



# Energy Efficient Ethernet: Outstanding Questions — *Update: March 2007*

**Bruce Nordman**  
Energy Analysis  
Lawrence Berkeley National Laboratory  
Berkeley, CA 94720  
BNordman@LBL.gov  
(510) 486-7089

# Outstanding questions — Update

Bruce Nordman is unofficially tracking what is known and what is not (yet) known by the EEE Study Group. This is intended to reflect the general consensus of the EEE Study Group but does NOT do so in any official capacity.

A complete text document is on the SG page for this meeting.

Please send him comments.

## Control Policies

- No update

## Traces / Use patterns

- No update

# Outstanding questions — Update, cont.

## Data Rates

### *Know*

- Asymmetric data rates raise questions about signaling, and in most applications would have only slight affect on energy savings, so not a priority for consideration at this time.
- Power difference in PHY between 100 Mb/s and 10 Mb/s is too small to be concerned with for energy savings and of uncertain direction.
- Zero Mb/s deserves consideration as a new data rate for EEE PHYs.
- We should not consider PHY data rates other than multiples of 10.

# Outstanding questions — Update, cont.

## Transitions

### *Know*

- Candidate signaling mechanisms include: LLDP, OAM, MAC, LLDP (see Frazier/January slides).
- Some parameters could usefully be stored to minimize transition time.

## Other Protocols / Layers

### *Know*

- We should confer with the PoE group on signaling.

### *Questions*

- Could / should EEE affect how the spanning tree algorithm uses link speed?
- Should EEE be limited to edge connections?
- Does link aggregation pose a problem for EEE?

# Outstanding questions — Update, cont.

## PHY types

### *Questions*

- Does EEE apply to backplane Ethernet?
- Does EEE apply to fiber PHYs? ( or other parts of fiber NICs? )
- For 10G, is it OK if the EEE 1G PHY is not identical with today's 1G PHY since this state will only occur with 10G EEE PHYs?

## Outreach

### *Know*

- We got a flurry of Internet coverage right after January meeting
- URLs:  
IEEE/EEE: [grouper.ieee.org/groups/802/3/eee\\_study/](http://grouper.ieee.org/groups/802/3/eee_study/)  
LBNL: [efficientnetworks.lbl.gov](http://efficientnetworks.lbl.gov)  
USF: [www.csee.usf.edu/~christen/energy/main.html](http://www.csee.usf.edu/~christen/energy/main.html)

## Getting to PAR submittal

### *Know*

- Assume not necessary to have hardware experimentation