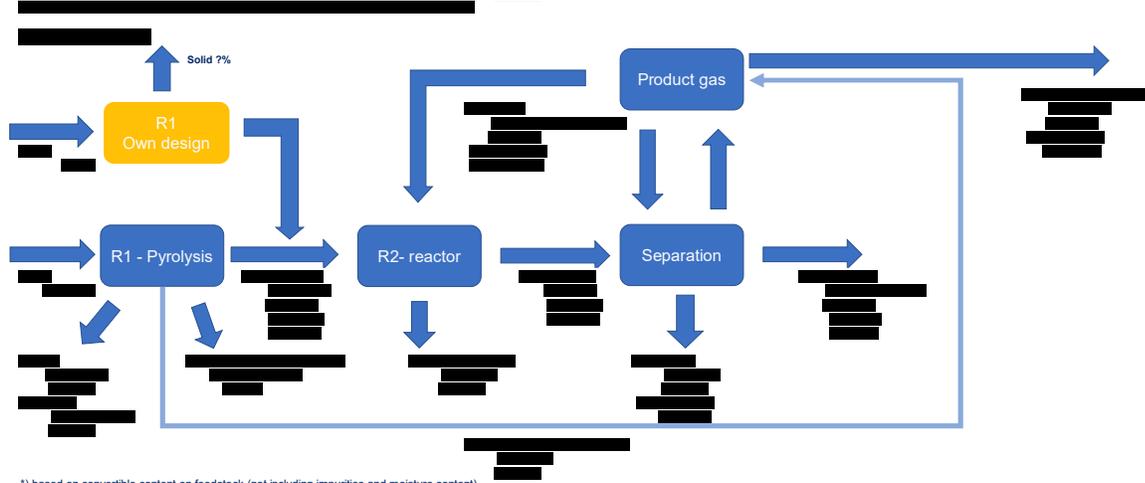
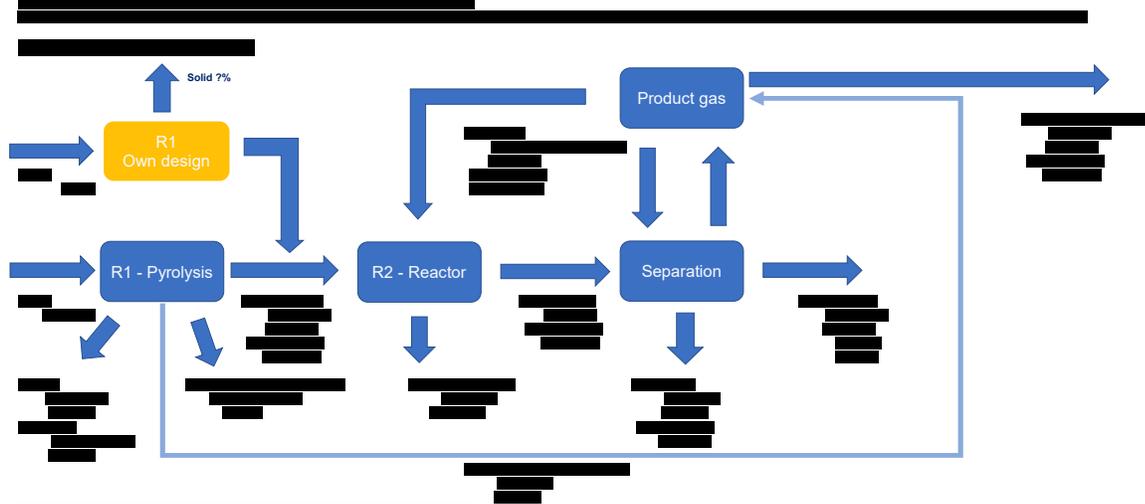
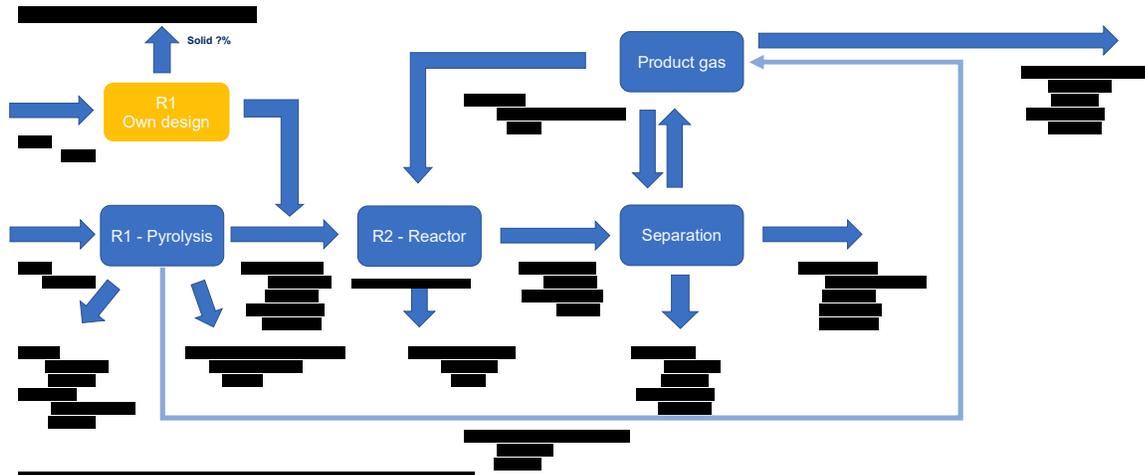


HIGH LEVEL HEAT AND MASS BALANCE



General Note :

- 1) The balance is derived from the R2 conversion model and Aspen Hysys simulation (for separation and product gas section).
- 2) All enthalpy data is generated from Aspen Hysys model with same default reference point.
- 3) The numbers have to be confirmed by the suppliers (Sulzer and Borsig) when they do their simulation.
- 4) Yield is calculated based on the convertible content; not including the impurities (8%) and the moisture content (0.5%)
- 5) Enthalpy of the bitumen is unknown. It will be updated when more information from BlueAlp is received.



*) based on convertible content on feedstock (not including impurities and moisture content)
 Note B) The conversion model shows yield of 51% and the simulation shows 50% yield. The difference is probably because of the limitation of the simulation of Product gas section part. Borsig is still to confirm this by their simulation.

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