# Use of PowerPriceIndex information in measurement TLV

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IEEE Std 802.3-2015 Energy-efficient Ethernet modes for higher speed PHYs

- Energy-efficient Ethernet modes for higher speed (≥ 40 Gb/s) PHYs
- Deep Sleep
  - No transmission during Low Power idle except refresh
  - Energy saving in PHYs due to the ability to turn off transmitter
  - Enables energy saving in attached system based on signalling Low Power idle
- Fast Wake
  - Fast Wake signaling during Low Power idle
  - Enables energy saving in attached system based on signalling Low Power idle
- In Fast Wake all saving is implementation dependent
  - Innovation based on the information signaled
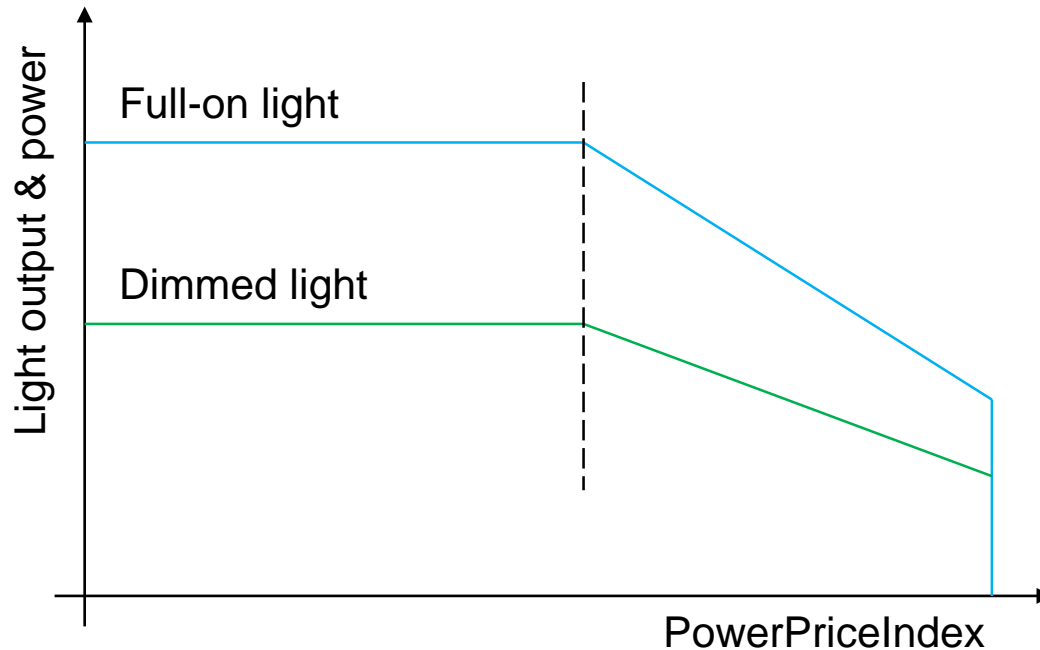

Deep Sleep Mode

Fast Wake mode
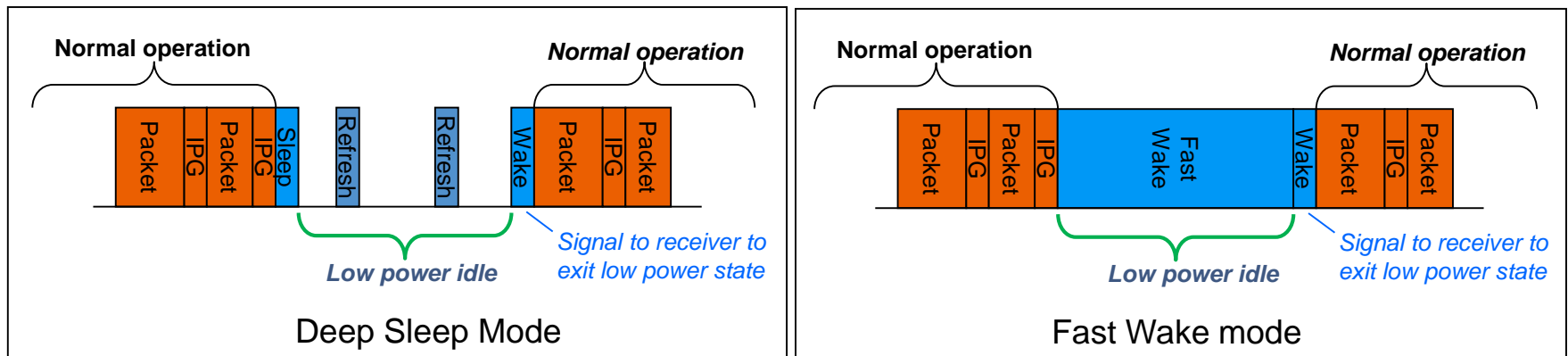
Proposal summary

- PowerPriceIndex sourced by PSEs and used by PDs
- Algorithms for how PSEs set PowerPriceIndex or how PDs use it do **NOT** need to be standardized and are out of scope for this standard

- Example uses
  - Total demand by PDs nears PSE power capacity so PSE increases PowerPriceIndex to stay under limit (and later decreases when capacity used drops)
  - PoE light begins to dim when PowerPriceIndex exceeds some threshold and turns off entirely when a second threshold is reached.
  - PD with energy storage charges during low price and consumes from storage during high price

Example use of PowerPriceIndex Price-responsive light

Example use of PowerPriceIndex PD with energy storage

Based on previous cost range PD with storage chooses to charge during this period

When cost is high stored energy can be consumed

PowerPriceIndex

Time