

**MODERNIZATION AND DEVELOPMENT OF LOGISTICS PROJECT FOR THE GAS TURBINES EXPERIMENTATION COMPLEX – EXTURBO**

**National Plan for Research, Development and Innovation for 2007 – 2013 (PN II)**

Program: **Capacities**

Contract owner: Romanian Research and Development Institute for Gas-Turbines – COMOTI Bucharest

Contract duration: **2010-2013 (in progress)**

Project value: **11.532.708 lei (~ 2.562.850 euro)**



General objective: **MODERNIZATION AND DEVELOPMENT OF LOGISTICS PROJECT FOR THE GAS TURBINES EXPERIMENTATION COMPLEX.**

Specific objectives:

- **Convergence** to the EU research area in the field of gas-turbines;
- **Strengthening the capacity** to participate in international projects in the field of aeronautical gas-turbines, knowing the results obtained so far in FP 5, FP6, FP7 in the projects SILANCE(R), METHOD, VITAL, JEAN, COJEN, ABRANEW, OPENAIR, TEENI, X3 NOISE in the field of gas-turbines, having the purpose to valorize the accumulated knowledge and **increasing the integration** in European aviation and terrestrial gas-turbine research;
- **Increasing the technical level** of energetic applications with gas-turbines at small and medium power for combined heat and power in cogeneration systems;
- Romanian **gas-turbines realization** for aeronautic and industrial applications;
- **Young graduates attraction and researchers/specialists training** in the field of gas=turbines, with the purpose to valorize the accumulated knowledge and competence transfer from one generation to another.

Research directions:

- Gas-turbines **efficiency** increase;
- **Unconventional fuels** utilization in gas-turbines (landfill gas, biogas, bioethanol, biodiesel);
- Gas flow in **profile cascades** study at temperature above 500°C and pressures up to 20 bar;
- Gas-turbine components realization using carbon fiber in polymeric matrix **composite materials**;
- Environmental **chemical an phonic pollution** reduction in gas-turbines applications;
- Gas-turbines **performance** increase;
- Quality **characteristic measurements** for gas-turbines and components.

- Beneficiaries:
- Research entities from Romania and EU (COMOTI, SNECMA-Fr, TURBOMECA-Fr, ONERA-Fr, DLR-Ge, NLR-Netherlands, CIAM-Russia);
- **universities** (UPB – Aerospace Engineering, Energy, Military Technical Academy, University of Florece-It);
- gas-turbines **production and maintenance** entities (Turbomecanica, Aerostar, Romaero);
- entities which **realize products** with gas-turbines (Avioane Craiova, IAR Brasov);
- entities which **use (exploits)** gas-turbines (Tarom, Romavia, Petrom, Transgaz, MApN, TERMICA Botoşani, CET Vest Bucureşti, CET Bacău, ROMGAZ Mediaş).

Socio-economic impact:

- Keeping Romania in the field of **high qualification** activities and with **high added value**;
- Romanian research **potential** valorization in Romania;
- Accumulated **experience** in the field of gas-turbines valorization;
- Increasing of the **technical level** of the experimentation complex for gas-turbines for ensuring the **convergence** with the EU research area;
- Increasing of COMOTI's attractiveness to be **partner** in international projects;
- **New jobs** creation.