

WHAT THE FUTURE: EARTH

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future of Earth PAGE 17



Experts from the U.N. IPCC, Colgate-Palmolive, 3M and Molson Coors share their visions for blunting climate change and living in a changed world



GAME CHANGERS



Imagine it's 2030.

The climate has changed and continues to get worse. We aren't hitting our targets, and it's becoming harder to live here comfortably. Maybe Earth is determining her own future ...

Readers of What the Future will know that we usually take a rather positive view of the future. For this issue, we're going more dystopian. The future of the climate is the dark cloud that hangs over all other futures. Because the future of Earth is certain. Over the course of the next few billion years the sun will mature and that will be bad news. But the future of human life on Earth is less certain. Will we be around when that happens? Will we be around in 200 years? 100?

The ever-prescient author Neal Stephenson in his latest book, "Termination Shock," raises the question of what happens when climate solutions that seem extreme today seem less far-fetched because the situation is increasingly dire and urgent. Getting the population to Mars, for instance, seems like a bigger problem to solve than today's climate crisis should.

The climate is not a scientific problem at this point. It's a human problem. Our attitudes, behaviors and values might prove harder to solve for than the technology. Companies like those featured in this issue are working on solutions today for a hopeful tomorrow. But will they get the support from people and governments alike that they need in order to arrest and ideally reverse the damage already done?

A photograph showing a person's hands watering a small green seedling in parched, cracked earth using a clear plastic bottle. The background is a vast, dry, brown landscape under a hazy sky.

88%

of Americans believe climate change is real versus 93% globally.

(Source: 3M State of Science Index conducted by Ipsos Sep. 27-Dec. 17, 2021, among 17,198 adults in 17 countries, including 1,014 U.S. adults.)

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1. Territory map

The future of the Earth will be driven by forces coming from six directions. We map them out.

2. The lay of the land

We talk with experts from the U.N. Intergovernmental Panel on Climate Change (IPCC), Molson Coors Brewing Company, 3M and Colgate-Palmolive Company about topics ranging from living in a changed climate, to who can solve climate change and how brands can help.

3. Tensions

Is climate change real or not? Who should take the lead between companies, government and consumers? Will shoppers buy sustainable options as much as they say they care about them? How much these opinions change in the coming years could make or break our future.

4. Plausible ports and Waypoints

Based on our data and interviews with experts, we plot out a potential future — a plausible port in our future journey. Then, thinking of our tensions, we consider what happens if one of them shifts. We use that as waypoint to ponder how that might send us to a different scenario, plausible port two.

5. Appendix

Want more? We show our work, including the full text of our expert interviews, our contributors, links to what we're reading today that has us thinking about tomorrow, and some bonus data. Finally, we include a new feature, the future Jobs to Be Done, giving you a new way to think about the future.

Territory: What will drive the future of Earth?

The future of Earth is shaped by myriad factors. These include how we humans use and preserve its natural resources, manage its condition, adapt to changing climate, and inhabit the space and coexist with each other. Our relationship with Earth is a symbiotic one. Keep reading as we travel the map, collect the data and talk to experts in these areas.





How we could live in a changed climate



Robert Lempert

Coordinating lead author, U.N. IPCC

If we want a livable future, we need to act today, according to the United Nations' Intergovernmental Panel on Climate Change (IPCC). The window is closing, so what will life be like if we miss the mark? Robert Lempert is principal researcher at the Rand Corp. He's also a coordinating lead author for the IPCC's "[Climate Change 2022: Impacts, Adaptation and Vulnerability](#)" report, which included 270 authors from 67 countries. He spells out the possibilities.

48%

of Americans believe climate change can't be stopped, but that they can lessen the effects, while 22% of those ages 18-34 believe climate change can be stopped in their lifetime.

(Source: Ipsos survey conducted Mar. 30-31, 2022, among 954 U.S. adults who agree that the climate is changing.)



We have made progress from the initial IPCC projections written in the 1990s. But it's not nearly enough and the clock is ticking. If we don't act with intention, things will get rather bleak. Expect a world where catastrophic events that would otherwise be considered one-in-100-years or one-in-500-years happen each year, he warns.

“A world in which you’re hit by a lot more extreme events, be it heat, storms, drought, and then increased difficulty in getting the food and water you need.”

He also sees a loss of services, from flood control to abating insects, as well as the pleasures that people get from being out in nature. And he expects that many communities will get displaced.

[Read the full Q&A on page 26.](#)

Those we expect to help the most are those we trust the least

Q. How much do you trust or distrust the following groups to protect Earth and create a more sustainable future?
(% Total)

People like me



People in my community



Small businesses



State government



Federal government



Large companies or corporations



■ Trust a lot ■ Trust a little ■ Distrust a little ■ Distrust a lot

(Source: Ipsos survey conducted Mar. 30-31, 2022, among 1,174 U.S. adults.)



Who should help solve climate issues?

While the IPCC's Lempert calls climate change "an all-hands-on-deck challenge," Americans tend to put more responsibility for solving the challenges on companies and government. However, Ipsos research shows that people trust these entities less than they trust themselves to protect Earth. However, Lempert says, "It's not who's responsible. It's who can fix the problem."

Based on Ipsos' annual [Earth Day](#) global study, it's clear that Americans and their global counterparts are becoming more assured that government has a plan for managing climate change, says Pippa Bailey, head of Ipsos' Climate Change and Sustainability practice.

"But governments, which are best positioned to drive change, still have a way to go to convince citizens that their plans are enough."

People are more assured by government but think it can do more on climate change

Q. To what extent do you agree or disagree with the following:

[My country's] government has a clear plan in place for how government, businesses and people themselves are going to work together to tackle climate change

If businesses in [my country] do not act now to combat climate change, they will be failing their employees and customers

U.S. 2022



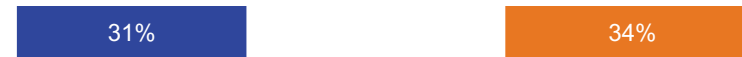
U.S. 2021



Global 2022



Global 2021



■ Agree ■ Disagree

U.S. 2022



U.S. 2021



Global 2022



Global 2021



■ Agree ■ Disagree

Here's who people think can solve climate change



Gayle Schueller

Chief sustainability officer, 3M Company

More Americans are aware and concerned about the climate emergency, but Americans still lag their global counterparts, according to the annual State of Science Index study Ipsos conducted on behalf of 3M Company. The global study shows that climate change is increasingly personal, as 69% of Americans and 79% globally say they're concerned that they or a loved one may one day be displaced due to extreme weather related to climate change, says Gayle Schueller, senior vice president and chief sustainability officer at 3M.

24%

of people say sustainability is a purchase driver for household care products, well behind other considerations like price.

(Source: Ipsos survey conducted Mar. 30-31, 2022, among 1,174 U.S. adults.)



As a company that's been around for 120 years, 3M has seen its share of government leaders turn over time. Companies, therefore, have an important role for taking a long-term view, says Schueller.

“If we want to be around and thriving 100 years from now or even 50 years from now, we need to be making longer-range decisions right now.”

That includes prioritizing sustainability to reinvent its product portfolio. For example, the company makes Scotch-Brite scouring products out of agave fiber, a waste product from tequila production, and Post-it Notes using plant-based adhesives. The company's portfolio is based on 51 technologies that it mixes and matches in different ways. It saves money by using materials from one process, either back into that same process or into another material.

[Read the full Q&A on page 28.](#)

Sustainability ranks low among purchase drivers

Q. Think about all the following types of products you buy. For each category, when you decide which brands or items to buy, select all the following reasons that factor into your decision. (% Selected)

	Personal care/health and beauty products	Packaged food and beverage products	Household care	Paper products	Alcoholic beverages
Sustainability rank among purchase drivers:	7	7	4	5	7
If I trust the quality of this brand	56%	55%	53%	48%	37%
If it is a brand I have already used in the past	55%	54%	53%	50%	41%
If there is a sale or promotion	35%	40%	37%	36%	25%
If it receives good product reviews	26%	23%	24%	17%	16%
A recommendation from friends/family	23%	28%	21%	15%	24%
If it is the cheapest or most affordable	18%	22%	24%	26%	12%
If it is sustainable or a better product for the environment	18%	17%	24%	21%	10%
If the brand is aligned with my values	16%	14%	15%	12%	9%
None of the above	3%	3%	3%	3%	23%

(Source: Ipsos survey conducted Mar. 30-31, 2022, among 1,174 U.S. adults. See topline for full categories and descriptions.)

How climate will determine where we live

In “The Ministry for the Future,” author Kim Stanley Robinson opens with a near-future scene in India where a heat wave causes the temperature and humidity to rise to a point that leads to mass casualties. It’s scary, but realistic. As parts of the world become uninhabitable, people will leave those areas. What would a “climate refugee” crisis look like?

Most people in the U.S. and throughout the world think that people should be able to seek refuge in another country to escape war or persecution, according to a global [Ipsos survey for World Refugee Day 2021](#). But in all 28 nations covered in that survey, majorities say that most foreigners who want to get into their country aren’t true “refugees” but come for economic reasons. As people will start to migrate to less disastrous climates, we might need to reconsider who qualifies as a “refugee” or is granted asylum, says Nicolas Boyon, a senior vice president with Ipsos Public Affairs.

“People fleeing their country because of climate change are not yet recognized as ‘refugees’ by international law. This state of limbo creates a recipe for human crisis.”

Yet despite climate skepticism, most people think it’s a matter of when, not if, this brewing climate crisis will impact them and their loved ones.



69%

of Americans and 79% of people globally are concerned that they or a loved one may one day be displaced due to extreme weather related to climate change.

(Source: 3M State of Science Index conducted by Ipsos Sep. 27-Dec. 17, 2021, among 17,198 adults in 17 countries, including 1,014 U.S. adults.)



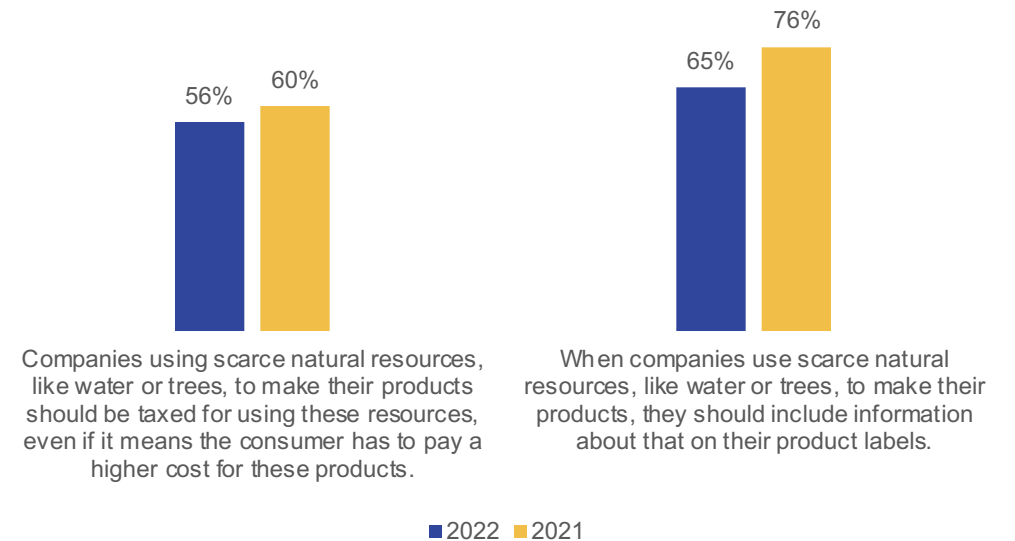
Do shoppers want more sustainability regulations?

Governments influence corporate and consumer behavior through taxes and product labeling requirements. Traditionally, this has been used for regulating health claims. But this thinking could apply to environmental impacts as well, says Ashley Ericksen, an Ipsos vice president.

“This could prove an effective way to close the say-do gap, provide necessary education on the natural resources in the products they buy and ultimately help shoppers achieve their own environmental goals.”

Consumers support regulation up to a point

Q. How much do you agree or disagree with the following statements? (% Agree)



(Source: Ipsos survey conducted Mar. 30-31, 2022, among 1,174 U.S. adults; Ipsos Global Advisor survey conducted May 21-Jun.4, 2021, among 1,000 U.S. adults.)



How the stuff we buy can become a climate solution



Ann Tracy

Chief sustainability officer, Colgate-Palmolive Company

There's a line in the 1967 film "The Graduate" where a businessman says, "There's a great future in plastics." Fast forward to today and the world seems to be drowning in the stuff. It's a can't live with/can't live without kind of problem. Ann Tracy, chief sustainability officer of Colgate-Palmolive Company, sees a new future in plastics, but in a much different way than decades ago.

61%

of adults ages 18-34 are familiar with the environmental impact policies for packaging for their favorite brand, and 58% are familiar with the water use impact policies.

(Source: Ipsos survey conducted Mar. 30-31, 2022, among 1,174 U.S. adults.)



The future of plastics isn't just recycling and reusing, it's reducing their use in the first place. Tracy says that [nature-based solutions are another big direction](#). Across these efforts, brand messages are critical for closing the gap in what people say they want and what they do. "That to me epitomizes what marketing's job is — to close the say-do gap," she says.

It's also up to brands to make sustainability irresistible, much the way Tesla has made sustainable cars cool. "We have to make the Tesla of toothpaste," says Tracy.

"How do you make it such a superior experience that people don't think about the sustainability aspect of it, but they want to use the new product in a new way?"

[Read the full Q&A on page 30.](#)

People are more aware of sustainability but are slow to act on it

Q. To what extent do you agree or disagree with the following statements? (% Agree)

Purchasing sustainable brands or products makes a difference for our environment



I feel better when I buy sustainable brands or products



I have purchased brands/products specifically because of their sustainability practices



I have avoided brands because I disagreed with their sustainability practices



I have researched brands to ensure they do what they say they will when it comes to sustainability



■ 2022 Total ■ 2020 Total



Here's what brands can do to reduce climate change



Brandon Watkins

Senior manager-utilities optimization and design, Molson Coors Beverage Company

The climate emergency isn't the only threat facing our planet. The depletion of our resources is a looming crisis in itself. Water lies at the nexus of these trends as a drier planet also is a hotter planet. Water is critical to life. Some might argue that beer, which is a historical driver of civilization itself, is also pretty important. Creating it, however, takes a lot of water. Brandon Watkins is working to ensure that we can have both in a sustainable future.

51% of Gen Z adults consider the natural resources used in creating a product before they purchase it while 69% of Millennials and 59% of Gen Xers do.

(Source: Ipsos survey conducted Mar. 30-31, 2022, among 1,174 U.S. adults.)



Water isn't just an issue for brewers, of course. It's a major ingredient in many foods as well as things like personal care products. And it's not just an ingredient. It takes a lot of water to keep the cooling and manufacturing systems — so-called “non-contact applications” — clean.

For Molson Coors' Brandon Watkins that's the area where he can make the most progress. (We're not at a point where something like dehydrated beer is on tap just yet.)

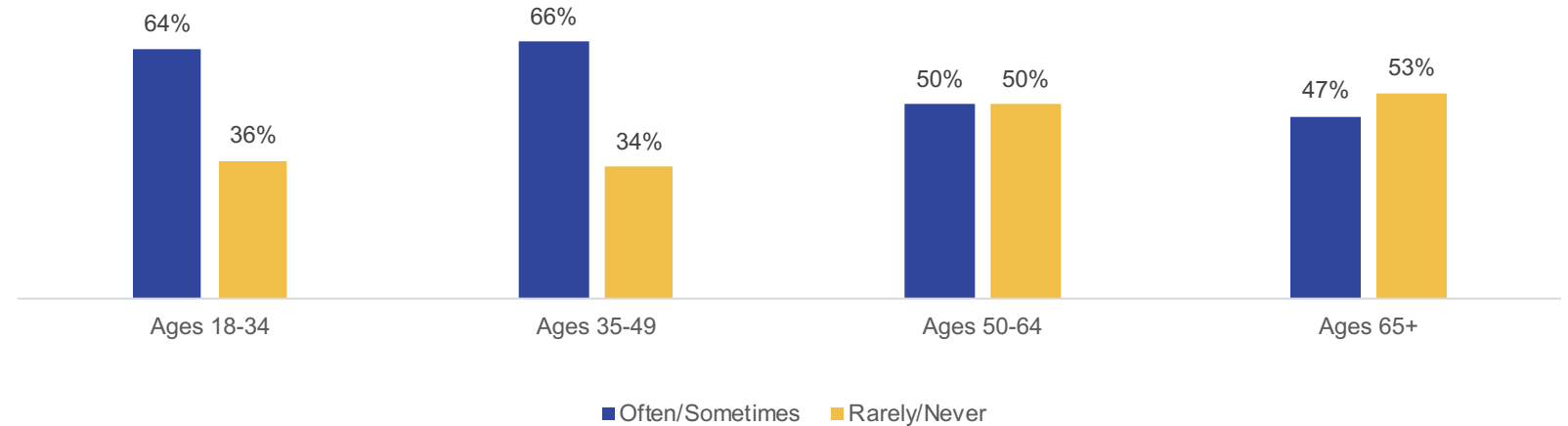
“The first piece is driving process improvements at our facilities. The second piece is really capturing the good clean water that we have and reusing it in our process for non-contact applications.”

But he notes that, as a global company, different regions require different approaches, and in some water-stressed areas recycling water in the product itself makes sense, too. In a crisis, all solutions have to be on the table.

[Read the full Q&A on page 32.](#)

Sustainability is a more powerful consideration for younger adults

Q. How often, if at all, do you consider the natural resources used (water, minerals, chemicals) in creating a product before you purchase it?



(Source: Ipsos survey conducted Mar. 30-31, 2022, among 1,174 U.S. adults.)



Brand steps to reduce climate change

People think brands have a large role to play in helping solve environmental issues. But, of course, it's not that easy. Organizations have to follow their specific regulations — which often vary market to market. Brands are challenged to implement sustainable practices that are timely, tangible, and more importantly, realistic for their product and their profits. But they also need to resonate with their audience. While efforts often take time to plan and develop, brands should also look for short-term wins.

Before starting an initiative, brands should consider the balance of three things, says Emmanuel Probst, global head of brand thought leadership for Ipsos.

“Brands need to understand how their customers perceive them, their markets and their competitors, and what they can implement now that will make the most impact.”

How big is the gap in what people say they value and what they buy?

Produced in safe and ethical working conditions



Use the minimum possible amount of packaging



Packaged in recyclable materials



Produced in a way that has a low impact on the environment



Made in the U.S.



■ % Say important to buy ■ % Made conscious decision to buy

(Source: Ipsos survey conducted Mar. 30-31, 2022, among 1,174 U.S. adults. Adults answered: How important, if at all, is it that the products you buy are; and How much do you agree or disagree with the following? In the past month, I have made a conscious decision to try to buy products that are:)

Five tensions that will drive change:

1. Is climate change natural? (It is.)

Climate change is man-made. So is this tension. There is no reasonable case to be made that climate change is anything but an emergency of [our own making](#). That said, the fact that 38% of Americans (mostly, but not anywhere near entirely, Republicans) believe that climate shifts are just something that happen occasionally is a massive impediment to making meaningful progress. You can't solve a problem if you don't think there's a problem to solve. And the more people who agree that it's a problem, the easier it is to start moving toward solutions. But even the folks who believe it's a problem don't always agree on solutions. Since the solution is increasingly, "We need all the solutions, now," we need to find some way to come together before it gets any more "too late" than it is today.

Most agree that climate change is caused by humans

Climate change is mostly man-made

62%

38%

Climate change is mostly natural variations in temperature

Q. For each of the pairs of statements, please select the statement that comes closest to your view, even if neither is exactly right. (% Total)

(Source: Ipsos survey conducted Mar. 30-31, 2022, among 1,174 U.S. adults.)

Five tensions that will drive change:

2. Is government regulation a solution we need?

One theme in this issue is that in order to keep Earth hospitable for humans, we need to make the changes we can make personally, and with our brands — as 3M, Molson Coors and Colgate-Palmolive are doing. But as Robert Lempert, a lead author on the IPCC's climate report, says, "It's an all-hands-on-deck" situation. That includes needing action from government, which can often be the biggest change driver of all through policy and regulation. Most Americans agree that government needs to play a role here to the extent that 65% agree that "If the U.S. government does not act now... it will be failing the American people." The question, is, of course, what role, and how big should it be? Where opinion falls on this particular tension will likely be of the utmost importance if we want to make meaningful change, in time.

Most agree slowing climate change needs more government intervention

We need more government regulation to slow the effects of climate change

60%

40%

New or additional government regulation will not slow the effects of climate change

Q. For each of the pairs of statements, please select the statement that comes closest to your view, even if neither is exactly right. (% Total)

(Source: Ipsos survey conducted Mar. 30-31, 2022, among 1,174 U.S. adults.)

Five tensions that will drive change:

3. Will people buy sustainability at any cost?

Colgate-Palmolive's Ann Tracy says that consumers don't want to compromise on quality, price or experience, but they also want products that are good for them and good for the planet. So far, sustainability often costs more than the less environmentally friendly option. This is certainly an area where government efforts can help using all of government's favorite tools. Policy changes could lead to greater subsidies, deductions, tariffs and credits and/or funding of research, any or all of which could aid the market. If sustainable products become more affordable, and marketing does its thing, that could go a long way toward helping customers align their values and the value of the products on their shelves with the cash in their wallets.

Price outweighs sustainability for most shoppers

I prioritize price when buying something

68%

32%

I prioritize environmental sustainability when buying something

Q. For each of the pairs of statements, please select the statement that comes closest to your view, even if neither is exactly right. (% Total)

(Source: Ipsos survey conducted Mar. 30-31, 2022, among 1,174 U.S. adults.)

Five tensions that will drive change:

4. Are we doing enough to protect our resources?

Only one in four Americans thinks we are doing enough to protect our resources. Each year, more of our wilderness goes up in flames. Persistent droughts are reshaping our landscape and our ability to farm. Brandon Watkins from Molson Coors says that companies, often the largest users of resources in their communities, have to be good stewards, even if they're not directly being pressured by consumers to get there. "It's our responsibility to assure that we're using our resources as efficiently as possible, and inherently it helps to minimize the impact to the environment," he says. As more companies, individuals and government initiatives focus on these efforts, what will it take to convince the public that it's enough?

Three in four are concerned for our natural resources

I am concerned we are not doing enough to protect our natural resources in the U.S.

74%

26%

I am confident we are doing enough to protect our natural resources in the U.S.

Q. For each of the pairs of statements, please select the statement that comes closest to your view, even if neither is exactly right. (% Total)

(Source: Ipsos survey conducted Mar. 30-31, 2022, among 1,174 U.S. adults.)

Five tensions that will drive change:

5. If we all play a role, who needs to play the biggest?

People are looking to corporate America to play the largest role in helping minimize our climate emergency. When asked who has a larger role, large companies or individuals, people overwhelming (2:1) chose companies. But people narrowly (54%/46%) think companies have a greater role to play than government. How brands and corporations do that and, more importantly, what the looming crisis means for their business will require planning and likely, dare we say, some foresight. 3M's Gayle Schueller says that since governments and their leadership turn over with some regularity, it's incumbent on companies to take the long-term view. "We need to be making longer-range decisions right now," she says.

People put a bigger onus on companies to solve climate change

Large companies have the biggest role to play in solving climate change

66%

34%

Individuals have the biggest role to play in solving climate change

Q. For each of the pairs of statements, please select the statement that comes closest to your view, even if neither is exactly right. (% Total)

(Source: Ipsos survey conducted Mar. 30-31, 2022, among 1,174 U.S. adults.)

Plausible port one:

It'll be humid, assuming there's any water left

Imagine it's 2030. If your child is in middle school today, you'll be paying for their college. And that won't be your biggest concern. The weather will be ... *unpleasant*. Way more often than it is now. Wildfires will be a constant in the western U.S., food shortages and supply chains will be an issue, and marine life as we know it will change forever. That's if we're lucky and work really hard to reverse climate change in the meantime. Which we won't.

2030 isn't that far off. And if all that horror is plausible then, you can only imagine what 2040 could look like. Or 2050. What we humans are doing likely isn't enough to right the ship. So, the climate will continue to worsen, and we will have no choice but to adapt. How we will do that could take a lot of forms. We'll need different clothing to protect us from the environment. We'll need to rethink what we eat as the climate increasingly changes here and globally. Some foods will become unsustainable, some seafood faves will go extinct. More foods and ingredients need to be synthesized in the lab for us to continue consuming them. But maybe we'll also start cultivating new kinds of foods that haven't been imagined yet.

The move to an electric car fleet is great, not just for the climate, but also for air quality. On the other hand, it further strains the power grid, which was on shaky ground before rising temps meant air conditioners were cranked up more often, compensating for more extreme temperatures, in more regions. Oh, and we lost a lot of hydroelectric power because the rivers all dried up.

This is a very plausible future. The hopeful version is only slightly better and *much* less plausible.

Waypoints

Today, a majority — but a deeply partisan one — thinks that regulation can help slow the impacts of climate change.

One might guess that part of the issue is that many don't think climate change is caused or heavily exacerbated by humans. But we have seen that regulation can have a big impact on climate. One needs only to look at the receding pollution levels in our major cities as we've improved fuel standards and imposed other regulations. Regulation is a lever that certainly can be pushed. But that requires a government that's capable of making big changes that might be unpopular, at least temporarily, and at least among some significant percent of the population. But let's say that conditions deteriorate to the point that increasingly more people recognize the urgency of the problem, the political will to change it develops, and the government takes the action that today's majority wants. What then?



Plausible port two:



This is the best we can hope for?

Suppose our waypoint shifts and points us to a new, hopeful future. It assumes drastic action by humans, who are generally slow to change their values and behaviors; corporations that are often doing what they can, but in a challenging environment and lacking some of the policies we've alluded to that would make their changes more affordable and apparent to consumers; and governments facing crises of competence in many countries as tensions between warring political factions make it seem unlikely that bold action of any sort will take place.

But say we pull it off. Say the climate gets so *bad* that we act. Say that our waypoint shows that we're headed toward a world where governments are empowered to lean heavily on those big levers of change: taxes and regulations. What does that world look like then?

By 2030, if the world isn't much different than it is today, that'll be a victory. We'll still have a lot of our global and national population experiencing severe drought. We'll still have an extended season for tornados, hurricanes and wildfires, which will drift further inland. We'll still have issues with our power grids in both summer and winter. Our air quality will improve due to the electrification goals we're moving toward for motor vehicles. Yet, periodically, so much of the nation will be on fire that it will be tough to breathe.

Innovation will potentially move us to a more sustainable food supply as well as a growing agreement that eating meat is harmful for our health and the health of our planet. Tech will solve some problems and likely create others.

And again, this is the hopeful version.

Appendix

**In this section,
we show our work
and our workers**

1. Full Q&As
2. Signals
3. Contributors
4. Future Jobs to Be Done

How we could live in a changed climate



Robert Lempert

Coordinating lead author, U.N. IPCC

The window is closing to “secure a livable future” if we don’t act now on climate change, according to the United Nations’ Intergovernmental Panel on Climate Change (IPCC). Robert Lempert is principal researcher at the Rand Corp., a nonpartisan nonprofit public policy think tank. He is a coordinating lead author for the IPCC report “[Climate Change 2022: Impacts, Adaptation and Vulnerability](#),” which included 270 authors from 67 countries.

Kate MacArthur: The IPCC warns that we’re running out of time to act on climate. How much time do we have before things really go south?

Robert Lempert: The time scales that the report talks about are in the order of 10 or 20 years where we have a window of opportunity to try to curve towards a much more livable and sustainable future than the path where we currently seem to be on.

MacArthur: That’s a generation. What could the average person experience if this situation doesn’t improve?

Lempert: There’s this language people use, sticking labels such as a one-in-100- or one-in-500-year event on some of these extreme events. And we’re starting to have those events every year. So, a world in which you’re hit by a lot more extreme events, be it heat, storms, drought, and then increased difficulty in getting the food and water you need. And then the nature that

we rely on both for physical services, from flood control to food to holding down insects, to just the joy that people get from being out in nature. Those things we will lose as well. Many communities will get displaced. There’ll be a lot more forced migration, either because places are inundated or the crops or the livelihoods that people relied on, they can no longer do.

MacArthur: What we can do now to adapt?

Lempert: The high-level thing is that communities across the U.S. and the world ought to have climate adaptation plans where you look at the specific risks for your community. Among the more specific things that are useful to do is to adjust our building codes, our zoning, our land use for future climate as opposed to past climate. When we do all those things, sometimes we’re using historical records from the 1960s and the climate is already way different, and it’s going to be even different still in 10, 20, 30 years.

MacArthur: What do you say to people who say this will work itself out or it's cyclical?

Lempert: The first answer to people who doubt is, yeah, that's true. But it worked itself out in the past with mass extinctions, people being swept away from the places they were living and so forth. A little bit more sophisticated argument is, "Well, can't we just adapt to climate change?" The answer is yes, you can adapt to climate change but within limits. And in some places, we are very far from the limits. In other places, we've already exceeded the limits. And there are just certain natural and human systems which are already beyond saving. That's the situation we want to avoid increasing over time.

MacArthur: Our research shows that Americans are among the least moved globally by the threat of climate change. How do you get them on board?

Lempert: As people start to see the effects of climate change, they do start to take it more seriously. There is real value in "depoliticking" the language. You see people talking about resilience or climate variability as opposed to climate change. The other big thing is to really focus on the solutions, and renewable energy is very popular among Americans of all political stripes.

MacArthur: Who should be responsible for mitigating climate effects, whether it's people, companies or governments?

Lempert: Dealing with climate change is really an all-hands-on-deck challenge. The most effective solutions are collaborations among many, many groups. So, in that sense, it's not who's responsible. It's who can fix the problem. But it depends on how you connect those two things in your mind.

A big advance in climate science over the last five or so years has been the whole science of attribution, which is the scientific term for saying how well can we connect or assign a particular event — a flood, a fire, a drought — to climate change and hence proportion out that responsibility to those countries and groups that have caused the emissions that create climate change.

The ability to do this sort of attribution is starting to reach a stage where you can imagine people saying, "OK, this flood destroyed my house, and it was 50% or 90% due to climate change," and assigning responsibility accordingly. So, we may see more of that.

Kate MacArthur is deputy editor of What the Future.

“There is real value in ‘depoliticking’ the language. You see people talking about resilience or climate variability as opposed to climate change. The other big thing is to really focus on the solutions.”

Here's who people think can solve climate change



Gayle Schueller

Chief sustainability officer, 3M Company

As a global manufacturing conglomerate, 3M makes more than 55,000 business, industrial and consumer products, including household names like Post-it Notes and Scotch-Brite. It is one of thousands of corporations working to meet global sustainability targets to improve their environmental impact. Gayle Schueller, senior vice president and chief sustainability officer for 3M, explains how that shapes everything from research and development to marketing.

Kate MacArthur: Among global nations, Americans are consistently among the least concerned about climate, sustainability issues and plastic waste.

Gayle Schueller: According to our [2021 State of Science Index](#) — and we've worked with Ipsos on that — 88% of Americans believe climate change is real versus that 93% globally. While it is lower, it is still very high. Climate change is becoming increasingly personal. Sixty-nine percent of Americans say that they're concerned that they or a loved one may one day be displaced due to extreme weather related to climate change.

MacArthur: How does that affect how manufacturers set priorities for reducing raw material use?

Schueller: For 3M, every new product we launch must have a sustainability value commitment. But I recognize we are closer to the beginning than the end on that. That can range from helping our customers reduce

their greenhouse gas emissions to recyclability, to incorporating materials that are either renewable or plant-based recycled content, then ways that we can reinvent the product for a longer lifespan.

MacArthur: Even if Americans don't prioritize it, how do you "do what's best" for the planet and humanity anyway?

Schueller: If you look at any country around the world, including the United States, there's fast turnover of presidencies, administrations and so on. So, companies have a really important role for taking a long-term view. I won't say that our day-to-day decisions are all based on the decades-long view, but it's something that we're very aware of and something that we're very conscious of if we want to be around and thriving 100 years from now, or even 50 years from now. We need to be making longer-range decisions right now.

MacArthur: We always talk about living better through science but there can be an environmental impact from that science. How do you determine how things are affecting the planet during your innovation cycle?

Schueller: As part of every new product we launch, we have a lifecycle management approach where we are looking at both the current and emerging scientific literature and the regulations. It can also come from things where the performance of recycled content is working better. And we can switch to a material that is either plant-based or based from a certain type of recycled content.

MacArthur: We asked consumers across a number of categories about purchase drivers and frankly, the consumer population ranked a lot of these other decision drivers higher than sustainability.

Schueller: We cannot expect that the broad base of consumers is going to be picking products for sustainability as their top one, two or even three pieces. People are buying a product for a specific function. In my experience, for most consumers, if the other factors are even, they're going to pick the more sustainable product.

MacArthur: How do you communicate with consumers to help motivate them to buy sustainable?

Schueller: We want to make sure that we're making the products that customers want to have. And then along with that, helping them see the sustainability attributes that we have. But it's not like someone's going to go out and choose a Post-it Note because it's sustainable. They're choosing a Post-it Note to help them communicate. They're choosing a Scotch-Brite scouring sponge to help them clean their kitchen. And if it doesn't work effectively, they end up wasting lots of materials. That's a worse sustainability strategy than having used one in the first place.

MacArthur: Is there one sustainability target you're hoping the company can achieve with consumers?

Schueller: We have about 15 of them set to mature in 2025. Some we're making great progress on; some are more challenging. From a 2030 perspective, I'm super excited that we've done the math, and we see the path for us to take what we've already done in terms of reducing our greenhouse gas emissions over 70% from 2002, and then reduce it by an additional 50% by 2030. That's my big milestone that I'm looking forward to.

Kate MacArthur is deputy editor of What the Future.

“In my experience, for most consumers, if the other factors are even, they’re going to pick the more sustainable product.”

How the stuff we buy can become a climate solution



Ann Tracy

Chief sustainability officer, Colgate-Palmolive Company

There's a great line in the 1967 film "The Graduate" where a businessman says, "There's a great future in plastic." Fast forward to today and the world seems to be drowning in the stuff. Ann Tracy, chief sustainability officer of Colgate-Palmolive Company, believes that there is a new future in plastics, but in a much different way than decades ago.

Kate MacArthur: Is that line from "The Graduate" still true?

Ann Tracy: I think you have to throw the word "circularity" in there. Plastics aren't going to go away in their entirety, but we have to slow down the pace of introducing new plastic. To get to the circular economy, we need to reduce as much as we can first. And then we have to figure out how to reuse and recycle what's left.

MacArthur: Can you give an example?

Tracy: We've talked in the past about the recyclable tube, and that was big for us because we are the world's biggest producer of toothpaste tubes. And most of our bottles of Palmolive dish soap in the U.S. are made with 100% recycled plastic. We've come out with a new toothbrush that reduces the amount of plastic by 80% compared to similarly sized Colgate toothbrushes. It's called Colgate Keep. You keep the metal handle

and just change the head, so that's drastically reducing the amount of plastic.

MacArthur: Who is responsible for solving this climate challenge: individuals, companies or government?

Tracy: The answer is "yes, and." This to me is an inflection point where businesses and governments need to start to work together because one can't do it without the other.

MacArthur: Is the motivation for sustainability oriented more toward consumer expectations or is it the right thing for companies to do?

Consumers don't want to compromise on quality, price or experience, but they also want products that are good for them and good for the planet. So, the companies that can find or develop the right products that deliver on all fronts are the companies that are going to win.

MacArthur: What about protecting and preserving natural resources. How does that work with sustainability?

Tracy: Nature-based solutions are the direction companies are going. A really cool awareness campaign that we're just launching now is called "[Smiling Planet](#)." It basically shows wonderful examples of natural smiles, whether it's in a wave or a cloud. We say, "When we smile at the planet, the planet smiles back."

MacArthur: How does that affect how brands communicate those messages?

Tracy: There's a huge role for marketing to play. We have lots of data around what we call the say-do gap, where people say they're going to do one thing, but then when it comes to actually doing it, they don't. That to me epitomizes what marketing's job is — to close the say-do gap.

MacArthur: Can you talk that through that with the recyclable tube campaign?

Tracy: There are approximately 20 billion tubes of toothpaste sold every year. We just launched a U.S. campaign advertising some of our recyclable tubes with "Recycle Me" language, so that consumers can easily identify which of Colgate's tubes are recyclable. One thing to know is that some facilities may not yet accept the tubes for

recycling, so consumers should check locally. Here, we have a big opportunity to communicate with people to drive awareness through our campaigns and help them lead a more sustainable lifestyle. We educate consumers with messaging on every tube and carton. And that's a great example of where we're trying to use our brand power to help people do things more sustainably at home.

MacArthur: What kind of promise is there for zero-waste packaging?

Tracy: I hope there's promise. It makes a lot of sense to take the water out of the product and ship less water. Well, that's a big change for a consumer. It's more convenient and easier for people to just grab [a product] off the shelf, take it home and use it, as opposed to taking a few steps to make their product themselves essentially. The trick here is, will people do it? And how do you create something cool?

A great example is the Tesla. People don't buy it because it's a sustainable car. They buy it because it's a cool car. We have to make the Tesla toothpaste. So how do you make it such a superior experience that people don't think about the sustainability aspect of it, but they want to use the new product in a new way? That's what Colgate is trying to do across all our products.

Kate MacArthur is deputy editor of What the Future.

“We have to make the Tesla of toothpaste. So how do you make it such a superior experience that people don’t think about the sustainability aspect of it, but they want to use the new product in a new way?”

Here's what brands can do to reduce climate change



Brandon Watkins

Senior manager-utilities optimization and design, Molson Coors Beverage Company

The climate emergency isn't the only threat facing our planet. The depletion of our resources is a looming crisis in itself. Water lies at the nexus of these trends as a drier planet also is a hotter planet. Water is critical to life. Some might argue that beer, which is a historical driver of civilization itself, is also important. Creating it, however, takes a lot of water. Brandon Watkins is working to ensure that we can have both in a sustainable future.

Matt Carmichael: How do you conserve water when it's integral to your product and its manufacturing?

Brandon Watkins: A big portion of our usage is in the product. Water makes up 90% to 95% of our ingredients and our beer. The secondary portion of our usage is cleaning — tanks, vessels, pipes and systems to assure we get the highest quality. We focus on “cleaning process optimization.” The first piece is driving process improvements at our facilities. The second piece is really capturing the very good, clean water that we have and reusing it in our process for “non-contact applications” like cooling towers and machine cooling and things of that nature.

Carmichael: As a beer drinker it seems weird to talk about eating beer. Are we steering toward things like astronaut ice cream, but for dehydrated beer?

Watkins: We haven't looked at those options yet. But our innovation space continues to evolve.

Carmichael: How do you prioritize reducing waste versus protecting our natural resources?

Watkins: It works hand in hand because I feel reducing waste means ensuring that we're not using more of our natural resources than we need to produce our products. In many of our communities, we're the largest consumer of our natural resources. So, I think it's our duty to assure that we're utilizing these resources as efficiently as possible.

Carmichael: To what extent are your efforts driven by consumer pressure, and to what extent is it about being better stewards?

Watkins: I'm not sure I call it pressure, but more so our responsibility to assure that we're using our resources as efficiently as possible.

Matt Carmichael is editor of What the Future and head of the Ipsos Trends and Foresight Lab.

Signals

What we're reading today that has us thinking about tomorrow

"Termination Shock" by [Neal Stephenson](#). This science fiction novel is set in near-future Earth transformed by climate change. What happens when people take matters into their own hands and make today's far-fetched-seeming solutions real.

War abroad and politics at home push U.S. climate action aside via [New York Times](#). As the U.N. issues a warning over the closing window to address global warming, war and politics are complicating the efforts by the U.S. and Europe to do their part to reverse their outsized contributions to pollution.

Folks, we gotta start farming different crops via [Slate](#). Since World War II, we've created a highly productive but incredibly fragile food system. But narrowing the genetic base of the global food system and focusing on highly productive but increasingly uniform crops and animal breeds has increased our vulnerability to the impacts of climate change.

BIG reveals hotel room wrapped in 350 birdhouses via [Dezeen](#). A treetop hotel room with a facade of bird nests aims to decrease the downward spiral of the bird population in the Swedish woods and strengthen the biosphere and natural habitat.

A sustainable future? via [Ipsos](#). With the aim of helping us all to develop our understanding of the subject, Ipsos brings together key work from around the world in anticipation of, and in response to, this growing demand for more sustainable practices.

Views about sustainable energy via [Ipsos](#). Eight in ten people (84%) across 30 countries say it is important to them that their country shifts away from fossil fuels to more climate-friendly and sustainable energy sources in this survey for the World Economic Forum. Among global respondents, the U.S. was second to last ahead of Russia with 75% of Americans saying it is a great deal or a fair amount important.

Three-quarters of people in global survey want single-use plastics banned via [Ipsos](#). An average of more than eight in ten would like to see an international treaty to combat plastic pollution in 28-country Global Advisor survey by Ipsos in conjunction with Plastic Free July. The U.S. had the second-lowest levels of agreement with 55% behind Japan at 37%.

Scanning for signals is a type of research that is foundational to foresight work. These signals were collected by the staff of What the Future and the Ipsos Trend Network, including Britt Calvert and Natalie Novak.

Contributors



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Future Jobs to Be Done

The traditional “Jobs to be Done” framework focuses on the tasks and outcomes that people are trying to accomplish and why they hire products and services to help them achieve that outcome. We don’t buy a car; we hire one for freedom and independence. We don’t buy toothpaste; we hire it for confidence and health.

Ipsos takes this theory forward with *future* Jobs to be Done (fJTBD). We envision powerful and plausible future scenarios through strategic foresight. These scenarios help us define the circumstances in which people may find themselves, like an inhospitable climate. What will their new needs be? Then we use fJTBD to tie these scenarios to actions that organizations can take today and tomorrow to help people meet those future needs.

While many needs are enduring and do not change over time (e.g., protection), the context of that job (e.g., frequent wildfires creating hazardous air) will change that job space and the potential solutions and alternatives. Because of this, we often create fJTBD clusters that are higher-order and needs-driven. Within each, we can envision more granular fJTBD to illuminate opportunity spaces to meet human needs in new ways.

Trevor Sudano is a senior engagement manager with Ipsos Strategy3.

Potential future Jobs to Be Done in a new climate reality

1

Help me act more sustainably

Change is hard, and these changes are going to be massive and touch all facets of our lives. Brands can help people adapt and learn to survive, if not thrive, possibly delving more into behavioral change and disrupting unsustainable habits.

Potential fJTBD:

- Help me to teach my children sustainable habits in a fun and engaging way
- Help me stay up to date on the latest sustainable behaviors (e.g., changes in what's recyclable vs. not)

Imagine a world where ... a home recycling machine becomes the trendiest home appliance, overtaking the coveted air fryer.

2

Help me protect myself and people around me

Across categories like apparel, housing, automotive and personal care, innovation will focus on protecting us (and those we have responsibility for) from the deteriorating climate and environment.

Potential fJTBD:

- Help me ensure the air in my indoor environments is safe from toxins, viruses and pollution
- Help me keep my employees safe from climate events to avoid liability

Imagine a world where ... your clothing helps to filter and remove toxins from the air around you.

3

Help me build climate resilience

The pandemic took a toll on our already fragile health. This will become much worse. Products and services will need to help build resilience and navigate a crisis unfolding in slow motion.

Potential fJTBD:

- Help me to prepare for seen and unforeseen climate events
- Help me to assess and prepare for climate events when traveling to an unfamiliar destination

Imagine a world where ... your smart watch helps guide and track your sustainable behaviors like it tracks steps and health metrics today.

For full results and methodology, visit future.ipsos.com
and [subscribe to our newsletter](#) to receive our next issue, What the Future: Food

What the Future is produced by the Ipsos Trends and Foresight Lab

GAME CHANGERS

