Painfully slow hurricanes, deadly heat, and cities without water:

What the climate crisis will look like in the next 10 years, according to experts

A woman walks in a flooded street during a period of seasonal high water in Venice, Italy,

November 11, 2012. The water level in the canal city rose to 149 cm (59 inches) above normal.

We only have a decade to avoid the worst consequences of climate change.

That's the warning the UN Intergovernmental Panel on Climate Change (IPCC) put out last year. But so far, nations are not slashing emissions enough to keep Earth's temperature from rising more than 1.5 degrees Celsius above pre-industrial levels — the threshold established in the Paris climate agreement.

"What we know is that unabated climate change will really transform our world into something that is unrecognizable," Kelly Levin, a senior associate at the World Resources Institute's climate program, told Business Insider.

That transformation has already begun. The last few years saw record-breaking temperatures, catastrophic and bizarre storms, and unprecedented ice melt. That's all likely to get worse by 2030.

Fossil fuels like coal contain compounds like carbon dioxide and methane, which trap heat from the sun. Extracting and burning these fuels for energy releases those gases into the atmosphere, where they accumulate and heat up the Earth over time.

"As long as we burn fossil fuels and load the atmosphere with carbon pollution, it all gets worse," climate scientist Michael Mann told Business Insider in an email.

According to the IPCC, the world's carbon emissions have to fall by 45% by 2030 to keep

the world's average temperature from rising more than 1.5 degrees Celsius above pre-industrial levels.

So the next 10 years are crucial for any efforts to slow this trend.

"The choices that we make today are going to have profound impacts," Levin said.

BUSINESS INSIDER

Under the voluntary goals set in the Paris agreement, the world would still emit the equivalent of 52 to 58 gigatons of carbon dioxide per year by 2030, according to the report. (This is measured as an "equivalent" in order to factor in other greenhouse gases, like methane, which is 84 times more effective at trapping heat than carbon dioxide.)

The world will keep getting warmer even if we stop emitting greenhouse gases immediately.

"It's pretty well understood that if the water is warmer and it's causing more moist air to come up, you have the potential of a storm to grow quickly and intensely," Brian Haus, a researcher who simulates hurricanes at the University of Miami, previously told Business Insider.

"Certain types of extreme events in the US have already become more frequent and intense and long-lasting," Levin said. "There's no reason to think that we're not going to start to see an amplification of what we've been seeing."

The WHO expects that heat-related illnesses will be a major culprit, killing up to 121,464 additional people by 2030.

"Climate change, with rising temperatures and shifts in precipitation patterns, is amplifying the risk of wildfires and prolonging the season,"

the World Meteorological Organization (WMO) said in a July release.

A 2016 study found that climate change nearly doubled the amount of forest that burned in the western US between 1984 and 2015, adding over 10 billion additional acres of burned area. In California in particular, the annual area burned in summer wildfires increased five-fold from 1972 to 2018.

High ocean temperatures can cause coral to expel the algae living in its tissue and turn white, a process called coral bleaching.

These largely irreversible changes will eventually force mass migrations of marine life, upend ocean ecosystems, and threaten human livelihoods that depend on the ocean, according to a 2017 study. Many species that can't adapt could die out.

Levin and the IPCC both say that, since we're so far off the path towards quitting fossil fuels, the transition will also require technologies that suck carbon out of the atmosphere.

"It's definitely going to be a massive undertaking, but the risks are so large that we can't afford not to do it," Levin said.

Morgan McFall-Johnsen