Divestment is a powerful way to take a stand against companies involved in an activity that is morally reprehensible. This strategy has been used to send strong messages and force change in corporate policies and governance. Through divestment campaigns, shareholders, the people and organizations that own corporate stock, are forced to take responsibility for the actions of the companies they own and demand change or sell their shares.

Why should universities divest from coal-fired utilities and coal mining companies? Coal is a dirty, dangerous fuel from destructive mining practices to coal burning to disposal of its toxic waste. Every year in the U.S. there are 21,000 deaths, 24,000 hospitalizations and 280,000 severe asthma attacks attributable to the coal industry. Coal is the largest source of mercury pollution in the country, affecting 1 in 12 U.S. women and damages from the coal industry cost the U.S. $100 billion a year in health costs.

Many universities are basing their financial success and stability on this dirty, dangerous and increasingly risky industry. Is the notion that growing the value of the endowment is more important than the thousands of people who are ill from coal acceptable?

The fact is today there are alternative investments that make equal or better returns. The emerging renewables and clean tech industries are among the fastest growing sectors of the U.S. economy. Even investing in the campus itself through programs such as efficiency funds can provide real returns while creating educational opportunities. For universities who are educating and training emerging leaders, the question comes down to whether they are investing in the future with new technology solutions that will create jobs and a healthier, cleaner world or in the past with risky dirty energy holdings that are contributing to global problems.

WHERE ENDOWMENTS ARE CONCERNED
IT'S TIME FOR UNIVERSITIES TO PRACTICE WHAT THEY TEACH.

In the 1970s students witnessed the atrocities happening in South Africa. Responding to the apartheid system that disenfranchised people of color, the mass democratic movement called for worldwide governments to impose economic sanctions on South Africa. The US, which was deeply tied to South Africa, refused. In response, students realized that they could take matters into their own hands and pressure their universities to divest. Through the power of student activism, one university after another started to divest. South Africa became a moral pariah; owning stock in businesses that benefited from apartheid became morally unacceptable. The apartheid system began to unravel and was ultimately dismantled. In short, college divestment activism can be a powerful tool.

Students have already pushed their schools to reduce global warming pollution, retire campus owned coal plants, invest in renewable energy and green jobs. Students once again can come together and expose coal as a moral pariah, pressure universities to divest their coal holdings, and reinvest in a clean energy future for the benefit of students and the global community.
# Table of Contents

3  **Why Divestment**  
4  **Running a National Divestment Campaign**  
6  **Understanding University Endowments**  
9  **The Filthy 15**  
11  **Health Threats From Coal**  
15  **Coal Is a Risky Investment**  
16  **Greening Your Endowments Portfolio**  
17  **The Authors**  
18  **Acknowledgements**  
19  **Appendix A: Filthy 15 Fact Sheets**  
TBD  **Appendix B: Coal Is a Risky Investment**  
     **(Extended Version)**
WHY DIVESTMENT

The movement to transition our nation beyond coal to clean energy has already stopped more than 150 proposed coal-fired power plants from being built, pushed numerous dirty plants towards retirement, and fought major battles to protect communities from destructive mining practices that poison peoples water and destroys entire landscapes. The success of this work through grassroots organizing, legal challenges, regulatory advocacy and pressuring policy-makers has been tremendous, but the coal industry is still extremely influential.

Ten of the biggest US utilities spent approximately $3.84 billion between 2009 and 2010 lobbying our nation’s decision-makers¹ and the industry as a whole spends millions on public relations efforts aimed at influencing the American public and investors that they’re not the dangerous industry of the past we know they are. Divestment campaigns are an opportunity to expose the real financial liability of the coal industry. These efforts can show investors that coal is a fuel of the past that is too risky and too dangerous to continue supporting financially.

Electric power companies and their coal mining suppliers are uniquely vulnerable to actions that threaten their image in the investment community and thereby their access to capital. This financial vulnerability should be utilized to accelerate pressure on coal-dependent utilities to shut down their coal plants and move to cleaner, renewable energy. Reduced coal demand by utilities will have negative consequential effects on the coal mining and transportation industries.

Endowment fiduciaries are unlikely to divest from the filthiest coal companies without external pressure challenging the legitimacy of investing in coal from social and economic perspectives. To be successful students will need to stand up and demand their universities act immediately to move beyond coal.

The goal of these campaigns is to divest all university endowment funds out of the filthiest utilities, coal operators and mining companies in the U.S.

The bottom line is simple: Does your university profit from the environmental and health degradation of the coal industry? If so, it’s time to show your university they can maintain a successful endowment that is in alignment with their values and invests in a safer, healthier future for all people.

Will you join us?

DIVESTMENT COMES AT A CRISIS POINT
Divestment campaigns are a serious approach to disrupting the cycle of a crisis. For example, the movement to divest from companies tied to the government of Sudan, which took place over the last decade ignited because of the failure of political channels to stop the bloodshed. The coal industry’s brazen destruction of communities, poisoning of our air and water, contributions to the global climate crisis and its entanglement in our political system have led us to a crisis point that must be addressed using all the tools and resources we have. Divestment can serve as one of these approaches and in doing so can shift the dialogue on major issues that can have reverberations in both the financial and policy arenas.

DIVESTMENT IS A SOPHISTICATED STRATEGY
Modern endowment portfolios have been engineered to be resistant to outside influence, sometimes removing the university itself completely from the decision-making process. Therefore, running successful a divestment campaign requires clear goals, informed strategies, and consistent and visible pressure to overcome the institutional barriers set up to protect the people in charge of investing.

DIVESTMENT IN CONTEXT
If a community decides to make a statement by no longer financially supporting corporate abuse of the environment and society, this behavior is a profound step. However, it’s important to see this action from the perspective of the corporation from which an investor is choosing to divest. When an institution sells its holdings in a corporation, another investor will buy them, even if it’s at a lower price.

IF THIS ACTION TAKES PLACE IN ISOLATION, OR WITHOUT SIGNIFICANT MEDIA EXPOSURE, THE CORPORATION MAY NOT EVEN KNOW THE DIFFERENCE BETWEEN A CONCERTED, MORALLY MOTIVATED ACTION AND A BAD WEEK FOR THE MARKET.

When a divestment campaign is attempted without a broader national context, it makes it much easier for a university administration to resist a demand for divestment. Almost no higher education institution wants to be the first of their peers to make a move that risks being perceived as “political” or “taking a side”. What some see as an institution taking a leadership position on an important societal issue, others may see as taking a significant financial and reputational risk that could alienate possible donors and alumni.

DIVESTMENT AS A NATIONAL MOVEMENT
Let’s contrast the approach of an individual campus campaign to that of a national movement. Say we’re students at your average college campus in Ohio, protesting the school’s investment in the coal industry, and we’ve just heard a resounding “no” from our administration to our concerns. Instead of shutting our campaign down, we get in touch with five peer institutions in our region and ask them to join us. Now there are six campaigns in several media markets taking place across the state. Both the media and the administrations at these schools are bound to be feeling the pressure exponentially more than before, especially as their carefully cultivated reputations start to take hits from concerned parties. This is what happened in the divestment movement from apartheid South Africa in the 1980s; universities insisted for years that their investments in the regime were internal, highly sensitive financial decisions, until the reputational risks of being associated with such an unjust regime hit a tipping point.
DIVESTMENT GOES NATIONAL
Things may be heating up on our hypothetical campuses in Ohio, but now think back to the perspective of the coal and power industry. That negative media attention will be putting major pressure on them too, and that means a concrete impact on the one thing that matters most to them: their earnings. As the national divestment campaign spreads across the country, the financial markets begin to take notice too. Analysts in New York, London, and Tokyo start to re-examine the risks and rewards of the coal industry as a worthy investment, which can significantly multiply the financial and reputational impact on the industry. By this time, our universities will be realizing that the benefits of remaining invested in coal no longer outweigh the risks, and the coal industry will be feeling the powerful reverberations of this backlash.

The impact of this shift in the public discourse is also critical. Political dialogue is a carefully crafted struggle between interests trying to ‘reframe’ the debate under their terms. The way in which a national divestment movement could shape the issue would, in turn, affect the way ordinary people and the media think about and portray the issue. This would bring momentum to and inspire action in the political arena. A large, effective national divestment movement against coal would have a huge impact on the ‘hearts and minds’ of those who may currently perceive coal as a risk or a nuisance, but not a true instigator of crisis. As large numbers of people get behind divesting from coal, it would help remove coal’s social license to operate and create the appearance of a ‘pariah’ industry, like tobacco, implicated in the deaths they are responsible for and the environmental catastrophe they are creating with every ton of coal they burn.
UNDERSTANDING UNIVERSITY ENDOWMENTS

The endowment is like a school’s savings account, while a separate operating account is used more like a checking account.

Divestment campaigns typically focus on the endowment since that’s where most of the university’s funds are invested.

Unfortunately, most institutions keep their endowment investments completely hidden.

ENDOWMENT MAKE-UP
A typical endowment has a mix of different types of investments. The asset allocation is the different types of investments and the percentage of the endowment invested in each.

Types of investments in a typical endowment portfolio:

**Domestic equities** are investments in publicly-traded companies based in the U.S. – companies whose stock is bought and sold publicly on the stock exchange. “Equity” is essentially another word for “ownership” or “investment.”

**International equities** are investments in international holdings.

**Short term and cash assets** refer to investments that are relatively low-risk and therefore unlikely to gain or lose value quickly. They are low-return (making a small but steady return) and usually fairly accessible (money that the institution can get its hand on readily).

**Fixed income** represents other low-risk, low-return assets, like bonds that have a fixed rate of return for various periods of time.

**Alternative strategies** are much more complex, high-risk, high-return strategies, and investment vehicles that have become more common over the past few decades. These investments are some of the hardest to scrutinize and understand.

WHAT’S THE BIG SECRET?
One of the defining characteristics of the current endowment investment model is just how secretive most of the holdings are.

NO ONE BEHINDS HIGH-RANKING UNIVERSITY OFFICIALS AND FINANCIAL PROFESSIONALS KNOWS WHERE THE VAST MAJORITY OF MOST ENDOWMENTS ARE INVESTED.
WHY IS THIS?
1) Significant proportions of many university endowments are invested in *commingled funds*. A commingled fund consists of assets from several different investors that are all pooled together, such as in a mutual fund. Commingled funds are usually intentionally obscured and difficult to obtain information about. Often investors don’t know who else is invested in the fund with them. When a school invests in a mutual fund of stocks, for example, it is not buying shares of the companies that comprise the mutual fund but rather shares of the mutual fund itself. This significantly limits the school’s rights as a shareholder as those rights are instead given to the mutual fund manager.

2) When universities invest with fund managers, they often sign *agreements that limit their freedom to disclose information*, including the specific funds they are invested in and the underlying holdings of those funds. Fund managers argue these agreements are necessary to protect their competitive advantage, but the truth is, they talk about the inner-workings of their financial strategies all the time—they just want the power to choose who has access to it. If one of the institution’s funds does include a dangerous or risky company, they have to either sell all their shares of that fund or convince the fund manager to remove the company from the fund.

3) Universities are non-profit institutions, so there are *very few regulations for endowment transparency*. Because universities are not forced to be transparent about their investments, they most often are not.

There is some momentum to change this, most concretely in Massachusetts, where the Massachusetts Higher Education Transparency Act would require higher education institutions to disclose much more about their endowments’ investment practices, including information about their external fund managers.

4) Many universities are trying to protect their endowment portfolio practices because they view them as valuable *trade secrets*. Whereas several decades ago university endowments were invested in more transparent and liquid securities, today, most universities employ “a new

---

**SOMETHING TO WATCH OUT FOR**

Some schools have successfully divested from a specific industry in their direct holdings, only to find out that they were still invested in that industry through externally managed funds. In 2005, the Harvard Management Company responded to student demands about its investments supporting the Sudanese government, which at the time was a major perpetrator in the genocide in Darfur. The university agreed to divest shares of PetroChina and Sinopec, two close partners of the Sudanese government. However, in 2007, students discovered Harvard University investments in two externally managed funds that included stakes worth as much as $16 million in the two companies—a substantially larger amount than the funds previously divested from direct holdings.²

model of investing that relies on radical diversification of endowment portfolios into illiquid, riskier asset classes.\(^3\) Highly compensated university officials, such as the Chief Investment Officer (CIO) and Executive Vice President have personal interests in keeping their investment strategies hidden. Competitive Wall Street culture is prevalent in university investment offices, and successful CIOs and investment officers often leave their positions to seek even larger salaries from other schools or private asset management companies.

**WHO CONTROLS HOW THE UNIVERSITY’S ENDOWMENT IS INVESTED?**

The Board of Trustees is the highest legal body of the university and it makes the highest-level decisions about the university’s finances often through an Investment Committee. The Investment Committee is usually comprised of influential alumni or individuals who have significant experience in business, management, access to resources and a desire to help the school. In some public schools, trustees may be political appointees.

---

**CONFlicts of interest abound**

For example, in 2003, University of Pennsylvania students who were advocating for UPenn to reconsider its investments in cigarette giant Philip Morris had to argue their case to a group of trustees that included an individual who also sat on the Philip Morris corporate board. As of 2010, Dartmouth’s board counted a number of trustees who managed investments valued at approximately $100 million for the endowment in a five-year period. Even when there are not direct conflicts of interest, trustees’ intimate connections to the banking system and their corporate directorships compromise their abilities to responsibly oversee endowments. De-sensitized by their time spent working in bailout banks, venture capital, hedge funds, and private equity, many trustees view risky, exotic, illiquid investments as business as usual.

---

THE FILTHY 15

THE LARGEST, DIRTIEST COAL-FIRED UTILITIES AND COAL MINING COMPANIES IN THE US

The Filthy 15 is a list of the largest and dirtiest coal-fired utilities and mining companies in the US. Not only are these companies jeopardizing public health, damaging the environment, and placing an unfair burden on low-income and minority communities, but their continued reliance on coal makes them an increasingly risky investment (see Financial Risks of Coal).

TELL YOUR ENDOWMENT TRUSTEES TO DIVEST:

- Direct ownership of public equities and corporate bonds in the Filthy 15
- Pooled funds that have equity holdings and corporate bond holdings in the Filthy 15

THE FILTHY 10: COAL-FIRED UTILITIES

Coal-fired power plants contribute to mercury and particulate pollution, arsenic and other toxic groundwater contamination, ozone smog, acid rain, regional haze, and global warming. There is a direct link between this pollution and human health. In 2010 alone, coal plants were responsible for 17,057 deaths, 26,248 heart attacks, 281,242 asthma attacks, and other severe health impacts. Many coal-fired power plants are located near low-income communities, placing the greatest health burden on the people that can afford it the least.

TELL YOUR ENDOWMENT TRUSTEES TO DIVEST:

- Tons of coal mined
- Method of extraction
- Environment and safety regulation violations, and
- Influence peddling via political donations

THE FILTHY 5: COAL MINING COMPANIES

Coal mining causes irreparable damage to land, water, air and also risks the health, safety, and vitality of local communities. The most destructive type of coal mining, known as mountaintop removal, involves coal companies literally blowing off the tops of mountains to reach thin seams of coal and leaving the debris in valleys and streams leading to ecosystem damage and toxic runoff destroying water supplies. Additionally, coal miners are exposed to dust and particle pollution that can cause black lung and other respiratory problems. The conditions at many mines are exceedingly unsafe, placing miners at risk of injury and/or deadly explosions like the one that occurred at Massey Energy’s Upper Big Branch mine which left 29 miners dead.

The mining companies on the Filthy 15 list were selected based on the following criteria:

- Tons of coal mined,
- Method of extraction,
- Environment and safety regulation violations, and
- Influence peddling via political donations.

THE FILTHY 15
Investments in the Filthy 15 are morally unjust and fiscally irresponsible. It’s time to divest from the Filthy 15 and reinvest in on-campus initiatives and green, screened portfolios.

COAL-FIRED UTILITIES:

1) AEP: burns more coal than any other utility
2) Duke: 1,248 deaths last year. The #1 killer
3) Southern: the 4th largest carbon polluter in the world
4) FirstEnergy: merged with Allegheny, doubled its coal capacity
5) Mid-American: Warren Buffet’s coal utility, testifies against EPA regulations
6) Ameren: average age of Ameren’s plants reaching 50 years old!
7) PPL: doled out $25 million to neighbors of its Colstrip plant after its coal ash ponds contaminated groundwater
8) NRG: cancer rate near Indian River plant is 17x higher than the national average
9) Dominion: being sued over coal ash reuse in a Chesapeake Bay golf course
10) Edison International: worst environmental justice violator in the country

MINING COMPANIES

11) Peabody: the world’s biggest private-sector coal company
12) Arch: the second largest coal producer in the U.S.
13) Patriot: the second largest practitioner of mountaintop removal mining
14) Alpha: 9 environmental violations per day. Massey lives on!
15) CONSOL: the operator of 7 of the 20 U.S. mines with the most safety citations

COAL DIVESTMENT TOOLKIT: MOVING ENDOWMENTS BEYOND COAL
HEALTH THREATS FROM COAL

Human health is at risk from each phase of the coal lifecycle. From mining, to transporting, to burning, to the disposal and storage of coal ash waste, there is a persistent harm to human health. The chart below shows the devastating coal-related health impacts on American citizens in 2009 by the filthiest 10 coal-fired utilities.

Table 1: Health Threats from the Filthy 10 Coal-Fired Utilities

<table>
<thead>
<tr>
<th>UTILITY</th>
<th>DEATH</th>
<th>ASTHMA ATTACKS</th>
<th>HEART ATTACKS</th>
<th>ACUTE BRONCHITIS</th>
<th>CHRONIC BRONCHITIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duke</td>
<td>1,248</td>
<td>20,511</td>
<td>1,887</td>
<td>1,786</td>
<td>758</td>
</tr>
<tr>
<td>AEP</td>
<td>1,236</td>
<td>19,905</td>
<td>1,921</td>
<td>1,730</td>
<td>743</td>
</tr>
<tr>
<td>Southern</td>
<td>1,224</td>
<td>20,770</td>
<td>1,710</td>
<td>1,819</td>
<td>752</td>
</tr>
<tr>
<td>FirstEnergy</td>
<td>821</td>
<td>12,653</td>
<td>1,341</td>
<td>1,094</td>
<td>484</td>
</tr>
<tr>
<td>Ameren</td>
<td>407</td>
<td>6,896</td>
<td>628</td>
<td>601</td>
<td>250</td>
</tr>
<tr>
<td>Dominion</td>
<td>332</td>
<td>5,528</td>
<td>519</td>
<td>481</td>
<td>205</td>
</tr>
<tr>
<td>Edison International</td>
<td>313</td>
<td>5,262</td>
<td>495</td>
<td>458</td>
<td>193</td>
</tr>
<tr>
<td>MidAmerican</td>
<td>234</td>
<td>4,305</td>
<td>362</td>
<td>377</td>
<td>152</td>
</tr>
<tr>
<td>NRG</td>
<td>223</td>
<td>3,896</td>
<td>354</td>
<td>340</td>
<td>140</td>
</tr>
<tr>
<td>PPL Corp</td>
<td>221</td>
<td>3,535</td>
<td>373</td>
<td>306</td>
<td>134</td>
</tr>
<tr>
<td><strong>Total Filthy 10</strong></td>
<td>6,259</td>
<td>103,261</td>
<td>9,590</td>
<td>8,992</td>
<td>3,811</td>
</tr>
<tr>
<td><strong>Total for all US plants</strong></td>
<td>17,057</td>
<td>281,242</td>
<td>26,248</td>
<td>24,488</td>
<td>10,382</td>
</tr>
</tbody>
</table>

According to the Physicians for Social Responsibility, pollution from coal contributes to four of the five leading causes of death in the US and adversely affects the respiratory system, the cardiovascular system, and the nervous system leading to a wide range of chronic and fatal diseases (see Table 2).

---

<table>
<thead>
<tr>
<th>Disease or Condition</th>
<th>Symptoms or Result</th>
<th>Most Vulnerable Population</th>
<th>Coal Pollutants Implicated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asthma exacerbation</td>
<td>Coughing, wheezing, shortness of breath, and breathlessness</td>
<td>Children, Adults</td>
<td>NO2, ozone particulate matter (PM)</td>
</tr>
<tr>
<td>Asthma development</td>
<td>New cases of asthma, resulting in coughing, wheezing, shortness of breath, and breathlessness</td>
<td>Children</td>
<td>Suspected but not confirmed: NO2, ozone PM2.5</td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease (COPD)</td>
<td>Emphysema with chronic obstructive bronchitis; permanent narrowing of airways; breathlessness; chronic cough</td>
<td>Smokers, adults</td>
<td>NO2, PM</td>
</tr>
<tr>
<td>Stunted lung development</td>
<td>Reductions in lung capacity; risk factor for development of asthma and other respiratory diseases</td>
<td>Children</td>
<td>NO2, PM2.5</td>
</tr>
<tr>
<td>Infant Mortality</td>
<td>Death among infants &lt; 1 year</td>
<td>Infants</td>
<td>NO2, PM</td>
</tr>
<tr>
<td>Lung Cancer</td>
<td>Shortness of breath, wheezing, chronic cough, coughing up blood, pain</td>
<td>Smokers, adults</td>
<td>PM</td>
</tr>
<tr>
<td>Cardiac arrhythmias</td>
<td>Abnormal rate or rhythm of the heart; palpitation or fluttering; may cause fatigue, dizziness, fainting, rapid heartbeat, and chest pain</td>
<td>Adults, hypertensive, diabetics</td>
<td>NO2, PM2.5</td>
</tr>
<tr>
<td>Acute myocardial infarction</td>
<td>Chest pain or discomfort</td>
<td>Adults, hypertensives</td>
<td>PM2.5</td>
</tr>
<tr>
<td>Congestive heart failure</td>
<td>Shortness of breath, fatigue, edema (swelling) due to impaired ability of heart to pump blood; can result from narrowed arteries, past heart attack, can lead to death</td>
<td>Adults, hypertensives, diabetics</td>
<td>PM2.5</td>
</tr>
<tr>
<td>Ischemic stroke</td>
<td>Artery supplying blood to the brain becomes blocked; may cause sudden numbness or weakness, especially on one side of body, confusion, trouble speaking, trouble seeing, trouble walking, dizziness, severe headache; effects can be transitory or persistent</td>
<td>Elderly, hypertensives, diabetics</td>
<td>NO, PM23, PM10, SO2</td>
</tr>
<tr>
<td>Developmental delay</td>
<td>Mental retardation; clinical impairment on neurodevelopmental scales; permanent loss of intelligence</td>
<td>Fetuses, infants, children</td>
<td>Mercury</td>
</tr>
</tbody>
</table>

COAL MINING CAUSES MORE FATAL INJURIES THAN ANY OTHER US INDUSTRY

Miners are perhaps the most adversely affected population due to chronic health problems including chronic obstructive pulmonary disease and black lung, which causes permanent scarring of lung tissue. Communities near coal mines may also be adversely affected by mining operations due to the effects of blasting, the collapse of abandoned mines, and the dispersal of dust from coal trucks. Surface mining destroys forests and groundcover leading to flood-related injury and death, as well as erosion of soil and consequentially the contamination of water supplies. Mountain Top Removal mining (MTR) is a particularly hazardous extraction method that involves blasting the tops off of mountains to expose coal seams deep below the surface. The debris is dumped into adjacent valleys where it blocks streams, destroys freshwater ecosystems, and leaches toxins into local water supplies. This mining technique is widely used across southern Appalachia.

After mines are abandoned iron, aluminum, cadmium, and copper are released into the surrounding water system and contaminate drinking water. Before the coal is transported to power plants, it must be washed. Coal washing, which removes soil and rock impurities, creates a liquid slurry waste which is stored in impoundments/ponds. Slurry ponds can leak or retaining walls can breach, leading to severe injury and death. Slurry, which is often injected underground into old mine shafts, can release arsenic, barium, lead, and other heavy metals into nearby wells, contaminating local water supplies.

TRANSPORTATION

After coal is mined and washed, it is transported to power plants. Trains and trucks together release over 600,000 tons of NOx and 50,000 tons of particulate matter into the air every year. Nearby communities are then exposed to dust inhalation as coal dust is released in the air via coal trucks. These trains and trucks also run on diesel fuel subjecting communities, schools, churches and playgrounds to continuous traffic and air pollutants.

COMBUSTION

The burning of coal places the greatest toll on human health. When coal is burned for energy, a combination of toxic chemicals are released into the air, including sulfur dioxide (SO2), particulate matter (PM), nitrogen oxide (NOx), mercury, and dozens of other hazardous air pollutants and toxins known to be harmful to human health. When NOx is released from power plants and reacts with volatile organic compounds in the presence of sunlight, ground-level ozone is produced which is the primary ingredient in smog. These air pollutants damage the respiratory, cardiovascular, and nervous system.

These air pollutants impair lung development which can cause other pulmonary diseases. Coal pollution plays a role in the development of chronic obstructive pulmonary disease (COPD), a lung disease. Air pollution also triggers attacks of asthma, a disease affecting more than 9% of all children in the U.S. Children are particularly susceptible to the development of pollution-related asthma attacks.

WASTE

Over 130 million tons of coal ash is produced in the US every year from coal combustion. If you stacked it on a football field, it would be 20 miles high. This toxic ash contains arsenic, lead, cadmium and other heavy metals. It is either stored in a dry landfill or mixed with water to form slurry and piped into giant impoundments that hold 2-3 billion gallons of toxic sludge that can cover 1600 acres. Every coal plant has several of these unlined “ponds” that leach arsenic and heavy metals into local water supplies. Not many people knew about these until December of 2008 when a retaining wall of the TVA impoundment in Kingston Tennessee burst, dumping 1.1 billion gallons of toxic sludge on to the town and into the nearby Tennessee River. The town was evacuated, the river is still dead and the long term
health impacts of the families living there are not fully accounted for yet.

Because of the pollutants in coal ash, leachate from ponds and dry landfills can severely damage health and the environment. EPA's 2010 risk assessment found the cancer risk from drinking water contaminated with arsenic from coal ash disposed in unlined ponds is as high as 1 in 50 adults or 2,000 times EPA's regulatory goal for acceptable cancer risk. This is equivalent to the cancer risk of smoking 20 packs of cigarettes EVERY DAY! These impoundments are often sited on the banks of a river allowing the leachate to move easily into municipal drinking water supplies. Dry landfills can also pose dangers to drinking water and aquatic life, according to the EPA.

### CANCER CASES PER 100,000 EXPOSURES

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>500</th>
<th>1,000</th>
<th>1,500</th>
<th>2,000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPA GOAL CANCER RISK</strong></td>
<td>1</td>
<td>100</td>
<td>500</td>
<td>1,500</td>
<td>2,000</td>
</tr>
<tr>
<td><strong>SMOKING A PACK OF CIGARETTES A DAY</strong></td>
<td>100</td>
<td>500</td>
<td>1,500</td>
<td>2,000</td>
<td></td>
</tr>
<tr>
<td><strong>EXPOSURE TO COAL COMBUSTION WASTE</strong></td>
<td>2,000</td>
<td>1,500</td>
<td>1,000</td>
<td>500</td>
<td>0</td>
</tr>
</tbody>
</table>

Coal ash is also sold for use in everyday product and for landfill in construction projects. This practice called “beneficial use” endangers people as toxic material is used for landscaping; making rolling hills on golf courses and highway embankments. Toxic runoff after a rain poisons local water supplies. It is also mixed with concrete and used as “recycled material” in plaster wall board and bowling balls. Another beneficial use is using coal ash to fill old mines. This puts the toxic material in direct contact with aquifers and poses health threats to local communities.

**Coal kills people at every stage of its life cycle.**

---

Coal that was once referred to as “cheap and abundant” is neither. Coal is a risky financial investment for two primary reasons: First, over half of the U.S. coal-fired plants are old, inefficient, and require major costly retrofits – costs that will not be recovered in the course of the plant’s useful life. Second, the price of coal and cost of extraction is going up, while the price of natural gas and other alternatives are low, making coal-fired electricity a financial loser.

Utilities and Public Utility Commissions know the risks: Since 2005 utilities and PUCs have canceled 153 new coal plants.8 These cancellations moved $243 billion away from coal to other opportunities.9 In 2010, plant closing announcements demonstrated that both larger and younger plants are no longer economical as plans for new natural gas plants and alternative energy projects increased.10

INVESTORS WITH HOLDINGS IN COAL-FIRED UTILITIES FACE SIGNIFICANT FINANCIAL RISKS.

1. Costs of environmental compliance.
   • Coal-burning utilities are being required to comply with the Clean Air Act, Clean Water Act, and other environmental laws forcing expensive retrofits on older plants that cannot be amortized over the plants useful life.
   • Enforcement of existing environmental regulations and proposed new regulations will impose significant increases in capital and operating costs.
   • The cumulative risk posed by enforcement of existing regulations and the adoption of new rules for air, water, and waste, will increase the cost of producing electricity from coal.

2. Increasing price and price-volatility of coal.
   • In 2010, the price of coal from each of the major U.S. production regions increased significantly: +48.2% in the Powder River Basin; +45.6% in Central Appalachia; +19.4% in the Illinois Basin; and +51.4% in Northern Appalachia.
   • Price increases are projected to continue, creating a commodity risk for utilities with substantial power generation based on coal.
   • The estimates of coal reserves once thought to be “abundant” have been downgraded.
   • The price of natural gas is at historic lows and is projected to stay at these prices - making coal-fired power comparatively expensive.

All of these factors, taken individually and cumulatively make power generation through the combustion of coal uncompetitive with cleaner alternatives.

---

This section (to be written) will cover a discussion of green indexed funds that outperform S&P 500 and other investment instruments suitable for endowments to replace dirty coal holdings and still return comparable profits. This section will also discuss how investing in green infrastructure on-campus has quantifiable returns.
Corinne Bendersky is Coal Program Manager at As You Sow. She conducts in-depth research, files shareholder resolutions, and coordinates company dialogues. She graduated magna cum laude from the UC Santa Cruz with bachelor’s degree in Environmental Studies.

Martin Bourqui is Responsible Endowment Coalition National Organizer at Tufts University. Martin organized around responsible investment issues with the support of REC; now, as National Organizer of REC, he has also worked with Citizens for Voter Choice, the Global Development and Environment Institute at Tufts University, and at Americans for Democratic Action in Washington, D.C.

Bob Burton is a contributing editor to CoalSwarm wiki portal and a freelance journalist and author based in Hobart, Australia. He has written for a wide range of publications from the British Medical Journal to newspapers and magazines in Australia, New Zealand, the US and the Asia-Pacific region.

Emily Flynn is the Manager of Special Projects at the Sustainable Endowments Institute. She earned her bachelor’s degree at Williams College, with a focus on environmental biology and social psychology.

Joshua Frank is a researcher for CoalSwarm and has worked as an independent environmental journalist for eight years. He holds a degree in Environmental Conservation from New York University.

Amy Galland, Ph.D., is Research Director at As You Sow where she researches, analyzes, and publishes industry reports on Corporate Social Responsibility policies and benchmarks best practices in recycling, sustainability, product safety, purchasing, and supply chain monitoring.

Kim Teplitzky helps run the Sierra Student Calition’s Campuses Beyond Coal campaign that aims to transition every campus in the nation off dirty coal to 100% clean energy solutions.
Thanks to all those who contributed information, reviewed content, or otherwise helped in the production of this toolkit: Andrew Behar, Dan Apfel, Ellen Dorsey, Joshua Buswell-Charkow, Mark Orlowski, Maura Cowley, Richard Graves, Richard Mott, and Ted Nace.

Thanks to all the organizations that collaborated on this campaign:

- American College & University Presidents Climate Commitment
- AS YOU SOW
- California Student Sustainability Coalition
- CoalSwarm
- Energy Action Coalition
- Green Corps
- IB5k
- Responsible Endowments Coalition
- Sustainable Endowments Institute
- THE ENGAGE Network
- WALLACE GLOBAL FUND

This campaign was made possible by the generous financial support of the Wallace Global Fund.

Design by: makewellmade.com