Planet of the Humans

written, produced and directed by Jeff Gibbs
Produced by Ozzie Zehner
Executive Producer: Michael Moore
Co-Producers: Valorie Gibbs, Christopher Henze, David Paxson

Released: April 21, 2020

[Vandana Shiva] So we are talking of the old oil economy trying to maintain itself now through another raw material, the green planet. The only reason corn and soy has been planted for biofuel in this country is the subsidies make it profitable. I think the big crisis of our times is our minds have been manipulated to give power to illusions. We shifted to measuring growth, not in terms of how life is enriched, but in terms of how life is destroyed.

-- Planet of the Humans, by Jeff Gibbs

-- Silent Spring, by Rachel Carson
-- The End of Growth: Adapting to Our New Economic Reality, by Richard Heinberg
-- An Inconvenient Truth, directed by Davis Guggenheim, Starring Al Gore
-- Green Illusions: The Dirty Secrets of Clean Energy and the Future of Environmentalism, by Ozzie Zehner

Huron Mountain Films

[Haunting Music]

[Jeff] I've got a question.
How long do you think we humans have?

[Man] How long does the human race have?

[Woman] Ooh.

[Man] Um.

[Woman] Oh, wow.

[Man] I don’t exactly know, but might be soon.

[Woman] I have no clue.

[Jeff] No? [laughing]

[Woman] I hope I get me at least 50 more years. [laughing]

[Woman] I think there’s infinite amount of time.

[Woman] Infinite. It’s infinite, yeah.

[Man] I give us a million. A million years.

[Man] Being kind, I would say probably about 10 years.

[Woman] 10, 12 years.

[Man] Thousands of years.

[Man] 47 years, three months, five days. It’s approximate.

[Woman] We’re kind of like cockroaches on the planet -- no matter how much damage we’ll do, enough of us will survive to procreate and keep it going.

[Man] Unless we can get to another planet, but then we’re just gonna fuck it up like we did Earth.

[Woman] Well, I think that we will be here for a long time, but we will change. We're gonna turn back into apes.

[suspenseful dramatic music]

[Jeff] Have you ever wondered what would happen

if a single species took over an entire planet?
Maybe they're cute, maybe they're clever
but lack a certain,
shall we say,
self-restraint?

[somber dramatic music]

[Jeff] What if they go too far?
What if they go way, way, way,
way, way too far?

[somber dramatic music]

[Jeff] How would they know when it's their time to go?

[intriguing orchestral music]

a Huron Mountain Films production

[intensifying orchestral music]

Executive Producer: Michael Moore

Produced by: Ozzie Zehner

a film by Jeff Gibbs

PLANET OF THE HUMANS

[Music fading]

[Old-Timey Music]

THE UNCHAINED GODDESS

Produced by FRANK CAPRA

[Man] Due to our release through factories
and automobiles every year
of more than six billion tons of carbon dioxide,

our atmosphere seems to be getting warmer.

[Man] This is bad?

[Man] Well, it’s been calculated a few degrees rise

in the Earth’s temperature would melt the polar ice caps

And if this happens, an inland sea would fill a good portion
of the Mississippi valley.
For in weather, we're not only dealing with forces
of a far greater variety
than even the atomic physicists encounters,

but with life itself.

[Piano synthesizer music]

[Jeff] That was 1958.
We've known about the dangers
of climate change for six decades.

Back then, there was so much air pollution,
it would actually block out the sun.

There was so much water pollution, rivers caught on fire.

[Synthesizer music]

[Jeff] Forget throwing plastic bottles into the water,

we tossed our cars in there.
We also knew someday we'd run out of oil.

[Newsman] For millions of Americans,

this may be the worst weekend they've ever faced
for finding gasoline to give them the automobile freedom
they take as their due.

[Jeff] I never doubted humans would find a better way,
and I wanted to be part of it.

[SILENT SPRING, Rachel Carson]

[Jeff] A scientist sounded the alarm,
and the modern environmental movement was born.

[Rachel Carson, 1963] Unless we do bring these chemicals under better control,

we are certainly headed for disaster.

[Jeff] Students all across the country

organized the first Earth Day.

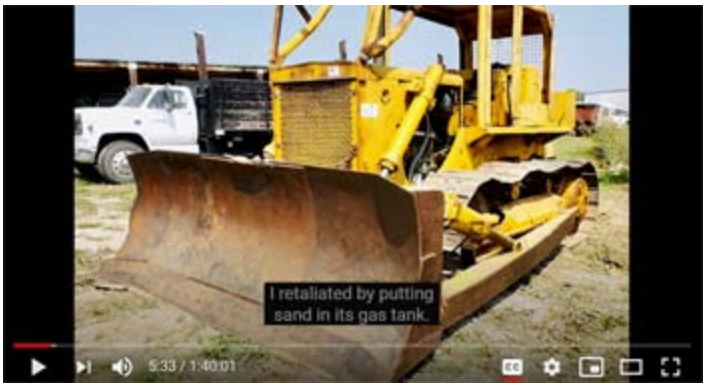
[Denis Hayes, National Coordinator Environmental Teach-in, 1970] At this point in time it’s very, very fashionable

to talk about the environment,
but as everyday procedure we find
very, very little concrete being done.

[Jeff] As for me, you might say

I was an early environmentalist.
When I was nine years old,

a bulldozer began knocking down the woods near my home.



I retaliated by putting sand in its gas tank.

[Mellowly dramatic music]

[Jeff] When I grew up, I became a tree hugger, and moved
to the wilds of Northern Michigan

to build a sustainable homestead, and commune with nature.
I wired my cabin for solar panels,

and heated with wood instead of fossil fuels.

[MOTHER EARTH NEWS, THE ORIGINAL GUIDE TO LIVING WISELY
Homesteading in Michigan on the Upper Peninsula, by Jeff Gibbs.
January/February 1983]

[Jeff] I wrote about sustainable living
and environmental issues for the Mother Earth News,
and several news outlets.

[AlterNet News & Politics
Decimating Tree Disease Spreads to Redwoods – and Beyond?
A deadly tree disease, coupled with manmade environmental stresses, has killed thousands of California oaks. Now it has spread to redwoods, a bad sign for the rest of the country.
By Jeff Gibbs]

[TRAVERSE CITY RECORD EAGLE
Zebra Mussels Decimate Key Link
Diporeia, a major food source for whitefish, have declined 90-100%
by Jeff Gibbs
October 20, 2001]

[Jeff] I traveled the country documenting invasive species,

[buzzing] ecosystem collapse.
and species threatened with extinction.

[Man] [Tapping on butterfly cage] Come on, girls, boys.

[Crowd Chanting]

[Jeff] I covered protests against destroying mountains for coal.

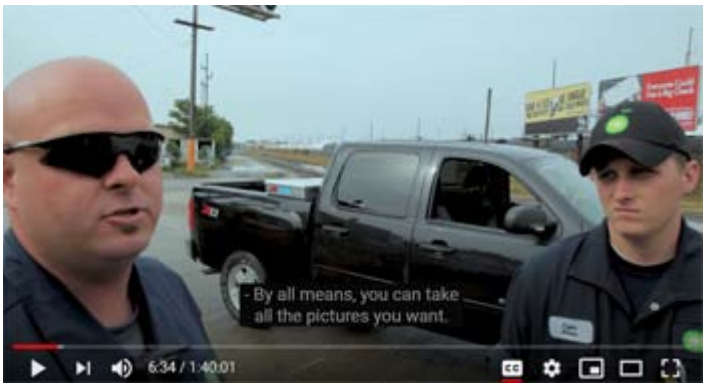
[People shouting and clapping]

[Jeff] And was once even confronted by the BP police

[Car tires crunching]

[Police] You're a journalist?

[Jeff] Yep, yep, yeah.



[Police] By all means, you can take all the pictures you want.

[Jeff] Okay.

[Police] We'll write our report, and then we have to send it to the FBI and the U.S. Attorney's Office. They'll call you.

[Traffic whizzing]

[Slamming door]

[Jeff] Through all of this, I kept wondering,
"Why are we still addicted to fossil fuels?"
So I decided to begin following the green energy movement.

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[Mild rock music]

[Jeff] What better place to check out
how our renewable energy revolution is coming along
than a solar festival
in the green mountain state of Vermont,

powered by 100% solar energy.
[Bass guitar and guitar music]

[Solar salesman] Solar, solar. [laughing]

[Jeff] I was having fun,
and got a chance to ask
about getting solar panels installed.

[Solar Salesman] You can keep adding, so maybe every time

you get a tax return, buy another solar panel.

[Singing rock music]

[Jeff] But then, a little rain began to fall.

[Rock band playing and singing:
Packed up my guitar
and headed to the nearest bowling alley]

[Jeff] My camera man noticed some commotion behind the stage.

[Thudding]

[Jeff] What are you guys setting up here?

[Man] This is for biodiesel generators,
in case we lose our power due to the rain.

[Jeff] So the festival's run
on solar energy, primarily?

[Man] Primarily.
We do need to bring some of this stuff in,

just because we want to make sure
we have enough power not to kill our fancy toys
that we have lighting the stage.

[Jeff] Right.

But the biofuel generator wasn’t enough,
so they wound up plugging
into the electrical grid that we all use.

[Man] The other inverter operating,

it’s actually pulling power in from the grid,
it’s charging the batteries.
It’s running backwards from the way
we originally intended to do it, but --

[Guitar music]

[Jeff] That was disappointing.

[Singing]

[Jeff] But after all, it had been raining.
Maybe next time things would go better.

[Mellow rock music]

[Jeff] Luckily for us, hope was on the way.

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[Barack Obama] It’s been a long time coming, but tonight

change has come to America.

[Crowd cheering]

[Guitar music]

[Jeff] Green activists across the country cheered
when newly elected president, Barack Obama,
rolled out a trillion dollar stimulus package,
with nearly 100 billion dollars for green energy.

[Guitar strumming and people chanting]

[Jeff] Green was finally ramping up,
and everyone wanted to be part of it.

President Obama brought in environmental activist Van Jones,
from the Apollo Alliance, with shovel-ready projects.

[Van Jones, Link] They've gotta put up tens of thousands of wind farms,
they've gotta put up millions of solar panels.

[Jeff] Former Vice President Al Gore,
who had a few years earlier released an Oscar-winning film,
shared his ideas with the president.

[Barack Obama, CNN: Obama Meets with Gore and Biden in Chicago] We have the opportunity now
to create jobs all across this country,
in all 50 states, to repower America.

[Jeff] Al Gore had already encouraged
billionaire airline owner, Sir Richard Branson,
to invest big-time in green energy.

[CNN Miles O'Brien] Branson is pledging future profits from his airline to the tune of perhaps three billion dollars.

Three billion! That's with a "B". To fight global warming!

[Interviewer] Is Al Gore a prophet?

[Al Gore] [laughing]

[Sir Richard Branson] Um, how do you spell "prophet?" [Laughing]

[All laughing]

[Jeff] Investors came forward.

[Newswoman, 60 Minutes] Investor Vinod Khosla, known as the father

of the clean tech revolution,
has poured over a billion dollars of his own money
into some fifty energy startups.

[GOLDMAN SACHS]

[Jeff] Major banks were eager to get involved.

[Goldman Sachs Man] By 2020, we think renewable will require

$395 billion on an annual basis.

[KENNEDY: OBAMA'S ENERGY POLICIES ARE WITHOUT A DOUBT BETTER FOR THE COUNTRY]

[Jeff] Robert F. Kennedy, Jr.
was both on the board of major environmental organizations,
and was leading a green energy investment group.

[Robert F. Kennedy, Jr.] We build wind farms, we build solar farms,

and once you build our plant, it's free energy forever.

[Calm music]

[The New York Times, New York, Thursday, July 21, 2011: Bloomberg and Sierra Club Join Forces to Slow Coal]

[Jeff] The Sierra Club received 50 million dollars
from billionaire and former New York City mayor,
Michael Bloomberg.
Their mission?
To fight coal and promote clean energy.

[BEYOND COAL]

[Michael Brune, Executive Director Sierra Club] So with the mayor's gift, here's what will happen.
We'll have a large and aggressive presence in 46 states.

[Michael Bloomberg] It's time for America to find a new energy path,
one that takes us beyond coal.

[Bill McKibben] So funny …

[Jeff] And then Bill McKibben,
one of the nation's leading environmentalists,
and author of a breakthrough book called,

"The End of Nature,"
formed an organization called 350.org,

with the mission of igniting a global climate movement.

[350=SAFE LEVEL OF CO2 IN THE ATMOSPHERE]

[Calming music]

[Bill McKibben] Can I show off my necktie for a minute,
because they made it for me yesterday.
It’s got that 350 on it,
because it’s the most important number in the world.

[Jeff] Things were looking up.
And the green energy revolution was under way.

[Wind blowing]

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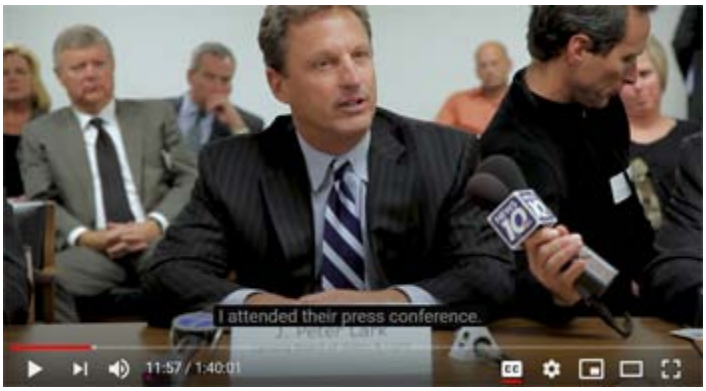
[Jeff] Michigan had been hit hard by the Great Recession,

and hundreds of millions of dollars
in green stimulus money was arriving.
Now, to do their part for the new green economy,
General Motors introduced a new line of electric vehicles.

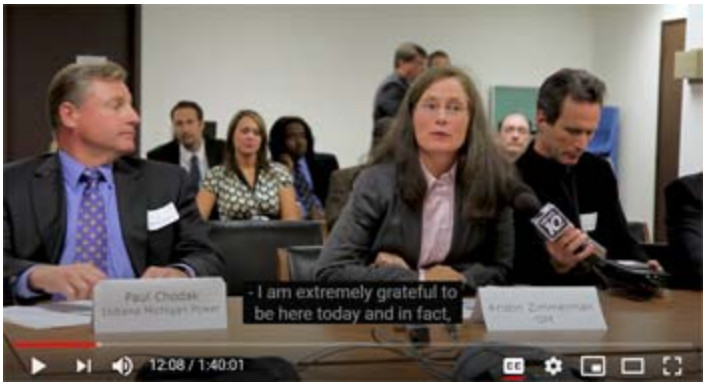
When the Chevy Volt was ready for release,



I attended their press conference.

[NEWS 10]

[David Joos, Consumer's Energy, Lansing, Michigan] So these electric vehicles are ready
for public consumption, and we're ready
with the infrastructure, with the rates,
with the communication.



[Kristin Zimmerman, General Motors] I am extremely grateful to be here today, and in fact,
this is a chance for me to say, "thank you," more formally.
The Chevy Volt is upstairs.
We'll be able to take a look at it.

[Banging metal]

[Woman] We've got about 1,000 photos.

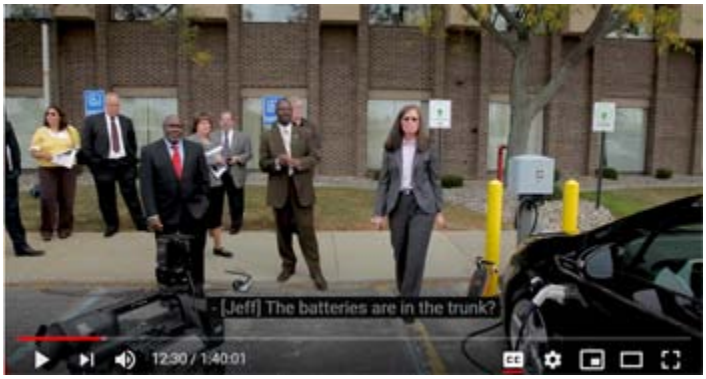
[Jeff] Yeah.

[Man] Here is the plug.

[Crowd laughing]

[Clicking]

[Man] It’s as simple as that.



[Jeff] The batteries are in the trunk?

[Kristin Zimmerman, General Motors] No, the battery in this particular design is a T-shape, right down the center, and across the backseat area.

[Group talking]

[Kristin Zimmerman, General Motors] Because everybody thought we killed the electric vehicle.
Noooo, we didn't.
It's alive and well.

[Jeff] So what's charging the batteries right now?
What's the source of electricity?

[Kristin Zimmerman, General Motors] Well, here! It's coming from the building.

[Jeff] I mean, is it, what's our mix of power?

[Kristin Zimmerman, General Motors] Oh, actually, Lansing feeds the building.

[Jeff] What's that?

[Kristin Zimmerman, General Motors] Lansing feeds power to the building.
So, I don't know –-

[Jeff] They're —

[Kristin Zimmerman, General Motors] I betcha they're a bit of coal?

I think they're heavy on natural gas, aren't they?

[Jeff] Right now the car's charging off your grid?

[J. Peter Lark, Lansing Board of Water & Light] Right.

It would be charging off our grid, which is about 95% coal.

[Jeff] How long do you think it will be
before there's a solar and wind-powered grid?

[Kristin Zimmerman, General Motors] Oh, golly.

[J. Peter Lark, Lansing Board of Water & Light] To suggest that all of the power used for these cars will be generated from wind and solar

in the very near future, would not be correct.
In fact, these, we're talking about charging these up
at night, so there won't be any solar at that time.
So we're down to wind, and very often
at night, the wind does fall off. So –- [Shrugs shoulders]

[Kristin Zimmerman, General Motors] I don't think coal is baaaad!

[Jeff] [Inaudible]

[Kristin Zimmerman, General Motors] The what?

[Jeff] Mountain top removal.

[Kristin Zimmerman, General Motors] Oh, mountain — [Makes pushing-away gesture, then praying hands gesture] Oh yeah, oh yeah. [laughing]

[Jeff] Yeah.

[Kristin Zimmerman, General Motors] It's got lovely BTUs; it's got lovely energy value. How do you burn it more cleanly?
I mean, do you see natural gas getting bashed?

[J. Peter Lark, Lansing Board of Water & Light] We will be delivering power based on natural gas very shortly.

And even with that mix, we intend to use biofuels if we can.

[Jeff] Have you gotten any support?

[Kristin Zimmerman, General Motors] Oh, the environmental groups are extreeeemely supportive.

[J. Peter Lark, Lansing Board of Water & Light] We did install the state's largest solar array at my company, The Board of Water and Lights.
It's just down the street from here a few miles
if you want to take a look at it.

What outfit are you with?

[Jeff] New World Media. We're doing a segment
on the renewable energy –-

[J. Peter Lark, Lansing Board of Water & Light] Oh, excuse me, I gotta go for a second.

[Jeff] Okay, sure.

[J. Peter Lark, Lansing Board of Water & Light] Thanks.

[People chatting]

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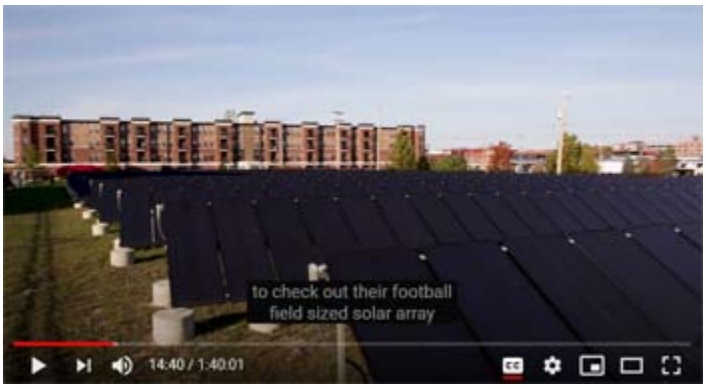
[Jeff] I decided to take him up on his offer



to check out their football field sized solar array
right down the street.

[Cedar Street Solar Array, Lansing Michigan]

[David Gard, Michigan Environmental Council] What we're trying to do with this kind of a tour is
to get a sense for what they've already done,
as an indication of what we could do

to push the envelope even further.

[Jan Nelson, Lansing Board of Water and Light] We took a hard look at wind and determined that,

you know, around here, there's not really any real good wind coming through all the time.
That's what we liked about solar.

You would get the power when you most needed it.
Pass these around, and look at them.
They are pliable.

Made in Michigan -- that was another good thing.
Although the efficiency

of these panels is only about just under 8%.
If you happen to be NASA, and you happen
to own a rover running around Mars,
they have very efficient panels.
But we can't afford those
at about a million dollars a square inch.

[Man] How many homes would this array provided electricity for?

[Jan Nelson, Lansing Board of Water and Light] The standard answer that we tell everybody is,
that we're providing enough
to meet the peak requirements of 50 homes.
However, for most of the people that look
at it a little bit closer,
we generate about 63-64 thousand kilowatt hours a year.
Our average customer uses
about six thousand kilowatt hours a year.
Six thousand into 64, it's just a little over 10.

We can meet the energy requirements for 10 homes
over a year.

[Traffic humming]

[Woman] Will that be an incentive to put more solar on?

[Jan Nelson, Lansing Board of Water and Light] Well, if you wanted to make all
of the energy required for the city of Lansing over a year --

[Woman] Well, how about —

[Jan Nelson, Lansing Board of Water and Light] You'd have a solar array
that was three miles by five miles.

[Woman] Right. But –-

[Jan Nelson, Lansing Board of Water and Light] We're not gonna do that.

[Woman] But, but, I mean —

[Jeff] My friend from the Sierra Club wanted him
to be more positive, but he was not interested.

[Wind blowing]

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[Jeff] As a consequence of the big push for green energy,
wind farms were rising around the nation,
including near my home in northern Michigan.

[John Wozniak] We've done coal and nuclear for years.
We've been trying to get in more into the renewable side.
These are the largest in Michigan.

I think its 482 feet total.

[Jeff] How many yards of concrete?

[John Wozniak] It was 800 yards of concrete in the base,
right around 140 tons of resteel.

[Jeff] What are those blades made out of?

[John Wozniak] That’s all fiberglass and balsam.
They’re about 36,000 pounds a piece.
This tower will weigh 800,000 pounds when we’re done.
Then the cell is 220,000 pounds,
and the hub rotor assembly is another 160.
It’s pretty substantial.

[Wind blowing]

[Jeff] They were impressive machines.

[Wind blowing]

[Jeff] But is it possible for machines made
by industrial civilization

to save us from industrial civilization?

[Wind blowing]

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[Group talking together]

[Lowell Mountain, Vermont]

[Jeff] In environmental leader Bill McKibben's home state
of Vermont, the Green Mountain state,
a site was being cleared
for the installation of wind turbines.
A group of citizens was concerned
about how the construction
might affect the mountains they love.
I joined them for a tour.

[Woman] It's going to be 21 turbines.

[Group] 21?

[Man] Yeah.

[Man] On this project?

[Woman] In this project, yeah.

The estimate was maybe there would be three full-time jobs.

[Man] If the goal is to try to make Vermont the leader
in climate change, I appreciate looking
to the sky in the hopes we can do that.
But more importantly, I'm personally looking

at the ground thinking, this is not the kind of legacy
I want to leave to my kids.

[Wind turbine construction site]

[Man] When I was a kid, we'd go hiking in these woods.
We would be able to drink from the waters
down the hill here, And now you have to question that.

[Jeff] And how long are these towers supposed to last?

[Man] 20-something years, 20 —

[Woman] I know, it's just a nanosecond.

It's a nanosecond.

[Jeff] 20 years?

[Woman] Oh, it's a nanosecond in the time of energy.

[Jeff] Has anybody considered
that this is mountaintop removal for wind instead of coal?

[Man] Yeah, and we've even had people say,
"If you can do mountaintop removal
in Kentucky and West Virginia for coal,

then it's about time the rest of the country shared
in mountaintop removal, too."

[Guard truck coming]

[Man] Uh-oh.

[Jeff] You think he's gonna tell us to move out?

[Man] Probably.
The thing is that you've got

to have a fossil fuel power plant backing it up,
and idling 100% of the time.
Because if you cycle up or cycle down,
as the demand on the wind comes through,
then you actually generate a bigger carbon footprint
than if you just ran it straight.

[Jeff] Do you ever go to things where they say,
"That's just not true.
It doesn't matter; we're gonna have a smart grid."

[Man] It doesn't make any difference. They still got to have it idling.
Because, let's just say the wind stopped right now.
Just stopped for an hour.
You've got to have that power.

[Jeff] What do you do?

[Man] I'm an environmental health and safety consultant.
I usually work with businesses to help them do things,

but I would never work with scum like this.

[Leaves crunching]

[Man] [Crossing over orange tape line] You didn’t get me on camera doing this, did you?
Not being judgmental or trying to play God,

but we’ve got to deal with population growth
and sustainable resources. We’ve all got to cut back.

All this energy’s supposedly going to heat a water park.

We can find unique and different ways to waste energy.
This is not a Vermont company.
Green Mountain Power will be bought out by Gaz Metro,
and Gaz Metro is owned by Enbridge, as I understand it,
which is a big resource company in Canada
which is exploiting the PowerSands,
that wants to build the XL Pipeline.
See, it's –-

[Woman] And they're all in bed together.

[Man] And still we don't know the whole story.

[Jeff] Have you asked Mr. McKibben to come and see this?

[Woman] He thinks anything renewable is good.

[Jeff] Yeah.

[Woman] That's what I've heard people say.

[Wind blowing]

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[Up tempo music]

[Jeff] I am in a strange position.
I'm against our addiction to fossil fuels,
and have long been a fan of green energy.

[Crowd talking]

[Jeff] But everywhere I encountered green energy,
it wasn't what it seemed.

[Hydrogen car exhibit]

[Salesman] This is like a perpetual energy battery.

[Jeff] And where do you get the hydrogen from?

[Salesman] The hydrogen that's in, the hydrogen is sourced
from any hydrocarbon material.

So you can get it from natural gas; you can get it

from any petroleum oil based product.

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[Zoo eyes elephant poo as energy source]

[Jeff] I read about a zoo that was said
to be powered by elephant manure.
But it turned out the elephants

didn’t even produce enough manure to heat the elephant barn.

[Zookeeper] Yeah, we don’t even really make enough

and what we had, elephant wise, couldn’t even do that.
We would need a lot more.

[Jeff] More elephants?

[Zookeeper] Yep, more elephants, or more manure.

[Woman] [Laughing]

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[Jeff] Ethanol plants also seem

to have a secret ingredient.

[Man] This is the most productive farmland in the world,

and we're not that far west of the biggest coal mines
in the world, as well.

So we bring the two together, and have an ethanol plant.

[Jeff] Great, so ethanol was reliant on two things:

a giant, fossil-fuel based industrial agricultural system
to produce corn, and even more fossil fuels
in the form of coal.

All of this in the attempt to replace fossil fuels?
It was enough to make my head explode.

[Pulsating music]

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[Jeff] I was getting the uneasy feeling

that green energy was not going to save us.
And I wasn't the only one.

[Richard Heinberg, Author, The End of Growth] I've counted something

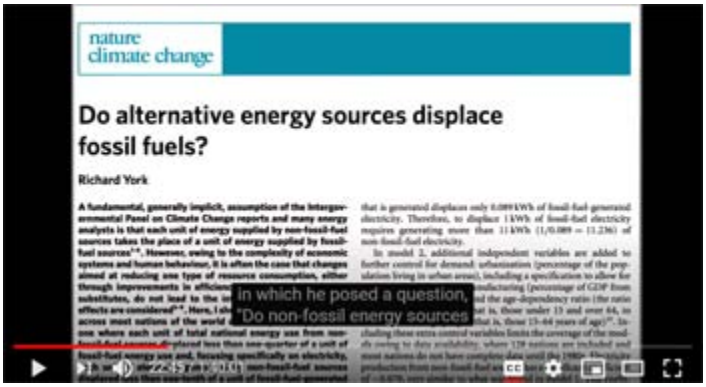
like 25 different alternative energy options.
So surely, among all of those,
there are enough sources
of energy to keep us living basically
the way we are in perpetuity.

But that's not the reality.
Currently we're getting, in some cases,
no energy from these potential options.

[Nature: Climate Change
Do alternative energy sources displace fossil fuels?, by Richard York]

[Jeff] Richard York, of the University of Oregon,

published a study in the Journal Nature



in which he posed a question, “Do non-fossil energy sources
actually replace fossil fuels?”

[Richard York, Environmental Sociologist, University of Oregon] What we implicitly assume, often,

is that the substitute pushes out
the thing you want it to substitute for.
What you find is,
nations that add non-fossil energy sources do not seem
to see a particular suppression of fossil fuels.

[Jeff] That’s pretty mind blowing.
You’ve got billions of dollars being spent,

and green energy is not even replacing fossil fuels?

[Richard York, Environmental Sociologist, University of Oregon] They don't even know that that's a question, yes.

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[Nina Jablonski, Anthropologist, Penn State University] The story that we're in, right now, is okay,
we're in ecological hot water,
but there are technological fixes.

And if we're just creative enough,
if we're just ingenious enough,
and if we just work hard enough, we will triumph.
Seeking technological fixes, one after another,
is simply going to lead us to another level
of catastrophe, sooner rather than later.

[Richard Heinberg, Author, The End of Growth] We want to believe that these things are going to be available
for us, so if we get a little worried,

and somebody comes up with a new thingy and promises
that this will do it for us, we want to believe it.

[Guitar strums]

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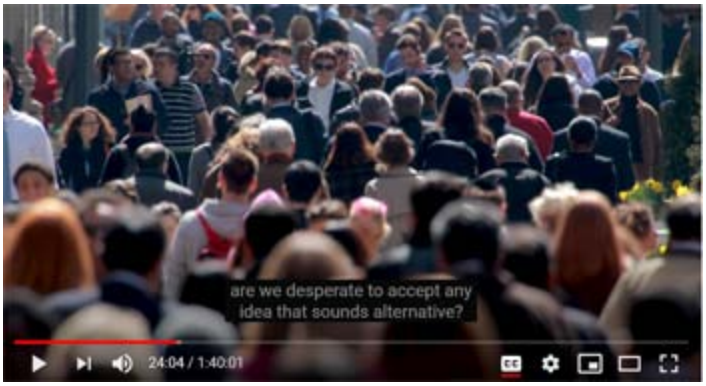
[Jeff] Because we're a little worried,



are we desperate to accept any idea that sounds alternative,
or green?

[Guitar strumming]

[Jeff] Are we avoiding looking too closely
because we don't want to know the answer?
Ozzie Zehner, a visiting scholar at UC Berkeley
and Northwestern University, was asking some
of the same questions.

[Ozzie Zehner, Author, Green Illusions] I mean, I thought that solar
and wind were probably very good solutions.

I mean, it wasn't really even that long ago.

One of the most dangerous things right now is the illusion
that alternative technologies, like wind and solar,
are somehow different from fossil fuels.
What I hear a lot of times is solar cells
are made out of sand.

[Salesman] Have you ever thought about solar panels?
The main ingredient

that makes them work is silicon, or sand.

[Salesman] This is the raw material chips

are made of, sand.

[Ozzie Zehner, Author, Green Illusions] They don't use sand at all.
I'll show you what –
So this is one of the ingredients,
it's actually mined quartz.

[Rocks clattering]

[Rock exploding]

[Announcer] Spruce Pine, North Carolina,

regarded as the finest source of high purity quartz
in the world, for semiconductor, solar,
and communication applications.

[Ozzie Zehner, Author, Green Illusions] You can't use sand because sand has too many impurities.

So you start with very high quality quartz,
and a very high quality coal. And then you put
those two together into an arc furnace, and you melt them.

[Saleswoman] The quartz is then melted with coal
in a large furnace, at temperatures of up to 1,800 degrees.

[Ozzie Zehner, Author, Green Illusions] And so you need more coal to do that.
I'll get another coal out.
When we melt these together,

we get silicon metal and carbon dioxide.
And the carbon dioxide just goes off.
And you got rid of the carbon,
and you left the silicon metal.
This is not clean coal. [laughing]

[Jeff] Not clean coal.

Ozzie Zehner said it was an illusion
that renewables were replacing coal, or any fossil fuel.
Environmental groups continue telling a different story.

[Michael Brune, Executive Director, Sierra Club] We've already seen more than 25%
of the U.S. coal fleet has already either retired,
or is on a schedule to retire.

[Jeff] Coal plants were closing, but Ozzie explained
that well meaning people were being misled.

[Reid Gardner Power Plant, Nevada]

[Man] NV Energy's now going to go ahead and shut down the plant,
and go with renewable,
one of the largest solar plants.

And that is going to happen right behind me.

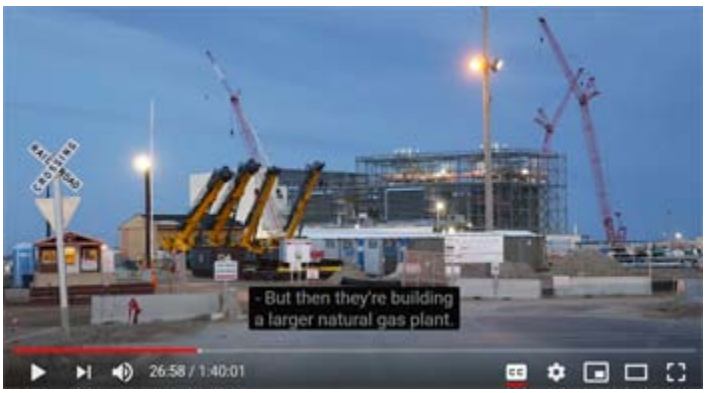
[People clapping]

[Ozzie Zehner, Author, Green Illusions] Since you can't replace a coal plant with solar,
they're actually replacing the coal plant
with two natural gas plants.
And natural gas is a fossil fuel.

This is the Las Vegas Co-Gen natural gas plant.
This is one of the facilities
that's replacing the coal plant that's being shut down.

This is the Sun Peak generating facility.
This is the second natural gas plant
that was used to replace the coal plant.
And you hear the same story in Iowa.

[NewsWoman, Covering the Corridor] Instead of using energy generated
by coal-fired power plants,
the solar farm will now avoid
about 2.1 million pounds of carbon pollution.



[Ozzie Zehner, Author, Green Illusions] But then they’re building a larger natural gas plant.
This is a 650 megawatt natural gas plant.
That’s four times more megawatts

than the coal plant over there that it's replacing.
And they're doing the same thing in North Carolina,
which was that subject
of that Years of Living Dangerously series.

[YEARS OF LIVING DANGEROUSLY]

[Mary Anne Hitt, Director, Beyond Coal] Duke Energy operates a coal plant right
outside of Asheville that is the biggest source
of climate pollution in western North Carolina.
And we are working to retire that plant,

and replace it with clean energy.

[Ozzie Zehner, Author, Green Illusions] But what they don't tell you is

that we’re also building a larger natural gas facility.

[Duke Energy Spokesman] So we’ll be retiring a two-unit 376 megawatt coal plant. We’ll invest $750 million

to build a state-of-the-art natural gas plant.

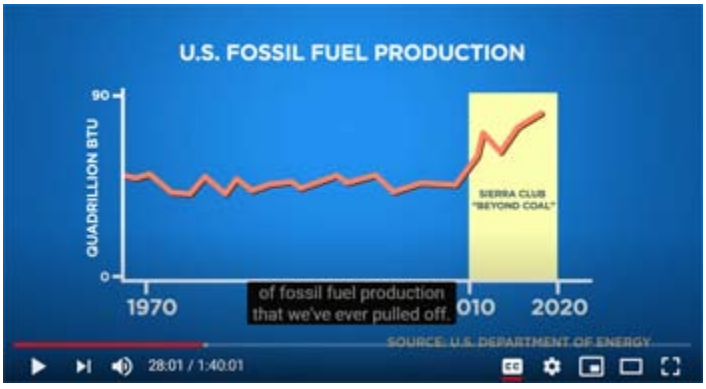
[Ozzie Zehner, Author, Green Illusions] When Michael Brune stands up and talks about clean energy, he’s using solar cells and wind turbines.

[Michael Brune, Sierra Club] This is the new world [pounding on his heart]: 100% clean energy.

[Ozzie Zehner, Author, Green Illusions] When Michael Bloomberg stands up and says,
"Cleaner energy," he's talking about natural gas.

[Michael Bloomberg] Create cleaner energy, solar, wind and natural gas.

[Ozzie Zehner, Author, Green Illusions] In fact, the Sierra Club's Beyond Coal campaign actually coincides with one of the largest expansions



of fossil fuel production that we've ever pulled off.
Most of that being natural gas.

[Jeff] Ozzie's assertion that renewable were not replacing fossil fuels,
if true, would upend all of our assumptions
about green energy and what was going to save us.

[Tranquil piano music]

[InterSolar Expo: The World's Leading Exhibition Series for the Solar Industry, San Francisco, California]

[Jeff] What would happen if I asked the same question to industry insiders?

Like, where do solar panels come from?

[Salesman] Well, you do have to start with a mine [PV Silicon]

[Jeff] Wait till you see my —

[Salesman] [Laughing]

[Jeff] Or, what's stopping us from running the world on 100% solar and wind?

[Salesman] Well, intermittency is one of the major challenges.

[Saleswoman] Good stability.

[Salesman] The sun’s everywhere, except when it’s not there.

[Adriann McCoy, Electrical engineer] There’s a lot of developers that were flocking
to California, wanting to connect their solar farms
and wind farms.
And the utilities would turn to me and my team
to help them look at what the impact to their grid would be.

[Jeff] When we add solar cells,
or wind turbines to a grid,
do we get to shut off a coal plant?

[Adriann McCoy, Electrical engineer] That’s certainly the goal. The problem is,
or the different is that, renewable are intermittent.
All of a sudden, a cloud cover could come over,
and your solar generation could drastically decrease.
And if you don’t have something else there
to meet whatever the load is at that moment,
then you’re going to have power outages.

[Jeff] So we don’t get
to turn a fossil fuel power plant off
when the sun is shining or the wind is blowing?

[Philip Moeller, Federal Energy Regulatory Commissioner] Well, it’s not that easy.
We need to be able to back up that power

to keep the system steady all the time,
so it doesn’t collapse.

Most likely that’s through fast-acting gas plants,
but also what we call the base load plants,

either nuclear or coal that are on all the time,
but that maybe can be dialed down during the day,
and dialed up when demand starts rising.

[Jeff] Does it affect the efficiency
to turn fossil fuel power plants on and off?

[Philip Moeller, Federal Energy Regulatory Commissioner] Oh, yeah.

They don’t like to be dialed up and down.
It does make, that’s wear and tear for them.

[Adriann McCoy, Electrical engineer] Turning them on, turning it off -- there’s energy used
and lost. And any time, kind of like when you turn on your car and off,
you use a little extra gas to get it turned on.
I do still think you have

to maintain a base load of some kinds.

[Jeff] What's the solution then?

[Salesman] You need energy storage.

[Philip Moeller, Federal Energy Regulatory Commissioner] Without storage, you can't count on it.

[Adriann McCoy, Electrical engineer] If you can store the energy that's created off
of things that are intermittent, like solar and wind,
if you can store that, now you're reducing your need
for a base load.

[Jeff] But would adding storage,
like batteries, increase the carbon footprint?

[Salesman] Yeah, absolutely.

In a big way, actually.
And as more energy storage gets on the grid,
it has a mass scale implication.

[Piano music]

[Jeff] When I looked up how much battery storage

there is, it was less than one-tenth
of one percent of what's needed.
In a couple of years, they begin to degrade,
and need to be replaced a few years later.
I learned that the solar panels don't last forever, either.

[Salesman] Some solar panels are built to last only 10 years.

So it's not as if you get this magic free energy, right?
I don't know that it's the solution,
and here I am the salesman, helping to sell the materials
that would go into photovoltaics.

***

[Jeff] And so to overcome profound limitations
of solar and wind, rarely discussed in the media,
a new generation of technology was rising,
in the California desert.

[Newswoman, CSpan] What is this?

[Joseph Desmond, BrightSource Energy Marketing & Government Affairs Senior Vice President] What we're using is a field of mirrors
to focus sunlight onto a tower.
The power plant itself, at 377 megawatts,

will be the largest of its kind in the world.

[Arnold Scwarzenegger] This will become the biggest solar plant in the world!

[Crowd clapping and cheering]

[Arnold Scwarzenegger] There's some people that look out in a desert,
they see miles and miles of emptiness.
I see miles and miles of a gold mine.

[Ivanpah Solar Array, Mojave Desert, California]

[Jeff] But this next generation

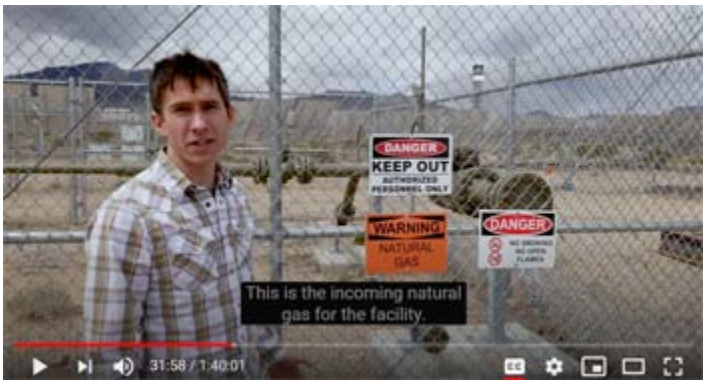
has a fossil fuel secret, too.

[Ozzie Zehner, Author, Green Illusions] This solar facility burns natural gas pretty much

every morning in order to get it started up.

[Jeff] How long do they have to burn it for it?

[Ozzie Zehner, Author, Green Illusions] Hours, usually.



This is the incoming natural gas for the facility.
This plant would work about as well without natural gas
as I would without coffee in the morning. [laughing]

[Jeff] Or maybe how you would be without food.

[Ozzie Zehner, Author, Green Illusions] Without food, yeah. [laughing]

They have to file for acid rain permits, permits for nitrous oxide emissions.
They have to apply for carbon offset permits,
because they're producing carbon dioxide here.
So they have to offset that.

[ACID RAIN PERMIT, Issued to Ivanpah Solar Electric Generating System]

[EXTERNAL COMBUSTION ENGINE: Ivanpah 1]

[Ozzie Zehner, Author, Green Illusions] The whole thing is built using fossil fuel infrastructure,
from the concrete, to the steel, to the mirrors,
to the backing on the mirrors.

And the sun is renewable, but the solar arrays are not.

[Jeff] Oh, come on.
There's got to be something renewable.
Glass is renewable.

[Ozzie Zehner, Author, Green Illusions] Glass. [laughing]
Glass is not renewable.

[Jeff] Iron's renewable.

[Ozzie Zehner, Author, Green Illusions] [Laughing]

[Jeff] Aluminum?
That's renewable.
I recycle my soda cans.
[laughing] I know it's renewable.

[Ozzie Zehner, Author, Green Illusions] [Laughing] Yeah, the problem with all of these materials is
that it takes an incredible amount of energy to mine
and process all of the materials
that go into building something like this.

You use more fossil fuels to do this
than you're getting benefit from it.

You would have been better off just burning the fossil fuels

in the first place, instead of playing pretend.

[Jeff] That green energy has nothing
to do with fossil fuels is apparently a story

only meant for you and me.
Here is Robert F. Kennedy, Jr.,
speaking to oil and gas company insiders.

[Robert F. Kennedy, Jr.] It’s a combination solar gas plant.
It’s a turbine that we just take from a gas plant,
suspend it from a big scaffolding, a tower,
and surround it by giant mirrors in the desert.
The plants that we’re building, the wind plants

and the solar plants, are gas plants.

[Jeff] What kind of game is being played?

[Ozzie Zehner, Author, Green Illusions] [Gusting wind] Well, we're basically just being fed a lie.
For instance, you'll hear
about Germany running on wind and solar.

[Man, ENERGY: THE GERMAN WAY] 35% right now.

[Michael Brune, Executive Director Sierra Club] 50% of their power.

[Bill McKibben] There were days this past summer

when the Germans were generating 80%
of their power from the sun.

[Ozzie Zehner, Author, Green Illusions] But Germany

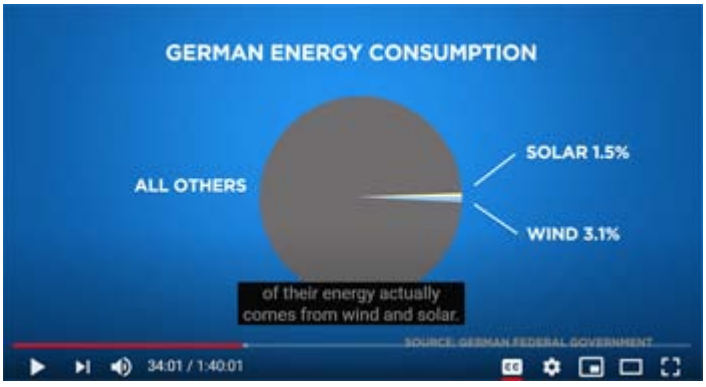
is still Europe’s largest consumer of coal.

[Newswoman] But if the most coal is extracted in this region,

then the region must also be the largest source of CO2.

[Engineer] Uhh.

[Ozzie Zehner, Author, Green Illusions] Only a small fraction



of their energy actually comes from wind and solar.
In fact, Germany just built a large terminal

to import natural gas from the United States.

[TESLA GIGAFACTORY]

[Ozzie Zehner, Author, Green Illusions] Elon Musk, the founder of Tesla, when he announced his Gigafactory battery plant,

he said it would power itself with wind and solar energy.

[Elon Musk] Through a combination of geothermal, wind and solar,

it will produce all the energy that it needs.

[Ozzie Zehner, Author, Green Illusions] But in fact, it has lines connecting it to the same electrical grid that we're all connected to.

[TESLA GIGAFACTORY, Sparks, Nevada]

[Fast-paced dramatic music]

[Gigafactory Substation]

[Ozzie Zehner, Author, Green Illusions] Electric cars, wind turbines,
and solar panels use rare earth metals.
And in fact, the rare earth mine is
right up the street from here.

[Mountain Pass Rare Earth Mine]

[Ozzie Zehner, Author, Green Illusions] In mining these deep deposits, about 90%
of what they pull up out of the ground contains uranium,

thorium, and low level other radionuclides:
radioactive waste, that has to be disposed of somehow.

They kind of turn it into a paste, and spread it
over the desert floor.

[Jeff] Well, that's good for the desert, right?

[Ozzie Zehner, Author, Green Illusions] Yeah, the desert loves that. [Laughing]

Tesla's electric cars are built with aluminum,
which uses eight times more energy
to manufacture than steel.

[Lithium-Ion batteries Contain 10X More Graphite Than Lithium]

[Ozzie Zehner, Author, Green Illusions] They use lithium, which also relies on toxic mining.
And even more graphite, which is one
of the rarest forms of carbon.

[Tesla battery plant will need 6 new flake graphite mines, by Simon Moores, Andrew Miller, Marc 7, 2014, INDUSTRIAL MINERALS]

[Ozzie Zehner, Author, Green Illusions] In fact, the investors wanted

to open several new graphite mines
after Tesla announced the Gigafactory.

Apple claims to be 100% renewable.

[Apple Spokeswoman] We never stop thinking about what's best for the planet.

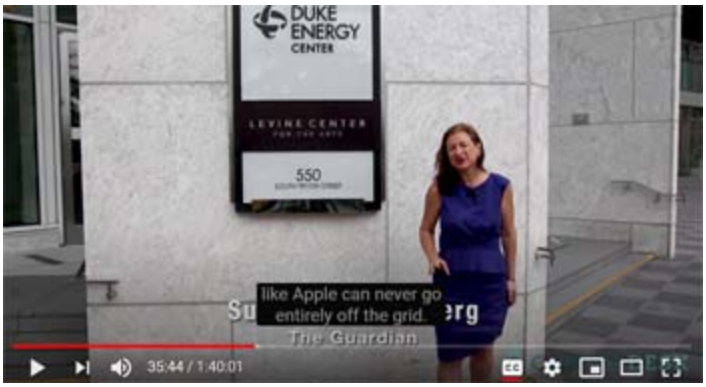
We now run Apple on 100% renewable energy.

All of our facilities, worldwide.
[Clapping and cheering]

[Ozzie Zehner, Author, Green Illusions] And they did chop down a forest
to put up solar panels near their North Carolina plant.

But they didn’t disconnect from the grid, and they can’t.

[Suzanne Goldenberg, The Guardian] Duke says energy hungry companies,



like Apple, can never go entirely off the grid.

[Thomas Williams, Duke Energy] They’re still hooked up to our grid.

[Fast-paced energetic music]

[Google Officially Hits Its 100% Renewable Energy Target]

[General Motors Texas Facility Now 100% Powered by the Wind]

[Chicago Set to Become First Major US City to Be Powered 100% By Renewable Electricity]

[EON Switches All UK Customers to 100% Renewable Power]

[New Jersey 100% Renewable Energy Plan –- More Fiber, Less Fluff]

[Ozzie Zehner, Author, Green Illusions] Despite all the claims,
I haven't found a single entity anywhere in the world
that's running on 100% solar and wind alone.

[Suspenseful music]

[Jeff] It turns out, you don't just need fossil fuels
to run a place like Ivanpah, you need the devil himself,

or in this case, themselves.

[David Koch / Charles Koch]

[GUARDIAN INDUSTRIES CORP. SCIENCE AND TECHNOLOGY CENTER]

[Ozzie Zehner, Author, Green Illusions] All of the mirrors that you see there are built
by the Koch brothers, Guardian Glass Industry,

a company that they control.

Koch Carbon creates a lot of the inputs that are used
to create the cement, and the concrete, and the steel.

[KOCH-GUTSCH]

[Ozzie Zehner, Author, Green Illusions] And not only that, they build the plants that builds polysilicon for solar cells.
They have, actually,

their own solar line, called Solar Molex.
From every step of the process, the Koch brothers are there.

[Jeff] But they're the evil doers.

[Ozzie Zehner, Author, Green Illusions] Yeah. [laughing] The funny part is

that when you criticize solar plants like this,

you’re accused of working for the Koch brothers.
[Laughing]

That’s the idiocy in all of this.
This absolutely cannot extend civilization’s life.
This relies on the most toxic and industrial processes
that we’ve ever created.

***

[How Solar Cells & Wind Turbines Are Made
and Electric cars too!]

[Drum rolling]

[Small triangle dinging]

[Pulsating dramatic music]

[Silicon]

[Music building in intensity]

[Polymers]

[Silver]

[Up tempo dramatic music]

[Cobalt]

[Graphite]

[Rare Earths]

[Music building]

[Coal]

[Steel]

[Music tempo increasing]

[Nickel]

[Sulfur Hexafluoride

23,000 times worse than CO2]

[Copper]

[Concrete

third leading cause of C02 emissions]

[Lithium]

[Tin]

[Phosphorus Oxychloride]

[Gallium Arsenide]

[Indium]

[Ammonium Fluoride]

[Cadmium]

[Lead]

[Ethylene Vinyl Acetate]

[Molybdenum]

[Neodymium]

[Sodium Hydroxide]

[Dysprosium]

[Phosphine]

[Chlorine]

[Hydrofluoric Acid]

[Petroleum]

[Tesla assembly plant]

640 foot (195 meter) tower including receiver


38:35 / 1:40:01


38:45 / 1:40:01


38:47 / 1:40:01


38:51 / 1:40:01

Cold salt tank / Hot salt tank
Molten salt receiver]

[Music ending dramatically]

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[Man] The beauty of a solar facility,
and particularly this technology,

is that it is so environmentally benign.

[Roaring of large machinery]

[500 year old yucca plant, Ivanpah Solar]

***

[Jeff] I, too, had once thought
deserts could be sacrifice zones.

[Powerful drum based music]

[Jeff] I was wrong.

Deserts are not dead.

They are, in fact, full of ancient life.

[Powerful music]

[Jeff] In the desert, the Joshua tree stands, waiting,

waiting for the giant ground sloths
and the mammoths that shall never return.

The Joshua tree depended on the giant mammals
to reach up high and eat their seeds,
and thus disperse the Joshua tree.

[Mystical vocal music]

[Jeff] But now, stranded in time and space,

the Joshua tree awaits a new fate:
to be sacrificed
in the name of progress.

[Newsman, 23 ABC] [AROUND THE COUNTY. JOSHUA TREE CONCERNS. NEIGHBORS UPSET OVER TREES GETTING CHOPPED DOWN.] Joshua trees are torn down to make way for solar projects.
23 ABC's Cassie Carlisle travels
to the Mojave Desert to talk to neighbors.

[Cassie Carlisle, 23 ABC] They're not your usual tree.
More like something from fiction,
but these Joshuas are causing quite an uproar.

[Man] No, it makes me sick that they're clearing them off,

killing them real quick.
And now they're grinding them up,

getting rid of all the evidence.

[Powerful dramatic music]

***

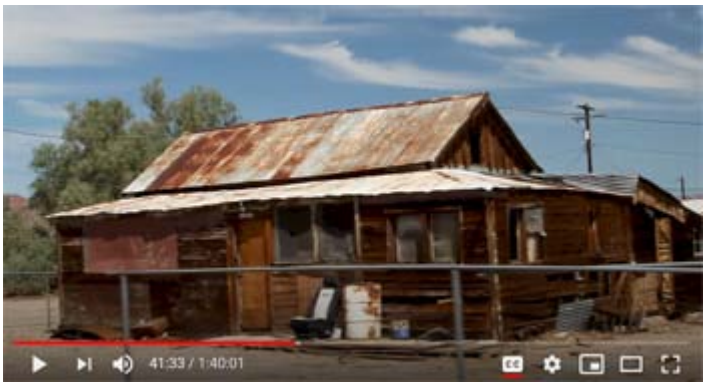
[Jeff] Not far from Ivanpah Solar,
Daggett, California, was home
to several generations of solar arrays,

including some of the first on the planet.

["SEGS" Solar Array, Daggett, California]

[Loud machinery]

[Jeff] Ozzie and I thought we would take a trip
to see where it all began.



[Wind blowing loudly]

[Ozzie Zehner, Author, Green Illusions] This is one of the sunniest places on the planet, really.
And it's the center of the solar industry.
And they've been building, and dismantling,

and building arrays here for about 40 years.

[Man's voice on loudspeaker]

[Jeff] Then we happened to run
into the mayor of Daggett.

[Mayor of Daggett] And then the solar plants out there, my husband,
back in, I'd say '83, '84, they worked out there building
that solar plant out there.

[Ozzie Zehner, Author, Green Illusions] Yeah, the SEGS.

[Mayor of Daggett] And everybody here worked.

[Ozzie Zehner, Author, Green Illusions] How's that hold up?
Is it, are the jobs still here?

[Mayor of Daggett] No.

Jobs went bye-bye.
They have their normal people that run the plant,
plant operators and stuff like that,
the big wigs, you know, they have that.
Where that energy's going, I don't know.

[Jeff] Were you originally optimistic
that the solar would bring more jobs,
and development for people?

[Mayor of Daggett] Yeah, we really did, we really did.
A lot of things come into this town; they come and go.

They go really fast.

[Loud wind blowing]

[Ozzie Zehner, Author, Green Illusions] Do you see this?

[Jeff] Then Ozzie and I discovered

that the giant solar arrays had been razed to the ground.

[Ozzie Zehner, Author, Green Illusions] Oh, my God!

[Wind whooshing]

[Jeff] I mean, this was huge.

["SEGS" Solar Site]

[Jeff] It suddenly dawned on me what we were looking at:
a solar dead zone.
Look at the blowing sand.

[Ozzie Zehner, Author, Green Illusions] Yeah.

There's sand everywhere.

There's sand dunes forming around this area.

[Jeff] Wow.

[Humming of solar factory]

[Solemn music]

[Jeff] So after all the mining,
the fossil fuels,
the toxins,
the environmental destruction,
here's what happens next.

[Somber music]

[Jeff] Only a few years after it was built,
things at Ivanpah began to fall apart.

Broken mirrors littered the desert.

[Music intensifying]

[Jeff] Yes, these giant solar
and wind technology installations may last

only a few decades,
then tear it down and start all over again --
if there is enough planet left.

[Somber music]

[Jeff]It was becoming clear that
what we have been calling green, renewable energy,

and industrial civilization, are one and the same.

Desperate measures not to save the planet,

[Thunder crashing]

[Jeff] but to save our way of life.

[Somber music]

[Jeff] Desperate measures, rather than face the reality that
humans are experiencing the planet's limits,

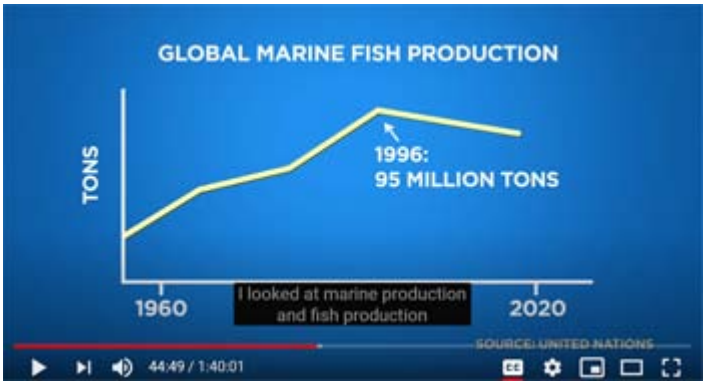
all at once.

***

[Steven Running, Ecologist, University of Montana] Every different perspective I look at

and imagine, well, we could do more of this,
or go to a larger area, or use more of that.

Well, it turns out, there isn't more.



I looked at marine production, and fish production, and found that peaked 20 years ago.

More and more of what we eat is from fish farming.

The current acres of actively farmed land,
that has peaked also.

The rivers are already being irrigated
to about the limits of what they can sustain.

The Colorado River doesn’t get to the ocean anymore.
Well, then you start looking at ground water --
the southern great plains --

and I think they can almost predict when they will run out
of ground water. And it's in a decade or two.

[Somber music]

[Steven Running, Ecologist, University of Montana] A human vulnerability at the global scale,
that any one of them we could maybe compartmentalize,

but we're seeing them propagating
across topic after topic of society and the earth system.
And I don't think the people

in charge are near nervous enough.

***

[Jeff] Though each of them takes climate change seriously,
every expert I talked to wanted
to bring my attention to the same, underlying problem.

[Richard Heinberg, Author, The End of Growth] They're too many human beings using too much, too fast.

[Steven Churchill, Anthropologist] As a global community, we really have got

to start dealing with the issue of population.

[Nina Jablonski, Anthropologist, Penn State University] Population growth continues to be the, not the elephant, but the herd of elephants in the room.

[Jeff] Can a single species
that's come to dominate an entire planet –

[Steven Running, Ecologist, University of Montana] Be smart enough to voluntarily limit its own presence?

[Jeff] Is there any precedence for that in nature?

[Steven Running, Ecologist, University of Montana] [Laughing] Wow.

[Nina Jablonski, Anthropologist, Penn State University] We have to have our abilities to consume reined in.
Because we're not good at reining them in
if there are seemingly unrestrained resources.

[Steven Churchill, Anthropologist] Species hit the population wall a lot, and then they crash.
I mean, that's a common story in biology.
If that happens to us, in a way,
it's the natural order of things.
And I don't think we're going to find a way out of this one.
I don't.

[Jeff] As a scientist, what leads you to that conclusion?

[Steven Churchill, Anthropologist] Well, because right now, a large percentage
of that number is supported by industrial agriculture,
which is heavily subsidized by oil.
And it's not sustainable.
And there's no going back,
without seeing some sort of major die-off in population.
There's no turning back.

[Jeff] What's the thing that nobody ever asked you
that you want --

[Richard Heinberg, Author, The End of Growth] [Laughing]

Nobody's ever asked me if I'm scared.

[Jeff] Yeah.

[Richard Heinberg, Author, The End of Growth] And I am.
I actually am scared.
I lose sleep over all of this.

[Somber music]

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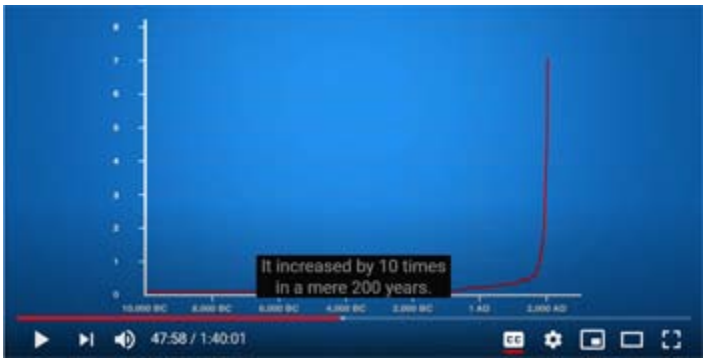
[Jeff] It took modern humans tens of thousands
of years to reach a population of 700 million,
and then we tapped into millions of years
of stored energy, known as fossil fuels.
Our human population exploded.



It increased by 10 times in a mere 200 years.
Our consumption has also exploded:
on average, ten times per person,
and many times more in the Western world.
You put the two together,
the result is a total human impact 100 times greater
than only 200 years ago.

[Mellow music]

[Jeff] And that is the most terrifying realization I have ever had.

We humans are poised for a fall from an unimaginable height.
Not because of one thing.
Not climate change alone.

But all the human-caused changes
the planet is suffering from.

[Slow tempo music]

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[Jeff] So why are bankers, industrialists,
and environmental leaders only focused
on the narrow solution of green technology?
Is it the profit motive?
And why, for most of my life, have I fallen
for the illusion green energy would save us?

[Waves lapping on shore]

[Squeaking door]

[Jeff] Clearly, to answer this question,
I needed professional help.

[Dark Ages America]

[Jeff] I'll just be honest with you about my dilemma.
You can be my clinical social psych [Laughing]
It's like, the right has religion,
and they have a belief in infinite fossil fuels.
Our side says, "Oh, it's going to be okay,
we're going to have solar panels.

We're going to have wind towers."
As soon as I heard you talk about our denial of death,

I'm like, "Could that be it?
Could it be that we can't face our own mortality?
Could we have a religion that we're unaware of?"

[Sheldon Solomon, Social Psychologist, Skidmore College] Absolutely.

I think you've hit the proverbial nail on the head.
What differentiates people from all other forms
of life is that, we're not only here,
but that we know that we're here.
If you know that you're here, then you recognize,
even dimly, that you'll not be here someday.
And on top of that, we don't like that we're animals.
So we don't like that we're going to die someday.
We don't like it that you could walk outside
and get hit by a fucking meteor.
What human beings did back
in yesteryear, is to envelop ourselves

in culturally constructive belief systems.
You know, call them cultures,
call them world views, schemes of things --
whatever you call them, every human community has them.
Every culture has an account of the origin of the universe.
Every culture has a prescription
for how you're supposed to behave while you're here.
And every culture offers its denizens hope of immortality,
either literally or symbolically.
Then the question is, well, what happens when you bump
into people who don't share those beliefs?
Whether you know it or not, whether you like it or not,
that's undermining the confidence
with which you subscribe to your own views,
and exposing you to the very anxiety

that those beliefs were constructed
to eradicate in the first place.
If we're to make progress, whatever that word means,
or even to persist as a form of life, we're going to need
to radically overhaul our basic conception
of who and what we are, and what it is that we value.
Because the people that you referred to earlier,
both on the left and the right,
that think we're going to be able to discover more oil,
or solar panel ourselves into the future,
where life will look pretty much like it does now,
you know, only cleaner or better.

[Jeff] Either with more oil or greener oil.

[Sheldon Solomon, Social Psychologist, Skidmore College] Or both.
I think that's just frankly delusional.

[Jeff] What I'm hearing is that, if I haven't come to grips
with my own anxiety about death and life,
and presented with a reminder of that, I'm highly likely
to make some tragic decisions for the community.

[Sheldon Solomon, Social Psychologist, Skidmore College] Yes.
The only solution in principle is, as Albert Camus put it,
he said, "There's only one liberty, to come to terms

with death; thereafter anything is possible."
I find that downright inspiring.

[Jeff] As for our environmental leaders,
who dwell in comfortable illusions,
how tragic of decisions were they capable of making?
I was about to find out.

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[Humming of machinery]

[Burlington, Vermont]

[Leaves crunching]

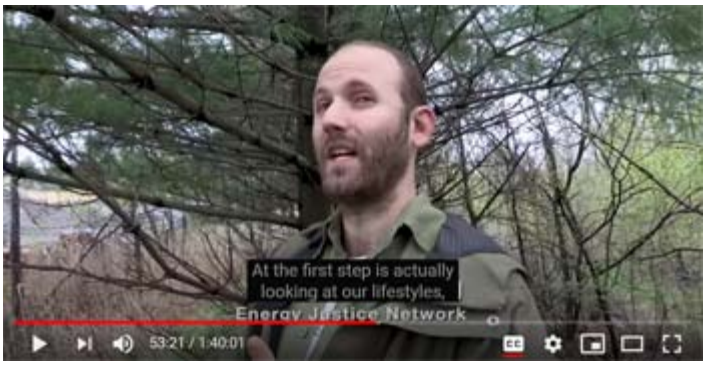
[Josh Schlossberg, Energy Justice Network] They claim they're just using forest residues,
but actually a great deal of what the McNeil facility,
and lots of biomass facilities burn, is whole trees.
As you can see by this pile that's stacked right
outside of the facility, these are trees.

[McNeil Biomass Power Plant]

[Jeff] It turns out that the biggest source
of green energy in Vermont is something called biomass:

burning trees to create electricity.

[Josh Schlossberg, Energy Justice Network] This is definitely not the way.



And the first step is actually looking at our lifestyles,
and how we can reduce our energy consumption.

This is all the ash that has varying levels of toxic metals,
a great deal of radiation,
because these trees have been absorbing --
Oops, there's a —

[Machinery humming]

[Guard] You're in forbidden territory there.

[Jeff] Are we?

[Security Guard] Yeah. May I ask both of you to come up to our office, okay?

[Josh Schlossberg, Energy Justice Network] Is that something you're interested in doing?

[Security Guard] It's not an interest. You've got five seconds, or I'm calling 911.

[Jeff] Okay.

[Security Guard] [On telephone] We've got two individuals here –-

[Loud crunching footsteps]

[Security Guard] Police will be down here in about two minutes.

[Josh Schlossberg, Energy Justice Network] You asked us to leave,
and we're doing so.

[Security Guard] I'm not asking you to leave.

I’m asking you to come up to the office.

[Josh Schlossberg, Energy Justice Network] Okay, thanks for the offer.
Maybe next time.

[Electronic beeping]

[Machinery humming]

[Josh Schlossberg, Energy Justice Network] You got everything here.
You have the number one polluter in the state
that people think emits magical fairy dust
from the smokestack.
The reality is what you have is a facility
that burns 400,000 green tons a year of trees.

This facility burns thirty cords of wood per hour.

[Jeff] That's a hell of a lot of wood.

[Josh Schlossberg, Energy Justice Network] And on top of that,
it actually burns natural gas, as well.

[Jeff] And to think you would have to have 10
of these to replace one average coal-fired power plant.

You know, it's just not going to work.

[Josh Schlossberg, Energy Justice Network] It's just nuts.
It takes a great deal of fossil fuels
to cut down all these trees,
to truck them in, to use the big machinery,
to dump the wood chips everywhere.
So the idea that somehow this is not anything to do
with fossil fuels just doesn't even make any sense.
It couldn't happen without fossil fuels, in fact.

[Jeff] How did the environmental groups
get pulled into this?

[Josh Schlossberg, Energy Justice Network] Obviously, the main factor is delusion.
A lot of these environmental groups have been saying
that all we have to do is, for instance,
switch our fossil fuel economy over

to a few solar panels and windmills,
and we can continue living life as normal.
Some of the environmental groups have been,
for years, touting facilities like this saying that,
number one, it's carbon neutral,
that this will actually help us fend off climate change,
because there are no CO2 emissions.

It ACTUALLY emits over 400 thousand tons
per year of carbon dioxide.
"Oh, but once we cut them, they'll grow back."
They'll grow back over a period of decades to centuries.
But if we cut every tree in the United States,
it would be able to power the country for a year.

Then what happens when those trees are gone?

***

[Wind blowing]

[L’Anse, Michigan]

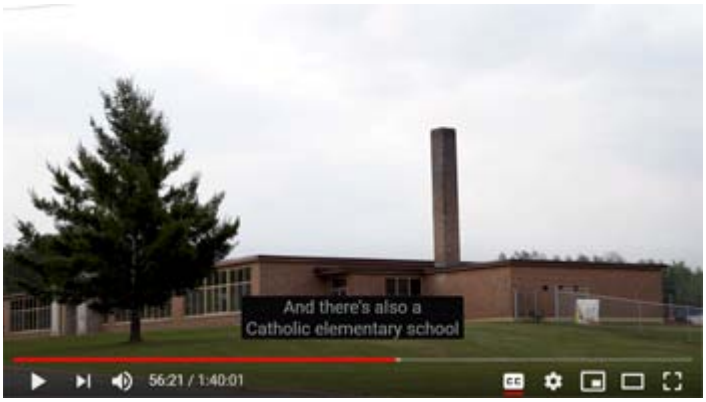
[Jeff] I discovered biomass plants
were not even always biomass plants.

[Catherine Andrews, Citizen Activist] It’s actually a solid waste incinerator

that is posing as a biomass plant.
The impact in this community is severe.

The plant is right next to a Head Start school
for preschool kids.
There is Green Hill Manor, and

that's an assisted living senior residence.



And there's also a Catholic elementary school
right next door.

[Jeff] How do you know they're polluting?
Can you see it ever?

[Catherine Andrews, Citizen Activist] We can see it.
The snow at the elementary school,
and at the preschool, is covered with black,
some kind of black soot.

We just had it analyzed,
and it came back as mostly tire chips.

They have to add tire-derived fuel
to raise the temperature of the fire,
because anybody who has tried to burn green wood, or wet wood,
knows that it doesn't burn very well.

[Jeff] But this biomass plant had
yet another surprise.

[Catherine Andrews, Citizen Activist] They admit that they burn 20.1 tons per hour

of creosote-treated railroad ties.
Besides that, they are allowed to burn 500 pounds per hour
of PCP-treated railroad ties.
These are shipped in from Canada.

It’s not green, it’s not renewable, it’s not carbon-neutral,
it’s not anything that they claim it to be.
Yet, they got a $11.5 million grant

because it was classified as renewable.
The plant owner told us
that they were having trouble getting enough wood chips.
And he even asked us if we had any scrap wood
where we lived, would we call the plant
and let them know, so they could come up and pick it up.

[Jeff] We’re not talking
about some old industrial site --
we’re next to one of the most beautiful places in the world.

[Catherine Andrews, Citizen Activist] We are next to Lake Superior. This is Keweenaw Bay.

This is actually L'Anse Bay -- it's part of Keweenaw Bay.
It's Lake Superior, our lake [voice breaking]
So it's a very sacred place to many people.

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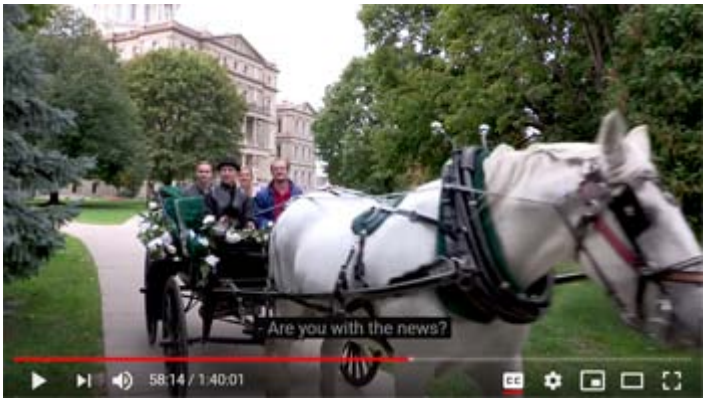
[Clopping horse feet]



[Woman] Are you with the news?

[Jeff] No, there's supposed
to be a climate change rally.

[Woman] Oh.

[Lansing, Michigan]

[Group chanting]

[Jeff] Michigan State University students,
inspired by 350.org, were holding a rally

for the clean energy future they'd been promised.

[Crowd shouting and cheering]

[Boy] Imagine when I found out

that it is the largest on-campus coal plant in the nation.

The goal is to get the whole world moving
beyond fossil fuels.

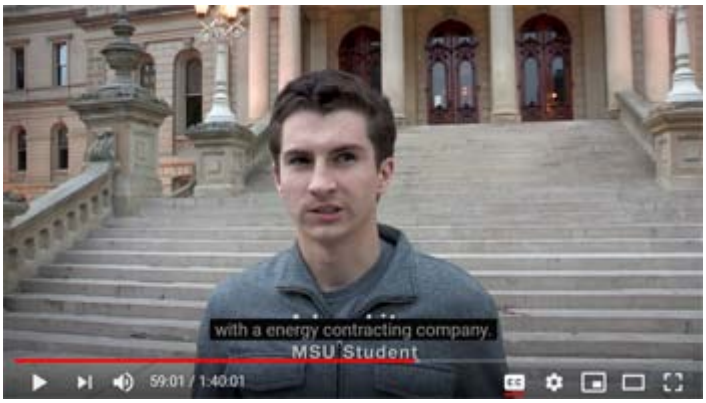
[Crowd cheering and clapping]

[Girl] Who wants to do a 350 sign on the steps?

[Students] [Raise hands and cheer]

[Jeff] But it turned out Michigan State had a form
of green energy in mind the students did not support.

[Adam Liter, MSU Student] The university contracted



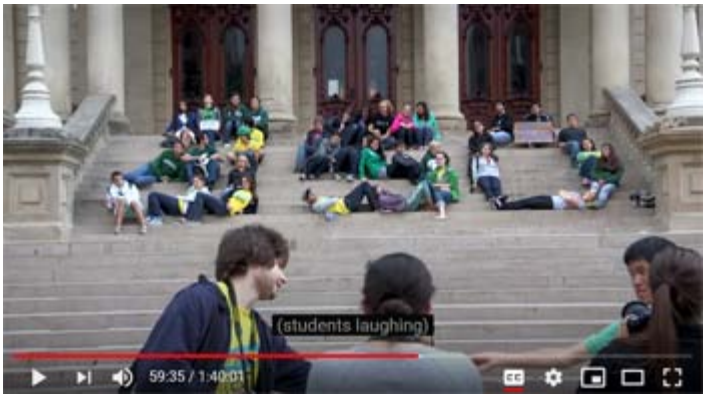
with an energy contracting company.

They put together like a modeling tool.
The first two or three months
that the steering committee was using this modeling tool,
it didn't even contain data for wind or solar.
So there was –-[voice fading out]

[Jeff] Adam told me they were planning on
substituting coal burning with biomass burning.

[Adam Liter, MSU Student] But the permit that is currently being considered
by the state is a permit for 24,000 tons of biomass --
I think per year.
And the plan is to do that in all four boilers.
Unfortunately, the steering committee considers
biomass renewable at the moment.

Which we're not happy with.



[Students laughing]

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[Jeff] Michigan State wasn't the only university
to go green.

[Man] I'm happy to announce that Carolina will be going

beyond coal in the next decade.
Now, as we begin to wean ourselves off coal, we are about
to try another alternative energy source: biomass.

[Jeff] And who was here
to help the University of North Carolina switch
from burning coal to burning trees?

[Bruce Nilles, Director, Sierra Club "Beyond Coal"] So it is a great pleasure to be here today
to celebrate the remarkable step
that the university is taking to say,
"We're going to do our part."

[Solemn music]

[Jeff] A remarkable step, indeed.
We're to do our part by getting out
of bed with coal companies,
and into bed with logging companies?
Where did the idea of colleges going green
by burning trees come from, anyway?

[Middlebury, Vermont]

[Jeff] A little college called Middlebury, in the heart of Vermont.

Open Letter to the President and Trustees
by Steven C. Rockefeller
The Middlebury Campus: Middlebury College's only student-run newspaper
October 12, 2015 / October 21, 2015

For five decades Middlebury College has been an outstanding leader in promoting environmental studies and international studies and in adopting sustainable operating procedures. Laurie Patton has shared with me her commitment as the College's new president to build on and extend this admirable record of leadership. Toward this end, she would like to work in partnership with trustees, student groups, and concerned faculty and staff in an effort to identify next steps. This is a sound approach that all in the College community can support. Regarding next steps, this letter highlights one especially significant opportunity. We are at a pivotal moment in the national and international debate over the urgent need for a transition to a clean energy economy. Middlebury has the ability to influence the outcome of this critical debate by taking a public stand with a commitment to join the growing fossil fuel divestment movement. A decision by the College to divest should be viewed primarily as an act of moral and educational leadership at a time when industrial-technological civilization has lost its way and must reinvent itself.

I write this letter as a former Middlebury faculty member who taught at the College for close to three decades, served as dean of the college in the Olin Robison administration, and chaired the College's Environmental Council during the mid-1990s. My courses included the study of environmental ethics, global ethics, and religion and ecology. I also write as a trustee and former chair of the board of the Rockefeller Brothers Fund (RBF), an international grant making foundation that has joined the fossil fuel divestment movement as part of an effort to align its investment policy with its mission and program goals. The Divest Middlebury campaign has set forth a compelling argument, and I write in support of the students who are leading this important initiative.

Scientists working in the field of climate change have turned on the alarm bells.

Human development practices, especially the burning of fossil fuels, are altering the conditions on Earth that have made possible the development of civilization over the past ten thousand years. If humanity does not act with all deliberate speed and reduce its global greenhouse gas emissions by 80% by 2050, the consensus among scientists is that the ecological, economic and social damage and disruption could be catastrophic and irreversible. The most vulnerable are the hundreds of millions of people living in poverty, but no one's life will be unaffected. Already the negative effects of climate change are being felt by communities around the world. In addition, human development patterns have caused a tragic decline in the planet's biodiversity and natural beauty, and ongoing global warming will accelerate this process.

Since action on climate change is about preventing immense harm and promoting the common good, it is first and foremost a fundamental moral issue. With the risk of dangerous consequences growing with every day of delayed action, it is also an extraordinarily urgent moral challenge. In a recent declaration, the Pontifical Academy of Sciences at the Vatican in Rome stated the matter succinctly: "Human-induced climate change is a scientific reality, and its mitigation is a moral and religious imperative." A growing chorus of religious leaders, including Pope Francis, the Ecumenical Patriarch Bartholomew, and the Dalai Lama, fully support this view. The new Encyclical Letter of Pope Francis on the environment, "Laudato Si': On Care for Our Common Home," and the Pope's addresses before Congress and the United Nations clearly and forcefully highlight the ethical and spiritual dimensions of the environmental crisis and climate change. In response to the initiative of Pope Francis, 333 Rabbis have signed a "Rabbinic Letter on the Climate Crisis."

This year could be a turning point when the world community forms the necessary global partnership and commits to the collaborative action needed to reduce and eliminate carbon pollution. In December heads of state from the 193 governments that are party to the United Nations Framework Convention on Climate Change (UNFCCC) will meet in Paris to finalize a long delayed, legally binding climate change agreement. The goal of the negotiations is to elicit commitments that will cumulatively prevent global warming from exceeding 2 degrees Celsius since the pre-industrial era. Achieving an effective and equitable agreement in Paris is fundamental to protecting Earth's ecological integrity, promoting human rights, and fulfilling our responsibilities to future generations. However, again and again governments controlled by short term economic and political interests have failed to address the problem of global warming. Building pressure from civil society, including from leaders in science, religion, education and philanthropy, can make a critical difference.

With the demand for change growing, governments are searching for a way forward. China and the United States, the two largest carbon polluters, have together made meaningful commitments, and many other nations have joined them. However, the commitments made to date fall far short of the reduction in emissions needed. At a special summit meeting on sustainable development this past September, the United Nations issued a path breaking declaration on "Transforming Our World" that adopts seventeen Sustainable Development Goals (SDGs) with 169 targets, which envision the full integration of the environmental, economic and social dimensions of the sustainable development agenda. The SDGs call for radical change, and if governments are serious about achieving the SDGs, a strong UNFCCC agreement is mandatory. By joining the divestment movement, Middlebury College can help to send that message and register its concern that governments be held accountable for fulfilling their obligations under the agreement and expand their commitments in the future as necessary.

The divestment movement has grown dramatically over the past year. A recent

study, which was commissioned by the Wallace Global Fund, has found that 436 institutions have made a commitment to divest from fossil fuel companies, representing $2.6 trillion of investments—a fifty-fold increase. These institutions include the world's largest sovereign wealth fund and two of the largest pension funds as well as foundations, colleges, universities, NGOs and religious institutions. Recognizing the significance of these developments, the Executive Secretary of the UNFCCC, Christiana Figueres, has called for more institutions to divest from fossil fuels and invest in clean energy as a way to build momentum going into the Paris climate change meeting. (Clarification regarding the $2.6 trillion of investments is needed, because in some cases the institutions involved are limiting their divestment to coal or to coal and tar sands oil or to some but not all fossil fuels companies.)

College and University trustees have a fiduciary responsibility to ensure that their institution has the financial resources to fulfill its educational mission, and they are rightly concerned to maximize returns on endowment investments and minimize risk. In pursuing its commitment to divest from fossil fuels, the RBF [Rockefeller Brothers Fund] has adopted a phased approach, eliminating investments in coal and tar sands first followed by a gradual elimination of all fossil fuels in a fiscally responsible manner. The goal of the RBF is to be completely divested of fossil fuels by the end of 2017. The Fund's trustees have not found it necessary to alter their long standing commitment to preserve the purchasing power of the endowment. Middlebury should be able to divest from fossil fuels over several years without suffering reduced investment returns. Moreover, divesting could produce higher returns, because the fossil fuel energy sector is facing complex problems and risks. In addition to the precipitous collapse in the price of oil over the past year, which has caused some firms significant loses in market value, the big oil companies face the long term problem of stranded assets. Preventing global warming from exceeding two degrees Celsius will require leaving most of the known coal, oil, and gas reserves in the ground. In short, the transition to a clean energy economy will in all likelihood make fossil fuels a high risk investment. Many financial institutions are following this situation closely, and the Carbon Tracker Initiative is providing investors with the tools to measure economic risk associated with fossil fuels.

It is also important to recognize that renewable energy is rapidly becoming competitive with fossil fuels on cost and that corporations are coming to the realization that cutting their carbon footprint through improved efficiency and a shift to renewables is both possible and profitable. There is a global coalition of corporations that have committed to the long term goal of operating entirely with renewable energy. The New York Times reports that among the companies that have recently joined the coalition are Goldman Sachs, Johnson & Johnson, Proctor & Gamble, Starbucks, and Walmart. The transition away from fossil fuels to renewables is underway in spite of efforts by the big oil companies to prevent it and deny it. The only question is whether the transition will happen fast enough to prevent global warming from pushing the biosphere over tipping points that involve high risk. In a September Op-Ed, the president of Siemens, Joe Kaeser, announced that his global industrial manufacturing company has pledged to become carbon neutral by 2030, and reflecting on the challenge and opportunity before the business community he writes: "We have the technologies, we have the business incentive, and we have the responsibility. Now all we need is the commitment." A decision by Middlebury's board to divest will reinforce this message to corporate leaders, many of whom are listening with a new level of concern for the future of the planet, the global economy, and their companies.

Some argue that it is hypocritical for an institution like Middlebury to divest when the college and American society at large continue to be dependent on fossil fuels in so many ways. Is it hypocritical for someone who is addicted to cigarettes but knows that smoking is harmful and cancer causing to divest from all tobacco

company stocks? Divesting is a way to help all of us wake up to the real dangers created by our addiction to fossil fuels and make the change to a cleaner, safer, more secure world.

When the RBF board and its investment committee, which includes both trustees and outside experts, began to consider joining the divestment movement, they were working with a highly skilled and successful investment manager. However, given the way its operations were structured, the investment manager concluded that it could not accomplish the goals that the RBF had set for divestment. Consequently the Fund was forced to change investment managers. Making the change has been a demanding process, but it has worked out well and the Fund now has investment managers with the expertise and flexibility that it requires. In short, there are very good alternatives, if Middlebury finds itself contending with the same kind of problem that faced the RBF.

Apart from major educational issues, as a general rule, it is not the responsibility of a college board of trustees to consider taking an official position on the many issues under debate on campus, and only under exceptional circumstances when there are very compelling moral reasons to do so should a board use divestment to support a protest movement. However, climate change is not just one environmental issue among many others or just a political issue. It is one of the defining issues of our time, and the choices made in response to the challenge will profoundly affect the lives of all Middlebury students and the future of life on Earth.

Middlebury College is a highly respected leader internationally in the field of education and a decision by its president and board of trustees to join the expanding fossil fuel divestment movement will be an act of responsible global citizenship consistent with its mission. It will have a significant impact, inspiring other institutions to support the transition to a clean energy economy and contributing to the outcome we all hope for in Paris.

Steven C. Rockefeller
Professor Emeritus of Religion
Middlebury College

Steven C. Rockefeller has had a career as a scholar and teacher, an environmental conservationist, and a philanthropist. His research, writing, and teaching have been focused on the fields of religion, philosophy and ethics. He has had a special interest in the transition to a sustainable future and the development of a relational spirituality and a global ethic for building a just, sustainable and peaceful world community.

Professor Rockefeller is professor emeritus of religion at Middlebury College, Vermont, where he taught from 1970 to 1998 and also served as dean of the college and chair of the religion department. He received his bachelor of arts degree from Princeton University in 1958, his master of divinity from Union Theological Seminary in 1963, and his doctorate in the philosophy of religion from Columbia University in 1973. He is the author of John Dewey: Religious Faith and Democratic Humanism (Columbia, 1991; Peking University, 2009) and Democratic Equality, Economic Inequality, and the Earth Charter (Earth Charter International, 2015). He is the co-editor of two books of essays, The Christ and the Bodhisattva (SUNY, 1987) and Spirit and Nature: Why the Environment is a Religious Issue (Beacon, 1992). His other publications include over fifty essays that appear in a variety of books and journals.

Professor Rockefeller and Professor John Elder organized and directed at Middlebury College in 1990 the Spirit and Nature Symposium that included the Dalai Lama and was filmed by Bill Moyers for public television. In the mid-1990s,

Professor Rockefeller chaired the Middlebury College Environmental Council. Under his leadership, the Council prepared and submitted to the College president "Pathways to a Green Campus" (1995), a comprehensive environmental report on the state of the college with 22 recommendations. Professor Rockefeller served as president of the Demeter Fund, which created the Charlotte Park and Wildlife Refuge in Vermont overlooking Lake Champlain and the Adirondack Mountains. He is the founding president of the Otter Creek Child Care Center in Middlebury, Vermont.

For over thirty years Professor Rockefeller has served as a trustee of the Rockefeller Brothers Fund, an international foundation with grantmaking programs in democratic practice, sustainable development, and peacebuilding. From 1998 to 2006 he chaired the RBF board of trustees. Among the other boards and commissions on which he has served are the National Commission on the Environment (organized by the World Wildlife Fund), the National Audubon Society, the Colonial Williamsburg Foundation, the Asian Cultural Council, and the Council of the UN mandated University for Peace in Costa Rica. He is a member of the Council on Foreign Relations.

Over the past two decades, Professor Rockefeller has been actively involved in the Earth Charter Initiative, which in and through extensive worldwide, cross cultural dialogue has endeavored to identify and articulate shared values that provide an ethical foundation for the emerging global community. From 1997 to 2000, he chaired the Earth Charter international drafting committee for the Earth Charter Commission. A final version of the Earth Charter—a declaration of global interdependence and universal responsibility with fundamental principles for creating a just, sustainable and peaceful world—was launched by the Earth Charter Commission at the Peace Palace in The Hague in 2000. From 2000 to 2010, Professor Rockefeller served as co-chair of the Earth Charter International (ECI) Council. The ECI Secretariat is based at the University for Peace in Costa Rica and has affiliates in 73 different countries. The Earth Charter has been translated into over 40 languages and endorsed by over 5,000 organizations globally, including UNESCO and the World Conservation Congress of IUCN.

Professor Rockefeller lives with his wife, Professor Barbara Bellows Rockefeller, in Pound Ridge, New York

[Man] Welcome to the celebration of the opening

of Middlebury's new biomass gasification system.
It's now my great pleasure to introduce
this afternoon's speaker, Bill McKibben.

[Audience clapping]

[Bill McKibben] What powers a learning community?
And as of this afternoon, the easy answer
to that is wood chips.
Um, it’s incredibly beautiful stand over there

and see that big bunker full of wood chips.
You can put any kind of wood in, you know: oak, willow,
whatever you want.
Pretty much anything that burns we can toss in there
if we can chip it down to the right size.
And there are very few similar cases anyplace
in this country of that kind of change over that scale.
But it shows it could happen anywhere,
and it should happen anywhere.
In fact, it must happen everywhere.

[Jeff] *“It must happen everywhere.”*

[Dramatic piano music]

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[Jeff] And now it’s time for a nature break.

Enjoying our sustainably-managed Michigan forests.

[Classical piano music]

[Man] If you walk through here and you look,

there’s virtually nothing growing but

a little bit of grass, occasionally.

[Increasing classical music]

[Jeff] And it seemed that biomass plants, indeed,

were suddenly everywhere,
like this one in Cadillac, Michigan.

[Truck engine rumbling]

[Jeff] In Detroit, an incinerator

that burned garbage was considered green.

[Classical piano music]

[Detroit Renewable Power]

[NewsWoman] The Detroit incinerator is known to emit horrible smells

and pollutants that neighbors say make them feel sick,
and put their health at risk.

[DETROIT INCINERATOR EXCEEDS POLLUTION LIMITS, BUT IS RARELY FINED BY THE STATE, ACTION NEWS: THE INVESTIGATORS]

[Woman] It’s a stink, it’s a horrendous stink.

[MASCOMA]

[Jeff] A proposed biofuel plant
for the Upper Peninsula of Michigan would consume trees

from tens of thousands of square miles.

[Pat Egan, Local Timberland Owner] In order to create 40 million gallons of ethanol,
they are going to have to use up

over a million tons of green wood.
And we pointed out that they were going to be using

more natural gas than they were going to be creating ethanol
to displace the natural gas.
If you continue to do this,
you're going to be fertilizing the forest.

[Jeff] Fertilizing the forests with fossil fuels?

[Pat Egan, Local Timberland Owner] Fossil fuel-based fertilizers.

[Jeff] Made from natural gas?

[Pat Egan, Local Timberland Owner] Yeah.

***

[Why Bill McKibben supports Michigan's Prop 3]

[Jeff] Then came a ballot proposal backed
by Bill McKibben and nearly every major environmental group --

[APOLLO ALLIANCE, CLEAN ENERGY, GOOD JOBS / SIERRA CLUB / 350.org, EDF ENVIRONMENTAL DEFENSE FUND / NRDC / MICHIGAN LEAGUE OF CONSERVATION VOTERS / NATIONAL WILDLIFE FEDERATION]

[Jeff] -- requiring Michigan to get 25% of its electricity
from renewable sources by the year 2025.

[Narrator, Paid for with regulated funds by Michigan Energy, Michigan Jobs] This year, Michigan voters have a choice:
keep burning dirty coal and oil, or move Michigan

to clean, renewable energy, like wind and solar.

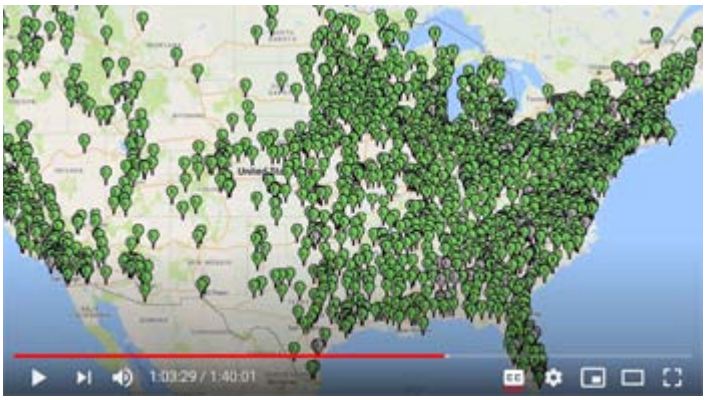
Vote yes on Proposal three.

[Jeff] Surprisingly, Proposal three,

also known as 25 x 25, was the brain child
of an organization that was 100% biofuels and biomass.

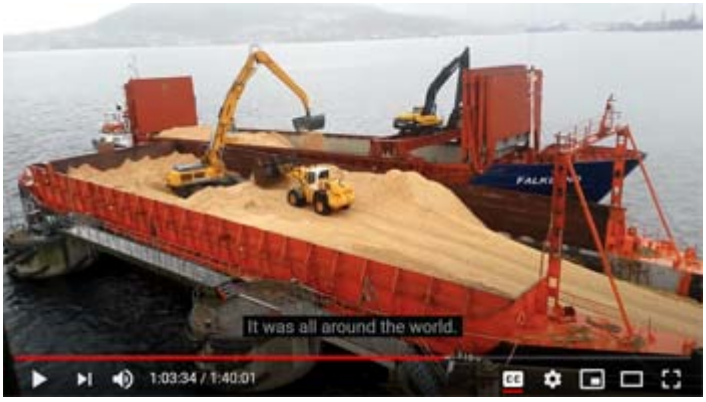
[Read Smith, Co-chair 25x25 Steering Committee] Allowing America's farms, ranches, and forest lands
to be active participants in contributing
to America's energy future.

[Jeff] These are the biomass
and biofuel plants across the U.S.



[Popping]

[Jeff] How did this happen?
And it wasn't just the USA --



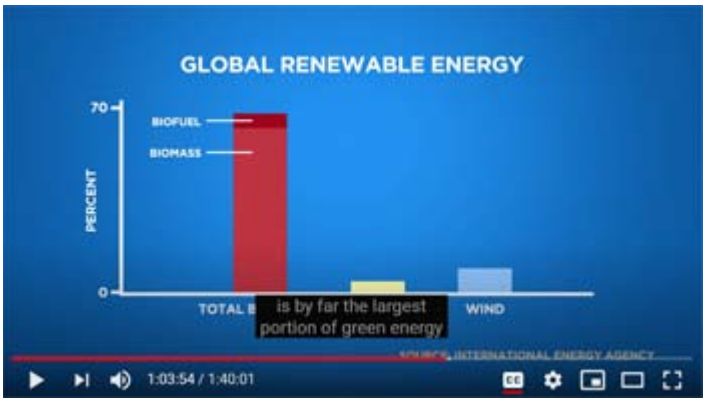
it was all around the world.

Wood chips, which is just a euphemism for trees,
are being exported to Europe from America,
British Columbia, Brazil, and Indonesia.

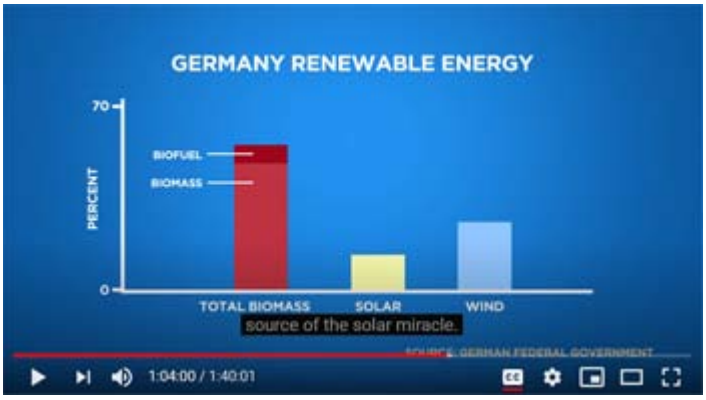
Wherever they can get them from.

[Classical piano music]

[Jeff] Biomass, especially when you add in biofuels,



is by far the largest portion of green energy
around the world, even in Germany,



source of the "solar miracle."

[Classical piano music]

***

[Jeff] But maybe I was missing something.

Maybe I had it all wrong.

[Woman's voice on loudspeaker]

[Jeff] I decided to ask people protesting fossil fuels
how they felt about biomass and biofuels as green energy.

[NO TO DIRTY ENERGY. STOP THE CLIMATE CRISIS]

> The Ghost Dance was associated with Wovoka's [Jack Wilson] prophecy of an end to white expansion while preaching goals of clean living, an honest life, and cross-cultural cooperation by Indians…. Wilson said that the Creator gave him powers over the weather and that he would be the deputy in charge of affairs in the western United States… Jack Wilson claimed to have left the presence of God convinced that if every Indian in the West danced the new dance to "hasten the event", all evil in the world would be swept away, leaving a renewed Earth filled with food, love, and faith….
>
> Despite the widespread acceptance of the Ghost Dance movement, Navajo leaders described the Ghost Dance as "worthless words" in 1890.
>
> -- Ghost Dance, by Wikipedia

[Jeff] Would you say we don't need to do biofuels,
and food and forests for energy?

[Woman] No, no, definitely not.

Of course not, of course not!

[Man] Burning biomass, any kind of combustion,

is something we just need to move away from.

[Woman] The more trees we have, the better.

[SAN LUIS OBISPO COUNTY FRACKING
WASTES WATER WE DON'T HAVE
GIVES IT TO PEOPLE WE DON'T TRUST
BAN IT NOW]

[Woman] A lot of that didn't grow overnight.
If we cut it down, we don't know the impact of that.

[Jeff] You're here as an oak tree?

[Man] Yes.

[Jeff] If I had a chainsaw,
that wouldn't be saving the planet, would it?

[Man] No, it's painful,

it’s a painful way to go.
I can tell you that right now.

[Jeff] It would take you a while to regrow.

[Man] [Laughing] Yeah, oh yeah.
But it wouldn’t be me, it’d be an offspring.

[Woman] With so many people doing it on such a massive scale,

all of a sudden at once, that’s pretty serious.

[Man] No, I think we should not be burning trees.

[Group] No, no, no.

[Ban Fracking Now]

[Woman] Why would we cut down trees?

[Woman] We shouldn’t replace one terrible way of getting energy
with another terrible way of getting energy.
Because it’s one thing –

[Girl’s voice fading]

[Jeff] Clearly, most citizens are opposed
to biomass and biofuels.

[Calming guitar music]

***

[Jeff] But what about environmental leaders?
At times they have promoted biomass, but other times
they sound like they are against biomass

[SIERRA CLUB Biomass Guidance]

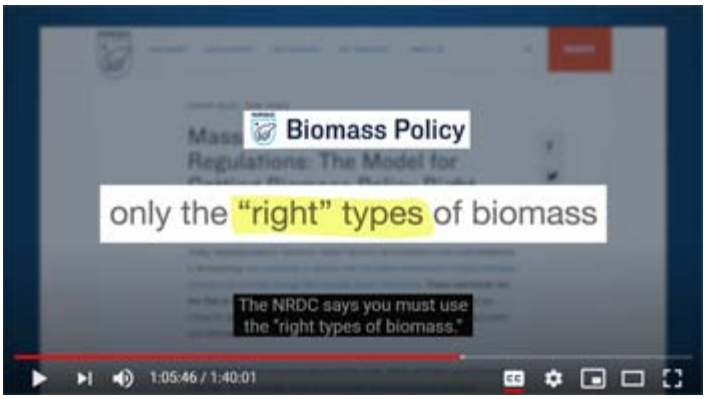
[Jeff] Like this Sierra Club policy:
“We are deeply concerned about the implications of wood-to-energy for native forests.”

[Dogwood Biomass Campaign Platform]

[Jeff] Or this statement signed on by 75 environmental groups:
“Burning forests for energy will destroy one of our best defenses against climate change.”

But then again, their language leaves loopholes
that enable biomass.

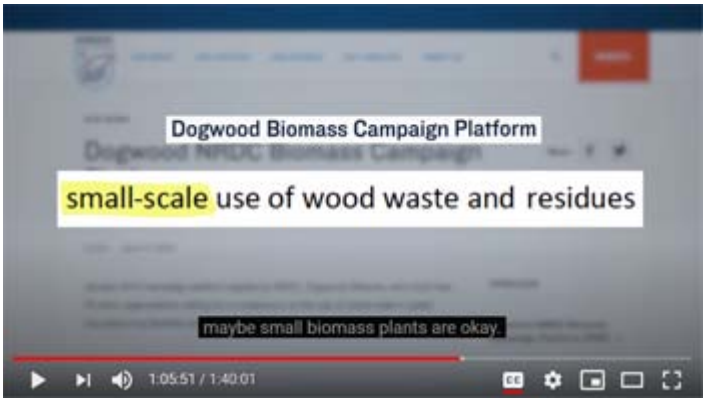
[NRDC Biomass Policy: Massachusetts Biomass Regulations: The Model for Getting Biomass Policy Right, April 27, 2012, by Sami Yassa]



[Jeff] The NRDC says you must use: "the right types of biomass."

[Dogwood Biomass Campaign Platform: small-scale use of wood waste and residues]

[Jeff] The Dogwood Alliance says:



"maybe small-scale biomass plants are okay."

[SIERRA CLUB Biomass Guidance: biomass projects can be sustainable]

[Jeff] And the Sierra Club flat-out states:

“Biomass can be sustainable.”

[Pensive guitar music]

[Jeff] Which side are they really on?

I thought, for sure, with the camera rolling,
environmental leaders would speak for the trees.

[Anti-fracking Protest, Harrisburg, Pennsylvania]

[Group] No frackin’ way.

[Woman] Where’s the science, where’s the science?

[Clean Water Action Man] We’re here to tell a story about what the forests of this state, of our commonwealth, mean to us.

[Jeff] Does your organization have any stance on that?

[Man] I’m not sure I would say we support it, as much

as we can wrap our heads around it.

We’ve almost made a peace with the timber industry.

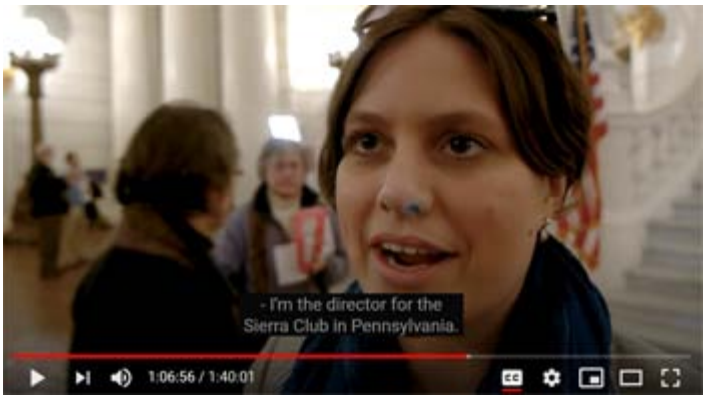
[Jeff] I’m just curious, what’s your group stance
on using forests for biomass?

[Man] Biomass is renewable; biomass is sustainable.

[Clean Water Action Man] And I’m with Clean Water Action.

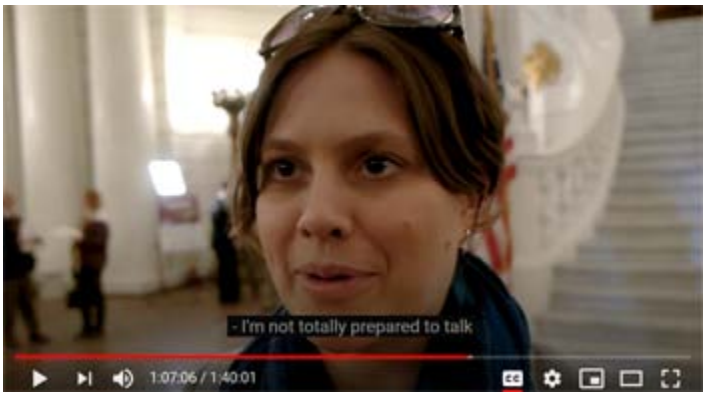
Well, we don’t really have a stand on it.
If the director of the Sierra Club was here,

she’d be able to talk your ear off about it.



[Woman] I’m the director for the Sierra Club in Pennsylvania.

[Jeff] Does the Sierra Club support,
or not support biomass?



[Woman] Uh, I'm not totally prepared to talk
about our policy on biomass today.

Our position is somewhat nuanced,
so I just want to be careful not to –-
[Shakes her head *"you know what I mean."*]

[Crowd talking]

[Jeff] So you're with 350?

[Man] I am.

[Jeff] Does 350 have a position on biomass,
because I'm kind of actually --

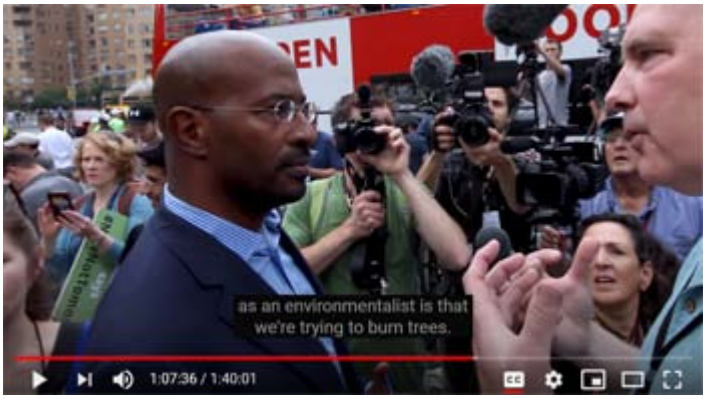
[Man] I can't really speak for 350.

[Jeff] Do you personally have an opinion about
whether we should be burning green trees for green energy?

[Man] No, I don't have an opinion on that.

I like a fire. [Laughing]

[Jeff] One of my biggest concerns,



as an environmentalist, is that we're trying to burn trees.
There are tree-burning power plants.
Are you aware of the problems with biomass, or biofuels?

[Van Jones] Yeah, yeah, I'm not as aware of that
as I could be or should be.

[Jeff] Jeff Gibbs, working on a documentary.
In Michigan where I live, where I'm from,

there's large plants that burn trees for energy,
and pretty much whole trees chopped up.
Do you have a thought about whether
that should be a part of green energy or not?

[Robert F. Kennedy, Jr.] Well, the great thing about green energy is

you don’t have to pick a favorite.

[Jeff] Jeff Gibbs.

[Bill McKibben] Oh, hello.

[Jeff] My biggest concern is that in Germany, for instance,
they’re moving toward solar and wind,

but 60% of their actual energy is coming from biomass,
60% of what’s considered renewable energy.
[Should we be] burning trees for energy?

[Bill McKibben] I don’t know the details out of Germany.

What Germany’s really doing is a lot

of sun-related, and that’s really powerful to see.

Perhaps the most central neopagan element in German volkisch movements was sun worship. The worship of the sun was extolled as true ancient Teutonic religion, and while it was primarily a literary device and a powerful rhetorical metaphor for the experience of God, actual solar-worship rituals did take place among some volkisch groups during the annual summer solstice, especially between the very early 1900s and the 1930s. As a direct consequence of this Germanic neopaganism, in the 1930s the Nazi government banned the celebration of traditional Christian holidays and instead substituted others more appropriate for the "New Germany." The summer solstice was designated as one of these holidays.

From at least the Romantic era, sun worship was offered by prominent Germans as the most rational alternative to Christ worship. Sun worship was the image at the center of fantasies of a return to "natural" paganism. This was most clearly stated by Goethe:

> What is genuine except everything excellent which stands in harmony with purest nature and reason, even today serving for our highest development! And what is counterfeit except everything absurd, empty, dumb, everything which bears no fruit, at least no fruit of value! If the genuineness of a biblical document is to be decided by the question whether everything it tells us is true, then in a few points the genuineness of even the Gospels could be doubted .... And yet I consider the Gospels, all four, to be genuine; for there works within them the reflection of a majesty which preceded from the person of Christ. It is of such a divinity as any the deity has ever assumed upon earth. If I am asked whether it accords with my nature to give him reverent worship, then I say, "Completely!" I bow before him as the divine revelation of the highest principle of morality. If I am asked whether it accords with my nature to worship the sun, then I say once again, "Completely!" For it, likewise, is a revelation of the most high, and in fact the mightiest which has ever been granted us mortals to perceive. I worship it in the light and creative power of God, whereby alone we live and move and have our being, and all plants and animals together with us.

Hence we have the noble Goethe equating Christ with the sun and making an appeal to the rationality of pagan sun worship. These same pagan sentiments stayed very much alive in the underground of German society in the nineteenth century, never far below the surface of "the bourgeois-Christian world," and erupted openly during the fin de siecle with volkisch neopaganism.

[Jeff] I'd like to see us come out
against any burning of trees,
for clean energy.

[Bill McKibben] All right, well go and do it.

[Jeff] Would you?

[Bill McKibben] Although I confess I stoke my wood stove
almost every night of the winter,
so I'm not really the right person to ask.

[Jeff] But designating green energy for power plants.

[Bill McKibben] Yeah, yeah, I don't know.

It's not what this day's about.

[Jeff] But if we're burning trees,
instead of fossil fuels.

[Suzy] Suzy from Taiwan.

[Bill McKibben] Oh, good.

[Suzy] We're wondering what role do you want
to play in this –-
[voice fading out]

[Jeff] I think the biomass question’s a non-starter.

***

[Somber music]

[Jeff] I found only one environmental leader willing
to reject biomass and biofuels.

[Vandana Shiva] So we are talking
of the old oil economy trying
to maintain itself now

through another raw material, the green planet.
The only reason corn and soy has been planted for biofuel

in this country is the subsidies make it profitable.
I think the big crisis of our times is

our minds have been manipulated to give power to illusions.
We shifted to measuring growth,

not in terms of how life is enriched,

but in terms of how life is destroyed.

[Peaceful guitar]

***

[Jeff] Her honesty was refreshing.

But as for the rest of them, I wondered,

What are they hiding?
And why are they hiding it?

Is it their ignorance?
Of is it something else?
[Music increasing in tempo]

What if they, themselves, had become misguided?
[Intensifying dramatic music]

What if they’ve made some kind of deal
they shouldn’t have made,

and are leading us all off the cliff?

***

[Light upbeat music]

[Jeff] It was long past time for me to come to grips
with the other elephant in the living room.

The profit motive.

The only reason we've been force-fed the story
climate change + renewables = we're saved
is because billionaires, bankers

and corporations profit from it.
And the reason we're not talking about over-population,
consumption, and the suicide of economic growth, is

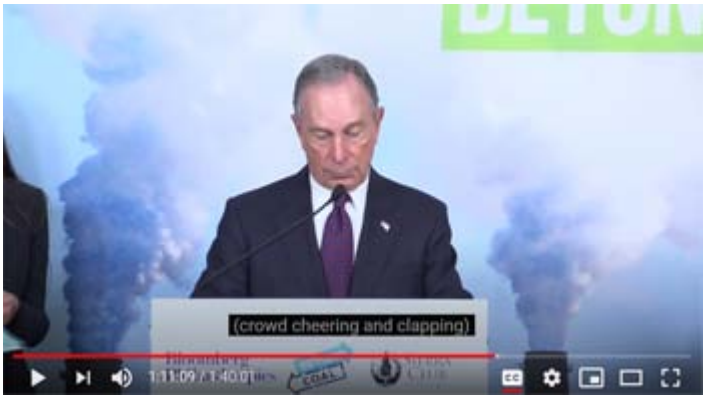
that would be bad for business.

Especially the cancerous form of capitalism
that rules the world,

now hiding under a cover of green.

[Michael Bloomberg] Today Bloomberg Philanthropies is making,
I'm happy to announce, a new investment

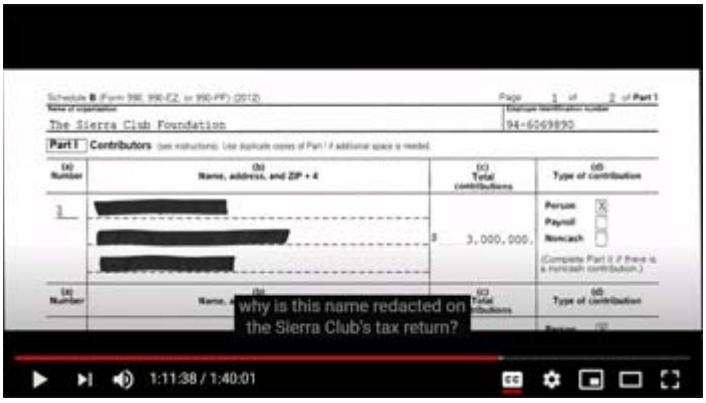
of $30 million in the Beyond Coal campaign.



[Crowd cheering and clapping]
We have more.
I'm glad to say that more
than a dozen additional funders have committed
to match that $30 million.
[More clapping and cheering]

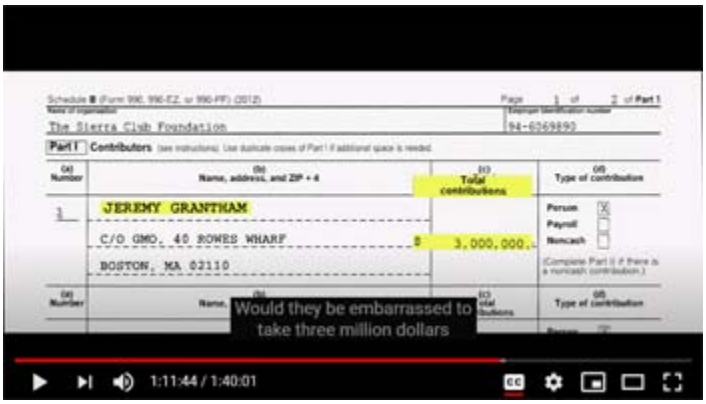
[Jeff] And who were these new partners?
One of them was Jeremy Grantham,

a billionaire, and the world's leading timber investment adviser.
[Man speaking in background]
They were not investing in trees
to turn them into nature preserves.
Which might answer another riddle:



"Why is this name redacted on the Sierra Club's tax return?"

[JEREMY GRANTHAM. Total Contributions: $3,000,000.]



[Jeff] Would they be embarrassed to take three million dollars
from a man who made his living selling the forests of the world?
Bloomberg, bringing a timber investment billionaire

to the party, was no coincidence.

Bloomberg sponsored a U.N. [United Nations] climate session
to discuss wrapping up biomass
and biofuels around the world.

[KLM Royal Dutch Airlines
UNITED NATIONS
THE WORLD BANK
CARBON WAR ROOM
Bloomberg NEW ENERGY FINANCE
SHELL

BOEING
novozymes
SCANIA
TOTAL, COMMITTED TO BETTER ENERGY]

[Jeff] Billionaires were in love with the idea of turning

what was left of nature into green profits.

[CNN: SIR RICHARD BRANSON, CHAIRMAN, THE VIRGIN GROUP. GLOBAL WARMING PLEDGE.]

[Jeff] Remember when Al Gore had gotten Richard Branson

to invest billions into saving the planet?

[Newsman] Richard Branson, founder of Virgin Atlantic,
powered a Boeing 747 from London to Amsterdam,

on a coconut oil mixture, to highlight the potential

of this amazing oil as a clean energy biofuel.

[LIQUID Investments]

[Jeff] Branson had actually invested in biofuels.

He was attempting to replace the jet fuel,
damaging the planet, with biofuels

that required the consumption of the living planet.

And it was game-on for the airline industry.

[Dennis Bragg, Reporting] Dozens of researchers,
from all over the northwest, gathered
in Missoula the past two days, to explore the idea
of converting the region's mass of reserves

of wood into jet fuel.
Especially with the demand for aircraft fuel expected

to grow by a billion gallons in the northwest alone.

[The Street: United Airlines Hedges Against Fuel Price Volatility and Possible Carbon Regulation]

[Newswoman] United Airlines will buy a $30 million stake
in biofuel company, Fulcrum BioEnergy.

The airline used 3.9 billion gallons of fuel last year.

[Jeff] What technology was Silicon Valley billionaire
Vinod Khosla hoping to profit from?

[Vinod Khosla] Nature takes a million years to produce our crude oil.

KiOR can produce it in seconds.

[Lesley] The company took over this old paper mill,
where logs are picked up by a giant claw,

dropped into a shredder, and pulverized into wood chips.

Clean gasoline?

[Vinod Khosla] Clean, green gasoline.

[Lesley] There must be a downside.

[Vinod Khosla] There is no downside.

[Goldman Sachs]

[Jeff] The bank that crashed the economy,
ruined millions of lives, and has their tentacles

on the levers of power,
what would their favorite form of green energy be?

[Goldman Sachs Man] One of the very interesting markets

that we deal with is Brazil.
It’s unlike any other market, in that today

alternative energy isn’t really alternative energy, because
it’s so much a part of the fabric of the society.

The country began to utilize its vast resources

of sugar cane to produce ethanol.

[The Why & How of Sustainable Investments, by David Blood, Senior Partner, Generation Investment Management
Chair of New Forests Pty Ltd.
NewForests: THE FUTURE OF FORESTRY INVESTMENT]

[Jeff] There was a man from Goldman Sachs
who was particularly in love

with turning forests into profits.

[David Blood] Has everybody got enough coffee?
You might want to get some more.

[Jeff] Meet David Blood, former CEO

of Asset Management for Goldman Sachs.
How much money did Mr. Blood believe should
be invested in green energy?

[David Blood] A natural alignment for something in the order

of $40-50 trillion worth of capital.

[Jeff, Investors and Environmentalists Sustainable Prosperity] $40-50 trillion.

And who was going to help the man from Goldman Sachs,
help him raise that astronomical amount of money?

[Announcer] A gentleman some of you may recognize

and know -- Bill McKibben!

[Bill McKibben] It’s entirely dependent on what kind
of political will we can muster.

And if we do not get this done very fast,
then we’re not going to get it done.

[Jeff] And so Bill McKibben went forth
to generate the political will for trillions
of dollars in green investments.

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[David Letterman] Our next guest has been called

our nation’s leading environmentalist.

***

[Bill Maher] And you are, in some sense,

the Grand Poobah of the environmental movement.

Today in Masonic History we discuss the 'Grand Poobah'.

The term 'Grand Poobah has it's origins closer to Freemasonry than many may think.

Most people recognize the term 'Grand Poobah' from the popular cartoon series from Hanna-Barbara The Flintstones. In the cartoon, the two main characters Fred Flintstone and Barney Rubble regularly appear at their lodge meeting. In the cartoon it is the Loyal Order of Water Buffalo, not a masonic lodge. The Loyal Order of Water Buffalo is a send up though of Freemasonry and other fraternal organizations.

In the 70's people would also recognize it from the show Happy Days. In the show the patriarch of the family is a member of a leopard lodge. Often he is seen heading off to his meeting wearing a fez with leopard spots. Again the head of the leopard lodge is the 'Grand Poobah.'

It would be easy to assume that the origin of the 'title 'Grand Poobah' came from a pop culture reference such as the ones mentioned above or in some of the other ways it has been used in pop culture. Especially over the last few decades.

Instead the origin of the term Grand Poobah comes to us from March 1885. It also comes to us from two masonic brothers, Gilbert and Sullivan in their comedic opera The Mikado. In the opera one of the character's name is Pooh-Bah and he holds a variety of titles which include First Lord of the Treasury, Lord Chief Justice, Commander-in-Chief, Lord High Admiral, Archbishop, Lord Mayor and Lord High Everything Else. The opera begins with the town executioner, in a Japanese town, being sentenced to death himself. It is decided that the executioner can not perform any more executions until he executes himself, since he is next in line. The towns people are too proud to serve under the executioner and perform the execution. Eventually all of the town leaders resign their positions and Pooh-Bah ends up with all of their titles.

The Mikado uses Japan as a back drop to satirize British politics of the time.

In modern times the term Grand Poobah is meant to be a mocking term generally. Either to describe someone who has an inflated self-regard or someone who has a grandiose title that has little true power behind it.

Grand Poobah, by MasonryToday.com

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[Stephen Colbert] My guest tonight is on a global crusade –-

***

[Jeff] On a global crusade for what?

[Bill McKIbben] Commit to divesting from fossil fuels.
We can't justify investing our money into companies
that are basically running Genesis backward.

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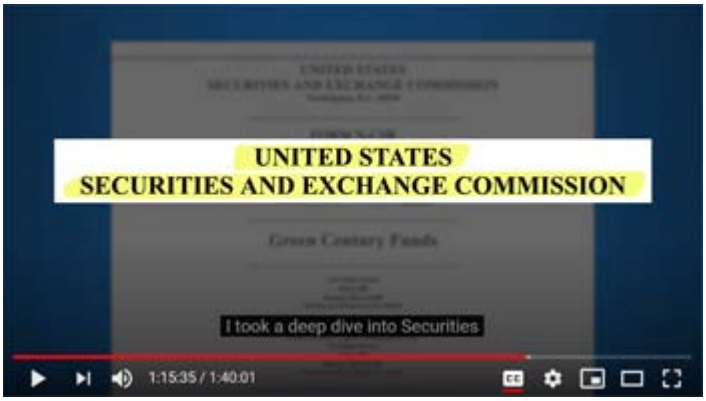
[Jeff] So when you divest from fossil fuels,
and invest in green funds, *WHAT are you investing in?*

[UNITED STATES SECURITIES AND EXCHANGE COMMISSION]

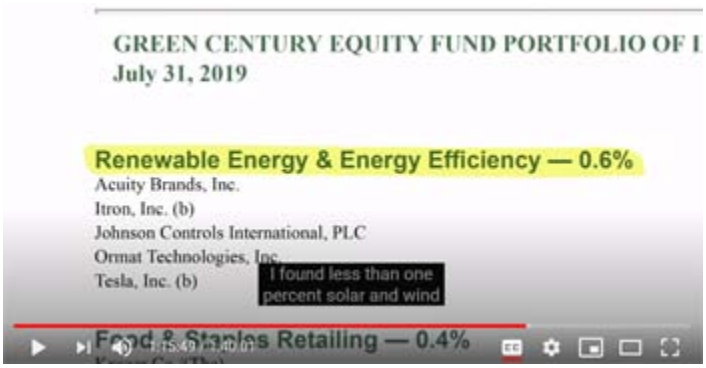


[Jeff] I took a deep dive into Securities
and Exchange Commission filings to find out.

[GREEN CENTURY FUNDS
350.org]

[GREEN CENTURY EQUITY FUND PORTFOLIO OF –
Renewable Energy & Energy Efficiency – 0.6%]

[Jeff] For instance, in the Green Century Funds,
recommended by 350.org and Bill McKibben,



I found less than one percent solar and wind,
and 99% things like mining,

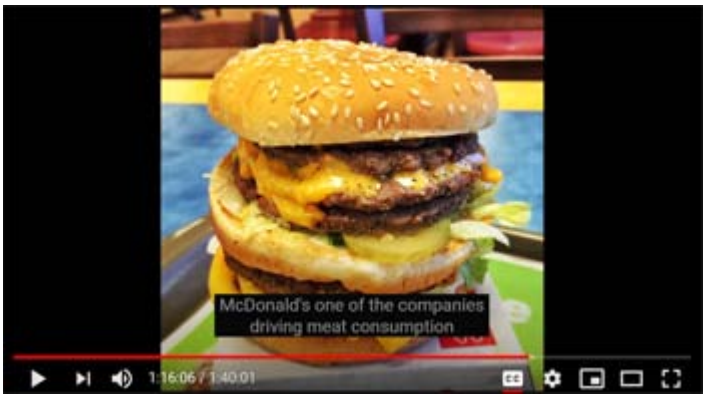
[Agnico Eagle Mines Ltd.
Newcrest Mining Ltd.
Sumitomo Metal Mining Company, Ltd.
3M Company
Compass Minerals International, Inc.
Newmont Goldcorp Corporation]

[Jeff] oil and gas infrastructure companies,

[ECOLAB: REFINING, FUEL ADDITIVES & PETROCHEMICAL
FLOWSERVE: OIL & GAS]

[Jeff] including a tar sands exploiter,

[xylem: Let’s Solve Water: Oil Sands]



[Jeff] McDonald’s, one of the companies driving meat consumption across the planet;
Archer Daniels Midland,

one of the world’s largest producers of biofuel;
Coca Cola, the largest creator

of plastic pollution on earth;

[PotlatchDeltic
BIOENERGY: Providing sustainable solutions for energy needs]

[Jeff] logging and paper companies, including one
that brags about biomass burning; and banks.

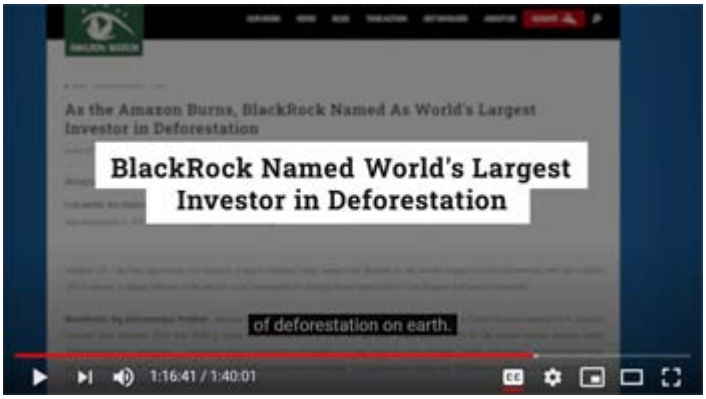
[Bank of America Corporation
PNC Financial Services Group, Inc. (The)
Mastercard, Inc., Class A
KeyCorp.
M&T Bank Corporation
New York Community Bancorp, Inc.
Old National Bancorp
People’s United Financial, Inc.
PNC Financial Services Group, Inc. (The)
Regions Financial Corporation
Signature Bank
SVB Financial Group (b)
Umpqua Holdings Corporation
Zions Bancorp NA
JPMorgan Chase & Company
American Express Company
First Republic Bank
Comerica, Inc.
Visa

HSBC Holdings PLC
BlackRock, Inc.]

[Jeff] Lots of banks.

[Dramatic music]

[Jeff] Including BlackRock, the largest financier



of deforestation on earth.

[As the Amazon Burns, BlackRock Named World’s Largest Investor in Deforestation]

[Woman] The business that they are engaged in is actually destroying our life support system.

[YOU'RE BURNING OUR FUTURE]

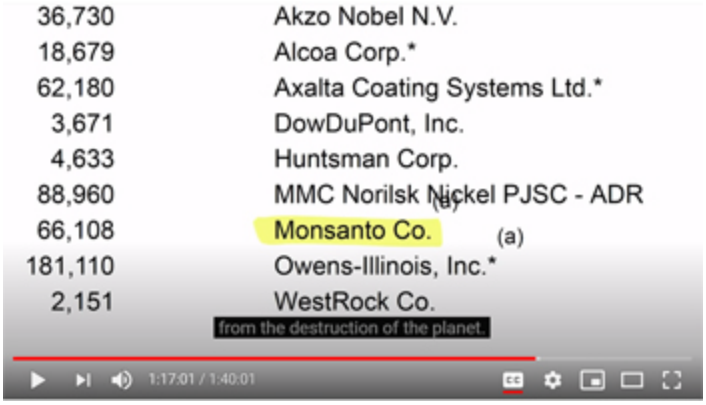
[Dramatic music]

[Jeff] The Sierra Club also partners

with a green fund called, "Aspiration."

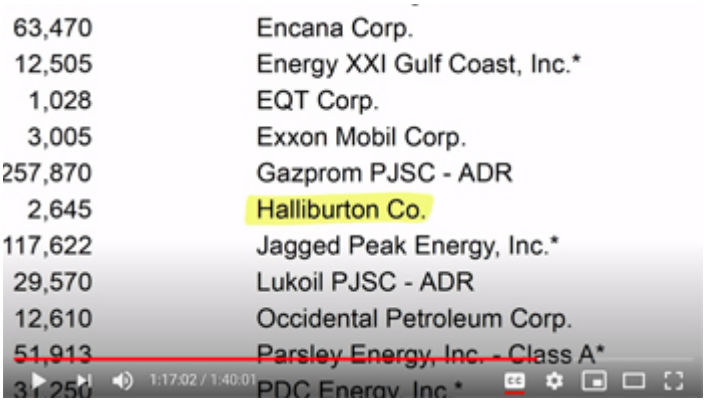
[Aspiration + SIERRA CLUB]

[Jeff] Aspiration also includes dozens of companies profiting

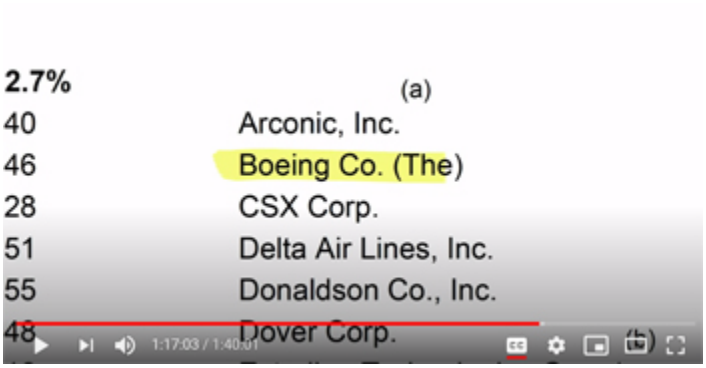


from the destruction of the planet.

[Monsanto Co.



Halliburton Co.



Boeing Co. (The)
Wells Fargo & Co.]

[Jeff] Including Chevron, ExxonMobil, Chesapeake Energy,

[Chesapeake ENERGY Announcer] In order to maximize the production potential of the well,

the shale formation will be hydraulically fractured.

[Jeff] the Russian gas giant, Gazprom,

[Gasprom Announcer] Gazprom owns the world's largest explored gas reserves, 36 trillion cubic meters.

[Jeff] and in perhaps the most bizarre twist of all,

the Sierra Club's green fund's biggest holding is in Viva,

the world's largest consumer of forests,
to be incinerated in green energy biomass plants.

[Somber piano music]

***

[Jeff] Of course, one investment option is a green fund,
run by Bill McKibben's buddy, David Blood.
And who was the chairman of this fund?
Someone familiar.

[Al Gore] Use capitalism. It gives incentives

for people to do their best.

[Jeff] Al Gore and David Blood partnered

to form a company called Blood and Gore.

No, scratch that, Generation Investment Management.

> Conscious of the spirit and terms of its resolutions 35/7 and 36/6, in which it solemnly invited Member States, in the exercise of their permanent sovereignty over their natural resources, to conduct their activities in recognition of the supreme importance of protecting natural systems, maintaining the balance and quality of nature and conserving natural resources, in the interests of present and future generations,
>
> -- World Charter for Nature, by UN General Assembly

And within this fund, Blood and Gore designated

a special investment category targeting $650 million
of biomass and biofuels.

[Al Gore, David Blood, 27 July, 2004]

[Jeff] The funny thing was, they partnered
before Al Gore's film came out.

-- An Inconvenient Truth, directed by Davis Guggenheim, Starring Al Gore

[NOTHING IS SCARIER]

[dramatic music]

[Jeff] Was that movie just about climate change, or something else?

[THAN THE TRUTH]

[Al Gore] On one side, we have gold bars.
Mm, mm, mm. [Audience laughing]
Don’t they look good?

I'd just like to have some of those gold bars.
And on the other side of the scales, the entire planet.
[Audience Laughing]
If we do the right thing,

then we're going to create a lot of wealth.

[Jeff] And when it came time for Al Gore
to choose between the entire planet and getting him some
of them gold bars, what choice did he make?

[C-SPAN 2: Global Climate Change. Senate Foreign Relations Committee]

[Jeff] Here's Al Gore earning his keep by pretending to care
about the rain forest, while lobbying Congress

on behalf of the sugar cane ethanol industry.

[Senator Christopher Dodd, D-Connecticut] Let me come in on the Brazilian effort here,
with the issue of the possibility of expanding into
that Amazon River basin, with further deforestation,

to produce more ethanol out of sugar cane, is a worry.
And apparently, you're not as concerned about that.

[Al Gore, Alliance for Climate Protection, Founder & Chairman] No, no, I am. I simply forgot.

[Motor Roaring]

[Children screaming & crying]

[Al Gore, Alliance for Climate Protection, Founder & Chairman] What's been going on there, it is really very troubling.

[Indigenous Woman] We are human beings!

[Indigenous Woman] Humans! All we want is to survive!

[Al Gore] And with your permission, I'll show you a very quick example

of it over a period of 25 years.

[Loud tapping]

[Newsman] The invasion of sugar cane monocultures

in the region clashes with the indigenous people's right to land.
These are images of a last ditch attempt,

by the Guarani-Kaiowa, to resist eviction.
[December 15, 2005]

[Al Gore, Alliance for Climate Protection, Founder & Chairman] It's important to note that the exploitation

of the sugar cane growing areas in Brazil does not have

to inevitably have the knock-on consequence
of causing destruction in the Amazon.

knock-on effect (plural knock-on effects): (Britain) A secondary, often unintended effect; a repercussion, chain reaction. -- knock-on effect, by wiktionary

[Newsman] Sugar cane fields are burning.
They’re set alight before the harvest,

to eliminate the leaves and tops of the plant,
which makes cutting more efficient.
[Somber music]

Environmentalists blame the seemingly
endless sugar cane fields for air and water pollution

on an epic scale.
And along with deforestation, the threat it poses
to the environment is becoming clear.
[Dramatic music]
[December 15, 2005]
Once the indigenous families were expelled,

the land owners set their homes on fire.

[Dramatic music]

***

[Jeff] Is there anything too terrible
to qualify as green energy?

[Richard Branson] Thank you very much, Secretary Mabus and U.S. Navy, for once again inviting me to speak with you today.
The Navy's work to help launch
this new fuel industry is invaluable.

[Roaring plane engine]

[Newsman] The U.S. Navy has a special message
this year:

It is time to turn green.
Joining the vessels is what the U.S. Navy calls

"it’s great green fleet of warships,"
powered by fuel from renewable sources, like algae,

grass and animal fat.

[Jeff] Animal fat?

[Animal Fat Rendering Plant]

[Thudding and pounding]

[Newsman] [Alternative FUELS] The next time you fill up at your neighborhood gas station,

you might find yourself pumping a little alligator
into your tank.

That’s right, U.L. Lafayette researchers

have developed alligator fat
into a renewable source for biofuels.

[GE-Alstom Nuclear Systems: Your technology partner for nuclear power plants]

[Jeff] And once we run through the animals, what’s next?

-- Delicatessen, directed by Jean-Pierre Jeunet

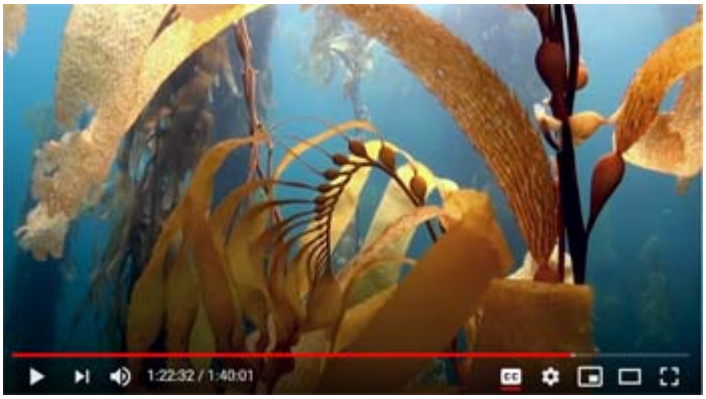
[Jeff] GE, who brings you nuclear energy and wind turbines,
is ready with a plan.

[ecomagination: MADE POSSIBLE BY GE]

[Scientist] I believe that liquid fuels, chemicals,
are eventually going to have to be made

from sustainable raw materials.
We believe that seaweed is one
of the most attractive opportunities.

[Majestic Music]



[Jeff] [To Sea Horse] Better hurry.

One year after it was filmed, the seaweed forest was dead.

[Somber music]

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[Jeff] You might ask yourself, how could men destroy

what remains of nature to enrich themselves?

Well, that’s why they’re billionaires and you’re not!

[Al Gore, Richard Branson and Interviewer] [Laughing]

[Jeff] The takeover of the environmental movement

by capitalism is now complete.

Environmentalists are no longer resisting those

with a profit motive, but collaborating with them.

[The Nature Conservancy: Protecting nature. Preserving life.]

[Jeff] The Nature Conservancy is now the logging conservancy.

[Michael Carr, Executive Director, Adirondack Chapter, The Nature Conservancy] We will capture the most important pieces biologically.

And there will be another large block sold
to timber investment groups.

[Union of Concerned Scientists]

[Union of Concerned Scientists, Inc., Two Brattle Square, Cambridge, Massachusetts 02238-9105. 509a1: to support clean vehicles efforts
$400,000
$562,000
$440,000
$150,000
$550,000
$40,000
$400,000
$425,000
$400,000]

[Jeff] The Union of Concerned Scientists has become the union
of concerned salesman, having taken millions,
not for science,

but to create markets for electric cars.

The Sierra Club sells electric cars

and solar panels right from their website.

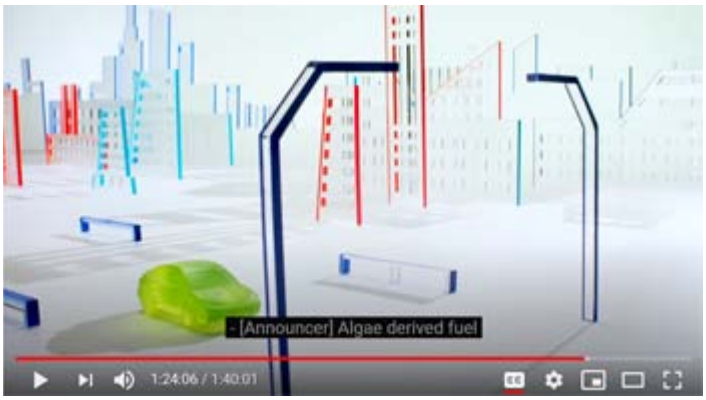
[LEARN ABOUT SOLAR]

[Michael Brune, Executive Director Sierra Club] [Video] The best thing about Sungevity is

that they make it easy for you.
All that you have to do is to say yes.

[ExxonMobil, produced with TBrandStudio]

[Jeff] The New York Times partners with ExxonMobil
to bring you the good news about biofuels.



[Announcer] Algae-derived fuel
could help us meet growing demands.

[Jeff] Treehugger.com, which claims
to be the largest single source of environmental news,

was founded and funded by Georgia Pacific,
a logging company.

In fact, they are neighbors.

[Atlanta, Georgia – Georgia-Pacific / Treehugger.com]

[Jeff] Georgia Pacific is owned by our friends, the Koch brothers,
who are likely the largest recipient
of green energy biomass subsidies in the United States.

[Somber music]

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[Jeff] Yes, the merger of environmentalism
and capitalism is now complete.

But maybe it’s always been complete.

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[Karyn Strickler, Journalist] How is 350.org funded?

[Bill McKibben] Well, not very well.

[Karyn Strickler, Journalist] [Laughing] Who are your funders?

The Sustainable Markets Foundation is an environmentalist organization...[that] serves as a fiscal sponsor, providing grants as well as administrative support to other nonprofits like 350.org or Frack Action....

SMF is funded by major environmentalist groups and center-left foundations such as the Rockefeller Family Fund, Tides Foundation, and TomKat Charitable Trust...

Elizabeth Hitchcock serves as President of the Sustainable Markets Foundation board. Hitchcock also serves as a Public Health Advocate for U.S. Public Interest Research Group and the U.S. PIRG Education Fund.

Jay Halfon is the Director and General Counsel for the organization. Prior to his appointment, Halfron was the executive director of the New York Public Interest Research Group. In addition to his role with the Sustainable Markets Foundation, Halfron serves on the board of 350.org, Earthworks, and the Park Foundation....

In a 2014 report by the Republican staff of the U.S. Senate Committee on Environment and Public Works, Sustainable Markets Foundation was connected with the “Billionaires Club” –– an elite group of donors, foundations, and organizations that control the center-left environmental movement and have influenced policies of the EPA under President Obama.

Particularly scrutinized in the report was the Sustainable Markets Foundation's sponsorship of the organization 350.org. The report states that between 2011 and 2014, 350.org received funding from the Park Foundation, Rockefeller Brothers Fund, Tides Foundation, Marisla Foundation, ClimateWorks Foundation, and Rockefeller Family Fund routed through Sustainable Markets Foundation.

-- Sustainable Markets Foundation, by Influencewatch.org

[Bill McKibben] To the degree that we have any money at all, it's come from a few foundations in Europe and U.S.

[Karyn Strickler, Journalist] Which ones?

[Bill McKibben] Ah, let's see.

The, uh, I'm trying to think who the biggest funders are.

Uh, uh, uh, there's a foundation based in Sweden called,

I think it's called the Rasmuson Foundation,

that I think has been the biggest funder.

Elmer Edwin Rasmuson (February 15, 1909 – December 1, 2000) was an American banker, philanthropist and politician in the territory and state of Alaska. He led the family business, National Bank of Alaska, for many decades as president and later chairman. He also served as Mayor of Anchorage from 1964 to 1967 and was the Republican nominee for United States Senator from Alaska in the 1968 election, losing the general election to Mike Gravel....

In 1954, together with brother-in-law Robert Atwood (who had married Evangeline in 1932), Elmer invested in Richfield Oil's exploration of the Kenai Peninsula. The investment yielded great profits after oil was discovered in 1957 near the Swanson River.

In 1955, Elmer created, with his mother [Jenny Olson Rasmuson], the charitable Rasmuson Foundation. It was to become "the most generous private donor in Alaska history." ...

In 1961, Elmer married Mary Louise Rasmuson, national director of the Women's Army Corps.

-- Elmer E. Rasmuson, by Wikipedia

[Karyn Strickler, Journalist] So you don't get money from Pew or Rockefeller, or any of those big foundations?

[Bill McKibben] No, we did.
Rockefeller Brothers Fund gave us some money right
when we were starting out.
That's been useful, too.

[Karyn Strickler, Journalist] But they no longer fund you?

[Bill McKibben] Uh, uh, I don't know, I don't know. I don't have this sort of –-

[Karyn Strickler, Journalist] [Laughing] Really?

[Bill McKibben] -- Funders sitting in front of me.

[Karyn Strickler, Journalist] That's usually something that people know.

[Bill McKibben] Rockefeller's been one of our, is one of our,

is a great ally in this fight.

The Rockefeller Foundation is a private foundation based at 420 Fifth Avenue, New York City. It was established by the six-generation Rockefeller family. The Foundation was started by Standard Oil owner John D. Rockefeller ("Senior"), along with his son John D. Rockefeller Jr. ("Junior"), and Senior's principal oil and gas business and philanthropic advisor, Frederick Taylor Gates, in New York State on May 14, 1913, when its charter was formally accepted by the New York State Legislature.

-- Rockefeller Foundation, by Wikipedia

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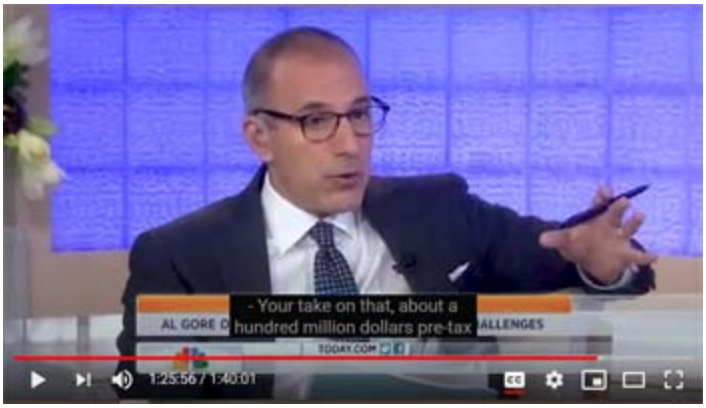
[NOW THIS NEWS Newsman] You just sold your TV network to Al Jazeera.

[Al Gore] Right.

[NOW THIS NEWS Newsman] And that government is basically nothing but an oil producer.

[Al Gore] Gas, mainly, and oil.



[NOW THIS NEWS Newsman] Your take on that was about a hundred million dollars pre-tax, from a country that bases it's wealth on fossil fuels?

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[Interviewer from Today.com] Isn't there a bit of hypocrisy in that?

[Al Gore] Well, I get the criticism, I just disagree with it.

***

[Al Gore] I'm proud of the transactions.

[Jon Stewart] You couldn't find, for your business,

a more sustainable choice?

[Al Gore] What is not sustainable about it?

On January 2, 2013, Al Jazeera Media Network announced that it had purchased Current Media, LLC and would be closing down the Current TV channel while launching and integrating the remains of Current into a new American news channel titled Al Jazeera America using its distribution network. Prior to the sale, it was believed that Al Gore and Joel Hyatt each owned approximately twenty percent of Current Media, business magnate Ronald Burkle owned about twenty-five percent, and Comcast and DirecTV each owned more than five percent. The terms of the deal were undisclosed. According to Forbes and The New York Times, the purchase was about $500 million USD. The purchase by Al Jazeera occurred after an attempt by TheBlaze to purchase the media company was rejected in 2012.

Immediately after the announcement, Time Warner Cable and Bright House Networks, which both broadcast Current TV to nine million American homes, announced that they would be dropping the channel, but stated that they would consider airing Al Jazeera America. It was previously reported in April 2012 that Time Warner and Bright House were considering to drop the channel due to low ratings. Al Jazeera America still replaced Current TV on Comcast, Dish Network, Verizon and DirecTV. AT&T dropped Current TV the morning before it changed to Al Jazeera America prompting a lawsuit for breach of contract from Al Jazeera Media Network. Time Warner and Bright House later added Al Jazeera America on December 6, 2013 after a new deal was signed 2 months earlier. AT&T would add the channel on June 27, 2014.

Defending his decision, Current TV chairman Al Gore wrote: "I am incredibly proud of what Current has been able to accomplish. But broadcast media is a business, and being an independent content producer in a time of increasing consolidation is a challenge." In a news release, Al Jazeera Director General Ahmed bin Jassim Al Thani said,

"By acquiring Current TV, Al Jazeera will significantly expand our existing distribution footprint in the U.S., as well as increase our newsgathering and reporting efforts in America [...] We look forward to working together with our new cable and satellite partners to serve our new audiences across the U.S."

The Al Jazeera network also expected to increase its U.S.-based staff to a total of more than 300 employees and retain most of Current's staff.

In addition to ending the Current TV channel, Al Jazeera announced it was scrapping the channel's programming lineup, as well as its brand. On January 2, Cenk Uygur, host of the weekday Young Turks with Cenk Uygur, stated at the time that the Current TV show would continue for at least three months and that he was open to staying with the new network. Later, after the end of Current, in a Los Angeles Times interview, Uygur remarked about the loss of the television show that he felt "relieved" that he could move on and focus on his web show and site

and that he "was exhausted from doing the two shows at once;" also that "The future is overwhelmingly online" and he was excited to turn his energies there. It was also mentioned that after the acquisition of Current, he had brief talks with Al Jazeera America about whether there would be a place for him and the show, but both sides agreed that Uygur, known for political rants, would not fit well with the company's plans to build a news source with a more neutral tone.

That same day, Jennifer Granholm, host of The War Room with Jennifer Granholm, announced that she would leave the channel as a result of the acquisition, as did Gavin Newsom, host of The Gavin Newsom Show, who was reported to have planned on leaving the network earlier. On Sunday, January 6, Eliot Spitzer announced that he had left the network and his weekday show Viewpoint with Eliot Spitzer.

It was announced in an article in Politico at the time of the purchase that Bill Press didn't expect to continue his show with Al Jazeera once the change officially took place. Press also didn't expect Stephanie Miller to continue her show on Al Jazeera. Press said he would look for TV coverage to replace Current but expected having trouble finding a replacement. On August 1, 2013, Press announced that his show's simulcast would move to Free Speech TV on September 3, 2013. Stephanie Miller announced later after a hiatus from television syndaication that her show would also move to Free Speech TV in January 2014.

In a January 22, 2014 article in Politico Al Jazeera spokesman Stan Collender said the network's launch would be pushed back to within six months, and would create "multiple hundreds of new jobs" and new bureaus around the country. They announced the hiring of 105 total jobs for the new network, with 98 in New York and seven in Washington D.C. On July 3, 2013 Ali Velshi announced on his Twitter account that the network would replace Current on August 20, 2013.

The last live show on Current was Viewpoint with John Fugelsang, ending on August 15, 2013. The final item to air on Current TV was a short VC2 documentary titled "Jumper". "Jumper" was also the first program to air upon Current's launch on August 1, 2005, thus "bookending" the network. Al Jazeera America launched and replaced Current on August 20, 2013 at 3:00pm EDT.

On August 16, 2014, Al Gore launched a lawsuit against Al Jazeera Media Network claiming a residual payment of $65 million of the sale proceeds held in an escrow account, due in 2014, remained unpaid. In September Al Jazeera Media Network launched a lawsuit against Al Gore.

Al Jazeera America shut down on April 12, 2016, citing the "economic landscape and the highly competitive nature of the American media market, as reasons to shut down the channel. After use by three networks since 1994, the channel space folded after Al Jazeera failed to sell it to another network.

-- Current TV, by Wikipedia

[Jon Stewart] Because it is backed by fossil fuel money.

[Al Gore] I get it, I get it, I get it.

***

[Jeff] And so, if you got yourself,
an environmental movement, and environmental leaders,

why not buy the holy day itself?

[Crowd Screaming]

[Man] Happy Earth Day!

[Singing] Oh, oh, oh, oh, oh.

You make me want to say

Ah, you make me want to say.

[Denis Hayes, Founder, Earth Day] Now we are facing the greatest sets of issues that we've seen in my lifetime.
It's time now for a new generation to jump up

on the stage, and create a habitable country,
a habitable planet, that we can all enjoy.

Are you that generation?

[Crowd screaming and cheering]

[Denis Hayes, Founder, Earth Day] I need to thank Building Energy,
which provided so much solar power to this,

that we powered the entire event with solar energy.

[Crowd cheering and screaming]

[Jeff] But when I went backstage to see
what was really going on –-

[Man] It ain’t running this whole thing on that, Jack [points to the arrays]

I can tell you that.

For a toaster, it takes 1200 watts.

So that run right there could run a toaster.

[Jeff] I found the installer.

[Man] Hi.

[Jeff] Are they running the festival

on these solar panels?

[Man] The concert is run by diesel generation system.

They didn’t ask us to energize the concert.

[Jeff] Oh, okay.

[Hugh Evans, CEO, the Global Poverty Project] And we’d also like

to thank our incredible corporate sponsors,

who have been behind the movement to end extreme poverty,

and tackle climate change, since the very beginning.
I want to thank Toyota...

[Loud roaring engine]

[Hugh Evans, CEO, the Global Poverty Project] Citibank.

[NYSE: rings The Closing Bell]

[Clanging bell and cheering]

[Hugh Evans, CEO, the Global Poverty Project] We want to thank Caterpillar.

[Amy Goodman, Democracy Now!] We're standing at the destruction site

of the Dakota Access Pipeline.
It looks like there are

at least three bulldozers actually bulldozing the land.

[Group yelling and cheering]

People have gotten through the fence;

the bulldozers are still going,

[People screaming]

and they’re marching over the dirt mounds.
[Loud angry screaming]

[Man in Orange Shirt] Get the fuck off!
Get the fuck out of here!

[Hugh Evans, CEO, the Global Poverty Project] Without these partners, it wouldn’t be possible.

Let’s give them a round of applause, everyone.

[Crowd cheering and clapping]

***

[Slow solemn music]

[Jeff] Now I know this all might seem overwhelming.
It’s a kind of thing
that we normally don’t try and think about.

[Slow solemn music]

[Jeff] But by not thinking about it,
it stands a good chance of doing us in.

[Slow solemn music]

[Jeff] I truly believe that the path to change
comes from awareness,

[Slow solemn music]

[Jeff] that awareness alone can begin to create the transformation.
There is a way out of this.
We humans must accept that infinite growth,
on a finite planet, is suicide.
We must accept, that our human presence,
is already far beyond sustainability,
and all that that implies.

We must take control of OUR environmental movement,
and OUR future, from billionaires,
and their permanent war on Planet Earth.

THEY ARE NOT OUR FRIENDS.
Less must be the new more.
And instead of climate change,
we must at long last accept
that it's not the carbon dioxide molecule
destroying the planet,
it's us.

It’s not one thing, but everything we humans are doing:

a human-caused apocalypse.
If we get ourselves under control, all things are possible.
And if we don’t --

***

[Ominous music]

[Chainsaw buzzing]

[Crashing trees]

[Sad mournful music]

[Trees crashing]

[Trees scrapping]

[Orangutan chirping]

Ah-ooh

[Mournful orchestral music]

[Music fading]

[Snapping tree branch]

[Slow solemn music]

[Roaring crackling fire]

Ah-Ah-Ooh [Increasing in intensity]

[Orangutan chirping]

[Female singing mournfully]

[Orangutan squealing]

[Man] Yeah, yeah, yeah.

Ah-Ah-Ah

Oh-Oh-Ah

Oh-Oh-Oh

Ooh

PLANET OF THE HUMANS

written, produced, and directed by JEFF GIBBS
produced by OZZIE ZEHNER
executive producer MICHAEL MOORE

A week after this film premiered, Sierra Club came out against biomass burning.
Days later, they gave a green award to a college that burns biomass.

co-producers:
VALORIE GIBBS
CHRISTOPHER HENZE
DAVID PAXSON

editing by
JEFF GIBBS
ANGELA VARGOS

cinematography:
JEFF GIBBS
OZZIE ZEHNER
CHRISTOPHER HENZE

After the first screening of this film, Bill McKibben said he was wrong about biomass.
The Middlebury plant, and thousands more, still burn trees today.

orangutan footage courtesy of
PATRICK ROUXEL

additional cinematography:
CHARLES MILLER
JAMES SCHABERG

sound mixing
CHRISTOPHER HENZE

music consultant:
HEATHER KREAMER

Al Gore, and David Blood, opened a new billion-dollar sustainability fund ... in the Cayman Islands.

associate producer:
TEDDY GROUYA

special thanks:
GAIL SEMER
AL JANKOWSKI
ROD BIRELSON
ANNE MOORE
JOHN HARDESTY
BASEL HAMDAN
CARL PALMER
BRUCE PILATO
JOE BETTS
STEWART YOUNG
DUFF PAULSEN
EMBER SWIFT
NIGEL STANFORD
ROBERT FRIPP
STEVE HACKETT
THOM YORKE
PATRICK O'HEARN
ZACK KELLY
VALENTINA LISITSA
THE PROKOFIEV ESTATE
FRANK FOLEY
NANCY PAXSON
DOMINIQUE DEBROUX
MELONIE STEFFES
VERONICA MOORE
PATTI AND TOM ZEHNER
AARON NORTON
NATE JOHANSING
FLO AND VALERA ZAKAROV
CHRIS HEDGES
CHARLES LITTLE
LIZ TODD

KURT ENGFEHR
MARILYN TRENT
TRENT CREATIVE
TIA LESSIN
CARL DEAL
ADAM J. SEGAL THE 2050 GROUP
RAY AND LEE SCHREURS
DAVE GARDNER
ED LEVERING
RICHARD GROSSMAN
BARBARA FRANKLIN
FLORDE WARD
DAVID TRAUGER
BOB SCHMITZ
CAROLYKN VANDENDOLDER
DEBBY AND DAN THROCKMORTON
ALAN WARE
MATT KERN
MICHAEL DONNELLY
TIM HERMACH
ANGELA BOARDMAN
MICHELLE AND MICAELA JANKOWSKI
DAN KELLY
PATRICIA HUDAK
AMELIA MARPMAN
JERRY HAASER
OLEG MAKARIEV
KYLE RICHARD HENRY
JOAN PHILIPS
SIOBHAN ANDERSON
LUKE DODDS
JACKSON JEWETT
JUSTIN RITCHIE
RODE MICS
DAVE SMITH INSTRUMENTS
APRIL MERLE
JAMIE KRAMER
MORGAN BURKE-BEYERS
JOHN MULROW
RACHEL SMOLKER
DIANE MILLER
MICHAEL SCOTT
MICHAEL LAUW
CASKET CINEMA
STATE THEATRE
BIJOU BY THE BAY
STRYMON PEDALS

LUKE KELLY
CHRIS CLARKE
NAZARETH PANTALONI
ANDRE SCHMIDT
MAXWELL GAIL
ADRIANA SHAW
STEVE QUICK
DC HAYDEN
SAM ROYER
CHRIS CLARKE
INNES SMOLANSKY
BERLIN ATMOSPHERES
SUSAN SUBAK
DOUGLAS GRANT

Shortly after the second showing of this film, Sierra Club’s “green” Aspiration fund abruptly shut down.

archival footage courtesy of
ANTON PETRUS
BLACK BOX GUILD
BLVDONE
DUNCAN SINFIELD
JAMES CORWIN
MYSTOCKVIDEO
NASA
NICO MUNOZ
CRISTIANO NAVARRO
AN BACCAERT
SPOTMATIK AERIALS
THOMAS LUKASSEK
POND5

“Humankind is challenged, as it has never been challenged before, to prove its maturity and its mastery – not of nature, but of itself.”

-- Rachel Carson 1962

in loving memory of
AARON GIBBS-RIVETTE
JOHN AND SHIRLEY MARRA

planetofthehumans.com