Paper ID: 72848
oral

IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
Launch Services, Missions, Operations, and Facilities (2)

Author: Mrs. Claire Jonckeau
Centre National d'Etudes Spatiales (CNES), France

Mr. Didier Cauquil
Centre National d'Etudes Spatiales (CNES), French Guiana
Dr. Hélène BEN AÏM DRIEUX
Centre National d'Etudes Spatiales (CNES), France

ENERGY TRANSITION PROGRAM AT THE EUROPEAN SPACE PORT

Abstract

CNES is actively engaged in a Corporate Social Responsibility policy, and thanks to its Sustainable Development Directorate, has shaped a stringent low carbon strategy for all its centers and activities.

To fit this low carbon trajectory, the European Space Port, so called Guiana Space Center (CSG), shall conduct a new energy strategy and a greening of all its industrial processes. Inclusive concern in order to sustain social development and global benefits to the French Guiana territory are strong guidelines to the relevant developments.

CSG, settled in the Amazon area, in French Guiana, is a green territory covered by a tremendous biodiversity. In a few words, the CSG covers 600 km2, including cryotechnic plants, a solid propergol's factory and four different launch pads to fit with ARIANE 5 and 6, VEGA and SOYOUZ.

CSG is by far the biggest consumer of electricity in the French Guiana territory (around 15%). As energy is becoming more and more expensive, the CSG shall control and reduce the financial cost of energy needs, in order to reach ARIANE 6 competitiveness' objectives. Beyond cost, this situation generates both dependency to fossil energies and risks of electricity cuts due to social, technical or geopolitical concerns.

For French overseas departments, the law sets two objectives: increase the share of renewables up to 50% of final energy consumption by 2020, and a total energy autonomy by 2030. Thanks to this law, an incentive system has been set up in order to promote energy savings and renewable energy self-production. Those mechanisms, associated to recent technological improvements, give to the CSG a real opportunity to foster its renewable energy strategy. It implies a new conception of its electrical network, an autonomous renewable energy production involving both photovoltaic and biomass power plants, and a smart grid management system.

To fit to the very stringent low carbon trajectory, the CSG is also conducting a transition program to green the fueling of ARIANE launcher. It is aiming at greening the hydrogen production, which will serve not only ARIANE launcher but also French Guiana's terrestrial mobility with dedicated green H2 vehicles. CNES is also preparing the spaceport to new reusable vehicles propelled with biomethane manufactured using local resources.

As part of its CSR strategy, CNES also intends to support the funding of these projects with a dedicated subsidiary, "Green by CNES", partly fed with its employee savings.

This article details the overall program of the European Space Port's energy transition and greening process, including innovative financial tools to achieve it.