



# ENERGY STAR

## Commercial Buildings Update

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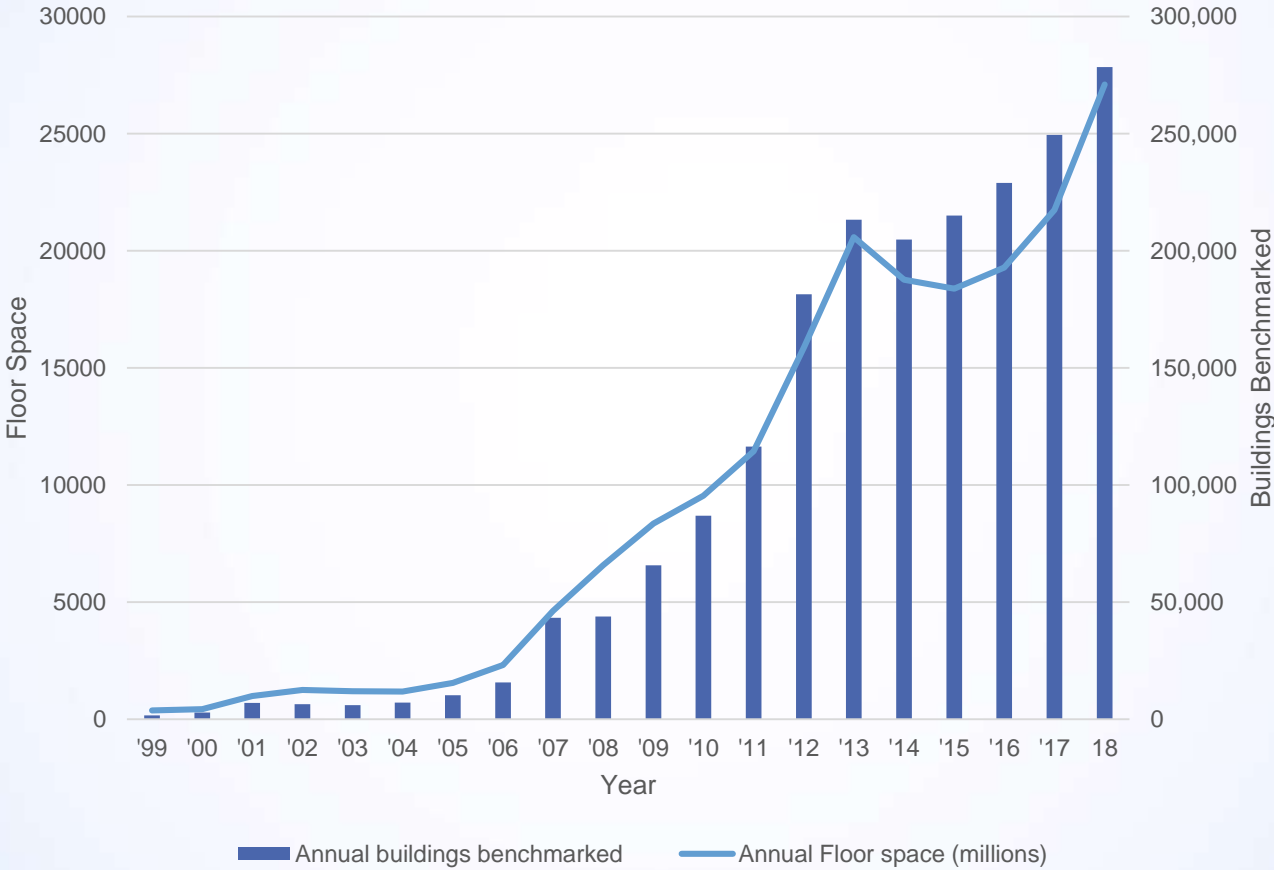
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US EPA

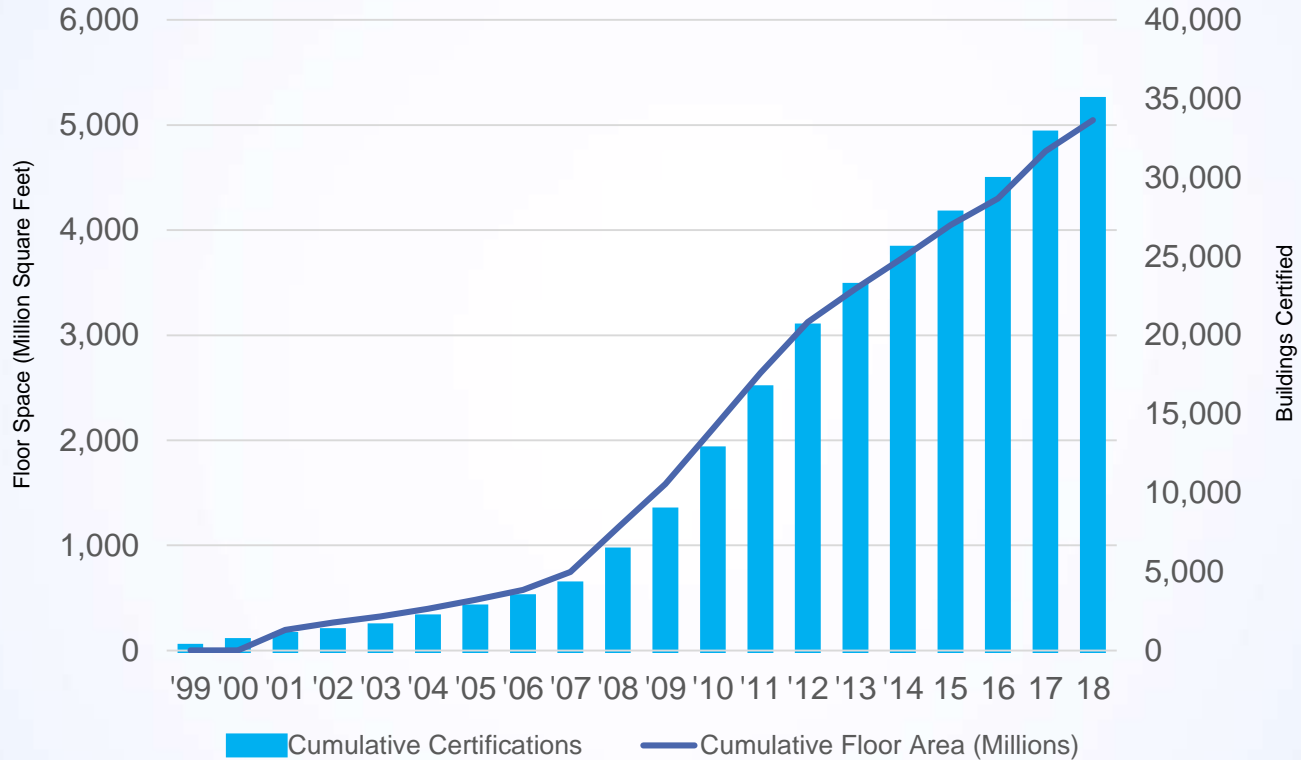


- **270,000** buildings just last year
- **32** state and local benchmarking policies
- **One** foreign government (Canada)

# Annual Buildings Benchmarking Energy



# ENERGY STAR Certified Buildings





# ENERGY STAR Certified Buildings

- More efficient than 75% of similar buildings
- Use 35% less energy (on average)
- Cause 35% fewer GHG emissions (on average)

Over 35,000 cumulative buildings



# ENERGY STAR® PortfolioManager®

## Management Tool



Assess whole building energy and water consumption, plus waste



Track changes in energy, water, greenhouse gas emissions, and cost over time



Track green power purchase



Create custom reports



Share/report data with others



Apply for ENERGY STAR certification





# ENERGY STAR® PortfolioManager®

Hundreds of metrics, including:



**Energy use**  
Source, site,  
weather  
normalized,  
demand



**Water use**  
Water use  
intensity,  
Water Score  
(for Multifamily)



**Waste &  
Materials**  
Waste intensity,  
diversion rate

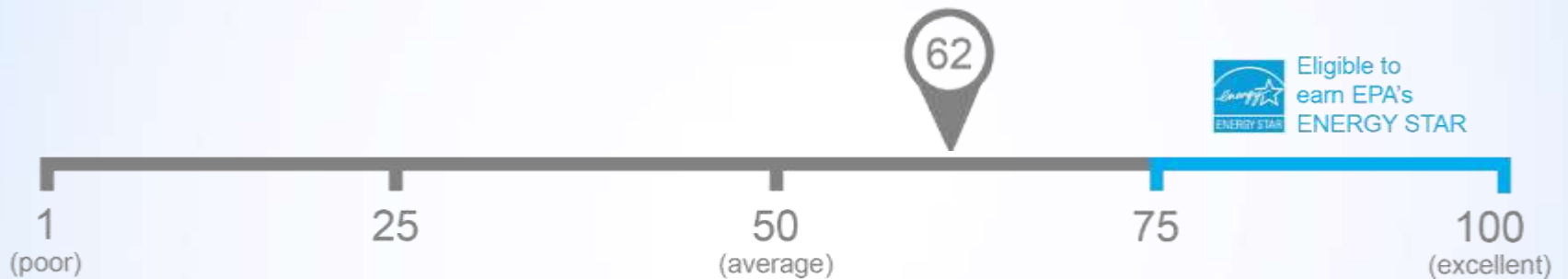


**1-100  
ENERGY  
STAR score**



**GHG  
emissions**  
Indirect,  
direct, total,  
avoided

# The 1-100 ENERGY STAR Score



One simple number  
understood by ALL stakeholders.



# ENERGY STAR Score Objectives

- Evaluate whole building energy use
  - Accounts for combined effects of technology, operation, maintenance, and usage patterns
- Provide a comparative, national benchmark
  - 1-100 Score provides percentile comparison to peer buildings
- Identify best performers in the market
  - Top 25% of the market
  - Tap into 90% awareness of ENERGY STAR brand
  - Allow consumers and businesses to make smart choices

# Why Update the ENERGY STAR models?

- Leverage the most recent market data
  - Buildings have become more efficient
  - Recalibrate energy performance scale to reflect current market conditions
- Re-assess key drivers of energy use
  - Have the relationships between existing variables (e.g. computers) and energy intensity changed in the last 10 years?
  - Are there new variables we should be adjusting for going forward?
- EPA's basic approach has **not** changed
  - Provide a national level benchmark
  - Use source energy to provide equitable scores for all fuel mixes
  - Incorporate variables that capture weather and business activity
  - Exclude from analysis terms about technology

# Score Review Period

- Released updated models for U.S. properties in August, 2018
  - Updated models with 2012 CBECS data
- Received feedback once scores were live
  - Score trends
  - Variability
  - Changes that were hard to understand
- Instituted review period in September, 2018
  - Suspended certification
  - Gathered feedback
  - Conducted analysis

# Status of Office Score Review

- Common feedback was variability observed among buildings with different:
  - Location/climate
  - Fuel mix
  - Size
- Conducted extensive analysis
  - Assessed scores in Portfolio Manager
  - Worked with EIA to analyze CBECS data not publicly available
- Pleased to be communicating results

# Office Model: Location/Climate

- Heating Degree Days (HDD)
  - Not included in August 2018 model
  - CBECS 2012 did not show a statistically significant positive relationship between HDD and EUI
- Gathered feedback and performed analysis
  - Buildings in very cold climates score lower on average
  - Need to account for the different ranges of HDD and heating requirements that buildings experience on a year-to-year basis
- Determined that an HDD/heating adjustment is needed
- Thank you for helping us improve the model!

# Results: Range of score increase from HDD adjustment

City	Average HDD	Range		
		Lower End (10 <sup>th</sup> Percentile)	Middle (Median)	Higher End (90 <sup>th</sup> Percentile)
Boston	5,429	4	6	9
Chicago	5,528	4	7	9
New York	4,300	3	5	7
Los Angeles	1,016	0	0	1



# Overview of Benchmarking Trends

# Interactive map of policies and programs



[www.energystar.gov/policiesandprograms](http://www.energystar.gov/policiesandprograms)

Can be hosted on your site!



# Benchmarking laws that require use of ENERGY STAR Portfolio Manager

30+ laws nationwide

Buildings must:

1. Benchmark their energy use
2. Report it on an annual basis
3. Disclose to public or potential buyers/lessees

EPA only advises on the use of Portfolio Manager



# Impact of U.S. City, County, and State Benchmarking and Transparency Policies for Existing Buildings

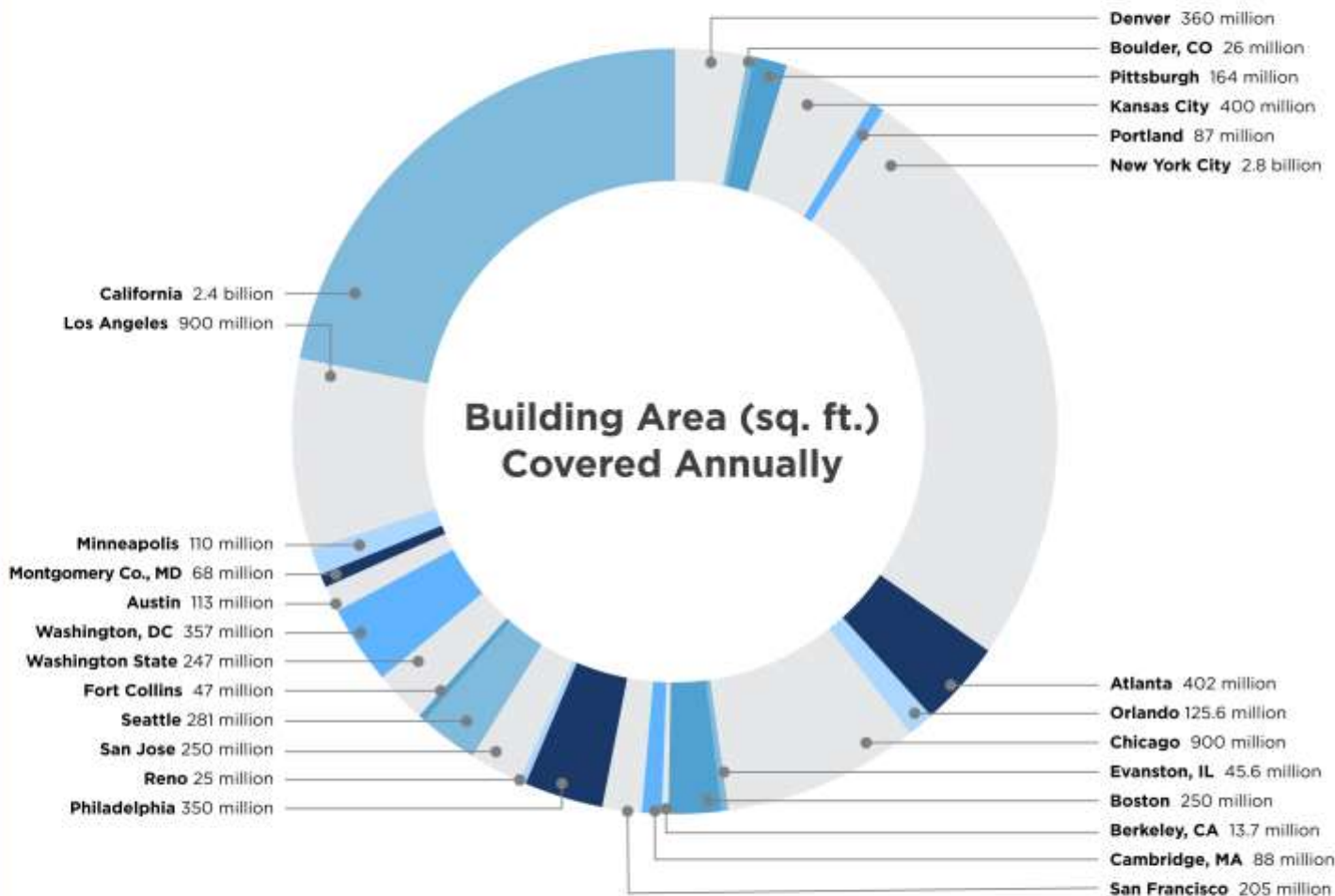
Each year, existing policies will impact more than **91,800** properties



[www.buildingrating.org](http://www.buildingrating.org)

# Impact of U.S. City, County, and State Benchmarking and Transparency Policies for Existing Buildings

Totaling approximately **11 billion** SF of floor space in major real estate markets



Government	Commercial	Multifamily	Water reporting	Utility data availability
Atlanta, GA	>25K	>25K	Yes	web services
Austin, TX	>10K	-	-	spreadsheet
Berkeley, CA	>25K	>25K	Yes	web services
Boston, MA	>35K	>35K or 35+ units	Yes	web services
Boulder, CO	>20K	-	Yes	web services
Cambridge, MA	>25K	50+ units	Yes	spreadsheet
Chicago, IL	>50K	>50K	-	web services
Denver, CO	>25K	>25K	-	web services
Washington, DC*	>50K	>50K	Yes	web services
Evanston, IL	>20K	>20K	Yes	web services
Fort Collins, CO	>20K	>5K	Yes	web services

Government	Commercial	Multifamily	Water reporting	Utility data availability
Kansas City, MO	>50K	>50K	Yes	spreadsheet
Los Angeles, CA	>20K	>20K	Yes	web services
Minneapolis, MN	>50K	>50K	Yes	web services
Montgomery County, MD*	>50K	-	-	web services
New York, NY	>25K	>25K	Yes	web services
Orlando, FL	>50K	>50K	-	-
Philadelphia, PA	>50K	>50K	Yes	web services
Pittsburgh, PA	>50K	-	Yes	web services
Portland, ME**	>20K	50+ units	Yes	-
Portland, OR	>20K	-	-	web services

Government	Commercial	Multifamily	Water reporting	Utility data availability
Reno, NV	>30K	>30K	Yes	-
Salt Lake City, UT	>25K	-	-	web services
San Diego, CA	>50K	>50K, 17+ units	-	web services
San Francisco, CA	>10K	-	-	web services
San Jose, CA	>20K	>20K	Yes	web services
Seattle, WA	>20K	>20K	-	web services
South Portland, ME	>5K	10+ units	Yes	-
St. Louis, MO	>50K	>50K	Yes	web services
State of California	>50K	>50K	-	web services
State of Washington*	>10K	-	-	web services
Province of Ontario, Canada	>50K	>50K, 10+ units	Yes	-

# Recently added benchmarking requirements

- New or updated in 2019:
  - Minneapolis, MN: added multifamily reporting requirement
  - Salt Lake City, Utah
  - San Diego, California
  - San Jose, California

# Coming in 2020

- Fort Collins, Colorado
  - March 1 deadline; commercial and multifamily 5,000 ft<sup>2</sup> +; water included
- Reno, Nevada
  - April 1 deadline; commercial and multifamily 30,000 ft<sup>2</sup> +; water included; required action every 7 years if not meeting performance target
- Des Moines
  - May 1 deadline; commercial and multifamily 25,000 ft<sup>2</sup> +; water included



# Other new requirements

- Chicago building label law
  - Starts in 2019 based on 2018 data year
- New York City building label law
  - Starts in 2020 based on 2019 data year

## DC Building Energy Performance Standards

- Minimum performance standards to be established by 1/1/2021 and each 5 years thereafter. Will be no lower than district median ENERGY STAR score for property type. 10,000 ft<sup>2</sup>+. EUI reduction and prescriptive compliance paths in 5 year window.

# Other new requirements, cont'd

- NYC GHG caps
  - GHG caps set for buildings based on property type and square footage, using local factors for GHG emissions. 25,000 ft<sup>2</sup>+. Caps begin 2024, applying 2024-2029, with stricter caps 2030-2034.
- State of Washington building energy standard
  - Commercial buildings 50,000 ft<sup>2</sup> +. Starts 2026. Must meet standard based on “energy utility index”, adjusted by building category and geography. Standards will be updated each 5 years. Alt. compliance path will be available.

# ENERGY STAR Battle of the Buildings

Ready to host your own competition?

We have the tools you need!



Everything you need to get started:

- Template rules, timeline, communications
- Competition Guide
- Data Management Guide and Template Data Tracker
- Activity kits
- ...and more!

[www.energystar.gov/BattleoftheBuildings](http://www.energystar.gov/BattleoftheBuildings)



**FIND** THE  
**TREASURE**   
IN YOUR FACILITY

# ENERGY STAR® Treasure Hunt Campaign

Leading Organizations to Uncover Energy  
Gold in Their Buildings or Facilities





# Treasure Hunts as a Best Practice



*Treasure Hunts strike a positive, optimistic tone, by focusing on bringing new perspectives to a facility and identifying quick fixes with a short payback period.*



# October Kicks Off Treasure Hunt Season!

## To participate in the campaign, organizations:

### □ Conduct an Energy Treasure Hunt

- Organize teams of intrepid energy explorers using the ENERGY STAR Treasure Hunt Guide for Commercial Buildings or Industrial Plants to hunt for energy savings. Don't forget to take pictures during the hunt!

### □ Fill the Treasure Chest from October 1 – January 15!

- Track progress and submit identified energy savings starting in October at [www.energystar.gov/treasurehunt](http://www.energystar.gov/treasurehunt)

### □ Get EPA Recognition for Joining this Shared Effort

- Organizations will:
  - Be featured on [www.energystar.gov/treasurehunt](http://www.energystar.gov/treasurehunt) and in a weekly email to ENERGY STAR stakeholders
  - Receive a printable certificate noting their contributions
  - Be included in an EPA press release at the campaign's conclusion



# Why Should My Organization Participate?

**Hundreds of public and private organizations have used energy Treasure Hunts to reduce their facilities' energy use by up to 15%.**

Treasure Hunts will also enable you to:

- Reduce energy waste and **save money** on utility bills.
- Earn EPA recognition for **environmental leadership**.
- Collaborate with team members and boost **workplace pride**.
- Deliver **value to tenants and customers** with a more efficient workplace.
- Achieve **lasting benefits** for the bottom line.
- **Save time and effort** with EPA-provided resources!



# Start Planning Your Treasure Hunt



**Energy Treasure Hunt**  
A HOW-TO GUIDE FOR FINDING ENERGY SAVINGS IN YOUR BUILDING

**VIEW HEALTHCARE'S VIDEO SUCCESS STORY**

**VIEW HONDA'S 5-PART VIDEO SUCCESS STORY**

**HUNTING FOR ENERGY TREASURE AT HONDA**  
BY ERIC SPECTOR & REGINA

**Project Details**

**Opportunity Short Title**

Identify the project area within the building			
Substation	Equipment Identification	Equipment Upgrade	Other

**Identify the background**

**Identify the description of opportunity**

Current Situation (Before Opportunity)		Proposed Situation (After Opportunity)	
Business Hours	Non-Business Hours	Business Hours	Non-Business Hours

Current Situation (Before Opportunity)		Proposed Situation (After Opportunity)	
Year	Month	Year	Month

[www.energystar.gov/TreasureHunt](http://www.energystar.gov/TreasureHunt)







# Treasure Maps

□ Available for various plant and building types, including:

- K-12 schools
- Retail stores
- Hospitals
- Labs
- Worship facilities

□ Coming soon:

- Multifamily housing
- Higher Ed
- Auto dealers
- Lodging
- Restaurants
- Grocery stores & convenience stores



[www.energystar.gov/TreasureHunt](http://www.energystar.gov/TreasureHunt)





# Promotional Resources for Third Parties

- **Spread the word to your stakeholders, constituents, and customers**
  - Use ready-made, co-brandable communications materials, including tweets, web buttons, creative graphics, template emails and newsletter articles, and more.
- **Earn recognition**
  - Third parties, such as ESCOs and utilities, can submit the results of a Treasure Hunt on behalf of customers.
  - Both sponsors and participants will be eligible for recognition from EPA for their efforts.





## Learn More!

Visit [www.energystar.gov/treasurehunt](http://www.energystar.gov/treasurehunt) to access resources and learn more.

*Energy gold is just a treasure hunt away!*

