



CEC EPS Regulations and Power supply design limitations

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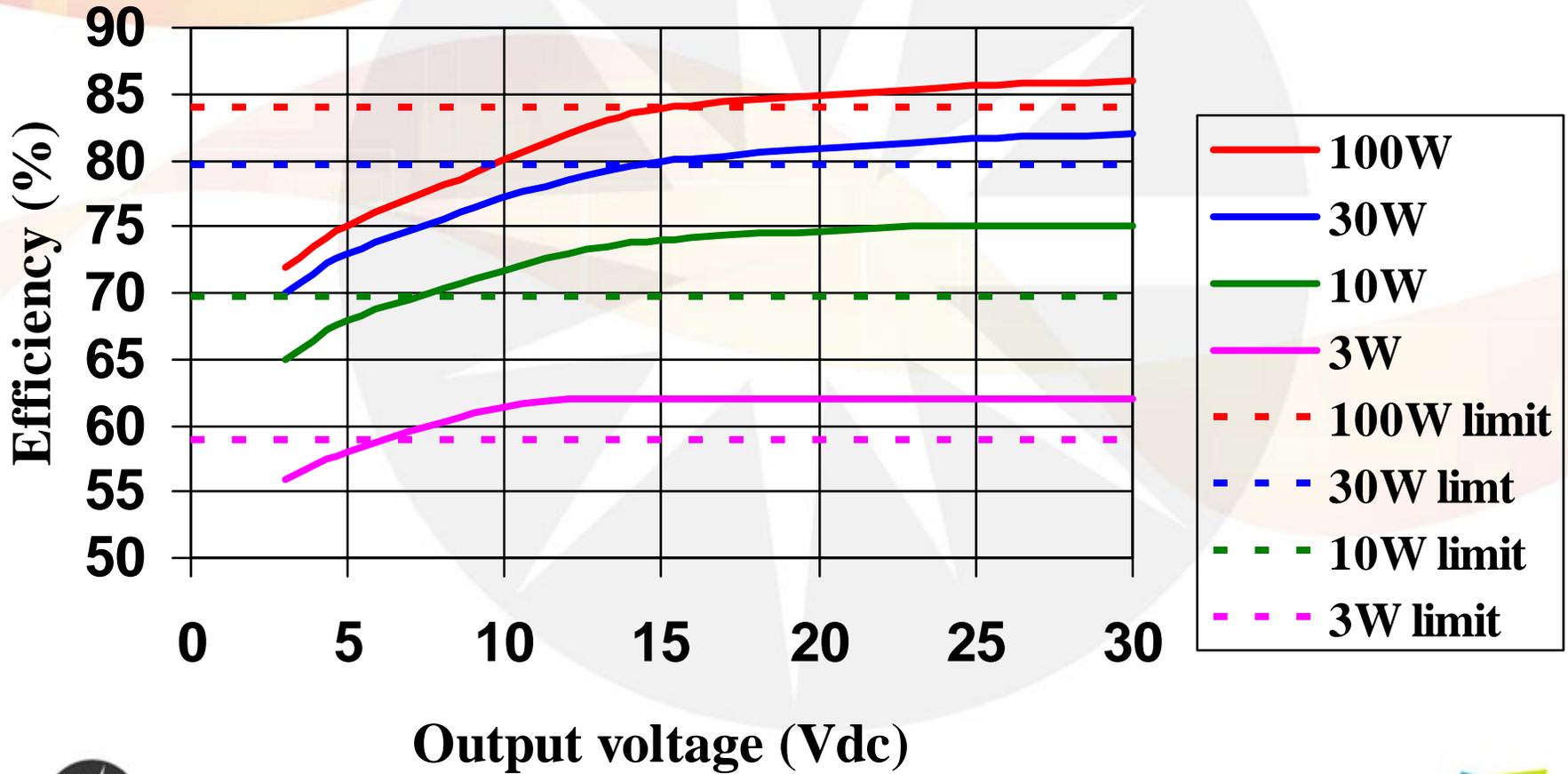
Power Supply design limitations.

All power supplies are equal, but some are more equal than others.

- Output voltage dependent efficiency.
- Input voltage dependent no load power consumption.
- Functional limitations.
- Logistics
- Time to Market

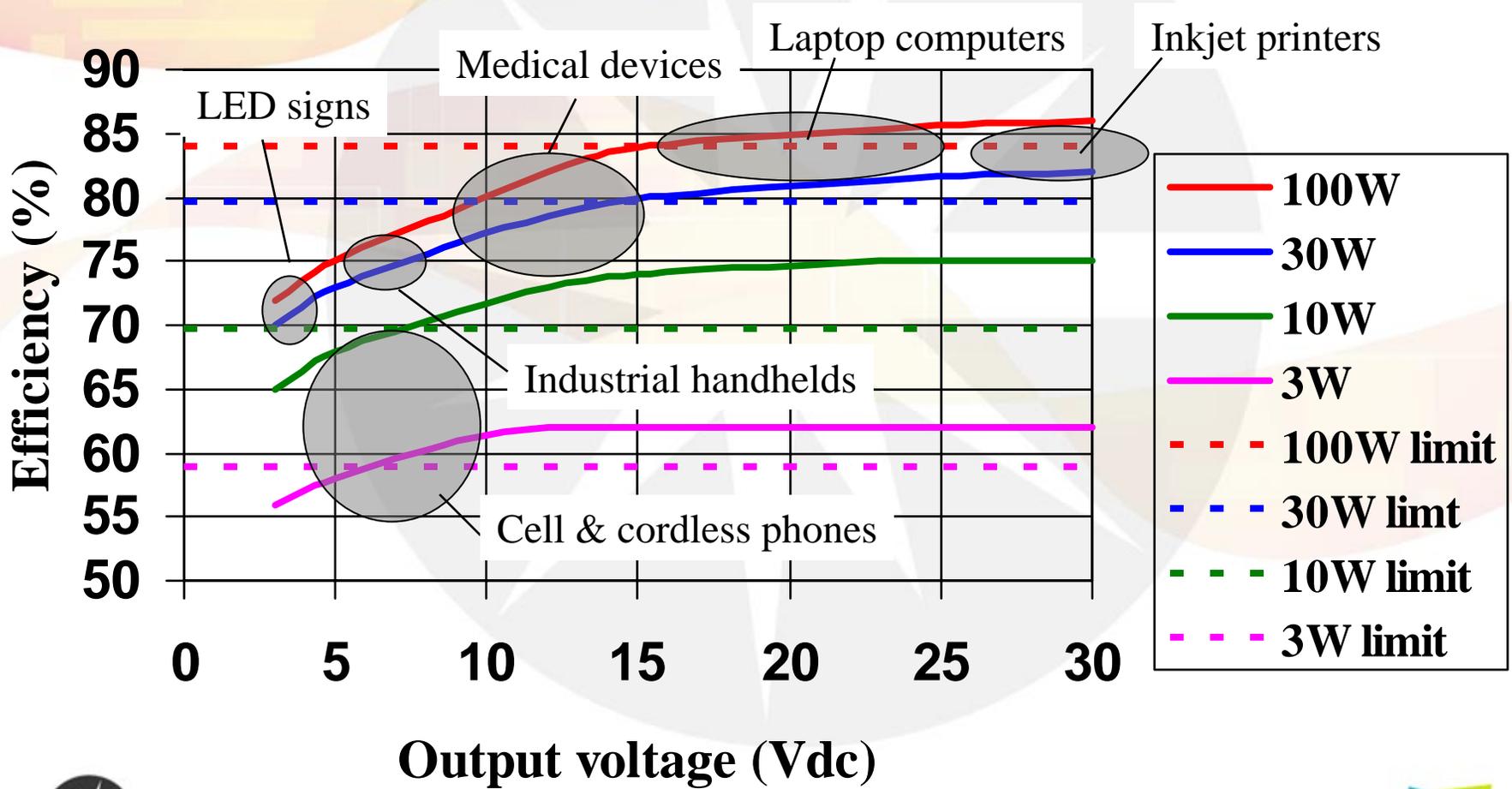
Good design practice

Switched mode EPS efficiency

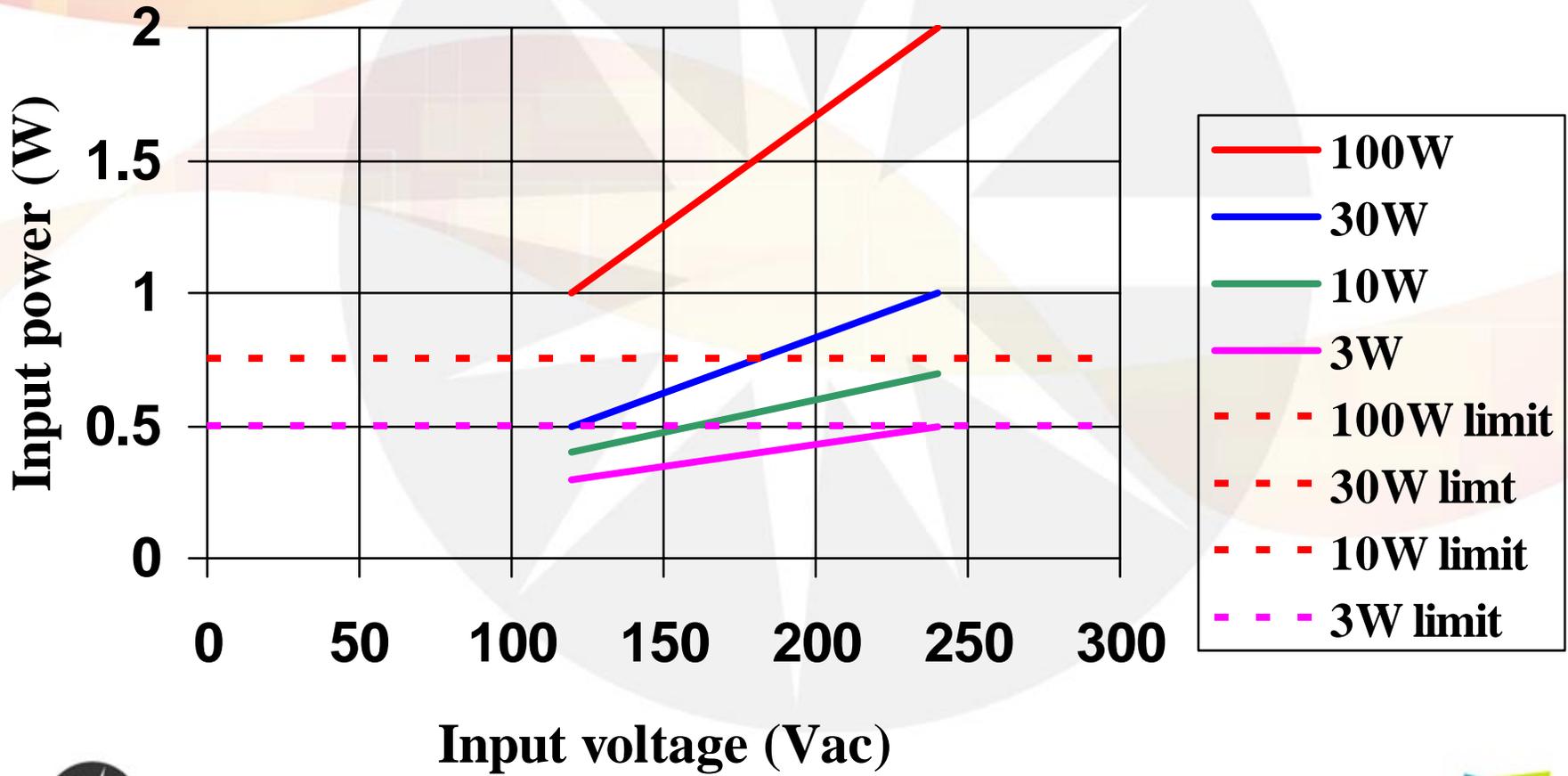


Good design practice

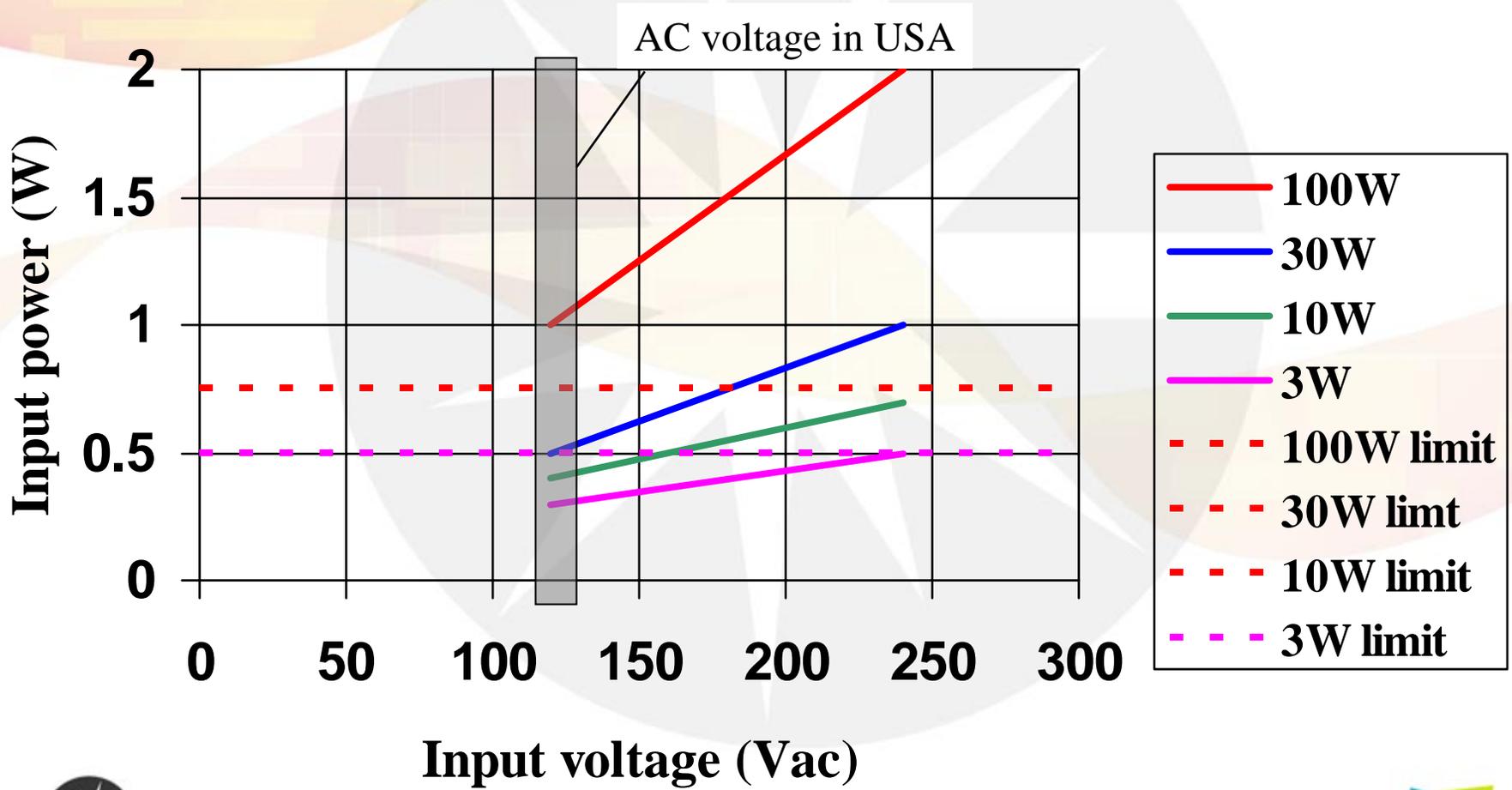
Switched mode EPS efficiency



Good design practice (without functional limitations) Switched mode EPS no-load consumption



Good design practice (without functional limitations) Switched mode EPS no-load consumption



Functional limitations

- Low no-load power consumption has functional limitations.
 - Audible noise
 - Not acceptable for all applications.
 - Wake up delay for PFC power supplies
 - CEC compliant power supplies not functionally compatible with normal power supplies.
 - Impact on system design not yet fully understood.

Logistics problems

- Only a limited number of manufacturers of controllers for low no load consumption power supplies.
 - Industry dependent on a small number of manufacturers.
- **Zero** compatibility between manufacturers.
 - No second sourcing possible.

Time to Market

- Components for CEC compatible power supplies have only recently become available.
- Second source issue has not yet been addressed in the market.



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Time to Market

- It takes at least another six months to solve the component availability issue and the second sourcing issue will take much longer.
- It takes at least another year to develop and release CEC compliant products.
- It will be technically impossible to make low voltage power supplies compliant to the currently proposed standards for many years, unless the standards take output voltage into account.

Thank you for your attention.

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