ENERGY STAR
Imaging Equipment
ITI/JEITA/JBMIA Workshop

July 2014

Data used in setting V2 performance criteria

- EPA received comments throughout the spec process that our dataset
  - wasn't current,
  - contained inaccurate data,
  - contained duplicates,
  - inconsistency in product family implementation
- In response, EPA updated the data sets several times – most recently in Final Draft phase
- EPA used the most current Qualified Product Lists as the basis and added in identified non QPL products
- Final data set included:
  - TEC: 2,359 QPL, 203 non QPL
    OM: 873 QPL, 696 non QPL

Non Qualified Data

- Throughout the spec process, esp at the start, EPA seeks to expand its data set to include current non-qualified models
  - Improves energy savings estimate
  - Help set revised specification levels relevant to current market
  - Complement shipment / market penetration numbers
- During V2 spec, EPA got limited data from a few manufacturers
  - EPA spent a lot of resources looking through Brand Owner web sites/catalogs for non qualified models
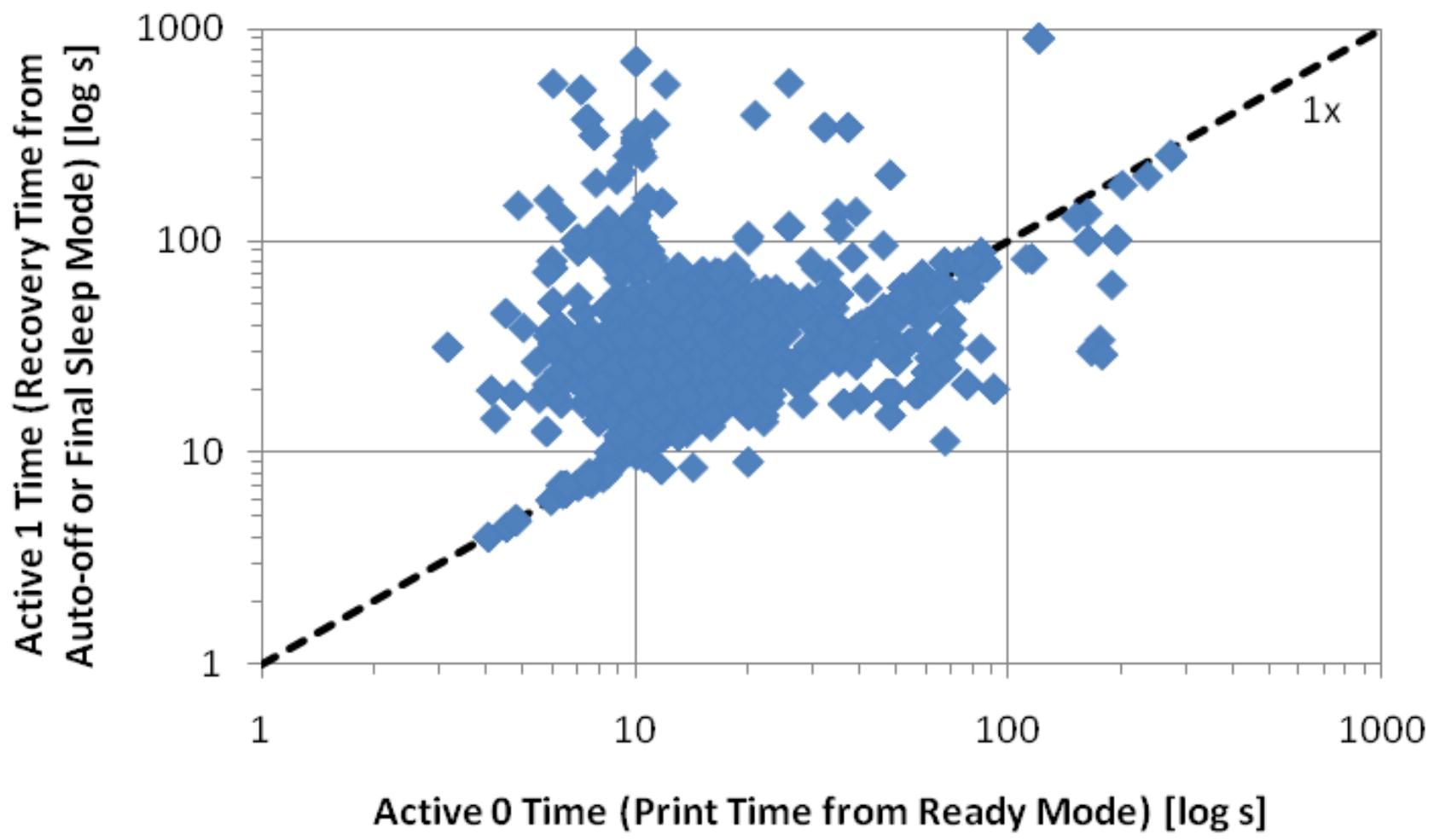
Recovery Time

- The current TEC qualified product dataset has 4 times reported for most models
  - Active 0 time: Time from when unit indicates it is in Ready Mode after turn on to first page
  - Active 1 time: Time from 1 hour of sleep mode to first page
  - Active 2 time: Time from 15 minutes after first job to first page of second job
  - Product recovery time from sleep as marketed

Recovery time Issues

- During V2 prep, analysis showed that Active1 time varies greatly among TEC products, from several seconds to hundreds of seconds

- Improbably, for some products, Active0 time is greater than Active1 time, indicating that it takes longer to print from sleep than from ready mode—as much as 6 times longer in some cases.

Chart showing Active 1 Time (Recovery Time from Auto-off or Final Sleep Mode) [log s] on the vertical axis versus Active 0 Time (Print Time from Ready Mode) [log s] on the horizontal axis, with a dashed 1x reference line.
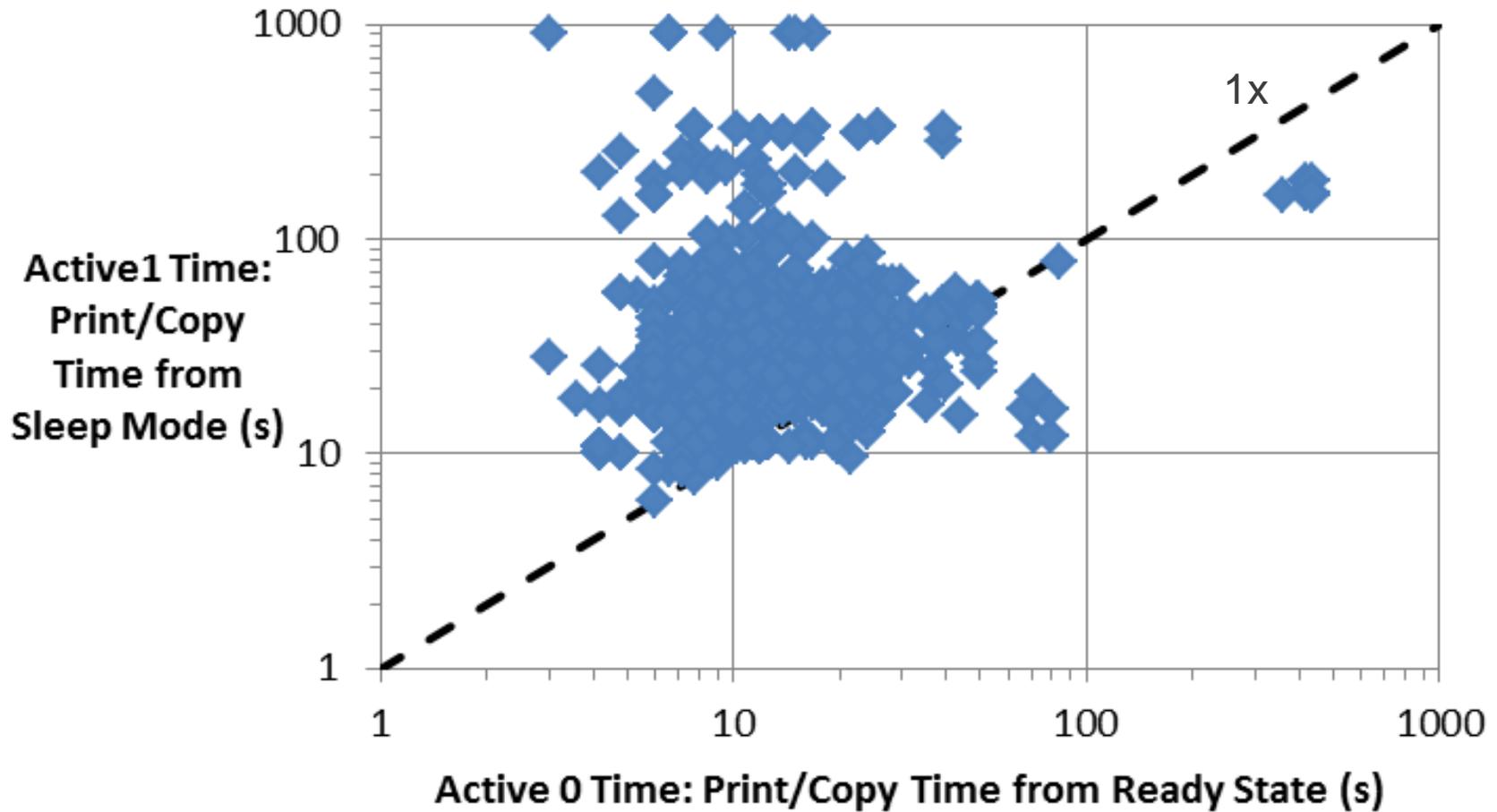
Possible Explanations

- Unit was performing initial calibrations/other startup activities
- Control panel indicated ready state early to permit user to perform non-printing functions
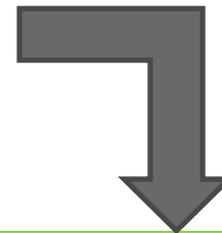
The Situation Today

Reporting Recovery Time

- Data is measured in minutes
- Draft of Qualified Product eXchange (QPX) template asked for data in hours
- Current QPX asks for minutes

Converted to seconds (×60) for reporting on Qualified Product List (QPL)

Product Family re defined in V2

"For Imaging Equipment, acceptable variations within a product family include:

a) Color,

b) Housing,

c) ~~Input voltage and frequency,~~

d) ~~d)~~ **c)** Input or output paper-handling accessories,

e) ~~Internal storage drive (hard disk drives (HDD) or solid state drives (SDD)), or~~

f) ~~Any of the functional adders specified in Table 7.~~

d) **Electronic components not associated with the marking engine of the Imaging Equipment product."**

> Conflicted with requirement to test products in each market sold.

> Added back as an adder

> Allows for new adders not currently treated under the OM approach (Table 7)

Duplicates

- QPX collection system generally uses a single row per product family and all additional models listed as variations

- EPA and CBs can identify unique models through cert ID which is used to determine unique counts for verification testing

V3 Issues identified to date

- Interest to include a new class to the specification
  - Professional products
    - Needs to be defined/delineated
    - Performance data on a range of products
- Re-evaluate existing product scope
  - inclusion of fax and copiers based on declining market shipments
- Evaluate decoupling TEC categories
  - set performance criteria independent of each TEC category based on data