The steelmaking process

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

2. Raw materials preparation

3. Ironmaking
   - Direct reduction of iron ore

4. Steelmaking
   - Two main routes
   - Electric arc furnace
   - Basic oxygen furnace
   - Supplementary heating fuels
   - Electricity
   - Oxygen

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

6. Hot-rolled products

7. Finishing operations
   - Rails
   - Structural shapes
   - Welded / seamless tubes
   - Wire rods
   - Bars
   - Rebar
   - Coils
   - Flat products
   - Metal coating
   - Painting
   - Cold rolling

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
   - Powder or hydraulic engineering
   - Sea forestation
   - Internal and external use of iron and alloying elements
   - Use as input material for the chemical industry
   - Internal use as reducing agents
   - Heat and electricity
   - Carbon capture and utilisation
   - Carbon capture and utilisation

9. Steel applications
   - Wind turbines
   - Packaging
   - Motor vehicles
   - Bridges
   - White goods
   - Rail tracks & trains
   - Buildings
   - Ships & containers
   - Tools / Machinery
   - Factories
   - Razor blades
   - 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.