



## **KOPERNIK PERSPECTIVE**

### **Is Coal Dead?**

#### **EXECUTIVE SUMMARY**

Kopernik is a believer in the longer growth in demand for electricity. Seven billion people are a lot and the population continues to grow. Coal, gas, geothermal, nuclear, hydro, wind and solar are all excellent ways to produce electricity, but they are all very flawed ways as well. They will all have a place in meeting the future needs of the world.

Coal is arguably the best source. It is arguably the worst. Kopernik will challenge excess bullishness such as that exhibited circa 2011. We will challenge, and endeavor to take advantage of, excessive pessimism too. Kopernik is all too happy to invest in any of the referenced energy solutions at the right level of pessimism/price.

#### **THE CONTROVERSY OVER COAL**

At Kopernik, as value investors and contrarians at heart, we frequently find ourselves leaning against the popular opinions on Wall Street as well as Main Street. We are often early both buying and selling stocks as we find the discipline of using value as our guidepost more profitable over the long run than using momentum, revisions or any of the myriad other shorter term indicators that many other investors rely on. Because of this, people frequently look at our portfolio and question some of our holdings as being contrary to what “everyone” knows to be a prudent investment.

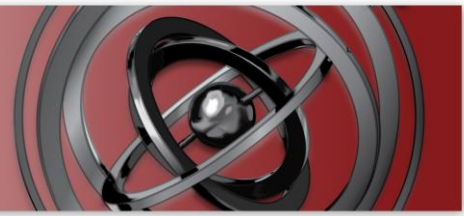
One of these investments that makes our clients question our intelligence, if not sanity, is coal stocks. It seems everyone knows that coal is the worst thing to ever happen to mankind (as well as the planet) and is on its way to the dustbin of history. For over a thousand years coal has been used as a source of energy and has been controversial for virtually that entire time. King Edward the 1st of England (the same Edward “Longshanks” who fought Mel Gibson in Braveheart) outlawed the burning of coal in 1306 under penalty of death due to the pollution it was causing in London. It is believed that he even had a person executed for burning coal and had a few others tortured. Something people complaining about President Obama’s “war on coal” might keep filed away under the heading “things could be worse”.

Unfortunately, from a purely environmental standpoint, economics won out. With there being no other energy source near the low cost and abundance of coal, it became the source of heat and electricity that is causing so much alleged damage to the planet’s ecosystem today (the fact that it also enabled the industrial revolution and a massive improvement in global living conditions seems like a small footnote to the current doomsday narrative).

Historically most of the controversy over burning coal has come from the visibly obvious pollution that it spewed into the atmosphere, namely soot and smog, as well as the invisible pollutants such as sulfur dioxide, nitrogen oxides and mercury. In the developed world most of these pollutants have been greatly reduced through the use of technologies such as scrubbers. The developing world is not as advanced in cleaning up its coal use, as China’s smog choked cities can attest. However, the latter will certainly improve over time as China continues to develop western standards of modern pollution controls and improve coal plant efficiencies.

The bigger worry with coal now is its emissions of carbon dioxide, considered a major contributor to global warming. So far there is no economically viable solution to reducing the emissions of carbon dioxide from coal, except for reducing or eliminating it from the energy mix. Carbon capture and sequestration technologies continue to be explored in both government and private sectors, but none appear to show much promise, at least in a reasonable time frame and cost.

Given this, has the time for coal’s demise finally come? We think not. The main reason Kopernik thinks coal will be with us for a while is that it still makes economic sense and economics tend to win out over time. Assuming we still want to have modern necessities like lights, air conditioning, computers, iPhone chargers and electric cars, we will still need to get our electricity from somewhere and the alternatives remain limited, expensive and unreliable for now.



## THE TRUTH ABOUT RENEWABLES

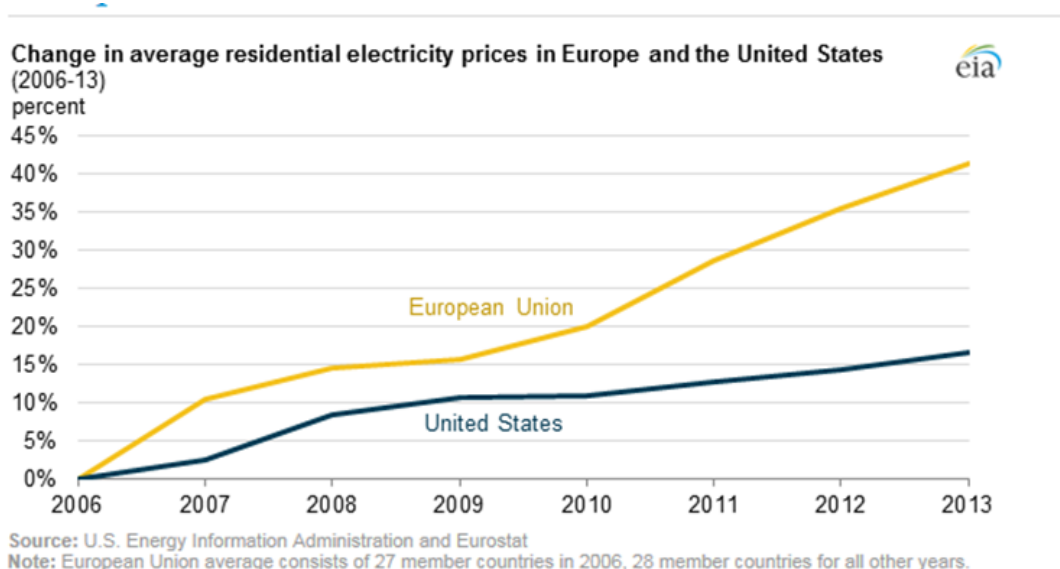
Can renewables like solar and wind replace coal generated electricity? In a word, no. At least not in the near to intermediate future and not without significant increases in costs and decreases in reliability. Granted, we have seen fairly rapid growth around the world in solar and wind installations. However, these have come with very high cost in subsidies, which were palatable when they were still a small part of the overall energy pie, but become much harder to swallow as they grow. Alternatives, even if they were cost effective, will not be able to supply a material amount of base load energy needs for a very long time.

At Kopernik, we have seen, for a few years now, studies showing that solar and wind power are competitive (or nearly competitive) on an unsubsidized basis with coal and natural gas. This seems hard to believe given that everywhere subsidies are reduced, solar and wind installations plunge immediately. Kopernik thinks most of these are still a long way from being competitive without direct subsidies, net metering, generous tax credits or without government mandates.

While in the United States, the march to renewables seems to be in full force, countries that were leaders in renewables are finding the costs very high and are starting to backtrack on them. For example, Australia last year repealed a carbon tax (which technically is not a subsidy but rather a tax on fossil fuels intended to make renewables more attractive) due to its high costs.

In Spain, the government directly subsidized solar and wind projects for years and managed to get these sources up to 20% of total generation. However, recently the Spanish government has had to cut these as the costs became too much for the government to bear. As a result investment and employment in the solar and wind industries has fallen over 90%<sup>1</sup>. The story in Italy is similar.

Germany was another early champion of renewables and heavily subsidized them as well, especially pushing distributed solar installations. They too have found that the costs are becoming too great as residential electricity prices there are over three times those in the U.S. (36 cents a kilowatt-hour versus about 12 cents here). Additionally, this doesn't even include other taxes piled on top of those for other renewable subsidies as well as significant efforts placed on energy conservation. Despite these high electricity rates the German utilities seem to be struggling as wholesale prices decline and the costs of sustaining the grid continue to rise.

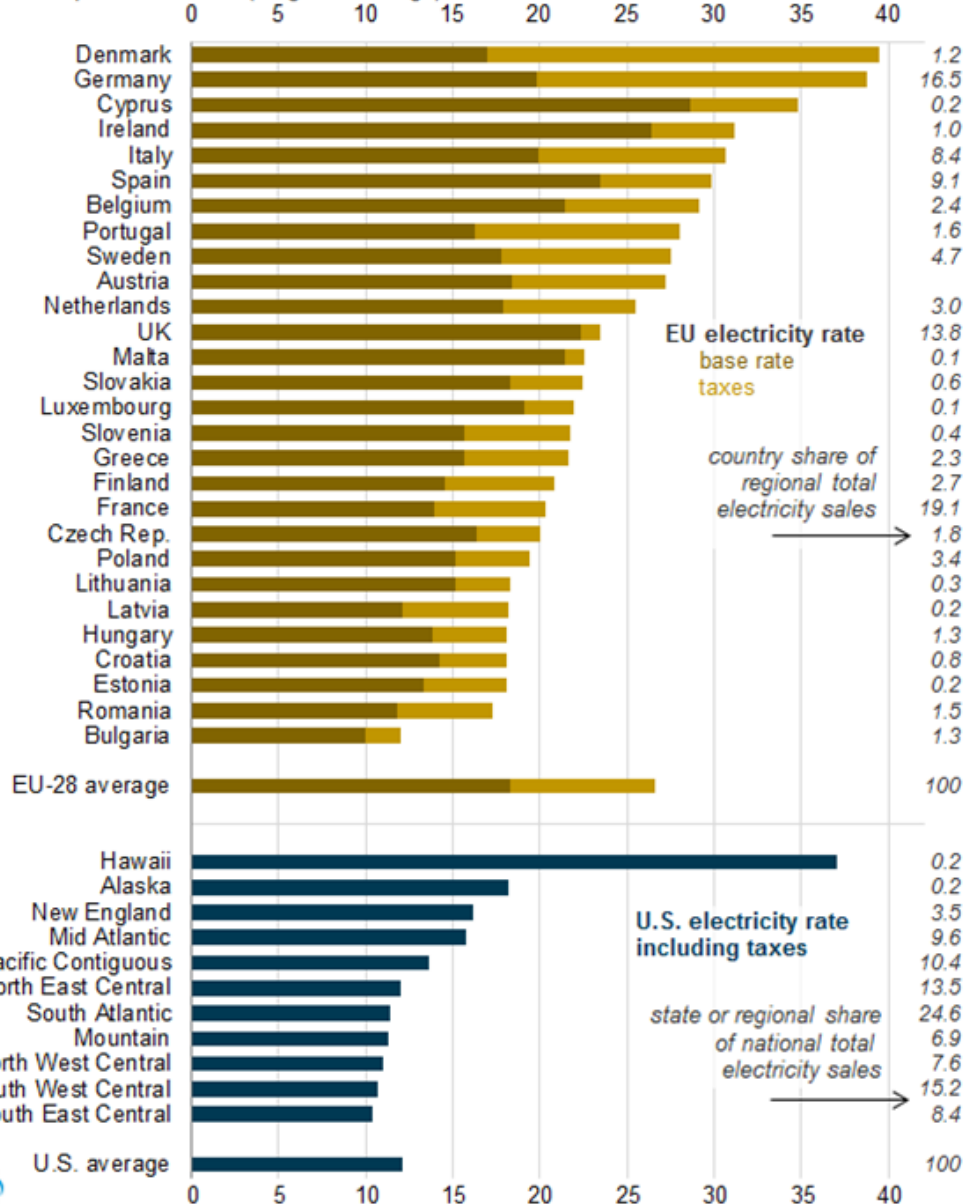


<sup>1</sup>Source: Institute for Energy Research April 9, 2014.



**Residential electricity prices in Europe and the United States in 2013**

U.S. cents per kilowatthour (weighted average) share of total sales

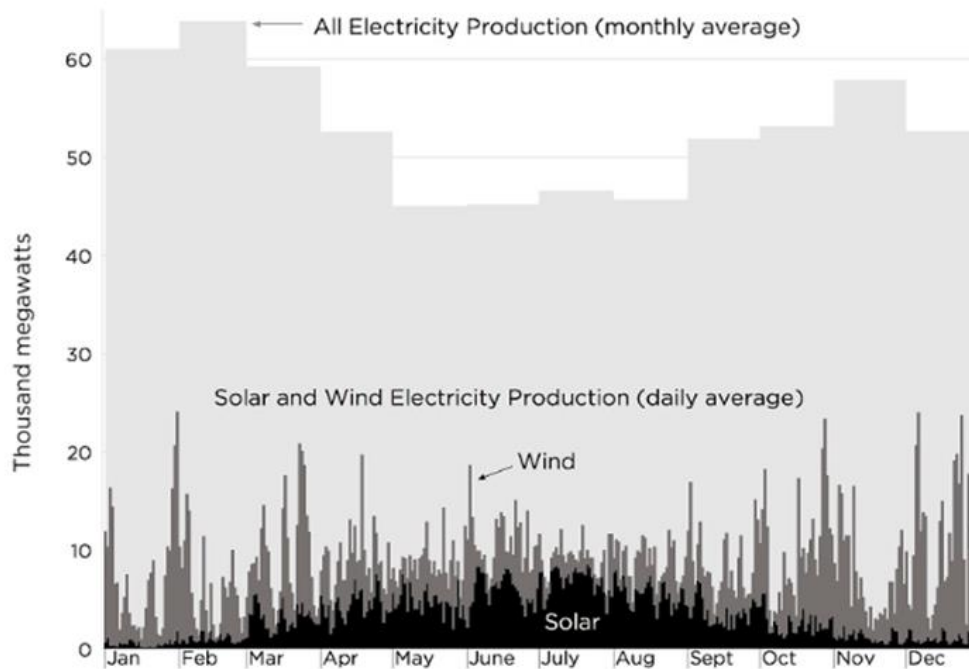


Source: U.S. Energy Information Administration, Electric Power Monthly; Eurostat  
Note: A conversion factor of 1.328 Euros/USD was used. Percent share of residential sales are 2012 values.

Additionally, Germany has decided to eventually shut down its nuclear fleet after the Fukushima disaster. With renewables becoming more of a financial burden and nuclear seemingly on the way out, what will fill the gap? Increasing their coal use, most likely. Not just coal, but lignite, or brown coal, the least efficient and most polluting coal type.



### German Electricity production from renewables



Sources: *European Energy Exchange Transparency Platform Data (2013); Federal Statistical Office of Germany*

The point here is not that renewables will not continue to grow. They most certainly will and the growth rates will look impressive off of very low bases. In the U.S. and many emerging markets, Kopernik believes solar and wind will continue to take market share for the foreseeable future. However, we believe the thought that these might completely replace coal powered generation is fanciful without huge improvements in technology, particularly in energy storage (batteries) or huge increases in costs.

### **THE LONG TERM VIEW ON COAL**

According to the World Bank there are still 1.1 billion people in the world with no access to electricity, while 3 billion still cook in their homes with polluting and dangerous fuels such as kerosene, wood charcoal, and dung. The World Health Organization estimates that millions die every year due to indoor air pollution from heating and/or cooking over open fires in their homes. As these people try to join the 20th century (despite being well into the 21st), we believe they will need to generate power using the most reliable and inexpensive source available. It is possible that they simply bypass the fossil fuel stage of development by delaying modernization until renewables costs come down, pleasing Western environmentalists. It is also possible that the third world transition to a carbon free environment gets funded by the richer countries. But we would bet against it.

At the end of the day our conviction on owning coal companies comes down to the fact that Kopernik believes that coal is not going away. If coal is not dead then some (albeit not all) of the world's coal reserves have real value. Value is the most important consideration when investing. Kopernik focuses on reserves and acquires them at very attractive prices, as the markets (both equity and debt) are valuing the whole industry as being in severe distress. Granted, many of the companies in the industry did very foolhardy things in the last upcycle



(M&A), destroying wealth and/or transferring it to the smarter players. However, now Kopernik believes we own reserves at small fractions of what they would cost to replace.

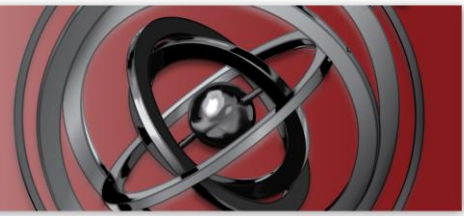
Consider the fact that one could buy all of the world's publically traded coal companies' equity and debt for about \$200 billion (assuming you were buying the debt at par, which is well above current prices for the debt). One would have about half of global coal production (3.7 billion tons per year) and almost twenty years of proved reserves. That's enough coal to provide 15% of the world's total energy or 20% of the world's electricity for 20 years, for less than the market cap of Amazon. In fact we estimate at current market prices for the debt and equity, one could buy the entire U.S. coal mining industry for about \$10 billion. That's less than the \$15 billion the US government spends per year subsidizing renewables, or about the enterprise value of SunEdison (after the latter's 80% decline in stock price).

Our point here is not to be Pollyanna's about the difficulties facing the global coal industry. It is currently battling debt levels that are too high, substitution by cheap natural gas, over supply, slowing demand and severe political backlash. However, the markets seem to be assuming that the industry will definitely be going away, and soon. We, however, believe that the industry may be going away, eventually. The difference between will definitely, soon and may, eventually is huge and results in what we see as a skewed risk-return tradeoff in our favor. If coal dies in the next few years we will lose a lot on a couple of our stock positions. But, if the industry survives another 20 years or more, Kopernik believes we will have bought reserves in the ground that proved to be worth many multiples of our investment.

Stephen Rosenthal

Kopernik Global Investors, LLC

February 2016



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Please consider all risks carefully before investing. Investments in a Kopernik Fund are subject to certain risks such as market, investment style, interest rate, deflation, and illiquidity risk. Investments in small and mid-capitalization companies also involve greater risk and portfolio price volatility than investments in larger capitalization stocks. Investing in non-U.S. markets, including emerging and frontier markets, involves certain additional risks, including potential currency fluctuations and controls, restrictions on foreign investments, less governmental supervision and regulation, less liquidity, less disclosure, and the potential for market volatility, expropriation, confiscatory taxation, and social, economic and political instability. Investments in energy and natural resources companies are especially affected by developments in the commodities markets, the supply of and demand for specific resources, raw materials, products and services, the price of oil and gas, exploration and production spending, government regulation, economic conditions, international political developments, energy conservation efforts and the success of exploration projects.

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