# AGIR Project Proposal
2024-2025

## Title (titre):

Housing performance diagnosis and local climate : perspectives on energy consumption

## Partner/Client (partenaire/client):

This project is submitted by Viveris, an independent consulting and engineering group, committed in the digital transformation of companies and their products for more than 35 years. Viveris sustainably commits to both its employees and its customers. From the first contacts, the Group strives to instil the values of excellence, initiative, openness and friendliness.

More specifically, as the project is Data-driven, the main point of contact for this project will be Olivier DEPRAZ (M2 UCB Lyon I 2022), a member from the Viveris's data department, and Yves SAINTILLAN (INSA Lyon IF 1995), scrum master and coach also from Viveris.

## Dimensions (dimensions):

SOCIETALE / METHODOLOGIQUE

The aim of the project is to submit and perfect an algorithm for evaluating aforementioned perspectives. This is in order to provide societal insight for the subject.

## Summary including Objectives and Deliverables (résumé y compris les objectifs et les livrables):

In the context of climate change, the French State has vowed to increase the standard on DPE (Diagnostic de Performance Energetique / Energetic Performance Diagnosis) for most (to not say all) housing within the country. However, upgrading every house and apartment complex to be efficient is a great economic challenge.

Here, the objective isn't to quantify this challenge, but to assess how much energy is lost and how much the residents of energetically bad houses are losing, at a macro level, and how climate change eases or worsens these losses. The resulting product would be a small application composed of two sections:

- First, a statistical analysis on energy consumption depending on the DPE, the city and (if possible) the housing type
- Second, a prediction on said energy consumption depending on adjustable factors. These factors are temperature evolution and DPE evolutions of the studied housing stock.

To accommodate the small amount of time allocated for the project, the statistical analysis can be focused on a specific visualization and the prediction oriented on a specific factor. The idea is to have a proof of concept for such application.

## References (références):

The idea is based on two governmental data challenges:

- https://defis.data.gouv.fr/defis/changement-climatique
- https://defis.data.gouv.fr/defis/diagnostics-de-performance-energetique

These two projects are proposing public data to work with:

- Meteorologic data: https://meteo.data.gouv.fr/
- Climate projection: https://www.drias-climat.fr/
- DPE database: https://data.ademe.fr/datasets/dpe-v2-logements-existants
- Enedis's energetic consumption: https://data.enedis.fr/explore/dataset/consommation-annuelle-residentielle-par-adresse/information/

It is possible to look into already existing tools around energy consumption:

- Application relying partly on DPE to propose improvement of domestic energy consumption: https://www.hellowatt.fr/
- Similar tool for businesses: https://www.dexma.com/fr/
- Evaluation tools DPE-related : https://www.bbs-logiciels.com/climawin-2020/ - https://logicielsperrenoud.com/product/dpewin-v5-dpe-audits-energetiques-reglementaires/

## Project Team (groupe-projet):

The project is open to applications.