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# **Energy Savings Opportunities for Home Electronics: Insights from a Minnesota Field Study**

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***Energy Center of Wisconsin***

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**What does metering a bunch of old electronics in homes tell us about future directions for Energy Star?**



**We metered...705 (of 1,612)  
devices in  
50 homes...**

**...for one month...  
...at 6-minute  
intervals**

2,300 ± 700  
kWh/yr

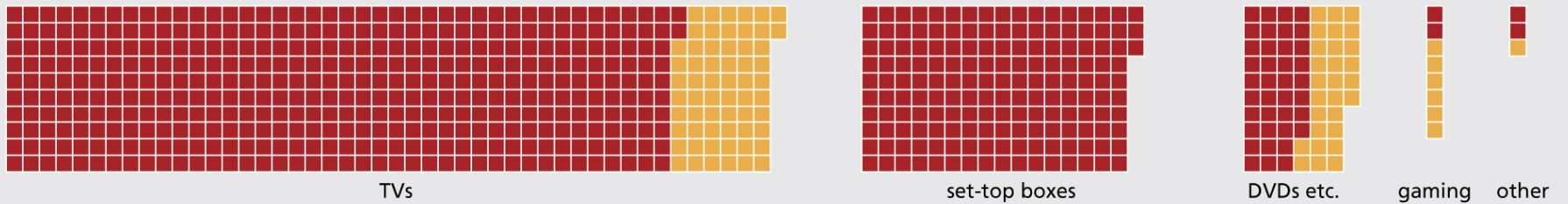
1,300 ± 400  
kWh/yr



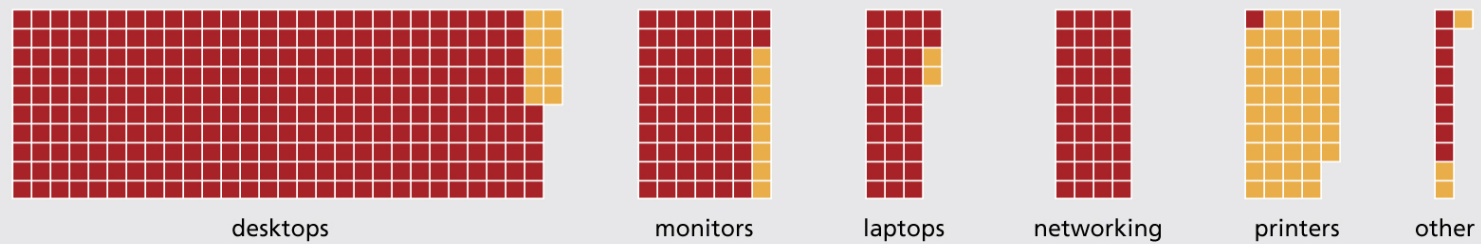
□ = 1 kWh / year / home

■ active mode ■ standby mode

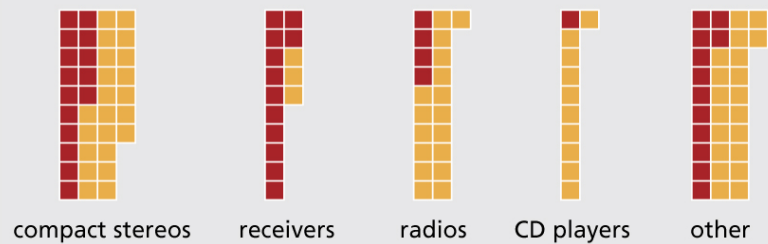
### TV-RELATED



### COMPUTER-RELATED



### AUDIO



□ = 1 kWh/year/home

DEVICE  
CATEGORY:

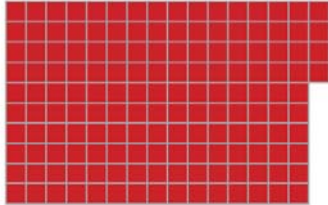
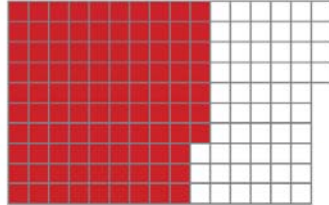
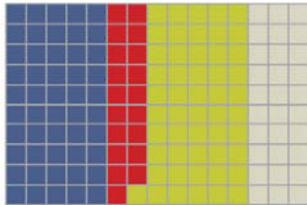
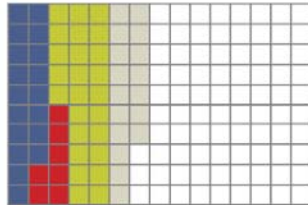
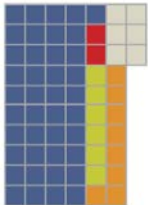
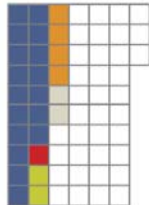

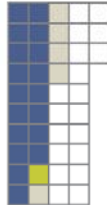
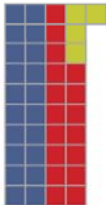
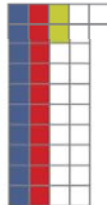
■ TV and peripherals

■ computer and peripherals

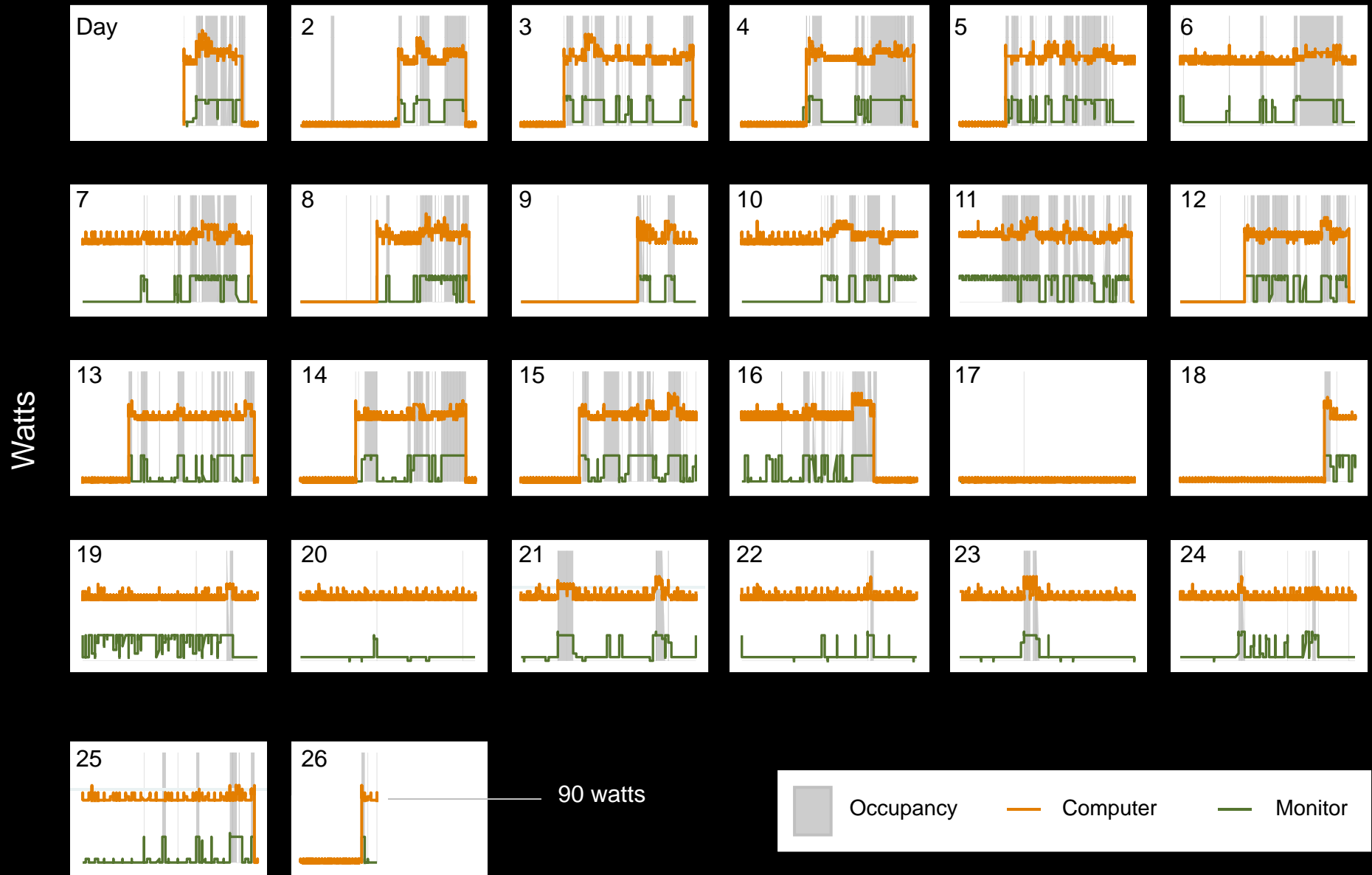
■ audio

■ HVAC

■ other

TECHNICAL SAVINGS (kWh/year/home)	STRATEGY	BEHAVIORALLY-ADJUSTED SAVINGS (kWh/year/home)
	enable computer power management	
	manually unplug	
	turn off when not in use	
	use a timer	
	use a smart power strip	

## 75% of desktop computer electricity use occurs when no one is in front of it



Site 24



# Sat/Cable Set-top Boxes

- 200 kWh/yr per box on average
- 85% are satellite
- Little potential for household-driven savings
  - fear of messing w/ box
  - don't want to hassle with recovery delays
  - recording at odd hours
- Need a manufacturing solution!

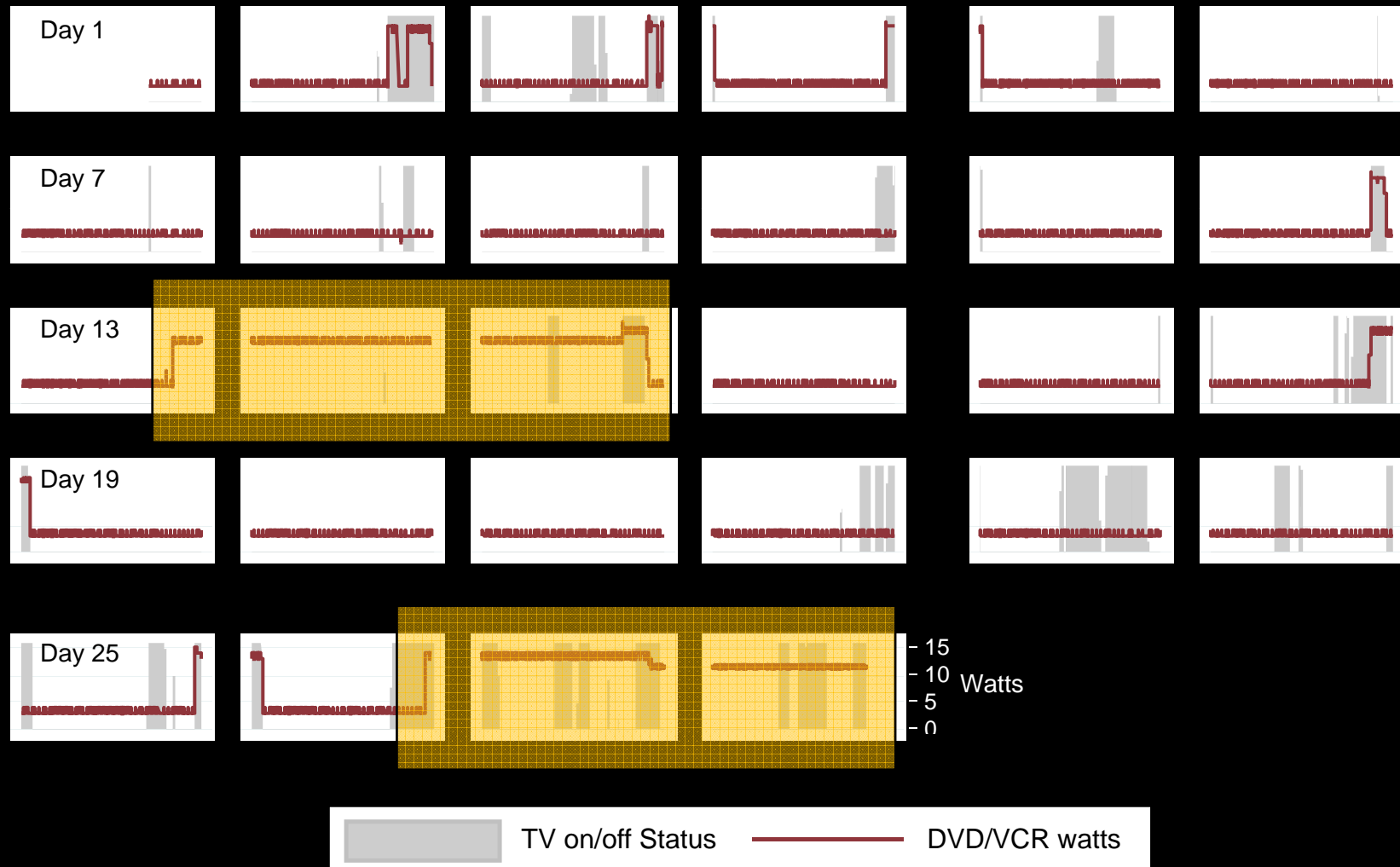




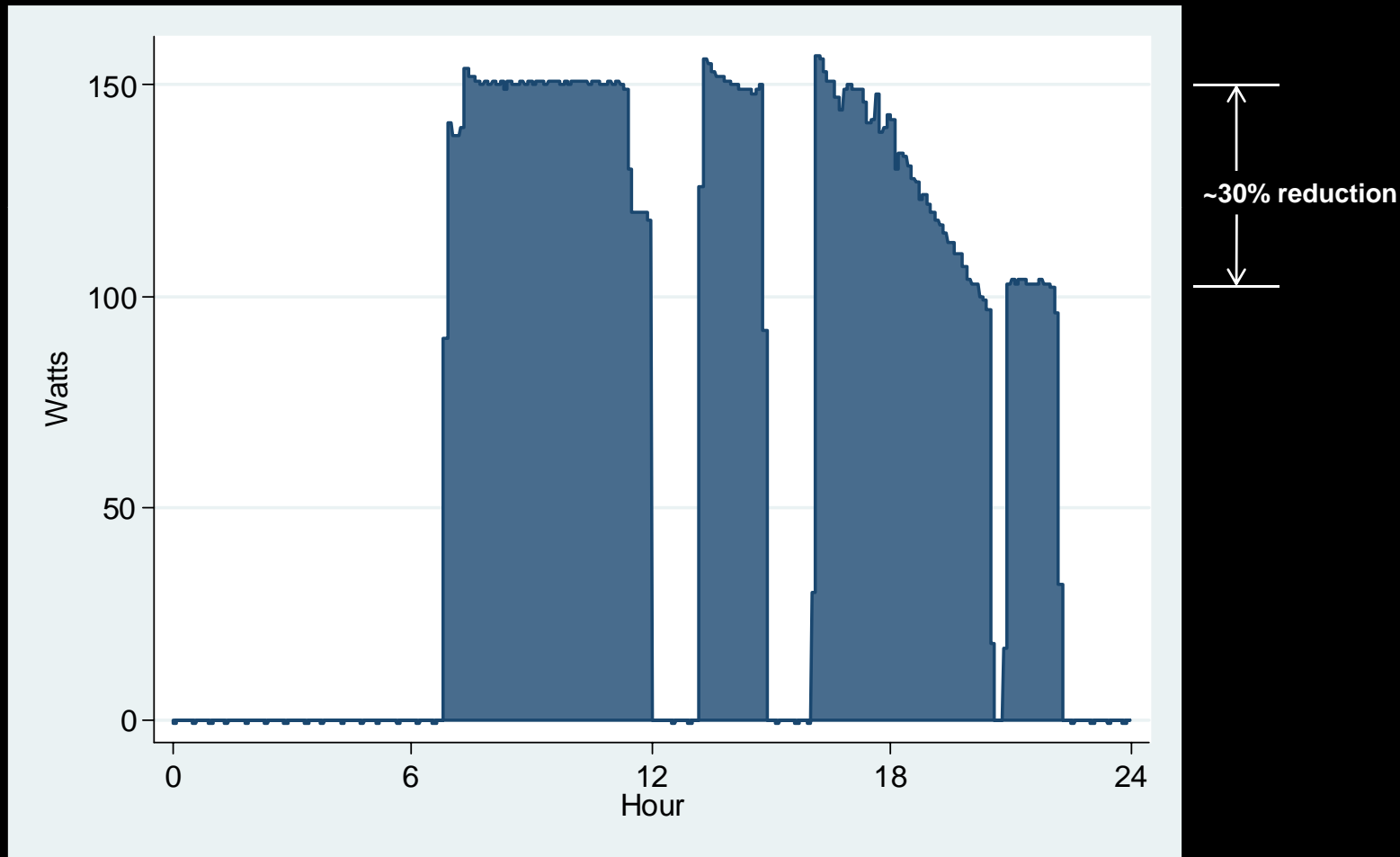
# Auto Power-Down ---

## When electronics are left on, it's often for days...

DVD/VCR (Site 20)



# Promise from TV automatic brightness control?



# Summary

- **Computer power management is a significant savings opportunity**
  - continue to work to ensure that it is user-friendly and enabled by default
- **Set-top boxes need a manufacturing solution!**
- **Auto power-down specifications will help**
  - a long APD delay may be better if people are less likely to disable it, and it still prevents most wasted use.
- **Field data for 2 TVs suggests some promise for automatic brightness control**

# Thank You!

## Contact Information for Follow-up Questions:

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Project website: [www.ecw.org/mnenergystudy](http://www.ecw.org/mnenergystudy)

(Public-Use data sets available)