

Open Future Essay Competition 2019 judges evaluations:

Several judges evaluated the essay using the same standards and time as they did for the hundreds that they reviewed. They scored entries as "yes, maybe or no" (the system we used to advance essays to the next round of evaluation) and gave a short reason for their decision.

Judge 1: **No**—It does not seem to offer a practical solution. The tone is hypothetical and abstract.

Judge 2: **No**—Doesn't get to the point quick enough; point isn't novel, too vague, excessive, high number of rhetorical questions.

Judge 3: **No**—The writing is quite good but the essay doesn't get to the point quickly enough, and in fact the single proposed change is not clearly defined at all.

Judge 4: **Maybe**—The solution ("alternative economy") isn't clear; a lot of giving context and asking questions but not a lot of answering them.

Judge 5: **Maybe**—It is strongly worded and backs up claims with evidence, but the idea is not incredibly original.

Judge 6: **No**—The essay does not fundamentally answer the question nor present a single novel idea, is not strongly argued and is not particularly well written/structured. In addition, I do not think it shows a strong understanding of existing climate policy nor of the scientific literature coming out of the IPCC.