Combined Cycle Power Plant
Brazi, Romania

- The largest private greenfield power generation project in Romania and the first of this size in the last 20 years
- State of the art best available technology in the field, in line with EU environmental standards
- High performance, efficiency and flexibility
- Total investments of approximately EUR 530 mn

1. Background

- Decision to invest in a power plant, in May 2007
  - Aged capacities to be replaced by new, cleaner, less carbon intense technologies: 50% of the existing capacities are more than 30 years old, while 30% are between 20-30 years old
  - High environmental costs stemming from EU compliance
  - Regulatory framework
  - OMV Petrom= Integrated oil and gas company, accounting for 50% of Romania's gas production
- Construction period: 2009 - 2011; tests performed in 2011 & 2012
  - No of workers on site during construction: 200 - 1,200 per day
- On August 1st 2012, the plant became commercially operational

2. Technical characteristics

- **Installed capacity of 860 MW**
- **Technical configuration**
  - 2 gas turbines of 290 MW each,
  - 1 steam turbine of 310 MW
- **High efficiency:** 57% energy efficiency of Brazi vs. 30% average energy efficiency throughout energy system in Romania (it uses half the amount of gas that any other gas fired plant in Romania is using to generate the same amount of electricity)
- **High flexibility:** low start-up time (half of a conventional power plant) & high speed rate of production increase
- **Lower CO2 emissions:** Brazi produces electricity at 0.35t CO2/MWh; average coal/lignite plant produces at of ~0.8t CO2/MWh;
- **Brazi brings reliability to Romania's power supply**
  - Not weather dependent (e.g., on water levels, wind, sun)
  - Can compensate the low predictability of wind production: allow the installation of approximately 700 MW in wind power in the Romanian system.
- **Connection to the gas and power grids:**
  - Newly built 30km gas pipeline

- Newly built 2x3km overhead lines

- **Consumption** depending on the power demand; annual gas consumption might reach approx. 800 mn cm

3. Financing

- **EUR 400 mn corporate loan** European Bank of Reconstruction and Development (EUR 200 mn) and European Investments Bank (EUR 200 mn)
- The difference covered from the **company's cash flow**

4. Partners

- General Electric-Metka consortium - construction of the power plant
- Transgaz - constructed, owns and operates an 800 mm diameter / 30 km gas pipeline dedicated to the CCPP
- Transelectrica – constructed and operates the overhead line connection (3 km high voltage power line)
- Siemens, Toshiba & Itouchu – provided state of the art equipment for the overhead line connection

5. Significant benefits for Romania

- **Benefits for consumers**
  - **Security of electricity supply**: will ensure ~ 8-9 of the electricity produced in Romania; electricity supply equivalent to **Bucharest consumption** ~ 5 TWh)
  - **Positive impact on electricity price** due to increased competitiveness on the electricity market;
  - Increased predictability of the electricity price

- **Benefits for the Romanian economy**
  - Positive signal for foreign investors;
  - **GDP contribution**
  - Additional **revenues to the state budget**
  - Ensure **jobs**

- **Benefits for the energy sector**
  - **Revamping of the electricity sector asset base** in Romania (taking into account the aged production capacities in Romania facing challenges due to alignment to European standards)
  - Improving **environmental standards and efficiency**
  - **Stimulating competition** in the Romanian power sector
  - Enables Romania to meet its ambitious **objectives in terms of renewable energy**
  - **Diversification** of electricity production mix