JFE Steel works to reduce the environmental impact of its iron and steelmaking processes, including through the effective use of resources. The company recycles 93.5% of the water it uses for production and uses 99.7% of its co-products, such as iron-steel slag. In addition, 100% of co-product gas generated during production is reused as fuel for reheating slabs, generating power for internal use and supplying power to the public.

### JFE Steel

**Input**

- **Raw materials for steel production**
  - 66.0 million tonnes
    - Iron ore: 40.1 million tonnes
    - Coal: 20.6 million tonnes
    - Lime: 5.3 million tonnes

- **Purchased energy**
  - 119.6 PJ
  - Petroleum-based fuels: 20.9 PJ
  - Electric power: 98.7 PJ

- **Industrial water**
  - 218 million tonnes

**Output**

- **Total water consumption**
  - 3,376 million tonnes
  - 93.5% recycled
  - 6.5% reused

- **Recycled**
  - Steel scrap
    - 1.3 million tonnes
  - Chemical substances (PRTR)
    - Released: 545 tonnes
    - Transferred: 2,533 tonnes

- **Wastewater**
  - 126 million tonnes
  - 3.7%

- **Evaporation loss**
  - 92 million tonnes
  - 2.7%

**Recycling Processes**

- **Coke oven and sintering plant**
  - Coke oven gas
  - BF gas
- **Blast furnace**
  - BF gas
- **BDF and CC**
  - BDF gas
- **Reheat furnace**
- **Rolling**

- **Landfill**
  - 0.052 million tonnes
  - 0.3%

- **Recycled**
  - 39.3%
  - 6.0 million tonnes

### Material Flow

Protecting the Global Environment
**Community, Environment and Society**

### Effective use of recovered energy
- 100%

### Energy supply
- 39.1%
  - Power
  - Fuel gas
  - Steam

### Co-products
- 99.7%

#### Output
- Steel products: 26.3 million tonnes (crude steel base)

#### Other products
- Chemicals
- Oxygen
- Nitrogen
- Hydrogen
- Argon

### Waste generated
- 1,500 tonnes
  - Industrial wastes: 1,200 tonnes
  - General wastes: 318 tonnes

### Wastewater (ocean only)
- 146,000 tonnes

### Products
- 44,500 tonnes

### CO2
- 13,800 tonnes CO2
  - Scope 1: 6,800 tonnes CO2
  - Scope 2: 7,000 tonnes CO2

### Outputs and Emissions
- 118.8 tonnes LPG
- 181.8 tonnes City gas
- 146.9 tonnes Kerosene
- 221.7 tonnes Light oil
- 12.6 tonnes Gasoline
- 330.2 tonnes Class A heavy oil
- 26.8 GWh Electric power purchased

### Input
- Steel: 47,300 tonnes
- Energy
  - Electric power purchased: 26.8 GWh
  - Class A heavy oil: 330.2 kℓ
  - Gasoline: 12.6 kℓ
  - Light oil: 221.7 kℓ
  - Kerosene: 14.8 kℓ
  - City gas: 357,800 Nm³
  - LPG: 118.8 tonnes
- Water: 101,700 tonnes

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**Products**
- Chemicals
- Oxygen
- Nitrogen
- Hydrogen
- Argon

**Other products**
- Steel products
- Other products
- Marine and land civil engineering materials
- Recycled products

**Waste generated**
- Industrial wastes
- General wastes

**Wastewater (ocean only)**
- 146,000 tonnes

**Others (PRTR)**
- 175 tonnes