In an ever-changing energy and regulatory environment, Customers need to address key challenges in flexibility of operations, with proven performance and reliability.

AC Boilers is an OEM with a large number of Heat Recovery Steam Generators worldwide, installed downstream of large Gas Turbines of various Models and Sizes, firing a variety of fuels.

AC Boilers can deliver a reliable, integrated design supported by strong in-house engineering, procurement, fabrication, logistical and project management capabilities.

Operational, Warranty, Maintenance and Diagnostics needs, and Spare Parts requirements, are available and provided by our worldwide operations offices.

Cost Effectiveness =

<table>
<thead>
<tr>
<th>RELIABILITY</th>
<th>Proven Designs, High Quality “State-of-the-Art” Manufacturing, In-depth Erection &amp; Commissioning Expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLEXIBILITY</td>
<td>Proven &amp; Enhanced solutions to meet the demands for fast start-ups, changing demand loads</td>
</tr>
<tr>
<td>HIGH PERFORMANCE</td>
<td>Purpose built, highly efficient design optimized for the most demanding steam pressures and temperature requirements of modern Combined Cycles</td>
</tr>
<tr>
<td>FAST DELIVERY</td>
<td>Flexible combination of engineering, procurement, manufacturing and transportation solutions allow for easy constructability through modularization</td>
</tr>
</tbody>
</table>

= AC BOILERS
AC Boilers addresses the most pressing topics of a Client’s Combined Cycle, delivering high-performing HRSG’s downstream of Gas Turbines up to the maximum ratings.

Constant proprietary-design improvement, continuous feedback from existing units and extensive Utility Boiler Design & Manufacturing experience make AC Boilers choose the best option for the job at hand.

AC Boilers experience and design capabilities enable it to “break” new ground and develop comprehensive solutions, like with the first commercial Benson Once-Through in 2005, or the two-stage supplementary firing approach in 2004.

Pressure parts manufacturing capabilities include Own Shop fabrication in manufacturing facilities in Italy and Romania. Global operational and procurement offices are found in Italy, USA, Egypt and China.

Horizontal Gas Flow HRSG’s

AC Boilers has extensive experience and capabilities in Horizontal HRSG design and manufacturing.

**BASIC DESIGN FEATURES**

- **Steam & water cycle**
  - Multiple Pressure Levels, with or without Reheat
  - Up to the Highest Steam Pressures and Temperatures for Advanced Combined Cycles
  - Natural Circulation, Drum Type

- **Operation**
  - Heavy Cycling
  - Fast Start-Ups
  - Operational Flexibility

- **Construction**
  - Flexible Constructability
  - **Solutions:** Harps, Modules or “C-Type” Sections

- **Arrangement**
  - Fully Drainable, Spiral-Finned, Efficient Heating Surfaces
  - Top Supported
  - Cold Casing

**CUSTOMISED DESIGN OPTIONS**

- Supplementary Firing
- Fresh Air Auxiliary Firing Mode
- SCR – CO catalyst
- By-pass stack
- Boiler House

**HERDECKE**
1 x 250 MW GT

**APRILIA**
2 x 260 MW GT
AC Boilers Designed and Manufactured the 3 longest commercially-operating Benson Once-Through HRSG’s in the world

Where extreme demand fluctuations are the norm, Benson Once Through HP Evaporators allow for enhanced dynamic characteristics, flexibility and faster start-ups, making them suitable for Advanced Combined Cycle Power Plants operating at the highest steam pressures and temperatures.

**Vertical Gas Flow HRSG’s**

In Brownfield projects with space constraints, or downstream of Crude-oil-firing GT’s, Vertical HRSG’s can be the best option at hand.

**SPECIFIC FEATURES INCLUDE**

- Multiple Pressure Levels, with or without Reheat
- Natural or Assisted Circulation
- Operational Flexibility
- Modular Design for Shop-Assembled tube bundles
- Horizontal tube bundles with Spiral-Finned, Efficient Heating Surfaces
- Top Supported
- Cold or Hot Casing
- Tailored solutions for Utility Boiler Repowering
- Cleanable heating surfaces optimized for operation downstream Crude Oil Firing GT’s

**START-UP TIMES**

<table>
<thead>
<tr>
<th>Time (minutes)</th>
<th>Cold Start-up</th>
<th>Warm Start-up</th>
<th>Hot Start-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drum Type</td>
<td>Drum Type</td>
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</table>

**TORREVALDALIGA SUD**

3 x 250 MW GT
Track Record

AC Boilers and its capabilities are borne out by these success stories

High Performance

Heavy Cycling

Heavy Cycling capabilities that satisfy Italian Grid Authority requirements

Focus on high efficiency, minimum load stability, operation flexibility and environmental safeguard, even visually speaking with an architect-designed boiler house

Flexibility

World's first commercial Benson Once-Through HRSG’s

Start-up, shutdown and load change on a moment’s notice. With the increasing penetration of unpredictable renewables, Future-Proof Grids require these capabilities

Reliability

Double Post-Firing

Highly reliable and flexible horizontal HRSG’s, with Double Post-Firing and Fresh Air Firing mode. Optimization for different combinations of electricity and water demand, including peak