

YEARS OF LIVING DANGEROUSLY EPISODE 106 v17: ENERGY FUTURE

AMERICA FERRERA VO: I WAS BORN IN CALIFORNIA. NOW I LIVE IN NEW YORK. AND BETWEEN SUPERSTORM SANDY HERE AND THE RAGING WILDFIRES AND THE RECORD DROUGHTS THERE, IT'S IMPOSSIBLE TO IGNORE GLOBAL WARMING.

IT WORRIES ME A LOT. SO WHEN I GET A CHANCE TO MEET A TOP ENERGY EXECUTIVE WHOSE COMPANY BURNS A LOT OF COAL, OIL AND GAS, I'M EAGER TO ASK HIM SOME TOUGH QUESTIONS:

DAVID CRANE: The single largest source of carbon emissions in the United States, in the the world, comes from power plants. And we own power plants.

DAVID CRANE IS THE CEO OF AMERICA'S SECOND LARGEST ENERGY GENERATION COMPANY ... NRG.

AMERICA FERRERA: When it comes to climate change and carbon emissions so many people would say you are the bad guy.

DAVID CRANE: We make enough power to light up 40 million American homes, but in order to do that, right now we're emitting about 60 million tons of carbon into the atmosphere in a year. We're the bad guys because we're keeping the lights on in everyone's' home and this is the way the lights have been kept on for the last 100 years.

AMERICA FERRERA VO: BUT THEN HE TELLS ME SOMETHING I WASN'T EXPECTING. HE'S TRYING TO MOVE AWAY FROM OIL AND COAL AND AS QUICKLY AS POSSIBLE. IN TEXAS, HIS COMPANY IS ALREADY ONE OF THE BIGGEST PROVIDERS OF WIND ENERGY.

AMERICA FERRERA: So then is your interest in sustainable energy purely personal and moral or do you see ... does it make business sense?

DAVID CRANE: Oh, no, it makes total business sense. You know when we started, we sorta looked to our left and to our right, thinking that -- you know, ours is a pretty competitive industry and all our competitors are going to be there and we have to fight them, and we were alone.

AMERICA FERRERA: Why?

DAVID CRANE: I don't know. I can't ask that question.

AMERICA FERRERA VO: AND DAVID CRANE ISN'T THE ONLY SURPRISING PERSON WHO'S PUSHING FOR CLEAN ENERGY THESE DAYS.

ABOUT AN HOUR FROM WHERE I GREW UP, I MEET THE MAYOR OF LANCASTER, CALIFORNIA, A TOUGH-ON CRIME REPUBLICAN... WHO'S TRYING TO POWER HIS ENTIRE CITY WITH SOLAR ENERGY.

REX PARRIS: Half the people think I am nuts when I say these things, half the people believe me, and then it happens, you know. Nobody believed 97% of the city buildings would be net zero.

AMERICA FERRERA: Explain that, explain, what is net zero?

REX PARRIS: Net zero is // we are not creating a carbon footprint at all on the environment. That is attainable now.

AMERICA FERRERA VO: AND IT'S NOT JUST COMPANIES AND CITIES THAT ARE TURNING TO RENEWABLES. ENTIRE COUNTRIES ARE TOO.

JIGAR SHAH: People have been talking about solar and wind since the 1970s, when, you know, Jimmy Carter was talking about this stuff. So, it has been around for a while. But, what is different now is that you have got Germany, Japan, Denmark, really large sophisticated economies that are now running, sprinting towards renewable energy, because We are cost-effective, we create huge amount of jobs, we are local. So, you do not have to worry about importing foreign oil or doing all of those things.

AMERICA FERRERA VO: SO WHAT'S STOPPING OUR COUNTRY FROM DOING THE SAME THING? RENEWABLE ENERGY SEEMS TO BE MORE VIABLE THAN EVER... BUT I'M ALSO LEARNING THERE ARE SOME POWERFUL FORCES STANDING IN ITS WAY.

TRANSITION

PRESIDENT BARACK OBAMA: Our planet is changing in ways that will have profound impacts on all of humankind. I'm here to say we need to act [THUNDEROUS APPLAUSE]

MARK BITTMAN VO: ON A HOT DAY LAST SUMMER, THE PRESIDENT LAID OUT HIS PLAN TO FINALLY DO SOMETHING ABOUT CLIMATE CHANGE.

PRESIDENT BARACK OBAMA: These are facts.

MARK BITTMAN VO: OBAMA PROPOSED A PATH FORWARD -- FROM THE DIRTY ENERGY OF THE PAST TO THE CLEAN ENERGY OF THE FUTURE.

BUT THE ENERGY SOURCE OBAMA TALKED ABOUT THE MOST WASN'T WIND ... OR SOLAR ... OR EVEN NUCLEAR ... IT WAS NATURAL GAS.

PRESIDENT BARACK OBAMA: We're also producing more cleaner-burning natural gas than any other country on Earth.

HE CALLED IT CLEAN ... AFFORDABLE ... AND CRITICAL TO STOPPING GLOBAL WARMING.

PRESIDENT BARACK OBAMA: It can also help reduce our carbon emissions.

MARK BITTMAN VO: THESE DAYS A LOT PEOPLE ARE SAYING THAT NATURAL GAS IS THE SOLUTION TO OUR ENERGY AND CLIMATE WOES.

BUT I ALSO DISCOVERED THAT A HANDFUL OF SCIENTISTS HAVE SOME PROBLEMS WITH THAT CLAIM. INCLUDING ONE WHO USED TO WORK FOR THE GAS INDUSTRY.

TONY INGRAFFEA: The Industry really wants the American people to believe, they really want the President of the United States to believe, they want all the state regulators and state legislators to believe what they're saying, which is shale gas is our savior. Merry Christmas, America. // It's going to make us energy independent, energy secure. It's going to keep prices low. It's going to kill coal. Well, all those things depend upon shale gas being clean. // And we questioned that.

MAIN TITLE THEME

AMERICA FERRERA VO: WHEN I STARTED LOOKING INTO THE STATE OF CLEAN ENERGY IN AMERICA, EVERYONE TOLD ME TO GO TO KANSAS.

TO THE NATIVE AMERICANS WHO ONCE LIVED HERE, KANSAS MEANS PEOPLE OF THE SOUTH WIND. THEY SAY THAT IN SOME PARTS OF THE STATE, IT NEVER STOPS BLOWING. TODAY MORE AND MORE PEOPLE IN KANSAS ARE TRYING TO HARNESS THAT NATURAL RESOURCE.

AMERICA FERRERA: Wow, look at that. It's huge.

I'M HERE TO MEET WITH ONE OF THE PIONEERS ... A RANCHER NAMED PETE FERRELL.

PETE FERRELL: I used to cuss the wind. There were days I'd come in with a headache from having to clamp my hat on so tight over my head.

AMERICA FERRERA: So at what point did your relationship to the wind change?

PETE FERRELL: It was out of strategic necessity. I realized a number of years ago that I was gonna join the old dead rancher society.

PETE FERRELL: That's where you work 24/7, 365 days a year until you fall over dead and then a bunch of people gather around you and congratulate you for what a fine job you did. "Boy he put away the hours, didn't he?" And I've seen guys just work themselves into the grave and I decided that I didn't want to be a member of that society, I wanted to find a different way.

AMERICA FERRERA VO: **BUT WHEN HE FIRST PUT UP THESE TURBINES, HE HAD NO IDEA THEY WOULD END UP SAVING HIS RANCH WHEN DISASTER STRUCK.**

Greg Milam: The worst drought in decades is causing pain across more than half the nation.

Anne Thompson, NBC News: Today the US Department of Agriculture reports almost half of all the nation's counties have been declared disasters because of this year's drought.

PETE FERRELL: We've had droughts before, we could measure them in months. So the first time in my life that I got to experience a 3 year drought. And a drought is like a piece of sand you could never get out of your eye. It's always there, it always reminds you everyday.

PETE FERRELL: And when you look out and you see the landscape dying. // I don't know what my fellow ranchers... well I do know what they're doing: I know they're- they're quitting. And they're losing their land and their livelihoods and of course my, um, my ace up my sleeve is that I have a wind farm which allows me to gain an additional track of revenue in spite of a drought. Wind is my best cash crop in a drought because wind blows even during a drought.

AMERICA FERRERA: So Pete, talk to me about the history of this ranch. How long have you been here?

PETE FERRELL: My great grandfather founded this ranch in 1888 and this is where he spent his final years. He built this house as a 70 year old. Just five years before he died.

AMERICA FERRERA: This very house?

PETE FERRELL: This very house built 90 years ago by him. So I'm living in my great-grandfather's home and it's sacred ground.

AMERICA FERRERA VO: **PETE SAYS THAT AT FIRST, PEOPLE WERE SKEPTICAL OF HIS WIND TURBINES. BUT A FEW YEARS AFTER HE PUT THEM UP, THE WHOLE STATE GOT BEHIND WIND ENERGY IN A BIG WAY. KANSAS PASSED A LAW REQUIRING THAT 20% OF ALL ELECTRICITY COME FROM RENEWABLES BY 2020.**

NOW, MORE THAN HALF THE STATES IN THE COUNTRY HAVE SIMILAR LAWS. THEY'RE KNOWN AS RENEWABLE ENERGY STANDARDS ... AND IT'S THANKS IN PART TO THESE LAWS THAT IN 2012, WIND AND SOLAR IN THE US GREW FASTER THAN ANY OTHER ENERGY SOURCE. FASTER THAN COAL OR EVEN NATURAL GAS.

KANSAS NOW HAS ENOUGH TURBINES TO POWER NEARLY A MILLION HOMES. AND IT'S NOT JUST LEFTIES WHO ARE HAPPY ABOUT THIS. KANSAS'S REPUBLICAN

GOVERNOR ... ONE OF THE MOST CONSERVATIVE IN THE COUNTRY ... IS A HUGE SUPPORTER.

GOVERNOR SAM BROWNBACK on CSPAN: If we do this right, we will see the development of renewable energy corridor throughout the state of Kansas that will provide jobs for rural Kansas and clean energy for the world. I want Kansas to not only be known as the wheat state, but also the renewable state. And we can do it.

AMERICA FERRERA VO: **BUT NOT *EVERYONE* IS HAPPY ABOUT ALL THE GROWTH IN RENEWABLES ... AND SOME GROUPS ARE WORKING VERY HARD TO CONVINCING PEOPLE THAT WIND AND SOLAR ARE A BAD BET.**

JAMES TAYLOR: We are at the world series of poker, in the RIO hotel and Casino, probably about 2,000 players, mostly poker professionals, a few amateurs like myself.

JAMES TAYLOR: The game - it's so complex. There's patience, self-control, self-discipline, then it's really important to be able to read people, understanding who they are, how they're playing. And for my job as an analyst for energy and environment issues and policy, like I would on the poker table, I need to know all the data, I need to know all the studies, I need to discern what each piece of data or study means - fit it into the overall picture.

TAYLOR at conference: The mere notion that climate is changing does not mean A) that we're facing a crisis or B) that we need to do something about it.

AMERICA FERRERA VO: **JAMES TAYLOR SPENDS MUCH OF HIS TIME ON THE ROAD, GOING FROM STATE ... TO STATE ... TO STATE ... TRYING TO SHUT DOWN ANY GOVERNMENT EFFORTS TO PROMOTE RENEWABLES.**

JAMES TAYLOR: I've been to most of the state capitols to meet with legislators or state officials or to testify.

JAMES TAYLOR talking to woman: For today's hearings would you prefer that I emphasize more the economics, more the environmental issues.

WOMAN: Emphasize the economic side. I don't think we're going to win the environmental argument.

JAMES TAYLOR: These are where the battles are fought regarding global warming and all sorts of other issues.

JAMES TAYLOR in court: The objective fact is that renewable power is substantially more expensive than conventional power.

JAMES TAYLOR: Natural gas, regarding the six principal pollutants tracked by EPA, natural gas cuts those pollutants by 90+%. It's essentially an emissions free power source.

GLENN BECK: You are almost a wholly owned subsidiary of Exxon mobil, are you not?

JAMES TAYLOR: (laughs) Well, that's what the global warming alarmists of the world would like you to believe.

AMERICA FERRERA VO: **TAYLOR SEEMS TO BE PART OF A VOCAL MINORITY. I FIND A GALLUP POLL SAYING THAT THREE OUT OF FOUR AMERICANS WANT THE COUNTRY TO PUSH *HARDER* ON WIND AND SOLAR. WHY IS TAYLOR SO INTENT ON STOPPING THAT?**

JAMES TAYLOR: You'll win em back, don't worry. Trust me.

WHO IS THIS GUY?

TRANSITION

MARK BITTMAN: Gotta keep an eye out for golfers, hopefully they're sending them off the other way. Don't want to get hit in the back of the head. It would take a really weird shot for us to get hit in the back of the head.

TOM HOLTON: Hahaha.

MARK BITTMAN VO: **I'M A COLUMNIST FOR THE NEW YORK TIMES AND RECENTLY I'VE BEEN WRITING A LOT ABOUT CLIMATE CHANGE. IN THE LAST FEW YEARS, THERE'S BEEN GROWING EXCITEMENT ABOUT NATURAL GAS AS A CLEAN ALTERNATIVE TO COAL AND OIL.**

AND IN CITIES LIKE FT. LUPTON, THERE'S ANOTHER REASON TO BE EXCITED: ALL THE MONEY THAT'S FLOWING.

TOM HOLTON: This is an oil and gas operations area. It's within 400 feet, 300 feet of residential homes. On the golf course.

MARK BITTMAN: No complaints, no problems, this is the way it is, and people are okay with that?

Lower Third: TOMMY HOLTON, MAYOR OF FORT LUPTON

TOM HOLTON: If there were complaints, I can guarantee it to you that they'd be calling the mayor.

MARK BITTMAN: (Laughs) I guess you would know about it..

TOM HOLTON: When I first got elected, we were having foreclosures left and right just like it was across the country.

MARK BITTMAN: 2008 - 2009?

TOM HOLTON: Yeah, and when I got in, the oil and gas came. And when that came we started adding jobs. And so it made a huge difference, I mean everybody's up at least 20% in their business. 20 - 30%

TOM HOLTON: We're the Saudi Arabia of natural gas.

MARK BITTMAN VO: JUST A FEW YEARS AGO AMERICA'S ENERGY FUTURE LOOKED UNCERTAIN. THEN FRACKING CAME ALONG. IT'S AN INTENSIVE PROCESS WHERE MILLIONS OF GALLONS OF WATER AND CHEMICALS ARE INJECTED UNDERGROUND TO BREAK UP THE ROCK AND FREE COUNTLESS TINY POCKETS OF NATURAL GAS. FOR THE FIRST TIME, FRACKING MADE IT POSSIBLE TO EXTRACT THE GAS FROM A TYPE OF ROCK CALLED SHALE. AROUND THE SAME TIME, MASSIVE NEW SHALE FORMATIONS WERE DISCOVERED.

SUDDENLY AMERICA HAD A NEW DOMESTIC ENERGY SOURCE... WORTH MORE THAN 10 TRILLION DOLLARS. SOON WE WERE FRACKING AT AN ALMOST INCONCEIVABLE RATE: DRILLING MORE THAN 35,000 NEW WELLS A YEAR.

I'VE HEARD LOTS OF COMPLAINTS ABOUT FRACKING. WATER CATCHING ON FIRE, TOXIC CHEMICALS, EVEN EARTHQUAKES. BUT TO ME IT SEEMED LIKE MAYBE THE PROS OUTWEIGHED THE CONS.

NATURAL GAS, I LEARNED, PRODUCES JUST HALF AS MUCH CARBON DIOXIDE AS COAL. AND WHEN IT COMES TO CLIMATE CHANGE, THAT'S A BIG DIFFERENCE.

BUT NOT FAR FROM THE NATURAL GAS FIELDS OF FORT LUPTON, A SCIENTIST WAS MAKING A SURPRISING DISCOVERY THAT WOULD CHALLENGE THE CONVENTIONAL WISDOM ABOUT NATURAL GAS.

GABY PETRON (with subtitles): We started doing measurements in the Denver Basin, north of Denver, in 2008. We had equipped a tower with instruments to measure methane, carbon dioxide and a few other gases, and we noticed interesting readings.

GABY PETRON: We had a signal there we had never seen before.

MARK BITTMAN VO: IN 2008 GABY PETRON, A TOP GOVERNMENT SCIENTIST AT THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, COULDN'T BELIEVE WHAT SHE WAS SEEING. HIGH LEVELS OF METHANE, A GREENHOUSE GAS UP TO 80 TIMES MORE POWERFUL THAN CARBON DIOXIDE.

GABY PETRON: Enhanced methane, propane, butane, almost in every sample. Methane is a strong greenhouse gas. And I had never seen these kinds of measurements. So we were like okay, lets try to understand better what this tower is telling us and we started driving around.

MARK BITTMAN VO: PETRON NEEDED TO FIND OUT WHERE THE METHANE WAS COMING FROM, SO SHE TURNED THIS OLD VAN INTO A HIGH TECH MOBILE METHANE DETECTOR.

SOON SHE WAS CRISSCROSSING VAST STRETCHES OF NORTHEASTERN COLORADO ... TAKING THOUSANDS OF MEASUREMENTS.

GABY PETRON: It's clear? So we're taking.

MARK BITTMAN VO: SHE THOUGHT IT MIGHT BE COMING FROM LANDFILLS ... OR THE 2.6 MILLION COWS IN THE AREA. BUT THE SOURCE TURNED OUT TO BE SOMETHING SHE DIDN'T EXPECT...

GABY PETRON: Methane ... methane is right there. Look at these levels! There is no question in where the methane is coming from.

MAN: It's natural gas, okay?

GABY PETRON: Definitely.

GABY PETRON: We saw a lot of emitters in these oil and gas field. Every well pad had some kind of signature.

WHAT SHE WAS FINDING WAS ALARMING. BUT WAS ENOUGH METHANE LEAKING TO MAKE IT A SERIOUS PROBLEM? TO FIND OUT, SHE NEEDED MORE DATA.

TRANSITION

AMERICA FERRERA VO: JAMES TAYLOR IS A SENIOR FELLOW AT THE HEARTLAND INSTITUTE, A LIBERTARIAN THINK TANK. THEY PROMOTE RIGHT-WING VIEWS ON ALL KINDS OF ISSUES, BUT WHAT THEY'RE REALLY FAMOUS FOR IS DENYING MANMADE CLIMATE CHANGE.

RIGHT NOW, TAYLOR'S FOCUS IS TRYING TO REPEAL RENEWABLE ENERGY LAWS ALL OVER THE COUNTRY. BUT HOW DOES SOMEONE LIKE HIM INFLUENCE LEGISLATION IN *DOZENS* OF STATES?

I FIND OUT TAYLOR IS WORKING WITH A POWERFUL GROUP CALLED THE AMERICAN LEGISLATIVE EXCHANGE COUNCIL -- OR ALEC.

THE NAME SOUNDS DULL, BUT ALEC'S MEMBERS HAVE INCLUDED SOME OF THE BIGGEST FOSSIL FUEL COMPANIES IN THE WORLD ...

... AS WELL AS THOUSANDS OF MOSTLY REPUBLICAN STATE LEGISLATORS. TOGETHER, BEHIND CLOSED DOORS, THEY WRITE BILLS THAT THE LEGISLATORS THEN TAKE HOME TO THEIR INDIVIDUAL STATES... AND TRY TO GET PASSED.

ALEC BOASTS THAT MORE THAN A HUNDRED OF ITS BILLS BECOME REAL LAWS EVERY YEAR. ARIZONA'S HARSH IMMIGRATION LAW STARTED ITS LIFE AS AN ALEC BILL. SO DID THE CONTROVERSIAL STAND-YOUR-GROUND LAW THAT WAS ENACTED IN MORE THAN TWO DOZEN STATES.

JAMES TAYLOR: And we're going to the state capitol please.

AMERICA FERRERA VO: AND THEN THERE'S THE ELECTRICITY FREEDOM ACT, CO-WRITTEN BY JAMES TAYLOR. IT SEEKS TO REPEAL RENEWABLE ENERGY STANDARDS ALL OVER THE COUNTRY.

TODAY, HE'S IN KANSAS.

JAMES TAYLOR: Many states are on the verge of rolling back their renewable power mandates. They're very close. Especially since the fracking revolution where we've been able to produce more natural gas. And often times when one state takes that first step that enables others to follow. I think Kansas is going to be one of those states that is going to set the tone in the next few years.

AND WITH HEARTLAND AND ALEC AT HIS BACK, TAYLOR HAS DIRECT ACCESS TO LAWMAKERS ACROSS THE COUNTRY.

JAMES TAYLOR: So my friends, Dennis Hedke and Forrest Knox here in the Kansas legislature, we share ideas on a frequent basis and we're meeting together to discuss those issues.

AMERICA FERRERA VO: DENNIS HEDKE IS THE CHAIRMAN OF THE HOUSE ENERGY AND ENVIRONMENT COMMITTEE... AND A MEMBER OF ALEC. HE'S TRYING TO PUT A STOP TO KANSAS'S RENEWABLE ENERGY MANDATE, WITH A BILL INSPIRED BY TAYLOR'S ELECTRICITY FREEDOM ACT.

JAMES TAYLOR: These renewable power mandates here in Kansas and elsewhere are requiring you to dismantle power plants that are in existence. Electricity demand is only growing at about 1% per year. It means you have to take out existing perfectly good power facilities in order to build more of the wind and solar to make the 20%.

DENNIS HEDKE: A lot of folks really just can't handle the truth, that's the way it is. but we gotta try our best.

JAMES TAYLOR: That's a great point.

DENNIS HEDKE: Heartland introduces me to ideas and concepts that I would not generate on my own. They have studied the issues in significant detail and so they make recommendations to policy makers like myself. So that's the value to me is, it saves me time, big savings of time.

JAMES TAYLOR: Anything I can do to help in terms of providing information or reaching out to people, just let me know. I am happy to do it. Thank you.

AMERICA FERRERA: So if forces succeed in rolling back the renewable energy standard, what does that mean for wind farmers?

PETE FERRELL: The rollback // would have huge effect on farmers and ranchers who then would no longer have the opportunity that I had to have a wind farm on their property. They have a drought - they have no other option, they're just done.

TRANSITION

MARK BITTMAN VO: **AROUND THE SAME TIME THAT GABY PETRON WAS DRIVING HER VAN ACROSS COLORADO, ANOTHER SCIENTIST, AT CORNELL UNIVERSITY IN NEW YORK, WAS STARTING AN INVESTIGATION OF HIS OWN.**

TONY INGRAFFEA: Of course, we want to make sure that we're accounting for all the methane that might be flowing into the volume over that area.

MARK BITTMAN VO: **TONY INGRAFFEA IS A PROFESSOR OF STRUCTURAL ENGINEERING AND AN EXPERT IN ROCK FRACTURE MECHANICS. HE SPENT MANY YEARS CONSULTING FOR THE OIL AND GAS INDUSTRY, BUT NOW HE'S ONE OF THE INDUSTRY'S BIGGEST CRITICS. IT ALL STARTED A FEW YEARS AGO, WHEN HE DECIDED TO TAKE A CLOSER LOOK AT WHAT HAPPENS TO NATURAL WHEN IT LEAKS INTO THE AIR.**

TONY INGRAFFEA: Natural gas is essentially methane. CH₄. The simplest of all of the hydrocarbons. It's colorless, it's odorless, it's tasteless. Methane when it's burned, produces less CO₂ per unit of energy produced than coal or oil.

MARK BITTMAN: It's less dirty.

TONY INGRAFFEA: It's less dirty than coal or oil by far. No question about that, but the problem with methane is that if it gets into the atmosphere without being burned it becomes a very potent greenhouse gas -- worse than carbon dioxide, by far.

MARK BITTMAN: How many times worse?

TONY INGRAFFEA: Ask this question. I put a pound of carbon dioxide in the atmosphere, I put a pound of methane into the atmosphere. If you wait 20 years methane is anywhere from 72

and 105 times more potent than carbon dioxide. So you'd have to leak 80 pounds of carbon dioxide to do the same harm as one pound of methane.

MARK BITTMAN: It makes for a thicker blanket than an equivalent amount of carbon dioxide.

TONY INGRAFFEA: It makes the earth's atmosphere a better greenhouse. Therefore we have to make sure we don't leak very much methane.

MARK BITTMAN VO: ANY LEAKS MAKE NATURAL GAS LESS CLEAN THAN ADVERTISED. AND THE MORE IT LEAKS, THE DIRTIER IT GETS. THE QUESTION IS: HOW MUCH METHANE CAN LEAK BEFORE NATURAL GAS STARTS TO GET AS BAD AS COAL—THE DIRTIEST FOSSIL FUEL?

MOST EXPERTS SAY THE THRESHOLD IS ABOUT 3%. AS LONG AS NO MORE THAN 3% OF THE NATURAL GAS WE PRODUCE ENDS UP LEAKING INTO THE ATMOSPHERE... IT'S NOT NECESSARILY GOOD... BUT IT'S STILL BETTER THAN COAL.

INGRAFFEA AND HIS TEAM WANTED TO COLLECT WHATEVER DATA THEY COULD GET THEIR HANDS ON... TO ESTIMATE HOW MUCH METHANE WAS LEAKING ACROSS THE ENTIRE COUNTRY.

TONY INGRAFFEA: And over a period of two years, we gathered the information we could from the EPA, from the Department of Energy, from industry sources - we'd pick up the phone and call people at gas companies and oil companies and ask them. And in most cases they were quite willing to say yeah here's the information, here's the data.

NO ONE HAD PIECED ALL THIS DATA TOGETHER BEFORE. AND WHAT THEY FOUND LOOKED LIKE VERY BAD NEWS.

TONY INGRAFFEA: We published our paper and we said, "Look, we concluded that as an upper bound 7.9% of all the gas produced by a shale gas well during its lifetime would not get burned but would get emitted. At the lower end, we said about 3.6%. That's the range. It could be this much, but even if it's only this much, natural gas is not any better than coal or oil. And if it's this much, it's way worse."

MARK BITTMAN: Even at the low end of the range, the news was bad.

TONY INGRAFFEA: I emphasize, we weren't going out and measuring anything. We didn't have the resources to do that.

MARK BITTMAN: You were really guessing at the amount of methane that was leaking. You really didn't know at that time.

TONY INGRAFFEA: We really didn't know but I object to the word guess. We were using best available scientific estimation methods to estimate, but we didn't know. We don't know now. No one knows.

EVEN SO, THE NATURAL GAS INDUSTRY MAINTAINS THAT THE LEAK RATE IS ONLY ABOUT 1%. AND THEY DIDN'T TAKE KINDLY TO INGRAFFEA'S RESULTS.

TRANSITION

AMERICA FERRERA VO: AS I INVESTIGATE THE FUTURE OF WIND AND SOLAR POWER IN AMERICA, I'M REALIZING THAT MANY OF THE BIGGEST DECISIONS AREN'T MADE IN WASHINGTON DC. THEY'RE MADE IN STATE HOUSES LIKE THIS ONE.

THIS IS WHERE JAMES TAYLOR HAS BEEN FOCUSING HIS TIME, TRYING TO CONVINCING LOCAL LAWMAKERS THAT RENEWABLE ENERGY IS TOO EXPENSIVE.

TODAY I'M MEETING KIMBERLY SVATY. SHE'S A CONSULTANT FOR THE WIND INDUSTRY HERE IN KANSAS... AND SHE'S BEEN ON THE FRONTLINES OF THIS LOCAL BATTLE.

AMERICA FERRERA: So one of the biggest things that I hear is that if my state decides to switch to wind or solar, ultimately I'm going to end up paying for it. My utility bill going to go through the roof. Is that true?

KIMBERLY SVATY: We have seen in the last several years, as the utilities have bought more renewable energy and they've integrated it onto their system, the price impact has been "de minimis" which is what they say. 0 to 1.7% impact, so not in Kansas, your rates will not go up in Kansas.

AMERICA FERRERA VO: IT'S NO SURPRISE THAT SVATY WOULD SAY GOOD THINGS ABOUT WIND, BUT A REPORT BY THE STATE OF KANSAS *ITSELF* BACKS HER UP. AND WHILE IT'S TRUE THAT IN SOME STATES, RENEWABLE ENERGY *ISN'T* AS CHEAP AS FOSSIL FUELS... PRICES ARE FALLING INCREDIBLY FAST... WIND AND SOLAR DROPPED BY MORE THAN 50% JUST BETWEEN 2008 AND 2012.

AND HERE IN KANSAS, WIND HAS ALSO GENERATED TENS OF MILLIONS OF DOLLARS FOR LANDOWNERS, BROUGHT IN BILLIONS IN INVESTMENT AND HELPED CREATE OVER 12,000 JOBS.

KIMBERLY SVATY: The forces that are interested in pulling back are primarily external forces.

AMERICA FERRERA: And who are they?

KIMBERLY SVATY: We've seen organizations like the Heartland Institute - has come into Kansas and put out information that is misleading about the cost of wind and renewables.

AMERICA FERRERA: And what is it that they're saying about the cost of renewable?

KIMBERLY SVATY: They're saying that renewable energy costs a lot more than what it really does in Kansas and I'm 7th generation Kansan, and this is a very important place for me. We have good things happening right now and it's very frustrating to see people come in and provide information that's not accurate for our state to try and undermine policies that have absolutely worked for our state.

JAMES TAYLOR: We like to present the facts, on various topics - energy and the environment, budget and tax to people who are influential.

MAN: If you are a state legislator here in Colorado or you have been a state legislator, could you just raise your hand? No, there are a few more. It's our privilege to have with us in person, the real James Taylor.

AMERICA FERRERA VO: GOING TO A HEARTLAND EVENT FEELS LIKE ENTERING AN ALTERNATE UNIVERSE...

JAMES TAYLOR at convention: There are hundreds upon hundreds of peer reviewed studies that show that humans are not causing - that global warming is not causing extreme weather events. Don't let anybody tell you differently.

IN REALITY, THE SCIENTIFIC CONSENSUS ON CLIMATE CHANGE IS EFFECTIVELY UNANIMOUS...

CNN News: It is extremely likely that humans are mostly to blame for temperatures that have been climbing now for decades. How sure are these scientists? They say about 95% certain. And in science, 95% is pretty darn certain.

AMERICA FERRERA VO: THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, OR IPCC, BRINGS TOGETHER THOUSANDS OF SCIENTISTS FROM MORE THAN 50 COUNTRIES.

THEIR LATEST REPORT MIGHT BE THE MOST COMPREHENSIVE SCIENTIFIC ASSESSMENT IN HISTORY... AND ITS CONCLUSIONS ARE DIRE. BUT TO CHALLENGE THE FINDINGS OF THE IPCC, HEARTLAND AND OTHERS SET UP THEIR OWN GROUP: THE NIPCC.

JAMES TAYLOR: What we're producing - look for it - the nongovernmental international panel on climate change. The updated report, climate change reconsidered, explaining what's going on.

AMERICA FERRERA VO: HEARTLAND EVEN CAME UP WITH A BILLBOARD CAMPAIGN IN 2012 OVER A BUSY CHICAGO HIGHWAY WITH PEOPLE THAT EQUATED PEOPLE WHO BELIEVE IN GLOBAL WARMING WITH TERRORISTS.

I'M STARTING TO WONDER... WHO'S BEHIND THE HEARTLAND INSTITUTE? I'M HEADING TO CALIFORNIA, TO MEET TWO PEOPLE WHO HAVE STUDIED HEARTLAND FOR YEARS.

TRANSITION

MARK BITTMAN VO: I'M ON MY WAY TO MEET WITH MARK BOLING, A TOP EXECUTIVE WITH SOUTHWESTERN ENERGY, THE FIFTH LARGEST NATURAL GAS PRODUCER IN THE NATION. I WANT TO ASK HIM ABOUT DR. INGRAFFEA'S PAPER, WHICH ESTIMATED THAT MORE THAN 3% OF ALL THE NATURAL GAS PRODUCED IN THE U.S. IS LEAKING.

MARK BOLING: We are not going to let those profits go up in the air. So that's - I'm not sure whether that's the real answer to your question. But from our perspective that's, from industry's perspective - well of course it can't be that high. We'd be fired if we allowed our leak rate to be that high.

MARK BITTMAN VO: IT'S OBVIOUSLY A TOUCHY SUBJECT, BECAUSE HE'S THE ONLY INDUSTRY OFFICIAL WHO WOULD AGREE TO TALK ON CAMERA.

AND HE WANTS TO SHOW ME HOW PREVENTING LEAKS... IS JUST SMART BUSINESS.

MARK BOLING: That's where we capture all of the gas from the minute that it comes back from a hydraulic fracturing flowback and put it right into the sales line.

MARK BITTMAN VO: SEVERAL YEARS AGO SOUTHWESTERN STARTED DOING WHAT IT CALLED GREEN COMPLETIONS TO CAPTURE GASES, INCLUDING METHANE, THAT WOULD OTHERWISE ESCAPE INTO THE AIR.

BOLING: The old way we used to do it, like this, we would vent probably 16 million cubic feet of gas on average from each well that we are now capturing. Multiply that by the amount of money you make per thousand cubic feet, it pays for itself.

MARK BITTMAN: So you're making money on it because you're selling the 16 million cubic feet you're capturing.

BOLING: Absolutely.

MARK BITTMAN VO: IN OTHER WORDS: PROBLEM SOLVED, AT LEAST FOR HIS WELLS. BOLING SAYS INGRAFFEA'S RESEARCH JUST FOCUSED ON THE DIRTIEST WELLS.

MARK BOLING: When I looked at some of the assumptions they used to come up with their numbers, then I go, "oh, well..." -- the study lost credibility with me in that regard and the kind of work that was put into it was really, wasn't what it should be, to come out and make those statements like "hey natural gas is dirtier than coal." That just didn't seem right to me.

MARK BITTMAN VO: **AFTER TALKING TO BOLING, I TRY TO FIND OUT HOW MANY OTHER COMPANIES ARE ACTUALLY DOING GREEN COMPLETIONS. NO ONE SEEMS TO KNOW... NOT EVEN THE GOVERNMENT.**

NEVERTHELESS, WHEN IT COMES TO METHANE LEAKS, THE GOVERNMENT MORE OR LESS AGREES WITH THE INDUSTRY'S ESTIMATES. THE ENVIRONMENTAL PROTECTION AGENCY SAYS THE LEAK RATE IS JUST 1.5%, WELL BELOW THE 3% THRESHOLD.

I WANTED TO FIND OUT HOW THEY GET THAT NUMBER. BUT FOR SOME REASON THE EPA DECLINED TO TALK TO ME ON-CAMERA.

BUT THEN I FOUND A FORMER E.P.A. OFFICIAL WHO WAS WILLING TO TALK.

AND HE EXPLAINED HOW THE AGENCY COMES UP WITH ITS ESTIMATES, WHICH ARE OFFICIALLY CALLED *EMISSION INVENTORIES*.

JOHN BOSCH: I've worked 38 years with EPA and actually formulated the techniques for developing emission inventories. I was responsible for them right from the start. They're of necessity, guesses.

MARK BITTMAN VO: **THAT'S BECAUSE THE EPA DOESN'T DO COMPREHENSIVE MEASUREMENTS. AS CRAZY AS IT SOUNDS ... WHEN THE EPA SAYS METHANE EMISSIONS ARE GOING DOWN IN THE U.S., THEY'RE PRETTY MUCH TAKING THE GAS INDUSTRY'S WORD FOR IT.**

JOHN BOSCH: All these emission inventories, by the way, are derived from industry supported data.

MARK BITTMAN: So when the EPA publishes estimates of leaks of methane that data is coming from industry. Is it at all independently verified?

JOHN BOSCH: No, no. You know, Mark, in my experience, developing and maintaining emission inventories nationally for many years, every time we looked further we found more emissions. And every time there was some sort of large growth in a particular industry there were unforeseen emissions. And we're in the same situation today. Certainly with the gas drilling that's going on now, the extensiveness of it is unbelievable.

MARK BITTMAN: But EPA's recently less - lowered their estimate for methane leak rate.

JOHN BOSCH: Well where did the data come from? Data came from the industry. That's like Farmer John sends the fox out to say, "How many chickens do I have?" And he comes back and says, "You have ten less chickens this year than you had last year."

IT SEEMED LIKE *EVERYONE* WAS GUESSING ABOUT METHANE LEAKS. BUT IN COLORADO, GABY PETRON'S RESEARCH WAS FINALLY YIELDING SOME CONCRETE RESULTS.

TRANSITION

AMERICA FERRERA VO: I'VE COME TO CALIFORNIA TO MEET WITH LISA GRAVES, THE EXECUTIVE DIRECTOR FOR THE CENTER FOR MEDIA AND DEMOCRACY, AND BRENDAN DEMELLE, WHO RUNS AN INVESTIGATIVE WEBSITE CALLED DE-SMOG BLOG. THEY'VE MADE IT THEIR BUSINESS TO LEARN AS MUCH AS POSSIBLE ABOUT THE HEARTLAND INSTITUTE AND OTHER GROUPS THAT DENY CLIMATE CHANGE.

BRENDAN DEMELLE: Heartland has this storied history of attacking climate change. They've sort of molded their position to fit the times and originally they started out as outright deniers, saying "it's not happening, it's a hoax" and that they science wasn't- was clear. Then they sort of shifted to "well if it's happening, it's not that big of a deal" to "actually it might be good for us, it might be beneficial" and that's where James Taylor really - you know where his position is at. That global warming will be beneficial for humans.

LISA GRAVES: The scientific evidence is really against them, but they say things so boldly and stridently that it makes some people believe that they must be telling the truth.

AMERICA FERRERA: So who are Heartland's supporters? Where do they get their funding?

BRENDAN DEMELLE: Well there's a number of things we know about the Heartland's funding and some that we don't. Because as of 2007 they don't disclose their donors.

AMERICA FERRERA: ONE THING THEY DO KNOW IS THAT HEARTLAND IS JUST A SMALL PART OF A VAST CLIMATE DENIAL NETWORK... WITH HUNDREDS OF MILLIONS OF DOLLARS BEHIND IT. THROUGH A COMBINATION OF PUBLIC TAX RECORDS AND LEAKED INTERNAL DOCUMENTS...

...A LOT OF THE MONEY HAS BEEN TRACED BACK TO TWO MAJOR SOURCES.

EXXONMOBIL, THE WORLD'S LARGEST OIL COMPANY, GAVE AT LEAST 27.4 MILLION TO CLIMATE DENIAL GROUPS BETWEEN 1998 AND 2010...

...INCLUDING HUNDREDS OF THOUSANDS OF DOLLARS TO HEARTLAND.

AND FOSSIL FUEL BILLIONAIRES CHARLES AND DAVID KOCH, WHO OWN KOCH INDUSTRIES...

...HAVE FUNNELED MORE THAN 72 MILLION DOLLARS TO THE CAUSE THROUGH A DIZZYING ARRAY OF FOUNDATIONS AND FRONT GROUPS.

BUT RECENTLY, THE MONEY TRAIL HAS GONE COLD.

BRENDAN DEMELLE: Foundations or companies that gave money directly are now through mechanism called "donors trust" and "donors capital fund" able to shield their donors.

AMERICA FERRERA: Which makes it harder for the public to put pressure on those funders to not support.

BRENDAN DEMELLE: How do you hold someone accountable when you don't know who they are?

AMERICA FERRERA VO: DONORS TRUST AND DONORS CAPITAL FUND ACT AS MIDDLEMEN BETWEEN WEALTHY DONORS AND GROUPS THEY WANT TO SECRETLY FUND.

THE DONORS ARE ABLE TO REMAIN ANONYMOUS.

MUCH OF HEARTLAND'S FUNDING NOW COMES FROM A SINGLE ANONYMOUS DONOR...

AND WITH THE HELP OF DONORS TRUST, MORE MONEY IS POURING INTO CLIMATE DENIAL THAN EVER BEFORE...

...A STAGGERING \$558 MILLION DOLLARS JUST BETWEEN 2003 AND 2010.

AND BRENDAN AND LISA TELL ME THAT CLIMATE CHANGE ISN'T THE ONLY ISSUE WHERE HEARTLAND HAS BEEN ON THE WRONG SIDE OF SCIENCE.

LISA GRAVES: One of the things we've seen with Heartland and with the other groups is a real effort to muddy the waters and that's right out of the tobacco company's big PR playbook.

BRENDAN DEMELLE: In 1969 a tobacco executive wrote a memo in which he said "doubt is our product" if they were going to confuse the public, they needed to suggest to them that there's no link between tobacco and cancer, so we're going to sell this idea there's confusion among scientists and continue to perpetuate doubt in the public mind. // and Heartland was one of the key players in that.

IN THE 90'S, WITH FUNDING FROM PHILIP MORRIS, HEARTLAND TRIED TO DISCREDIT THE SCIENCE LINKING SECONDHAND SMOKE TO CANCER.

IN A FUNDRAISING LETTER, HEARTLAND'S PRESIDENT BOASTED ABOUT HOW VALUABLE THE ORGANIZATION WAS TO TOBACCO COMPANIES.

AND MANY OF THE SAME SCIENTISTS NOW DENYING CLIMATE CHANGE, GOT THEIR START DEFENDING CIGARETTES.

AMERICA FERRERA: Brendan, can you tell us more about who James Taylor is?

BRENDAN DEMELLE: Sure, so James Taylor, his expertise is in the law, you know, he's a lawyer // he's a great talker, he's a very personable guy // but it's kind of shocking to me that anyone would rely on a lawyer to give them advice about science matters. You know, it's kind

of like asking your dentist what to do about your heart condition. You know he might have some interesting things to say about it, but he's probably not the specialist you should be listening to.
AMERICA FERRERA VO: **EVER SINCE I BEGAN LOOKING INTO THIS BATTLE OVER RENEWABLES, I'VE WANTED TO MEET JAMES TAYLOR FACE TO FACE. I GET MY CHANCE WHEN HE AGREES TO MEET IN NEW YORK.**

TRANSITION

MARK BITTMAN VO: **AFTER MORE THAN TWO YEARS DRIVING AROUND COLLECTING SAMPLES, GABY PETRON HAD A WEALTH OF DATA... SHOWING LEAKS THROUGHOUT THE ENTIRE NATURAL GAS SYSTEM IN THE DENVER BASIN.**

MARK BITTMAN: What did you do with that information? Where did that go?

GABY PETRON: We wrote a paper, and we estimated at the time that - on average 4% of the gas that was extracted from the ground ended up in the atmosphere instead of in the pipeline.

MARK BITTMAN: You're showing a leak rate that is much, much higher than EPA estimates - four times as high, minimum of four times as high as what the industry says there is.

GABY PETRON: That's right.

MARK BITTMAN: But this is real information produced by scientists, using real instruments.

GABY PETRON: And peer reviewed.

MARK BITTMAN: Peer reviewed, and impartial, etc. You present this information to the industry and they say what?

GABY PETRON: They have a lot of questions. I don't think that everybody is happy with what we found.

MARK BITTMAN VO: **HERE WAS AN INDEPENDENT STUDY PRODUCED BY TOP GOVERNMENT SCIENTISTS, SUGGESTING THAT, AT LEAST IN THE DENVER BASIN, NATURAL GAS IS FAR FROM CLEAN. NOT SURPRISINGLY THE INDUSTRY ARGUED THAT PETRON'S RESULTS WERE JUST AN OUTLIER, A SINGLE SNAPSHOT OF A VAST NATURAL GAS SYSTEM.**

ERIC CROSSON: That's where we're going. It's making measurements every one second.

MARK BITTMAN: Practically as soon as we started the leave and all of it went up.

ERIC CROSSON: Yup, it's starting to go up.

MARK BITTMAN VO: THE UINTAH [YOU-IN-TAH] BASIN IN EASTERN UTAH IS HOME TO THOUSANDS OF NATURAL GAS AND OIL WELLS ... AND NOT MUCH ELSE.

“

I AM HERE WITH A TEAM FROM PICARRO, A COMPANY THAT'S WORKING ON CUTTING EDGE TECHNOLOGY FOR MEASURING METHANE EMISSIONS.

NORMALLY, THESE GUYS ARE HIRED BY THE GAS COMPANIES *THEMSELVES* TO FIND AND FIX LEAKS. THIS TIME, THOUGH, THEY'RE HEADING OUT ON THEIR *OWN DIME*. THEY WANT TO KNOW IF THE METHANE PROBLEM COULD POSSIBLY BE AS BAD AS PETRON'S NUMBERS SUGGEST. AND TO FIND OUT, THEY BROUGHT IN THE BIG GUNS: EQUIPMENT THAT'S 1000 TIMES MORE SENSITIVE THAN WHAT MOST COMPANIES USE TO DETECT METHANE.

MARK BITTMAN: The blue dots are natural gas wells?

ERIC CROSSON: Yes. Or natural gas facilities of one type or another.

MARK BITTMAN: It's insane. We're driving down this road and we took a right turn and then within minutes - at first it doubled - and now it's close to triple.

ERIC CROSSON: Yes that's correct.

MARK BITTMAN VO: IT TAKES TWO WEEKS TO FULLY COVER THE AREA. THEY FIND LEAKS EVERYWHERE. THERE'S SO MUCH GAS IN THE AIR THAT METHANE READINGS ARE SKY HIGH...OVER THE ENTIRE 700 SQUARE MILE BASIN.

I WAS SURPRISED BY WHAT GABY PETRON SHOWED ME IN COLORADO. IT'S STARTING TO LOOK LIKE UTAH IS EVEN WORSE.

TRANSITION

AMERICA FERRERA: What is your point of view? Where do you stand on climate change?

JAMES TAYLOR: Well we know that carbon dioxide is a greenhouse gas and if you add more to the atmosphere you're going to get some global warming. So it's human nature to see change and fear change, but the best evidence out there, the best scientific evidence and data show that the moderate warming that is occurring is beneficial to human welfare as it always has been throughout human history.

AMERICA FERRERA: Can you talk to me about who supports you and the Heartland Institute? Who your funders are?

JAMES TAYLOR: Yeah, first of all, working on policy issues, I make it a point not to know. I don't want that to influence what I write and think. And even if I wanted to know, the Heartland Institute prevents me from knowing.

AMERICA FERRERA: You don't know who your funders are?

JAMES TAYLOR: I have a general idea of some, often times because some global warming activist or people who don't like the Heartland Institute they all assert that we receive money from this group or that. In general terms what I do know is that the vast majority of our funding comes from private individuals and from foundations. And if you at corporations who have a stake in the energy debate, especially fossil fuel companies, that would be a very small percentage.

AMERICA FERRERA: Why is this is something worth fighting? Why is renewable energy bad?

JAMES TAYLOR: Yeah, people like to talk about carbon dioxide and global warming, but they don't talk about the 1.4 million birds and bats including many endangered species that are killed each year by wind turbines. Also according to the wind energy industry itself it required 300 to 600 square miles of wind turbines to replace a single conventional power plant.

AMERICA FERRERA: Don't we need those things to help us jump start out a new economy or a new solution to fighting a modern problem like climate change?

JAMES TAYLOR: Well if global warming were a very serious problem then certainly we would be wise to look into that, but the science indicates that it's not a very serious problem.

AMERICA FERRERA: But James, I'm really confused because 97% of climate scientists say that it's real and that it's a problem, and that it's man made and you with all due respect, you're a lawyer, right?

JAMES TAYLOR: I'm a lawyer by training, I don't practice.

AMERICA FERRERA: You're a lawyer by training, but you're not a scientist by training.

JAMES TAYLOR: But I'm a scientist by training as well.

AMERICA FERRERA: You're a scientist?

JAMES TAYLOR: I successfully completed Ivy League atmospheric science courses, so I'm a scientist by training.

AMERICA FERRERA: Okay...

JAMES TAYLOR: But let's get to your question.

AMERICA FERRERA: Well my question is that, I'm confused because there's - over here - a kind of a mountain of evidence that kind of suggests it's a problem, it's man made, people will suffer, so why focus on the smaller evidence versus the mounting evidence?

JAMES TAYLOR: Well I think your premise is wrong. In fact more than 31,000 scientists signed on to a letter, a summary of the science explaining why global warming is not a human caused crisis.

AMERICA FERRERA: That letter you're talking about. That's the Oregon Petition?

JAMES TAYLOR: Yes indeed.

AMERICA FERRERA VO: **I'D HEARD ABOUT THIS FROM BRENDAN AND LISA IN LA.**

BRENDAN DEMELLE: The Oregon Petition. That is one of the original efforts by the denial industry to suggest that they had thousands of scientists on their side that would say global warming was not a problem. As you look through those lists // there were // fictitious names.

AMERICA FERRERA VO: **EVERYONE FROM STAR WARS CHARACTERS TO A MEMBER OF THE SPICE GIRLS HAVE SHOWN UP ON THE LIST.**

BRENDAN: There certainly are some scientists.-They are meteorologists. They are geologists. They are biologists. You know, certainly people with expertise in their area but they're far outside their // specialization. Most of these people, they're not climate scientists.

AMERICA FERRERA: There was a name on it that was one of the Spice Girls.

JAMES TAYLOR: Who told you that? You're getting bad information, America.

AMERICA FERRERA: There were names on it like-

JAMES TAYLOR: If you look at the petition itself, if you contact the scientists who put it together, they will present documentation, they have it on their website. More than 31,000 scientist have signed it and it's documented. It's documented.

AMERICA FERRERA VO: **AFTER MEETING JAMES, I DID SOME MORE RESEARCH. HIS "SCIENCE TRAINING." CONSISTS OF A FEW UNDERGRADUATE COURSES HE TOOK OVER TWENTY-FIVE YEARS AGO.**

AS FOR THE OREGON PETITION, IT TURNS OUT ANYONE WITH AN UNDERGRADUATE SCIENCE DEGREE CAN ADD THEIR NAME. THE WEBSITE BRAGS ABOUT THE NUMBER OF SIGNATURES, BUT LESS THAN 1% EVEN CLAIM TO HAVE AN EXPERTISE IN CLIMATE SCIENCE. THE WHOLE THING SEEMS KIND OF RIDICULOUS TO ME.

BUT WITH ALL THE MONEY POURING IN, THE DENIAL CAMPAIGN SEEMS HARD TO COUNTER. AND I WONDER HOW ALL THIS WILL PLAY OUT IN KANSAS, WHERE THE VOTE ON RENEWABLE ENERGY IS ABOUT TO HAPPEN.

TRANSITION

ERIC CROSSON: When we got to Utah, I was shocked. I have never, and I have done measurements all over the world, // I have never seen that situation ever. // Over hundreds of square miles// the number of leaks in Uintah is staggering.

MARK BITTMAN VO: A FEW WEEKS AFTER OUR TRIP TO UTAH, ERIC CROSSON FROM PICARRO IS ANALYZING THE DATA WE COLLECTED. WHAT HE'S FINDING IS HARD TO FATHOM.

ERIC CROSSON: We did a back of the envelope calculation and came to the conclusion that the leak rate coming out of the Uintah basin was about 11%.

UTAH, IN OTHER WORDS, IS *EVEN WORSE* THAN COLORADO. AND ON THE HEELS OF PICARRO'S FINDINGS, ANOTHER GROUP OF NOAA SCIENTISTS LOOK AT METHANE EMISSIONS COMING FROM A MIXTURE OF OIL AND GAS WELLS IN THE LOS ANGELES BASIN. THEIR NUMBER: 17%.

MARK BITTMAN: We hear industry say, "there's just not that much in the way of leaks, maybe we're losing 1%, it's not that high, it's not that big a problem. What do you say to that?"

MICHAEL WOELK: They're wrong. They're just flat out wrong in terms of what these emissions are. The EPA is flat out wrong as well, but as like so many other inaccuracies in life, if you repeat them often enough and if you repeat them loud enough and you defend them vociferously, then that kind of becomes accepted as truth.

TONY INGRAFFEA: Los Angeles Basin - up to 17%, now granted that's one basin. Utah was another basin, Colorado was another basin, but these basin's are starting to line up. All the data comes out so far - doesn't bode well for the final answering looking like its way low - like the industry says less than 1%. It's impossible, absolutely impossible.

MARK BITTMAN: NOAA measured and got levels of 17% and the Los Angeles basin - you know it takes a lot of 1% emissions to bring that average back down.

MARK BOLING: I can tell you that the studies that NOAA did and I know something about the Picarro instrumentation and I think some of those numbers, they certainly concern me. How could you say that that methane emission rate was one and a half percent - very, very difficult to there from here for that.

MARK BITTMAN: After what I've seen on working on this story and working on this story for months. A 1% leak rate industry-wide, country-wide - that really seems laughable.

MARK BOLING: No question, there's work to be done. But we can all waste our time about "is 4%, is it 8%, is it 1%" or we could all just say "I don't care what anyone thinks it is, let's go out and fix the problem"

MARK BITTMAN VO: IT'S NICE TO HEAR SOMEONE FROM THE INDUSTRY AT LEAST *ACKNOWLEDGE* THERE'S A PROBLEM. PRESIDENT OBAMA HAS ACKNOWLEDGED IT TOO... AND PROMISED TO STUDY IT. AND IN COLORADO, THE ENVIRONMENTAL

DEFENSE FUND SUCCESSFULLY CAMPAIGNED FOR TOUGHER METHANE LEAK REGULATIONS.

BUT ACTUALLY FIXING THE PROBLEM MIGHT NOT BE THAT EASY.

SOME SAY TECHNOLOGY LIKE THE KIND I SAW AT MARK BOLING'S FACILITY IS THE ANSWER. AND A STUDY LAST YEAR BY THE ENVIRONMENTAL DEFENSE FUND SHOWED THAT THESE SO-CALLED "GREEN COMPLETIONS" CAN HELP QUITE A BIT... BUT IN COLORADO, WHERE MORE AND MORE WELLS ARE DOING GREEN COMPLETIONS, PETRON STILL HASN'T SEEN METHANE EMISSIONS GO DOWN.

THEN I STARTED THINKING ABOUT ALL THE PLACES ACROSS THE COUNTRY WHERE GAS CAN LEAK: NOT JUST THE MANY THOUSANDS OF WELLS, BUT A PIPELINE SYSTEM 1.5 MILLION MILES LONG... WITH TENS OF THOUSANDS OF COMPRESSOR STATIONS... COUNTLESS VALVES... AND CORRODED PIPES RUNNING UNDER TOWNS AND CITIES EVERYWHERE. EVEN UNDER THE VERY CITY WHERE THE FUTURE OF NATURAL GAS WILL BE DECIDED.

ROB JACKSON: Check these first.

GIRL: This one we can smell it.

ROB JACKSON: Yea you can smell it just walking up. Oh yeah.

GIRL: I think it's saturating my instrument.

ROB JACKSON: 11%, that's a dangerous concentration. If we were parked, that would blow up.

MARK BITTMAN VO: ROB JACKSON IS A SCIENTIST WITH DUKE UNIVERSITY. HE'S BEEN USING PICARRO TECHNOLOGY TO FIND METHANE LEAKS IN CITIES. HE JUST FINISHED A STUDY IN BOSTON WHERE HE FOUND THOUSANDS OF THEM. NOW HE'S FINDING THE SAME THING HERE.

ROB JACKSON: This is a partial map of the city. The red is all the road miles in the city and the yellow are the leaks. You literally have thousands of very small leaks spread all across the city. It's death by a thousand cuts.

ROB JACKSON: So that's 45% gas. That's almost pure methane that's coming out of the ground.

ROB JACKSON (in interview): There's so much methane there that you actually couldn't light that because there's not enough oxygen. Not that that's much consolation.

MARK BITTMAN VO: THERE'S A LOT MORE WE STILL DON'T KNOW. BUT FROM EVERYTHING I'VE SEEN... IT SEEMS LIKE RIGHT NOW NATURAL GAS COULD BE MAKING OUR CLIMATE PROBLEM WORSE RATHER THAN BETTER. I THINK WE NEED

TO ASK OURSELVES IF THAT'S A RISK WORTH TAKING... BECAUSE THE NATURAL GAS BOOM IN THIS COUNTRY IS JUST GETTING STARTED.

TRANSITION

AMERICA FERRERA VO: THE BILL THAT WOULD DISMANTLE KANSAS'S CLEAN ENERGY LAW IS UP FOR A VOTE TODAY. AND PETE FERRELL IS ON HIS WAY TO LISTEN IN.

DENNIS HEDKE: In April 2009, this legislature passed mandates to quote protect end quote US citizens from the dangers of a colorless, odorless, tasteless, and I submit to you, harmless gas, known as CO2. The existing mandates also known as renewable portfolio standards or simply RPS, are why we are here today.

COMMITTEE REP #2 (M): Political winds shift, the composition of the legislature shifts. And maybe it shifts because of bad decisions that were made before.

COMMITTEE REP #3 (F): This is about generations of Kansans to come.

AMERICA FERRERA VO: IF THE VOTE IS A YES, KANSAS'S RENEWABLE ENERGY LAW WILL BE REPEALED.

COMMITTEE REP: I'm in support of this amendment.

COMMITTEE REP: I just cannot support this bill.

COMMITTEE REP: What are we doing here? What are we doing?

COMMITTEE REP: I will move forward with this motion.

COMMITTEE REP: This is starting to get a little ridiculous.

COMMITTEE REP: I will not support this and I do question why we are just playing with numbers.

CHAIR: I disagree and so I would suggest that this is legislation does advance reasonable policy for the citizens of Kansas. Alright let's call for a vote on the amendment. All in favor say "Aye."

CHAIR: All opposed say "nay."

CHAIR: The chair is in doubt and we'll call for a raise of hands to clarify the vote. All in favor raise your right hand please. So nine. All opposed, so nine, ten. Motion fails. This meeting is adjourned, thank you.

PETE FERRELL: We survived by one vote, one vote kept us from destroying the renewable energy standard in Kansas, so it wasn't like it was a slam dunk or anything.

AMERICA FERRERA: And did they really think that that's in the best interest of the people in Kansas?

PETE FERRELL: No, I don't think that they think it's the best interest in the people of Kansas. I think it's the best interest of powerful corporations.

PETE FERRELL: America, this is absolutely my favorite spot on the whole ranch. Not only is this where the ashes of my parents, my sister, and loved ones are, but it's the best view of the world in my opinion.

AMERICA FERRERA: It's beautiful.

PETE FERRELL: I mean we've got everything up here. We've got the most gorgeous tall grass prairie in the world and we have a state of the art wind farm as a backdrop.

AMERICA FERRERA: But I heard you say that you think they're beautiful but because of what they symbolize.

PETE FERRELL: Yeah what they represent: the ability to generate electricity without putting carbon in the air. That's always been central point for me you know we're going to run out of oil or coal, we want a hard landing or a soft landing. And I think moving to renewables provides a soft landing for us.

AMERICA FERRERA VO: IN THE END, DESPITE THE EFFORTS OF HEARTLAND, ALEC, AND OTHERS NOT A SINGLE STATE VOTED TO REPEAL ITS CLEAN ENERGY LAW IN 2013. INSTEAD, FOUR STATES ACTUALLY INCREASED THEIR GOALS FOR RENEWABLES. BUT TAYLOR IS PLANNING TO CONTINUE THE FIGHT.

JAMES TAYLOR: I'm very optimistic. I'm very pleased with the way events have been unfolding in the states. Sure I would like to have had some renewable power mandates rolled back by now. When I say "by now" It's only been a couple years that we've really turned the momentum. But I really think I have a strong hand in terms of what I'm advocating in the climate debate and I'm very comfortable in my own skin at that debate just like I am at the poker table.

////////// END