New generation of sustainable car park solutions: **installation of photovoltaic solar canopies**

The Thales Group has installed photovoltaic solar canopies over the car park at its Toulouse site to limit the consumption of electricity from the national grid and meet 6% of the site's annual electricity requirements.

Starting date of the project	October 2020
Project Localisation Places of implementation of the project at this stage and targeted geography if replicable.	Installation of canopies over the employee car park at the Thales Alenia Space site in Toulouse. Study under way to replicate the project at other outside car parks at the Toulouse site or other Thales facilities.
Project objectives Type of climate innovation of the project with a description of the problem/issue addressed	Reduce the site's GHG emissions by replacing part of the electricity sourced from the national grid with electricity generated by the photovoltaic solar canopies. Improve well-being of employees and better protect their vehicles.
Detailed project description	8,100 m² of photovoltaic solar canopies have been installed over 640 parking places in the employee car park at the Thales Alenia Space site in Toulouse. The photovoltaic solar canopies meet of 6% of the facility's annual electricity requirements. The electricity generated is consumed by the site itself.

Main project's drivers for reducing the greenhouse gas emissions

Reduction levers	**Details on the aspects of the project**
☐ Energy and resource efficiency (including behaviour)	
☒ Energy Decarbonisation	Replace part of the electricity sourced from the national grid with electricity generated by the photovoltaic solar canopies.
☐ Energy efficiency improvements	
☐ Improving efficiency in non-energy resources	
☐ Emissions absorption: creation of carbon sinks, negative emissions (BECCS, CCU/S, ...)	
☐ Financing low-carbon producers or disinvestment from carbon assets	
☐ Reduction of other greenhouse gases emission	

Emission scope(s) on which the project has a significant impact and quantification of GHG emission reductions per emission scope

	Aspects of the project contributing to the reduction of emissions by emission category	**Quantification of associated GHG emissions by emission category** *Please follow the quantification methodology used in the Afep guidelines.*
Reduction of the company's carbon dependency		
Scope 1 *Direct emissions generated by the company's activity.*		
Scope 2 *Indirect emissions associated with the company's electricity and heat consumption.*	Replace part of the electricity sourced from the national grid with electricity generated by the photovoltaic solar canopies.	25 tCO_2eq/an
Scope 3		

	Emissions induced (upstream or downstream) by the company's activities, products and/or services in its value chain.		
	Increase of carbon sinks		
	Emissions Absorption *Carbon sinks creation, (BECCS, CCU/S, …)*		
	GHG emissions avoided by the company at third parties		
	Avoided Emissions *Emissions avoided by the activities, products and/or services in charge of the project, or by the financing of emission reduction projects.*		

Clarification on the calculation or other remarks:

Annual electricity production by the solar panels is estimated at 1,798 MWh/year. The estimated LCA emission factor of the solar panels is 48 $kgCO_2$/MWh.

The average annual emission factor of the French power grid is approximately 62 $kgCO_2$/MWh.

The installation of the solar panels therefore generate savings of approximately 25 tCO_2/year.

Modality of verification of the quantification	**Calculation standard used (ADEME base, GHG protocol, etc.):** GHG Protocol - emission factors published by the IEA (International Energy Agency) **Verification of the calculation (internal or external):** Annual consolidation of the carbon footprint of the site and the Group, verification by ILO
Other environmental and social benefits of the project	By producing green energy for consumption by the Thales site itself, the project contributes to the following SDGs • SDG 7: Clean, affordable energy • SDG 17: Climate action
Project maturity level	☐ Prototype laboratory test (TRL 7) ☒ Real life testing (TRL 7-8) ☐ Pre-commercial prototype (TRL 9) ☐ Small-scale implementation ☐ Medium to large scale implementation **Remarks**: **click here to enter the level of maturity of the project**
Capacity and conditions of the project reproducibility, with associated climate impact mitigation potential	A study is under way for an equivalent project at the Thales Alenia Space site in Toulouse. Similar initiatives are in progress at other Thales sites in France and other Thales Alenia Space sites in Europe (Cannes in France, Charleroi in Belgium, L'Aquila and Turin in Italy). The conditions of success of a project of this type are as follows: • Maintenance management support and guaranteed annual production rates • Ability to resolve technical issues and failures over the long term.
Amount invested (in €)	No investment has been made. The project has been implemented under a 10-year lease purchase agreement with LVS (subsidiary of EDF ENR), with fees based on the amount of electricity generated. The company will become the owner of the installations in 2030.
Economic profitability of the project (ROI)	☐ ST (0-3 years) ☒ MT (4-10 years) ☐ LT (> 10 years) **Remarks:** This project reduces energy consumption and operating costs related to energy sourcing and supply.
Engaged partnerships	A partnership has been set up with LVS (subsidiary of EDF ENR).
Open comments from the project owner	/
More about the project	
Contact the company carrying the project	communication.web@thalesaleniaspace.com
Project URL links	https://www.youtube.com/watch?v=WcJCU97Np3Q

Illustrations of the project