

# Challenge@PoliTo\_ *By Firms*

## *Fill up with green energy in motorway* *\_By Autostrade Tech*

March – June 2021

### CALL for IDEAS

The switch to electric mobility will require a radical change in motorway infrastructure. A large amount of energy will have to be made available in the rest areas to support, in addition to the more classic uses (refreshments, air conditioning, lighting, etc.), the recharging of electric vehicles in their different technologies.

This energy will increasingly be made available by technologies based on renewable sources. However, such a technological ecosystem based on highly random energy sources and loads depends on many external factors. To make this ecosystem sustainable, we need to think about how to store energy.

The size of a storage system, as well as its optimal management, is, therefore, the more accurate the more precise are the forecasting capabilities that take into account the possible variations of all interacting factors on the related decision models.

The Challenge is to define tools aimed at the preliminary design of the storage system and/or its optimal management that can consider the various external factors that will have to be identified by the teams as determining or critical factors.

Therefore, the Challenge's central part will be to identify which internal and external factors impact the storage system's choice and management. Moreover, the teams will have to find suitable methodologies to put together all the relevant information for the optimal management system.

The Challenge's final result will have to be a model capable of choosing and managing the storage system and making decisions based on both real-time data and future forecasts. Some examples of criteria to be considered are energy cost, storage cost, weather, expected traffic, etc.

This activity will be recognized within your educational plan with 8 CFU credits. Check your institutional email, look for 'Challenge@PoliTo' and read the regulation carefully.

**SIGN UP NOW!** Places are limited!  
For any questions, write to [clik@polito.it](mailto:clik@polito.it)



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