How You Benefit

This package is applicable to V94.2 Pre Ratio Gas Turbine Models and is particularly profitable in the following cases:

- Combined with Life Time Extension (100k EOH overhaul);
- During any major intervention on the plant power train.

CUSTOMER BENEFITS

- Standardized spare parts with lead time reduction
- Availability increase (above 1%)
- Aging factor reduction (Rejuvenation)
- Remarkable reduction of maintenance costs (up to 25% savings)
- Reliability increase
- GT life time extension

TECHNICAL FEATURES

- Availability Increase, allowing extension of the maintenance interval from 25,000 EOH to 33,000 and up to 41,000 EOH
- The V94.2 Ratio Gas Turbine can benefit from the other upgrade packages designed for standard AE/V94.2
- Lower thermal and mechanical stresses on Hot Gas Path Components (turbine section and combustion chambers)
Technical Specifications

The Pre Ratio to Ratio consists of these upgraded components: many important upgraded components such as:

**Compressor Blades and Vanes**
Ansaldo Energia can install the current design or improved version (increased stall margin) of the compressor blades and vanes for all the compressor stages.

**Turbine Blades, Vanes and Discs**
The Pre Ratio to Ratio upgrade package designed conceived for the turbine section involves modifications to base material and coating of the blades/vanes and new design rotor components. Here a detail of modifications follows:

**Blade and Vanes Modification details:**

- **Stator Vane Stage 1**
  - New material: IN738
  - New coatings:
    - NiCoCrAlYSi / NiCoCrAlRe metallic coatings
    - Thermal Barrier Coating (TBC)
    - Internal Alluminising

- **Rotor Blade Stage 1**
  - New coatings:
    - NiCoCrAlYSi / NiCoCrAlRe metallic coatings
    - Internal Alluminising

- **Stator Vane Stage 2**
  - New material: IN738 replaces IN939
  - New material: IN738
  - New coatings:
    - NiCoCrAlYSi / NiCoCrAlRe metallic coatings
    - Internal Alluminising

- **Rotor Blade Stage 2**
  - New coating:
    - NiCoCrAlYSi metallic coating

- **Stator Stage 3**
  - Improved and new seal ring (Ratio version) components are fitted on turbine blade carrier with minimal modification

- **Stator Stage 4**
  - Improved vanes and new seal ring

**Exhaust Diffuser**
Minor modification on the diffuser seal ring

**Inner Casing**
Ansaldo Energia can substitute the inner casing installed on pre-ratio models with the improved version currently in production. Modifications are the following:
- Relocated fixation ring
- Optimized cooling air path
- Radiation Liner with belleville spring loaded

**Combustion Chamber and Burners**
HR3 burners can also be installed, with the advantage of a significant reduction of NOx emissions and an increase in flame stability. The benefits are:
- TIT increase
- NOx emission reduction
- Premix flow stability increased
- Flash back avoided

**Rear Hollow Shaft**
The rear hollow shaft is replaced with a new design one, tailored for the right axial position of the stage 4 turbine disc.

*For more information and to reach our sales Team, please go to www.AnsaldoEnergia.com*