

IGCC and Powerspan provide two carbon capture solutions for future of coal in Ohio. One is a proven, commercially adopted technology utilized throughout the world. The other is an infant technology, with one test project that has yet to produce results. IGCC is the proven production method, commercially producing power and eliminating harmful emissions right now. Powerspan operates only in a single test stage. Powerspan is a technology owned and advanced by one company. IGCC is a technology employed and mastered by many: Shell, Siemens, GE, and Conoco Philips among others. Right now, IGCC is an infinitely better choice. Below is a comparison of the two technologies and a few key facts.

Reliability and commercial adoption

IGCC is a commercially adapted technology, utilized all over the world in the power generation industry. Large plants are operating currently: Nuon, Netherlands, online in 1994, 250 MW, Polk, Florida, online in 1996, 250 MW, Wabash, Indiana, online in 1995, 260 MW, Elcogas, Spain, online in 1998, 320 MW. Additionally, there are projects coming. Tentative plans have been announced for plants in Meigs Co, OH (AEP), Tnawanda, NY (NRG), Tampa, FL (TECO), and Edwardsport, IN (Duke). Another 35 are in less developed stages.

Powerspan on the other hand has one test facility; this technology has not even made it to the pilot scale, let alone the independent commercial scale, like IGCC. There is only one small scale project employing Powerspan to date, a 30 MW effort in Shadyside Ohio that has not produced conclusive results.

Costs

IGCC is more expensive to initially adopt than traditional pulverized coal. However, this is largely because the technology is new, cost relative to pulverized coal trend downward as "off-the-shelf" technology is developed. This is happening as more and more IGCC projects are advanced. Further, IGCC with carbon capture has been shown in numerous studies to be a more cost-effective option than traditional pulverized coal with carbon capture. This accounts for a \$10 per MW savings.

Powerspan has not been demonstrated to the point where accurate cost comparisons can be made.

Fuels

The IGCC process can take numerous fuels, including but not limited to low rank coals, high sulfur coals, biomass, coal slag, and petroleum coke.

Pulverized coal technology, within which Powerspan technology works, needs high quality coal to run properly. It cannot take the variety of fuels IGCC production can manage.

Thermal efficiency

IGCC has extremely high thermal efficiency. More efficient plants are better for the environment and better for the consumer. This is efficiency rate reaches 50%.

Powerspan is utilized in traditional pulverized coal production. Traditional pulverized coal production has thermal efficiency of around 35%.

Pollutant reductions

Compared to the best conventional coal plants, IGCC plants produce 80% less sulfur dioxide emissions, 35% less nitrogen oxide emissions, utilize 40% less water, produce 30% less solid waste, emit 90% less mercury, have a higher heating value and can capture 80% of the carbon of a conventional plant.

Powerspan has not yet completed the projects necessary to assess any potential reduction in harmful emissions.

Footprint of plant

IGCC has a plant footprint (dimension and land used) and environmental impact that is substantially smaller than that for traditionally pulverized coal.

Powerspan would have a footprint that would be larger than traditional pulverized coal.

For these reasons, IGCC is the best available technology for coal energy production right now, and for the current generation of construction. Powerspan and other infant technologies should be studied and developed, but they cannot form the center of public policy right now - they simply are not ready. IGCC is ready to take on that role.

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