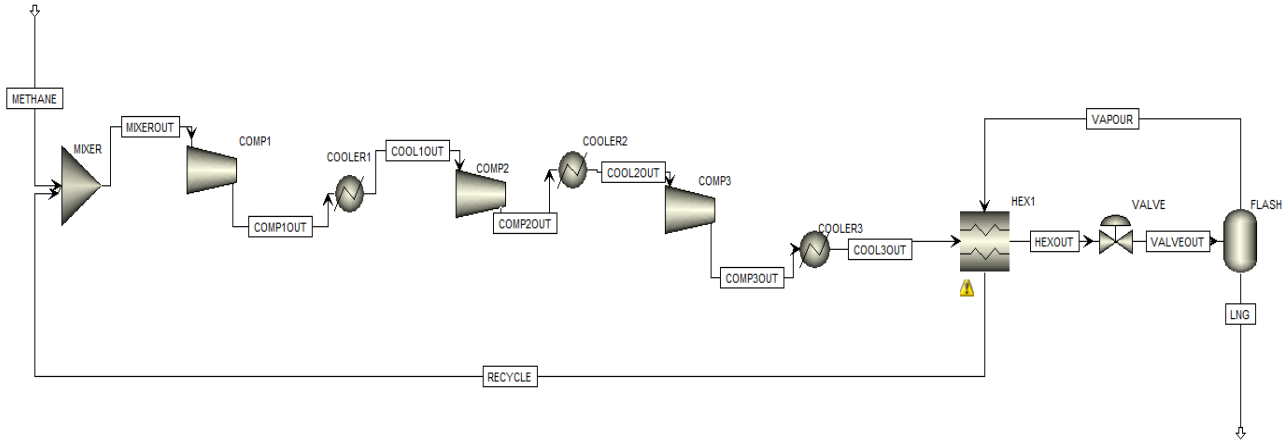
Flowsheet


METHANE
MIXER
MIXEROUT
COMP1
COMP1OUT
COOLER1
COOL1OUT
COMP2
COMP2OUT
COOLER2
COOL2OUT
COMP3
COMP3OUT
COOLER3
COOL3OUT
HEX1
VAPOUR
HEXOUT
VALVE
VALVEOUT
FLASH
LNG
RECYCLE

For Compressor 1

Net work required for compressor 1 is 8.59838 kW

Compressor model	Isentropic Compressor		
Phase calculations	Vapor phase calculation		
Indicated horsepower	8.59838	kW	
Brake horsepower	8.59838	kW	
Net work required	8.59838	kW	
Power loss	0	kW	
Efficiency			0.96
Mechanical efficiency			1
Outlet pressure	5	bar	
Outlet temperature	80.9325	C	
Isentropic outlet temperature	76.7109	C	
Vapor fraction			1
Displacement			
Volumetric efficiency			

For Compressor 2

Net work required for compressor 2 is 9.87831 kW

Compressor model	Isentropic Compressor		
Phase calculations	Vapor phase calculation		
Indicated horsepower	9.87831	kW	
Brake horsepower	9.87831	kW	
Net work required	9.87831	kW	
Power loss	0	kW	
Efficiency			0.96
Mechanical efficiency			1
Outlet pressure	25	bar	
Outlet temperature	134.275	C	
Isentropic outlet temperature	129.858	C	
Vapor fraction			1
Displacement			
Volumetric efficiency			

For Compressor 3

Net work required for compressor 3 is 7.94489 kW

Compressor model	Isentropic Compressor	
Phase calculations	Vapor phase calculation	
Indicated horsepower	7.94489	kW
Brake horsepower	7.94489	kW
Net work required	7.94489	kW
Power loss	0	kW
Efficiency	0.96	
Mechanical efficiency	1	
Outlet pressure	100	bar
Outlet temperature	120.528	C
Isentropic outlet temperature	117.229	C
Vapor fraction	1	
Displacement		
Volumetric efficiency		

Now the total work is 26.42158 kW for 50kg/hr of methane flowrate

For 1 kg of liquid methane the work required is: 0.5284316 kW