Serious Games and Serious Energy Saving

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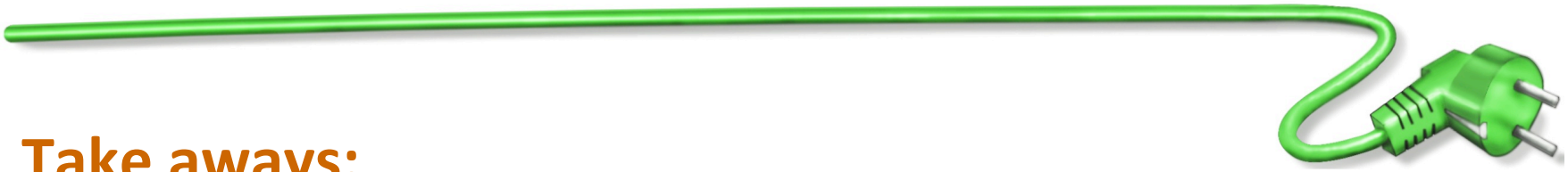
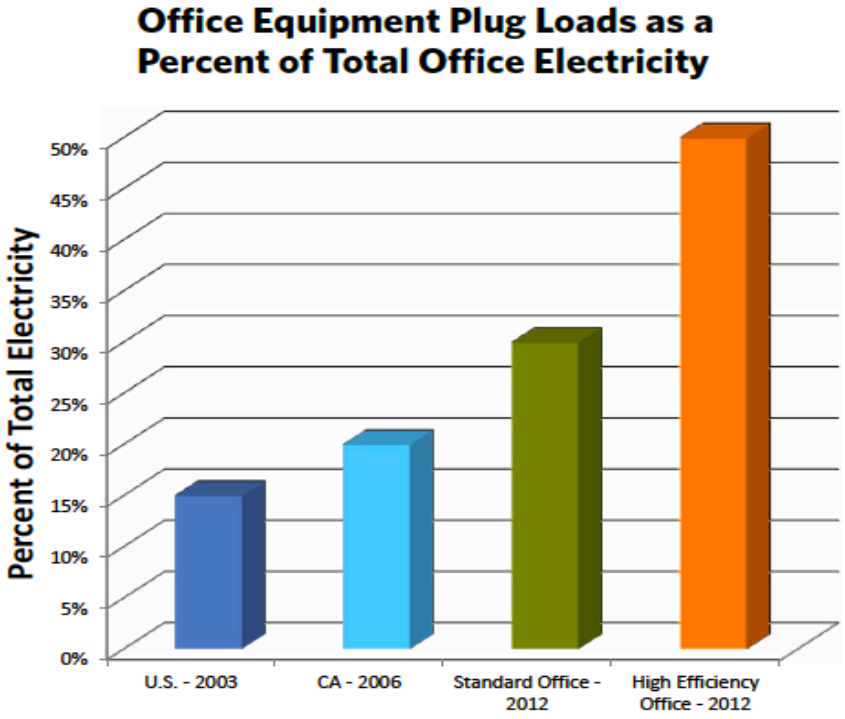
Energy saving in commercial offices



Take aways:

- Games can play a critical role in motivating energy-saving behavior.
- They are important because ordinary human beings with limited technical knowledge are in charge of the very simple actions that determine energy use.
- Five simple ways for offices to save energy.

Plug loads are a growing % of annual and peak load

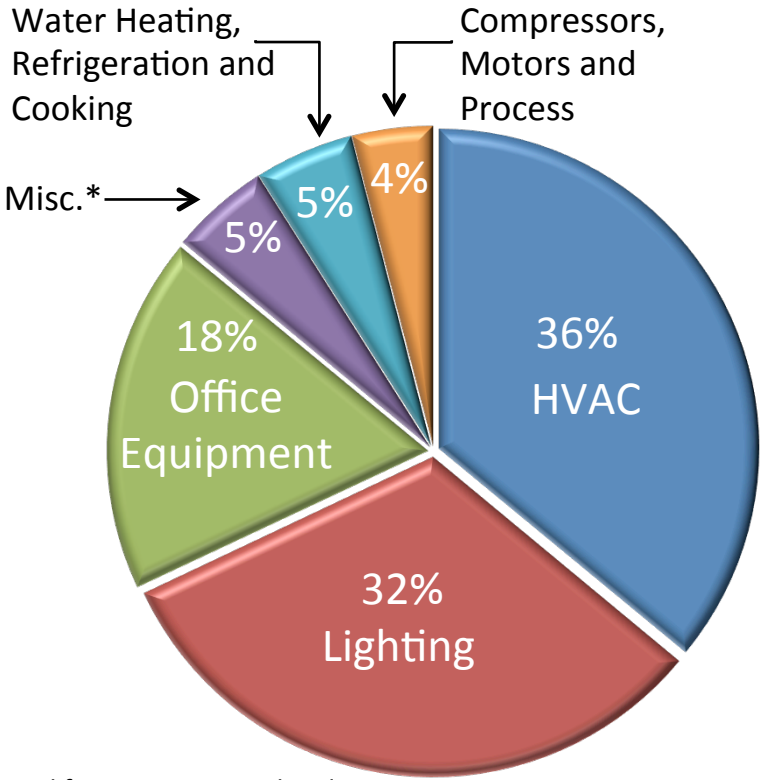


Plug Load Best Practices Guide

Managing Your Office Equipment Plug Load *NBI/Pier 2012*

In the most energy efficient buildings, plug loads may account for 50% of total electricity use!

By 2030, plug loads will be 50% of electricity demand



California Commercial End Use Survey 2006

50% of the energy -
for plug loads and lighting,
can be under the control of
office occupants!

Audience participation: Life at your desk

On the days you are at work, on average, how many hours do you work at your desk?

Raise your hand if it is…

- **more than 4?**
- **less than 4?**

Away from your desk…?

When you leave your desk for two hours or more…

Raise your hand if…

…you shut down your computer

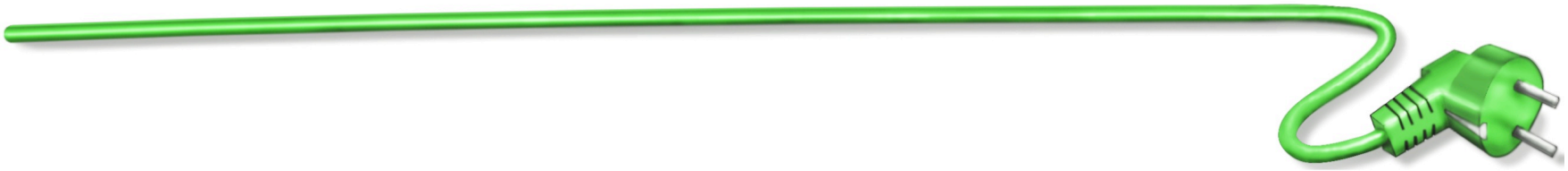
New devices, less energy use?

Is that new computer a power saver?

Raise your hand…

… if you can solemnly swear that your newest computer uses less energy that the one you had before

“Mission critical” devices?

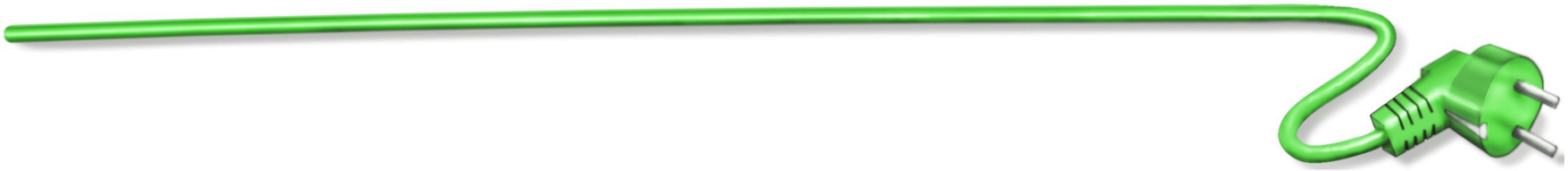


Of all the devices at your desk, how many are critical to your work?

Don’t raise your hand…

… but ruminate on your guilt…

Who decides how much energy you use?



Are you the one who decides if your computer is on or off?

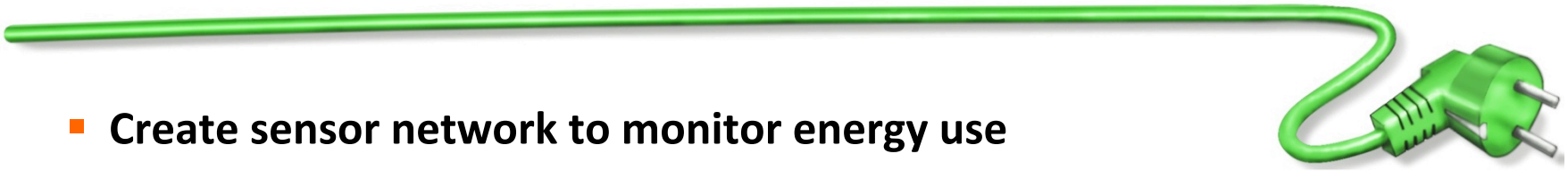
Raise your hand…

… if your IT staff insists that your computer stays on 24/7 for updates, back-ups and security scans

Complementary Roles of Games and Dashboards

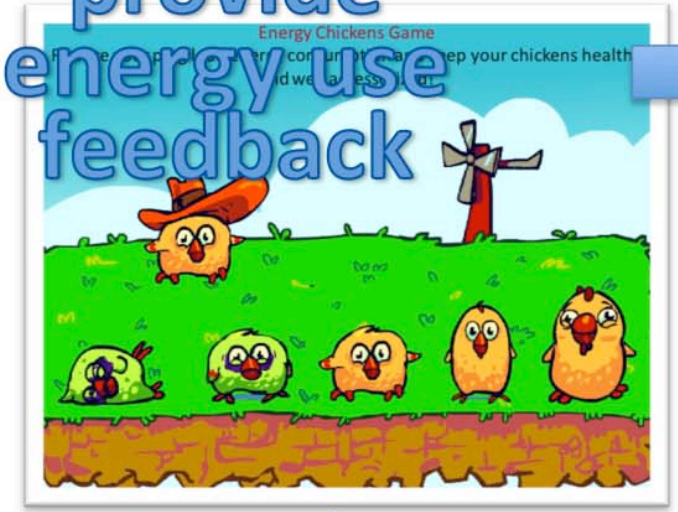
Engage, inform, motivate, sustain

Field Trial: Assess Baseline, Intervene, Measure Change



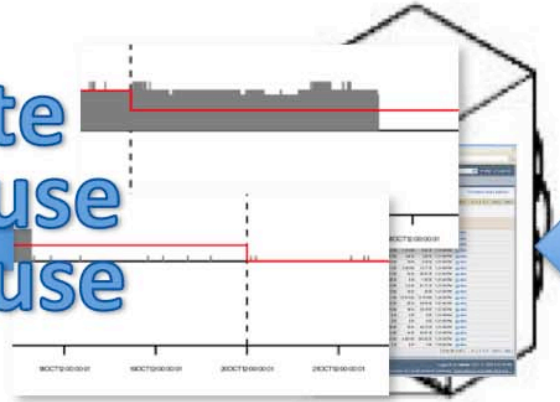
- Create sensor network to monitor energy use
- Measure changing energy use
- Provide feedback via a Serious Game
- Reward those who save
- Monitor to assess emergence and persistence of energy-saving behaviors
- **Introducing…**
  the Energy Chickens…

provide energy use feedback



change energy use behavior

monitor energy use



evaluate current use vs. past use

Serious Games for Serious Energy Saving

Project developers, Pennsylvania State University

Project supported by US Department of Energy

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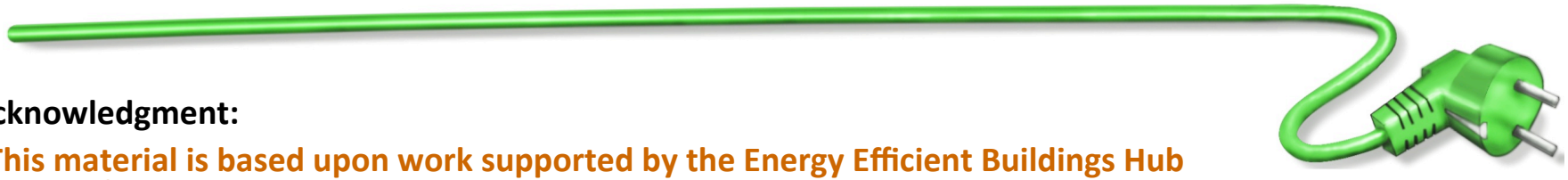
:: Developer Build ::
Energy Chickens
Login ID (4 digit pin)
3630
Remember Login
Log in

Who would you care for the most?

Acknowledgment and Disclaimer



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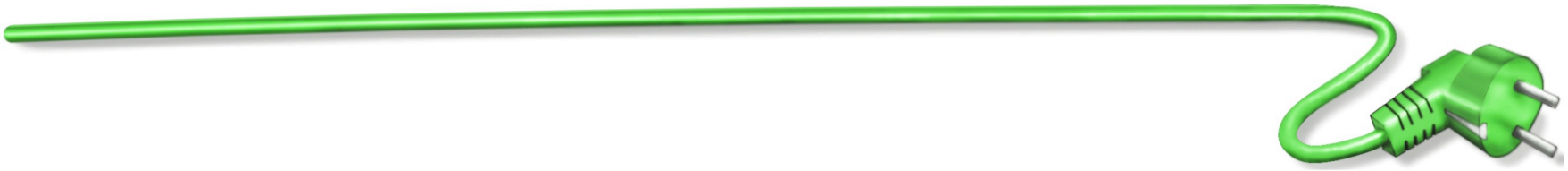
Questions??



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