International Energy Systems in Transition
- Perspectives from Science and Industry -
The 15th IERE General Meeting & German Forum
Abstract Format

Title: Future Requirements for Thermal Power Plants

Jörg BLAUROCK
Managing Director, ALSTOM Boiler Deutschland GmbH
Stuttgart, Germany

Keywords: *coal; fossil fuels; CCS; energy; energy transition; sustainability; competition; energy efficiency*

Abstract

Over the next two decades, the power generation industry faces the daunting challenge of meeting global energy needs that are slated to rise by 37 percent, amid a growing global population and demand from Asian markets. This energy supply challenge will come into conflict with the global goal of capping the rise in global temperatures by 2°C. Indeed, while the contribution of renewable energy sources is expected to grow, fossil fuels will continue to meet two-thirds of the increase in energy demand. These realities must nevertheless be reconciled, as a key target of the 2010 Copenhagen accord was to tackle the needs of around 1.4 billion people with no electricity supply and another 2 billion with little or inadequate access to power.

In other words, our industry will not only have to produce more energy, but will have to generate it more efficiently. Energy efficiency will thus be *the* critical key factor in mitigating the global challenges of energy security and rising energy consumption. Against this background, policymakers should adopt a series of pragmatic regulatory and policy options that may allow us and other industry players to work diligently on state-of-the-art, cost-effective technologies for abating global emissions.

At ALSTOM we are committed to being a reliable and flexible partner in energy efficiency and climate change mitigation efforts. We offer forward-looking solutions to improve efficiency and flexibility, while enhancing reliability and increasing performance. In this regard, we find it essential to adopt carbon capture and storage (CCS) systems, not only because we believe these technologies are the most economically viable and sustainable solutions for our customers, but also because they can be retrofitted to an existing installed base. We also advocate for the use of so-called ultra-supercritical power plants like our RDK8 project in Karlsruhe, whose cycle efficiency of 47.2 percent exceeds the average 33 and 38 percent at the global and European levels, respectively, and emits less carbon dioxide than conventional coal plants. Finally, we recognize the growing importance of the "water footprint" of thermal power plants as a criterion for assessing the physical, economic and environmental viability of energy projects, and we therefore make substantial efforts to optimize the impact of our offerings on water resources while maximizing asset values.