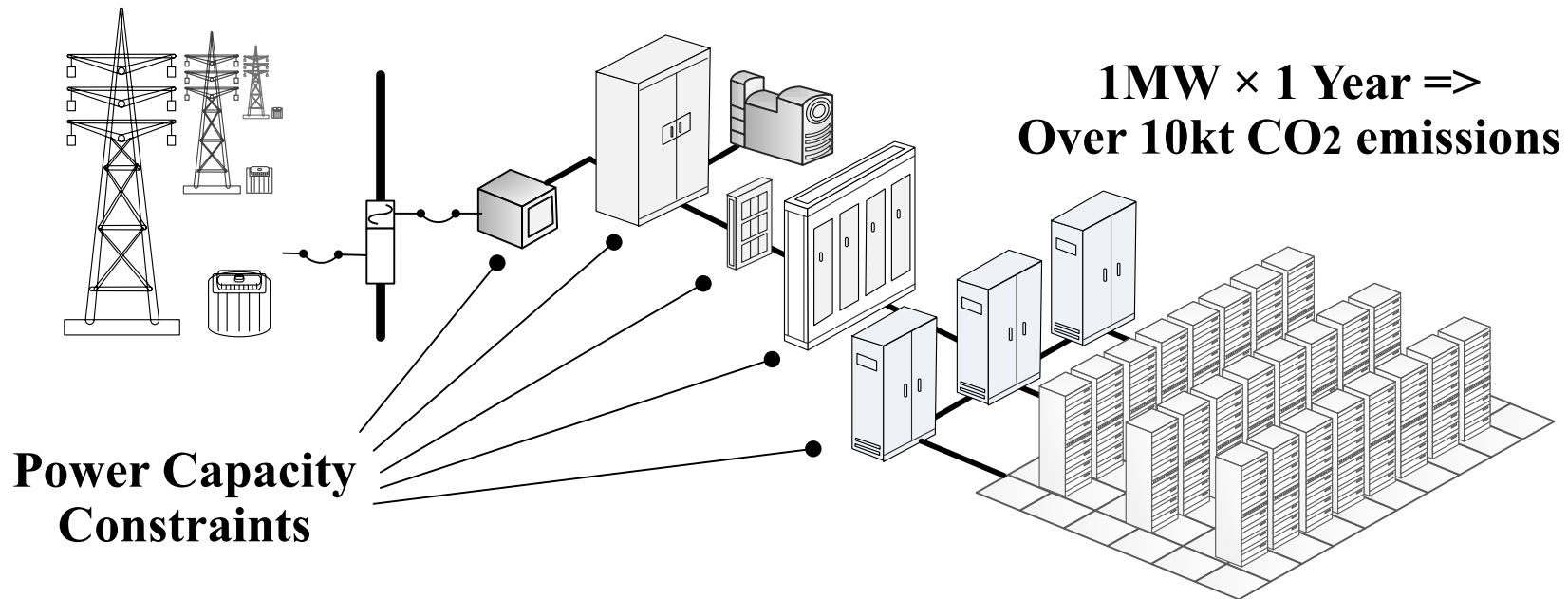# Enabling Datacenter Servers to Scale Out Economically and Sustainably

Chao Li, Yang Hu, Ruijin Zhou, Ming Liu, Longjun Liu, Jingling Yuan, Tao Li
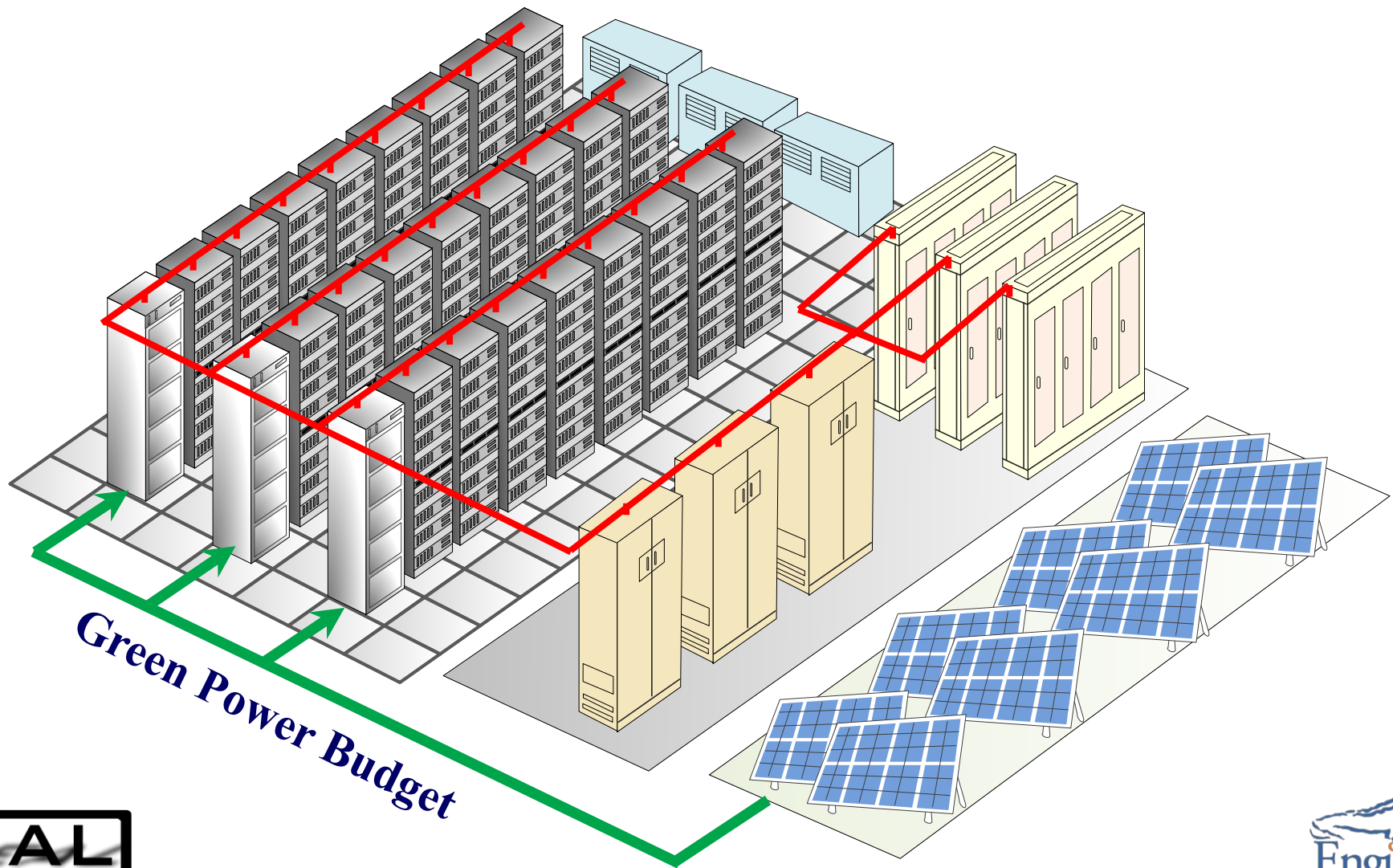
University of Florida

As data sets become **big**, servers must **scale out**

1MW × 1 Year =>
Over 10kt CO_2 emissions

Power Capacity Constraints

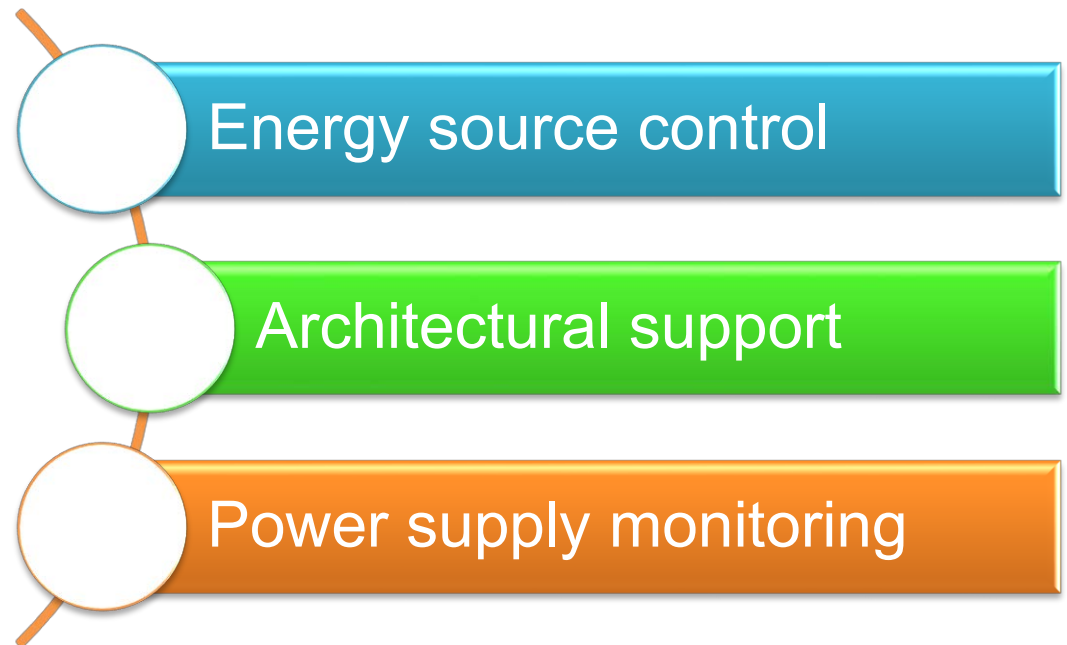## Unfortunately, modern datacenter servers are both **power-constrained** and **carbon-constrained**

Distributed, incremental green energy integration allows a datacenter to double its power capacity with zero emissions and 25% cost reduction

Green Power Budget

Oasis & Ozone: A unified power provisioning framework for scale-out green datacenters

- Energy source control
- Architectural support
- Power supply monitoring

Welcome! (15:30-17:00 Session 5A - #1)