Industry View

THE FUTURE OF TECHNOLOGICALLY ENHANCED COAL

Aiden Neary, CFO/COO, Clean Coal Technologies, Inc., USA

Conservative estimates suggest that over 1 billion people globally do not have access to electricity. And one thing that can be said with virtual certainty about those invisible townspeople is that not one person reading this article is one of them.

It is time to face facts on coal and recognise the continued benefits it provides across the globe. Coal is the oldest and most reliable source of energy in the world, with the first US coal power plant built in the 1880s. It has been the driver behind industrial revolutions and has provided energy to billions of people and, as a result, improved the quality of life across the world. Throughout the Western world, access to electricity is not only expected, it is demanded and viewed upon as a right. However, that is not the case across most of Asia and Sub-Saharan Africa. In fact, in many of those regions, it is a scarce luxury.

The three cornerstone tenants of energy production are 'reliable', 'responsible' and 'affordable' availability. Much debate exists on which of these requirements takes precedence and much of that typically depends on where you live. It goes without saying that those without access to electricity care little about the reliable delivery of energy, which in less developed countries can only be achieved if that energy is affordable.

Clean Coal Technologies, Inc. (CCTI) applaud the successes to date made by people like Prime Minister Modi of India and his continued efforts to provide access to electricity to the remaining 240 million citizens of India who do not have electricity. India needs affordable energy for its people in order to advance their opportunities and promote a better standard of living – as do China and many other countries. The real question is: how is that energy sourced?

"It is not what you don't know that gets you in trouble. It's what you know for sure that just ain't so," wrote Mark Twain. This is a fitting comment when applied to current energy issues. Nuclear power was thought to be the answer to energy production across the world in the 1970s and nowhere as prevalent as the prosperous country of Japan. But after the horrific Fukushima disaster in 2011, Japan has now refocused its energy efforts back to coal power plants with an estimated 45 new coal power plants being built. Once again, coal has shown to be the reliable form of energy production – even for countries as progressive as Japan.

CCTI contests that the three cornerstone tenants of energy are not necessarily mutually exclusive and maintains that all three can be achieved affordably. The simple solution for providing this is through technology. It is only through technology that coal can be an affordable and reliable energy bridge to the future.

Among fossil fuels, most are refined before use. One does not burn raw crude oil, nor should one burn untreated natural gas. Both are refined to burn more efficiently and to remove impurities. So why do we burn raw, untreated coal when there are ways to enhance or 'beneficiate' it? CCTI believes that there is too much focus on cost-prohibitive and (to date) unproven post-combustion solutions for coal-fired power plants ignoring pre-combustion solutions. Technologies, such as carbon capture and sequestration (CCS,) has proven to be neither affordable nor responsible as it proposes to capture and store CO_2 underground. It has yet to be proven economically viable – not to mention that it pushes a problem beneath our feet for future generations to deal with, with no knowledge of how that stored CO_2 will affect those generations.

CCTI has spent more than 10 years developing, proving and patenting a technology that treats coal prior to its use as an energy feedstock. This technology takes sub-bituminous, lower grade and lignite coals (which constitute the majority of coal globally) and enhances the energy value (BTU) of the coal to produce a more efficient fuel. CCTI's processed and enhanced end product (Coal 2.0) is a stable, dust-free, higher heating value, lower cost and lower emission fuel source.

It is proposed by some that coal as an energy feedstock should be abandoned and boycotted at all cost and replaced with alternative forms of 'green' energy. They insist that wind, solar and other renewables are sufficient going forward. However, one needs to ask how reliable, responsible and affordable is green?

As much as we may wish it, wind and solar power on their own are simply not reliable enough. Indeed, the wind simply does not always blow and the sun does not always shine. And without government subsidies applied to these 'renewable' forms of energy, they are not affordable. The ultimate oxymoron is that this green approach is far from a clean approach.

Solar power, for example, results in significant chemical pollution in its manufacturing but another question it poses is what to do with old, discarded solar panels. Their disposal is classified as e-waste and, as such, is generally sent to China and less developed countries to shift the pollution problem to others. Simply stated, there are no 'clean' solutions to energy, just ones that have detrimental effects that must be mitigated.

The global population is expanding and is expected to reach 9.7 billion by 2050 with the highest growth expected across Asia and Africa. Those people will need access to reliable, responsible and affordable energy. It is time for developed countries to combine their efforts through advanced technology development to use the abundantly available deposits of coal in a responsible and efficient way until alternatives are perfected. WC

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