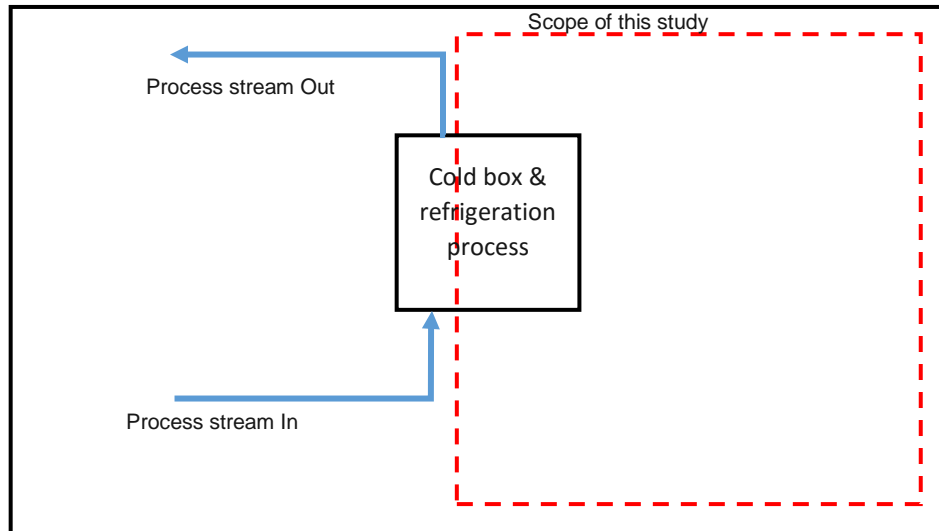


## TECHNICAL DATA SPECIFICATION FOR TECHNOLOGY CHALLENGE 10: COMPACT REFRIGERATION SYSTEM FOR NATURAL GAS PROCESSING

1. The scope boundary of Compact Refrigeration System for Natural Gas Processing is shown in Figure 1 below:

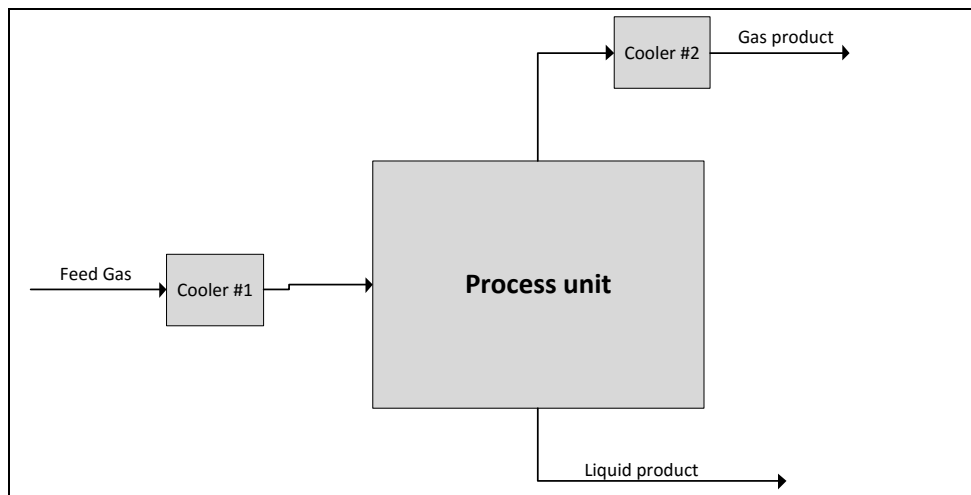


**Figure 1: Scope boundary of Compact Refrigeration System for Natural Gas Processing**

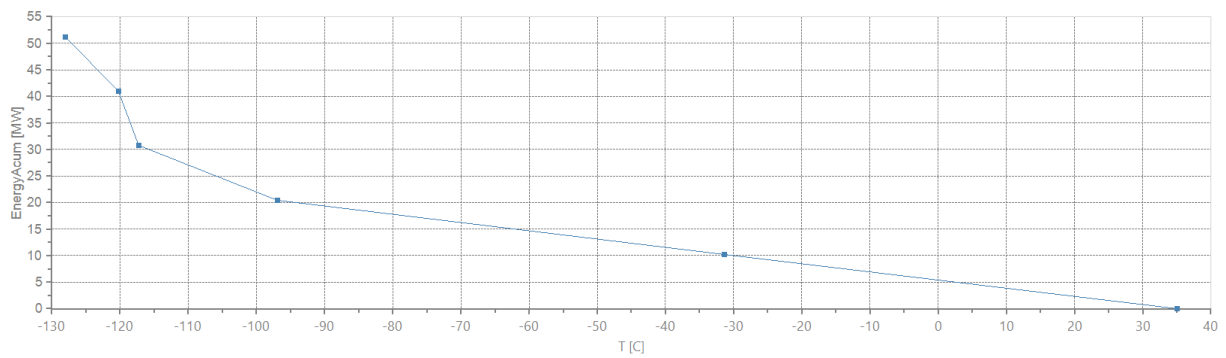
2. Process condition are tabulated as below:

| Parameter               | Unit   | Value   |
|-------------------------|--------|---------|
| <b>Inlet</b>            |        |         |
| Phase                   |        | Gas     |
| Flowrate                | MMSCFD | 300     |
| Pressure                | bara   | 8 to 15 |
| Temperature             | °C     | 35      |
| <b>Outlet</b>           |        |         |
| Phase                   |        | Liquid  |
| Pressure                | bara   | 1       |
| Temperature             | °C     | -165    |
| <b>Duty consumption</b> |        |         |
| Cooling duty #1         | MW     | 50      |
| Cooling duty #2         | MW     | 5.5     |
| Total cooling duty      | MW     | 55.5    |

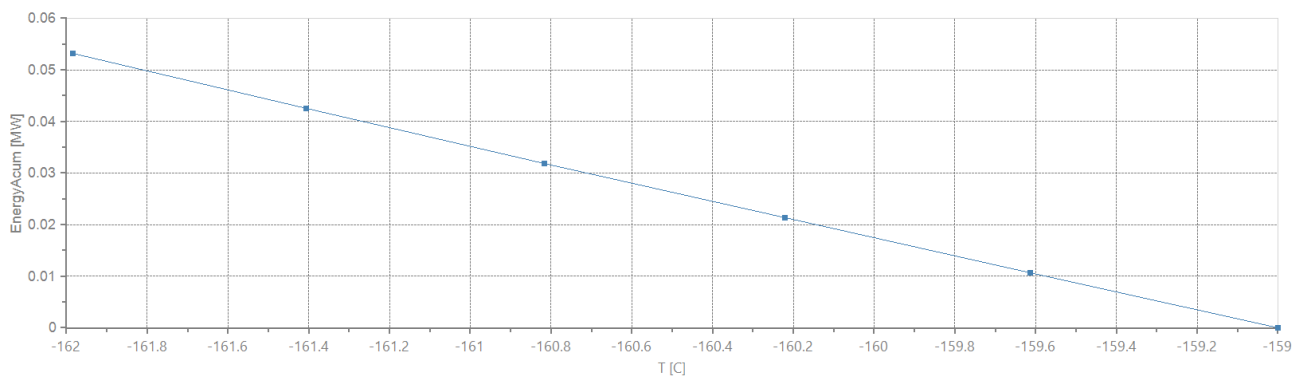
**Table 1: Process parameters of process stream**



**Figure 2: Schematic for Process Unit**



**Figure 3: Cooling curve for cooling duty#1**



**Figure 4: Cooling curve for cooling duty#2**