Agenda

Project Background
Executive Summary
  Console Users and Usage
  Perceptions of Household and Console Energy Usage
  Importance of Energy Saving Benefits
Moving Forward and Working Together
After reading a January 13, 2021, NRDC article from Noah Horowitz on gaming devices being considered “vampire devices,” LADWP created a committee...

### Gaming Standby Energy Load Ad Hoc Committee

**February 25, 2021**

- **LADWP**
- **Consumer Technology Agency (CTA)**
- **Microsoft**
- **UC Irvine’s Cal-Plug** (after the initial meeting)

Next, LADWP decided to connect with gaming manufacturers on the article. Entertainment Software Association (ESA) set up a meeting with representatives from Nintendo, Microsoft, and Sony on April 23, 2021.

The need to conduct a deep-dive into customers’ understanding and knowledge of gaming efficiency was identified.
Purpose and Objectives

**Purpose**
This research has been commissioned to understand device ownership, gaming and streaming behaviors, and the potential to effect change in customer behavior.

**Objectives**
- Understand *customer perceptions and attitudes toward energy usage* and customer understanding of amount of energy used
- Measure *customer interest in reducing energy usage* (bill amount) and customer understanding of which behaviors waste energy with gaming consoles
- Gain insights into *how attitudes and behavior differ* between various customer types and size of customer types
Overall Research Approach

Full Qualitative Exploration (Step 1)

Survey Pre-Test (Step 2)

Full Quantification (Step 3)

This reporting covers the quantitative phase with input from qualitative phase.
Methodology

Invited via an email invitation with general link

- Online survey, in both English and Spanish
- 12 minute average completion time

April 21 – May 9, 2022

839 Respondents must have met the following criteria:

LADWP Customers:
- Full or joint responsibility for energy-related decisions in the household
- Full or joint responsibility for paying the LADWP bill
- Do not own or rent solar panels
- Industry security screened

Household uses a home gaming console or hybrid gaming console
- Have at least some influence on the power settings of home gaming console

Throughout this reporting, these customers are referred to as Energy-Console Influencers.
Executive Summary
Executive Summary

Perceptions of Energy Usage

Less specific consideration of the energy usage of the console, compared to energy usage in the home overall.

• Tendency to put this on the manufacturer - 84% indicate the importance of manufacturers to develop energy efficient devices.

Person Most Likely to Take Action

Those who are not primary users of the console device.

• Motivated to decrease their energy usage
• Want to save money on their energy bill

Primary console user not likely to change behavior to save energy

• Prioritizes game performance over saving energy

LADWP can aid in reaching gaming household member most likely to take action to save energy

Heavy expectation remains with the manufacturer to work toward energy saving devices
Console Usage and Users
Knowledge and Influence on Power Settings

Influence on Gaming Console Power Setting

- Complete Influence: 58%
- Significant Influence: 20%
- Some Influence: 22%
- No Influence: 0%

Must have had at least some influence to qualify for the study.

Familiarity with Power Settings on Gaming Console

- Very familiar: 27%
- Moderately familiar: 26%
- Slightly familiar: 25%
- Not at all familiar: 21%
Degree of Console Usage

Gaming Participation

- 36% Primary user
- 11% Secondary user
- 20% Use the console minimally
- 32% Not a user but familiar with gaming console

Decision Maker Profile Summaries

**Primary User**
- More likely a **younger, single male**
- Focus is on gaming experience
- **Energy usage of the console is not likely to influence purchasing**
- Priorities for purchase:
  - Gaming performance
  - Newest games
  - Games they want

**Not a Console User**
- Lower income, older female. Less familiar with gaming console.
- **Greater concern for the energy usage** of household and of gaming console
- Console used heavily for gaming and streaming
- Energy usage of the console may play a greater role in console purchase
- Motivated to save energy in order to save money on energy bill
Q. 4 Note that average is calculated among those who stream from their console.

31% Average among those who stream from console.

Those that are streaming a greater proportion from the console have more consoles in the home and no alternative ways to stream - less likely to have a smart TV or a dedicated streaming device.
### Brand of Consoles in Home

<table>
<thead>
<tr>
<th>Brand</th>
<th>Currently Use</th>
<th>Use Most Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>PlayStation (Net)</td>
<td>44%</td>
<td>59%</td>
</tr>
<tr>
<td>PlayStation 2</td>
<td>5%</td>
<td>2%</td>
</tr>
<tr>
<td>PlayStation 3</td>
<td>2%</td>
<td>9%</td>
</tr>
<tr>
<td>PlayStation 4</td>
<td>2%</td>
<td>25%</td>
</tr>
<tr>
<td>PlayStation 5</td>
<td>18%</td>
<td>14%</td>
</tr>
<tr>
<td>Xbox (Net)</td>
<td>24%</td>
<td>33%</td>
</tr>
<tr>
<td>Xbox 360</td>
<td>5%</td>
<td>10%</td>
</tr>
<tr>
<td>Xbox One</td>
<td>13%</td>
<td>18%</td>
</tr>
<tr>
<td>Xbox Series X</td>
<td>4%</td>
<td>7%</td>
</tr>
<tr>
<td>Xbox Series S</td>
<td>4%</td>
<td>2%</td>
</tr>
<tr>
<td>Nintendo (Net)</td>
<td>26%</td>
<td>48%</td>
</tr>
<tr>
<td>Nintendo Wii</td>
<td>12%</td>
<td>2%</td>
</tr>
<tr>
<td>Nintendo Switch</td>
<td>22%</td>
<td>41%</td>
</tr>
</tbody>
</table>

### Brand User Profiles: Brand Used Most Often

- **PlayStation (Net)**: Have their consoles on **power-saving mode** and use them to **game and stream** (32% of their streaming is from their console).
- **Xbox (Net)**: Use their consoles to **game and stream** (37% of their streaming is from their console).
- **Nintendo (Net)**: More likely to use console to **game only**. Just 20% of their streaming is from their consoles since they also likely have a dedicated streaming device. However, they are likely to change how they stream knowing that streaming from the console takes more energy.
Perceptions of Household and Console Energy Usage
Potential Energy Savings

Changing the default power mode in the Microsoft Xbox from instant on to energy saving mode could save …

- **Nationwide**
  - 4 billion kWh *over the next five years***
  - OR
  - $500 million in energy costs
  - OR
  - 3 million tons of carbon dioxide

- **Los Angeles area households**
  - 31.2 million kWh
  - OR
  - $7.6 million a year*  
  
- **Single Console**
  - 9W of power
  - OR
  - 78 kWh in a year

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*Los Angeles area households paid an average of 24.4 cents per kilowatt hour (kWh) of electricity in August, 2022.

**Assumes 400,000 households in the City of Los Angeles will have the Xbox Series S/X through to the end of 2025 or the next 5 years.

## Potential Energy Savings Annually

On a nationwide basis, this is equivalent to...

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greenhouse gas emissions from:</td>
<td>54,883,782</td>
<td>miles driven by a gas-powered vehicle</td>
</tr>
<tr>
<td>CO(_2) emissions from:</td>
<td>2,785</td>
<td>homes’ energy use for 1 year</td>
</tr>
<tr>
<td>Greenhouse gas emissions avoided by:</td>
<td>7,651</td>
<td>tons of waste recycled instead of landfilled</td>
</tr>
<tr>
<td>Carbon sequestered by:</td>
<td>365,606</td>
<td>tree seedlings grown for 10 years</td>
</tr>
</tbody>
</table>
Importance of Energy-Saving Benefits
Q. 9

Impact of Power-Saving Mode on Performance

Does Power-Saving Mode Reduce Console Performance?

- Yes, 27%
- No, 47%
- Don't Know, 26%

Some seem to think that using power-saving mode during play would impact play performance.

Some foresee problems with start-up.

- Won't restart quickly. May not download updates in a timely manner.
- I would want to be able to pick up where I left off in the game.
- Game data or progress may not be recorded in memory. (Spanish)
- The resolution would be decreased and possibly the speed of the game.
- Poor frame rate, lower brightness.
Importance of Console Functions

Importance of Gaming Functions
- Top Two Box Importance -

- Has optimal playing experience: 57% (5) & 39% (4) - 79%
- Shuts down automatically to save energy when not in use: 56% (5) & 38% (4) - 76%
- Has a power-saving mode: 52% (5) & 26% (4) - 74%
- Has settings that maximize energy efficiency: 46% (5) & 18% (4) - 68%
- Holds users' place in the game for next time they play: 47% (5) & 20% (4) - 67%
- Have the fastest start-up possible: 39% (5) & 12% (4) - 65%
- The controller charges when the console is not in use: 36% (5) & 10% (4) - 62%
- Uses less energy than other gaming consoles: 38% (5) & 14% (4) - 55%
- When the console wakes, it automatically checks for and downloads updates: 32% (5) & 9% (4) - 53%
- Able to stream TV shows and movies directly from the console: 26% (5) & 7% (4) - 39%

Q. 5 Rated on a 5 point scale where 5= Extremely Important and 1 = Not at all Important
Sources When Purchasing New Gaming System

Trusted Sources of Information on Energy Usage of Console

- Console manufacturers: 50%
- Online (net): 44%
- YouTube reviews by gaming experts: 33%
- Social media reviews by gaming experts: 25%
- Utility company/LADWP: 37%
- Governmental energy ratings: 34%
- Family or friends: 33%
- Gaming magazines or websites: 32%
- Retail or online store: 22%
- University or other educational organizations: 18%
Importance that Manufacturers Develop Energy-Efficient Consoles

- 62% Extremely important
- 22% Important
- 10% Somewhat important
- 2% Slightly important
- 4% Not at all important

84% of respondents consider it extremely important for manufacturers to develop energy-efficient consoles.
Console Energy Usage While Streaming

Likelihood to Use Device Other Than Console to Stream When Informed of Higher Energy Usage

Research has shown that streaming TV or movies from a gaming console uses about 10 times more energy than streaming from devices like Apple TV, Roku box, or Amazon Fire Stick.

Very likely: 54%
Moderately likely: 20%
Slightly likely: 13%
Not at all likely: 13%

- Have other devices to stream from – stream less from console (22%)
- Energy functions important for console
- More concerned about energy usage of console and household

- Less likely to have other devices to stream from – stream more from console (41%)
- Ability to stream is a more important function
- Amount of energy used by console is less likely to impact future console purchase.

Regard energy usage while streaming as having similar importance in next purchase.
Moving Forward and Working Together
As the largest municipal utility in the nation, LADWP can serve as a catalyst for energy efficiency and sustainability.

- inspire energy saving behavior change among their customers
- partner with manufacturers to attain goals focused on these ideals

Goal is to continue to work together to be leaders in developing sustainability goals for the planet.
Thank You!