Design and Evaluation of Two-Stage Membrane-Separation Processes for Propylene–Propane Mixtures

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Supplementary data

Figures S1 and S2 show the energy consumption and CO_2 emissions, respectively, of the membrane-separation process in Cases 1 and 2.
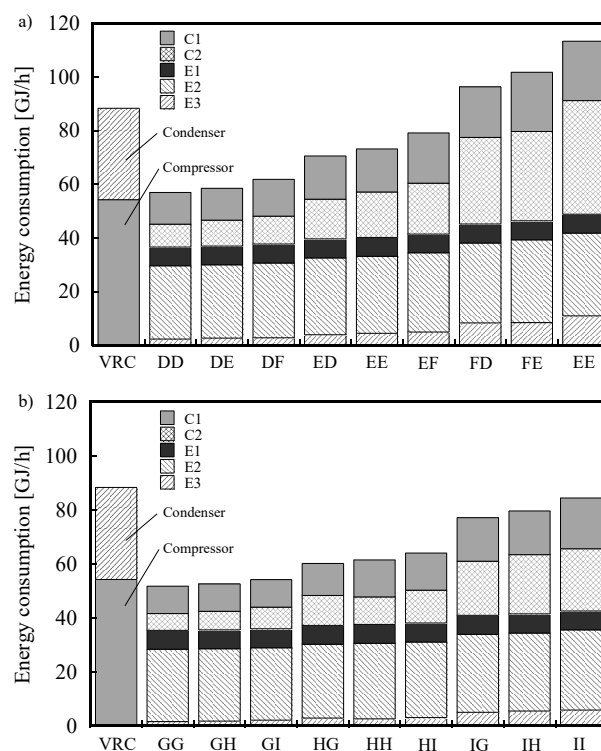
Figure S1. Energy consumptions of the two-stage membrane process with various combinations. (a) Case 1 and (b) Case 2.
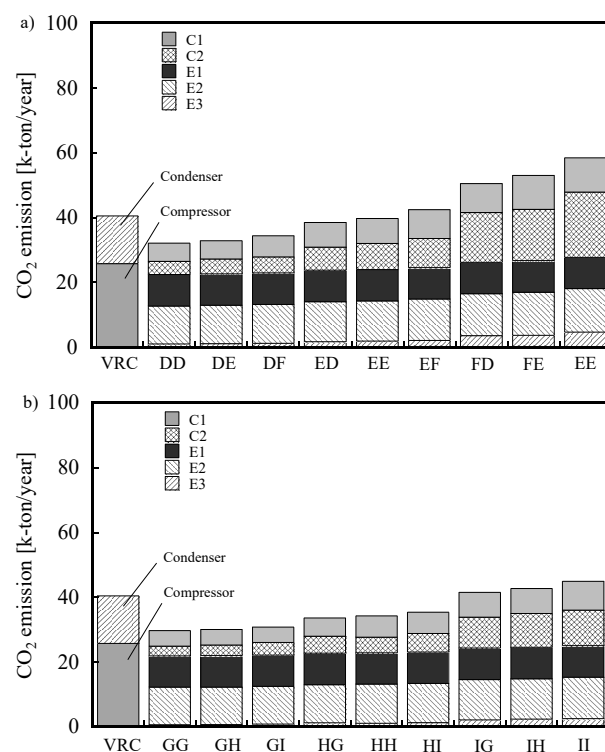
Figure S2. CO_2 emissions of the two-stage membrane process with various combinations. a) Case 1 and b) Case 2.

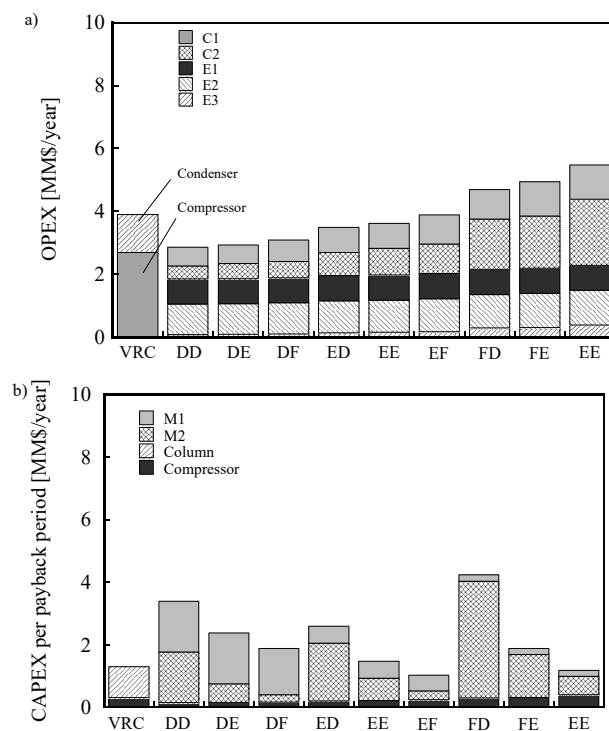Figures S3 and S4 show the OPEX and CAPEX of the membrane-separation process for Cases 1 and 2, respectively.

Figure S3. The production cost of the two-stage membrane process with various combinations of Case 1: a) OPEX and b) CAPEX per payback period. The payback period = 4 y.

Figure S4. The production cost of the two-stage membrane process with various combinations of Case 2: a) OPEX and b) CAPEX per payback period. The payback period = 4 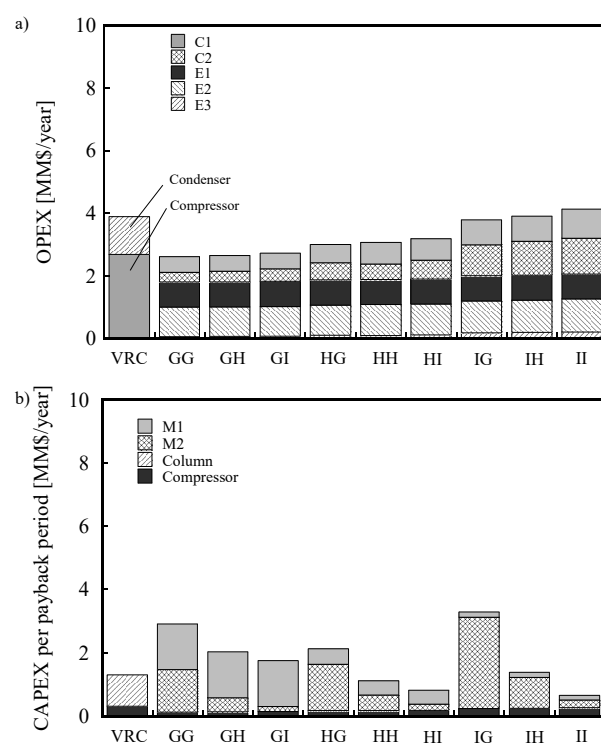y.