

CLIMATE CRISIS CATALOG

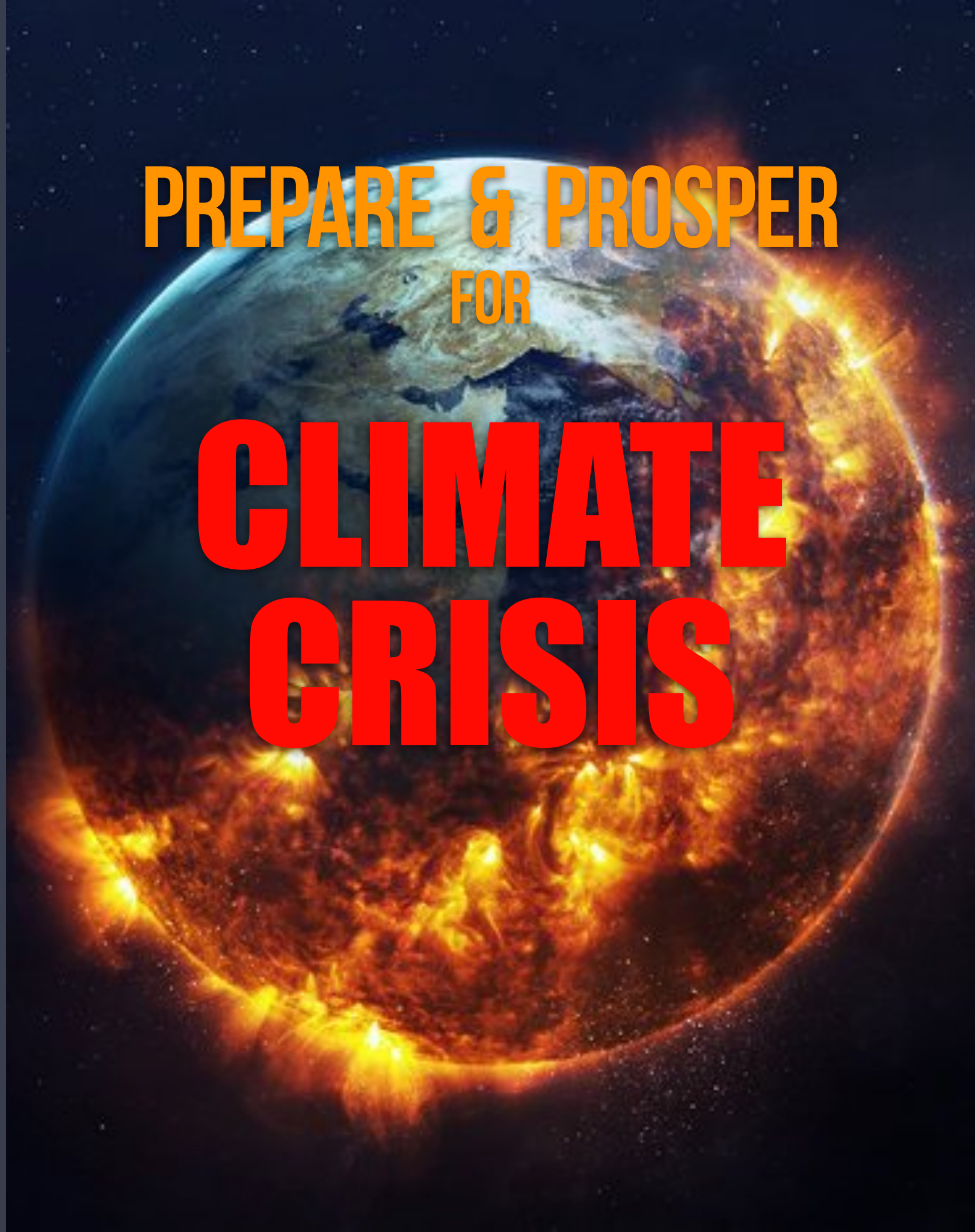


Access to tools we need.

DOUG ROSS

PREPARE & PROSPER
FOR

CLIMATE CRISIS



About the author of:

PREPARE & PROSPER FOR
CLIMATE CRISIS

As a teen in 1970 during the first Earth Day, I bought an oversized book, The Whole Earth Catalog. It was a treasured resource for access to tools to those going off the grid to live a simpler life. Now we need to a new digital catalog with tools critical for our future survival in this new climate crisis economy.

Be well to all,
Doug Ross



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For information, Contact: Doug Ross, Email: climatecrisiscatalog@gmail.com

TABLE OF CONTENTS

Table of Contents

Chapter 1 • RISKS

Chapter 2 • PROPERTY

Chapter 3 • ENERGY

Chapter 4 • TECHNOLOGY

Chapter 5 • FOOD

Chapter 6 • HEALTHCARE

Chapter 7 • BUSINESS

Chapter 8 • GOVERNMENT

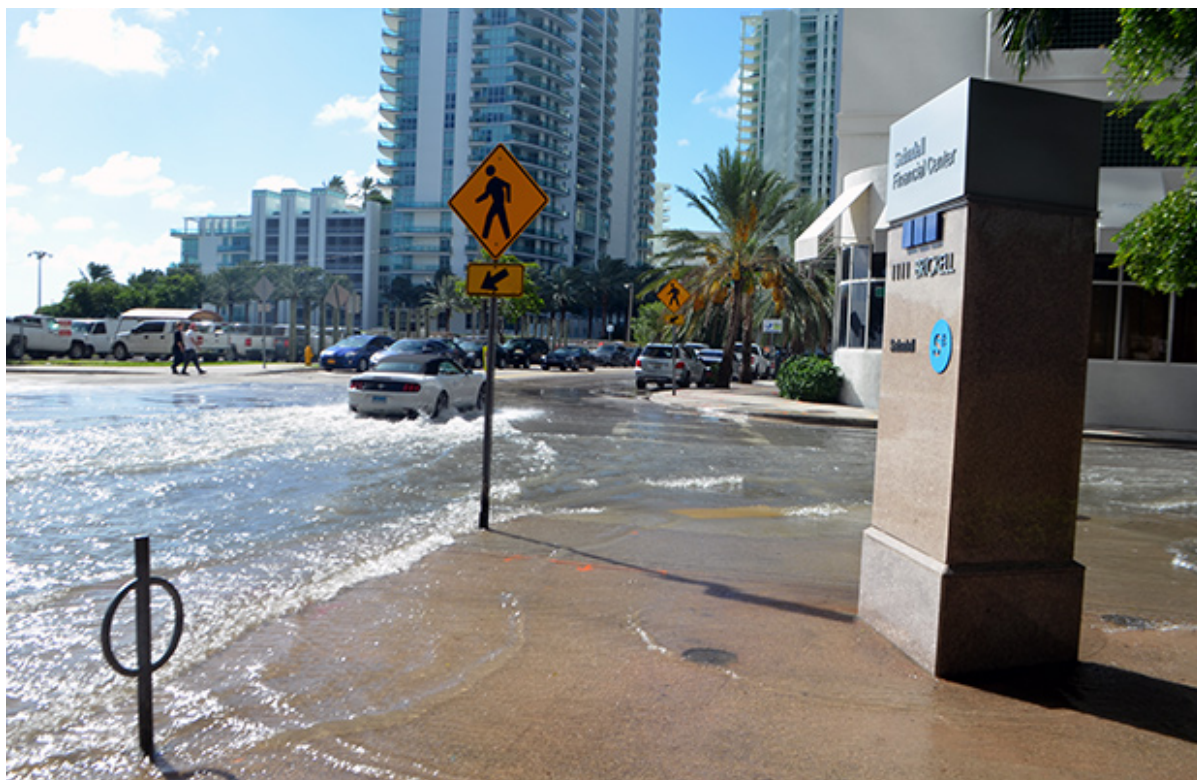
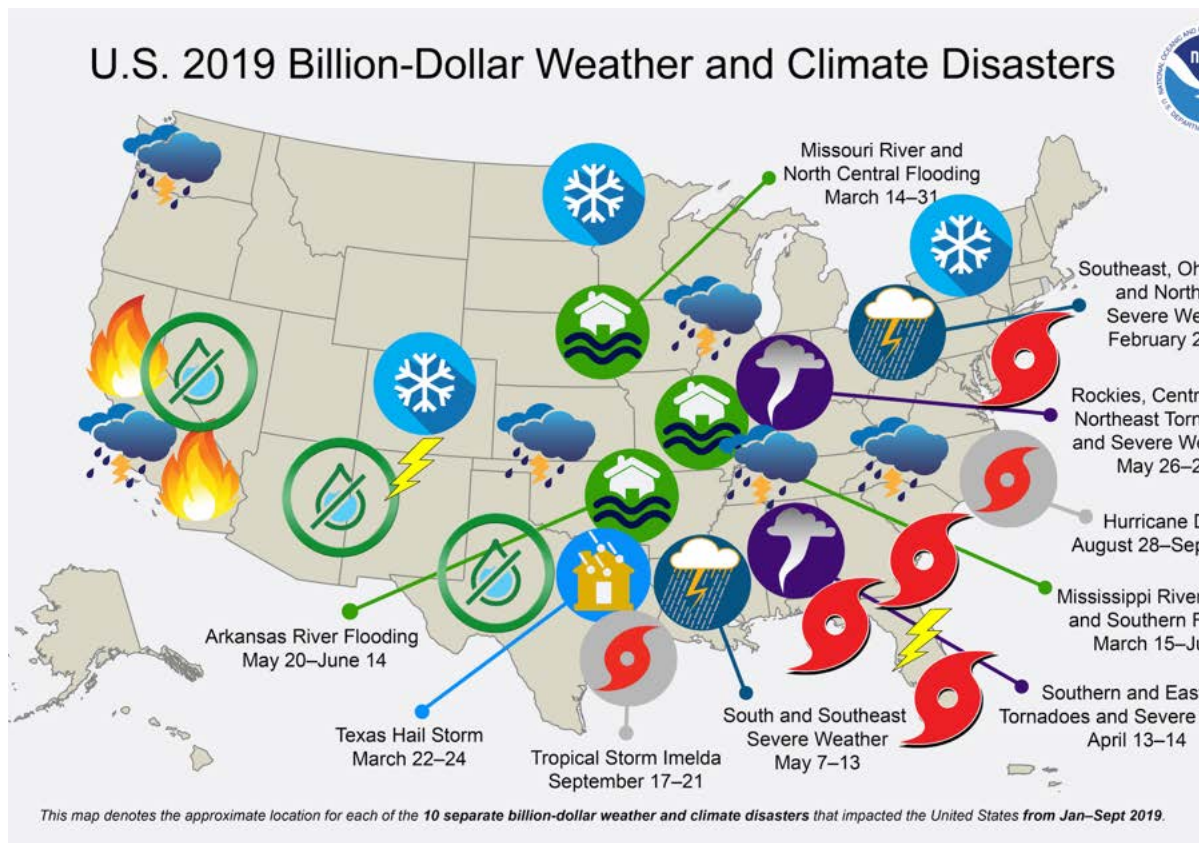
Resources

About Climate Crisis Catalog



RISKS

It is difficult to watch environmental tragedies unfold in the news more frequently causing deaths and damage. Whether it is annual river flooding in the Midwest, catastrophic fires in California, increasing twister destruction along "Tornado Alley," the bi-monthly tidal flood surges along the coasts, multiple billion-dollar hurricane damage, spreading and unending droughts. Insurance companies continue to ensure people and businesses who repeat the same mistakes over and over. In your gut, you know trouble is coming your way too. **Climate Crisis Catalog** has gathered the tools to provide you with how to prepare you and businesses for the inevitable future. Look to see where your home or business is threatened so you can begin to make your plan. In 2018, floods caused approximately 1.6 billion US dollars worth of property and crop damage across the United States. Coastal areas such as Florida will only experience increased flooding due to King tides when every 14 days the Moon and Sun line up to push seawater up the storm drains leaving streets with a foot or more underwater on sunny days with no rain in sight. It will only get worse as the ice continues melting glaciers at both poles rising the ocean even 1.5 to 2 feet by 2050.



With temperatures rising water heats, expands and rises into larger powerful storms creating massive more frequent hurricanes, tornados, flash floods, and even severe winter snowstorms. This will make for a challenging effort on everyone's part to adapt to the coming disasters.

There are proven plans, products, and services you can implement to avoid catastrophic loss of life and property.

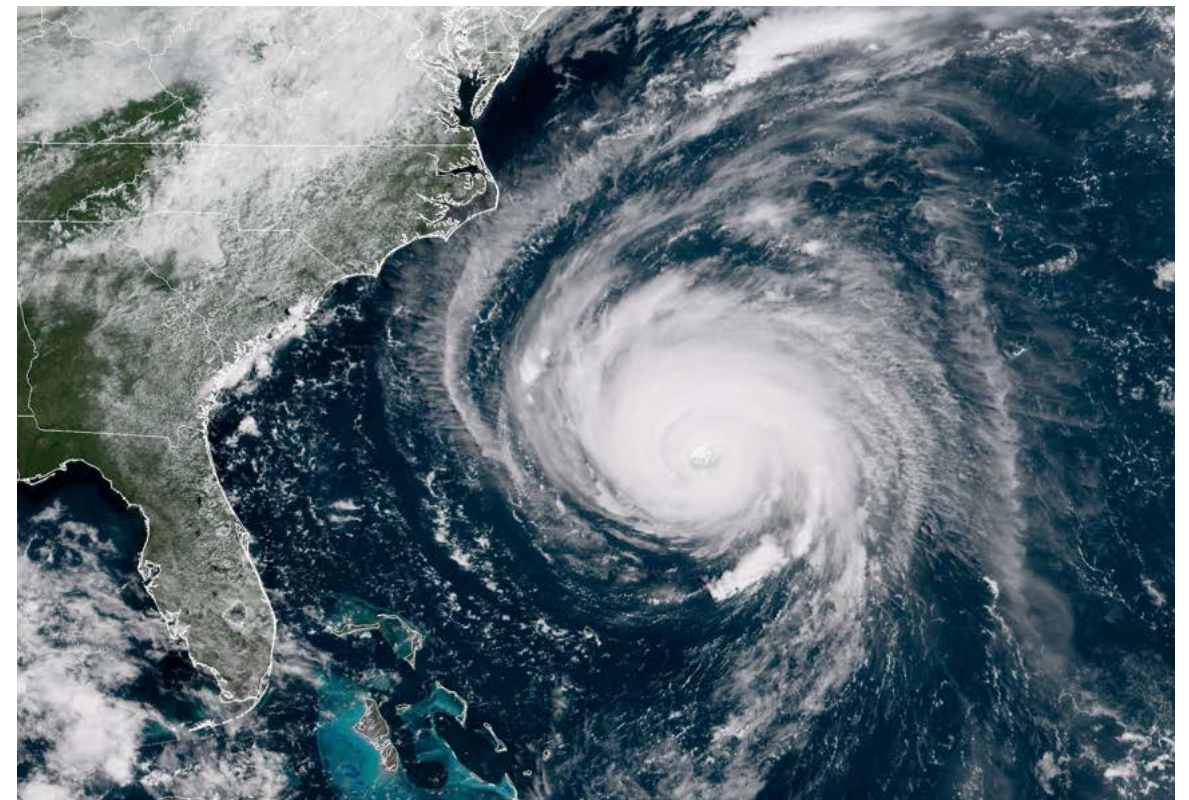
Climate Crisis Catalog believes obtaining information first will determine your unique plan to prepare for flooding of your home and property. Begin by understanding the facts provided in the SHELTER section by following this [link](#).

New model simulations of future **Atlantic hurricane** seasons suggest that higher greenhouse gas emissions will reduce vertical wind shear in an inconvenient place: along the US East Coast. This means increased intensity and frequency of hurricanes placing over 118 million people in jeopardy. There is a relationship between the frequency and intensity of hurricanes relative to social vulnerability with factors such as poverty, access to social services, an aging population, and higher mobility problems.

If you choose to live in the impact zone, you should at a minimum investigate. Plan, and rehearse your escape route when the next hurricane barrels inland. The greatest

damage usually is not the sustained high winds but the flooding from torrential downpours and the tidal surges. The widespread flooding is caused by the wind and pressure pushing seawater ashore into homes and communities.

Many who dare to ride out the storm take such fool's risks lightly and pay with their lives. However, if you wish to protect your property and home there are options under the PROPERTY section at this [link](#).



Larger more powerful hurricanes are the new normal.



Steve Linton of Deltec Homes has created a company which builds custom hurricane proof homes that are popular along the Atlantic coast and Caribbean. The engineering behind the designs reduce the energy forces against the structure. Wind can't build up enough pressure on any side to cause a structural failure. The energy is dispersed instead of building up in a single area. Other features include reinforced windows with impact glass that prevent wind and water from entering the home. Solar water heaters provide uninterrupted hot water while a passive solar design helps heat and cool the building. The building is elevated on multiple posts that allows any seawater surges to flow underneath away from the structure.



These unique green building designs are not just for oceanfront properties. There are prefabricated designs ready for assembly for mountain, farm, or rural locations. The in-house Deltec Homes design teams can even retrofit existing homes to improve their energy efficiency, extend the building size or harden its construction. Passive solar heating and cooling uses placement of windows, super-insulation, and direction the building will face for energy efficiency.

For more information: www.deltechomes.com



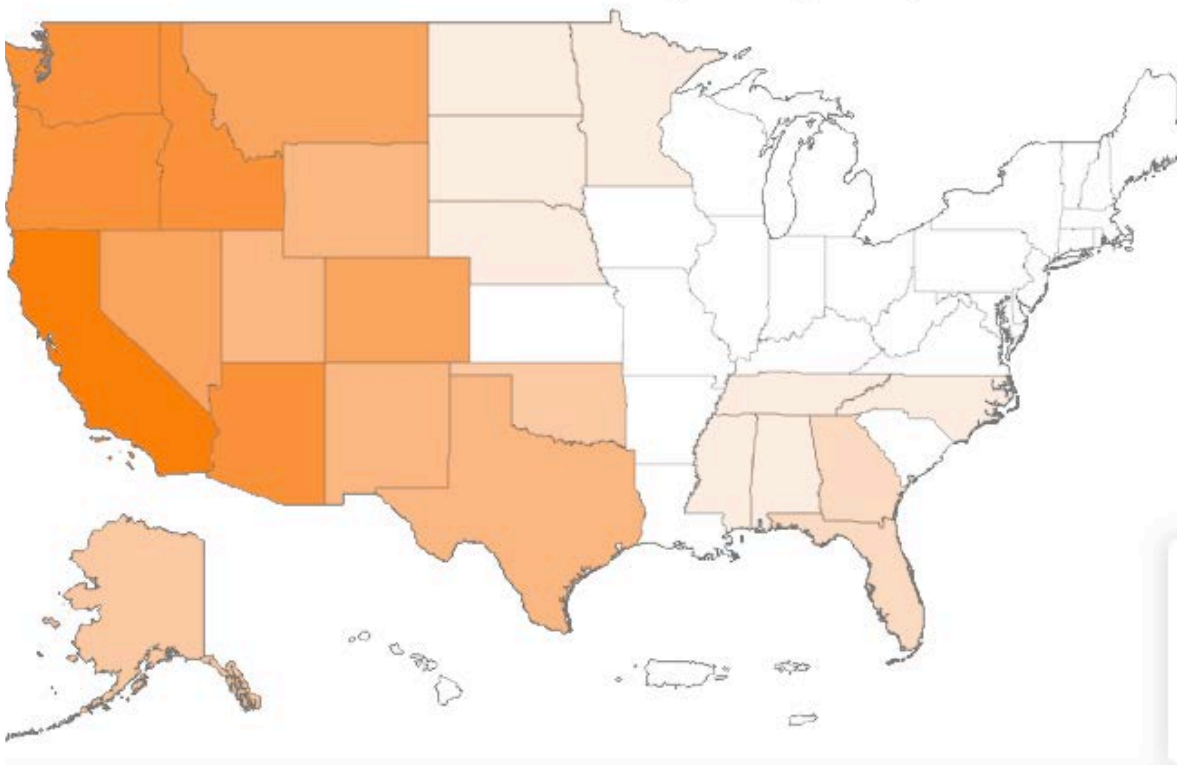
Fire is an important natural event in many ecosystems, and it also poses costly risks to human health and property. In recent years, North America has experienced a number of extreme wildfire seasons and extraordinary wildfire events, driven in part by declines in the health of wild land ecosystems. These changes are due in part to climate change and also to increases in human-caused fire ignitions as more people move into the wild land-urban interface. These factors have contributed to increases in the exposure of populations to direct and indirect impacts of fire, especially smoke.

Wildfire smoke is an incredibly complex and constantly evolving mixture of gases and particles, both solid and liquid. Smoke is directly related to negative health impacts, including exasperated asthma, chronic bronchitis, decreased lung function, congestive heart failure, and premature death. Small particles in wildfire smoke may result in exposures lasting hours to weeks.

Climate Crisis Catalog has researched the options available for those that want their loved ones and property safe from wildfires.

For more information, products and services please click on this www.climatecrisiscatalog.com.

2019* Billion-Dollar Wildfire Disasters (CPI-Adjusted)



Let's first define that a winter storm is a combination of heavy snow, blowing snow and/or dangerous wind chills. Winter storm is life-threatening.

Blizzards are dangerous winter storms that are a combination of blowing snow and wind resulting in very low visibilities. While heavy snowfalls and severe cold often accompany blizzards, they are not required. Sometimes strong winds pick up snow that has already fallen, creating a ground blizzard. An **ice storm** is a storm which results in the accumulation of at least .25" of ice on exposed surfaces. They create hazardous driving and walking conditions. Tree branches and power-lines can easily snap under the weight of the ice.

Lake effect storms are not low-pressure system storms. As a cold, dry air mass moves over the Great Lakes regions, the air picks up lots of moisture from the Great Lakes. This air, now full of water, dumps the water as snow in areas generally to the South and east of the lakes. **Snow squalls** are brief, intense snow showers accompanied by strong, gusty winds. Accumulation may be significant. Snow squalls are best known in the Great Lakes region.

Why can winter storms be so dangerous?

Most deaths from winter storms are not directly related to the storm itself.

- People die in traffic accidents on icy roads.
- People die of heart attacks while shoveling snow.
- People die of hypothermia from prolonged exposure to cold.

Climate Crisis Catalog has accumulated vital information, products, and services for your home and property needed to survive brutal winter storms beginning at this [SHELTER_link](#).



More water in atmosphere is causing heavier snowfall.



Check here for the real-time United States Drought Monitor, <https://droughtmonitor.unl.edu>

Drought ranks second in terms of national weather-related economic impacts, with annual losses nearing \$9 billion per year in the US. Beyond direct economic impacts, drought can threaten drinking water supplies and ecosystems, and can even contribute to increased food prices. Global warming affects evapotranspiration, the movement of water into the atmosphere from land and water surfaces and plants due to

evaporation and transpiration which is expected to lead to: Increased drought in dry areas. In drier regions, evapotranspiration may produce periods of drought defined as below-normal levels of rivers, lakes, and groundwater, and lack of enough soil moisture in agricultural areas. Precipitation has declined in the tropics and subtropics since 1970.



Heatwaves kill the young, old and weak.

Heatwaves are occurring more often than they used to in major cities across the United States, from an average of two heatwaves per year during the 1960s to more than six per year during the 2010s. The average heatwave season across 50 major cities is 47 days longer than it was in the 1960s. Of the 50 metropolitan areas in this indicator, 46 experienced a statistically significant increase in heatwave frequency; and 45 experienced significant increases in season length, between the 1960s and 2010s.

The most serious health impacts of a heatwave are often associated with high temperatures at night, which

is when the daily minimum usually occurs. If the air temperature stays too warm at night, the body faces extra strain as the heart pumps harder to try to regulate body temperature.

Adjusting for humidity is important because when humidity is high, water does not evaporate as easily, so it is harder for the human body to cool off by sweating. That is why health warnings about extreme heat are often based on the heat index, which combines temperature and humidity.

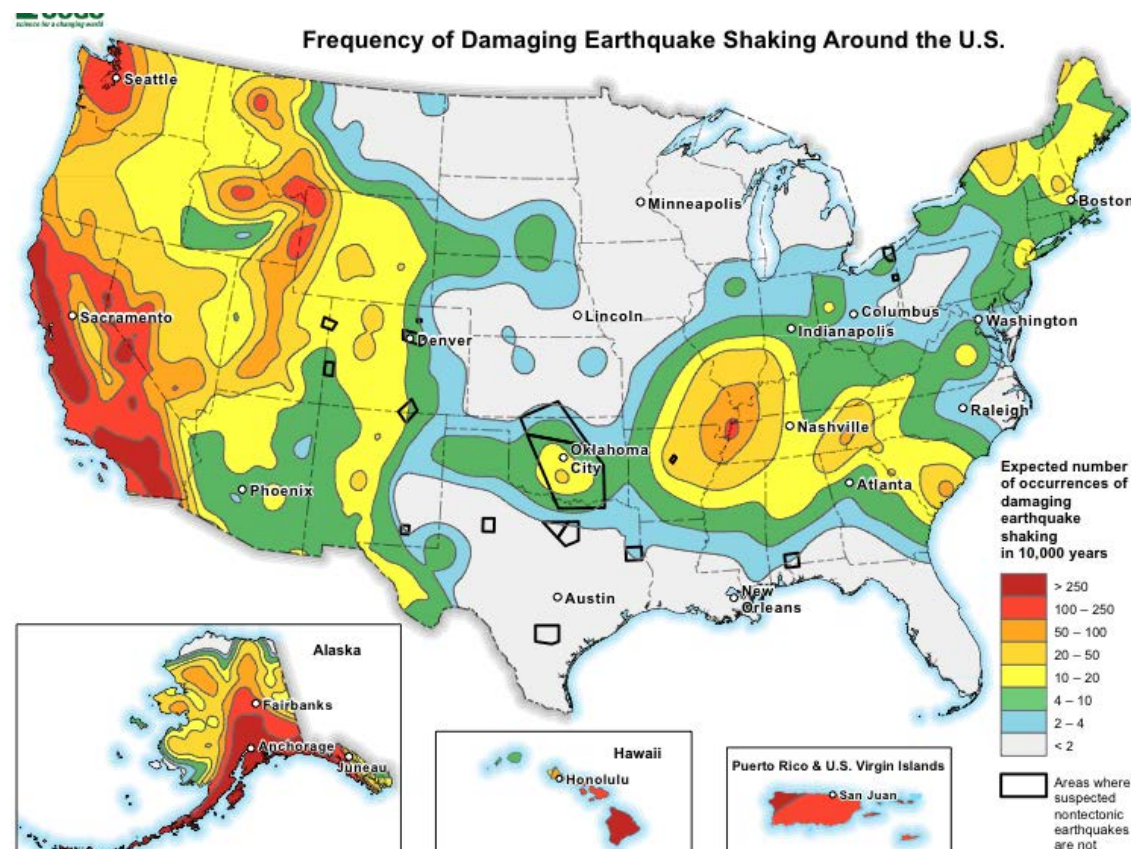
Climate Crisis Catalog offers credible solutions to surviving heatwaves with valuable information, products, and services at:

www.climatecrisiscatalog.com



Earthquakes are devastatingly destructive and although not directly caused by climate crisis they are included in the disaster section. Fossil fuel corporations who are responsible for the majority of global warming effects use fracking to extract natural gas trapped in deep underground pockets which induce earthquakes.

Fracking causes extremely small earthquakes, but they are almost always too small to be a safety concern. The injection of wastewater and saltwater into the subsurface can cause earthquakes that are large enough to be felt and may cause damage.



The largest earthquake induced by fluid injection that has been documented in the scientific literature was the September 23, 2016, earthquake in central Oklahoma. It had a magnitude of 5.8. Four magnitude 5+ earthquakes have occurred in Oklahoma, three of which occurred in 2016.

In 2011 a magnitude 5.3 earthquake was induced by fluid injection in the Raton Basin, Colorado. Earthquakes with magnitudes between 4.5 and 5.0 have been induced by fluid injection in Arkansas, Colorado, Kansas, and Texas.

PROPERTY

Our homes and business property are the biggest financial investments and require protection from external hazards like flood, wind, fire, and weathering caused by climate change. As a homeowner or property owner you should:

- a. Explore the hazards.
- b. Assess Vulnerability & Risks.
- c. Investigate Options.
- d. Prioritize & Plan.
- e. Take Action.

To investigate your regional climate and its forecast:Â

- [NOAA Storm Events Database](#)
- [NOAA Climate at a Glance](#)
- [USGCRP Indicators Portal](#)
- [U.S. Drought Portal](#)
- [NOAA Sea Level Rise Viewer](#)

Assess and evaluate the potential impacts on your assets and estimate the risks then decide what your action should be. You may need to choose to insulate, harden, earthen, elevate your shelter or even consider moving from the location. Weigh your options by choosing a solution that meets costs, benefits, and effectiveness to your plan then take action.





Building energy codes are driving greater **energy efficiency**, which means tighter and better insulated buildings. Designing and constructing beyond code including quality residential and commercial insulation installation delivers buildings that are more energy efficient, quieter and healthier.

The value of energy efficiency is obvious: it saves homeowners money on energy bills and reduces power plant CO2 emissions to lower carbon footprints. Several ways to increase energy efficiency in homes and businesses.

- Caulking window and door frame crack
- Install door sweeps to reduce draughts
- Increase insulation in external walls & attic
- Install heat reducing roof exhaust ventilators
- Energy Star double-pane windows
- Place rugs on this cold floors
- Use draught-sealing tape on internal doors
- Insulate electrical outlets
- Put your ceiling fan on reverse
- Don't use portable, gas, electric, space heaters
- Close fireplace flue,Â add chimney cap
- Replace screen door with storm door
- Insulate water heater with fiberglass jacket
- Fiberglass jackets around all ductwork, vents
- Install foam jackets on all exposed water pipes
- Hang thick curtains during winter
- Bi-annual HVAC checkup by professionalÂ
- Replace intake air filters seasonally
- Install smart thermostat

Because of long term climate change, the variable weather is increasing in intensity which could damage buildings. There are of numbers solutions to harden the structure to brace against hurricanes, tornados, storm winds carrying debris like small missiles into your structure.

Like any standard window, frame construction on a hurricane-resistant, storm-proof window can use aluminum or steel, vinyl, or wood. Aluminum or steel frames are considered the strongest (and most expensive), but there is some maintenance associated with these. Vinyl-framed windows are a great cost-effective solution with good insulation value, but at the end of their life, recycling the materials can be difficult. Wood frames offer good insulating value, but because they need to be regularly painted, the cost of maintenance is highest among the three frame options. And over time, wood windows can be susceptible to warping. There are also several glass options when it comes to hurricane-resistant, storm-proof windows. The different glazing types are identified by the laminate procedure by which the glass panes are joined with the interlayer.

For protection from tornados and rapidly spreading wildfires, above-ground interior shelters need to offer the ultimate in multi-purpose protection and security. Shelters

must withstand the most extreme tornado activity and offer a safe zone against home invasion. For more information visit the National Storm Shelter Association's Website at www.nssa.cc/installers.

Metal roofing is generally considered the best option for hurricane, tornado and fire resistance. Most metal varieties come with a warranty, offering defense against winds up to 140 mph. Metal roofs can be installed over your existing roof without tearing off shingles, provided local building codes allow it.



Storms are increasing and homes need to be reinforced.

How to Make Your Home More Energy Efficient

1. Change your light bulbs to LEDs.
2. If possible, wash your clothes in cold water.
3. Sealing cracks, gaps, leaks, and adding insulation can save up to 10% on home heating and cooling costs.
4. Clean or replace all the filters in your home regularly. Dirty filters make your system work harder and run longer than necessary.
5. Use your microwave instead of your stove when cooking.
6. To ensure your appliances are running efficiently, defrost your refrigerator and freezer before ice buildup becomes 1/4-inch thick.
7. During warmer months, close blinds, shades, and drapes on the sunny side of your home to help keep your home's temperature cooler and reduce the work for you AC. Open shades during cooler months to let the sun warm your home.
8. Don't peek in the oven while baking! Every time you peek, the temperature can drop 25 F, making your oven use more energy to bring the temperature back up.
9. Use natural light when possible.
10. Control your fixtures with a photocell or a timer to assure dusk-to-dawn only operation of your outdoor lights.
11. Don't leave your computer on all day long. Only turn on your computer, monitor, printer and fax machine when you need them.
12. Set your thermostat to 78 F in the summer and 68 F in the winter - every degree of extra heating or cooling will increase energy usage 6% to 8%. Setting your thermostat to a lower temperature than normal will not cool your home faster.
13. Using your ceiling fan will allow you to raise the thermostat setting about 4°F with no reduction in comfort.
14. Refrigerators and freezers actually operate most efficiently when full, so keep your refrigerator and freezer as full as possible (using water bottles if nothing else). Be careful about overfilling them as this will reduce airflow and cause the appliance to work harder.
15. Using dishwashers and clothes washers/dryers at night will keep the house cooler, reduce strain on the power grid during the peak usage hours of 4 PM and 6 PM and reduce the chance of an emergency!
16. Turn off the heated dry on your dishwasher and air dry instead.
17. Set your refrigerator temperature to the manufacturer's recommendation to avoid excessive cooling and wasting energy.
18. Don't leave bathroom or kitchen ventilation fans running longer than necessary. They replace inside air with outside.
19. If your home has single-pane windows, consider replacing them with more energy-efficient windows, or adding solar shades or tinting film.
20. Adjust the thermostat only to the desired temperature. Homes won't heat or cool faster by cranking it up.
21. Install a programmable thermostat that will automatically adjust the temperature according to your schedule.
22. Turn off the lights when they're not in use. Lighting accounts for about 12% of a typical residential utility bill.
23. Don't leave your mobile phone plugged in overnight. It only takes a couple of hours to charge.
24. Turn off the oven a few minutes before cooking time runs out. Your food will continue to cook without using the extra electricity.
25. Avoid placing appliances that give off heat, such as lamps or TVs, near a thermostat.



The term "**earth home**" is somewhat generic and can be applied to many different kinds of environmentally sound housing. For instance, underground homes, earth berm, sheltered or rammed houses fall under this category. A bermed house may be built above grade or partially below grade, with earth covering one or more walls. An elevational bermed design exposes one elevation or face of the house and covers the other sides and sometimes the roof with earth to protect and insulate the house.

The exposed front of the house, usually facing south, allows the sun to light and heat the interior. The floor plan is arranged so that common areas and bedrooms share light and heat from the southern exposure. This can be the least expensive and simplest way to build an earth-sheltered structure. Strategically placed skylights can ensure adequate

ventilation and daylight in the northern portions of the house.

In a penetration bermed design, earth covers the entire house, except where there are windows and doors. The house is usually built at ground level, and earth is built up (or bermed) around and on top of it. This design allows cross-ventilation and access to natural light from more than one side of the house.

Best of all, they are just plain cheaper to build.

Everything's cheaper about these houses. Less doors, less windows and less siding. In the exterior of a typical home you're maintaining four sides of the house plus the roof, in an earth-sheltered home you're only maintaining one side and a roof.

For more information:

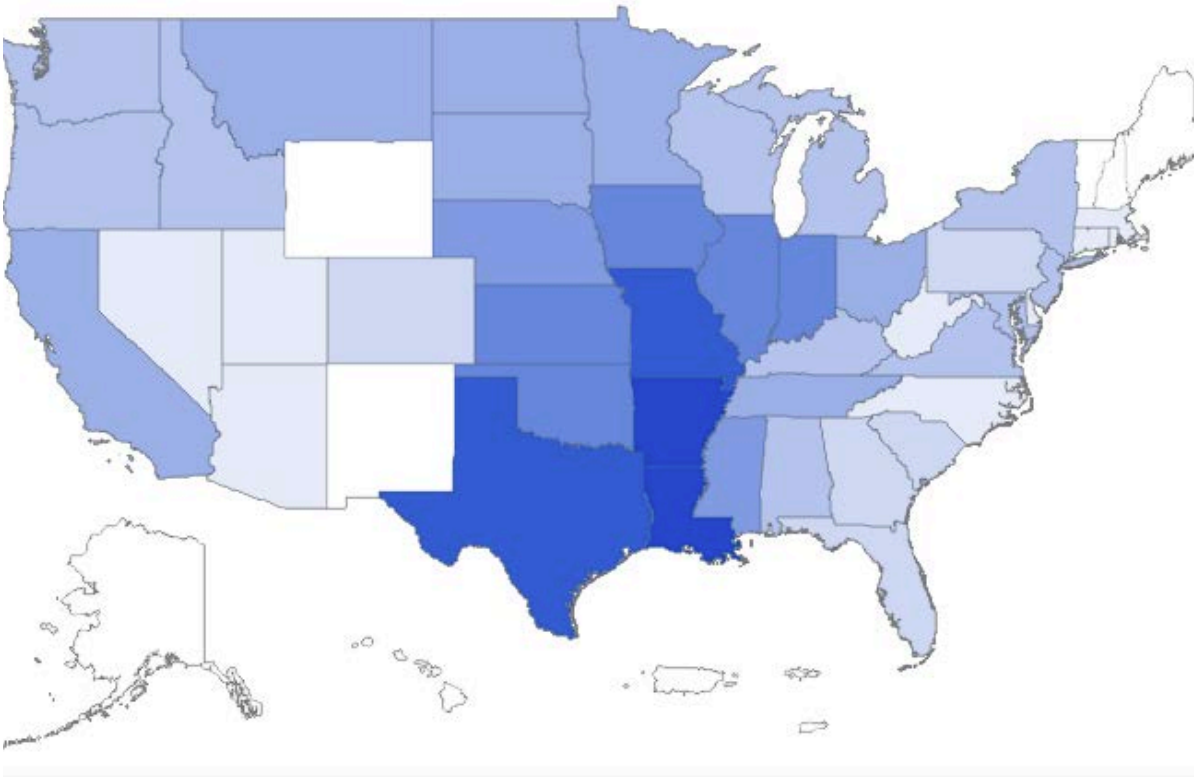
www.climatecrisiscatalog.com.



One of the most common retrofitting methods is elevating a house to a required or desired Flood Protection Elevation (FPE). When a house is properly elevated, the living area will be above all but the most severe floods (such as the 500-year flood). Several elevation techniques are available. In general, they involve (1) lifting the house and building a new, or extending the existing, foundation below it or (2) leaving the house in place and either building an elevated floor within the house or adding a new upper story.

During the elevation process, most frame, masonry veneer, and masonry houses are separated from their foundations, raised on hydraulic jacks, and held by temporary supports while a new or extended foundation is constructed below. The living area is raised and only the foundation remains exposed to flooding. This technique works well for houses originally built on a basement, crawlspace, and open foundations. When houses are lifted with this technique, the new or extended foundation can consist of either continuous walls or separate piers, posts, columns, or pilings. Masonry houses are more difficult to lift, primarily because of their design, construction, and weight, but lifting these homes is possible.

2019* Billion-Dollar Flooding Disasters (CPI-Adjusted)





Moving may be the only option as seawater rises along the coastlines

Sea levels could rise as much as 19 inches by 2050, according to what a report calls mid-range projections. The team used data from the US Geological Survey to map all areas along the continental US coastline containing homes that lie within one to 10 feet from the water level at high tide.

In recent years, places in Texas and Maryland have illustrated just how serious these more-frequent catastrophic storms can be for communities. The Houston area suffered major flooding from Tropical Storm Imelda earlier this month and from Hurricane Harvey in 2017. Ellicott City, Maryland, experienced two 1-in-1,000 year events that came just two years apart. In both cases, communities were barely recovering from the first storms when the second ones hit, prompting their local government to take a more serious look at how to adapt for the future.

There will millions of **climate crisis refugees** that will move and they will need help. This disaster will also be an opportunity for some who can create businesses offering moving assistance.

ENERGY

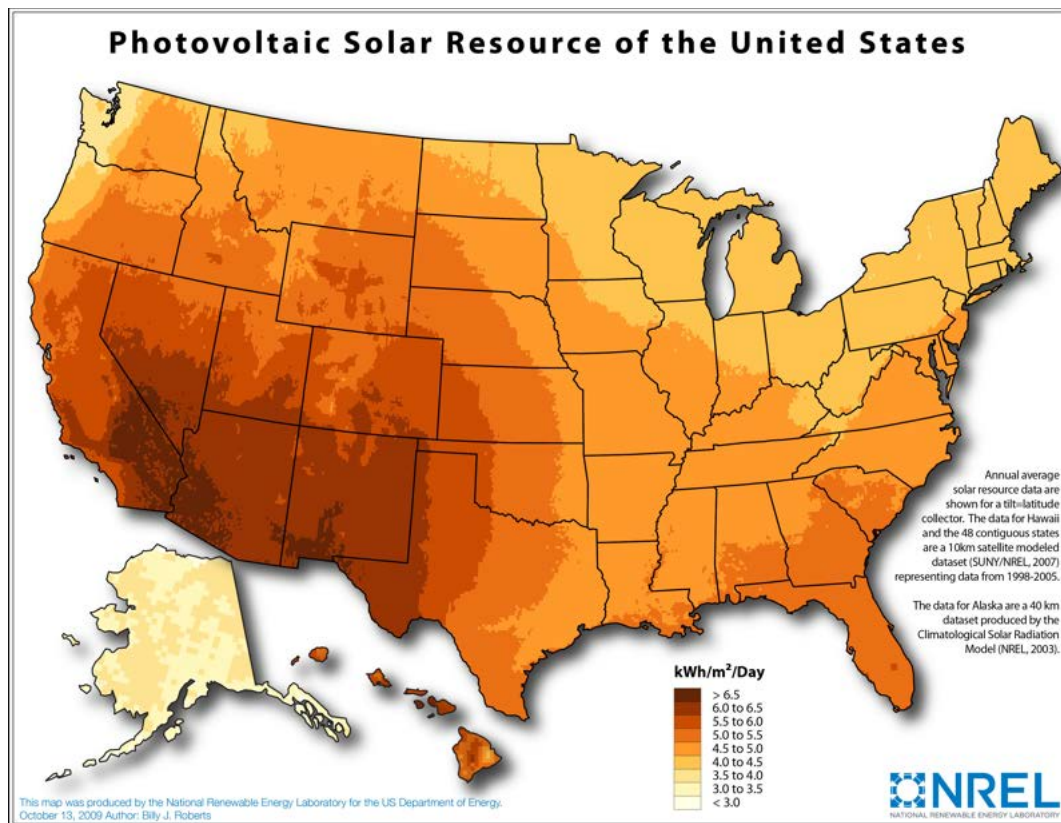
Until the mid-1800s, wood was the source of nearly all of the nation's energy needs for heating, cooking, and lighting. Today, fossil fuels coal, petroleum, and natural gas have been the major sources of energy. Hydropower and solid biomass were the most used renewable energy resources until the 1990s. Since then, the shares of US energy consumption from biofuels, solar, and wind energy have increased.

Renewable energy plays an important role in reducing greenhouse gas emissions. Using renewable energy can reduce the use of fossil fuels, which are major sources of US carbon dioxide emissions. The consumption of biofuels and other non-hydroelectric renewable energy sources in the United States more than doubled from 2000 to 2018, mainly because of state and federal government requirements and incentives to use renewable energy. The US Energy Information Administration projects that US renewable energy consumption will continue to increase through 2050.

The major types of renewable energy sources are:

- Biomass
 - Wood and wood waste
 - Municipal solid waste
 - Landfill gas and biogas
 - Ethanol
 - Biodiesel
- Hydropower
- Geothermal
- Wind
- Solar





Solar photovoltaic systems convert sunlight into electricity

Solar photovoltaic (PV) devices, or solar cells, change sunlight directly into electricity. Small PV cells can power calculators, watches, and other small electronic devices. Arrangements of many solar cells in PV panels and arrangements of multiple PV panels in PV arrays can produce electricity for an entire house. Some PV power plants have large arrays that cover many acres to produce electricity for thousands of homes.

Solar energy has benefits and some limitations

Using solar energy has two main benefits:

- Solar energy systems do not produce air pollutants or carbon dioxide.

- Solar energy systems on buildings have minimal effects on the environment.

Solar Energy has some limitations:

- The amount of sunlight that arrives at the earth's surface is not constant. The amount of sunlight varies depending on location, time of day, the season of the year, and weather conditions.
- The amount of sunlight reaching a square foot of the earth's surface is relatively small, so a large surface area is necessary to absorb or collect a useful amount of energy.
- The typical solar energy system includes solar panels, an inverter, equipment to mount the panels on your roof, and a performance monitoring system that tracks electricity production. The solar panels collect energy from the sun and turn it into electricity, which is passed through the inverter and converted into a form that you can use to power your home.Â
- The vast majority of residential solar energy systems are connected to the electricity grid grid-tied. When your panels are producing more electricity than your home needs, the excess is fed back into the power grid. Conversely, when your home needs more electricity than your solar panels are producing, you can draw power from the electric grid.

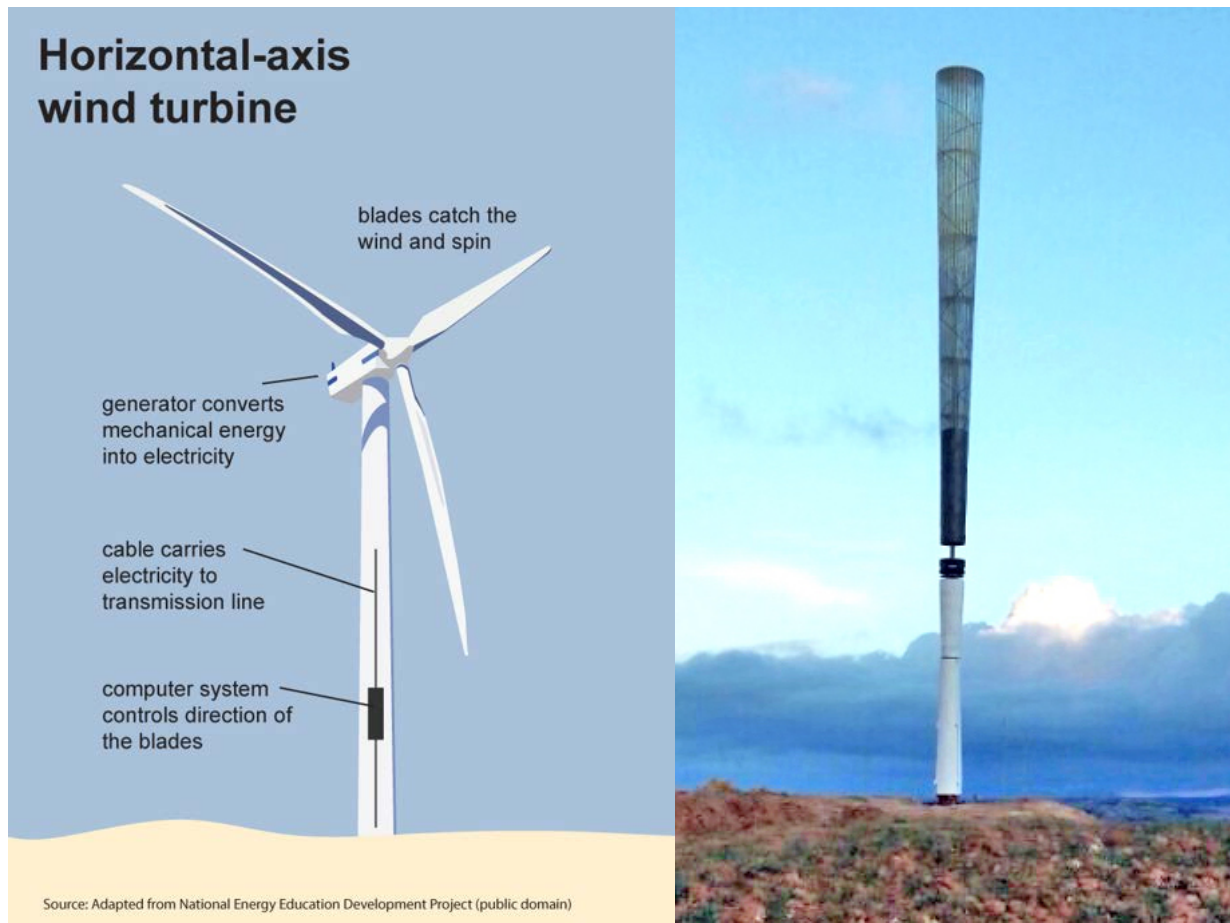
Solar energy authority Jon Yoshimura from Hawaii, has worked with major power utilities in the attempt to integrate their traditional power generation with multiple solar power sources. He said, "Many of the utilities in Hawaii were slow to adopt solar into their portfolio of power generation. Then on the island of Kauai, they tried it and it worked by combining all solar power sources. If you add up all the solar power from residential, commercial and utility combined during the day, you don't need a drop of oil. They could go 30 hours of continuous power because they stored the excess power into batteries which could be utilized at night. I would say that achievement was probably the first major utility in the world to go that long without burning any oil to supply electricity to its customers." So it can be done. By storing excess electricity into large scale battery banks to be used at night, a community can wean itself from fossil fuels.

Another example of success has been in Amsterdam where neighborhoods have become independent power generators. On the rooftops of the crowded buildings, solar panels convert the sunlight to electricity. On the streets below, owners of electric vehicles plug into the system giving back the power they do not use thus making them a kind of portable battery system. Any excess power

unused by residents and their vehicles is sent into the larger city power grid. Each neighborhood has a similar system where they generate electricity making them in effect, mini-power plants. No one is dependent on a centralized power generation plant that uses fossil fuels. And solar power generation used a patchwork battery storage, there was no danger of the entire grid going down because it was decentralized.

According to Yoshimura, the main barrier to moving ahead with creating widespread residential solar installs and generation is the political will to allow it. The elected politicians are directly influenced by the large utility companies to prevent solar power from succeeding by creating laws against its use. It is ironic and sad that the entire so-called "Sunshine State" of Florida has a minuscule amount of solar energy generation compared to the small State of Hawaii which has thirty times as much. The lesson here is clear that if you live in a state that prevents you from using solar power, elect new leaders who are in favor of it and send the big utilities a message. The sun is free and the people are in charge.

See more about solar energy at:
www.climatecrisiscatalog.com.



In 2018, wind turbines in the United States were the source of about 6.6% of total US utility-scale electricity generation. The amount of electricity generated from wind has grown significantly since 2000. Electricity generation from wind in the United States increased from about 6 billion kilowatt-hours (kWh) in 2000 to about 275 billion kWh in 2018.

New technologies have decreased the cost of producing electricity from wind, and growth in wind power has been encouraged by government and industry incentives.

There are three basic types of wind turbines:

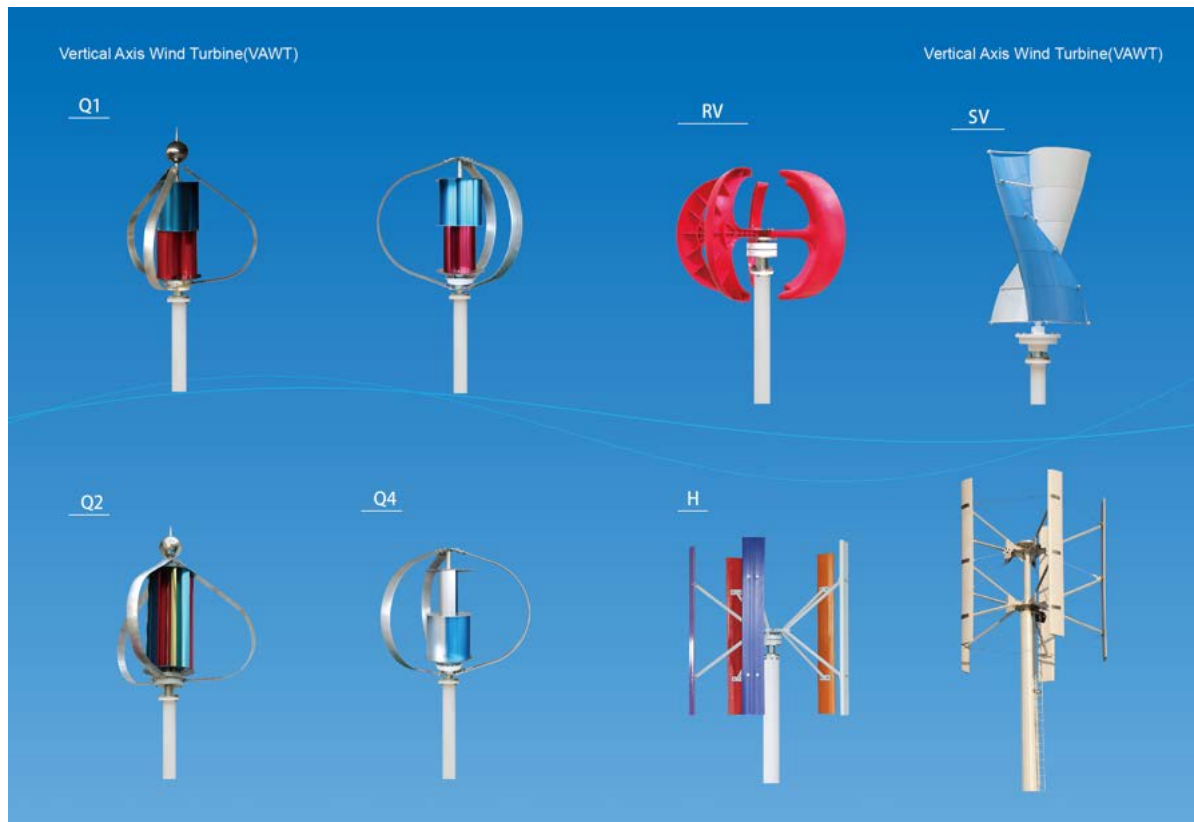
- Horizontal-axis turbines
- Vertical-axis turbines
- Bladeless turbines

The size of wind turbines varies widely. The length of the blades is the biggest factor in determining the amount of electricity a wind turbine can generate. Small wind turbines that can power a single home may have an electricity generating capacity of 10 kilowatts (kW). The largest wind turbines in operation have electricity generating capacities of up to 10,000 kW, and larger turbines are in development. Large turbines are often grouped together to create wind power plants, or wind farms, that provide power to electricity grids.

Climate Crisis Catalog likes NaierWind, Vortex, and Windmax products.

An innovative bladeless design is being pioneered by inventor David Yanaz of Vortex Bladeless. His device harnesses the wind energy vortex by inducing a vibration from the wind that is a phenomenon called Vortex Shedding. The cylinder oscillates on a wind range, which then generates electricity through an alternator system producing (AC) alternating current. The Eco-friendly design ensures no fatal bird strikes because it lacks rotating propellers like conventional wind turbine. A small home-based system installation cost is approximately \$7,000 per KW capacity while a large Commercial system can be \$1 million over 1 MW.

For more information: www.vortexbladeless.com



Jim Jiang of **Naier Wind Power Technology** in Jiangsu, China has taken the approach of offering customers both vertical axis or horizontal wind turbine systems. The right system is determined by the location, power needs and budget of the residential, business, or commercial customer. Naier Wind produces 100 W to 10KW wind turbines, 100 W to 100KW permanent magnet generators. There are digital controllers on all the models that send a data signal back to their headquarters to track the turbine's efficiency, any potential maintenance , and monitor the power output over the life of the wind turbine. Naier Wind is always improving their products and prefer to continue a close relationship with their customers. See www.wxnaier.com

Many of the Naier Wind products are used in conjunction with solar power which ensures their reliability when the wind is not. More and more residential and commercial installations recommend both renewable energy sources work together. Naier Wind products are available worldwide and are expanding into new markets. Their customized solutions provide a wind turbine which integrates the right style (vertical axis or horizontal), the amount of power output, installation, data monitoring and its continuous operation are correct for the customer needs. Jim Jiang recently mentioned in an interview, "My partners and I started Naier Wind Technology in 2009 with the goal of providing high quality, clean energy solutions. I have committed my lifetime to continuously improve our products. Contact Jim at: +86-13395185693

PROJECTS SHOW





Propane use in rural areas is essential without utility connections.

Propane is commonly used for space and water heating, for cooking, and as fuel for engine applications such as forklifts, farm irrigation engines, fleet vehicles, and buses; however, its applications are rapidly growing due to new technology developments. When used as vehicle fuel, propane is known as propane auto-gas.

Commercial establishments like hotels, restaurants, and laundromats use propane services in the same way as the homeowner. Farms: Farms use propane fuel for crop drying, weed control, and powering equipment. More than 660,000 farmers also use propane fuel for irrigation pumps, grain dryers, and generators.

Propane is a relatively clean-burning fuel, which is attributed to its lower carbon content. However, its combustion does produce wastes, such as particulate matter, sulfur dioxide, nitrogen oxides, nitrous oxide, carbon monoxide, greenhouse gas, methane, and non-methane overall organic carbon.

One disadvantage of propane gas is its availability.

As anyone needing to refill a barbecue tank is well aware of, propane is not as widely available as diesel fuel or gasoline. There is always a danger of explosions if improperly handled. Also during floods the tank could become buoyant and possibly be carried away.

Solar and wind facilities use the energy stored in batteries to reduce power fluctuations and increase reliability to deliver on-demand power. They store excess energy when demand is low and release it when demand is high, to ensure a steady supply of energy to millions of homes and businesses.

There are many different types of batteries that have large-scale energy storage potential, including sodium-sulfur,

Solar batteries work by storing energy produced by your solar panels and storing it as for later use. In some cases, solar batteries have their own inverter and offer integrated energy conversion. The higher your battery's capacity, the more solar energy it can store.

When you install a solar battery as part of your solar panel system, you are able to store excess solar electricity at your home instead of sending it back to the grid. If your solar panels are producing more electricity than you need, the excess energy goes towards charging the battery. Later, when your solar panels aren't producing electricity, you can draw down the energy you stored earlier in your battery for night use. You'll only send electricity back to the grid when your



Charge all day, power all night.

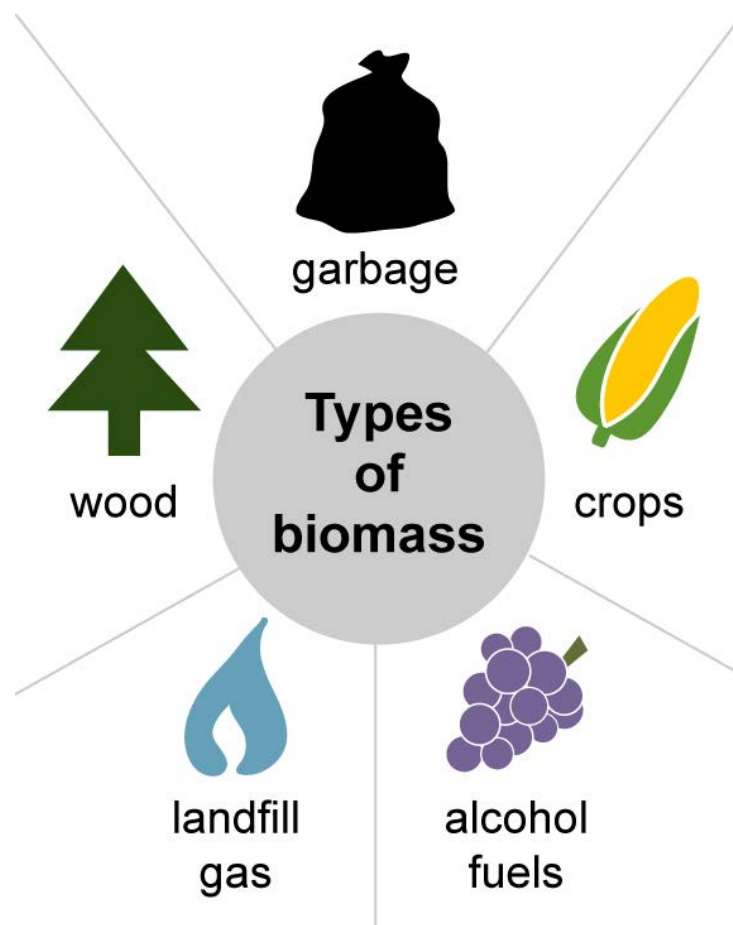


Tesla Powerwall delivers electricity for up to 7 days.

Battery is fully charged, and you't only draw electricity from the grid when your battery is depleted.

What this means in practical terms is that homes with solar-plus-storage can store excess solar power onsite for use later when the sun isn't shining. As a bonus, since solar batteries store energy at your home, they also offer short-term backup power in the event that there is a power outage in your area.

Climate Crisis Catalog recommends three storage batteries picks: Tesla Powerwall, LG Chem RESU10, Sonnen Eco10.



Biomass is organic material that comes from plants and animals, and it is a renewable source of energy.

Biomass contains stored energy from the sun. Plants absorb the sun's energy in a process called photosynthesis. When biomass is burned, the chemical energy in biomass is released as heat. Biomass can be burned directly or converted to liquid biofuels or biogas that can be burned as fuels.

Examples of biomass and their uses for energy

- Wood and wood processing waste burned to heat buildings, to produce process heat in industry, and to generate electricity
- Agricultural crops and waste materials burned as a fuel or converted to liquid biofuels
- Food, yard, and wood waste in the garbage burned to generate electricity in power plants or converted to biogas in landfills
- Animal manure and human sewage converted to biogas, which can be burned as a fuel

However, the only realistic and affordable use of biomass energy for a homeowner is wood fuel pellets used in stoves and heaters.

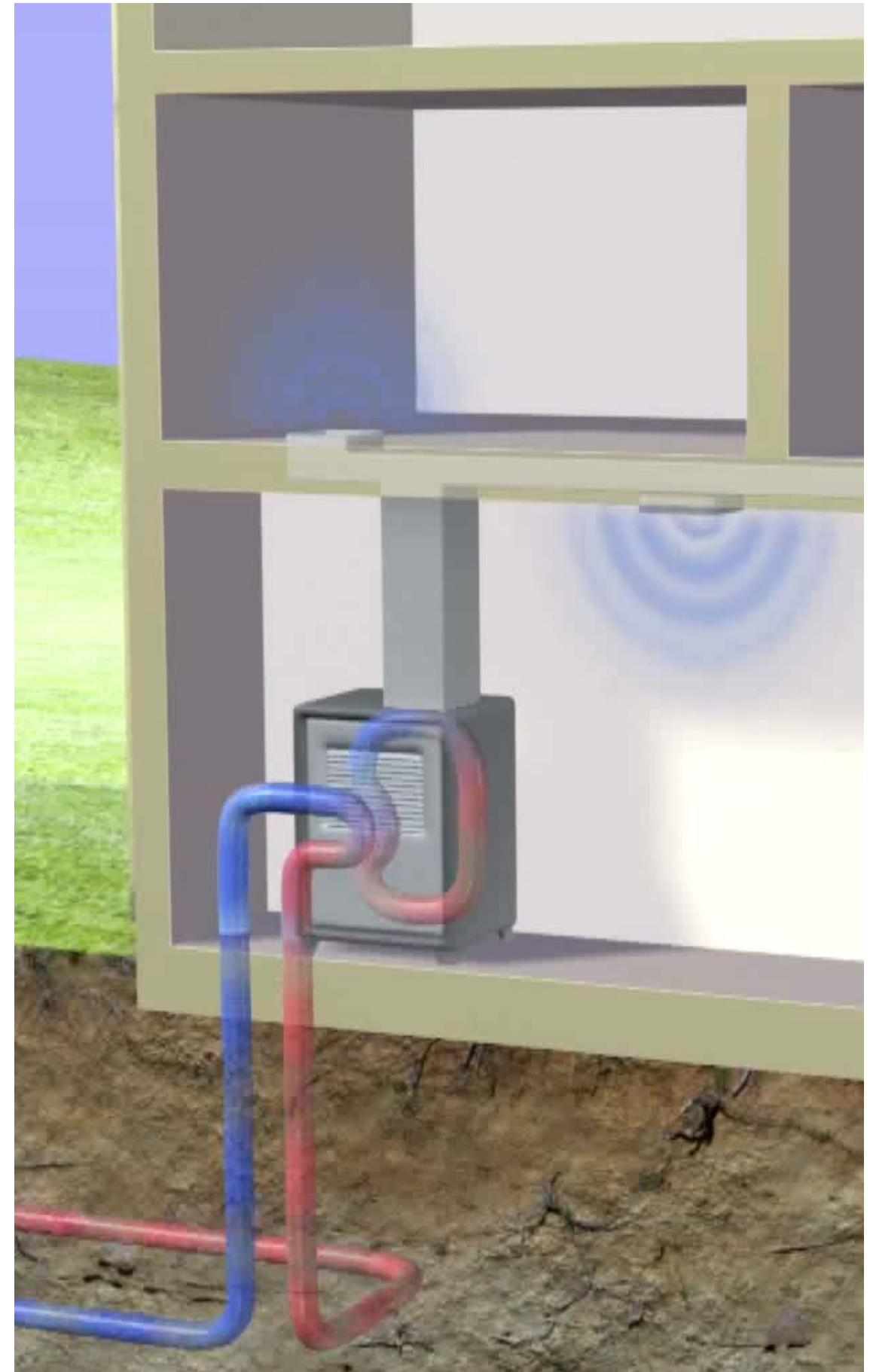


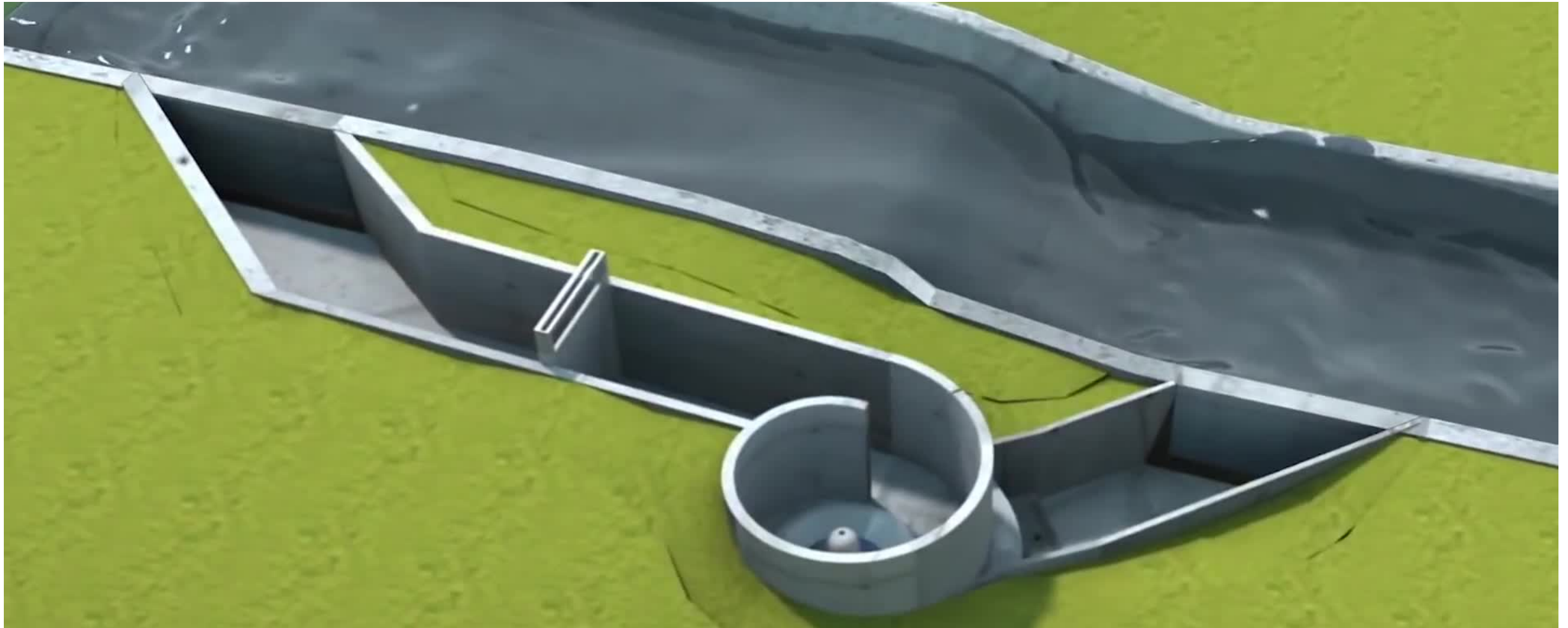
In the summer, a **geothermal system** collects heat from your home and moves it to the much cooler earth. During the winter, it draws from much warmer underground temps, making it that much more efficient.

No matter what climate you live in, the temperature throughout the year varies. For some climates that means blazing summers that cool to frigid winters. What many people don't realize is that the temperature below ground (regardless of climate or season) stays fairly consistent all year. While air temperatures can vary greatly from day to night or winter to summer, the temperature just a few feet below the earth's surface stays an average 55°-70°F year-round.

The ground is able to maintain temperature consistency because it absorbs 47% of the sun's heat as it hits the Earth's surface. Geothermal systems are able to tap into this free energy with a series of underground pipes called an earth loop. This technology is used to provide your home or office with access to an infinite energy source for heating, air conditioning, and hot water.

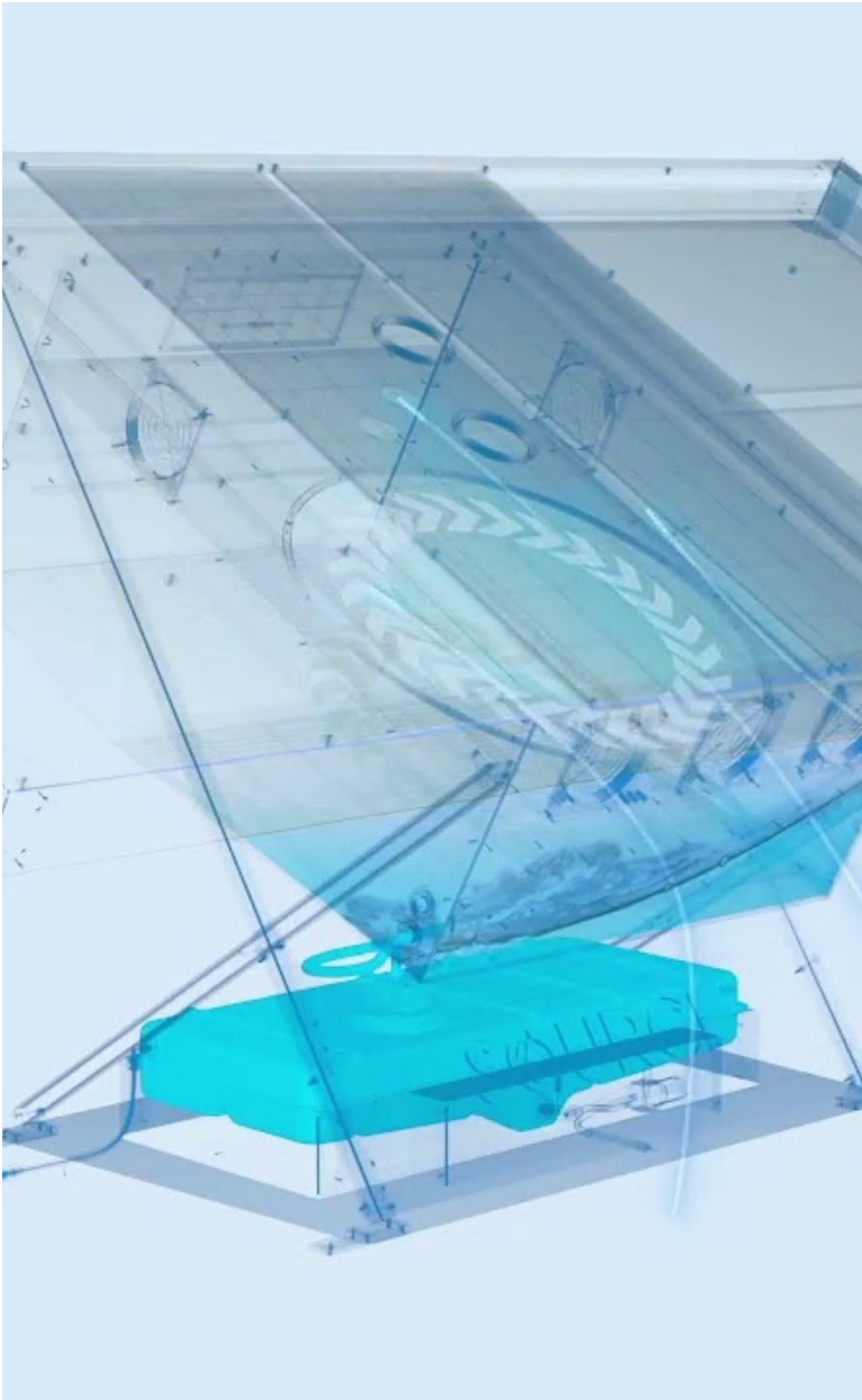
As the geothermal unit runs, it can capture heat that would normally go to waste and divert it to your water heater tank (using an optional component called a desuperheater). Your unit can generate up to 50% of your hot water at almost no cost. For larger volumes of hot water, we also offer dedicated hydronic units.





Turbulent's goal is to provide sustainable energy for remote communities in a manner that causes no harm to the environment. Using the constancy of the flow of water as the power source, Turbulent's **hydropower generators** work around-the-clock. With only one moving part, maintenance costs are minimal. Installation is relatively easy, with many locations generating power within a week. The deep drop structures created by controversial damming projects often alter the course of the water's path. The Belgian team's design, on the other hand, requires only a 1.5-meter height difference to work. Placement of the turbines in the correct location, in turn, becomes easier to find while also helping to keep additional construction to a minimum.

The flow of the water creates a vortex that turns the rotor that extracts the energy from the water. The small pressure required for the movement of the turbine allows for the construction of the system in areas of fairly shallow, slow-moving water. The Turbulent team is keen to point out what differentiates their system from commercial hydropower constructions. Crucially, the Turbulent design allows fish and other animal life to pass through the turbine unhurt. 15 kilowatts are currently available for small communities. However, the capacity of the turbine is being expanded to allow for 30 and 100 kilowatts of energy output. The team asks that anyone interested in the system to get in touch to discuss the specifics of the task and location.



SOURCE Hydropanel is a solar-powered and infrastructure-**free drinking water solution**. As a non-extractive water resource, SOURCE Hydropanels represent a first in transparency, resiliency, security, and quality. Whether at homes, schools, hospitals, or other institutions, SOURCE advances drinking water ownership, bypassing the need for other drinking water alternatives. [WATCH VIDEO.](#)

SOURCE is powered by an integral combination of solar photovoltaics and high-efficiency solar thermal. The electrical and thermal power is used to efficiently produce high-purity water in a modified psychrometric cycle even in some of the driest deserts in the world.

Ambient air is drawn into SOURCE and water vapor in the air adsorbs onto advanced hygroscopic materials

Solar thermal power desorbs water from the hygroscopic materials into amplified water vapor cycling within side the unit. Hydropanel resulting in liquid water formation, flowing into the reservoir

The collected pure water is mineralized for optimal health and taste, and the reservoir is actively managed for cleanliness

Water pumps from the onboard reservoir through a polishing cartridge and to a dispenser

Each Hydropanel connects to a cloud-based network and is monitored for performance and quality.

TECHNOLOGY

The home is getting smarter and a whole lot more convenient. With smart home technology, you can use your voice or phone to control and automate lighting, locks, cooling and heating, and much more. Hundreds of devices from every brand imaginable are now on the market, and with that comes discounts, sales, and deals. We've rounded up the best deals on the smart home tech available right now so you can start smartening up your home at the lowest cost possible.

Climate Crisis Catalog looks at Automation, Security, SmartTools, Transportation and Artificial Intelligence that will dominant your home and business environment. Discover and learn what applications work best for you, their costs and how everything is connected allowing you a master view of your home and business.

Home automation systems are devices that allow homeowners to monitor and control their home from remote locations. They are either programmable devices such as thermostats and sprinkler systems, or automation systems that can control all the devices in your home network.





Here are a few ideas on **automation**.

Security Lights

Smart Home Security

Smart Garage Door Closer

House Warming

Goodnight Google

Automatic Leak Mitigation

Improvised Geofencing

Automatic Shower/Laundry Room Fan

The Ultimate Alarm Clock

Laundry's Zetronix Done!

Power Down

Smart Water

Night Lights

Mail Call

Smart Shower Fan

Smart Stair Lights

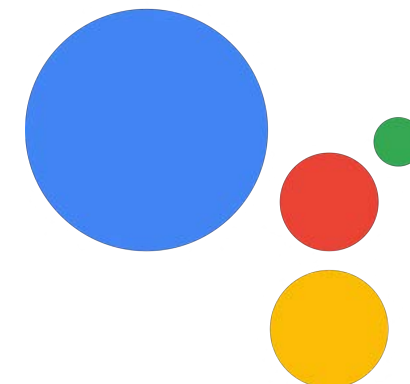
Night Watch

Garage Butler

Personal Lighting

High Security

Smart Humidifier



Installing a **Home Security System** means to protect your home and valuables, and to keep your family safe from potential break-ins by burglars. FBI burglary rates of homes state that 1 in 3 homes without a security system will fall victim to a burglary as compared to 1 in 250¹ homes that do have a security system.

What Are the Different Types of Home Alarm Systems?

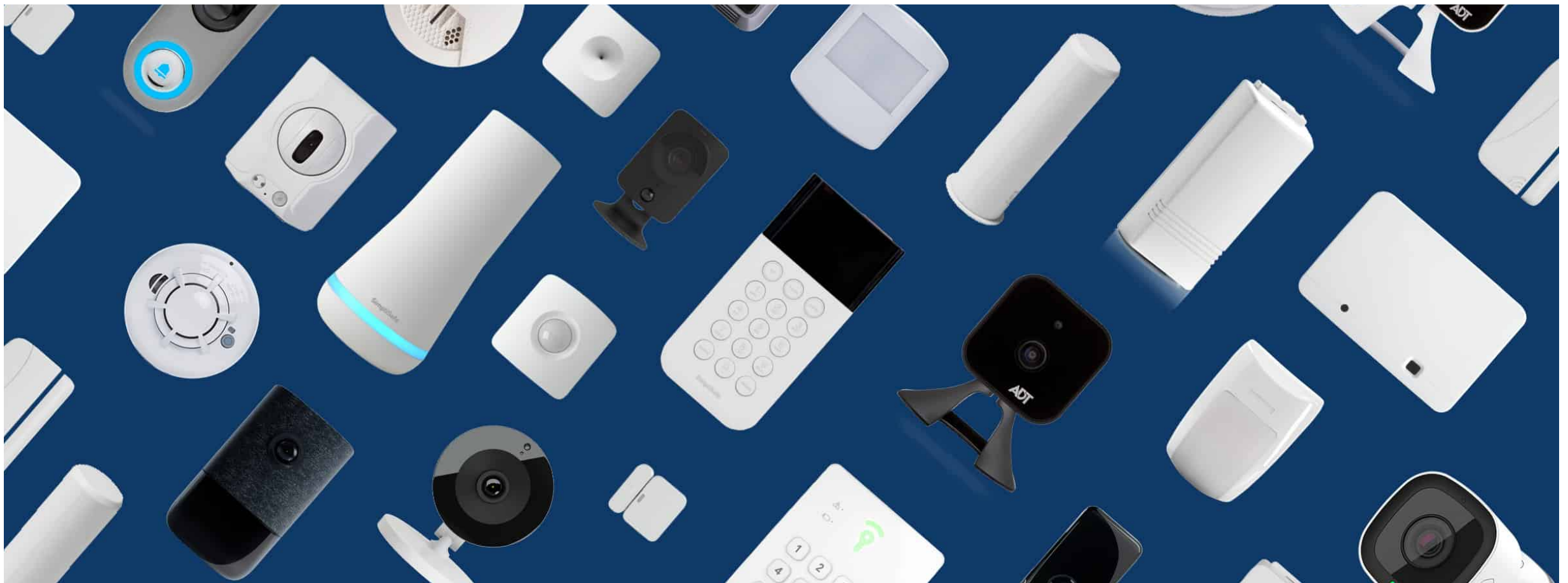
Wired Alarm Systems are your basic burglar alarm. This system uses a low-voltage electrical circuit that flows between two points throughout a home doorways and windows or other entry points.

Wireless Home Alarm System typically use a control panel and a series of sensors that are connected with built-in

radio frequency transmitters. Once your alarm system is triggered, a signal is transmitted to the control panel and the alarm is activated.

Unmonitored Home Alarm System relies on you or someone near your home to alert the authorities of an emergency. With an unmonitored system, audible and visual alarms are triggered whenever your system is tripped, but a monitoring center is not notified to dispatch help.

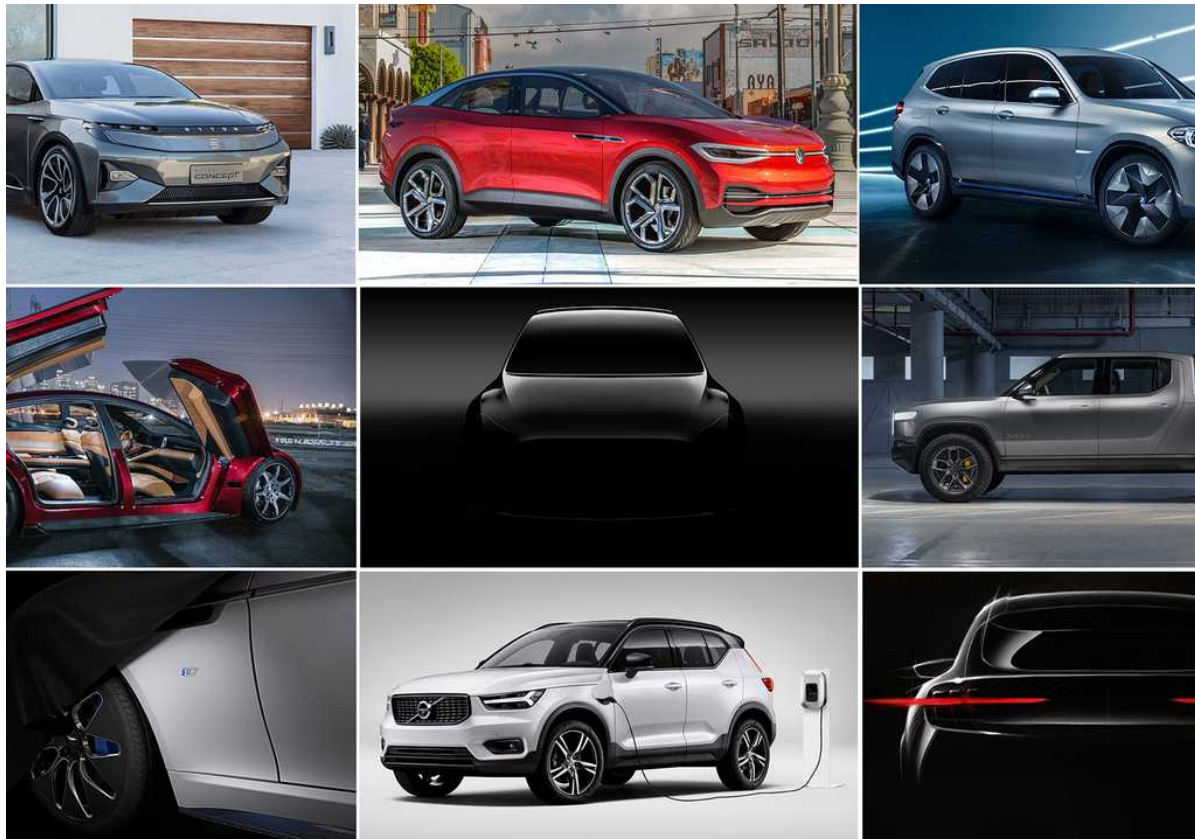
Monitored Alarm Systems not only alert you when an emergency happens, but they also notify the monitoring center operators to send emergency services.





The number of **electric vehicles** on the road around the world will hit 125 million by 2030, the International Energy Agency forecasts. The world's fleet of electric vehicles grew 54 percent to about 3.1 million in 2017. The IEA says government policy will continue to be the linchpin for electric vehicle adoption.

The EV boom will also create a demand for more power (some say 20% more), which may create problems for balancing and even running the power grid, especially given that peak EV charging times coincide with peak-heating demand in winter. There are other mobility options too, including improved public transport with trains, buses and trams, that are powered with green electricity or hydrogen. This might be seen as more socially and environmentally beneficial together with the overall need to reduce demand for traveling.



While researching electric vehicles, **Climate Crisis Catalog** found one site, evtrader.com that has accumulated all known manufacturers of electric autos, trucks, passenger buses, bicycles, sports vehicles along with batteries and charging stations. EVTrader is the online platform where all companies related to the electric vehicles industry can present and profile themselves. As a result small and large businesses will become more visible worldwide and be able to build up their own network, to expand and strengthen (Connecting e-Mobility).

After entering the specific country and category, the site easily connects you to every electric vehicle unique Website making your search quick and informative.

Today, more **smart tools** and gadgets are connected to computers, cloud servers, and tracking systems that monitor your health, financial investments, home security, just about everything your life is touched by technology.

Embracing the future is to stay informed and in control over these tools which are designed to improve your well-being leaving you more time to pursue your personal goals.

Climate Crisis Catalog has discovered several sites that offer the latest and best to offer in tech tools.

GeekBuying offers unique products like wearable devices, drones, toys, scooters, mini-cameras, and auto accessories.

Fitbit has inspired an entire generation to exercise for health and fun by introducing smartwatches and fitness trackers that enable better routines.

Zetronix devices cover the covert spy in us all with disguised cams for car dash, body, nanny, glasses, and outdoor.

Best Buy has an extensive variety and inventory making it the geek center for all your consumer electronics, computers, appliances, cell phones, and video games.



Integration with many systems allows smart tools to improve your life.

Ai or artificial intelligence need not be feared. It's the evolution of computers that emphasizes the development of intelligent machines, thinking and working like humans such as speech recognition.

Amazon Alexa makes every aspect of your smart home easy to access and control. You can use Alexa to speak to apps like Spotify just as easily as you can ask her to turn off the lights. Since Amazon's ecosystem is one of the most prevalent in the industry, most smart products integrate seamlessly with Alexa, including products made by Philips, Samsung, Nest, and Schlage -- meaning, Alexa can now close your garage, lock your doors, and adjust your home's temperature.

Google Assistant can help you navigate in Google Maps, on both Android and iOS devices. With your voice, you can share your ETA with friends and family, reply to texts, play music and podcasts, search for places along your route, or add a new stop, all in Google Maps.

Wink Hub 2 Lights. Power. Security. Now they're all connected through a single app, so you don't need a different one for every product. Simple controls allow you to monitor and manage everything in your home. This means it can do more for you, and you can do less. Finally.

Samsung SmartThings Hub connects wirelessly with over 400 smart devices and makes them work together. Now that's smart.



FOOD

Today around 40% of all adults are overweight or obese and every single nation on Earth is getting fatter. Obesity-related diseases, such as type 2 diabetes, are soaring on a trajectory that will cripple many health services. Most troublingly, there have been no success stories in the past 33 years not one country has been able to halt the growth of the bulge. Processed, calorie-dense foods continue to become more widely available worldwide and, short of an international catastrophe like a global famine or mass outbreak of war, turning the tide is going to take some truly innovative thinking.

A short-term solution is to re-engineer calorific junk food to have less fat, sugar, salt, and fewer calories, while still giving the same satisfaction.

There are artificial sweeteners, but they can have unpleasant side effects and can be cooked as sugar can. Low-calorie sugar substitutes, such as sugar-alcohols like sorbitol, taste like the real thing but cause flatulence and diarrhea if eaten excessively. But food technologists have managed to coat inert mineral particles with sugar, increasing the surface area that contacts the tongue, so that less sugar can be used to provide the same sweetness.

Climate Crisis Catalog offers the best desired and most realistic choices for foods of the future with FRESH, GARDEN, GREENHOUSE, HYDROPONICS, & EMERGENCY.





Eating a healthy diet can help lower your risk of certain diseases and maintain a healthy weight. A healthy eating plan is made up of **fresh** vegetables, fruits, whole grains, and fat-free or low-fat dairy products. It also includes lean meats, poultry, fish, beans, eggs, and nuts. A healthy diet limits saturated and trans fats, sodium, and added sugars. It also emphasizes eating minimally processed foods.

Previous studies have suggested a link between diets high in ultra-processed foods and health problems. Ultra-processed foods have ingredients common in industrial food manufacturing, such as hydrogenated oils, high-fructose corn syrup, flavoring agents, and emulsifiers. They are often cheaper and more convenient than making a meal from whole foods. But they're usually high in calories, salt, sugar, and fat. The term fresh, when used on the label or in the labeling of food in a manner that suggests or implies that the food is unprocessed, means that the food is in its raw state and has not been frozen or subjected to any form of thermal processing or any other form of preservation.

In an increasingly busy world for families, sometimes it is difficult to find the time to shop every few days to buy fresh fruit, vegetables, meats, and grains. An alternative would be a delivery service that brings fresh food to right your doorstep.

Whatever you chose, it is one of the most important decisions one can make in making sure you and your loved ones receive the highest quality nutrition.



Growing your own produce is a simple solution to numerous health, environmental, and economic problems. Whether you are growing a single tomato plant or have a large backyard garden, it is beneficial to your health, as well as the environments.

Five reasons to grow your own food include:

1. More Nutritious

When growing your own food, your diet is more diverse and healthy, packed with vitamins, minerals, and antioxidants. Food in its rawest, freshest form is not only the tastiest way to enjoy it but also the most nutritional. The majority of produce sold in grocery stores go through a long process of being harvested, shipped and distributed to stores. Once distributed, the produce can end up staying in storage or on the shelf for an extended period of time before being purchased, losing nutritional value.

2. Stay Active

Gardening is a fun way to get outside for some fresh air and physical activity. The physical activity required in gardening has proven to promote physical health. Involvement in gardening helps to improve cardiac health and immune system response, decrease heart rate

and stress, improve fine and gross motor skills, flexibility and body strength. Getting regular exercise can relieve stress, anxiety, and depression while boosting energy.

3. Get Vitamin D

Gardening is a great way to absorb vitamin D, known as the sunshine vitamin. Vitamin D is crucial in order to maintain healthy bones and teeth, and it can also protect against certain diseases.

4. Save Money

You can save a lot of money by growing your own vegetables and fruits. By spending a few dollars on seeds, plants, and supplies in the spring, you will produce vegetables that will yield pounds of produce in summer.

5. Better for the Environment

Long-distance transportation of produce relies heavily on fossil fuels. Growing your own food would help reduce the reliance on this transportation that is harming the environment. Also, by growing your own food, you are not using chemicals or pesticides that can harm the environment.



Automatic controls are ideal for providing proper growing temperature, artificial light, watering, humidity, and ventilation.

Today more and more homeowners are growing bedding plants, vegetable transplants and house plants in greenhouses. These greenhouses are called hobby greenhouses. They are usually small in size but can be as large as a small commercial grower's greenhouse. The gardener who has a greenhouse can extend or intermingle the seasons at will. With the many types of heating and cooling systems available, temperatures can be maintained to keep you and the plants comfortable. Whether you wish to build your own greenhouse from scratch or purchase a prefabricated structure ready for assembly, there are several basics that must be met. A hobby greenhouse can be a simple, polyethylene-covered framework that can be put together in one afternoon for less than one hundred dollars or it can be a six thousand dollar prefabricated structure. There are two basic types of greenhouses: attached and freestanding. An attached greenhouse may be even-span, lean-to or window-mounted. A freestanding greenhouse is usually even-span (symmetrical roof).

Hydroponics is an indoor garden growing technique that allows you to grow plants without soil in nutrient-dense water. The benefits of hydroponics compared to traditional soil methods include more efficient use of water, increased production, faster grow times, and the ability to grow all year round. By eliminating external factors like weather, pests, and the need for chemical weed control products, hydroponics can produce healthier, more consistent results. Whether you are looking to grow herbs, tomatoes, or medical marijuana, hydroponics is an effective way to grow plants indoors.

Hydroponic systems are often indoor systems positioned in places where there isn't access to direct sunlight all day long. Most edible plants require at least six hours of sunlight each day, with 12 to 16 hours even better. So unless you have a sunroom or other such space with lots of window exposure, you'll likely need to provide supplemental grow lights. Hydroponic kit systems usually come with the necessary light fixtures, but if you are piecing together your own components, you will need to buy separate lighting fixtures.

The three most basic setups recommended for beginners are the wick, water culture, and ebb and flow. All three of these systems can be built from individual components purchased separately, or you can buy a complete setup kit from online retailers or in a hydroponics store.





Emergency rations are items of food and drink that a person stores and relies upon in case of an emergency. Emergency food supplies can be purchased for camping trips or wilderness adventures. These supplies are meant to last for several days. Many people also purchase long shelf life emergency food in case of natural disasters or other emergency situations. The food can come in the form of a powder, freeze-dried, smoked or salted.

Typical emergency foodstuffs are high calorie foods such as candy bars, nutritional bars, energy or sports bars, hard bread or biscuit, dried meat (such as jerky), and dried fruit. If water is available, rations with little water content are lighter to carry.

Emergency Survival Kit:

What you need on hand before an emergency:

- Put together a power outage emergency kit.
- Buy an emergency weather radio.
- Have flashlights and batteries for everyone.
- Be able to purify water.
- Buy a food thermometer.
- Stock up on non-perishable food and water.
- Be prepared to cook outdoors.
- Buy a portable generator.



A bright green first aid kit bag is shown, filled with various medical supplies. The bag has black straps and a reflective silver stripe. Visible items include a red padded aluminum roll, a red stethoscope, a white roll of bandage, a pair of black scissors, a box of QuikClot Advanced Clotting, a box of CPR, AED, and Basic First Aid, and several packets of band-aids and gauze. The bag is open, showing the contents inside.

- Preserve life.
- Prevent illness or injury from becoming worse.
- Relieve pain, if possible.
- Promote recovery.
- Protect the unconscious.

A red and black Esky solar-powered emergency radio. The device features a large solar panel on top, a flashlight on the left side, and a carabiner attached to the top. The front panel has a frequency dial with FM and AM bands, a tuning knob, and a volume knob. The Esky logo is visible on the bottom left.

HEALTHCARE

The future of medicine looks bright in that technological breakthroughs are coming quickly and will create a paradigm shift in the way we view our healthcare. While AR lets users see the real world and projects digital information onto the existing environment, VR shuts out everything else completely and provides an entire simulation, and mixed reality is able to interact with the world while projecting information into it. Brain implants today are where laser eye surgery was decades ago, but the field will advance significantly in the upcoming years.

Advances in future medical technology will not just repair physical disadvantages such as impaired eyesight but will also create superhuman powers. The biotechnology industry is even working on printing out living cells and 3D printed drugs. As more and more corporations offer health insurance packages with game tracking options to their employees. New types of diseases might appear due to the excessive use of virtual reality solutions, video consoles or smartphones. Some innovative solutions are already here, promising an option for alleviating the overstraining of natural resources and still providing food for millions of humans.

Artificial intelligence-based voice to text technologies promise to turn the tables on the necessity of bureaucracy in the doctors office: the physician and the patient could speak while a voice assistant listens in and puts down the interpreted text into the relevant columns.



Waterproof, digital tattoos coupled with tiny electrodes are able to record and transmit information about the wearer to smartphones or other connected devices. These are just a few of the coming miracles of medicine but pro-active prevention plans to better health seem less invasive and a common-sense approach. (medicalfuturist.com)

Western Medicine: A system in which medical doctors and other healthcare professionals (such as nurses, pharmacists, and therapists) treat symptoms and diseases using drugs, radiation, or surgery. Also called allopathic medicine, biomedicine, conventional medicine, mainstream medicine, and orthodox medicine.

In the last 150 years, modern medicine has made great leaps forward in diagnosing and treating diseases, maladies, and injuries. Breakthroughs include germ theory, infectious diseases, x-rays, chemotherapy, sulfonamide drugs, antibiotics, antibacterial vaccines, insulin, cortisone, vitamins, anesthesia, heart surgery, organ transplant, drug production, ultrasound, MRI, and CT scanning. It has been truly remarkable that such fantastic improvements have dramatically increased the life expectancy of humans around the globe.

Those who are fortunate to live with western medicine have the choice if one can afford it to

utilize the latest diagnostic medical instruments like portable glucose, cholesterol, and blood pressure monitors or next-generation computer-aided diagnosis system like IBM Watson Health.

However, western medicine primarily focuses on the treatment of diseases while relegating prevention as a secondary goal. The problem with modern medicine in American and Europe is that it became monetized by insurance companies, hospital chains, and the pharmaceutical industry which place profit for shareholders over the well being of the patients.

Climate Crisis Catalog recommends using all tools available to prevent, diagnose, and treat all diseases and injuries but believes self-responsibility for one's health



Do medication side effects cancel their benefits?



Health and wellness promotion begins with the prevention of diseases and disabilities by eating smart, exercise regularly, get health screenings and vaccinations. Start by utilizing these resources from the US Department of Health & Human Services.

[Vaccines & Immunizations](#)

[Nutrition & Fitness](#)

[Health Screenings](#)

[Mental Health & Substance Abuse](#)

[Environment & Your Health](#)

[Healthy Lifestyle](#)



Scientists have made incredible progress in understanding how aging works in the last 25 years, and one thing they've learned is that a molecule called NAD+ (nicotinamide adenine dinucleotide) is hugely important. Scientists call NAD+ the "golden nucleotide" because it's a key player in so many biological functions, like cellular metabolism, cellular energy production, and mitochondrial health. It's indispensable for life, and we lose it as we age. It's not entirely known why NAD+ declines, but what's suspected is that [NAD+-consuming enzymes](#), which provide various benefits to the body's biological function, essentially "use up" NAD+.

Learn more: www.elysiumhealth.com



Acupressure massage releases muscle and nerve trigger points.

Complementary medicine is used to describe therapeutic techniques that are not part of conventional medicine (also called "regular," "standard," or "mainstream" medicine).

Complementary therapies are used as an addition to conventional medicine. Because complementary medicine can be combined or integrated with conventional medical treatment, it is also called "integrative medicine."

Complementary medicine is not an alternative medicine but is used together with conventional medicine.

Massage Therapy, Meditation, Aromatherapy.

Complementary medicine focuses on the interactions between your mind, your body, and your behavior.

Research has shown that your emotional state, both good and not so good, affects your immune system's ability to fight off disease. In one study, people with higher stress levels or more negative moods who were exposed to a cold virus came down with worse colds than people who were less stressed or had more positive moods.

People who practice meditation or yoga or have acupuncture say that their bodies and their brains are engaged. New studies are helping researchers understand the connection between mind and body. In one study, meditation was associated with a better immune system response to a vaccine.

Scientific research on many complementary therapies is relatively new. Many of the studies are small, and some haven't been done in a clinical setting. But as complementary therapies become more popular and well known, more research is starting. This research includes studies conducted by the National Institutes of Health National Center for Complementary and Alternative Medicine, one of the centers that make up the National Institutes of Health.

Learn more at: www.climatecrisiscatalog.com.



Traditional Chinese Medicine (TCM) has evolved over thousands of years. TCM practitioners use various mind and body practices (such as acupuncture and tai chi) as well as herbal products to address health problems.

Acupuncture is a technique in which practitioners stimulate specific points on the body, usually by inserting thin needles through the skin. Studies suggest that acupuncture stimulates the release of the body's natural painkillers and affects areas in the brain involved in processing pain.

Tai chi combines certain postures, gentle movements, mental focus, breathing, and relaxation. Research findings

suggest that practicing tai chi may improve balance and stability in older people and those with Parkinson's disease, reduce pain from knee osteoarthritis, help people cope with fibromyalgia and back pain, and promote quality of life and improve mood in people with heart failure.

Chinese herbal products have been studied for many medical problems, including stroke, heart disease, mental disorders, and respiratory diseases (such as bronchitis and the common cold), and a national survey showed that about one in five Americans use them.

More about TCM at: www.hopkinsmedicine.org

BUSINESS



The climate crisis economy will create unprecedented opportunities in business creation and expanding labor markets. Cumulative gains from realizing business opportunities related to climate change at US \$2.1 trillion, with the majority on track as almost certain. These opportunities include increased revenue through demand for low emissions products and services (such as electric vehicles), shifting consumer preferences and increased capital availability as financial institutions increasingly favor low-emissions producers.

On average, the potential value of climate-related opportunities is almost 7 times the cost of achieving them (US \$311 billion in costs, \$2.1 trillion in opportunities).



Given this, investors and stakeholders could expect to see a significant shift in climate-friendly products and services from the world's largest companies.

Companies in the financial sector see the most potential revenue (USD\$1.2 trillion) from potential new sustainable products & services, followed by manufacturing (\$338 billion), services (\$149 billion), fossil fuels (\$141 billion) and the food, beverage & agriculture industries (\$106 billion). The vast majority of risks are also concentrated in the financial services industry - the sector reported almost 80% of all financial risk value.

Climate Crisis Catalog looks to create a Eco-Jobs Board.

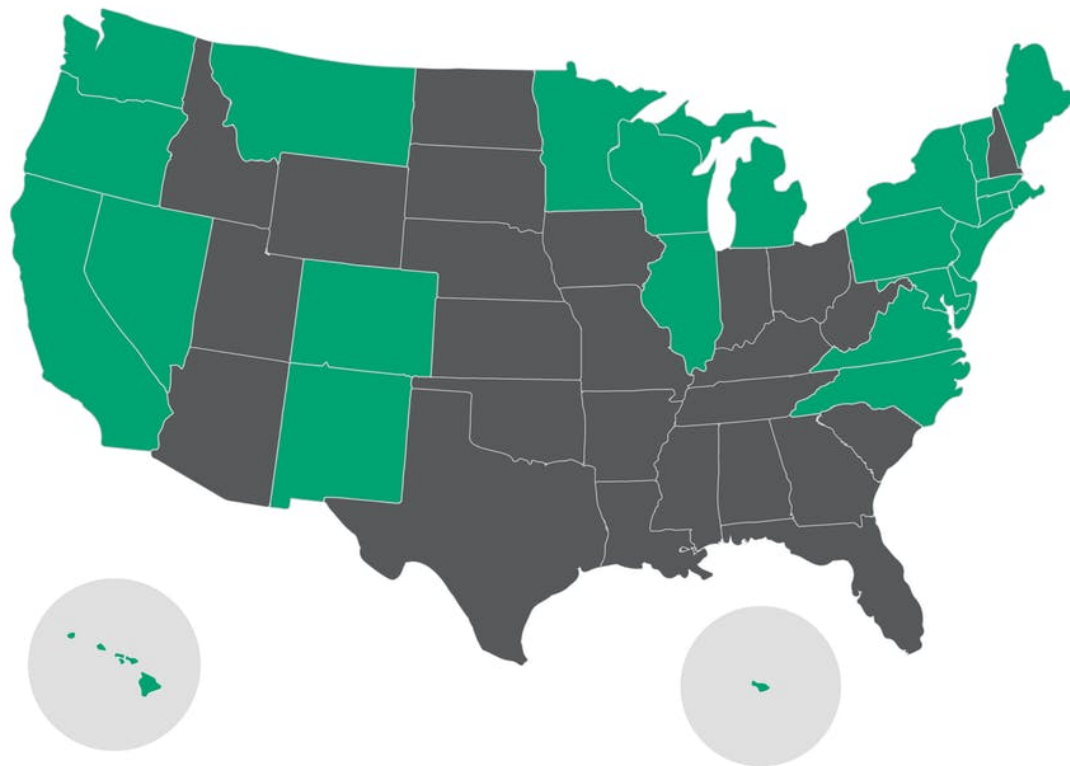
GOVERNMENT

In a society where environmentally and socially harmful goods and services are often indistinguishable from environmentally friendly or fair products, it's naive to think that asking the individual to save the world through consumer choice will be effective. The same is true of the climate crisis. What we need is citizens to make adamant demands of their politicians and institutions for more urgent action. The government can play a big role by enacting policies that encourage a speedy transition to clean energy such as wind and solar. Also, the government provides data, information, and resources.

Transportation infrastructure is the backbone of our cities. We need to work to expand and improve transit, pedestrian, and bike systems that anchor amenity-rich, walkable communities. Lowering dependence on cars reduces household transportation costs and frees up space to create places where people want to live, work and play. State-of-the-art sustainability practices can transform traditional economic development and poverty alleviation strategies. Creating resource efficiencies in areas such as water, transportation, energy, and material use makes communities more equitable and resilient while lowering

the cost of living. Transit-oriented development (TOD) helps people drive less, spend less, and enjoy a higher quality of life by encouraging the development of livable communities around transit stations. Extreme weather events are increasing in the face of climate change, which disproportionately affects low-income communities and communities of color. Planning should include tangible, measurable actions that can help make cities healthy, resilient, and prosperous.

One tangible idea is a micro-grid is a local energy grid with control capability, which means it can disconnect from the traditional grid and operate autonomously. A micro-grid generally operates while connected to the grid, but importantly, it can break off and operate on its own using local energy generation in times of crisis like storms or power outages, or for other reasons. A micro-grid can be powered by distributed generators, batteries, and/or renewable resources like solar panels. Depending on how it's fueled and how its requirements are managed, a micro-grid might run indefinitely.



People in the United States may seem divided, but when it comes to protecting the planet, 25 governors have joined forces to support the Paris Agreement on climate change.

Two years ago on June 1, 2017, when the Trump administration announced its intention to withdraw from the Paris Agreement, the governors of California, Washington, and New York stepped up to support the international agreement. Since then, the US Climate Alliance has grown to represent 24 states and Puerto Rico. And it continues to gain members.

Despite representing a wide variety of people, places, and economies, governors in the alliance are united by the same mission: to show that states can lead to climate action while growing clean energy economies, improving public health, and building more resilient communities.

Currently, the US Climate Alliance represents 55% of the US population, 40% of US greenhouse gas emissions, and an \$11.7 trillion economy. If the alliance were a country, it would be the third-largest economy behind the US and China.

To learn more about the US Climate Alliance and how states are acting on climate change, visit usclimatealliance.org





The **Green New Deal (GND)** is a proposed United States legislation that aims to address climate change and economic inequality. The name refers to the New Deal, a set of social and economic reforms and public works projects undertaken by President Franklin D. Roosevelt in response to the Great Depression. The Green New Deal combines Roosevelt's economic approach with modern ideas such as renewable energy and resource efficiency. The legislation calls on the federal government to dramatically reduce greenhouse gas emissions, create high-paying jobs, ensure that clean air, clean water and healthy food are basic human rights, and end all forms of oppression.

To achieve those goals, the plan calls for the launch of a “10-year mobilization” to reduce carbon emissions in the United States. It envisions sourcing 100 percent of the country’s electricity from renewable and zero-emissions power, digitizing the nation’s power grid, upgrading every building in the country to be more energy-efficient, and overhauling the nation’s transportation system by investing in electric vehicles and high-speed rail.

To address social justice, the resolution says it is the duty of the government to provide job training and new economic development, particularly to communities that currently rely on jobs in fossil fuel industries.

RESOURCES

There are a number of institutions that study global challenges and offer solutions.

World Resources Institute focuses on seven urgent global challenges that must be addressed to reduce poverty, grow economies and protect natural systems:

1. **Climate**: Protect communities and natural ecosystems from damage caused by greenhouse gas emissions, and generate opportunities for people by catalyzing a global transition to a low-carbon economy.
2. **Energy**: Drive the scale-up of clean, affordable power systems throughout the world to deliver sustainable socio-economic development.
3. **Food**: Ensure the world's food systems reduce their impact on the environment, drive economic opportunity, and sustainably feed 9.6 billion people by 2050.
4. **Forests**: Alleviate poverty, enhance food security, conserve biodiversity, and mitigate climate change by reducing forest loss and restoring productivity to degraded, deforested lands.
5. **Water**: Achieve a water-secure future by mapping, measuring, and mitigating global water risks.
6. **Sustainable Cities**: Improve quality of life in cities by developing and scaling environmentally, socially, and economically sustainable urban and transport solutions.
7. **The Ocean**: We are charting the path for a New Ocean Economy that is good for jobs, economic growth and human health -- while protecting and restoring the ocean.



WORLD
RESOURCES
INSTITUTE



**NATURAL
RESOURCES
DEFENSE
COUNCIL**

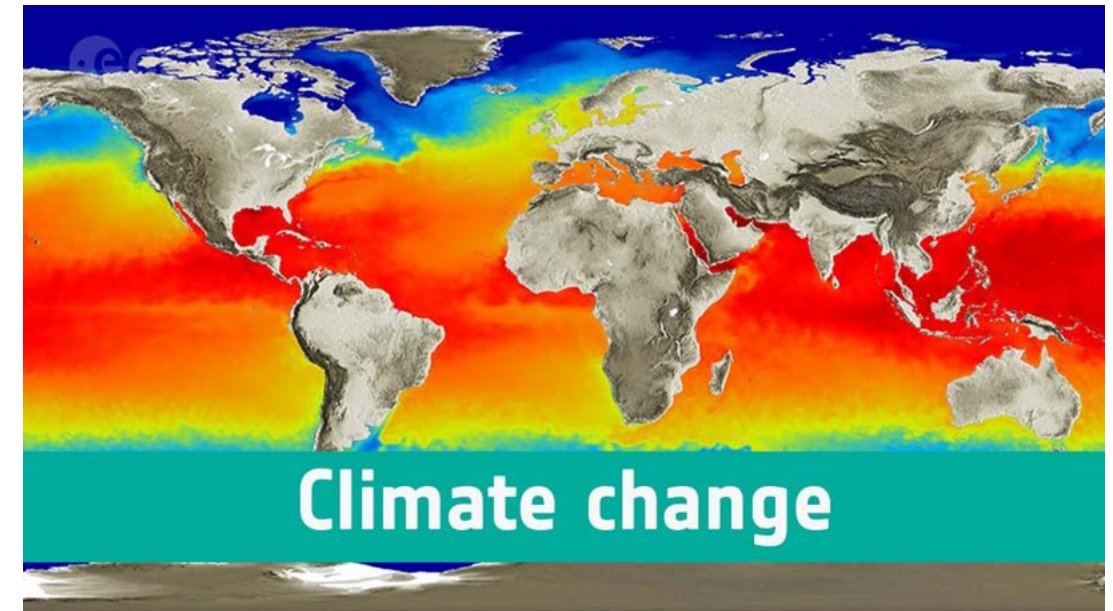


**CENTER FOR CLIMATE
AND ENERGY SOLUTIONS**

Non-governmental organization's mission as applied to the climate crisis are to advance strong policy and action to reduce greenhouse gas emissions, promote clean energy, and strengthen resilience to climate impacts. A key objective is a national market-based program to reduce emissions cost-effectively. They believe a sound climate strategy is essential to ensure a strong, sustainable economy.

11 policy ideas to protect the planet (from WashPost)

- Set local emissions goals
- Be smart about your air conditioner
- Encourage electric vehicles
- Be smart about nuclear power
- Make it easier to live without cars
- Prevent wasted food the right way
- Incentivize carbon farming
- Curb the effects of meat and dairy
- Adopt a carbon tax
- Open electric markets to competition
- Pass a Green New Deal



The World Economic Forum is an International Organization for Public-Private Cooperation.

The Forum engages the foremost political, business, cultural and other leaders of society to shape global, regional and industry agendas.

It was established in 1971 as a not-for-profit foundation and is headquartered in Geneva, Switzerland. It is independent, impartial and not tied to any special interests. The Forum strives in all its efforts to demonstrate entrepreneurship in the global public interest while upholding the highest standards of governance. Moral and intellectual integrity is at the heart of everything it does.

Our activities are shaped by a unique institutional culture founded on the stakeholder theory, which asserts that an organization is accountable to all parts of society. The institution carefully blends and balances the best of many kinds of organizations, from both the public and private sectors, international organizations and academic institutions.

We believe that progress happens by bringing together people from all walks of life who have the drive and the influence to make positive change.

ABOUT

Some may recall in the late 1960s when visionary Stuart Brand published The Whole Earth Catalog. The oversized catalog offered product reviews to grassroots hippies seeking "access to tools" needed to build their off the grid communities and co-ops. Many of those progressive thinkers went on to create the computer revolution that advanced human communication and spurred a new paradigm shift in an Internet economy. However, with the harsh reality of climate change upon us these businesses, homeowners, and communities will increasingly need access to tools, services, and strategies to brace for the uncertainties of the future.

Television producer and author Doug Ross created www.climatecrisiscatalog.com as the key resource center that reviews and promotes smart, green products and essential services sought by today's planners and doers. These businesses, property owners, and homeowners are investing time and money in the tools required to adapt and thrive in the new Climate Crisis Economy. Doug connects products and services with consumers that represent the growing conscious commerce that bases transactions on Eco-mindful, sustainable best business practices.

Climate Crisis Catalog Founder and Author Doug Ross of the best-selling book, PARADIGM SHIFT is publishing this new book with KDP Publishing entitled ***Prepare & Prosper for CLIMATE CRISIS*** into a large format paperback and Ebook. Interviews from authorities on climate crisis discuss smart solutions to survive and thrive by planning now. Publicity includes the author marketing the book on Social Media, Podcasts, TV, Radio, Local News, and Public Speaking appearances.

