

**[Union of
Concerned Scientists**

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Catalyst

Volume 21, Fall 2021

The Trouble With Tyson


*The giant food company's
near-monopoly threatens
local communities*

A People-Powered Clean Energy Transformation

Fighting against Disinformation

Catalyst, ISSN 1539-3410, is published quarterly by the Union of Concerned Scientists. Text of articles from *Catalyst*, duly acknowledged, may be reprinted free of charge. Artwork may not be reproduced.

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 *Catalyst* is printed on chlorine-free recycled paper with 100% post-consumer content.

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The Union of Concerned Scientists puts rigorous, independent science to work to solve our planet's most pressing problems. Joining with people across the country, we combine technical analysis and effective advocacy to create innovative, practical solutions for a healthy, safe, and sustainable future.

This publication is financed by contributions from individual members; you can join UCS by sending a tax-deductible contribution of \$25 or more to UCS Development, Two Brattle Square, Cambridge, MA 02138-3780.

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Lessons from a Battle with “Big Chicken”



Joining UCS at this time has enabled me to re-gear for battle in some of the most important fights of our time, including climate action, corporate accountability—and yes, Big Chicken.

The release of our report *Tyson Spells Trouble for Arkansas* (see p. 8) flooded me with memories from my years working with Black and Brown poultry workers. Starting in 2005, I spent a lot of time in Northwest Arkansas and Mississippi, where I provided support to small movements of chicken workers who were attempting to build bridges with each other, and with unions and faith-based allies to improve wages and safety on the processing line.

Most poultry processing plants are cramped and noisy, with constantly wet and slippery floors. Some rooms are cold, and others hot and smelly enough to bring a visitor close to vomiting. The industry's rising injury rate is even more alarming, with poultry work ranked as one of the nation's most hazardous jobs. The speed of the lines and the multiple repetitive knife cuts required by the demand for specialized chicken products have delivered fortunes to corporate coffers, but none to poultry workers.

My Big Chicken experience left me with two important lessons that are relevant to UCS research approaches and solutions.


The first is the inherent interconnectedness of problems and solutions. That's why I am excited by the broad, systemic approach taken with this report. Tyson's near-monopoly in Arkansas's chicken industry involves issues of worker justice, immigrant rights, racial justice, food security, and the environmental health of our air, soil, and water. In an interconnected world, no one is healthy or safe until everyone is healthy and safe. The insistence that healthy systems—including our food, energy, and economy—should serve everyone they touch is still a daring and controversial perspective. Tackling problems


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WHAT OUR SUPPORTERS ARE SAYING


Here's a sampling of recent feedback from the UCS Facebook page (www.facebook.com/unionofconcernedscientists), Instagram account (www.instagram.com/unionofconcernedscientists), and Twitter feed (www.twitter.com/ucsusa).

ON THE INFRASTRUCTURE BILL INCLUDING FOSSIL FUEL SUBSIDIES ALONGSIDE CLIMATE SOLUTIONS

 Tyler Poe:
I don't get why these adults are so interested in having oil survive after the entity was lying to the public for years—killing wildlife and people and raising the temperature all at the same time. ... We should be ashamed [that] these are our leaders. They don't lead. They follow the same path as [the] past.


 James Melton:
Funding energy development that burns carbon fuels does not give us clean energy. It's a payoff to the energy companies that have screwed us by suppressing climate research, misleading the public about the harm being done, and investing in corrupt politicians. It's exactly the people who are causing the problem that we want to pay with funds designated to fix the problem.


 @solar4planeta:
The fossil fuel industry has had 140 years of subsidies. Enough already!!

 @thought_pilot:
Where's the part where we hold the fossil fuel, oil, and chemical industries accountable?


 @iwastherephoto:
Might be better to say climate is an infrastructure issue. And economic. Then maybe they'll listen. Maybe...


ON HURRICANE IDA KNOCKING OUT POWER AT COASTAL CHEMICAL FACILITIES THAT USE ELECTRICITY TO RUN SAFETY EQUIPMENT


 Michael Fried:
Relying on electric power for something important? On that coast? Only one thing will cure that stupidity. Require plant managers and corporate leaders to live next to the facility.

 Ted Mazzoli:
They knew the storm was coming. They should have taken precautions to contain chemicals and protect the storage. If they spilled due to negligence, they should be fined into non-existence and the owners/managers jailed.

ON TYSON FOODS REQUIRING EMPLOYEES TO BE VACCINATED, DESPITE ITS FAILURE TO PROTECT WORKERS AGAINST COVID-19

 Len Kralik:
Better late than never but they are definitely shutting the [chicken] coop door after the fox got in.

 Judy Anderson:
They also have constant recalls, so health and safety is low on their list.

 @jtispoiindexter:
[The] slaughterhouse is a breeding ground for organisms ... [with employees] working close [together], it probably is the perfect storm for a virus.



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A Better Plan for Coal Ash Cleanup



In December 2008, a dike ruptured at a coal ash pond at Tennessee's Kingston power plant; the 1.1 billion gallons of coal waste destroyed homes and ecosystems in its path and contaminated nearby rivers. This spill—the largest industrial disaster in US history—underscores the need for comprehensive, equitable coal ash cleanup.

A steady procession of coal-fired power plant closures over the last decade has reduced air pollution and markedly improved public health. But another coal-era legacy continues to pose a serious threat long after power plants are closed: the leftover ash from burning coal, which is chock-full of arsenic, lead, radium, and other toxic contaminants.

Since the mid-1960s, US electric utilities have produced 4.5 billion tons of ash, and despite recent plant closures, they still churn out

an average of 100 million tons annually, which they pile in landfills or mix with water and store in all-too-often-leaky ponds. There are more than 700 federally regulated ash disposal sites across the country, and more than 20 percent of them are in the Ohio River Valley.

UCS Senior Energy Analyst Jeremy Richardson and two coauthors from the Ohio River Valley Institute recently set out to determine how the coal ash sites at the J.M. Stuart plant in southern Ohio and the Sebre

Generating Station in western Kentucky could be cleaned up in a way that creates good-paying remediation jobs to compensate for job losses at both facilities. The authors compared their “clean-closure” approach with the owners’ own plans and published their findings in October.

It turned out that Richardson et al.’s clean-closure proposal would not only better protect public health and the environment, but also provide more local job opportunities than either

of the owners’ plans. The clean-closure approach would initially cost more, but the authors calculated that their approach would generate more jobs and produce more than \$100 million in additional economic output in each state.

The report (online at www.ucsusa.org/resources/coal-ash-cleanup-benefits) offers a series of recommendations for the Environmental Protection Agency, which established coal ash pond standards in 2015, and for state regulators who are largely responsible for approving cleanup plans. It calls for fully funding federal programs and enforcing federal standards that are already in place, but also stresses that nearby communities must have a say in cleanup decisions and displaced workers should have the first crack at cleanup jobs.

“Comprehensive coal ash cleanup should address longtime inequities, ensure lasting environmental benefits, generate new jobs for displaced workers, and broaden opportunities for community redevelopment,” Richardson says. “Done right, everybody wins.”

ExxonMobil Continues to Fund Climate Disinformation



Keith McCoy, a lobbyist for ExxonMobil, mentions the company's funding of climate change-denying groups in an undercover video released in June.

ExxonMobil lobbyist Keith McCoy conceded in a secret video recording aired on British television last summer

that the company financed “shadow groups” that opposed “early efforts” to curb carbon emissions. Notably, McCoy

uses the past tense in the video, but as the oil giant's most recent annual grantmaking report shows, it is still funding these groups.

Since 1998, ExxonMobil has paid a network of think tanks and advocacy groups at least \$39 million to manufacture doubt about climate science and stymie government action. In 2020, it spent \$490,000 on three grantees: the American Enterprise Institute (\$100,000), the Regulatory Studies Center at George Washington University (\$140,000), and the US Chamber of Commerce (\$250,000).

The reported amounts are the least the company has spent on climate disinformation since 1999. (In 2019, for example, the company spent \$790,000.) But at least some of that drop in funding is likely due to a subtle change in the company's reporting: in its grantmaking report for 2020, ExxonMobil listed only grants of \$100,000 or more. In previous years, it had included all grants of \$5,000 and above. Regardless of the amount, the company's continued funding of disinformation, especially in light of McCoy's revelations, makes a mockery of its purported support for a carbon tax.

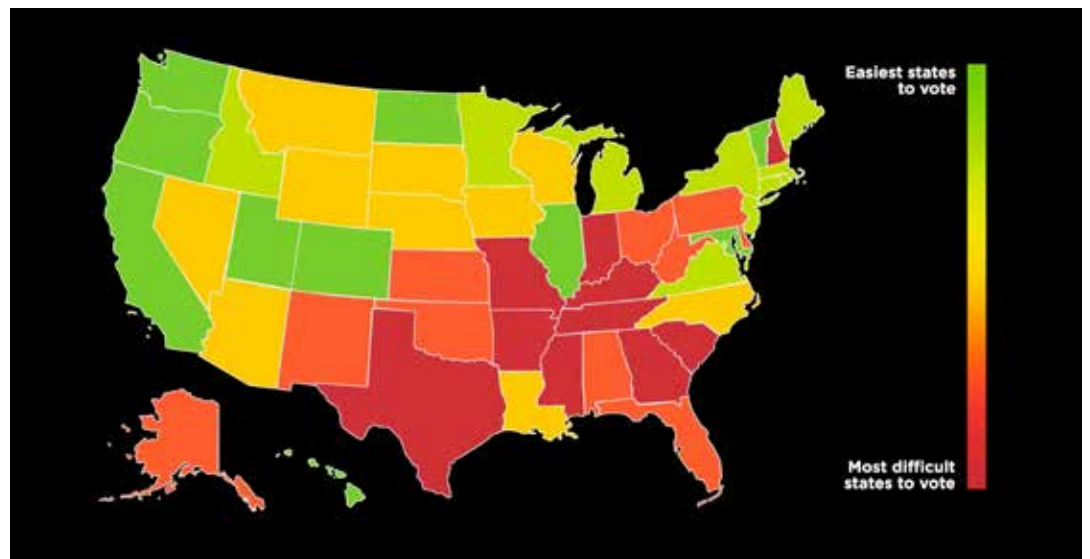
Making the Case for Electoral Reforms

The 2020 election exposed the flaws inherent in our electoral system, and the threats they pose to our democracy. The Center for Science and Democracy at UCS is working hard to address these problems by bringing social science research and researchers to analyze science-based solutions that have been shown to expand voting rights, restrict partisan gerrymandering, and limit the

influence of money in politics. The video above, released this fall, clearly and simply explains how these proposed laws would protect our

democracy against current threats. Watch the full video, *American Democracy Under Siege: The Future of Voting Rights Is Up to Congress—and*

You, on our social media channels and YouTube, and show your support at <https://act.ucsusa.org/election-reform>.



Busting Myths about Japan's Position on Nuclear Weapons



The bombings of Hiroshima and Nagasaki made the enormous destructive power and inhumane biological effects of nuclear weapons clear to the Japanese public. Opposition to nuclear weapons is a cornerstone of Japan's modern identity and enjoys broad-based public support.

During a 2019 town hall meeting, then-presidential candidate Joe Biden endorsed the adoption of a US “no-first-use” policy that would commit the United States to never being the first to use nuclear weapons in a conflict. Such a move would mark a notable change from current policy and, while Biden has said a no-first-use declaration is in the country’s best interest, not everyone agrees. With Japan under the so-called US nuclear umbrella that supposedly deters any attack on Japan because of

the potential threat of US nuclear retaliation, some have expressed concern that a US no-first-use policy might push Japan to develop its own nuclear weapons. UCS analysis, however, explains that there is little risk to such a change.

Because the US conversation about Japan is dominated by a few conservative think tanks and a handful of US officials who support hardline, aggressive nuclear policies, the voices of most Japanese people—who do not object to a US

no-first-use policy—seldom get aired in the United States. UCS is working to fill this gap through the release of two recent reports and collaboration with Japan’s New Diplomacy Initiative that will publicize mainstream Japanese views in the hopes of changing how the Biden administration and Congress think about Japan’s security concerns.

The first report, *Japan Is Not an Obstacle to a US “No-First-Use” Policy*, shows how such a policy could actually help reduce

the possibility of a nuclear war in East Asia and create opportunities to stop a new nuclear arms race. (Read the report at www.ucsusa.org/resources/japan-no-first-use.) In the second publication, co-authored by the New Diplomacy Initiative, Japanese experts weigh in on the future of their country’s defense and foreign policy. These efforts give UCS a chance to influence US policy and enhance global security while the Biden administration is actively reviewing its official position on nuclear weapons.

Science for Public Good Fund: Applications Now Open

For five years, the Science for Public Good Fund has helped UCS Science Network members make a difference in their neighborhoods, and supported and enhanced their development as leaders in a more inclusive scientific community. The fund is now accepting applications from Science Network members who have an idea for activism or advocacy that will further science-based projects to benefit the public, amplify community voices (especially those from underrepresented and marginalized communities), offer opportunities to enhance science advocacy skills and leadership, or encourage public participation in the communities where the applicants live or work.

Projects funded last year included an online symposium on resilient and equitable health care in Northern California that drew more than 700 participants, and the creation of the first-ever #BlackChemistsWeek social media event. To learn more about the grants and apply, visit www.ucsusa.org/resources/science-public-good-fund.



UCS Staffer Plays Science Role at White House

UCS analyst Gretchen Goldman has been tapped to serve a one-year appointment in the Biden administration as assistant director for environmental science, engineering, policy and justice in the White House Office of Science and Technology Policy. An expert on scientific integrity and science-based policy in

government who served most recently as research director for the Center for Science and Democracy at UCS, Goldman says she will work primarily on issues of climate change and environmental justice.

“When I was a graduate student, my wildest dream was to have the chance to work at UCS,” she says, “so it’s amazing

to me to have been given this opportunity, and I feel honored and grateful. Even though I know things can often look very different on the inside when you can see all the dynamics and challenges, I’m very excited to apply the knowledge I’ve gained through my work at UCS to try to overcome barriers and improve the way science informs government decisions.”

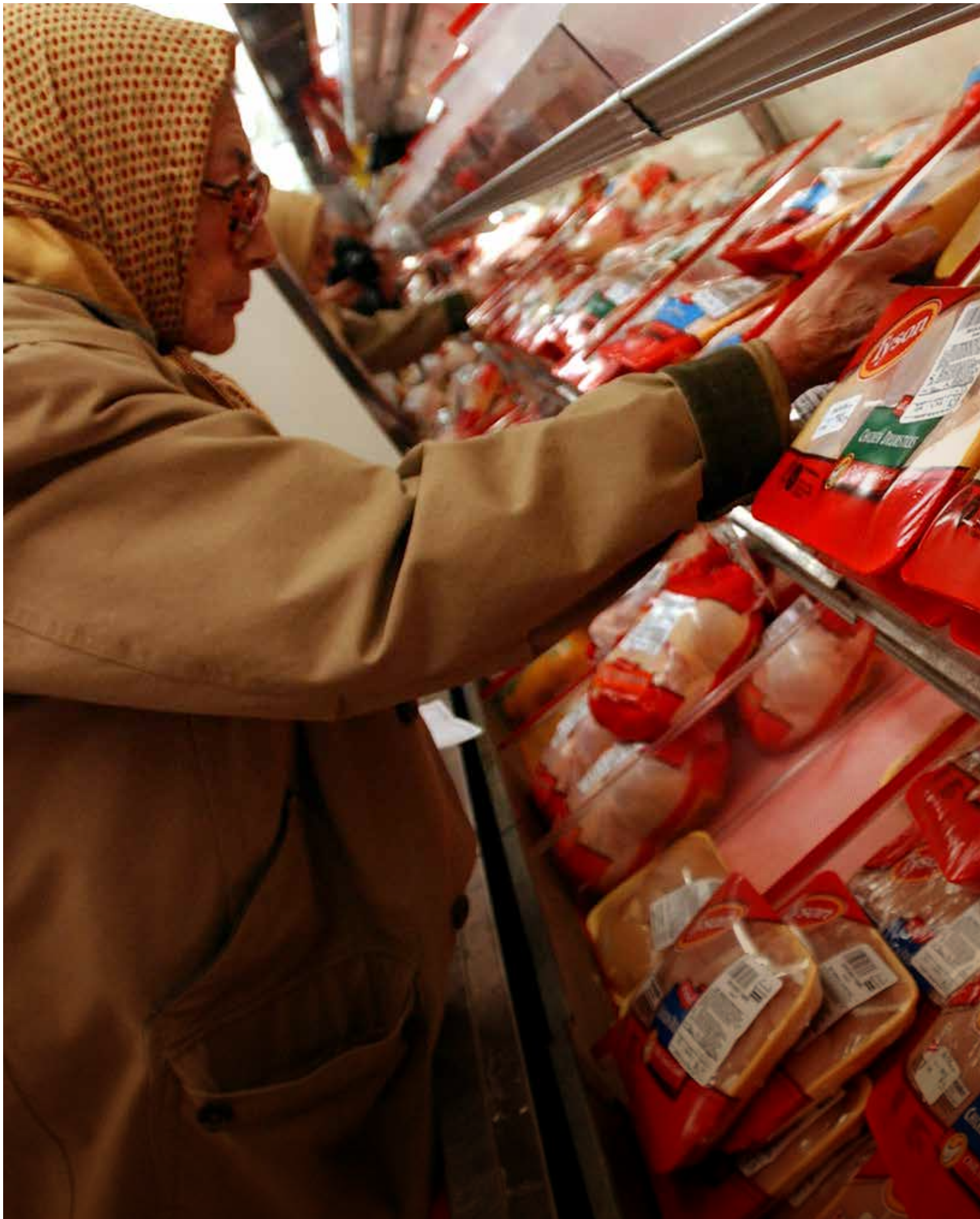
Goldman is one of several UCS staff members to be offered positions in the administration—a testament to the respect our experts have earned among policymakers.

“Advances” Contributors:

Fuzieh Jallow, Elliott Negin, Seth Shulman, Claudia Ward-de León, Pamela Worth

The Poetry of Science

Six contemporary poets gathered for a UCS virtual event on October 27 to discuss how they use their art form to inspire and move people to act on behalf of the planet. The conversation, attended by UCS supporters around the country, explored how poetry can create an emotional connection to science and nature and serve as a call to action—showcasing the power that the arts can have in building coalitions. If you missed the conversation, visit our website at www.ucsusa.org/poetry-of-science to watch the event, learn more about the speakers, and read their poetry.





THE TROUBLE WITH TYSON

UCS analysis shows that the giant food company has near-monopoly power in its home state, which is bad for local communities—and for farmers and workers nationwide.

BY BRYAN WADSWORTH

As Tyson Foods describes itself, it's clear the company wants you to see its evolution as a classic “up-by-the-bootstraps” success story. It begins in the Great Depression with John W. Tyson selling baby chicks to farmers. By the late '40s he is also selling feed and transporting chickens to market. In 1958, according to the company's website, John's son convinces him to build their own processing plant—i.e., slaughterhouse—“completing the vertical integration of the company.” From there, it is nothing but growth for Tyson, as the company goes public, branches out from chicken

(with acquisitions including Ball Park, Hillshire Farm, and Jimmy Dean), and constructs a “center of innovation” that enables Tyson to expand into “offerings of value-added protein in global markets.”

Today Tyson is the largest food company in the United States, with annual revenue of more than \$42 billion. It processes one of every five pounds of chicken, beef, and pork sold in this country, and even if you don't buy Tyson-labeled products in the grocery store, it also supplies the meat used by many schools and fast-food chains—including every McDonald's chicken nugget.

The real story behind the company's growth lies in the phrase "vertical integration." By controlling all the means of production—the chickens, the feed, the transportation, the processing—Tyson has little competition to worry about at most points in its supply chain. That means it can set the market conditions in which it operates, including unsafe conditions for its workers (see the sidebar) and contamination of surrounding communities' air and water with chicken waste.

"This is what happens when regulators and the government just stop caring about competitiveness in our economy," says UCS economist Rebecca Boehm, lead author of the new report *Tyson Spells Trouble for Arkansas*. "When a company like Tyson can get so big and powerful, where they have a near-monopoly in their industry, they make their own rules and rake in profits, while everyone else suffers."

MAKING A MESS IN ITS OWN BACKYARD

Tyson's home state of Arkansas is arguably the center of the US market for broiler chickens (those raised for meat): Arkansas has more poultry processing plants than any other state, accounting for \$8.1 billion in sales, of which Tyson

operates nearly half. In many counties with Tyson plants, there are few other employment opportunities, which has helped make Tyson the third-largest employer in the state.

Our report details the company's near-monopoly on chicken in Arkansas and its effects. The state's poultry processing industry is highly concentrated, with Tyson and three other companies controlling 87 percent of the market. According to the quantitative measure economists and regulators at the US Department of Justice's Antitrust Division use to evaluate competitiveness—called the Herfindahl-Hirschman Index (HHI)—a value of 2,500 is considered the threshold for a marketplace where power has become consolidated enough to warrant possible government intervention. Using data from 2017, UCS calculated an HHI value of 6,930 for the Arkansas poultry processing industry—nearly *three times* the government threshold.

Tyson alone accounts for 67 percent of poultry processing in Arkansas today, and its power is even greater at the county level, where it controls the entire market in half of the Arkansas counties with at least one processing plant. UCS analysis also shows that, as the industry has become more consolidated over time, farmers have been pushed out.

TYSON'S WORKERS REPORT FEAR AND INTIMIDATION



*Tyson employee Ennelida Lopez spoke of dirty and unsafe working conditions in the *Guardian* exposé. She caught COVID-19 on the job and infected her husband; he died soon after.*

In a joint investigation with UCS and Venceremos, a worker-driven nonprofit organization in Arkansas, the *Guardian* conducted a five-month inquiry into working conditions at three Tyson processing plants in that state and published its findings on the same day as the UCS report *Tyson Spells Trouble for Arkansas*. "The *Guardian* took our data and went to Arkansas to see how Tyson's near-monopoly status plays out on the ground," explains report author Rebecca Boehm. "Venceremos helped find Tyson workers who were willing to be interviewed, and their words paint a heartbreaking picture of the impact a company with too much power can have on people's lives."

Among the findings published in the *Guardian* as an exclusive, Tyson employees report:

- an atmosphere of fear, intimidation, and low morale;
- insect infestations;
- exposure to chemicals;
- insufficient protections against COVID-19; and
- unacceptable risks of bodily injury.

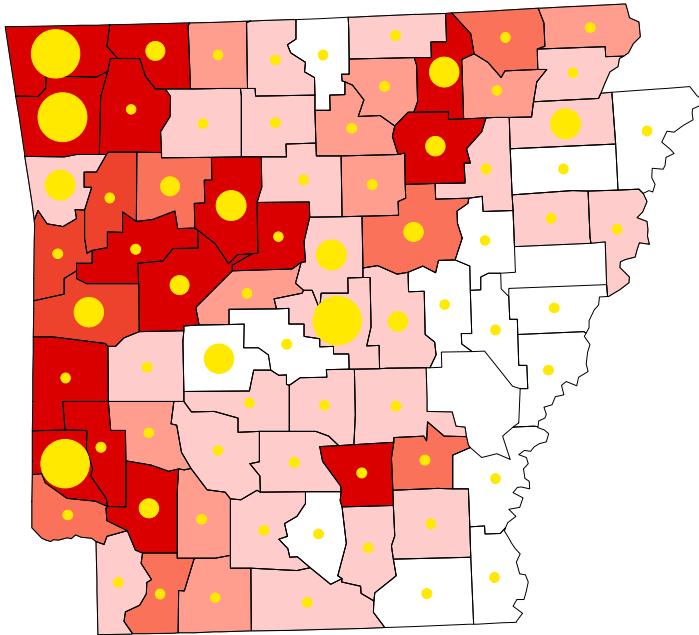
Tyson workers also said they are forced to work six days a week under surveillance, with only a single 20-minute break each day, and are issued points for missing work time even if sick; an accumulation of 14 points over an employee's tenure results in termination. Those interviewed believe they must endure all of this without complaint if they want to keep their jobs.

A machine operator also told the *Guardian* that the quantity of meat being processed has risen over the 10 years he's worked for Tyson while staffing levels have been cut—a risky proposition considering that workers on the line are expected to move quickly and in close proximity, with deboning knives that can cause permanent disability. The result is the highest nonfatal injury and illness rate of any private industry, according to the Bureau of Labor Statistics.

Many of Tyson's Arkansas employees are immigrants who have little choice but to live with the dangerous working conditions and pollution in their neighborhoods because they have no power to negotiate better conditions, and their employment options are limited. "Knowing that Tyson is allowed to exploit them weighs heavy on the workers' shoulders," says Venceremos Executive Director Magaly Licolli. "Like they're not seen as human beings, just labor."

Tyson has denied all the charges in the *Guardian* article, and claims its immigrant workforce is a source of pride.

WHO GETS STUCK WITH THE WASTE?



In 2017 alone, Tyson chicken farms generated nearly 25 million tons of waste, much of which was concentrated in counties that are home to a large share of the state's Hispanic and Native American populations.

Arkansas has lost nearly half of its broiler farms since 1978—even though the number of chickens being processed has dramatically increased (see the figure, p. 21). This trend toward fewer and larger farms in Arkansas is consistent with trends in the poultry industry nationwide.

Why does this matter? These large farms also produce large amounts of waste that pollutes the air and water in the surrounding area, putting both people and the environment at risk. Even though the waste is used as fertilizer on cropland, it often runs off in rainstorms and contaminates drinking water supplies. And federal laws governing how large livestock farms manage their waste currently lack enforcement mechanisms. UCS estimates that Tyson's Arkansas broiler farms produce almost 25 million tons of waste each year, much of which is concentrated in three counties that are home to a large share of the state's Hispanic and Native American populations (see the map).

How does the company get away with these practices? It's partly due to a decades-long process of deregulation begun by the Reagan administration, which significantly weakened a 1921 law giving the federal government the regulatory power to ensure fair competition in livestock markets. The resulting consolidation of power into a few hands accelerated under the Trump administration, which essentially stripped the US Department of Agriculture (USDA) of any remaining policy levers by which it could combat the problem.

Tyson has not been passively watching these events unfold—it has spent nearly \$18 million on lobbying and

more than \$300,000 in political contributions per election cycle since 2010. The company touts the many jobs it has created, the tax revenue it brings Arkansas, and the charities it supports. While there is some truth to these benefits, the outsize power of this single entity gives the people and communities in Arkansas fewer options than they would have with a more diversified agricultural economy.

For example, the combination of political influence and positive messaging helped Tyson win changes to Arkansas's workers' compensation laws in the 1990s, reducing the

(continued on p.21)



On Guard against Disinformation

INTERVIEW WITH ERIN MCAWEENEY



ERIN MCAWEENEY is a senior research analyst at Graphika, a social network mapping and

analysis firm. Her team focuses on detecting disinformation, inauthentic online activity, and coordinated media manipulation and harassment targeted at communities, platforms, and organizations. She has investigated disinformation on topics such as health care, climate change, electoral integrity, and immigration. Hear more about McAweeney's online sleuthing in our *Got Science?* podcast at www.ucsusa.org/resources/science-disinformation-social-media.

Disinformation is rampant on social media today. How do you find out where and how it is happening?

ERIN MCAWEENEY: Our company builds maps of online conversations—ranging from foreign interference in democratic processes to health misinformation spreading into vulnerable populations—and analyzes them to detect attempts to manipulate the conversations.

To do this, first we collect a lot of social media data, mostly from Twitter. And we then look at interests, behaviors, and followers shared between accounts. You start to get these very well-defined clusters of accounts that tend to spread mis- and disinformation, or that are commonly sharing a particular source of articles promoting misinformation. If there is an uptick in articles from a problematic domain or an uptick in a hashtag that might be carrying over from

a problematic group, then we consider that to be a spreading of misinformation into other communities.

Using COVID-19 as a real-world example, how is misinformation spreading through social media?

ERIN MCAWEENEY: There is concern about misinformation spreading into Black communities, health-care communities, and others that are vulnerable to anti-vaccination rhetoric. Mapping hashtags common to the anti-vaccine conversation in the COVID-19 context—for instance, #BillGatesBioweapon or #MandatoryVaccination—uncovers various clusters of anti-vaccination accounts facilitating the flow of misinformation.

We are also paying special attention to accounts that might be targeting the Black community. #TuskegeeExperiments

is commonly used to spread fear and misinformation in the Black community surrounding vaccination. [Editor's note: *The Tuskegee experiments, which ran from 1932 to 1972, kept Black men infected with syphilis that could have been treated, and contributed to a lingering distrust of doctors and public health officials among many Black people.*]

You've also done a lot of work looking at climate disinformation across networks. What are you seeing?

ERIN MCAWEENEY: On the climate denial front, what's unique to this group is that it is so small compared with pro-science, pro-environment organizations and individuals. It appears that [deniers'] main objective is to push out misinformation and make it seem like there's outsized support for this fringe belief that climate change isn't real or that climate science is false.

What's most worrisome is that, over the last year, they've become increasingly tied to conservative and conspiratorial groups online. We've seen that networks can start to amplify one another's messages once their goals align. In the most recent network map we made, there was a large QAnon [a far-right conspiracy theory] group within the climate conversation that we've never seen before. And when the West Coast wildfires started in the summer of 2020, which overlapped with Black Lives Matter protests, we saw both QAnon and conservative networks start to push the conspiracy that Antifa [an anti-fascism, anti-racism movement] had started these fires.

I hope that, by shining light on the dark corners of the internet, we can fight the manipulation and the deceit that is happening online today.

This content spreads quickly, so it needs to be curbed quickly because we can see how easily it will devolve into chaos. We've been working with a coalition of groups, including UCS, to map the climate conversation landscape and give them information they can use to take action with their members.

[Editor's note: UCS and 12 other organizations sent an open letter to Facebook in March requesting information on its efforts to stop climate change disinformation.]

News stories of fake social media accounts and "bots" have been gaining traction. Can you tell if these anti-vaccination, anti-science accounts are fake?

ERIN MCAWEENEY: Sometimes we'll come across a tight-knit cluster that may be unusual for a network, so we'll look for behaviors that might lead us to believe that the accounts are fake—for example, all of the accounts were created on the same day, or all have the same profile photo. Or they may only have a few friends, all of whom are within that tight-knit cluster, and they're sharing the same posts between each other trying to amplify a similar message.

One of those things taken individually cannot immediately identify whether an account is fake or a bot [a computer program that operates as a user]. But taken together, you have more confidence that an account or a set of accounts is fake, has a malicious intent, or is trying to amplify misinformation or disinformation.

That said, there can be a downside to overquantifying really messy online human behavior. [People can be flagged

as suspicious because they] aren't native English speakers and there is a semantic variation in how they're typing, or are tweeting over a certain volume per day, but they are real, authentic people. There's no set limit of how much somebody can tweet before they're identified as a bot; we can't just assume that a bizarre conversation must be malicious or must be a troll [someone who repeatedly antagonizes other users].

I think taking the care to manually go through and use these investigative processes to identify, to a certain confidence level, whether what we see is fake or inauthentic or coordinated protects everybody on the internet. I think it protects people from potentially being wrongfully banned from social media that

are a part of a genuine grassroots cause—which is the opposite of what we're trying to do.

Given all this, is social media a platform worth protecting?

ERIN MCAWEENEY: Yes. I truly believe that it can still be a powerful tool for marginalized voices to be heard, to be given a bigger megaphone. I hope that, by shining light on the dark corners of the internet, we can fight the manipulation and the deceit that's happening online today. In the next three to five years, I really see the field moving toward a more formalized system with standards that protect those online spaces and keep them open for all. {C}



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ON THIS PATH TO CLEAN EVERYONE





ENERGY, WINS

A team at UCS, in collaboration with a diverse array of researchers, academics, and activists, puts people at the center of the energy transformation we need.

BY MAEGAN RAMIREZ

If you happen to pass through El Paso, Texas, during the winter holidays, you'll see gleaming silver spires jeweled with red, green, and blue lights. Winter fog cloaks the lights in a dewy mist. It looks magical—a bit out of place nestled among the tiny houses, local businesses, and church that surround it—but magical. At least that's what I thought when I was a small child on my way to my great-grandparents' house. I had no idea that I was fascinated by an oil refinery, or that every time we visited my great-grandparents, the refinery, which dominates 550 acres of the majority Latinx neighborhood, spewed pollution and heat-trapping emissions into the atmosphere.

Nor did I know, until years later, when my great-grandfather became ill and lost his ability to do much more than gently sway back and forth in his rocking chair, that his 25 years inhaling diesel exhaust while working as a mechanic for the city bus line would cause the lung cancer that ultimately claimed his life.

But now I know. And I also know that—at a time when it's become frighteningly clear that to help limit the most catastrophic impacts of climate change, the United States must cut its heat-trapping emissions sharply—the same refinery still processes 131,000 barrels of crude oil a day. We can't afford to continue business as usual, in El Paso or anywhere.

We must cut emissions at least 50 percent below 2005 levels by 2030, and achieve net-zero emissions no later than 2050 (meaning we emit no more carbon than we take out of the atmosphere by then). This is a daunting task, no doubt, but it's one that can be met, and *equitably*—including for workers such as the 440 people currently employed at the El Paso refinery who would need to find jobs in another industry.

To guide our work toward such a transition, this summer the Union of Concerned Scientists released *A Transformative Climate Action Framework: Putting People at the Center of Our Nation's Clean Energy Transition*. This framework was created in collaboration with an external advisory board that included researchers, academics, and activists with years of experience working within marginalized communities. With their co-authors, the UCS team considered the many options available for shifting the United States to clean energy, exploring different pathways for reducing carbon emissions based on principles that will ensure a transformative change to our energy system improves the health and well-being of all people.

THE URGENT CHANGES WE NEED

Right now, we have an imperative to take swift action to address the climate crisis and combat long-standing racial and socioeconomic injustices. Fortunately, the change from fossil fuels to clean energy can help address all these problems with a shift that's both rapid and responsible. Toward that end, the team laid out three principles:

- 1. Effectively address the climate crisis.** The transition to a low-carbon economy must be anchored in climate-relevant targets and timelines: as mentioned above, reducing heat-trapping emissions at least 50 percent below 2005 levels by 2030 and reaching net-zero emissions no later than 2050. That means prioritizing deep cuts in fossil fuel use, which will also result in reductions of other harmful pollutants.
- 2. Advance equity and justice.** All people must be protected from environmental, climate, and economic harms present in our current energy system and, as we transition away from it, they all need equal access to decisionmaking related to that transition. Equity and justice are not just *outcomes* we must strive for, but also key components of the *process* we use to get there.
- 3. Drive systemic, not just incremental, change.** To rapidly decarbonize our economy in a people-centered way, we will need an accelerated and unprecedented shift to clean energy, as well as shifts in our society to sustainable consumption, production, and development. We will have to take on powerful fossil fuel interests and democratize the decisionmaking processes in our energy system so everyone can benefit from it. That means our analyses and policies must go beyond the status quo to challenge market rules and structures that impede the rapid and equitable deployment of clean energy.



Using computer models to examine the technical feasibility of a variety of pathways to a deeply decarbonized economy, the authors found that transformative climate action was needed across many sectors. The modeling results yielded insights into some of the significant economy-wide opportunities available for cutting emissions by ramping up clean energy and energy efficiency, and converting many energy uses now filled by oil, gas, and coal to electricity generated from renewable sources.

Many implications of these changes went considerably beyond what the modeling framework could capture, though. The significant public health and economic benefits that could accrue from a transition to clean energy fell outside the scope of the model, for example. And so did the difficulties facing fossil fuel workers who will need to find new ways to make a living, and communities whose economies are dependent on the fossil fuel industry.

These broader challenges underscore that systemic changes are needed to confront the outsize influence of fossil fuel companies and their allies standing in the way of progress; to bring about an unprecedented expansion of renewable resources, transmission infrastructure, and energy storage that would benefit all communities; and to ensure the clean energy economy of the future does not replicate the past harms and racism inherent in our current fossil fuel-based economy (for example, the fact that power plants have routinely been sited in low-income communities and communities of color that have been segregated by both housing policies and collusion among White realtors and homeowners).



In grappling with these issues, the team quickly recognized that while clean energy pathways that rely solely on technological solutions might be achievable, such narrowly focused approaches fail to address the multifaceted solutions we need. To achieve a truly just shift, policies must be designed in alignment with an equitable framework from the start.

IMPERFECT CHOICES

The years and decades we've lost so far in failing to shift toward clean energy means we are left with some less-than-favorable options. In her guest blog post for UCS, "Confronting the Consequences of an Extractive Economy," Dr. Monica E. Unseld, a member of the external advisory board and founder of Until Justice Data Partners, writes, "This modeling was never intended to be a one-size-fits-all solution. You will see disputed and opposed options like nuclear and biofuels. Again, that is because our society has ignored science for too long. Scientists have to work with available options to help find any way out. This work shows the possibilities and the gaps."

Despite these kinds of compromises, the team's blueprint shows us a path toward a clean energy transition that uplifts the voices of disproportionately affected communities—a net positive for us all.

"The solutions are largely within our reach today," says Rachel Cleetus, policy director with the UCS Climate and Energy program. "The costs of this transition are comparatively

modest—and easily outweighed when compared to the benefits of improved health and avoided climate impacts."

LAYING THE FOUNDATION FOR A BRIGHTER VISION

Ted Boettner, a member of the project's advisory board, is a senior researcher at the Ohio River Valley Institute. A West Virginia native, Boettner has seen firsthand the environmental and economic degradation the demand for cheap energy has left in its wake, and highlights how the UCS report sets itself apart by proposing more than merely technological paths to net-zero carbon emissions. "The UCS report understands it will require democracy," he says. "It will require people in local communities from all walks of life taking a leading role in deciding how—not whether—this clean energy transformation will occur."

This project of envisioning the path to a just and viable clean energy future marks a new and exciting avenue for UCS collaborative research, while building on the good work that many others have done. It represents an important and needed shift toward thinking about more than just the climate benefits of cutting carbon—toward the environmental justice benefits and the imperative to invest in a fair transition for fossil fuel workers and communities. As we forge ahead, we know we need to be staunchly advocating for community-based groups that have always taken this broader perspective into account, so UCS will be listening to and elevating voices from the environmental justice, labor, and civil rights spheres while putting our technical expertise to work on their behalf. (C)

Maegan Ramirez is a program coordinator with the UCS Climate and Energy Program.

A Community Strives for Energy Sovereignty

By Pamela Worth

In the early 20th century, Ford Motor Company opened the world's first moving assembly line in Highland Park, Michigan. The auto industry fueled the city's economy for generations, transforming a rural town into a busy city. However, when the auto industry took hits, so did Highland Park. Today, the city's roughly 10,000 residents—of whom about 46 percent live at or below the poverty line—are interested in a more collaborative model of innovation and grassroots transformation: building resilience within their community through “energy sovereignty.”

“The traditional model of communities paying utility companies for power and people not having much of a say in it isn't working for us,” says Shimekia Nichols, executive director of the Highland Park-based nonprofit Soulardarity. “Like residents in many communities, Highland Parkers want the ability to choose clean, locally generated power and keep more of the money we spend for electricity circulating in our neighborhoods.”

Soulardarity and UCS set out to explore how Highland Park might realize its vision of a locally controlled, equitable, and clean energy system—a system powered by resilient and affordable resources like solar and energy efficiency, owned by residents and businesses.

A MODEL FOR MANY COMMUNITIES

Soulardarity was founded 10 years ago after the local electrical utility serving Southeast Michigan, DTE Energy, didn't just turn off but *removed* more than two-thirds of the community's streetlights as it struggled to pay high electricity bills. Since then, Soulardarity has worked to install solar-powered streetlights, help residents improve

energy efficiency in their homes, and advocate for a just and equitable energy system. In conversations with UCS Campaign Coordinator Camilo Esquivia-Zapata, Senior Bilingual Energy Analyst Paula García, Senior Midwest Energy Analyst James Gignac, and Energy Organizing Manager Edyta Sitko, Soulardarity members and city residents turned to Soulardarity's *Blueprint for Energy Democracy* and a previous UCS analysis conducted in partnership with a Boston neighborhood to begin charting Highland Park's path toward energy sovereignty.

“We wanted to map out what a local future of clean energy could look like for Highland Park,” says Gracie Wooten, a Highland Parker and Soulardarity member. “Our vision is strong, but we wanted data and modeling to back up our case to residents, officials, and utilities that the vision is real and achievable.”

Using information provided by Soulardarity's experts and through other research—and applying modeling software called Hybrid Optimization of Multiple Energy Resources (HOMER)—Gignac, Sitko, UCS Energy Modeler Youngsun Baek, and the rest of the team created a comprehensive analysis that shows how energy efficiency and clean energy generated locally by rooftop solar panels installed on homes and businesses, larger solar installations, and a community water and energy resource center to process wastewater and turn it into electricity could meet 100 percent of Highland Park's electricity demand. The full analysis, presented in the report *Let Communities Choose: Clean Energy Sovereignty in Highland Park, Michigan*, can be found at www.ucsusa.org/resources/let-communities-choose-clean-energy.



Sitko says Soulardarity is running with the results. “They've been engaged in conversations with city officials around their goals,” she says. “And using the analysis as a pressure point for that. We wanted to help continue and contribute to the great work they're doing.”

REDUCING POLLUTION, IMPROVING SERVICE, AND LOWERING COSTS

As the recent UCS report *A Transformative Climate Action Framework* (see p. 14) makes clear, we cannot achieve the clean energy transition we so desperately need without accounting for the needs of all kinds of communities in the United States. For example, because of systemic racism, fossil fuel generators that burn coal and gas are disproportionately sited in or near low-income communities and communities of color, contaminating



Solar power plays a major role in moving Highland Park, Michigan, toward energy sovereignty. The community-based nonprofit Soulardarity has held trainings for residents on rooftop solar and installed solar-powered streetlights, and is working to bring other small- and large-scale solar projects to town that will help build a just and equitable energy system.

the local environment and posing health risks for residents. Shifting to clean energy would not only drive down carbon emissions but also right this injustice.

In Highland Park, which University of Michigan researchers have identified as particularly vulnerable to air pollution from nearby power plants and factories, residents are paying the price—and not just in negative health outcomes. According to well-established economic research, energy costs should make up 6 percent or less of a household’s income.

But in Michigan, households with annual incomes similar to Highland Park’s median income pay 18 to 33 percent of their incomes, according to Soulardarity calculations. This inequity is partly driven by aggressive increases in DTE Energy’s residential electricity rates. In addition, some Highland Parkers have reported multiple days of outages over the past year.

“It’s not hard to understand why cities like Highland Park would demand safe, resilient, clean, affordable, and community-driven systems,” Gignac

says. “Energy sovereignty should be a core building block as we seek not only to decarbonize our power generation, but also to address the ways in which electricity production and distribution are unjust and inequitable.”

“This is some of the most meaningful work I’ve done with UCS,” says Sitko. “To make this point and prove that locally produced and owned clean energy is possible for communities like Highland Park. Now let’s make these changes happen.” {C}

Lessons from a Battle with “Big Chicken”

(continued from p. 2)

effectively requires us to merge many perspectives and experiences. Poultry workers, union leaders, faith leaders, health-care workers, energy wonks, youth activists, elected officials, and scientists all hold a piece of the solution.

The second lesson is that we cannot lose sight of people who are part of these systems, who can be both helped and harmed by political and policy decisions, and who have essential insights to offer when we study systems and develop solutions. One of my greatest teachers back in 2005 was Carmen, a Tyson worker and 28-year-old mother who had landed in Siloam Springs, Arkansas, after leaving her two young sons in southern Mexico. She and her husband had come to the United States desperate for work after international trade policies opened up

Mexican markets to imports of cheap subsidized US grain, making it impossible for them to earn a living on their small family farm.

I was humbled by Carmen’s courage and resilience. She taught me that people living at the front lines of the world’s most vexing problems are also the folks at the center of our biggest systemic failures. Carmen and her co-workers had profound insight into how to tackle the problems they—and we—face. From them, I learned how to be more thoughtful and concrete about policy demands; we knew that we couldn’t completely overhaul the workplace policies of a giant like Tyson, but we *could* advocate for smaller, meaningful changes to workers’ daily tasks that would lessen the likelihood of repetitive stress injuries. I realized then

that when frontline perspectives inform research and actions, the result is stronger systems and solutions for everyone. Today, this same realization drives UCS partnerships with the Food Chain Workers Alliance and the HEAL Food Alliance, which carry on the fight for workers’ rights and a fairer food system. It’s also the theme of our new framework for a clean energy transition (see p. 14) and the ethos behind our collaboration with the clean-energy advocacy group Soulardarity (see p. 18).

I hope the UCS work featured within this issue—which you make possible—inspires you similarly to remain in the fight to overcome the intersecting challenges we face. Thank you, as always, for your support. {C}

Johanna Chao Kreilick is the president of UCS.

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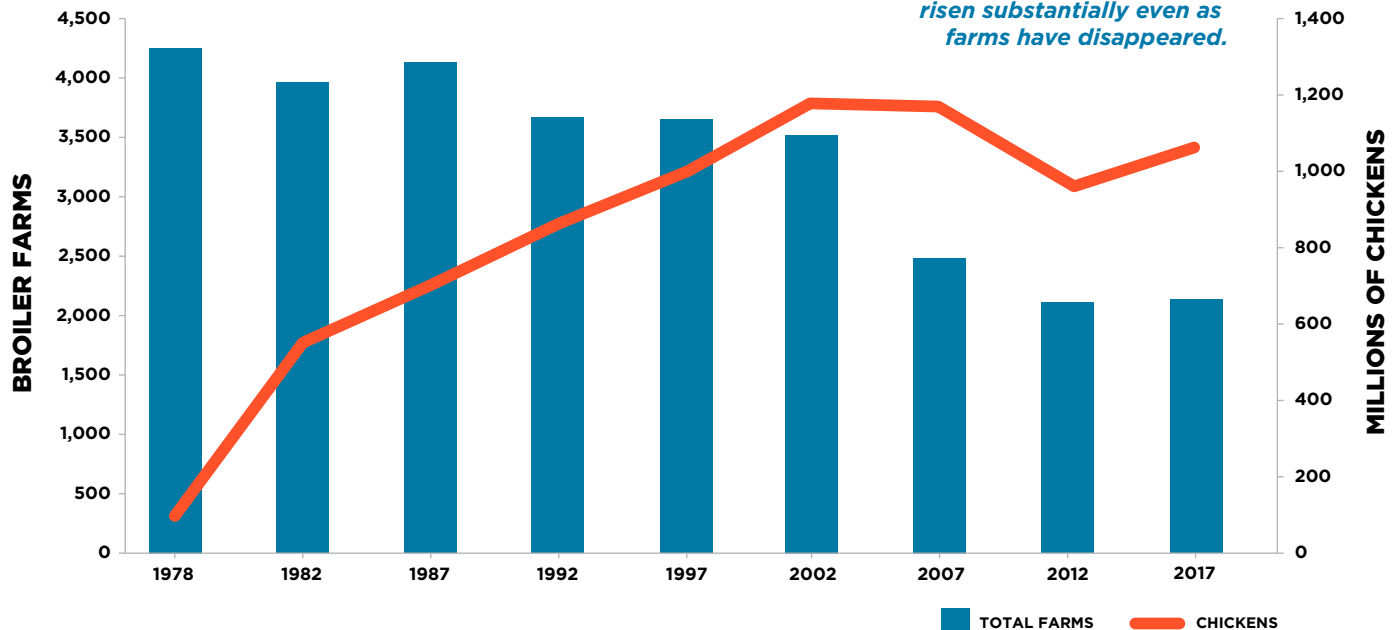
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MORE CHICKEN BUT LESS OPPORTUNITY

Since 1978, Arkansas broiler chicken production has risen substantially even as farms have disappeared.



The Trouble with Tyson

(continued from p. 11)

company’s liability for injuries and deaths—a strategy that became a model for other companies looking to reduce labor costs. More recently, while meat and poultry lobbyists were asking the USDA to allow processing plants to reopen during the COVID-19 shutdown, Tyson placed ads threatening meat shortages if its plants were forced to remain closed; just two days later, President Trump ordered the plants to reopen without having to protect workers from the virus.

PROTECTING WORKERS AND COMMUNITIES

Tyson publicly says it seeks to “operate with integrity,” “serve as stewards of the resources entrusted to us,” and “provide a safe work environment.” But it’s hard to see how Tyson executives can talk about integrity with a straight face when they continue to operate in a way that has led to multiple lawsuits accusing the company of colluding to inflate prices and depress wages, along with fines of more than \$169 million just since 2000. Then there is the fact that Tyson did little to protect its workers from COVID-19 and, in some cases, intentionally deceived workers about the risks.

The USDA and the Department of Justice each have an important role to play in keeping companies like Tyson in check, but they need the resources and political will to do so. On July 9, President Biden got a start on the latter by signing an executive order calling on the USDA to issue new rules that would protect livestock farmers from exploitation by Tyson

and other corporate giants. It also directs the USDA to create standards and labels that would give food shoppers a means to choose products made by companies that have actually demonstrated a commitment to fair pricing and worker safety, rather than merely paying lip service to it. Congress, too, can help by investing in meat and poultry processing infrastructure that would help smaller farms stay in business.

“When the government does its job to rein in unfair corporate practices,” says Boehm, “businesses like Tyson can continue to thrive while ensuring safe conditions for their workers, fair prices and contracts for their farmers, and clean air and water for the communities in which they operate.”

UCS will be watching to see how the USDA interprets the president’s executive order, and to ensure its new rules have teeth and will be enforced. We also plan to keep up the pressure on Tyson itself, and will be asking our members and supporters to push the government to hold Tyson accountable for its actions in Arkansas and across the country. Together, we can build an agricultural system that treats workers with dignity, and contributes to strong, healthy communities. {C}

Read the full report *Tyson Spells Trouble for Arkansas* at www.ucsusa.org/resources/tyson-spells-trouble, and listen to Rebecca Boehm’s episode of *Got Science?* at www.ucsusa.org/resources/why-tyson-foods-bad-workers-farmers-and-arkansas.

Will New Vehicle Standards Preserve the Same Old Loopholes?

By Dave Cooke



Recognizing the immediate need to cut global warming emissions from transportation—the largest source in the United States—President

Biden directed

the Environmental Protection Agency (EPA) and Department of Transportation to revisit fuel economy and emissions standards set by the Trump administration. When the proposed standards were released this summer, it seemed to some that the Biden administration had gone big. But when I dug deeper, it became clear that these new standards won't go far enough to meet the urgency of the climate crisis—in large part because they don't close existing loopholes and credits that allow automakers to avoid making their vehicles more efficient.

One way loopholes erode standards is by crediting automakers for emissions reductions on paper that don't line up with what actually occurs on the road. For instance, to promote certain advanced or novel technologies that reduce emissions and fuel use, the standards may provide extra credit for their deployment based on both real and assumed improvements in the efficiency of newly produced cars. Too often, though, these improvements are not accurately calculated and are overly rewarded. Credits can also be bought and traded among automakers, providing many companies with little incentive to manufacture cleaner vehicles.

Such an “overly rewarding” arrangement allowed Toyota to amass a windfall of credits from the EPA under Obama-era standards, for example.

After the company failed to make expected improvements to an engine platform used throughout its light-truck fleet, these vehicles have been underperforming on emissions for nearly 10 years. Instead of making engine improvements to cut emissions, Toyota has used its large credit bank to offset these deficits. Even so, they still have so many credits left over that they've been selling them to other companies like Mercedes and Stellantis (formerly known as Fiat-Chrysler), who have relied on the credits for their own compliance nearly the entire time this program has been in place, rather than selling efficient vehicles as intended by the standards.

While the Obama administration's fuel economy and emissions rules led to tremendous improvements in efficiency overall, roughly 16 percent of the benefits of that program to date were sacrificed because of loopholes like these, the most egregious of which were set to expire after 2021. Unfortunately, the Biden administration's proposal brought some of them back from the dead and made others even worse.

When our team at UCS analyzed the proposal, we found that loopholes for automakers will result in 130 million metric tons of global warming emissions more than intended through 2026. And nearly 400,000 fewer electric vehicles than intended could be on the road by that year as well. In total, loopholes in the proposal will scale emissions reductions back by approximately 30 percent compared with the rule implemented under President Obama in 2012.

The new standards will likely be finalized by the end of the year. My colleagues and I have made our case for eliminating these loopholes and credits, and I hope the Biden administration listened. Its final standards should be consistent with the science of what is really needed to cut emissions and address climate change. {C}

Dave Cooke is a senior vehicles analyst in the UCS Clean Transportation Program. Read more from Dave on our blog, The Equation, at <https://blog.ucsusa.org/author/dave-cooke>.



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