

October 2003

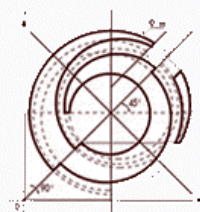
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Techno-Economic Evaluation of a Power Plant using MCM

- status of work -

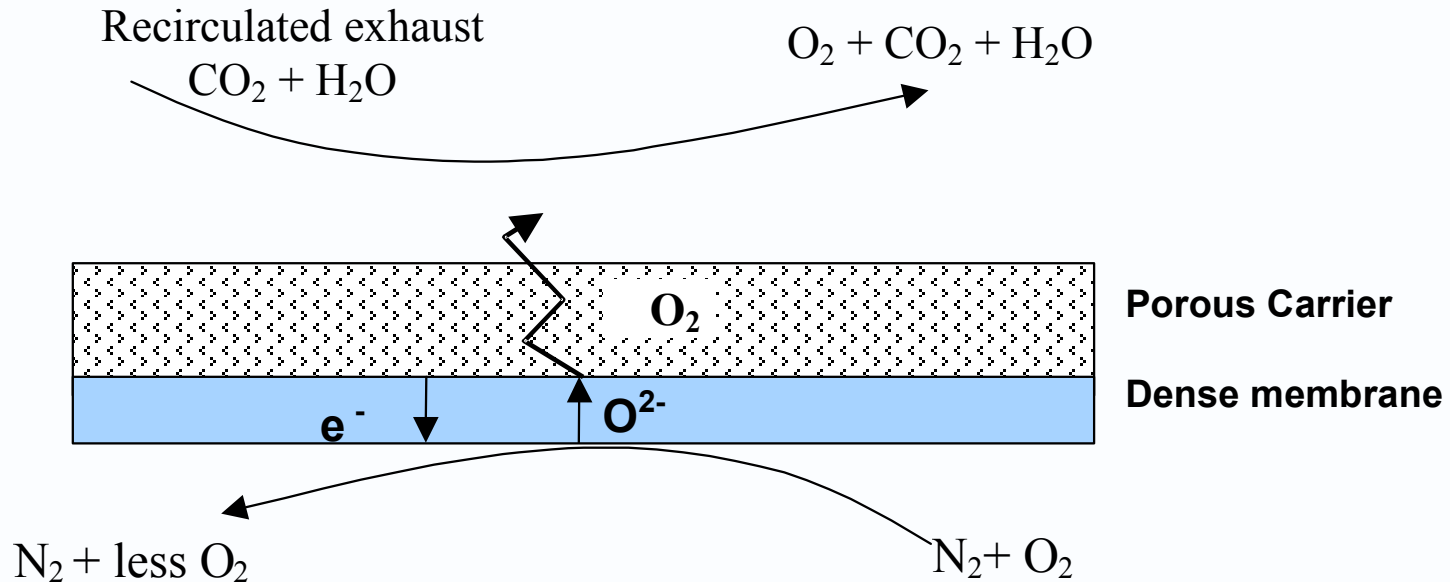
D. Bucker / D. Holmberg

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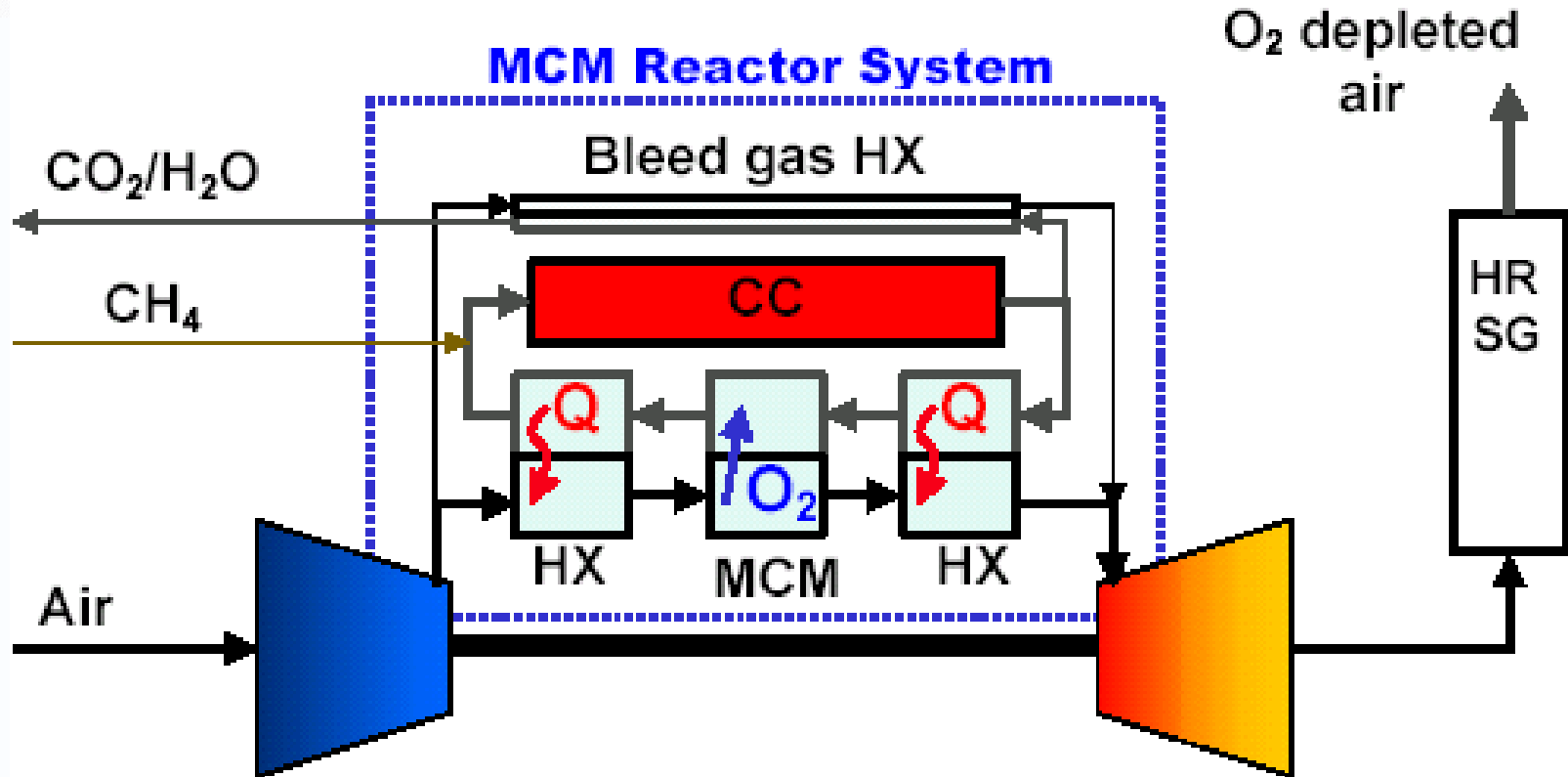
- The MCM-Concept
- Investigated Cycles
- Thermodynamic Results
- Economic Evaluation
- Conclusions

MCM – “Mixed Conducting Membrane”



- MCM-Concept invented by Norsk Hydro



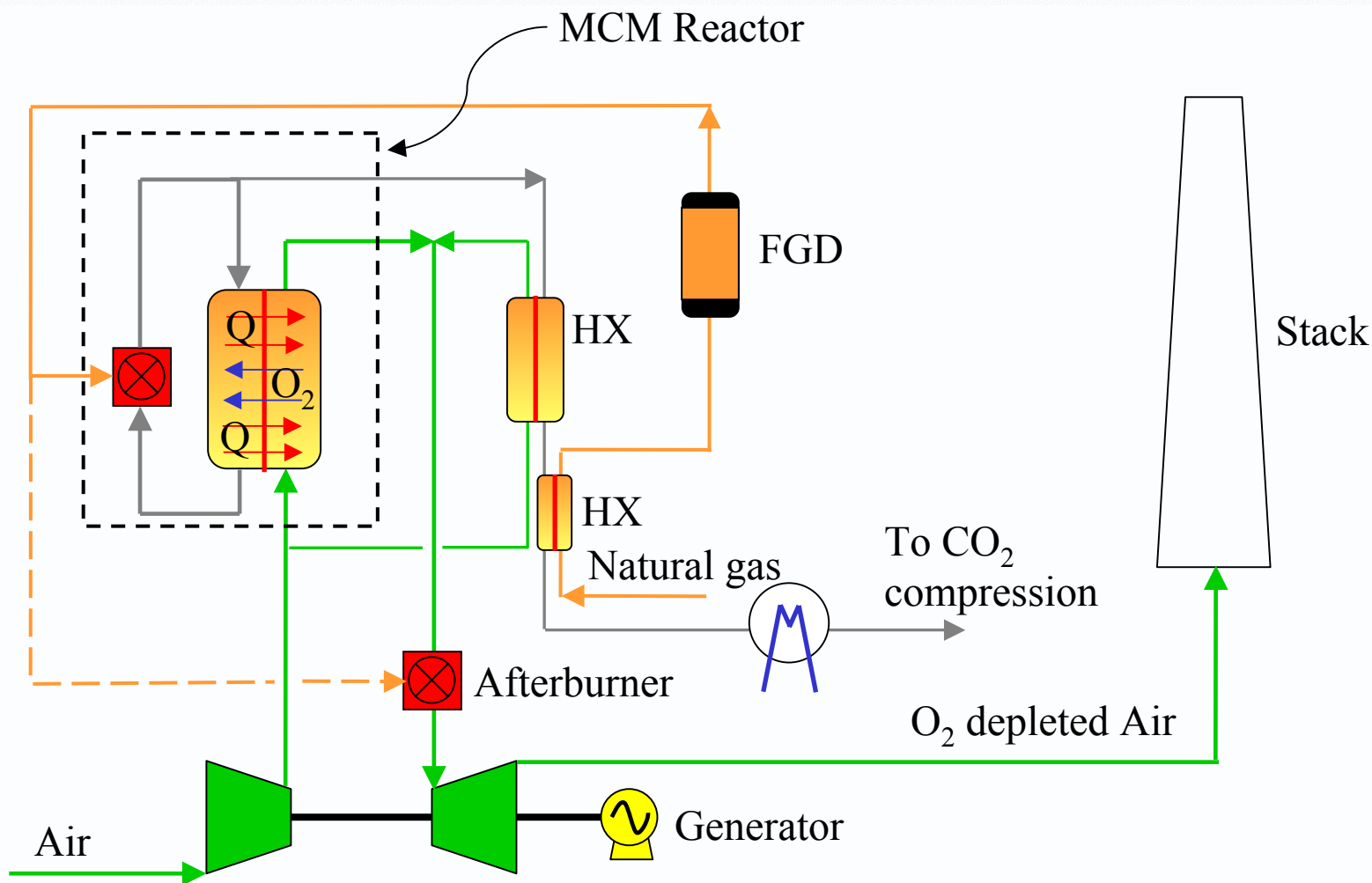


- AZEP Project initiated by Norsk Hydro and ALSTOM
- AZEP Process is a combined cycle GT process using MCM



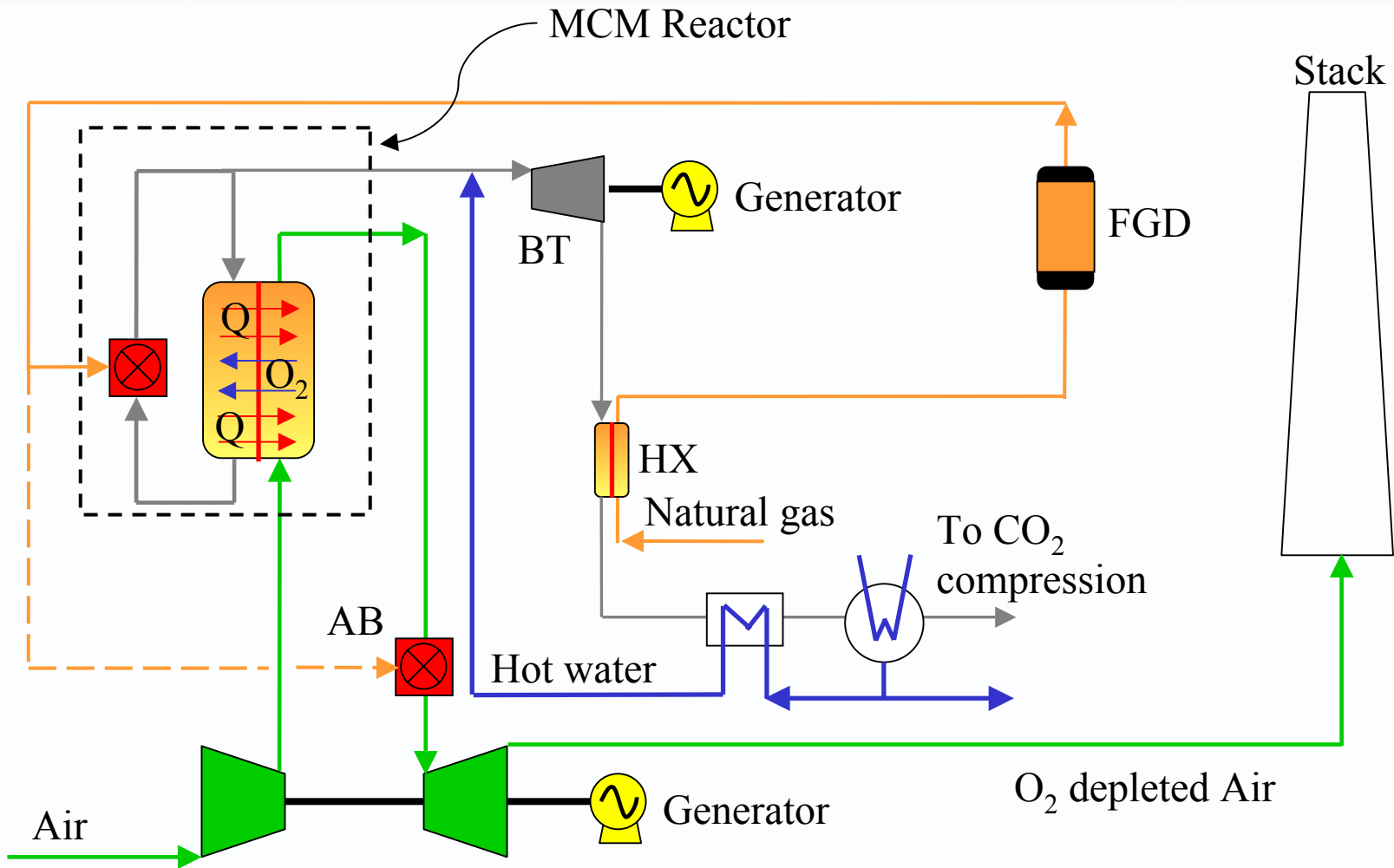
Investigated Cycles

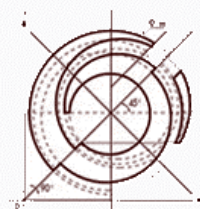
Model 1: Bleed HX



Investigated Cycles

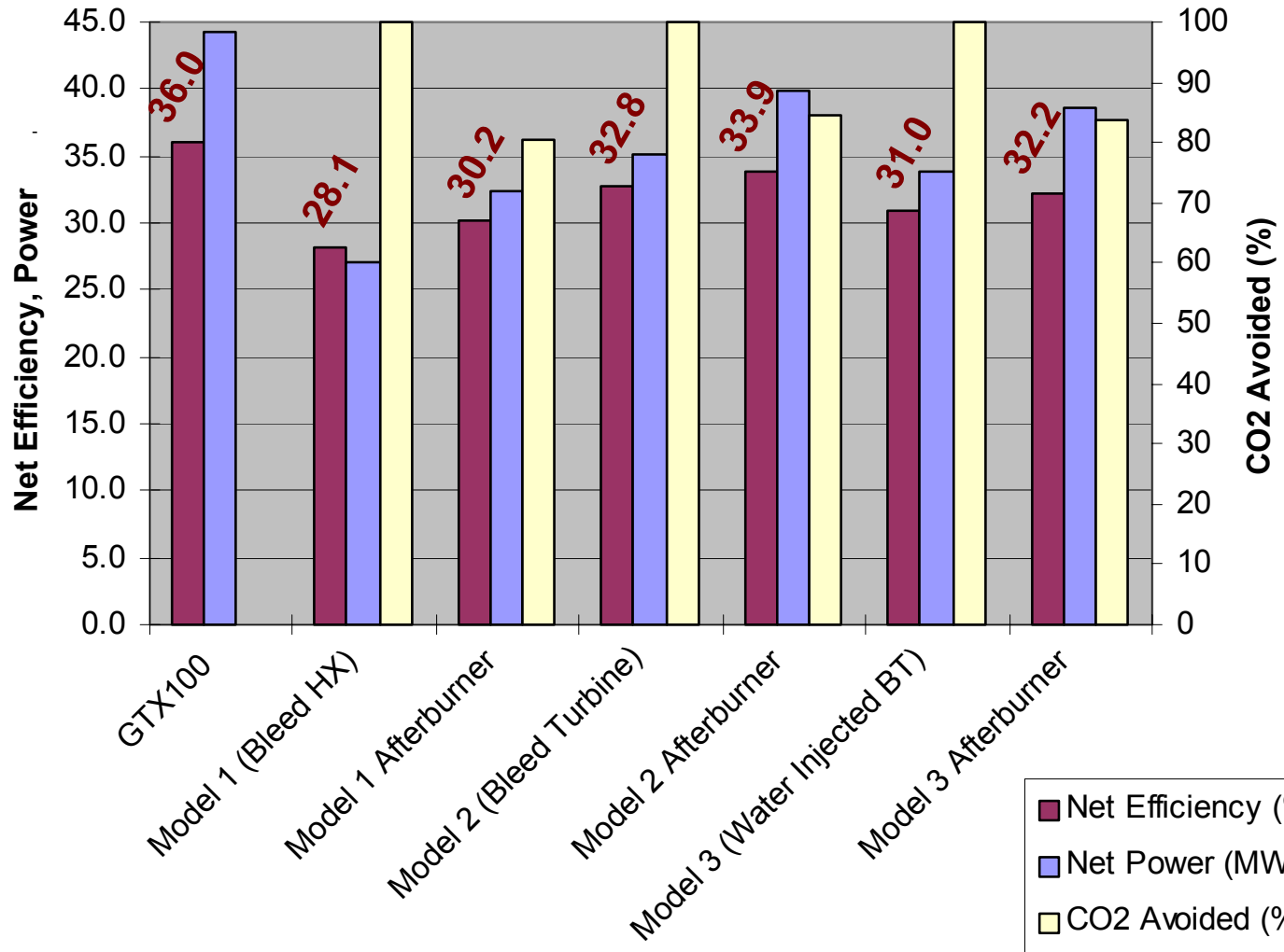
Model 3: Water Injected BT



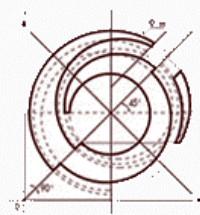


- CCP Scenario D: BP Alaska, summer scenario
- Replace current GTs by „AZEP-GTs“ (ALSTOM / Siemens GTX100)
- Production of electricity for reliable scaling of power for individual applications

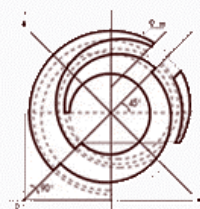
Preliminary Results



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- Simple cycle MCM-type plant can be an economical alternative in a remote island scenario
- Efficiency loss can be kept within 5%-points for simple cycle Zero Emission Technology
- A number of uncertainties associated with development of new technology



**This study has been funded by the
Carbon Capture Project (CCP)**

Further information on the AZEP process:

www.azep.org

The ALSTOM logo is centered on a white semi-circular background. The letters 'ALSTOM' are in a bold, sans-serif font. 'ALST' and 'M' are dark blue, while the 'O' is red and stylized as a circle with a gap on the right side. A thick red curved bar arches over the top of the white semi-circle. The background of the entire image consists of vertical blue stripes of varying shades and some faint white curved lines.

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