Topic Master thesis

**Future developments in the power sector of Tunisia**

**Background**

In order to reach the targets of the Paris agreement, all countries should commit to reducing their carbon emissions. Many developing countries have not yet set carbon neutrality targets, despite having huge renewable energy potentials. This is the case of Tunisia, which could also become a key player in hydrogen production due to its geographic proximity to Europe.

**Goals**

The purpose of the thesis is to model the power system of Tunisia and its future developments using multiple scenarios. Therefore, the following steps will be necessary:

- Modeling and validation of the current power system of Tunisia in high spatial and temporal resolution
- Definition of future scenarios (Nationally determined contributions, carbon-free power system, high demand due to hydrogen exports, higher demand due to seawater desalination, etc.)
- Assessment of the results (LCOE, expansion plan, geographic distribution)
- Discussion and policy recommendations

If you choose this topic:

- You will be able to use the open-source python tools pyGreta, pyCLARA and pyPRIMA
- You will learn how to use a GIS software (QGIS)
- You will apply the open-source optimization modelling framework urbs
- You will contribute to a study that has an impact on the policy-making of Tunisia

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Diaspora in Action

Context: This work will support a project that the non-profit organization “Diaspora in Action e.V.” is conducting, which consists in preparing a market pre-feasibility study for green hydrogen production in Tunisia and its export to Germany/Europe. This study will be elaborated and shared with Tunisian authorities to help them develop a hydrogen strategy. It will provide useful information for potential investors from Germany.