



LADWP Customer Gaming Console Use & Energy Efficiency



Los Angeles
Department of
Water & Power



RESEARCH & CONSULTING

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



Project Genesis

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

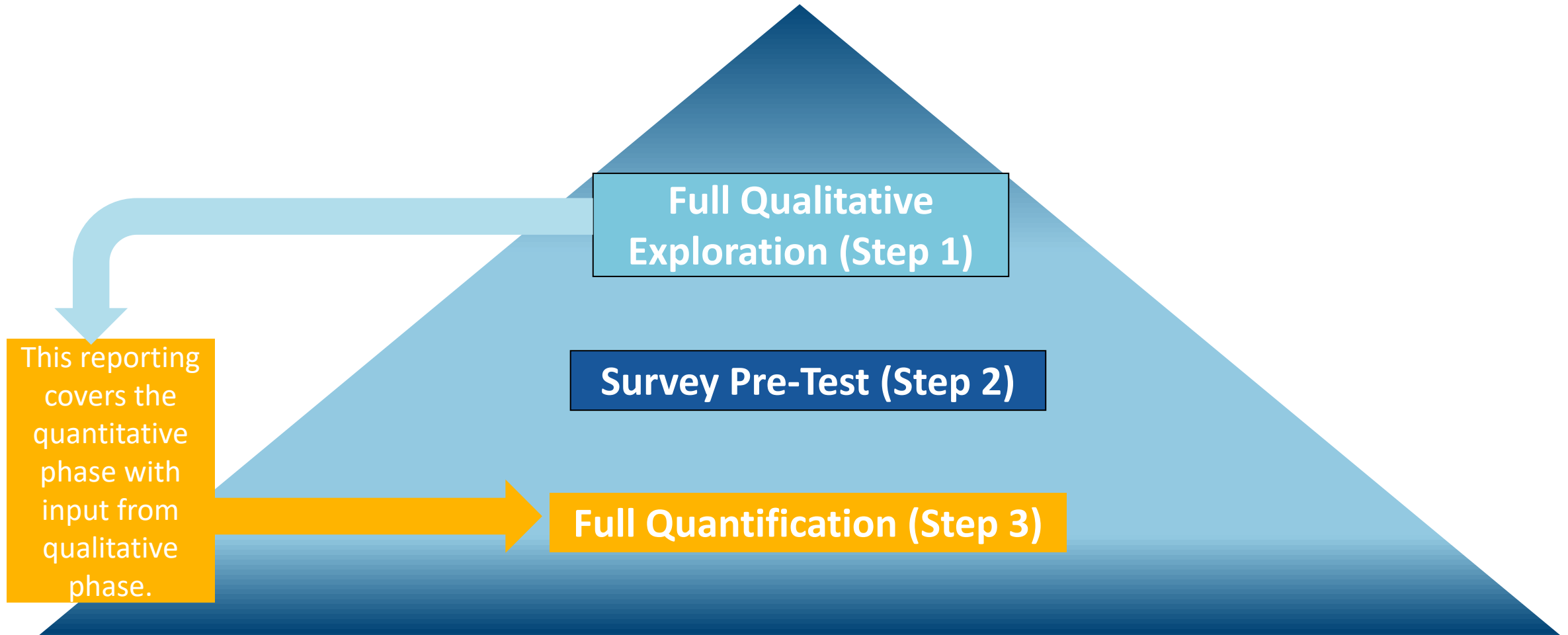
This research has been commissioned to understand device ownership, gaming and streaming behaviors, and the potential to effect change in customer behavior.

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



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.

A nighttime photograph of a city skyline with several illuminated skyscrapers. In the foreground, a large, rectangular fountain with multiple water jets is lit up. The water reflects the city lights. To the right, a modern building with large glass windows is visible. The overall scene is a vibrant urban landscape at night.

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



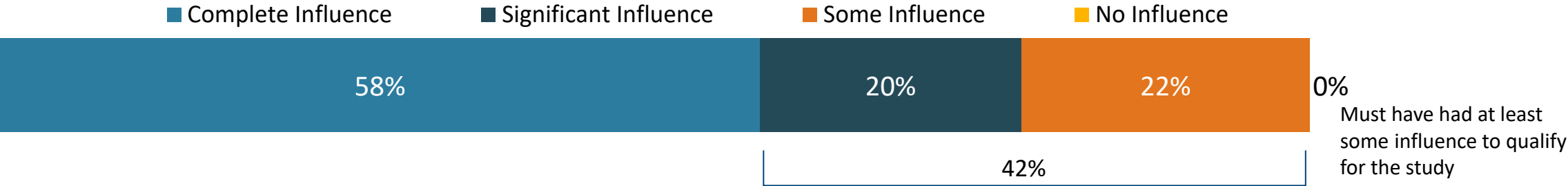
➡ **LADWP can aid in reaching gaming household member most likely to take action to save energy**

➡ **Heavy expectation remains with the manufacturer to work toward energy saving devices**



Console Usage and Users

Influence on Gaming Console Power Setting

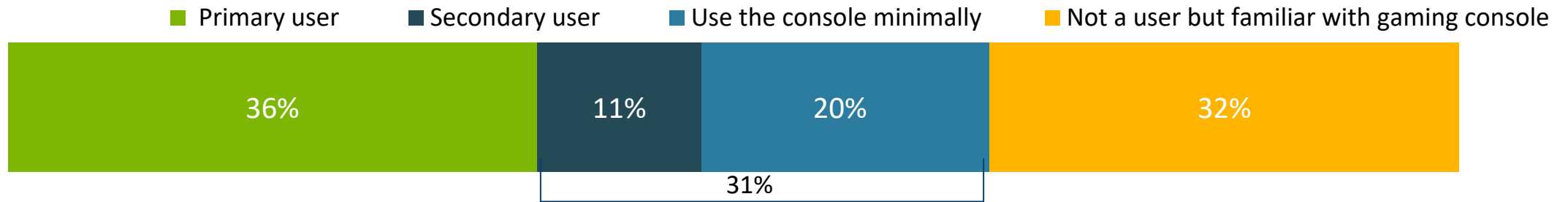


Familiarity with Power Settings on Gaming Console





Gaming Participation



Decision Maker Profile Summaries

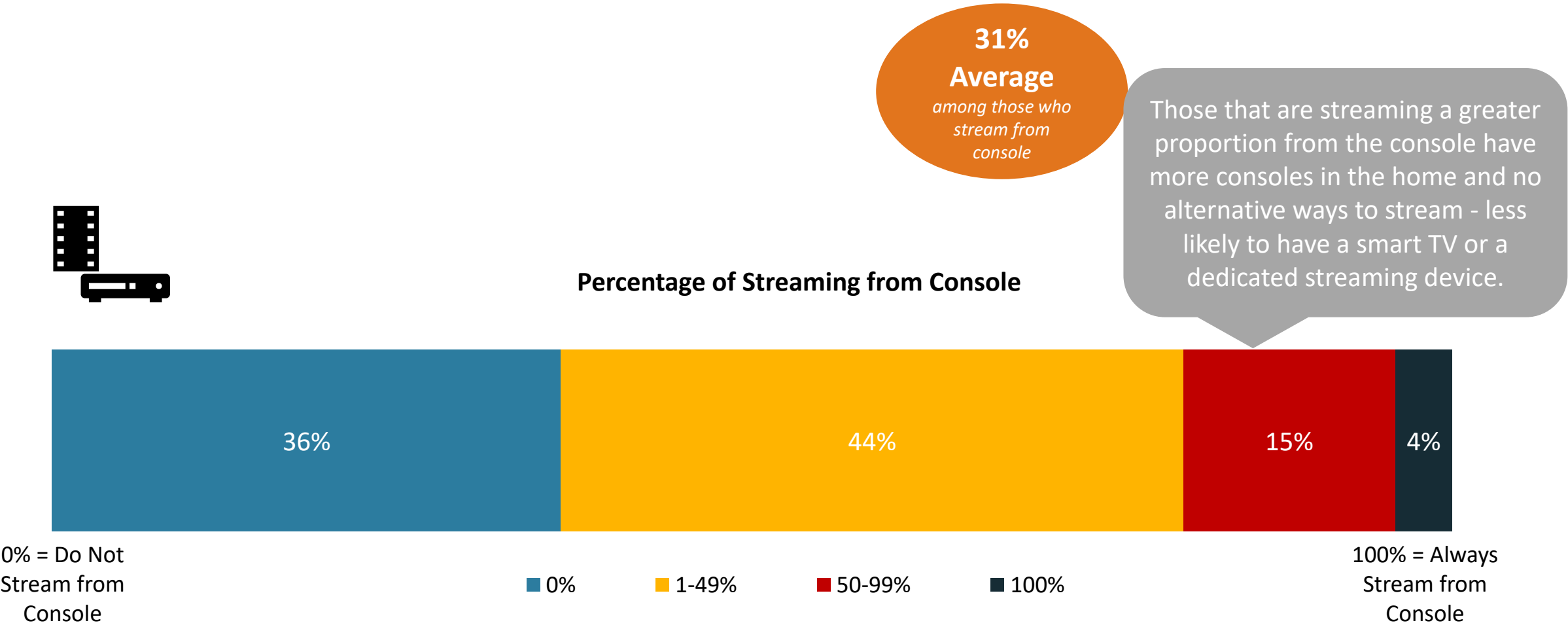
Primary User

- 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

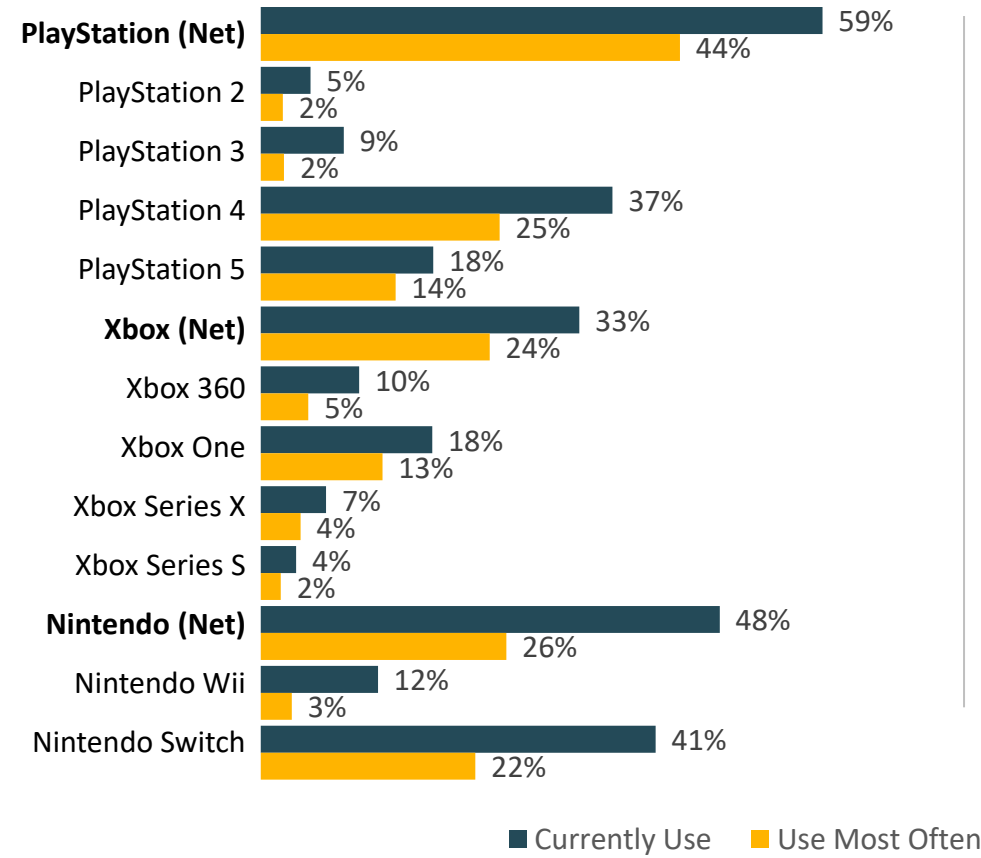
- **Lower income, older female. Less familiar with gaming console.**
- **Greater concern for the energy usage** of household and of gaming console
- Console used heavily for gaming and streaming
- Energy usage of the console may play a greater role in console purchase
- Motivated to save energy in order to save money on energy bill

Streaming from Console



Q. 4 Note that average is calculated among those who stream from their console.

Brand of Consoles in Home



Brand User Profiles: Brand Used Most Often



Have their consoles on **power-saving mode** and use them to **game and stream** (32% of their streaming is from their console).



Use their consoles to **game and stream** (37% of their streaming is from their consoles).



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.

A close-up photograph of a video game controller with a vibrant green glow emanating from its buttons and joysticks. The controller is centered in the background, with a semi-transparent white banner overlaid across its middle.

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



31.2 million kWh

OR

\$7.6 million a year*



Single
Console

9W of power

OR

78 kWh in a year

*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.

Estimates from [NRDC.org, Latest Game Consoles: Environmental Winners or Losers?](https://www.nrdc.org/publications/latest-game-consoles-environmental-winners-or-losers), Noah Horowitz, January 13, 2021.

Potential Energy Savings Annually

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

Greenhouse gas emissions from:



54,883,782

miles driven by a gas-powered vehicle

CO₂ emissions from:



2,785

homes' energy use for 1 year

Greenhouse gas emissions avoided by:



7,651

tons of waste recycled instead of landfilled

Carbon sequestered by:



365,606

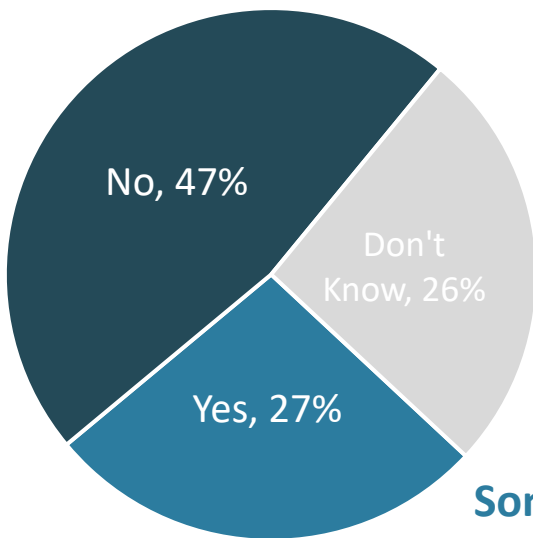
tree seedlings grown for 10 years

A close-up, high-angle photograph of a white PlayStation 5 DualSense wireless controller. The controller is centered in the frame, with its two black textured analog sticks and the D-pad clearly visible. The background is dark and out of focus, emphasizing the controller's sleek design and ergonomic shape.

Importance of Energy-Saving Benefits



Does Power-Saving Mode Reduce Console Performance?



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) ”

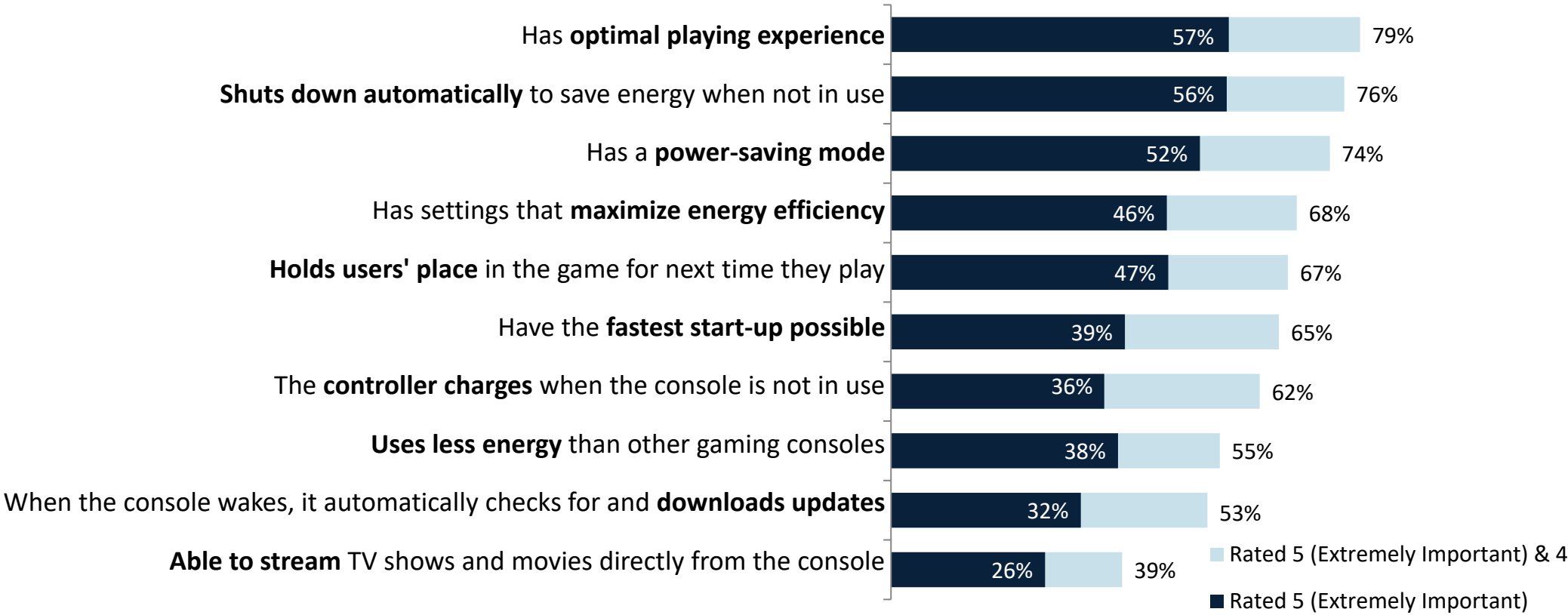
“

The resolution would be decreased and possibly the speed of the game.

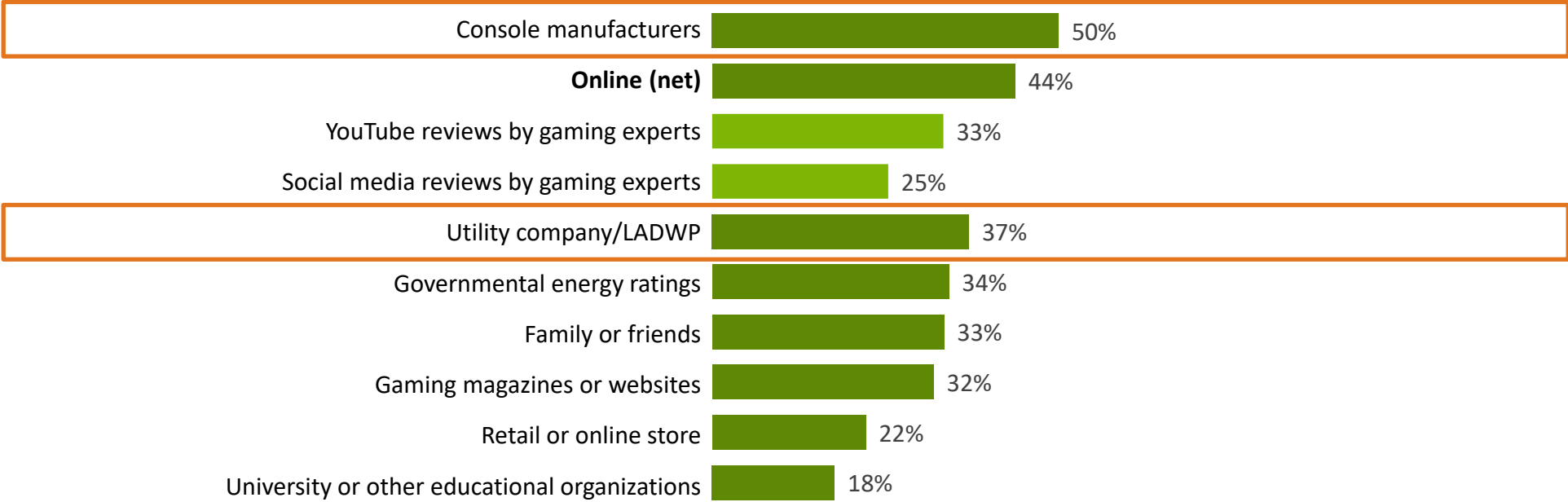
Poor frame rate, lower brightness. ”

Importance of Console Functions

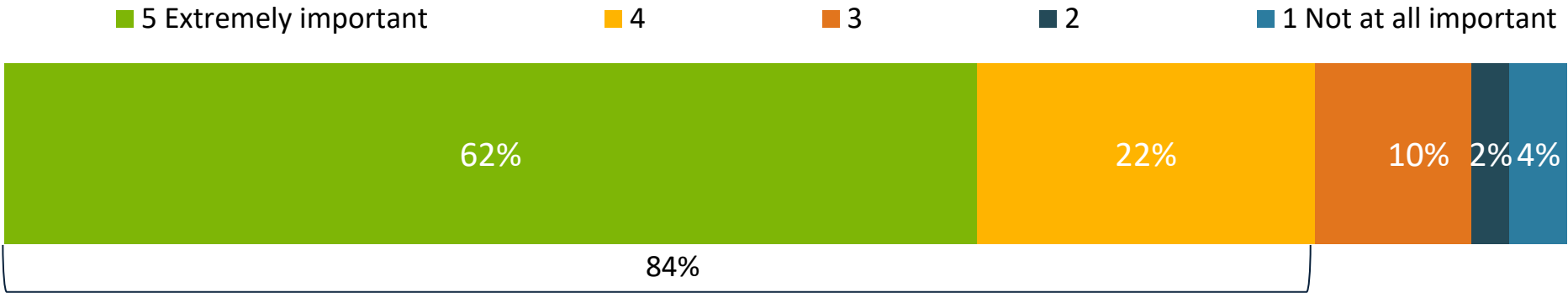
Importance of Gaming Functions - Top Two Box Importance -



Trusted Sources of Information on Energy Usage of Console



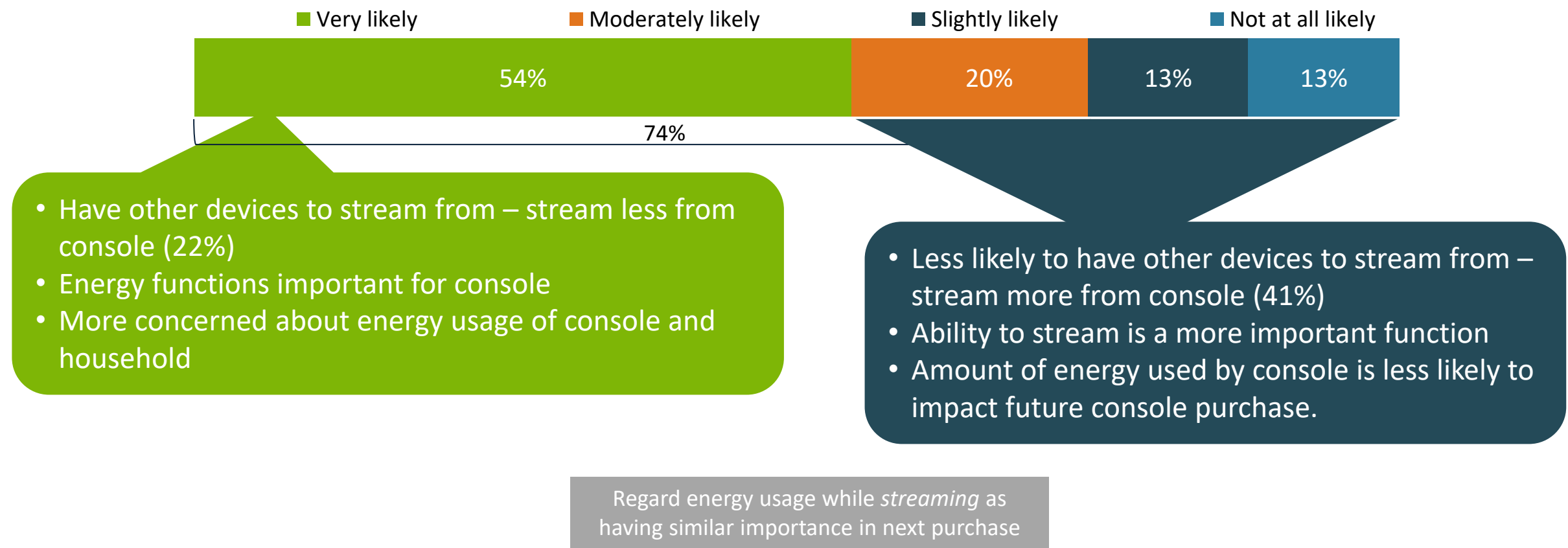
Importance that Manufacturers Develop Energy-Efficient Consoles



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.



A woman with dark hair tied in a bun is sitting cross-legged on a light-colored shaggy rug in a modern living room. She is wearing a dark green t-shirt and light brown pants. She has a laptop on her lap and her arms are raised in the air with clenched fists, indicating a moment of triumph or celebration. She is smiling broadly. Behind her is a dark blue sofa with several pillows, including one with a large yellow circle pattern. In the background, there is a light-colored wooden shelving unit with various decorative items like vases, plants, and framed photos. A large green plant is visible on the right side of the frame. The floor is dark wood.

Moving Forward and Working Together

An aerial photograph of a city skyline at dusk or dawn. The city is densely packed with buildings, many of which are illuminated with lights. In the background, a range of mountains is visible under a hazy sky. The overall tone is blue and purple, suggesting the time of day is either early morning or late evening.

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!



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