

## **Stop New Fossil Fuel Projects!**

Started from early 20<sup>th</sup> century, there are two existing coal-fired power plants that being operated at full capacity of 100 and 270 Megawatts (MWs) respectively. The first plant was built by Cambodia Energy Ltd, a local subsidiary of Malaysia's Leader Universal Ltd, which was launched in 2014. Second plant was constructed by a joint-venture between Cambodia International Investment Development Group (CIIDG) and the Chinese-based Erdos Hongiun Electric Power Co., Ltd. This second coal power station came online in 2015 and is being developed to a larger capacity of electric generation worth millions of USD that is enough to produce 700 MWs of electric energy to sustain local electricity consumption. The possibility of this enlargement depends solely on the availability of the imported coal from Indonesia, the main coal exporter to Cambodia and one of the major coal producers in the world.

This is not over yet as demand for electricity consumption rises, so supply has to be made available. To not depend solely on importing electricity from bordering countries, domestic production has to be expanded. On top of the existing two coal-fired power plants; currently, Royal Government of Cambodia is planning for another third coal-fired power plant to be constructed at the same area. It will be marked as the third approved coal-based energy generation facility in the in the Kingdom located at the southern coastal area of Sihanoukville. The whole projected was handed to the Japanese firm, Toshiba Plant System and Service Cooperation (TPSC), a wholly owned subsidiary of Japanese electronics manufacturing giant Toshiba, will build the turnkey power plant for Cambodian Energy II Co Ltd (CEL2), the plant will operate at 150 MW full capacity once completed. The construction will be carried out under full collaboration with TPSC Engineering Malaysia and TPSC from Thailand. The contract has been awarded by Cambodia Energy II Company Limited, a subsidiary of Malaysia's Leader Universal Holdings that operates the existing first coal-fired power plant as mentioned. The electricity output will be purchased by Electricité du Cambodge (Electricity of Cambodia), a state-owned enterprise operated under full direct supervision of Ministry of Economics and Finance, the revenue and profit manager; and Ministry of Mines and Energy, the energy and electricity policy designer, of the Royal Government of Cambodia. TPSC and its group companies will be responsible for the overall project, including engineering, equipment supply, construction work, installation, testing and adjustment. TPSC will

manage the entire project and engineering, its Malaysian subsidiary will be responsible for procurement of equipment, and its Thai subsidiary will handle construction. On another development site, Pöyry, a Finish engineering company, was granted a contract to provide assistance for the review of plant design, supervise the location, assurance and quality control services, project management and commissioning of the power plant.

There has been controversial global debate on stopping the continuous trend of fossil fuels projects. That is, the use of fossil fuels for energy production should be abolished at all cost to preserve the well-being of the environment. The real question that got me thinking is that “Why the third-approved coal-fired power station should be stopped?” when it is important to Cambodia’s energy sector. To give comprehensive answer to these questions, one should identify the real costs of burning coal for energy production, basically in the form of electricity. Advantages of burning fossil fuel like coal to the country economic can be seen less than its disadvantages posed on environment and ecology are elaborated as follows:

First, coal dusts contribute to heart and lung disease so does posing danger to aquatic lives and reduce water quality once coal leaks out of the storage tank. It seems worse when the coal transporting ship completely sank into the water. Other means of coal transportation on land can also be dangerous to humankind, land animals and plants when improperly transported.

Second, coal is known as the unrenowned and unsustainable source of energy production with limited availability of total global coal reserves that is only last for 134 years of present consumption rate, and could emit almost 2000 Gt of CO<sub>2</sub> emissions if all used. Coal has been recognized as the deadliest electricity source on earth that kills up to 280,000 people per 1000 terawatt hours of electricity generated giving the fact that the burning of coal alone is responsible for 46% of CO<sub>2</sub> gas emissions worldwide and accounts for 72% of total greenhouse gas emissions from the energy sector. CO<sub>2</sub>, once released to the sky, traps heat from the sun in the Earth’s atmosphere, causing temperatures to rise overtime.

Third, coal, when burned, generates CO<sub>2</sub> the most among many other poisonous gases such as, Nitrogen Oxide (NO) and Sulfur Dioxide (SO<sub>2</sub>), which all are harmful to the healthiness and freshness of the air. Nitrogen Oxide released by an amount of burned coal, together with SO<sub>2</sub>,

cause acid rain when both gases touch with rainwater. The effects of acid rain on ecosystem can be found on fish and wildlife are most clearly seen in aquatic environment. Acid rain also release aluminum once it flows through the soil going into lakes, and other watering systems. Plants and animal, some types, are toxic with acid, they are acid-sensitive, this sensitivity causes danger to their lives as some species living in the water including fish and frog can live under a specific level of pH. When acid rain damages to the pH level in water, though some type of species are acid-resistant, that does not mean the other animals or plants they eat are one. Other effect of acid rain on trees and plants can be seen with the death trees and plants. Acid rain removes nutrients and minerals from the soil causing the death of the plants and trees that rely most on those elements for the evolution of their lives. Rain that contains acid element destroy the sustainability of infrastructure and building in a long period. This problem can be seen in Cambodia as a country with glorious civilization left since the ancient time, thousands of Buddhist and Hindus temples were built thousands of years ago up until today, many temples are seen under very bad condition, and some others have been totally collapsed. Acid rain is one of the major causes of this architectural destruction without mentioning about human activities and natural disasters. All these are just some of effects among many others that can be easily captured. Despite causing acid rain, Nitrogen Oxide together with Carbone Dioxides and Carbone Monoxide trap smoke in the atmosphere in the forms of smog and haze. Breathing poisonous air effects to human health, mainly causing deadly breath diseases such as, asthma, exacerbate (worsen) a previously-existing respiratory illness, and provoke development or progression of chronic illnesses including lung cancer, chronic obstructive pulmonary disease, and emphysema. Coal is a major contributor to air pollution that kills around 7 million people a year, and both the mining, preparation, transport and combustion of coal are extremely polluting, according to World Health Organization (WHO). When it comes to air pollution and environmental destruction, coal is the worst fossil fuel among others. CO<sub>2</sub> and Carbone Monoxide (CO) that are released by a particular amount of fully and not fully burned coal respectively, once released to the atmosphere, weaken the ozone layer and trap the sunlight on the earth's atmosphere which results in global warming. Thus, the more greenhouse gas emission is released to the sky, the hotter the world will be. As long as ozone layer is not fully operated, the earth will be hotter attracting more ultraviolet light that causes sunburn. At one point when global warming reaches its peak causing drought that is when crops and plants will face

difficult seasonal condition to grow, results in cutting food supply in opposition to the increasing food demand.

Fourth, another major consequence as what the world is currently experiencing is the rise in sea level. Those of icebergs floating on Arctic Ocean surface and probably the whole North Pole will sequentially melt as the temperature keeps on going up to the maximum point. The same phenomena applies to big icebergs on Antarctica continent that consists of South Pole. These major global natural disasters will then be causing devastating flood that kills hundred thousands of lives on land.

Fifth, environmental sustainability is worsen under forest clearance for land concession and coal-fired plant construction. Deforestation destroys Oxygen (O<sub>2</sub>) best producer and CO<sub>2</sub> absorber, while leaving many families under displacement. Peoples are forced to move away in the form of migration to urban area result in overwhelm urban population leads to the process of urbanization that later on causes social insecurity and instability. With that said, coal is harmful to all living things on earth, ranking from animal, human and plant. Healthiness will be reduced and well-being of the people will then be cut down with more and more coal being used.

Sixth, coal-fired plant stations indirectly affect tourist destination. Since almost all of the coal plant are based at the coastal area of Sihanoukville, the coastal tourist attraction area is devastatingly polluted by coal plants that reduce air quality causing local and international visitor to reconsider changing their tour destination. The Kingdom's financial revenue earning from tourism sector will then be cut. Local resident is also affected with the polluted air they breathe every day.

Seventh, moreover, coal importation, like Cambodian case, leave the country being overdependence on foreign exporter. This political economy consequence leads the home country to rely heavily onto the availability and accessibility to consume coal, if not, the country would fall into deep energy problem.

With that all said, coal is a good use for energy and is economically profitable; however, it is extremely bad for environment and lives on the earth planet. Therefore, countries should reconsider granting license on any coal related project in the forms of exploration, production,

importation and consumption, and shift to rely more on renewable and sustainable sources of energy production.