INNOVATIVE APPROACHES TO SOLVING THE PROBLEM OF GLOBAL WARMING

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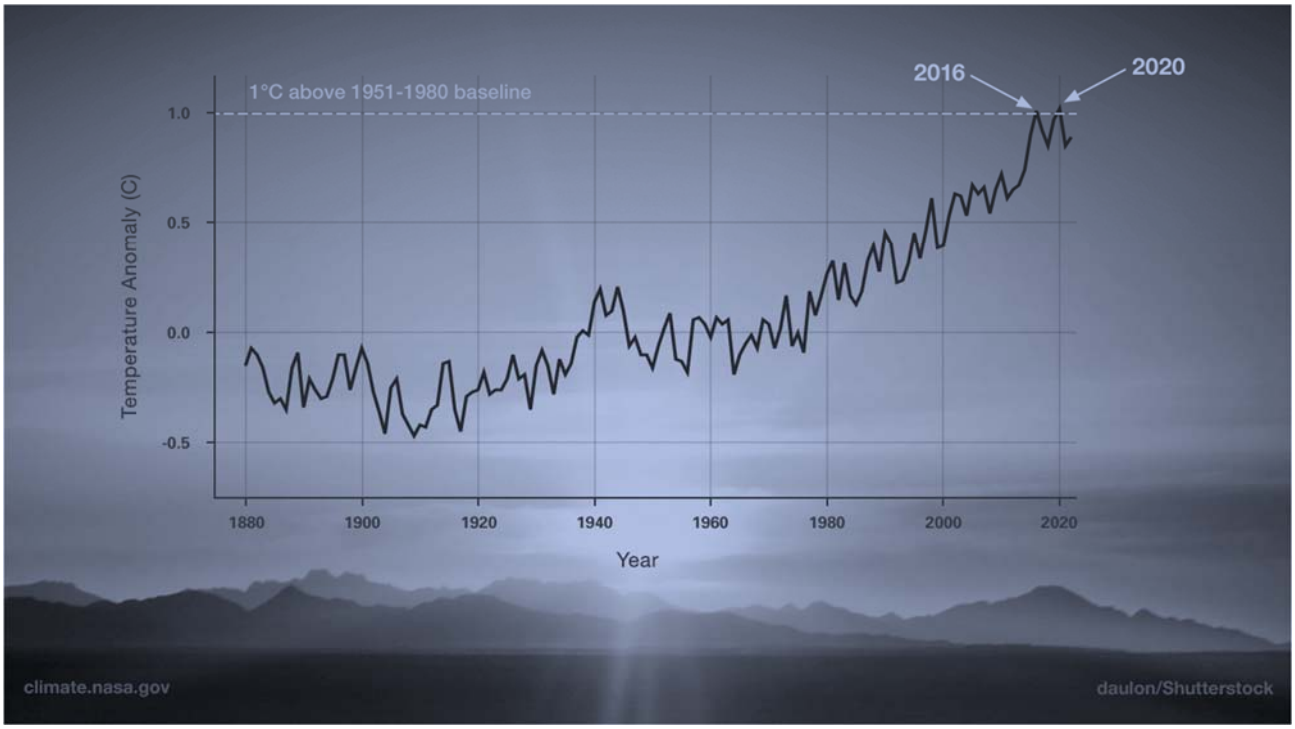
Global warming is known to be the increase in the Earth's surface temperature over an extended period, leading to significant alterations in the planet's climate, which causes global climate change. At the moment, this is one of the biggest environmental issues that humanity has faced.

According to information on NASA's official website, this phenomenon has been evident since the pre-industrial era (between 1850 and 1900) and is primarily attributed to human actions, particularly the combustion of fossil fuels, which results in higher levels of heat-trapping greenhouse gases in the Earth's atmosphere.

Over the period since the pre-industrial era, it is estimated that human activities have raised the Earth's global average temperature by approximately 1 degree Celsius (1.8 degrees Fahrenheit). This temperature increase is currently accelerating at a rate exceeding 0.2 degrees Celsius (0.36 degrees Fahrenheit) per decade. The present warming trend is unequivocally linked to human activity since the 1950s and is occurring at an unparalleled pace in comparison to historical patterns.



The accompanying graph illustrates the shift in global surface temperatures relative to the average temperatures during the period 1951-1980. Notably, the Earth's global average surface temperature in 2020 was statistically on par with 2016 as the hottest year on record, highlighting the persistent long-term warming pattern attributed to human activities.

The rise in the Earth’s average air temperature, commonly referred to as global warming, is one of the most important problems of our age. This phenomenon has a serious impact on our climate, natural resources, and the lives of humans and other living organisms. Thanks to scientific research and the development of technology, we finally have breakthroughs in the fight against this phenomenon.

The greatest achievements in solving this problem are Climate informatics and modeling that play an important role in understanding and combating global warming. The development of modern technologies allows us to better understand and predict changes in the climate. Supercomputers and specialized programs make it possible to conduct more accurate climate models and analyze huge amounts of data to make science-based decisions in the fight against global warming.

Climate models enable scientists to forecast future climate alterations under varying scenarios of greenhouse gas emissions and other variables. This capability equips society to get ready for anticipated changes and formulate adaptation

strategies.

Analysis of climate models creates optimal measures and tactics for mitigating greenhouse gas emissions and addressing other contributors to global warming.

Climate informatics provides scientific data and analysis that inform policy decisions about greenhouse gas emissions regulation, renewable energy development, and other mitigation strategies. It is ready to collect and analyze data on climate change, including air temperature, sea level and other indicators, allowing scientists to monitor the progress of reducing global warming.

Also, climate informatics and modeling create an opportunity for global cooperation and exchange of data and knowledge among countries, which is fundamental to solving global climate change problems.

In general, these technologies are tools for understanding, analyzing, and responding to global warming, and they play they have a significant role in the formulation of strategies to mitigate and adapt to climate change. Although climate informatics and modeling do not eliminate the danger of global warming, they play a key role in understanding, monitoring and solving this problem, providing a scientific basis and helping to make informed decisions.

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