

$$CO_{2,LF} = \left[\begin{aligned} &(MS_{\text{vap}} \times C_{MS_{\text{vap}}}) + \sum_{j=1}^m (AD_j \times C_{AD,j}) + (EL \times C_{EL}) \\ &- (MS_{\text{prod}} \times C_{MS_{\text{prod}}}) - (SL - C_{SL}) - (R \times TC_R) - (Rp \times C_{Rp}) \end{aligned} \right] \times 3.664$$