Your needs

You require enhanced process output and improved production flexibility, while reducing environmental emissions. Air Liquide will optimize your core production performance with customized solutions.

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<th>Your Needs...</th>
<th>... Expected Features...</th>
<th>... Our Solutions</th>
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<td>Productivity improvement</td>
<td>Production increase up to 60% without additional investment</td>
<td>Oxy-combustion technologies for efficient radiant heat transfer to the load</td>
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<td>Energy efficiency</td>
<td>Energy cost reduction by 50%</td>
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<th>Emission reduction</th>
<th>Reduction of CO₂, NOₓ, VOC, SO₂ and other greenhouse gas emissions</th>
<th>Clean technologies with advanced oxy-combustion process control ASPAL Clean</th>
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</table>
| Flexibility         | Improve production time  
Increase yield  
Implement efficient process control | Large oxy-combustion burners adapted to each metallurgy process |
| Reliable supply chain | Product certification  
Regulatory compliance | Supply chain engineering, measurement and management |
Our value creation

With **BoostAL** Air Liquide commits to create value demonstrated by tangible and measurable results obtained through engineered solutions that are supported by a network of experts and full implementation at the customer’s plant.

**BoostAL Value for Steel**
- Reduction of electrical energy consumption up to 60 kWh/t
- Reduction of power-on-time up to 12%
- Increase of metallic yield up to 1%
- Enhanced safety

**BoostAL Value for Foundries**
- Decrease of melting process cycle time up to 30%
- Improvement of product quality up to 30%
- Productivity increase up to 15%
- Reduction of coke consumption up to 10%

**BoostAL Value for Non-Ferrous**
- Fuel savings of up to 50%
- Production increase of up to 50%
- NOx reduction of up to 90%
- Significant CO₂ reduction

**BoostAL Value for Semi-Finished Products**
- Fuel savings of up to 50%
- Increase of production of up to 40%
- Reduction of heat-up time by more than 40%
- Homogenous temperature profile in the product
Your process

From feed conditioning and raw material melting, to melt refining and casting, all the way to finishing operations, Air Liquide supports you in every step of your production process.

BoostAL for Steel
Our offer

BoostAL is Air Liquide’s offer in metallurgy that covers the full range of clean application technologies designed to satisfy your needs. BoostAL optimizes performance through increased production output and reduced energy consumption, resulting in high quality products.

BoostAL for Steel

1. Melting with Electric Arc Furnace mills (E.A.F)
   - Oxygen lancing to adjust carbon and reach composition target (O₂)
   - Post combustion to reduce CO and electrical power consumption (O₂)
   - Oxy-combustion to increase furnace’s overall efficiency (O₂)
   - Supersonic injection technology to combine all the benefits of oxygen usage (O₂)

2. Metal transfer
   - Oxy-combustion for preheating ladles to enhance flexibility and lower costs (O₂)

3. Reheating
   - Oxy-combustion in rehear furnaces to increase productivity and reduce CO₂ and NOₓ emissions (O₂)

4. Surface protection and degassing
   - Non-reactive stirring gas injection for degassing (Ar, N₂)
   - Liquid argon for metal surface protection (Ar)
   - Inert vessels: RH, ladles, tundishes to lower defects and increase yield (Ar, N₂)

5. Environment
   - Carbolic dry ice injection in ladles for red fumes suppression (CO₂)

BoostAL for Foundries

1. Melting with cupolas
   - Oxy-combustion and Post combustion to save coke and increase production (O₂)
     - Blast air enrichment with oxygen
     - Supersonic oxygen lancing
     - Oxy-fuel flame

2. Melting with rotary furnaces
   - Oxy-combustion to increase production and furnace yield (O₂)

3. Metal transfer
   - Oxy-combustion for preheating of ladles to enhance flexibility and lower costs (O₂)

4. Surface protection and degassing
   - Non-reactive stirring gas injection for degassing (Ar, N₂)
   - Liquid argon for liquid metal surface protection (Ar)
   - Inert vessels: ladles, tundishes to lower defects and increase yield (Ar, N₂)

BoostAL for Non-Ferrous

1. Melting with refiners and smelters
   - Oxy-combustion to increase furnace’s overall efficiency (O₂)
   - Post combustion with oxygen enriched air to reduce CO and increase the heat transfer to the load (O₂)

2. Metal transfer
   - Oxy-combustion for preheating of ladles to enhance flexibility and lower costs (O₂)

3. Surface protection and degaging
   - Non-reactive stirring gas injection for degassing (Ar, N₂)
   - Inert vessels: ladles, tundishes to lower defects and increase yield (Ar, N₂)

BoostAL for Semi-Finished Products

1. Reheating
   - Oxy-combustion in rehear furnaces to increase productivity and reduce CO₂ and NOₓ emissions (O₂)

2. Heat treatment with protective atmospheres
   - Controlled atmospheres for annealing and galvanizing lines to enhance production quality for a cost effective solution (N₂, H₂, CO)
We are present in more than 75 countries

Air Liquide is the world leader in gases for industry, health and the environment, and is present in over 75 countries with 43,000 employees. Oxygen, nitrogen, hydrogen and rare gases have been at the core of Air Liquide’s activities since its creation in 1902. Using these molecules, Air Liquide continuously reinvents its business, anticipating the needs of current and future markets. The Group innovates to enable progress, to achieve dynamic growth and a consistent performance. Air Liquide explores the best that air can offer to preserve life, staying true to its sustainable development approach.