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# SC14 EEHPC Workshop

## Energy Efficiency Considerations for HPC Procurement Documents: 2014

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U.S. DEPARTMENT OF  
**ENERGY**

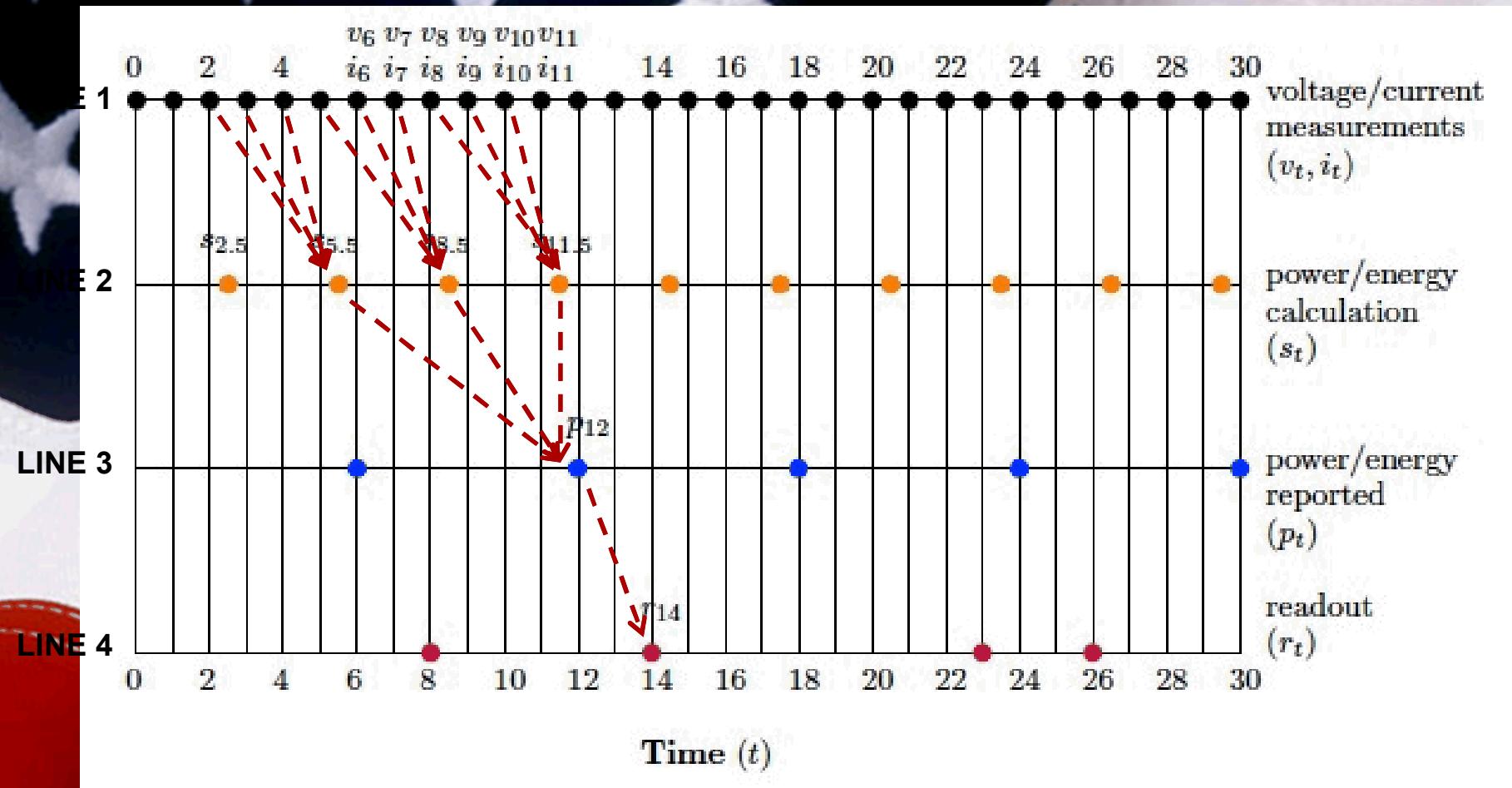


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# Purpose of Document

- Provide Guidance
  - Have you considered this?
  - Site can pick and choose what is important
- Facilitate communication
  - Throughout HPC community
  - Between HPC community and HPC vendors
- Forecast coming needs
  - Vendors need to be aware
- This is intended to be a LIVING document

# Reported Values vs. Internal Samples



# System/Platform/Cabinet

Internal Sampling Frequency	
Mandatory	$\geq 10$ per second
Important	$\geq 100$ per second
Enhancing	$\geq 1000$ per second

External Reported Value Frequency		
Mandatory	Discrete Power (W)	$\geq 1$ per second
	Average Power (W)	$\geq 1$ per second
	Energy (J)	$\geq 1$ per second
Important	Discrete Power (W)	$\geq 10$ per second
	Average Power (W)	$\geq 1$ per second
	Energy (J)	$\geq 1$ per second
Enhancing	Discrete Power (W)	$\geq 100$ per second
	Average Power (W)	$\geq 1$ per second
	Energy (J)	$\geq 10$ per second

# Node

Internal Sampling Frequency		
Mandatory		$\geq 100$ per second
Important		$\geq 1000$ per second
Enhancing		$\geq 10000$ per second
External Reported Value Frequency		
Mandatory	Discrete Power (W)	$\geq 10$ per second
	Average Power (W)	$\geq 10$ per second
	Energy (J)	$\geq 1$ per second
Important	Discrete Power (W)	$\geq 100$ per second
	Average Power (W)	$\geq 100$ per second
	Energy (J)	$\geq 10$ per second
Enhancing	Discrete Power (W)	$\geq 1000$ per second
	Average Power (W)	$\geq 1000$ per second
	Energy (J)	$\geq 10$ per second

# Component

Internal Sampling Frequency		
Mandatory		$\geq 1000$ per second
Important		$\geq 10000$ per second
Enhancing		$\geq 1000000$ per second
External Reported Value Frequency		
Mandatory	Discrete Power (W)	$\geq 100$ per second
	Average Power (W)	$\geq 10$ per second
	Energy (J)	$\geq 1$ per second
Important	Discrete Power (W)	$\geq 1000$ per second
	Average Power (W)	$\geq 100$ per second
	Energy (J)	$\geq 10$ per second
Enhancing	Discrete Power (W)	$\geq 10000$ per second
	Average Power (W)	$\geq 1000$ per second
	Energy (J)	$\geq 10$ per second