Stabilising power emissions is possible with solutions available today

Alstom’s commitment to providing a range of solutions to address the climate change challenge is a long-standing one. We believe that there is no single solution to meet this challenge and that it will take a range of approaches.

- Balancing the power generation portfolio by significantly increasing the share of CO2-free technologies
- Maximizing production efficiency and flexibility for both existing and new plants
- Applying Carbon Capture & Storage technologies to fossil fuel power production

To meet the CO2 concentration targets of 450 ppm by 2050, we cannot wait until tomorrow – action must be taken today!
2. EFFICIENCY AND FLEXIBILITY

**EFFICIENCY IS A KEY TO EMISSIONS REDUCTIONS:** For every incremental increase in production efficiency, there is a decrease in emissions. Increases in production efficiency also have a direct effect on fuel consumption. The more efficient a plant, the less fuel it requires to produce the same electrical output – an area of increasing priority in a time where security of fuel supply is a growing concern. With the increasing share of renewable technologies in the generation mix, flexibility of traditional generation assets is essential to ensure an effective integration of renewable technologies to the grid. Alstom offers a broad range of both generation and control technologies for both new and existing plant to ensure that efficiency and flexibility is maximised.

3. CARBON CAPTURE AND STORAGE (CCS)

**ACKNOWLEDGING THAT FOSSIL FUELS WILL CONTINUE TO ACCOUNT FOR ABOUT 60% OF THE INSTALLED BASE IN 2030,** application of Carbon Capture & Storage (CCS) technologies is essential. Alstom is carrying out an intensive effort for developing and / or acquiring the best available CCS technology that will provide optimum efficiency as well as environmental and commercial benefits to power plant operators worldwide, now and in the future. Given the range of plant types and fuels in use, Alstom is developing a portfolio of technologies for both new and existing plant that will provide operators with the optimum carbon capture solutions, taking into account the costs of installation, overall efficiency, operation and maintenance requirements. These technologies are focused specifically on the most promising families of Carbon Capture technologies, i.e. Oxy-Combustion and Post-Combustion solutions.

Alstom is engaged in multiple partnerships to secure the scale-up of CCS. Some of our active demonstration projects:

**OXY-COMBUSTION**
- Schwarze Pumpe, Germany (lignite)
- Lacq, France (gas)
- Jänschwalde, Germany (lignite)

**CHILLED AMMONIA**
- Pleasant Prairie, USA (coal)
- Karlshamn, Sweden (gas)
- Mountaineer, USA (coal)
- Mongstad, Norway (gas & oil)
- Alberta, Canada (coal)

**ADVANCED AMINE**
- West Virginia, USA (coal)
- Belchatow, Poland (lignite)
- Le Harve, France (coal)

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