

CLIMATE CRISIS SOLUTIONS

- *By Darshan Goswami, M.S., P.E., Pittsburgh, PA, USA*

Climate change is one of the most challenging threats that humanity has ever faced – but there are solutions.



Courtesy Google



Courtesy Google

Climate change is real and happening now. The climate crisis is accelerating more rapidly than most scientists anticipated, and many of them are deeply concerned that climate tipping points are now imminent. Climate change could cause significant disruptions to ecosystems, society, and economies, potentially making large areas of earth uninhabitable.

The climate crisis is driven by emissions of greenhouse gases, the main contributor to the warming temperatures. Every additional delay in action will result in worsening consequences of global warming, including more extreme weather events, higher temperature extremes, and higher risk of fire, droughts and flooding.

Fortunately, the climate crisis is solvable. There are plenty of well-understood solutions to climate crisis. We now need the leadership and the courage to change course.

What is Climate Crisis?

Climate change is a modification of the global climate over a long period of time. During the past few centuries, humans have released more greenhouse gases, such as carbon dioxide, into the atmosphere, increasing the Earth's temperature and contributing to a serious climate crisis. At least 97% of published climate experts agree that global warming is real and caused by human activities. The release of

harmful gases from burning fossil fuel (coal, oil, gas), is the main cause. The planet has already heated about 1.2°C due to past emissions, and the temperature is certain to increase further because greenhouse gas levels are still rising. If it continues at the current rate, global warming is likely to increase earth's temperature by 1.5°C between 2030 and 2050. [1]

Impact of Climate Crises

The impact of climate change can be seen in the massive raging wildfires in California and Turkey; surging global temperatures and heatwaves of 49°C in Canada and Morocco; devastating flash floods in Japan, Europe, US, India and China; rapid melting of glaciers; rising ocean temperatures; widespread mega drought; increased respiratory diseases; and mass forced human displacement that is affecting every living being on Earth. Recent scientific reports show that the climate crisis is only getting more severe, and that we are not prepared for the worsening impacts.

These impacts are specifically affecting the planet's poorest countries and low-income communities, who face higher risks of death and displacement from climate crisis. In addition, the record-breaking heat waves are rippling across the planet, bringing death and destruction in their wake. Refusing to address climate crisis will cause significant economic damage, and global supply chain interruptions.



Courtesy Google

What can we do?

Many scientists have called for urgent international action, citing cutting carbon emissions as the only long-term solution for avoiding the impacts of climate crisis.

We need to focus on two things to address the climate crisis: mitigation, and adaptation. Mitigation involves decreasing the concentration of greenhouse gases in the atmosphere by reducing emissions. If we want to limit warming to 1.5°C, we must cut global emissions by 50% by 2030 and reach net-zero by 2050. To meet these targets, we must transform businesses to rely on low-carbon energy sources such as hydrogen and electricity generated from solar and wind. Because the climate is already changing, we also need to adapt. Adaptation involves preparing for the effects of climate crisis, such as extreme weather events, rising sea levels, and food insecurity.

Climate Crisis Solutions

Greenhouse gases are released when oil, coal, and other fossil fuels are burned for energy—the energy we use to power our homes, cars, and economy. By using less fossil fuel, we can curb our contribution to climate crisis. Scientists also urge slashing of pollutants, stabilizing the human population, and switching to plant-based diets.

Here are 12 promising solutions to tackle the climate crisis and put the world on a path to zero emissions by 2050.

1. Expedite the Deployment of Renewable Energy (RE)



Courtesy Google

Renewable energy is the cheapest and safest option to avert the effects of the climate crisis. We must gradually phase out fossil fuels and transfer our energy sources to clean technologies like solar, wind, biomass, hydro, tidal wave, and geothermal. Costs for wind and solar have come down between 60% and 80% since 2010, and

battery costs have come down 85% in the same time period. By 2030, the cost of electricity produced from renewable resources is going to be about half of that generated from coal and gas.

2. Cut Emissions

To avoid the worst consequences of climate crisis, we need to reach “net zero” carbon emissions by 2050. To achieve this goal, we must no longer build fossil fuel infrastructure, phase out carbon intensive assets, and eliminate fossil fuel subsidies. The scale of these changes requires significant international cooperation.



Courtesy Google

3. Carbon Pricing

To protect our health and well-being and move beyond fossil fuels, we need a price on carbon pollution. Economists believe that carbon pricing is the most effective way to reduce carbon emissions. Carbon pricing makes polluting more expensive and solutions like clean energy and electric vehicles (EVs) more affordable.

4. Develop National Renewable Energy Policy

Each country must enact and deploy a comprehensive new energy roadmap with innovative RE policies — such as 40% by 2030 and 100% by 2050 — to create demand, new industries and innovation, and a new wave of green jobs.

5. Decarbonize the Electricity System and Electrify Everything

Expedite a move to electrify transportation by encouraging expanded use of EVs and plug-in hybrids and deployment of solar-powered EV charging stations around the

world. Facilitate the public transportation system of the future with "zero-emission" battery-powered electric buses in all major cities.



Courtesy Google

6. Energy Efficiency

To reduce the long-term demand for energy, it is imperative to engage states, industries, utilities, and other stakeholders to promote energy efficiency investments in the economy, industry, transportation, buildings, and appliances.

7. Develop Energy Storage

We are already seeing incredible progress in energy storage, battery technology, fuel cells and hydrogen generation/storage, and smarter and more flexible energy grids. With newer and better technologies and evolving energy and climate policies, renewed investment in energy storage could set the stage for a major transition to renewables.



Courtesy Google

8. Stop Deforestation and Plant Trees

Cutting forests is a chief contributor to climate change because forests and trees are reservoirs of carbon. While they absorb CO_2 from the air for photosynthesis, whenever they are burned or cleared, the carbon is released back into the atmosphere. Therefore, controlling logging, and planting new trees can offset greenhouse gas emissions.

9. Plant-Based Diet and consumption

One of the best ways for us to stop climate crisis is by reducing our meat consumption, or by going fully vegan. Animal products contribute to 15% of global greenhouse emissions and threaten both human health and environmental sustainability. Moreover, animal farming significantly contributes to deforestation and land use.

10. Work with Governments to Take Bold Climate Action

Work with government leaders around the world to set aggressive goals for climate solutions that create jobs, protect people, and cut pollution. Governments around the world need to adopt climate action plans that comply with international standards.

11. Protect Oceans



Courtesy Google

Oceans absorb large amounts of carbon dioxide from the atmosphere, which helps to keep our climate stable. But many are overfished, used for oil and gas drilling, or threatened by deep sea mining. Protecting oceans and marine life is key to protecting the environment from climate crises.

12. Educate Girls

Education is the most powerful tool available for breaking the cycle of international poverty, while mitigating emissions by curbing population growth. Educating girls is one of the most cost-effective, high-impact ways for every nation to fight rising temperatures because women with more years of education have fewer, healthier children and actively manage their own reproductive health, and therefore a lower carbon footprint. [2]

Conclusion

Climate change poses existential threats to humanity. Today's climate crisis can be averted by radically reducing carbon emissions from fossil fuels and other greenhouse gases. However, all countries must live up to the commitments of the Paris Agreement.

Some scientists have found that we may have already reached irreversible climate destabilization. Left unchecked, climate change could render a significant portion of the Earth uninhabitable, creating increased social, economic, and political crises in the very near future.

Decisive actions and policy changes are needed to effectively combat climate crisis and ensure the health of the planet. While real solutions will require action on a

global scale, each one of us can make small changes in our day-to-day life to lower our impact on the environment.

I believe that the threats posed by climate crisis can be solved with technologies and the science that already exists. The above solutions are favorable for creating millions of jobs, protect the health of our communities, and foster a stronger, cleaner, more equitable economy.

To transition to a 100% clean energy economy by 2050, policymakers everywhere must tackle the climate crisis by making massive investments in large-scale renewable energy projects. Through a powerful combination of informed policy and personal choices, we must ensure that the planet is safe and inhabitable for ourselves and future generations. If we do not take action now, the damage from climate change could be much greater and longer-lasting.

References:

1. *Skeptical Science (2017). The 97% consensus on global warming.*
<https://skepticalscience.com/global-warming-scientific-consensus-intermediate.htm>
2. *Brookings: Why is girls' education important for climate action?*

About the Author:



Darshan Goswami, MS, PE, has more than 40 years of experience in the energy field. He worked as a Project Manager for Renewable Energy, Micro-grid and Smart Grid projects at the United States Department of Energy (DOE) in Pittsburgh. He is a registered professional electrical engineer with a passion and commitment to promote, develop, and deploy renewable energy resources and the hydrogen economy. The author supports: India Foundation for Children Education and Care, Inc. (<http://www.ifcare.org/>).