
Welcome.


We spend a lot of time talking about individual issues such as government policies and specific advances in technology. Today I want to step back and look at the bigger picture. So first, I would like to describe POET's perspective – and how we see the world – and our role in it.


I'll start with our current perspective. The Age of Fossil Fuels.

Everyone alive right now was born and raised in the second half of this curve, at a time when the ancient gift of fossil fuel was opened.

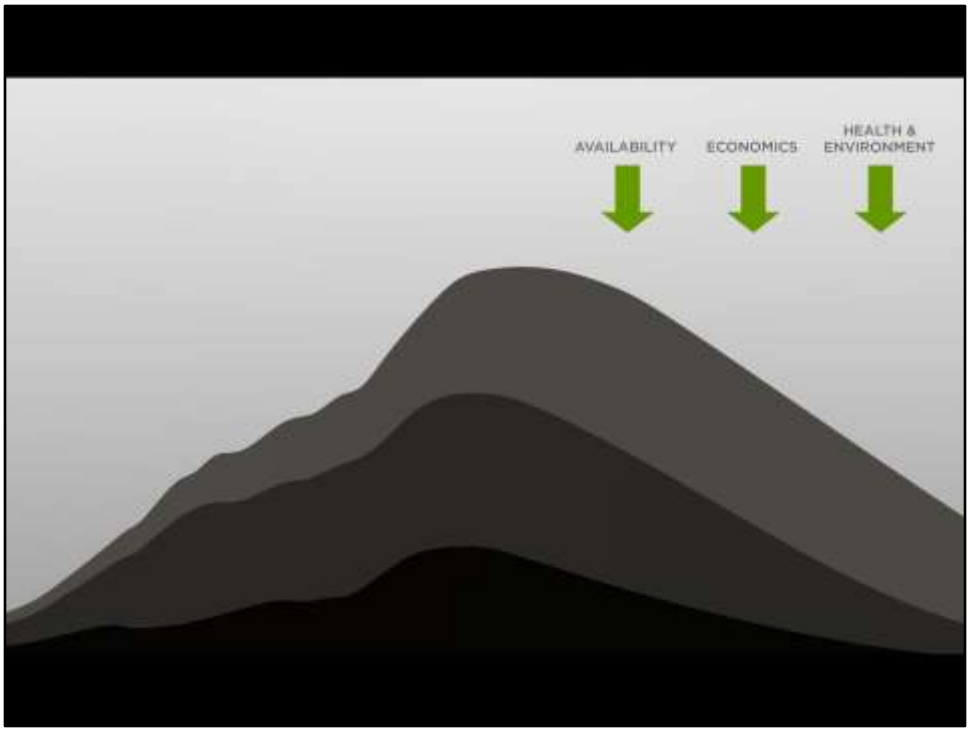
This resource has been available and plentiful for our entire lives.

It is convenient. It requires no maintenance. It waits for us beneath our feet, out of the wait, until we're ready to extract and use it.

This is an obvious point but I'm highlighting it to emphasize the viewpoint we have right now, in our lives, as a time of energy convenience which we take for granted.

This resource has been building in the Earth for millions of years… hundreds of millions of years in some cases, and we are the beneficiaries of the gift, cheap and readily available coal, oil, and natural gas which do not compete for the surface land area we use for other activities.

Source of chart: Rocky Mountain Institute



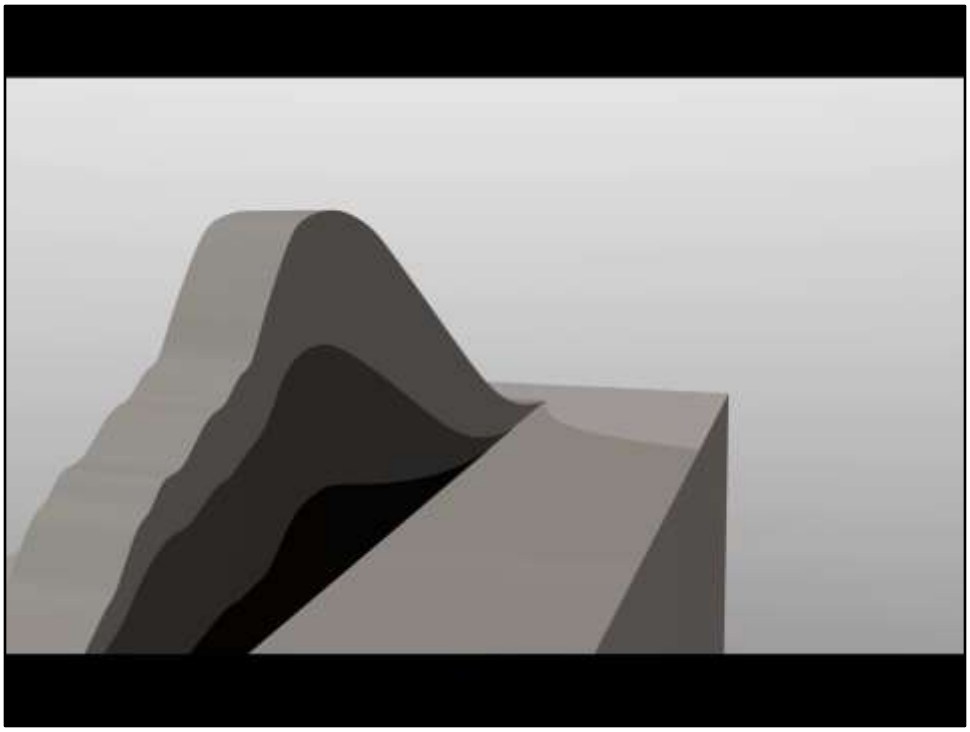

The problem is... The future of that deep reservoir appears gloomy...

**3 reasons why our jackpot of fossil fuels is at its peak**

AVAILABILITY: evidenced by statistics on reserve production and number of wells, and the desperation of deep sea rigs, shale oil, and other attempts to extract hard-to-access fossil fuels.

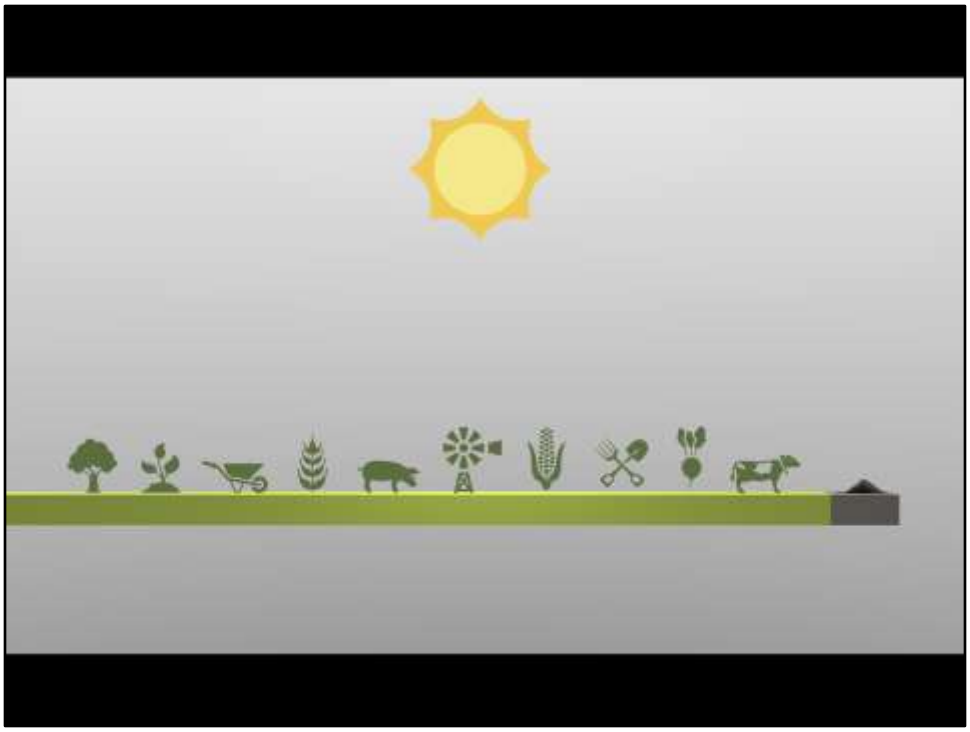
ECONOMICS: Even if there were an endless of supply of these resources, it would be useless without a way to economically extract it. We're already seeing demand shrink as prices rise.

HEALTH & ENVIRONMENT: Thirdly, it's important to note that even without the first two factors, we could still experience a usage peak of these resources in the fact of health or environmental concerns. Nuclear as an example of a resource which has not peaked in availability or cost, but has run into a usage wall due to public concerns/perception over health.



So…. With no indication that our energy needs will drop anytime soon, how will we handle this situation? It seems obvious that if our use of deep-earth resources is dwindling, our surface level resources will bear that load as we move forward.

But will it work?



At POET we believe the answer to that question lies in the past.

*We've done it before*.

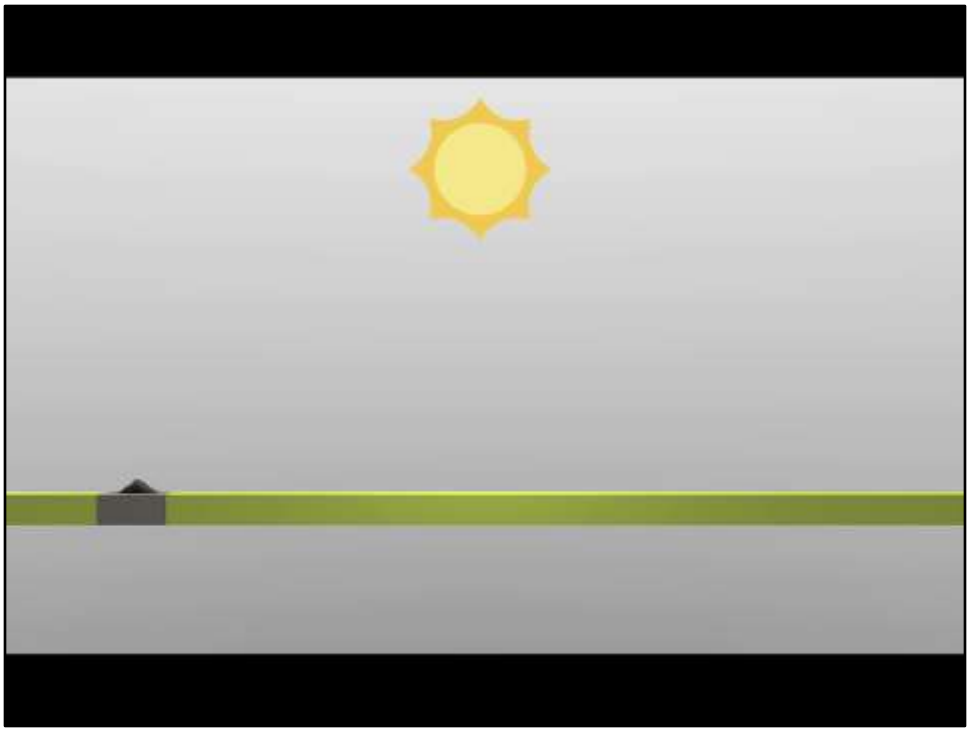
As much as we rely on fossil fuels today, we lived without them for thousands of years.

Through all these centuries, surface-level resources were our source of food AND fuel.

Thousands of years, hunting, gathering, fishing, logging, farming, ranching, exploring and innovating founded on energy harnessed from the sun. And at each step of history, our knowledge grew. Experiments in wind power and hydropower were gaining momentum. The study of biological, physical, and chemical sciences were well on their way. We learned SO much in this time.

This is our foundation.

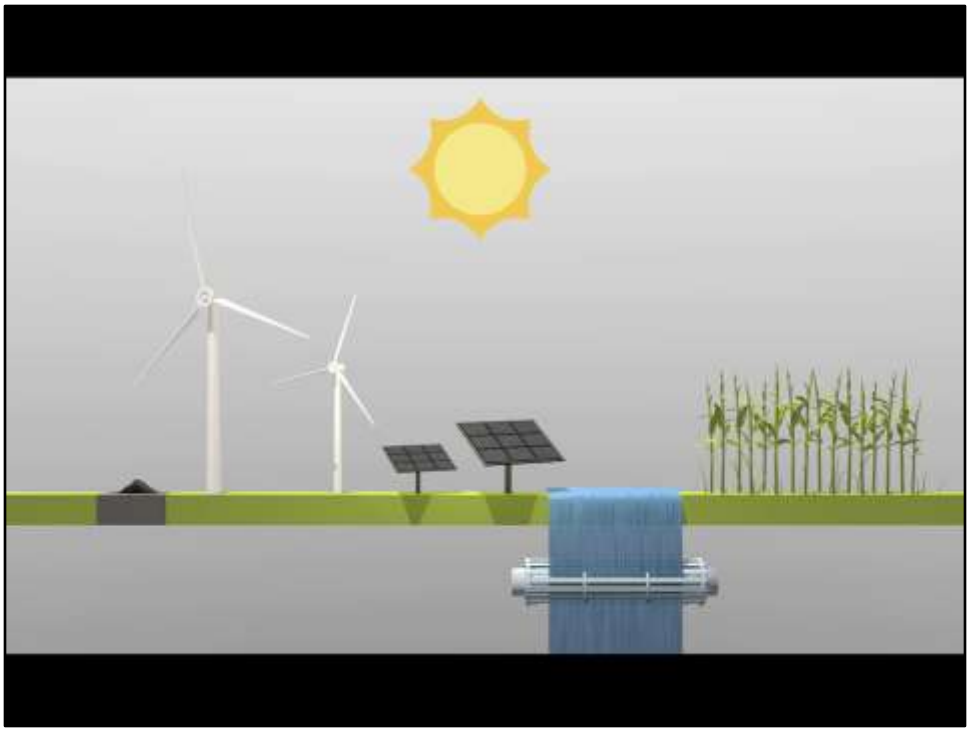
A history of innovation… we found countless ways to convert the natural resources around us into food for our bodies, warmth for our shelters, and in time, fuel for our machines.



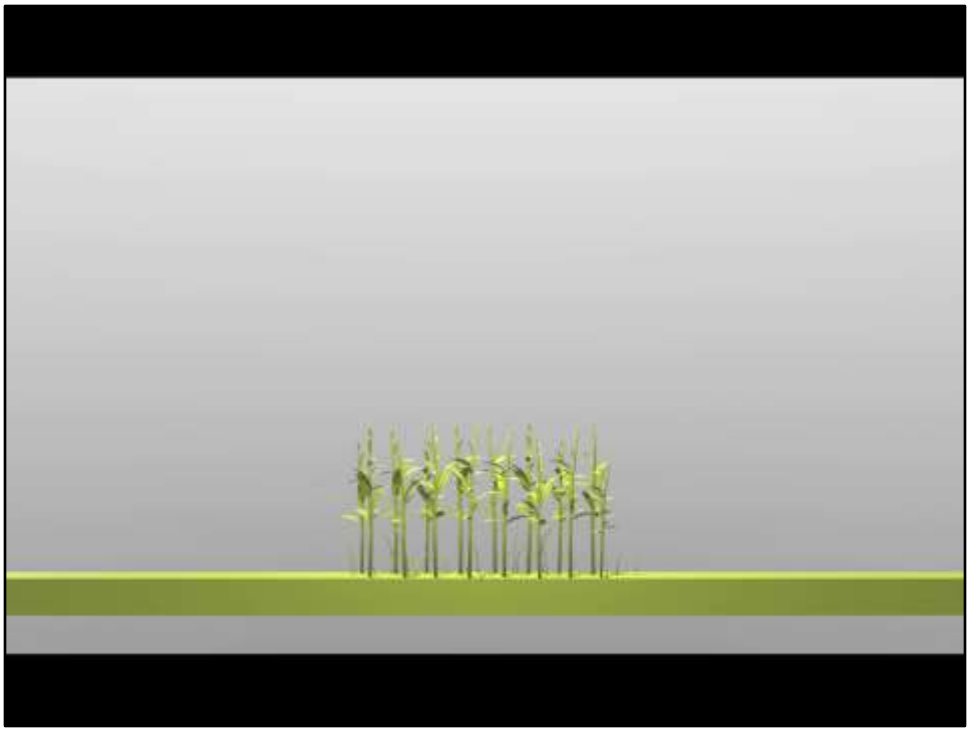
The spirit of innovation which began long before the age of oil is still with us today, and is the key to our future.

As we move into a future without fossil fuels, we have a model to work from. We've done this before. The difference, this time, is obvious: There are 7 times more people on Earth now than when the age of fossil fuels began. Will the approach that sustained 1 billion people in the 1700s will work for 7 billion today, or 8 billion tomorrow?

Fortunately, research and technology allow us to see more energy in the renewable world around us than ever before.



The energy solution of the future will be a TEAM EFFORT… wind, solar-electric, geothermal, hydroelectric, and biorefining…. Direct products of human innovation before and during the Age of Fossil Fuels. A fleet of renewable technologies driven by research, science, and demand.



POET is part of this team effort, and we're focusing on this sector…

We're in the business of solar power. We support the construction of billions of solar panels….

Our focus really on agriculture and the solar power harvested by crops and plants.

There is a massive amount of energy radiating out of the sun. Only a tiny fraction of that hits the surface of the Earth, but even that adds up to an amazing amount of energy. We can calculate that solar energy hits the earth at a density of 1367 watts per square meter*.

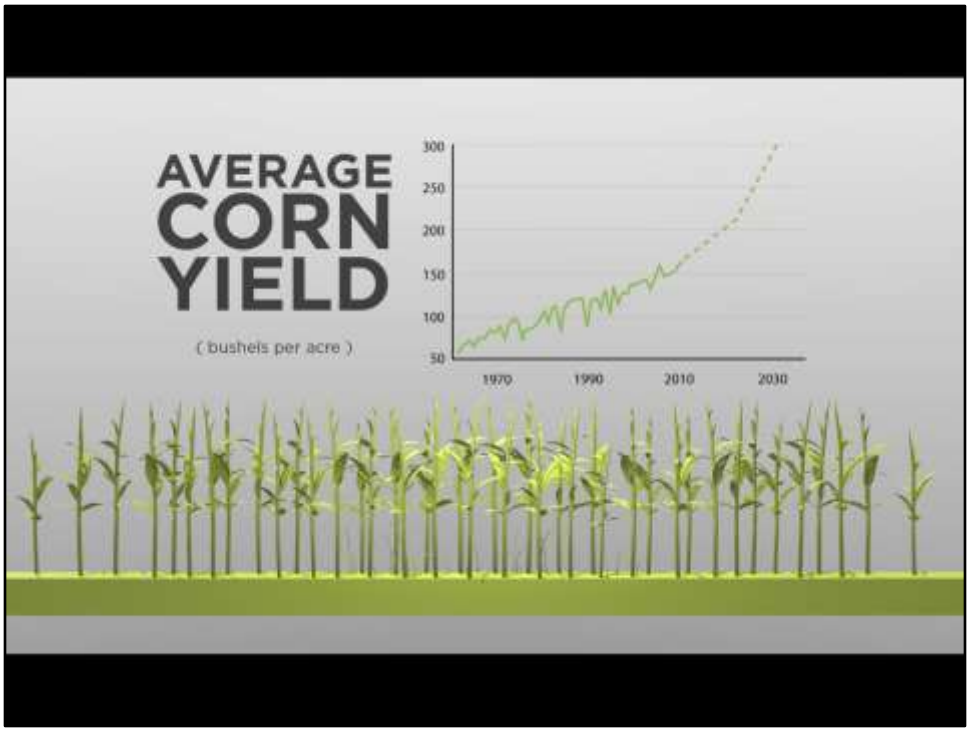
That's enough to power 22 laptops, or 2 refrigerators, or a washing machine, or a dozen flat-screen televisions.

Put another way, 1367 watts per square meter means the total energy hitting our planet from the sun is 10 to 20 thousand times more than our current global energy consumption**.

Of course we can't capture all that energy… but if we could capture even a fraction of that, we could run our civilization on renewable energy. And of course we are capturing a portion of that, and we're getting better at capturing **more** of it.

* multiple sources, including http://www.dnr.mo.gov/energy/renewables/solar2.htm

** calculated using http://www.ecoworld.com/energy-fuels/how-much-solar-energy-hits-earth.html, and http://www.greenbang.com/how-much-energy-does-the-world-use_21568.html




Already, we've seen dramatic increases in crop yields, driven primarily by a demand for this resource.

Contrast with the projected trend of fossil resources. (Trending up versus trending down.)

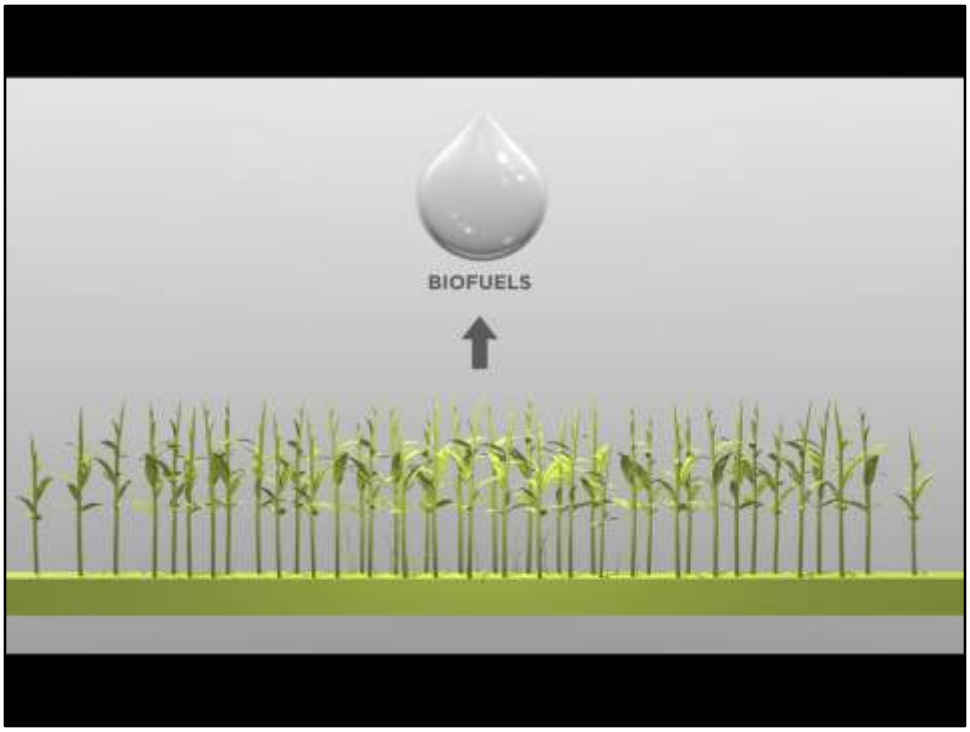
And as yields grow with technology, so does our ability to process these resources more efficiently. POET has seen a 20% increase in the amount of ethanol we can refine from 1 bushel of corn.

A decrease in the amount of water and other resources we need to ferment, distill, and process these materials.

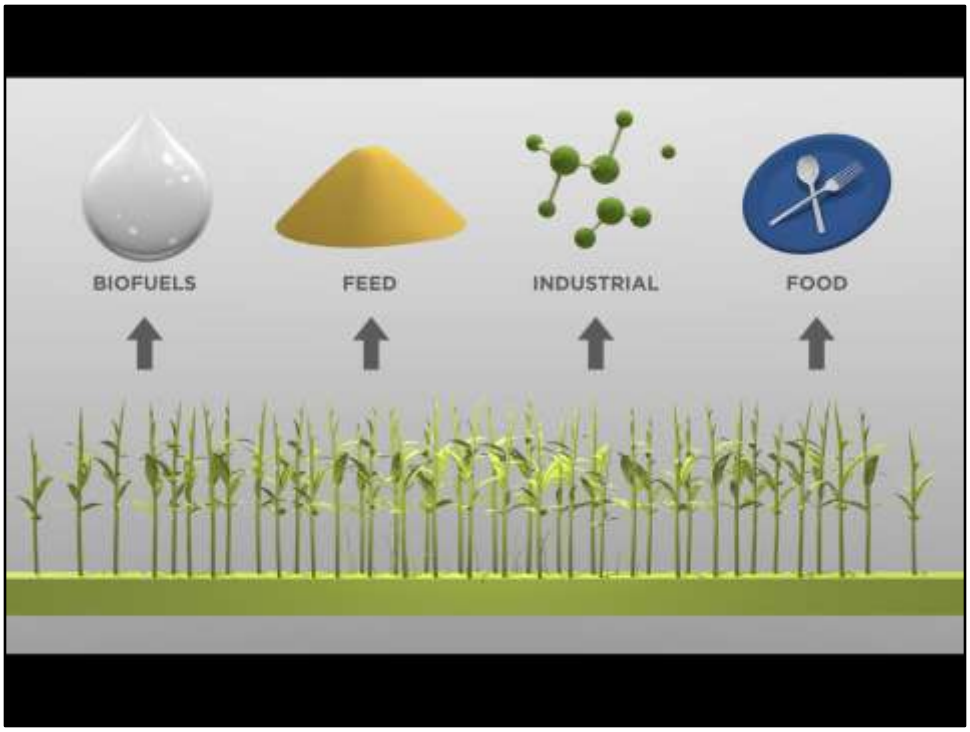
And we're learning more every day.


Yes, we know all of this. We get it. There's a lot of energy in the sun and we can capture it with agriculture. But there's an elephant in the room….

Here's the question on everyone's mind.  And rather than dance around it, I believe it can be addressed directly with 3 points.

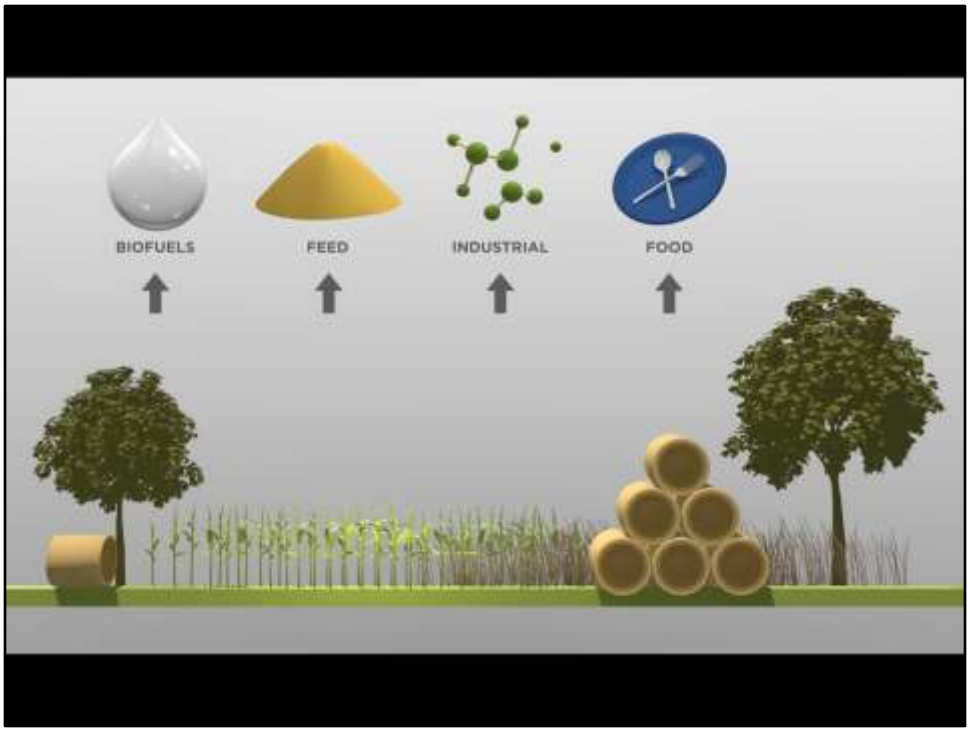



The question, posed as FOOD VS FUEL brings to mind this picture.




In reality, what we do at POET is more like this. So the first point is that biorefining is more than just converting renewable resources into fuel. It also yields a number of byproducts, such as high-quality animal feed. Industry leaders such as POET are also ideally positioned to address the topic of petroleum-based plastics by replacing them with bio-plastics and other protein-based materials.

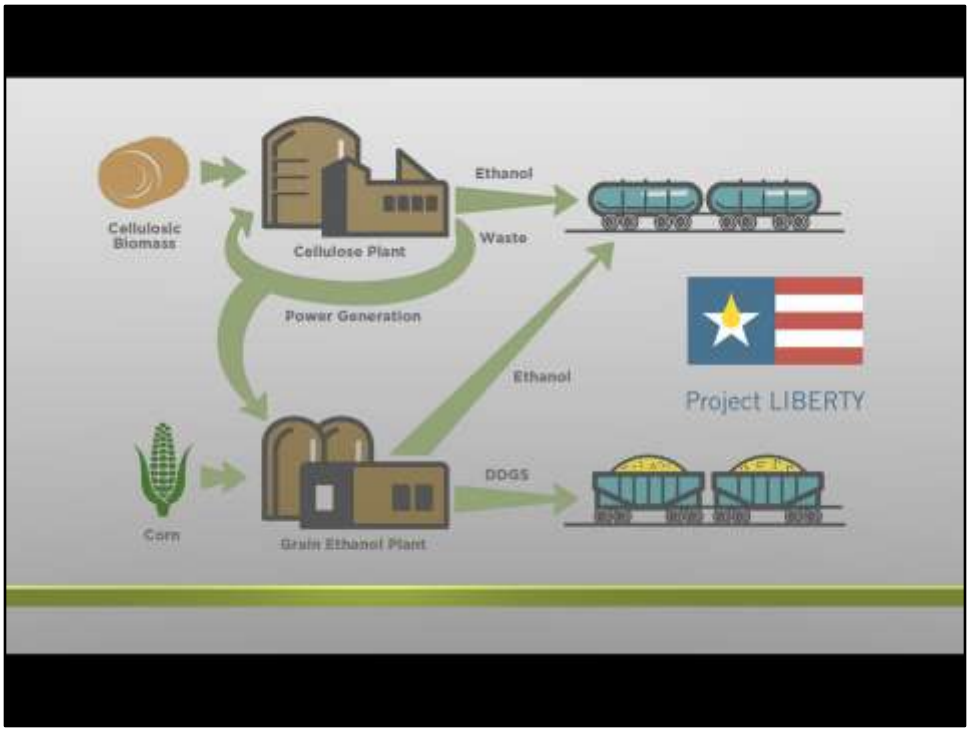
The second point is that *even this graphic* is not entirely accurate.



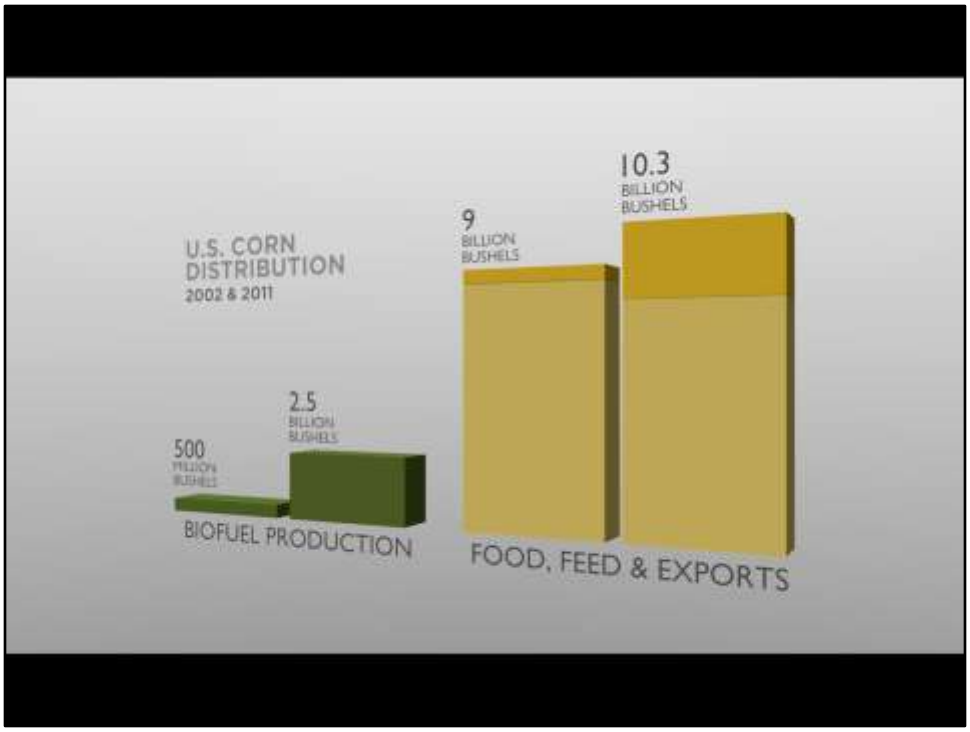

Investment and research in the technology of biorefining has already led to break-through science in refining cellulosic materials like corn stover, switchgrass, and other woody sources.

POET invests heavily in this area of research because we believe it's the key to the future of biorefining.


And by cooperating with global partners like DSM, we've positioned ourselves to move forward with this research.




Our vision for the biorefinery of the future is essentially this: a commercial-scale cellulosic plant sistered to a grain-based plant.




My third and final point is the most difficult to convey, primarily because it is counter-intuitive. And that is, that by finding new uses for renewable resources, we nourish them, rather than deplete them.

Many people believe that by biorefining corn into ethanol and other byproducts, we are stealing those resources from food use. Here are the real numbers.

…basically showing that from 2002 to 2011, use of corn resources for ethanol production increased, and so did their use for food, feed, and exports.

I'd like to wrap up with a statement about our perspective at POET as we move forward:


Each new consumer of a finite resource QUICKENS its inevitable exhaustion. Future opportunity depends solely on discovering more of that resource.


Each new consumer of a renewable resource IS A VOTE for its continued stewardship, and future opportunities flourish not by the discovery of a greater supply, but of a greater demand.


At POET, we believe the things we're doing today along with our partners such as DSM, in creating the biorefinery of tomorrow by developing new biorefined products, and utilizing new feedstocks such as cellulose, will make a significant contribution to a more sustainable world.
So at POET, our perspective is one of abundance – not scarcity. We believe there is almost an unlimited opportunity to provide the energy and food required in a sustainable way by harnessing the energy of the sun, the goodness of the earth, and the innovative spirit of humankind.