

GT/CCPP solutions for syngas and COREX export gas

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Overview

Right energy mix while meeting the growing need for energy demand is becoming extremely important especially for countries having very few indigenous fossil fuel resources of its own, such as Turkey. Heavily dependent on oil and gas imports, country's budget deficit is growing and competitiveness in energy intense sectors like iron and steel making is decreasing. There is an ongoing trend toward greater use of renewable and alternative energy generation methods in the energy sector for addressing these challenges.

The market requirements are the decision basis for further development and improvements of products in the energy sector. As well as other equipment manufacturers, Siemens is also developing alternative solutions that are successfully addressing those specific needs.

This presentation provides an update on key power plant developments, covering gas turbine; gasification and Corex plant concepts.

Methods

Syngas or in another name synthesis gas can be generated by gasification of coal, a refinery residue petcoke or biomass as feed stock. A very similar synthesis gas can also be produced as by product during iron and steel production by Corex plant technology. Both gasses have similarities and electricity production is possible from this synthesis gas with technological developments made in the gas turbine and system integration of combined cycle power plant.

Results

While this power generation technology is still in further development, there are already references available in the world. The results achieved with the plants presently in operation show that electricity generation with syngas capable turbines and power plants could be good alternative to the conventional technologies. With the experience gained from these plants and outcome of recent concept studies, developments are continuously being made for the equipment design and in the area of investment costs and profitability.

Conclusion

If alternative technologies receive necessary support, it is possible to contribute to Turkey's electricity generation needs by using Turkey's selected strategic resource low calorie lignite as feed stock or in a similar manner can increase competitiveness in energy intensive iron and steel industry both as a result reduce dependence on foreign resources.