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PIC is a scientific-technological center providing High Throughput and Data Processing Services to various scientific disciplines: High Energy Physics, Astrophysics, Cosmology and Life Sciences among others.

To fulfill these communities requirements it needs to maintain a steep capacity growth while keeping high levels of reliability. Thanks to technology improvements, in the last years it has been possible to support this growth keeping the overall energy budget about constant. However, power limit is getting close and, as user communities and requirements just keep growing, energy efficiency has become a key metric to ensure the sustainability of the activity. Therefore, power efficiency has become the metric for most purchasing decisions. The current input power limitations are a 200KVA UPS line to our main computer room and 100KVA UPS line to an independent, more energy efficient, module (PUE 2.3 vs 1.55). While a significant improvement of the situation is on sight, as of today we have to hold out with the available power. That means that our resources are mostly channeled on “going green”: how to save as much energy as possible to keep our equipment running while still delivering the required service.

With that in mind, different techniques are being experimented: improvements on racks to enhance cooling, by controlling air fluxes; newer, more efficient equipment that has a better performance unit per watt ratio; and virtualization technologies that allow us to consolidate servers.

In this presentation a brief description of the experiments running at PIC will be given. Furthermore, the status of the PIC site will be presented: computing resources, storage resources, datacenter considerations and software considerations regarding the most resource-consuming project, LHC, as well as other projects, and will try to give some insight on the trade offs found.

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