SUSTAINABLE CAMPUS

How can we transform the waste, water, and energy cycles of large institutions such as universities in order to neutralize their carbon footprint and achieve campus energy independence?

Challenge origin

The Sacyr Concessions business line aims to improve the energy efficiency of university campuses through innovative solutions to reduce the carbon footprint of campus activities, operations, and users.

Objectives

To identify technological solutions to reduce the environmental impact of campus activities through a sustainable energy transition in different areas:

- Mobility.
- Energy consumption (i.e., electricity and heat).
- Water consumption.
- Procurement.

Aspects to consider

Innovative solutions to replace or improve existing facilities are sought.

Solutions to raise awareness and encourage users to use resources responsibly are sought.

Solutions to generate an economic impact for the institutions in the form of savings are sought.

Problems to Solve

- The housing stock and the influx of people increase every year.
- Energy needs are subject to seasonal variations.
- A reliable energy supply is crucial for both residential areas and the university's activities.

Benefits

- Reduction of the environmental impact of all activities on university campuses.
- Reduction energy consumption.
- Achieve energy independence by leveraging clean energy and renewable sources.
- Raise awareness and educate users about the importance of the responsible use of resources.
- Generation of a positive economic impact through a better management of the energy supply.

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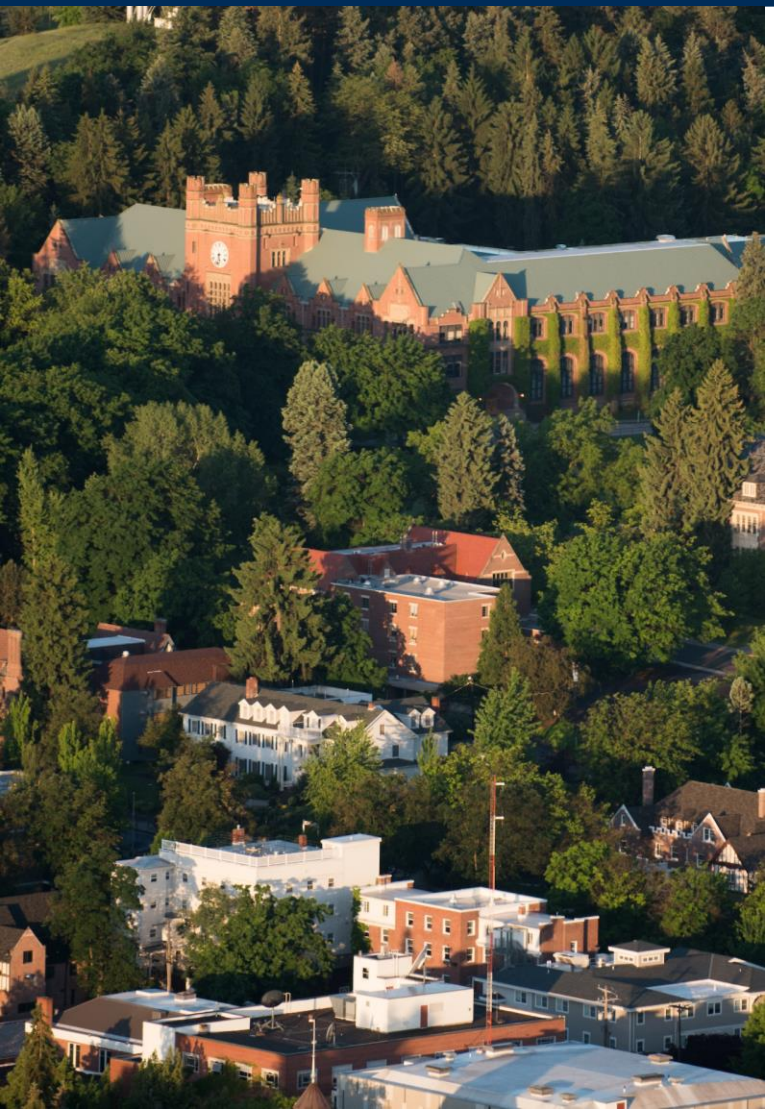

We Look for solutions…

- **To reduce energy and water consumption:**
  - Water cycle optimization based on data management (artificial intelligence and big data).
  - Solutions for water leakage estimation in the distribution system.
  - Sustainable treatment of influent and wastewater.
  - Services that require less energy use.
- **To convert the housing stock to near-zero energy consumption buildings:**
  - Consumption management, including warnings for the early detection of inefficient energy utilization.
  - Clean energy production such as the use of meteorological parameters for the efficient determination of energy sources and origins to be used in time intervals.
  - Energy storage and distribution.
- **To reduce the impact of operations on the environment:**
  - Sustainable mobility.
  - Awareness of the responsible use of resources.
  - Reduction of campuses' carbon footprint.
- **To recycle and reuse resources:**
  - Waste valorization.
  - Waste to energy conversion technologies: biomass...
- **Solutions that enable the sustainable procurement of goods and services.**
- **Solutions that enable the selection and use of goods and services that have a positive impact on our natural capital.**