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Host Level	Site Level	Virtual Layer	Application Layer	(dynamic / static)
Power consumption	Site utilization	CPU usage	Task execution time	Energy Mix
Disk IOPS	Storage utilization	Storage usage	Application execution time	Grid total
CPU utilization	Availability	I/O usage	Power consumption	Imported / Exported
Availability	PUE	Memory usage	Response Time	Produced CO ₂
		Power consumption	Throughput	
		Disk IOPS	A-PUE (Application PUE)	
ECO2Clouds me	trics		Application Energy Productivity (A-EP)	
BonFIRE metric	s		Application Green	



















































Future research	challenges	
Optimization/im	provement	
TCO (consic Green Grid)	dering also resiliency, see EU Code	of conduct,
energy vs ei	nvironmental impact	
design and a	adaptation, dynamical evolution	
Future trends continuous r IoT, big data	reduction of idle power a applications	
Barbara Pernici	RCUTTONICO MILANO 1333	48















