

$$\begin{aligned}
E_{\text{CO}_2} = & \frac{44}{12} \times \frac{2000}{2205} \times \sum_1^i \left(M_{\text{reducing agent}_i} \times C_{\text{reducing agent}_i} \right) \\
& + \frac{44}{12} \times \frac{2000}{2205} \times \sum_1^m \left(M_{\text{electrode}_m} \times C_{\text{electrode}_m} \right) \\
& + \frac{44}{12} \times \frac{2000}{2205} \times \sum_1^h \left(M_{\text{ore}_h} \times C_{\text{ore}_h} \right) \\
& + \frac{44}{12} \times \frac{2000}{2205} \times \sum_1^j \left(M_{\text{flux}_j} \times C_{\text{flux}_j} \right) \\
& - \frac{44}{12} \times \frac{2000}{2205} \times \sum_1^k \left(M_{\text{product outgoing}_k} \times C_{\text{product outgoing}_k} \right) \\
& - \frac{44}{12} \times \frac{2000}{2205} \times \sum_1^l \left(M_{\text{non-product outgoing}_l} \times C_{\text{non-product outgoing}_l} \right)
\end{aligned} \tag{Eq. K-1}$$