

# Energy Resources and Policy

## Tutorial: Fossil Fuel and Nuclear Power Plant

1. A company wishes to promote a new power production technology, which it claims has an operating efficiency of over 65%. You don't know much about the technology other than the fact that the working fluid is Argon, which is heated to 400°C, and heat is rejected at 15°C. Calculate the maximum possible efficiency of this plant and then comment on the validity of the company's claims.

[57.2%]

2. Using the data below, make a *realistic* estimate of the operating efficiency for each of the three nuclear reactor technologies.

	Pressurised Water Reactor (PWR)	Advanced Gas Reactor (AGR)	Boiling Water Reactor (BWR)
Peak temperature (°C)	330	580	285
Heat rejection temperature (°C)	10	10	10

[PWR – 31.5%; AGR – 42.4%; BWR – 28.8%]