

*Supplementary Material*

# **LCA analysis decarbonisation potential of aluminium primary production by applying Hydrogen and CCUS technologies**

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Figures S1-S4 present the LCA models for the four scenarios, developed in the commercial software package “Sphera LCA for Experts”.

## Primary Aluminium Production - Scenario 1

Process plan/Reference quantities  
The names of the basic processes are shown.

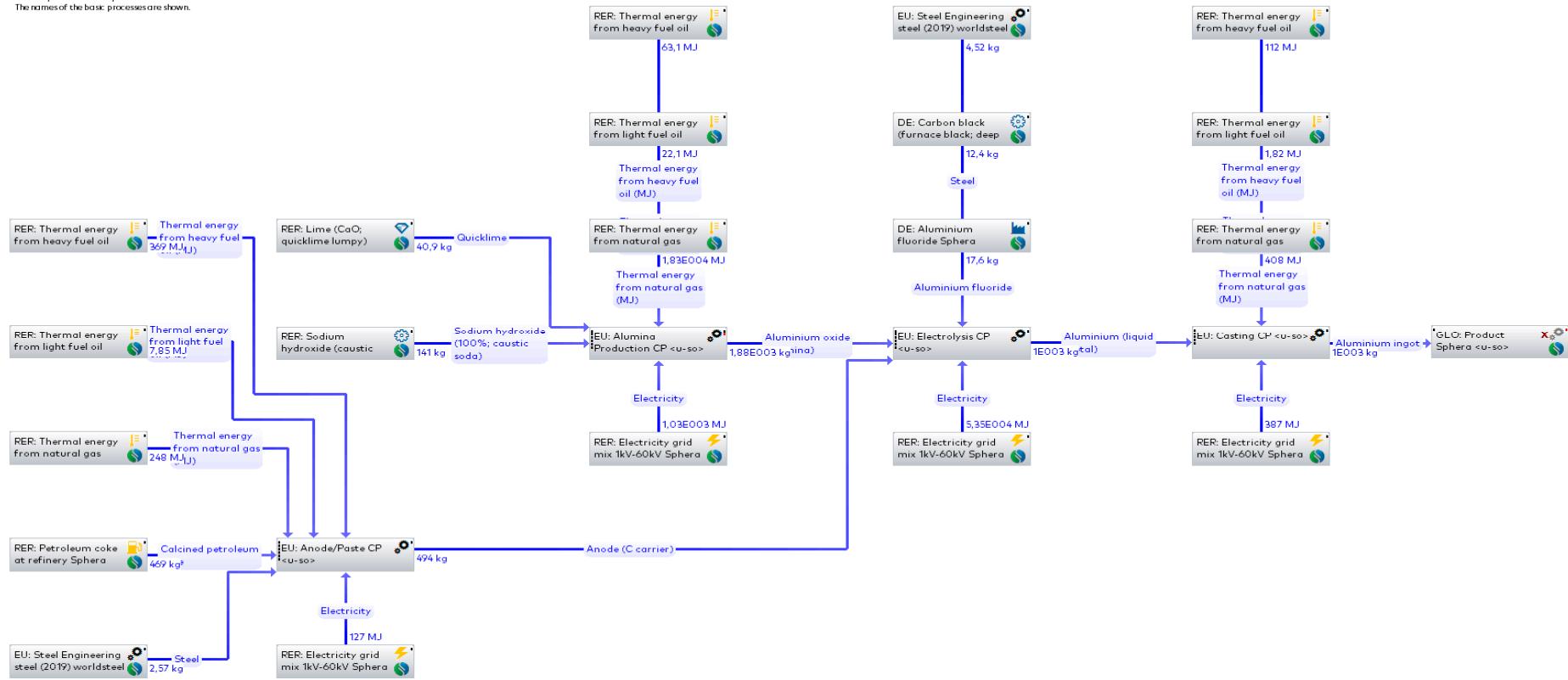


Figure S1. LCA model for scenario 1, as developed in "Sphera LCA for Experts".

## Primary Aluminium Production - Scenario 2

Process flow and reference quantities  
The names of the basic processes are shown.

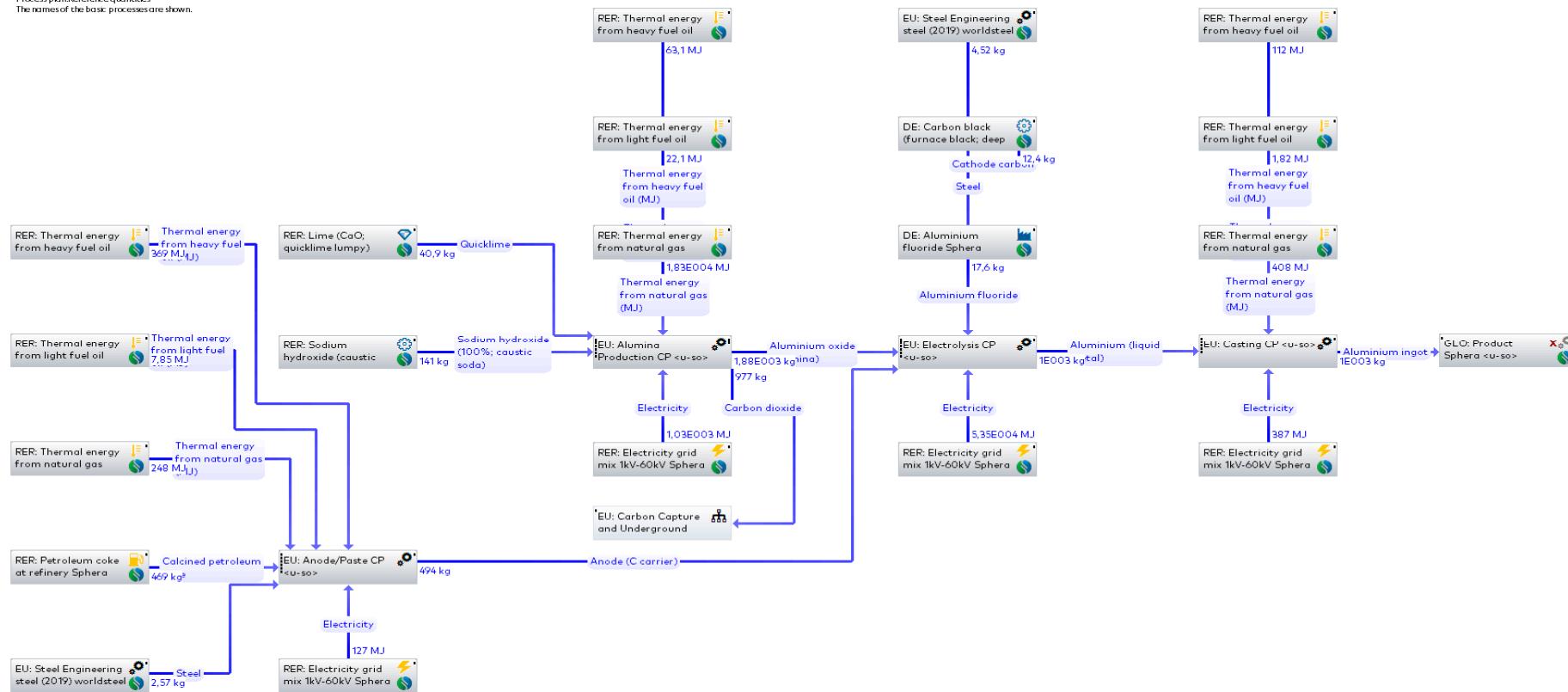


Figure S2. LCA model for scenario 2, as developed in "Sphera LCA for Experts".

### Primary Aluminium Production - Scenario 3

Process flows/Reference quantities  
The names of the basic processes are shown.

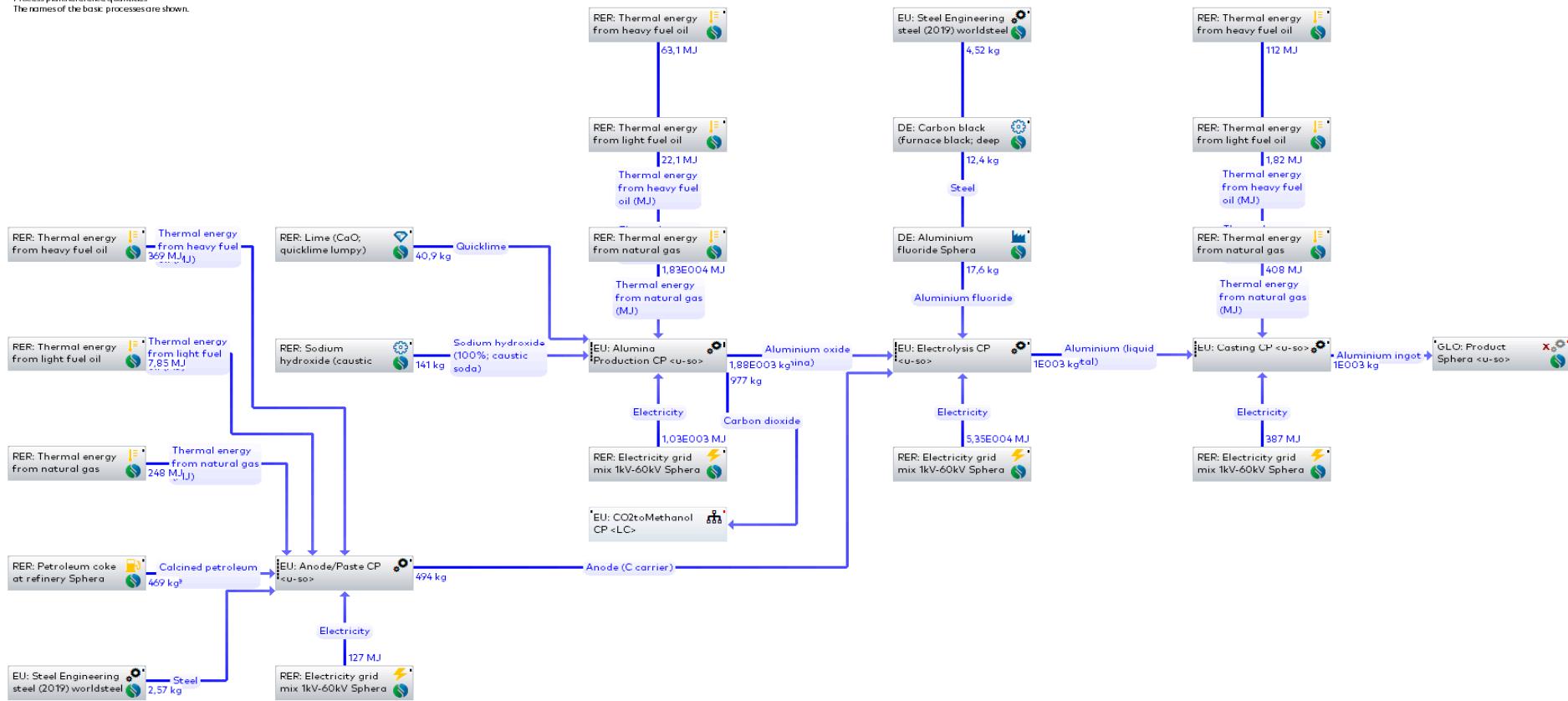


Figure S3. LCA model for scenario 3, as developed in "Sphera LCA for Experts".

## Primary Aluminium Production - Scenario 4

Process plan/Reference quantities  
The names of the basic processes are shown.

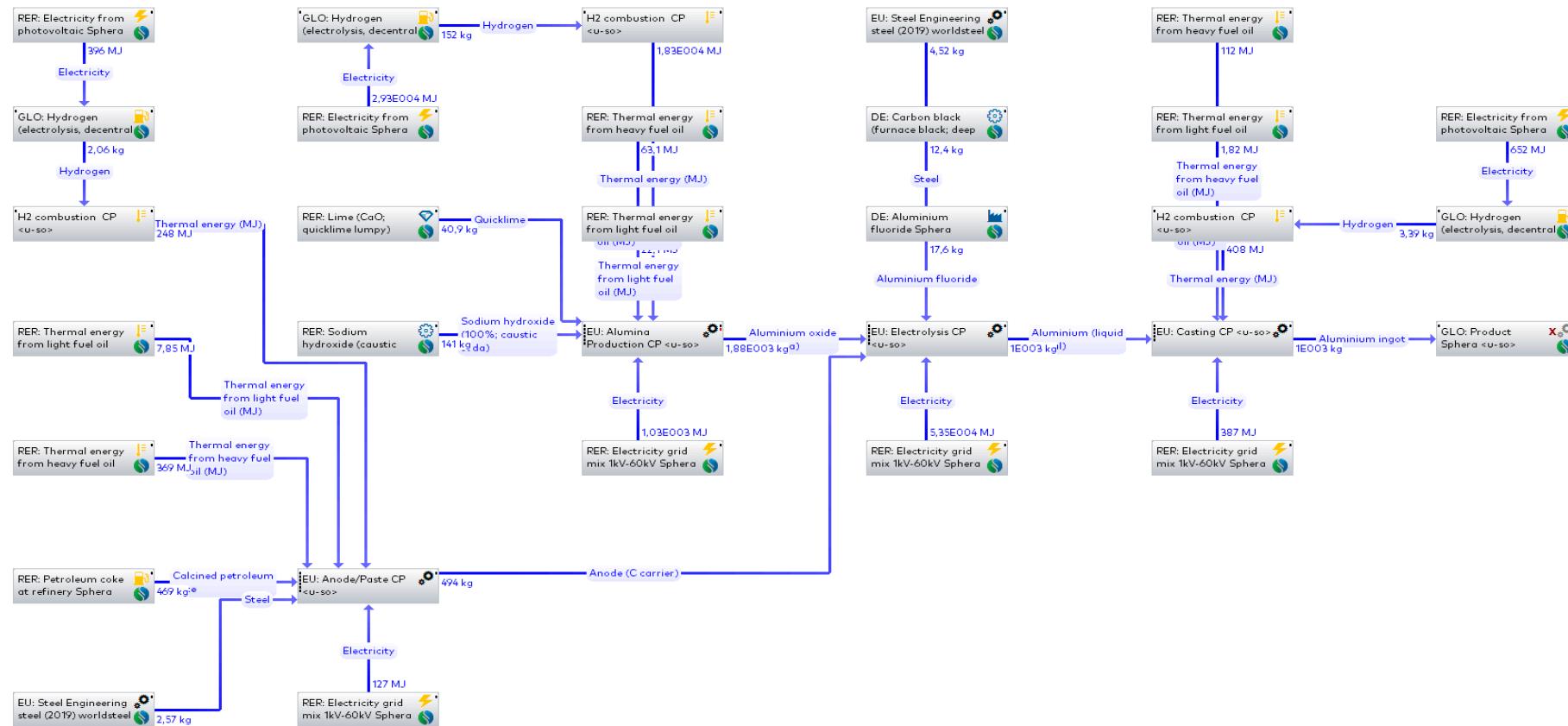


Figure S4. LCA model for scenario 4, as developed in “Sphera LCA for Experts”.