

SELECTED AS THE BEST 2009 CALENDAR CONTEST ESSAY:

Taylor Imburgia

7th Grade Yorkville Middle School

COAL: THE ENERGY SOURCE OF OUR FUTURE

The first piece of coal was discovered in Illinois over three hundred years ago. No one knew it would become as significant of a resource as it is today. As fossil fuels in foreign countries run out, coal has the ability to replace them as our leading energy source. Illinois may hold the key to our energy supply concerns of the future. Our great state of Illinois can go down in history as the state that gave the world the energy we need.

Coal is a dark brown to black solid. It is formed from fossilized plants that have decayed and hardened over time. The coal in Illinois is plentiful and is a high-energy bituminous coal. Coal covers sixty five percent of our state's surface. Illinois has a two hundred and fifty year supply of pure bituminous coal. This supply has already made over one billion dollars for the glorious state of Illinois. This coal is less expensive than the current fuels that we use from other countries. Our coal helps reduce the unemployment in our country by creating more jobs. The new, cleaner coal technologies will reduce global warming and air pollution threats. Illinois coal is the best energy choice for our world.

Illinois coal is very important to our country. For many years, we have had to depend on other countries for our energy. Due to the ever increasing prices of foreign fossil fuels, our economy has suffered severely. Coal from Illinois can bring America out of the darkness with a lower costing fuel. With this coal, we can supply electricity for many countries, including ours. We will no longer need to import fuel that is astronomically priced. Illinois coal is the solution to our energy problem.

The Earth needs an energy source that is not harmful towards the environment. Illinois has recently been selected to pilot a new high-tech power plant that will sequester carbon dioxide thus eliminating emissions from reaching the air. This technology essentially captures these emissions by putting them into the ground, to stop air pollution and potential global warming concerns. The new plant will create more jobs for our state. Other forms of energy, like solar, nuclear, or wind power, have been discussed, but experts agree that coal power will be a better choice for America in the near future.

Reliable and affordable energy sources are hard to find, but the search is over. Illinois' supply of coal can be the main energy source for many years to come. The coal will be wanted by every country, so America's economy will prosper. Historically, coal has been viewed as a polluter, but that has changed with technological advancements with the potential to eliminate its impact on climate change. Illinois has the coal that will revolutionize our world. Coal has already earned over one billion dollars, and it is just getting started. Coal is the solution to our energy predicament. I'm proud to live in such an important state that may change the world forever.

Katie Coyle

7th Grade Century Junior High

COAL FOR THE PAST, PRESENT, AND FUTURE

It makes billions of dollars, provides thousands of jobs and is found abundantly in the state of Illinois. What is it? Coal of course! Coal is the most important resource in the state of Illinois. It was discovered hundreds of years ago and was used then, now and will be used in the future of our state.

Even in the late 1800s and early 1900s coal was a very important resource to Illinois. More than three hundred years ago coal was discovered in Illinois. Almost one hundred years after that people began mining underground for coal. Many mines had great success in finding great amounts of coal and staying open for many years; some mines however were not as lucky and did not find very much coal in their location so they could not be in production for long. At these mines, down deep in the ground you would find many men working extremely hard with shovels and tamping rods, a tool used to push an explosive charge into a hole in the wall of the mine, and you would find hard working children delivering food and tools to the miners until child labor laws came into practice in 1938. Like today much of Illinois' electricity came from coal.

We seem to have a never ending supply of coal and a never ending list of things to do with it. Today more than ninety percent of Illinois coal is purchased by the electric industry and almost one half of the electricity in the United States comes from coal. To get electricity coal is burned, creating heat; the heat turns the water into steam; the steam turns the generator, and the generator makes the electricity. Illinois is abundant in relatively clean burning bituminous coal, but that doesn't mean there won't be byproducts. That is why we have found a way to use the leftovers. Coal byproducts are used to make concrete, bricks, plastics, and many more useful products that are mainly used in the construction industry. We also have found ways to reuse the land that has been mined for coal by turning it into parks, golf courses, and wildlife habitat. Clean-coal technologies have been developed as a way to decrease harmful chemicals in the air by removing these chemicals from the coal before it's burned. Coal is a relatively clean burning source of energy that is used all over the country with the help of Illinois coal.

The future of the coal industry looks bright for Illinois. FutureGen, a clean coal project, in Mattoon is going under construction in 2010 and will hopefully open and be operating in 2013. FutureGen will be the cleanest fossil-fuel power plant in the world and will not only turn coal into electricity, but also hydrogen energy. This energy efficient power plant will store ninety percent of greenhouse gases deep underground so they will not get into the atmosphere otherwise it will have near zero emission. FutureGen will also provide thousand of jobs to thousands of people. The great benefits of FutureGen does have a hefty price tag of 1.5 billion dollars. This clean coal technology will help to avoid global climate change the best we can. FutureGen is an amazing advancement in technology for Illinois coal and more importantly, the future.

Illinois is a great supplier of the wonderful resource of coal. We have had great amounts of coal in the past, present, and in the future and have found ways to make uses and byproducts better for the earth as time goes by. We Illinoisans should be proud of our fantastic resources of coal.

Reilly Hofmann

5th Grade Ridgeview Elementary

COAL MINING IN ILLINOS: PAST, PRESENT, AND FUTURE

Coal mining in Illinois produces 33 million tons of coal annually. There are two types of coal mining in Illinois. Coal is mined underground and on the surface. The safety of the miners is very important. Mine safety in Illinois can be understood by looking at the past, present, and future.

In the past, coal mines in Illinois were not very safe places. Mine disasters occurred often. On November 13, 1909, a load of hay being taken into the mine to feed the mules was ignited by a torch being used to light the mine. 259 men and boys were killed. 21 men were saved 8 days after the fire because they had sealed themselves off from the blaze. Another disaster took place on December 24, 1932, at the Moweaqua Mine. A methane gas explosion killed 54 miners. Fire and toxic gases were two problems that the coal industry needed to address.

In present day Illinois, there are many safety precautions for miners. In surface mining, miners use better communication when blasting and better training with the heavy mining machines to prevent accidents. Underground, large fans blow fresh air through the mine. The air is checked every 20 minutes to make sure it is safe. Roof bolts, along with posts, jacks, and beams support the ceiling of the mine. These are checked constantly to make sure it's safe. Another safety measure is rock dusting. Rock dusting is when miners dust the mine's walls with a powder that minimizes the amount of explosions. Many things that a miner wears can save them in a life or death situation. All miners wear hard hats, steel-toe boots, and safety glasses. The most important piece of equipment a miner wears is the self rescuer, which filters out harmful gas in an emergency.

The future of mine safety in Illinois depends on technology. In an emergency, tracking devices that transmit location and the miner's vital signs could help in a rescue. Using ultra low frequency text messaging would let people outside the mine communicate information about safety to the miners. Another advance would be the use of more refuge chambers. Mine refuge chambers are portable and have food, water, and air for up to 96 hours. The biggest advance is the use of robots. Robots can go where humans can't go because of debris or fumes. Robots can take photos or videos and detect gases. In rescues, they can go ahead of humans to see that it is safe.

The safety of Illinois coal mines has come a long way. Mining disasters happen less often because of increased safety. 2007 was the fourth straight year without a death in Illinois coal mines. Continuing to improve safety technology will keep coal mines in Illinois safe into the future.

Matt Kazlauski

6th Grade Rotolo Middle School

COAL MINING AND OUR ENVIRONMENT

Coal is a very useful fossil fuel and is plentiful in Illinois. However, coal can have negative effects on our environment. There are many ways though to use coal safely. Coal companies and federal and state governments are working to ensure environmental safety. Laws have been enacted to ensure that coal companies work to prevent air and water pollution and to ensure that the coal companies have plans in place to return the mined areas back to useful conditions.

Coal companies are trying to keep the harmful chemicals released when coal is burned from harming the environment. Mining coal puts dust and gas in the air, but laws and technologies are trying to stop the negative effects on the environment. Clean-coal technology like fluidized bed combustion removes pollutants while coal burns. Coal gasification converts coal to a type of gas called syngas. This gas can be processed to remove its CO₂, creating a clean energy gas. This gas can be used for heating and lighting.

Good mining protects and saves water from mining pollutants. Water is used to clean coal, but this leaves sediment in the water. The water can be put into sedimentation ponds where the coal sediments fall to the bottom. This leaves cleaner water at the top. Water is then pumped to treatment centers for purification to be used again. All water impacted through the mining of coal must be tested to ensure it meets state and federal water quality levels.

The government has passed reclamation laws for coal mining so the land used in mining does not go to waste. Laws require the mines to have reclamation plans before they can even begin to mine the coal. Topsoil is saved and then returned so the land is in the same or better condition than before the mining. The land is replanted and used as golf courses, farmland, parks, and wildlife habitats. Some wetlands in southern Illinois are reclaimed surface mines.

Coal can be safely mined and used because of laws and technologies. Water is helped by water purification systems so it can be used again. The air is helped by clean-coal technologies so that harmful chemicals are out of the coal while it burns. Landscapes are helped when the topsoil is put back and the land once used for mining is reclaimed. As you can see, coal has many effects on the environment, but the environment is kept safe by laws and technologies.

Jay Kessinger

5th Grade Ridgeview Elementary

IMPORTANT ILLINOIS MINERS

Many people are in the mining industry. Some are geologists and scientists who evaluate the mines to make sure they have all the safety needed. Mechanics work on the machines and repair them so reclamation is successful.

Did you know that wildlife and reclamation experts have to make sure every rule is followed? They also oversee to make sure the superintendent directs the process all the way through the reclamation process. Kind of like a principal overseeing everything.

Highly trained individuals and skilled equipment operators run the roof bolting equipment, shuttle cars, loading shovels, and trucks. These jobs require a lot of attention, skill, and sometimes teamwork to be able to do what you need. Each team is one important group of many important groups of individuals who mine.

Anna Lowenthal

8th Grade Porta Junior High School

AMERICA'S SPARK

Always working

Day in and day out

But they know what they're doing

Without a doubt.

The bravery and determination

It would take

To work in those conditions

Every day.

Some stay in the dark

And work through the night

Just so they can provide America

With electricity and light

And with pride

The coal miner can say

"I helped light up

My country today."

And tomorrow, all the miners will rise

They will wake up and watch the sunrise

So they'll go to work

In the dust and the dark

To help light a few

Of America's Sparks.

Nick Majka

6th Grade Rotolo Middle School

COAL USED IN ILLINOIS AND THE U.S.A.

Coal has been used for many things throughout history. Cavemen used coal to produce heat. In the 19th century, coal was used to power steam trains and for transportation. It was also used to make weapons during the civil war. About 100 years ago coal was used for heating homes and generating electricity. Today coal in the United States is mostly used for providing electricity, by industries who produce coal by-products, and lastly for making steel.

Electricity is made from energy stored in coal. It is the most common use for coal today. Almost half of the state of Illinois' electricity comes from coal. Nine out of every ten tons of coal in the U.S. is used to generate electricity. Coal generated electricity is used for heating, cooling, transportation, farming and much more. The U.S. has about 300 billion tons of reachable coal. This means our coal can last about 300 more years! Actually, it's cheaper to generate coal into electricity than it is to use natural gas.

Coal by-products are used in a variety of industries. Industries use coal by-products for making chemicals, cement, paper, ceramics, and metal products. For example, this paper could have been made using a coal by-product. Separated products of coal are used for making plastics, tar, synthetic fibers, fertilizers, and medicines. Items such as the plastic bags and paper towels we use, to the streets we drive on, and some of our clothing could have been made from separated coal by-products.

Carbonized coal, called coke, is used to make steel. Coke is a product produced by baking coal in a heated oven. When burned, coke generates an intense amount of heat but produces very little smoke, a quality that makes it an ideal fuel for use in production of iron and steel. The steel industries use coke and coal by-products to make steel that is used in bridges, buildings, and automobiles.

Coal is important in our lives. Without coal, we would have a hard time lighting our homes and schools. Groceries would cost more if farmers didn't have coal products to help them farm. Lastly, we might not have been able to rebuild the Wilson Street Bridge in downtown Batavia if we didn't have coal to make steel. I'm glad we have coal to mine in Illinois and the United States.

Nick Moore

8th Grade Rochelle Middle School

ILLINOIS COAL

Have you ever wondered how important coal is to Illinois? In Illinois, coal is a very vital part of the economy. Illinois is very committed to the coal industry. In Illinois, we also find more and more ways to use clean coal technologies.

The coal industry is so important to Illinois' economy that nearly forty-nine percent of our electricity comes from the power of coal. In 2005, nearly thirty-two million tons of our coal was mined, which resulted in nearly one billion dollars in gross revenue for Illinois producers. Also, over seventy-two percent of Illinois coal is sold to out-of-state utilities. In 2005, Illinois utilities used more than five million tons of coal. Most people don't know that Illinois is not the only state that uses Illinois' coal. States that use our coal include Indiana, Tennessee, Kentucky, even Missouri and Florida. Florida and Indiana each use more than four million tons of our coal each year.

Illinois' commitment to the coal industry is very important to our success in the coal industry. As a result to the commitment that Illinois has to its coal, Illinois sponsors the largest coal research and development program in the United States. Over seventy-three million dollars in state, federal and private funds have been granted for research on coal extraction. The Illinois Coal Demonstration program is helping to demonstrate and deploy clean and efficient technologies for Illinois coal. Illinois has supported over thirty clean coal projects in its efforts to help aid the coal industry. Did you know that over one-hundred and twenty-six million in state dollars have produced eight-hundred and thirty-seven million in private infrastructure investments to coal extraction? That lets Illinois produce more and more coal each year.

In conclusion, coal plays a huge role in our society and our everyday lives. In an effort to keep this coal industry of ours alive, Illinois must be very committed to the coal. Next time you turn on your lights, just think about where it could be coming from.

Samantha Spengler

6th Grade Rotolo Middle School

THE JOURNEY OF ILLINOIS COAL

“Rockin’ around the Christmas tree at the Christmas party hop...” Jazzy music echoes through the house. The tree is lit up brighter than the sun. The heat is on full blast and the microwave is starting and stopping, cooking the best hot cocoa for miles around (Mom’s secret recipe). Through all this Christmas cheer, I cannot help but think about what made all this happiness possible. Illinois coal has made this Christmas season warm and joyful for me.

When I think about coal, it is hard to forget what actually started it, the brave people who entered the dark and dangerous coal mines, just so they could provide their city with energy, or even further back, the very beginning. In 1673, two explorers named Father Jacques Marquette and Louis Joliet wrote down the first ever record of coal in Illinois. The mineral was found along the banks of the Illinois River in northern Illinois. Fast forwarding to 1810, miners were working hard when the first sale of coal was shipped from Illinois. It marked the start of many successful years to come. Soon after, the first ever record of coal production said that coal miners produced six thousand tons of coal in 1833. It is amazing how far coal has come!

So many different dates were important in coal history, but what about the people who worked hard and risked their lives just to earn a living, and in later years to change America? It was a harsh life down in historical coal mines; dangers were everywhere, fires, collapses, and much more. Yet people would brave even the worst. Who were they and how did they change the way we look at coal? People came from all over seeking their fortune in the coal industry. Irish, Scottish, Welsh, German, French, Italian, and a few other immigrants of different nationalities worked in mines. Even children sometimes helped out. Some people who provided inspiration for troubled souls were John Mitchell and “Mother” Jones. John Mitchell was a role model for aspiring workers by rising up from a poor mine working boy to president of the organization – United Mine Workers of America. “Mother” Jones was an awesome helper. Her speeches were life changing and her fierce personality told miners to never give up.

All these incredible people and dates set up for some pretty amazing things to happen. Three of many others are: The 1909 Cherry Mine Fire in Cherry, Illinois. It was the largest mine fire in the history of the United States. The deepest underground coal mine in Illinois was one thousand and four feet deep. Imagine how gloomy and treacherous it was down there! And, in 1961 coal became the most major resource used for electrical purposes, a landmark for loads of hard work.

For decades and decades, Illinois coal has made warm and joyful Christmases for millions of Americans. Looking deep into its mysterious past and journeying through mines one hundred years old made me realize how truly terrible it was for those miners deep, down, underground in leaky shafts. It also made me realize how lucky we are to have the technology we have now. Thanks to the workers years ago, we are able to do and make things we never could. The miners put their lives in jeopardy, just so they could heat a little girl’s home so her feet would be warm at night. They really are heroes (at least in my opinion).

Jadeah Spindler

6th Grade Three Rivers School

HOW DOES COAL EFFECT OUR ENVIRONMENT?

You probably know that you use coal in your every-day life all the time. It is one of our main sources of energy. But do you know how mining and using this coal effects our environment? Well, that is what you are about to find out.

Reclamation of the land that was used for coal mining is a BIG part of minimizing the effects that coal has on our environment. Mining coal from Illinois causes major changes in its landscape. There are now federal and state laws that require the land that was used for the coal mining be reclaimed or reformed. Before, land that was used in the coal mining process was left unattended after the mining. The reclaimed land can be used as wildlife habitats, golf courses, parks, or even farmland.

There are also technologies known as clean coal technologies. Ever since scientists have been concerned about the air we breathe, they have been trying to come up with ways to burn coal while emitting less harmful chemicals into the air. These technologies include removing harmful substances before, during and after the burning of the coal. One of these technologies is called fluidized bed combustion (FBC), and it removes any harmful substances out of the coal while it is being burned. Another technology is known as coal gasification where the coal is turned into gas, therefore emitting less harmful substances into the air.

Water plays a big part in coal separating and washing. The bad thing was that much of this water was going to waste. Now, there are ponds called sedimentation ponds that allow the water to be recycled. The water goes into a huge pond (a sedimentation pond) that allows all the small bits of rock and rock particles (sediment) to fall to the bottom of the pond. The water is pumped out and then is ok to be used in the next coal washing and separating process.

In summary of all of this information, good coal mining practices help protect and conserve our environment. By reclaiming the land, using clean coal technologies, and conserving/recycling their water, they reduce the impact that coal has on our environment. In this case, the less impact, the better!!

Elizabeth Teubert

6th Grade Frederick School

ILLINOIS COAL AND THE ENVIRONMENT

We all know that coal can put harmful chemicals into the air, but what we all should know is how Illinois is working to keep our environment a safe and healthy place to live.

Land reclamation is the process of returning land to the way it was (or better) before mining began after all of the mining is done. Lands that have been reclaimed are often used as animal habitats, golf courses, farmlands and parks. Independence Grove is a great example of land that has been reclaimed.

Clean-coal technologies allow harmful chemicals to be removed from coal before, during, and after it is burned. Two ways we do this are coal gasification and fluidized bed combustion (FBC). Coal gasification converts coal to gas, and fluidized bed combustion removes the pollutants that are harmful to our environment from the coal while it is being burned.

Illinois sets a good example for other states to follow because we see that our environment is important, and we are doing things to keep it in a good condition.

Dylan Wodrich

6th Grade Rotolo Middle School

ILLINOIS COAL MINING IN THE PAST, PRESENT, AND FUTURE

If you want to get a lot of information about coal and more specifically coal mining in Illinois, then do not put this piece of paper down! Do you want to know how long we have been mining coal? Read on to find out.

In the past, mining coal was very important for Illinois. The people of Illinois first discovered coal about 300 years ago, but we have only been mining it for about 200 years. When Illinois first started mining coal, we only used picks and shovels. We used mules to transport our coal. Can you believe how hard mining would have been 200 years ago! In the more recent past (2006), 22 mines in Illinois employed around 3,900 miners; each miner making an average of \$45,450 per year. I am sure you are bored with the past by now. We should move on.

It is time to talk about present day coal and coal mining. Mining coal in Illinois uses state of the art technology for mining to ensure great coal quality. Today, we rank 9th in coal producing states. We mine around 32 million tons of coal each year. (Imagine that.) The best and most impressive part of all of that is that only 11 counties are mined for coal. More than 90% of Illinois' coal is used for the electric utility industry. That pretty much wraps up present day coal mining. What do you say we move on to the future?

Coal mining in the future holds a great deal for Illinois. If we were to ever stop using coal in Illinois it would take a human (many people would lose jobs) as well as an economic toll. The Office of Coal Development is working on turning coal into domestic energy supplies such as coal to liquids, coal to syngas and other energy supplies.

So, you have read about coal in the past, present, and future. You have learned that Illinois has been mining coal for 200 years and our economy has been benefiting ever since. The future will bring new ways to use coal.