Film Review: *Kilowatt Ours*

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Rising gas and energy prices, along with the slow exhaustion of readily available petroleum, point to a looming energy crisis in the foreseeable future. When coupled with the rising concerns of global warming and climate change, alternative energy becomes the defining issue of our time. *Kilowatt Ours* is a fascinating documentary on the problems with the current situation and possible solutions for the future. It would be recommended to others because of its comprehensive discussion of alternative energy and its realistic answers to the crisis.

Kilowatt Ours begins with the most important source of electricity for America: coal. Coal is the single largest producer of energy for the United States, with about half of all electricity coming from its combustion. Of the numerous problems with coal, the film first discusses its impacts in Appalachia where it is a major natural resource. Entire mountains are leveled, moving 24 million tons of earth, soil, and rock, in order to retrieve 4 million tons of coal. The film shows how this practice alters the physical landscape of the region, flattening peaks and filling in valleys. Serious impediments to water flow and drainage are created, leading to widespread flooding and the buildup of sludge as a byproduct of coal retrieval (*Kilowatt Ours*).

Coal also has impacts as a pollutant. It reduces air quality by releasing mercury into the air, and serious health defects can result from its presence in the blood stream. Children are at a higher risk for these health problems because they use more air, pound for pound, than adults. In fact, the film says that asthma rates today are higher than they have ever been. Coal burning is also a big source of excess greenhouse gases released into the atmosphere. Despite these

problems, each home in America uses about 5 tons of coal each year, and in total, the United States mines and burns 1.1 billion tons of coal every year (*Kilowatt Ours*).

Next, the film looks into nuclear energy as an alternative to coal. Nuclear energy already accounts for 20% of the electricity produced in the United States, and it has no greenhouse gas emissions. However, as the film discusses, there are many controversial aspects of nuclear power. The mining and processing of uranium can leave tons of radioactive material on the surface of inhabited areas, causing health problems like cancer and leukemia. Furthermore, the storage of used radioactive waste still does not have a satisfactory solution. Currently in the United States, radioactive waste is kept at nuclear facilities around the country. A possible plan is to take this waste to Yucca Mountain in Nevada and bury it, but it is both expensive and controversial. Nuclear energy itself is an expensive energy alternative, needing government subsidies because it does not appeal to private investors. Nuclear energy is thus weighed down by its multiple health and financial disadvantages (*Kilowatt Ours*).

In order to solve these challenges, *Kilowatt Ours* presents a two step plan to solve the energy problem. First, the film cites increased efficiency as a renewable resource in itself. Most homes today are not energy or heat efficient structures. Starting with simple lighting, if each incandescent bulb was replaced with a longer lasting energy efficient fluorescent bulb, one would save $75 per bulb. Besides helping the environment and society as a whole, these steps also save the consumer money. By using less electricity and breaking less often, fluorescent lights reduce electricity bills and money spent on the bulbs themselves (*Kilowatt Ours*).

Using more energy efficient lighting is not the only way to save money and carbon emissions. The film discusses a government project, called Energy Star, that helps consumers select products that are energy efficient. Energy Star products include all appliances from

refrigerators to washing machines. Using these certified energy efficient products, one can save hundreds of dollars a year. Another important step in making a home efficient is to maximize the heating and cooling energy used. According to the film, 20% of heat energy in a house is wasted through air leaks in inefficient doors, windows, and walls. Additionally, geothermal energy can reduce the need for paying high electrical prices by using the relatively stable temperatures below ground (*Kilowatt Ours*).

On a large scale, energy efficiency can have even greater impacts. The entire city of Birmingham, Alabama upgraded its streetlights from incandescent bulbs to light emitting diodes (or LEDs) and in the process saved $220,000 a year. When the entire state of Kentucky did the same, it saved over $3 million a year in maintenance and repairs. This brings up the idea that, on a large scale, energy efficiency is a new power source that is often cheaper than building new power plants. By making more efficient buildings by informing the public, the city of Austin, Texas avoided building an entire power plant by cutting down on wasted energy (*Kilowatt Ours*).

Apart from energy efficiency, *Kilowatt Ours* also discusses renewable green power sources that can help the environment and save money. For example, hot water is one of the biggest expenses of small businesses. By using solar hot water heaters on the roofs of buildings, businesses can save hundreds of dollars a year on water heating costs. Moreover, there is flat roof space almost everywhere, and every roof has the potential to hold a solar panel to collect energy that literally falls out of the sky (*Kilowatt Ours*).

The film thus thoroughly discusses the difficulties faced by the United States and provides many affordable solutions to the average citizen. The problems include air pollution, environmental degradation, and rising energy costs. However, solutions are abundant, especially improvements in energy efficiency and green power. Most importantly though, *Kilowatt Ours*

informs the public about how beneficial energy efficiency and awareness can be through the most universal appeal of all: money. Again and again, the film successfully links helping the environment with saving money which everyone appreciates no matter how ecologically conscience they may or may not be. This financial appeal is what can make a mass movement out of a small, but well-intentioned cause.

The most important form of alternative energy that the United States should pursue is solar energy rather than nuclear or wind. Nuclear energy has no carbon emissions and has very low maintenance costs once constructed. Most nuclear power plants in the United States were built in the 1960s, and better, more efficient technology exists today. Despite these improvements, startup costs are relatively high, and it is not clear if nuclear energy could be competitive with coal and oil energy sources. Other alternative energy types are often offered incentives such as tax credits, but Americans distrust nuclear power because of its safety hazards and radioactive waste and thus, politicians do not want to vote for nuclear power either. The possibility for legislation to create economic incentives for nuclear power is hence very low ("Shape of things to come").

Though nuclear power has always been a controversial topic, wind energy is usually grouped with solar power as a source with few disadvantages, but there are many challenges to wind power that keep it from being an important contributor of electricity. Like solar, wind energy has zero carbon emissions and also no air pollutants. One of the first problems with wind power though, is that, unlike coal or oil, the wind is not always there. Though it is true that taking the available energy from wind is an improvement over having no wind-produced energy at all, this drawback makes wind less competitive with more stable power sources like oil or coal. A steady amount of electricity can be produced and sold at a coal plant, but not necessarily

at a wind farm (Hammons). Another less known problem is that many people do not like the aesthetic look of wind mills, especially those placed on popular public land. Since wind power is site specific, conflicts are not uncommon. If it happens that a wind farm would be best placed near the coast or a national park, public opposition could be very strong. One final problem with wind power compared to solar energy is the mass market potential. A solar panel can be placed almost anywhere and could be afforded by almost anyone, but a windmill can only be placed in open land, rather than easily on the roof of a house. Furthermore, a windmill costs significantly more than a solar panel, and often entire farms are devoted to harvesting wind, something that the average homeowner does not have room for (Pasqualetti). Thus wind power is not without many drawbacks.

Rather than nuclear or wind power being the replacement of fossil fuels, solar energy is the best choice for the United States to pursue. The first and most important argument for solar power is that it is the most plentiful resource available. Every flat roof has the potential to have a solar panel. Currently, solar panels are still expensive, but focusing on improving solar technology could yield a cheaper, mass-marketable technology. The potential is enormous because everyone has access to sunlight, and individuals could each produce their own power. In addition, solar energy does not produce any pollutants and does not require specific sites where it could work (Murawski). Solar energy is truly the resource of the future.

The film *Kilowatt Ours* is a superb documentary. It demonstrates clearly the many challenges faced by the United States and the world in a looming energy crisis. Effective solutions to those problems such as energy efficiency and green power are also discussed. Most importantly, they are presented as a conscientious way to save money. Additionally, of all the possible alternative energy sources, solar power would be most effective because of its few

drawbacks and mass market potential. There are thus many ways in which we can change the foreboding dilemma into a brighter future.

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