**What can we do about climate change?**

Human-caused global warming is settled science for scientists worldwide.There is too much new carbon in the atmosphere and the ocean, but not enough stable carbon where it once was — in the soil. What actions need to be taken to mitigate the serious impacts of climate change?

**World goals**

Each meat-eating American produces 1.5 tons per year more greenhouse gases than do their vegetarian peers.

— Make sure emissions peak in 2015 and decrease toward zero after that.

— Greater consuming developed countries make cuts of 40 percent on their 1990 carbon emissions by 2020. Desired individual carbon footprint is two tons CO2 per year.

— Developing countries slow the growth of emissions by 15 to 30 percent by 2020, supported financially by industrialized nations.

**World nations’ actions**

— Place tax on carbon to recover pollution externality costs from fossil fuels while protecting low-income families.

— Eliminate subsidies and increase extraction royalties paid by fossil fuel companies.

— Require solar panels on new buildings where feasible.

— Stop granting new leases of land and sea for fossil fuel production.

— Subsidize retrofit of buildings for energy efficiency.

— Convert government vehicles to electric/hybrid cars.

— Redesign the energy network to encourage local solar input.

— Protect tropical forests with a special funding mechanism.

**Other market-based solutions**

— Replace dirty fossil fuel energy with renewable energy and energy efficiency. Phase out coal plants and subsidize new clean power plants.

— Six northeastern states coordinate a regional effort to cap CO2 pollution from power plants via the use of alternative sources and energy-efficiency programs. California has launched its own cap-and-trade market.

— Control of methane leaks: In Colorado, leaks in pipelines, storage tanks and other infrastructure will have to be fixed within weeks after their discovery. The Obama administration has new rules to capture the methane leaking from garbage dumps, coal mines, large animal farms and fracking.

— Tougher car standards via more efficient internal combustion engines or better hybrids, and higher efficiency standards for appliances.

— Infrastructure upgrade: Upgrading existing highways and transmission lines, energy-efficient buildings and improved cement-making processes.

— Greener farming: Farmers can use precision agriculture to grow crops efficiently, using cover crops to reduce soil erosion and biodigesters to reduce animal waste.

— Changes to private business models, whether an insurance giant facing extreme weather risk or a utility facing new regulations as well as customers wanting a new relationship with power producers.

— New geopolitical consensus: China to cap its CO2 emissions by 2030 and to get 20 percent of its electricity from wind, sun, dams and fission. 55 developing countries installed nearly twice as much renewable power as developed countries between 2008 and 2013.

— Improved agricultural practices along with paper recycling and forest management changes, balancing wood logged with the amount of new trees growing.

**Personal actions**

— Vote for politicians and policies that promise climate action.

— Employ alternatives when possible — plant-derived plastics, biodiesel, wind power.

— Divest from oil stocks or invest in companies practicing carbon capture and storage.

— Move closer to work, use mass transit, or switch to walking or cycling, including working from home and telecommuting.

— Cut down on long-distance airplane flights that arguably release emissions in the worst possible spot (higher in the atmosphere).

— Consume less: Whether by forgoing an automobile or employing a reusable grocery sack, cutting back on consumption results in fewer fossil fuels being burned to extract, produce and ship products around the globe.

— For a new car, buy one that will last the longest and have the least impact on the environment. When purchasing groceries, buying in bulk can reduce the amount of packaging — plastic wrapping, cardboard boxes and other unnecessary materials.

— Be efficient — Stop buying gas-guzzling sport-utility vehicles, turn off lights when not in a room, and power off devices when not in use.

— Employing more efficient refrigerators, air conditioners and other appliances while weatherproofing windows of a home can reduce heating and cooling bills.

— Each meat-eating American produces 1.5 tons per year more greenhouse gases than do their vegetarian peers. It takes less land to grow crops to feed humans than livestock, allowing more room for planting trees.

— When purchasing wood products, such as furniture or flooring, buy used goods or wood certified to have been sustainably harvested.

— Purchasing energy-efficient gadgets such as efficient battery chargers could save more than one billion kilowatt-hours of electricity.

— Swapping old incandescent light bulbs for more efficient replacements would save billions of kilowatt-hours.

— More humans mean more greenhouse gas emissions. Promote family planning.

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