The Future of Gas Turbine Technology

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What challenges face Gas Turbine Technologies?

1. Current and Future Market?
   - Renewables & Storage:
   - Coal:
   - Nuclear:

Post COP 21
- Large expansion and reduced costs.
- Steady and slowly entering retirement.
- Potentially unpredictable.

2. Gas Turbine Challenges?
   - CCGT:
     - Operational flexibility
     - Fuel flexibility
     - High reliability and low lifecycle cost
   - Cycle Innovation:

   High Efficiency & Flexibility
   - 65% efficiency
   - Turn down, fast-start up and load frequency.
   - IGCC, Biomass and LPG.

   SOFC triple combined cycle.

3. Expected Technology Advancements?
   - Material:
   - Process:

   TIT > 1,700°C in 2020
   - Application of CMC and innovative super alloy.
   - Seal & cooling technology by additive manufacturing.
   - Asset management by IoT/big data analysis.