The steelmaking process

1. Input raw materials
   The range of input values differs according to route

2. Raw materials preparation

3. Ironmaking
   - Direct reduction of iron ore

4. Steelmaking
   Two main routes
   - Supplementary heating fuels
   - Electricity
   - Oxygen

5. Semi-finished products
   - Blooms
   - Billets
   - Slabs

6. Hot-rolled products
   - Rails
   - Structural shapes
   - Welded / seamless tubes
   - Wire rods
   - Rebar
   - Coils
   - Plate

7. Finishing operations
   - Cold rolling
   - Metal coating
   - Painting

8. Co-products and their uses
   - Slag
   - Dust and sludge
   - Chemicals
   - Emulsions and used oils
   - Process gases
   - Cement for road construction
   - Fertilizers and soil improvement
   - Paving stones for hydraulic engineering
   - Sea reforestation
   - Internal and external use of iron and alloying elements
   - Use as input material for the chemical industry
   - Internal use as reducing agents
   - Carbon capture and utilisation
   - Heat and electricity

9. Steel applications
   - Wind turbines
   - Packaging
   - Motor vehicles
   - Bridges
   - White goods
   - Rail tracks and trains
   - Buildings and factories
   - Ships and containers
   - Plant / Machinery
   - Medical equipment
   - Metal products
   - Solar panels
   - Furniture

Please note: This diagram aims to show steelmaking today. This diagram does not feature the new input materials and processes that are being developed and will dramatically change how we make steel in the next 30 years as we transition to the low carbon economy.