













DOOM

# There's a better way



Instead of doom,  
shame, and fear

"What not to do"

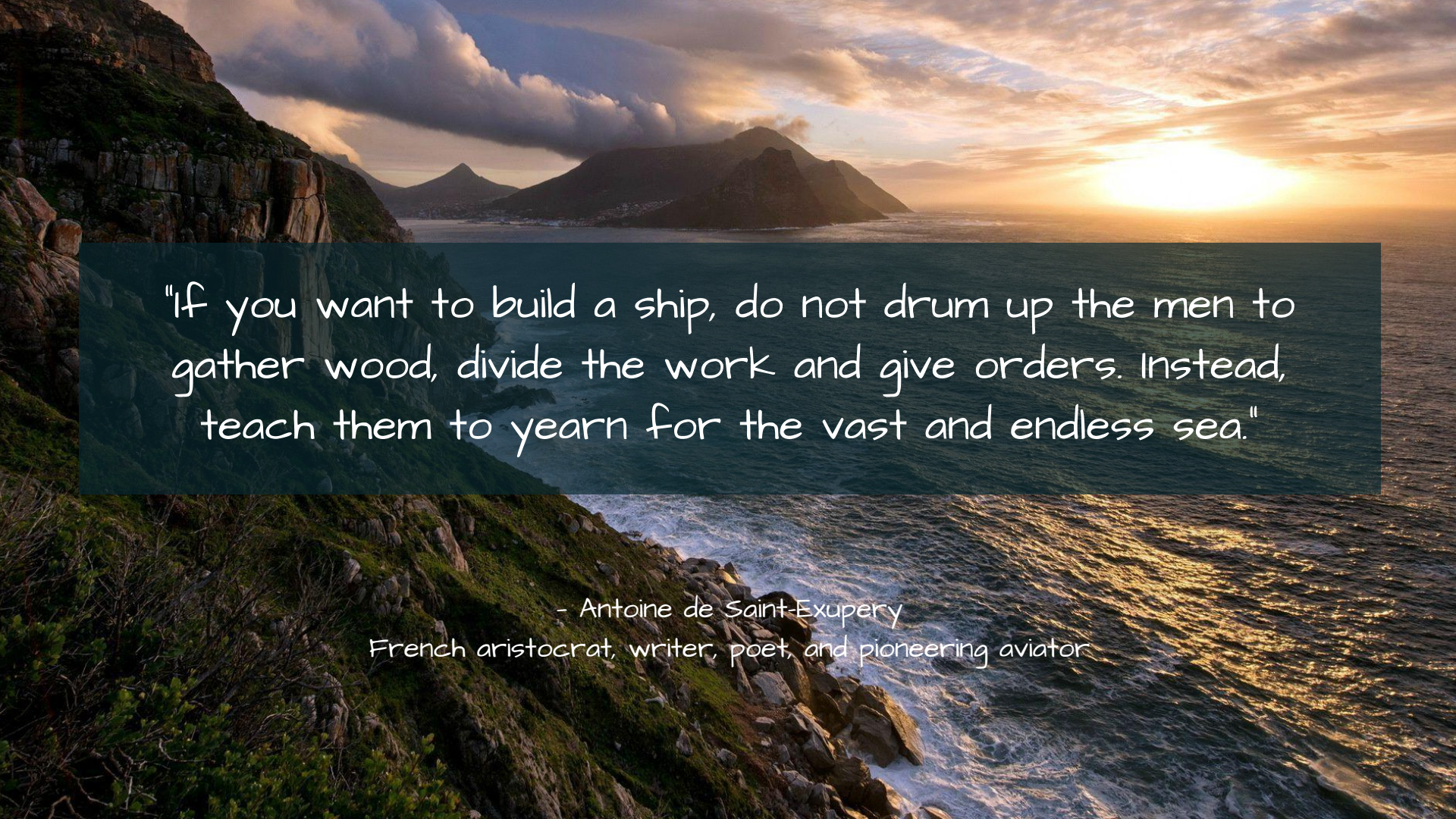


We choose Imagination,  
solutions, and examples

"What we are for"



A beautiful optimistic vision of the amazing future we are making



"If you want to build a ship, do not drum up the men to gather wood, divide the work and give orders. Instead, teach them to yearn for the vast and endless sea."

- Antoine de Saint-Exupery  
French aristocrat, writer, poet, and pioneering aviator

But, *how?*





Blogs



Books



Studies



Documentaries



Media  
coverage

Are we actually doing anything?



Events



Art



Protests



Apps



Networks



Conferences



# VALUE ACTION GAP

## INFORMATION DEFICIT HYPOTHESIS

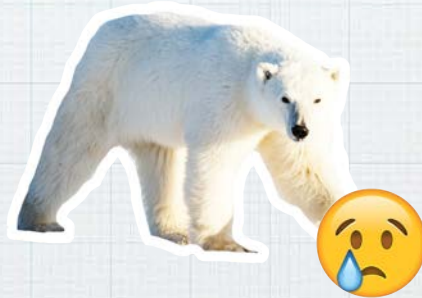
EDUCATION



CONCERN



ACTION ?





## INTELLECT

*Prefrontal Cortex*



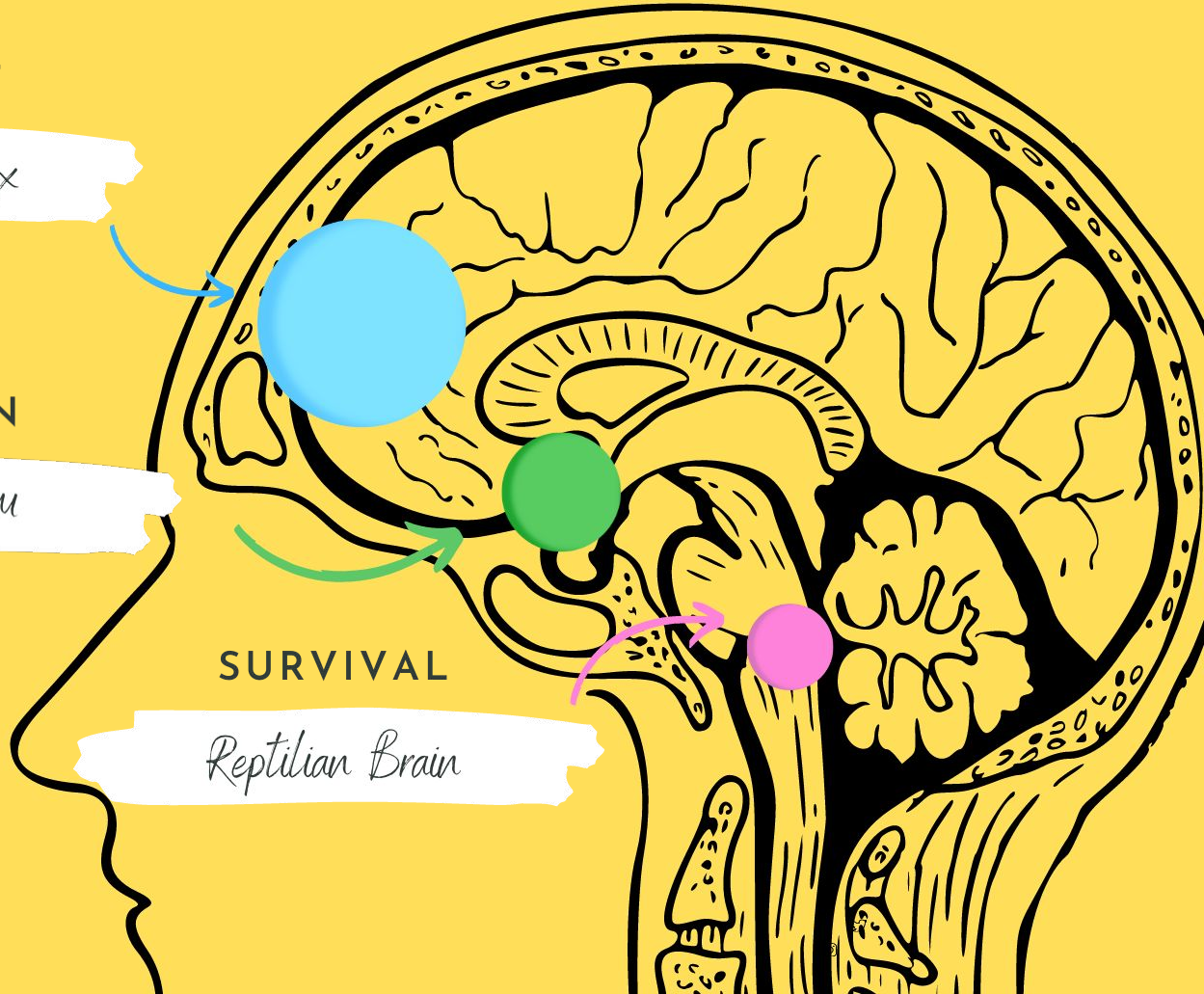
## EMOTION

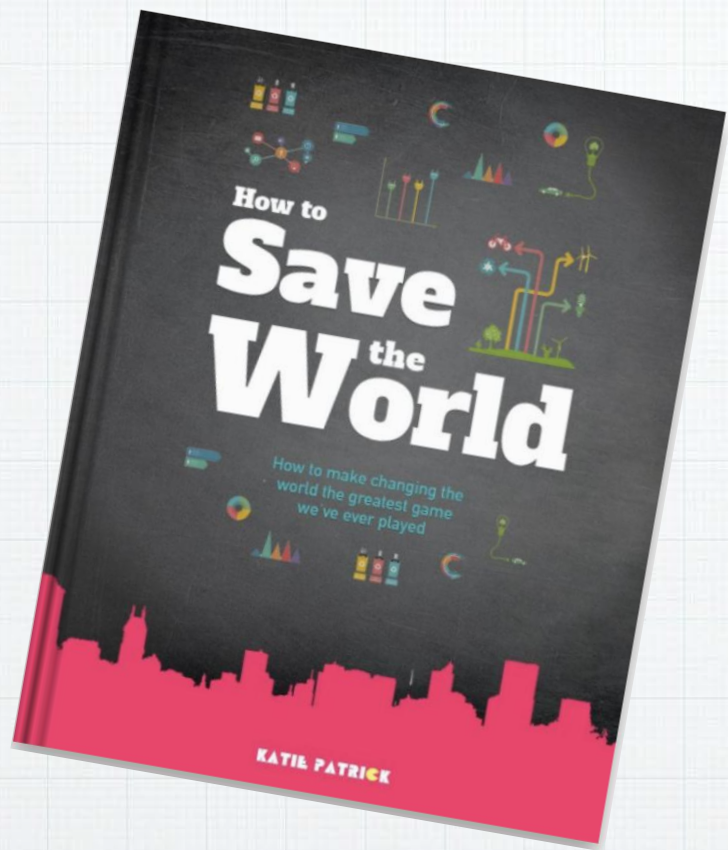
*Limbic System*



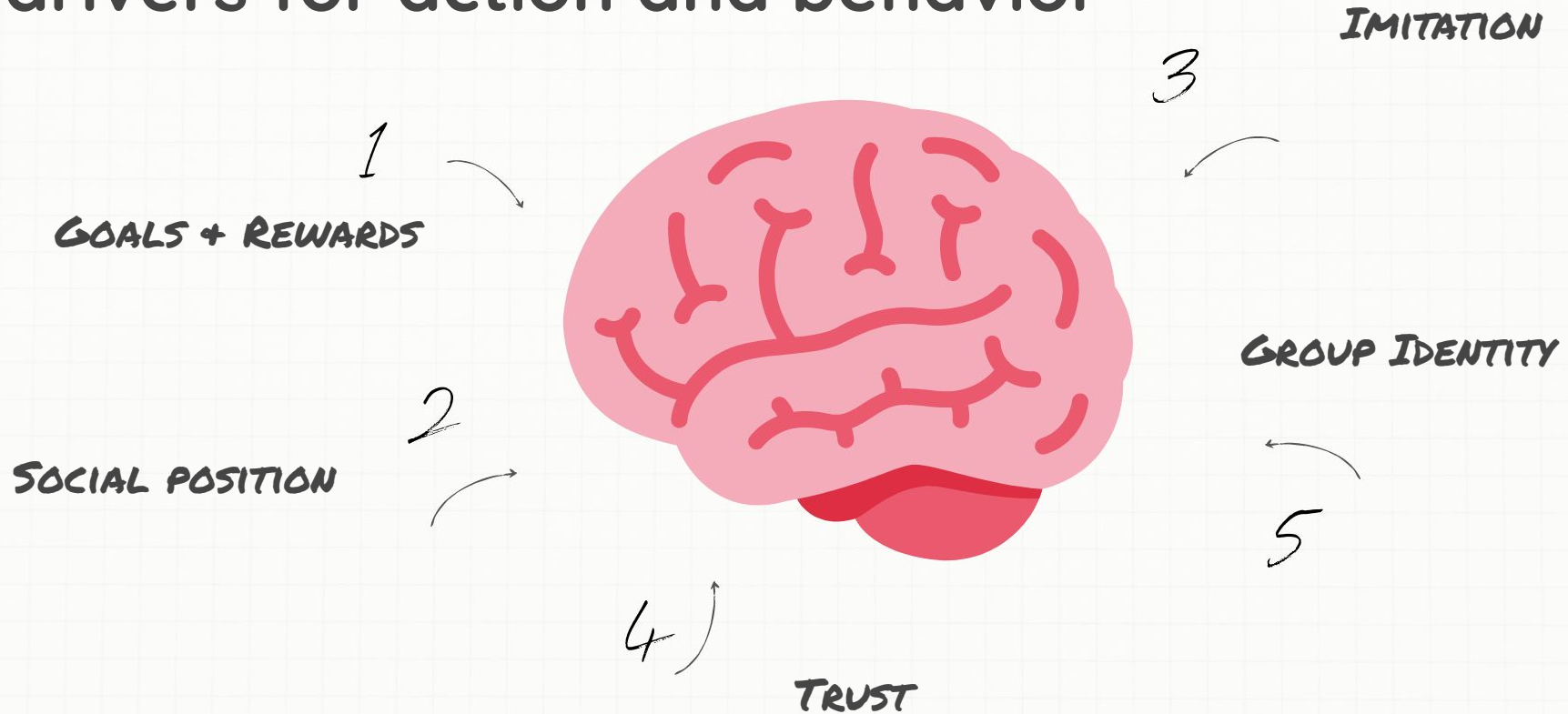
## SURVIVAL

*Reptilian Brain*





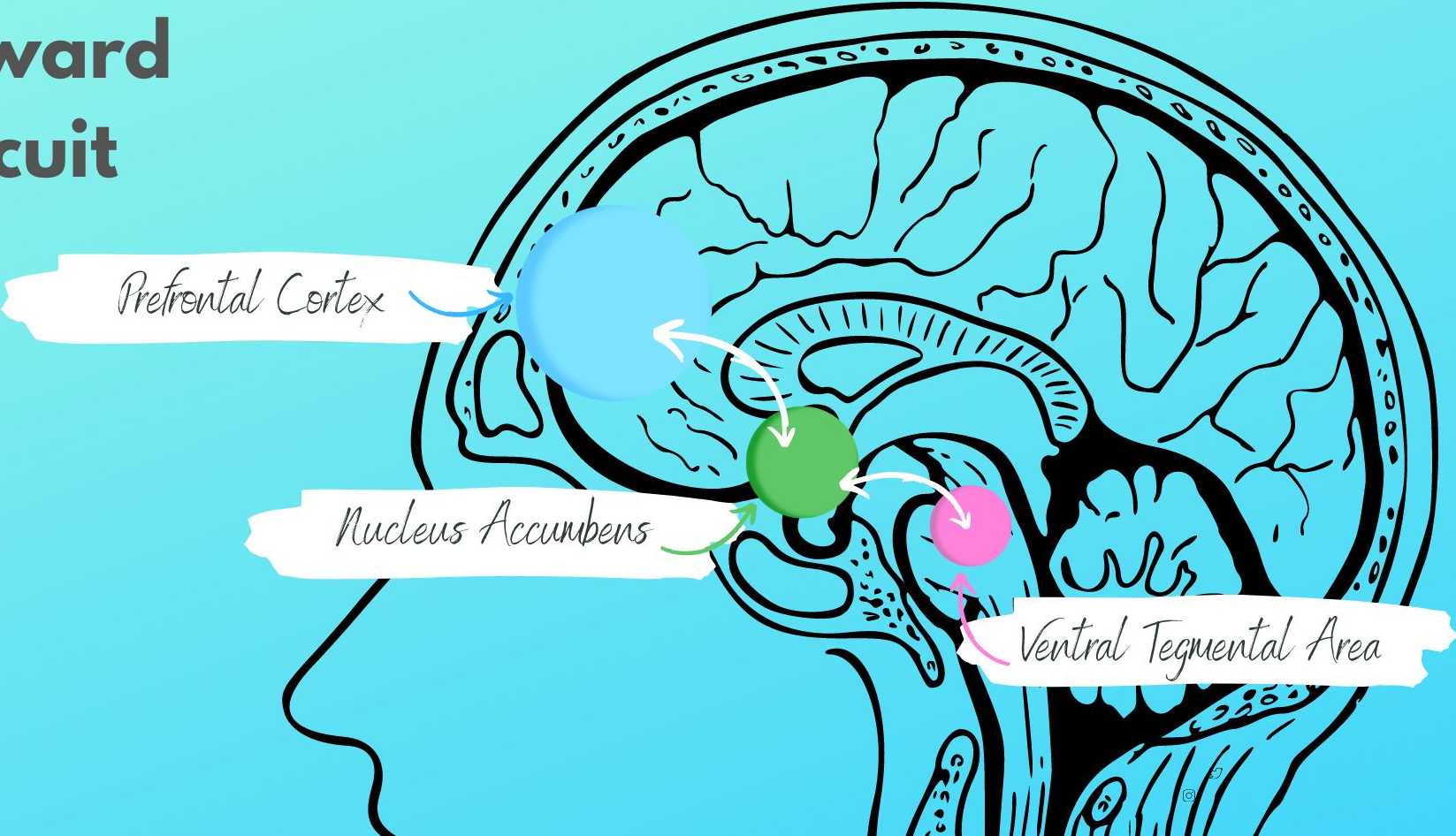
# The brain's five motivational drivers for action and behavior



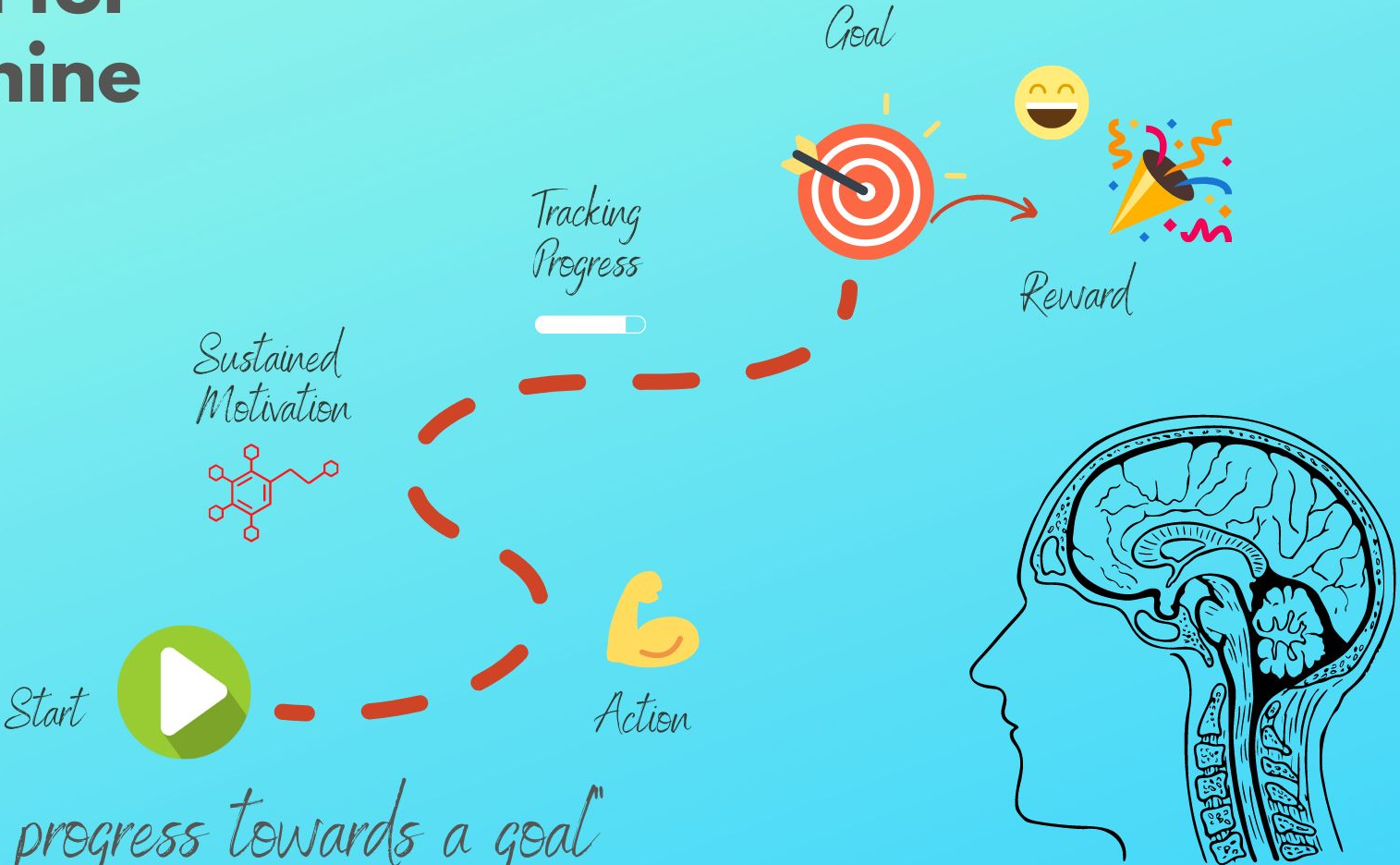
# Goals & Rewards



# Dopamine Reward Circuit



# Design for Dopamine



"Tracking progress towards a goal"

Looking at  
the data



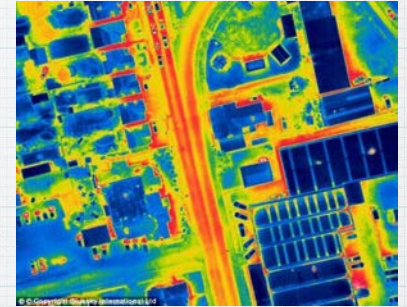


“You can achieve amazing progress if you set a clear goal and find a measure that will drive progress toward that goal. This may seem pretty basic, but it is amazing to me how often it is not done and how hard it is to get right.”

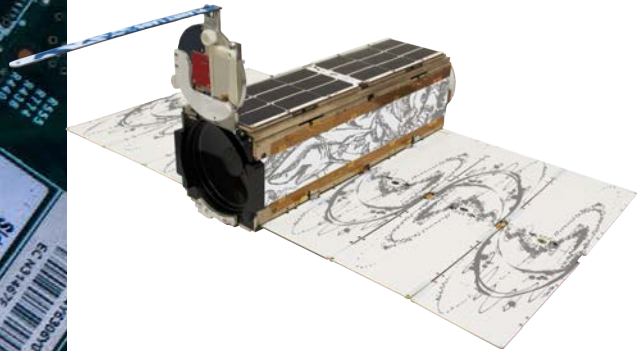
Bill Gates, 2013 Annual Letter



# Real-time data-driven environmental change

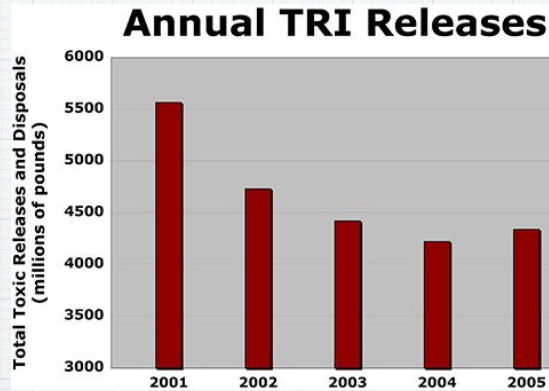
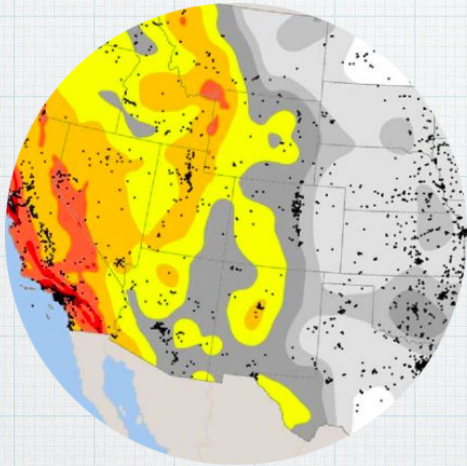


# Sensors everywhere



# Transparency & disclosure

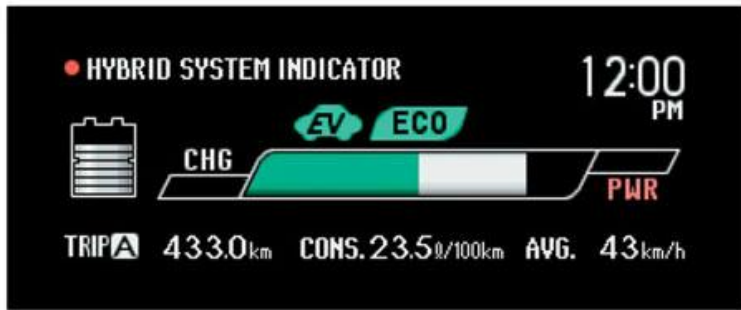
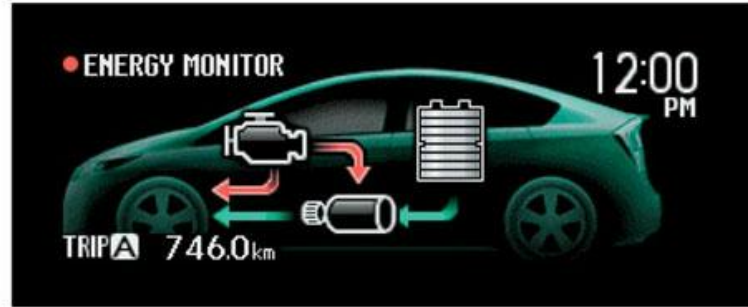
## EPA Toxic Release Inventory



45% ▼

# Feedback loops

## Toyota Prius dashboard



## Speeding in school zones



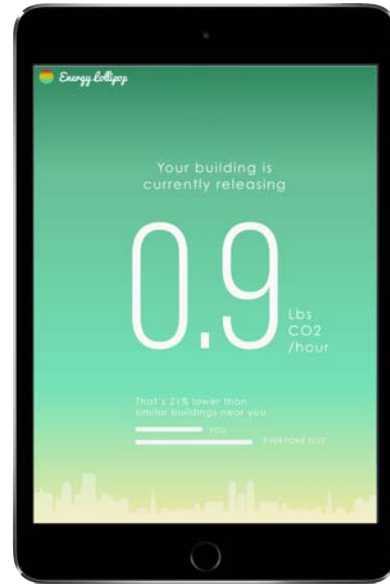
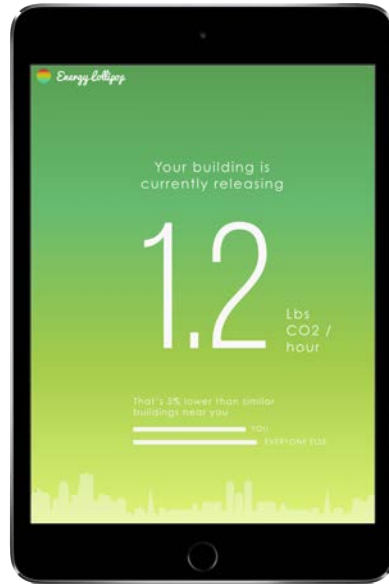
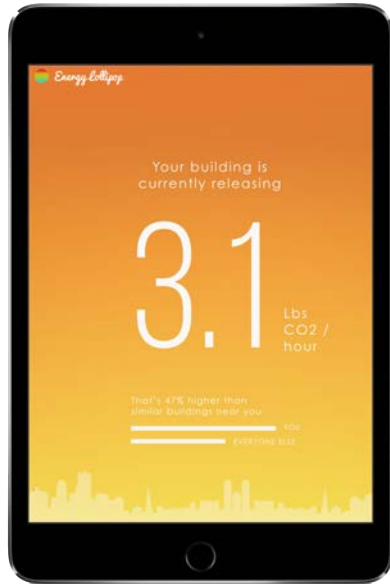
14% ▼

A hand-written sign that shows the amount of recycled paper

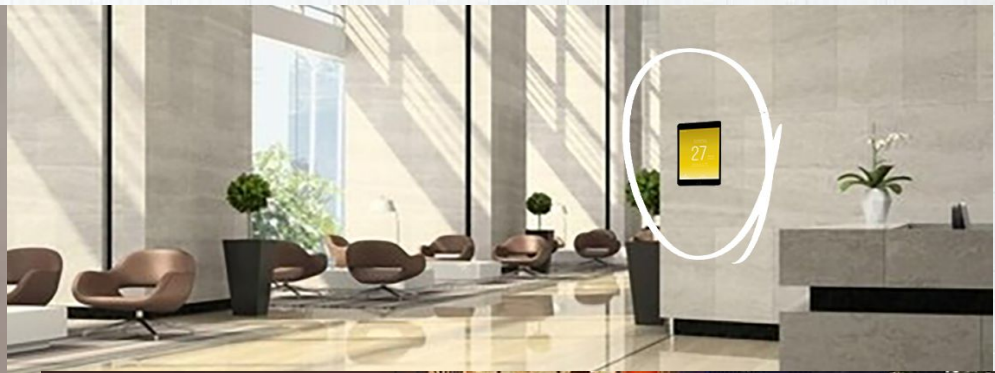


77% ▲

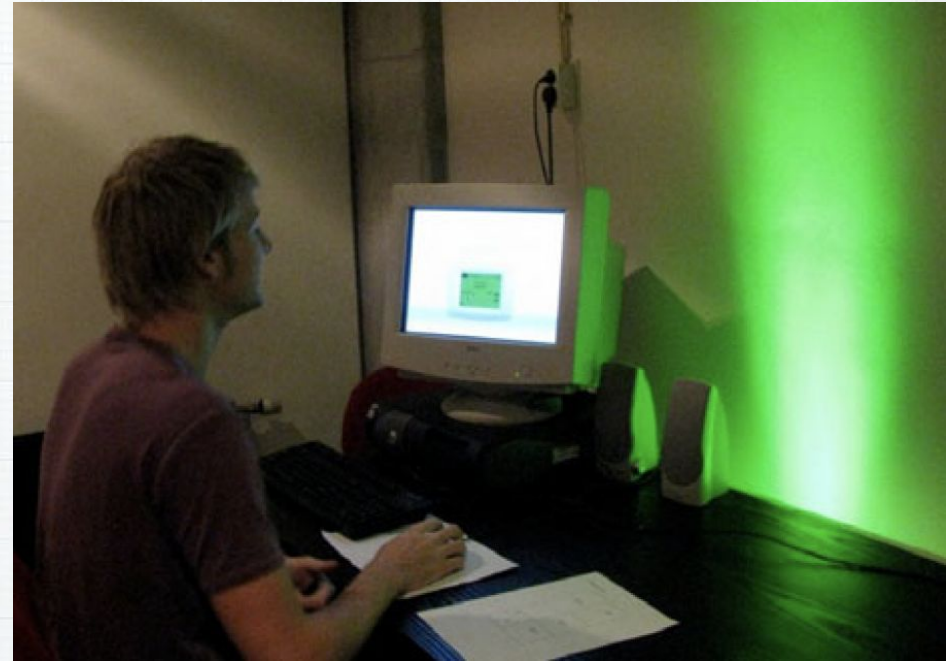
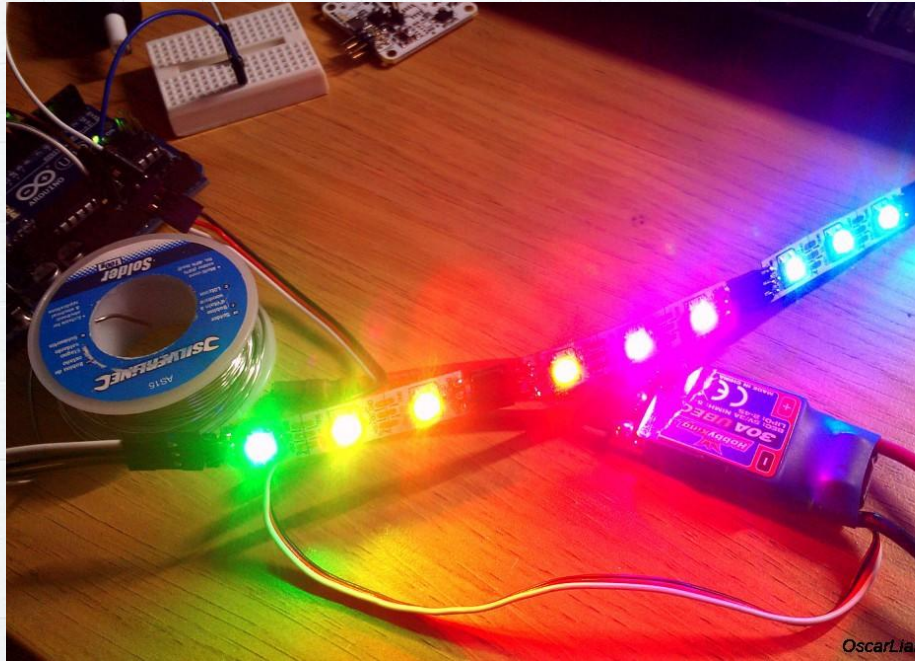
# Ambient messaging







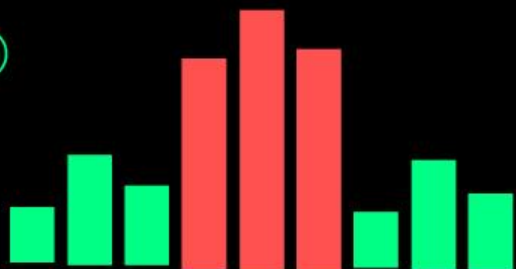
\*Petersen, J.E., Shunturov, V., Janda, K., Platt, G. and Weinberger, K. (2007), "Dormitory residents reduce electricity consumption when exposed to real-time visual feedback and incentives". *International Journal of Sustainability in Higher Education*



“Ambient persuasive technology can persuade the user without receiving the user’s conscious attention”

▼ 12 - 56%

TODAY'S  
FUEL  
SCORE



VIACOM

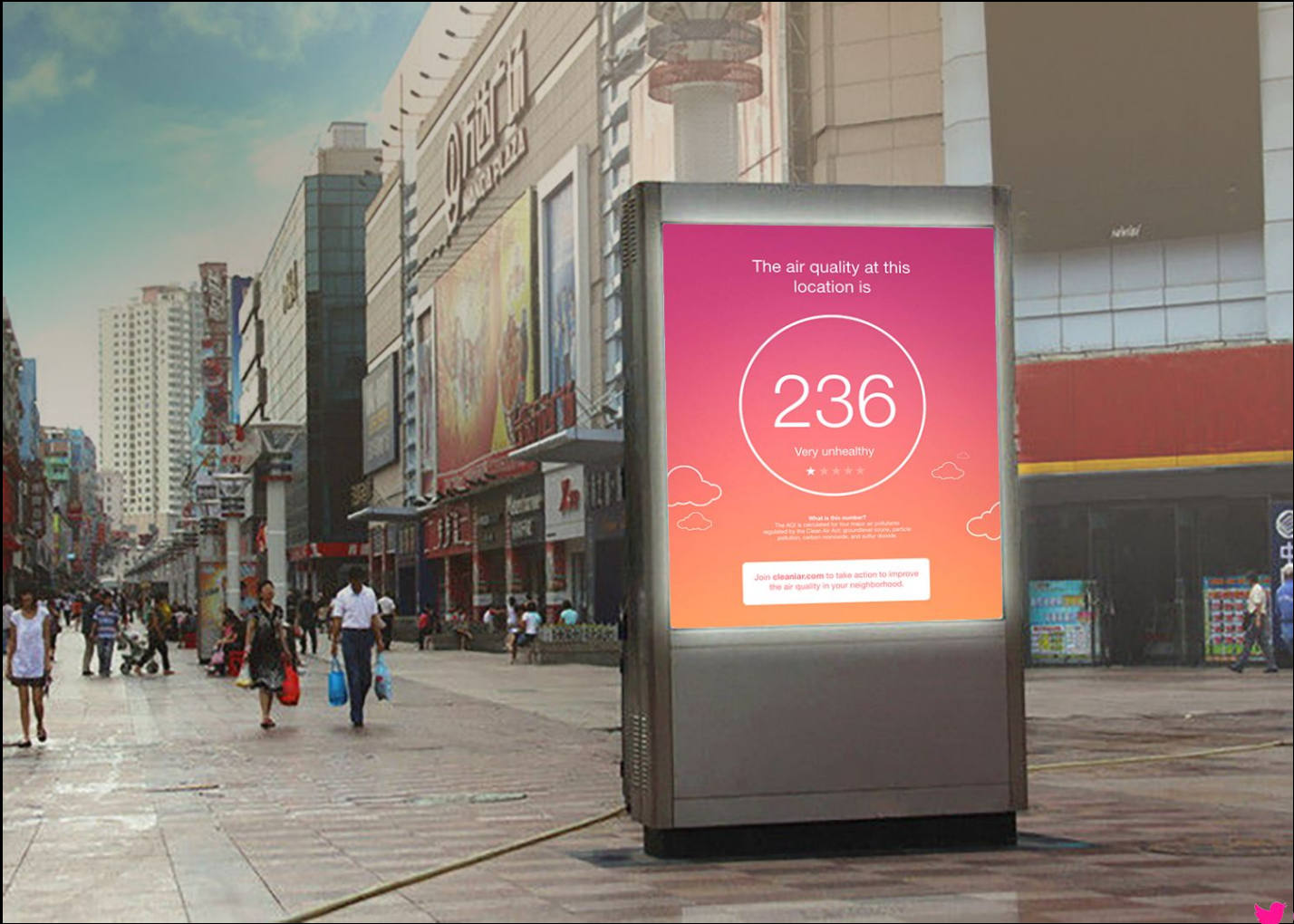
The air quality at  
this location is

Join [cleaniar.com](http://cleaniar.com) to take action to improve  
the air quality in your neighborhood.

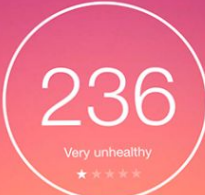
121

Unhealthy for  
sensitive groups





The air quality at this location is



Very unhealthy

★ ★ ★ ★ ★

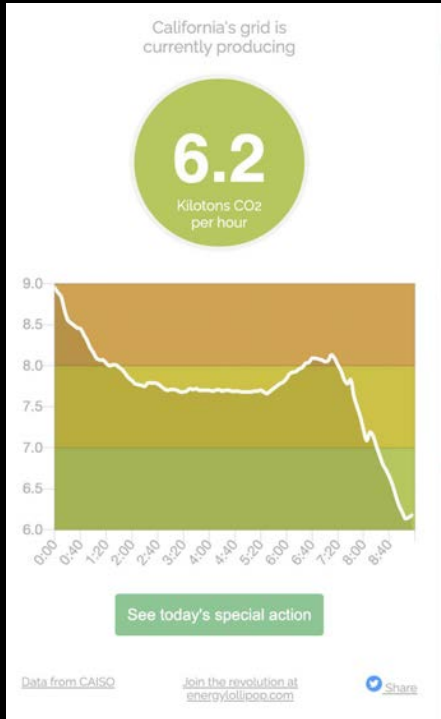
**What is this number?**  
The AQI is calculated by first finding air pollution readings by the Clean Air Act, government, non-road, traffic, pollution, carbon emissions, and other sources.

Join [cleaner.com](http://cleaner.com) to take action to improve the air quality in your neighborhood.



# Energy Lollipop on the Chrome store

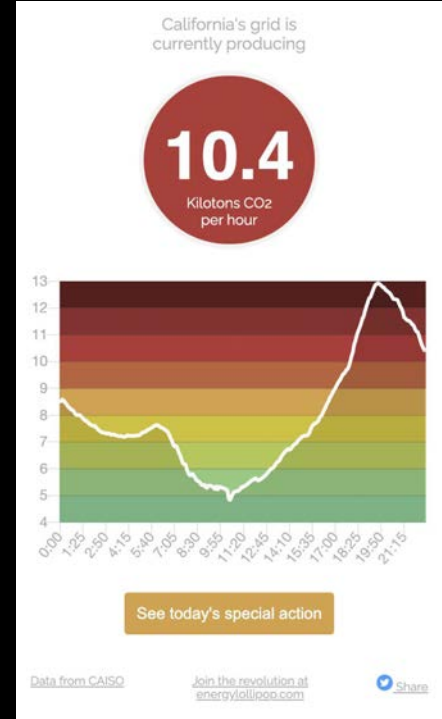
@energylollipop



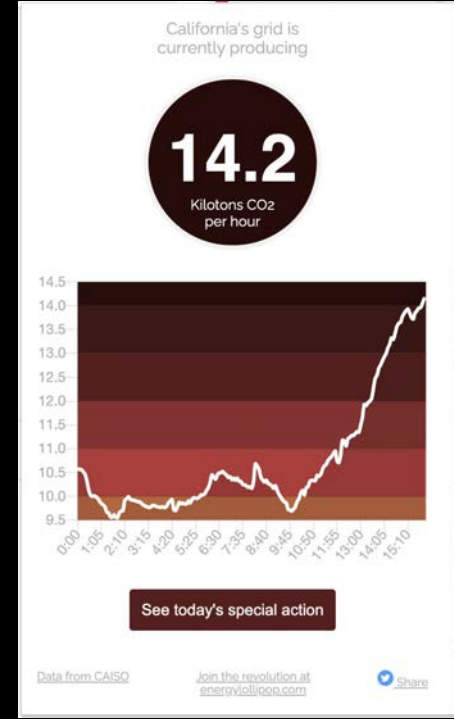
9am



12pm

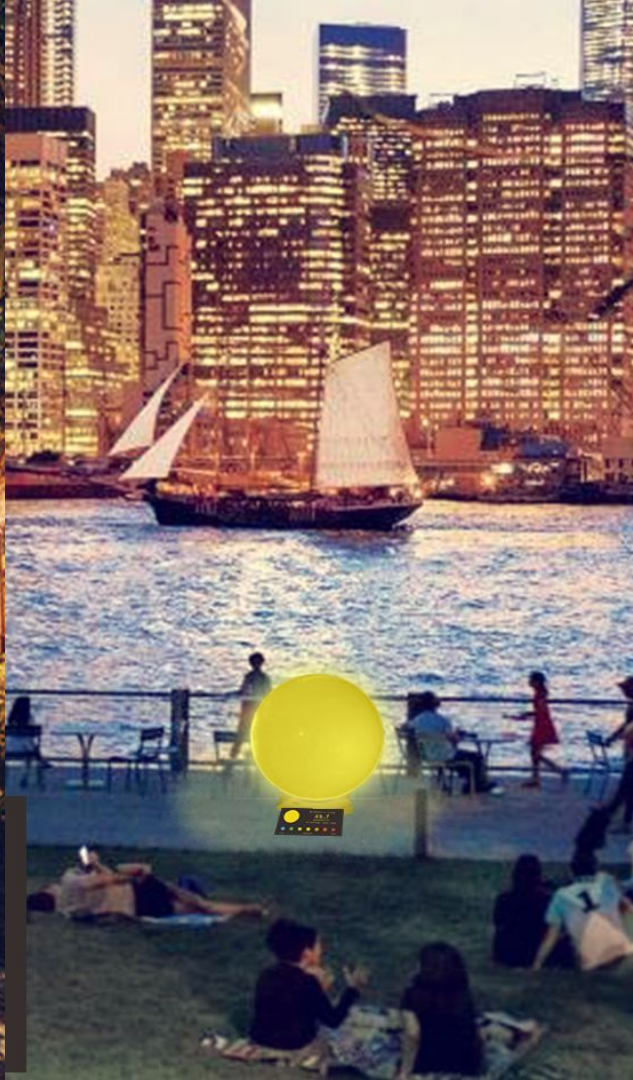


9pm



3pm  
Heat wave

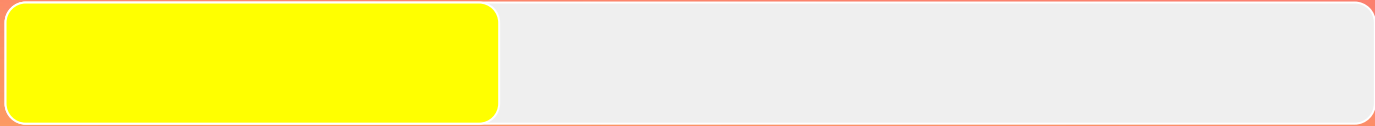






# Tracking Progress





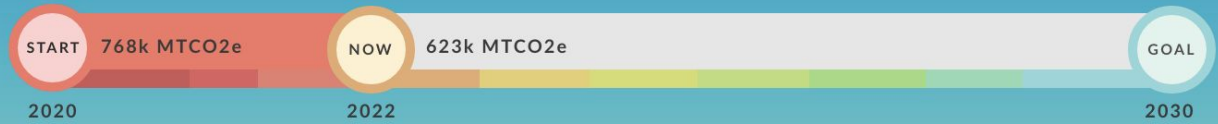
PROGRESS BAR

# Tracking the Earth's 10 year restoration mission



# Climate City Dashboard

Tracking Mountain View's progress towards zero emissions

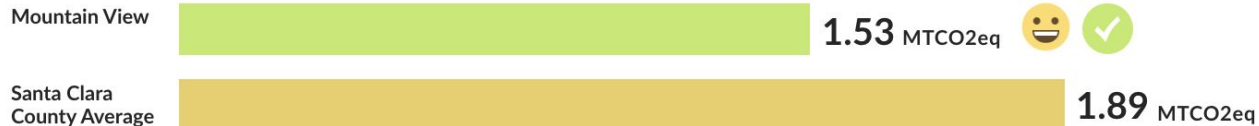


Your city's emissions currently are

**54,932**  
Metric tons of CO2 equivalent +3.2%  
From last week

## COMPARISON

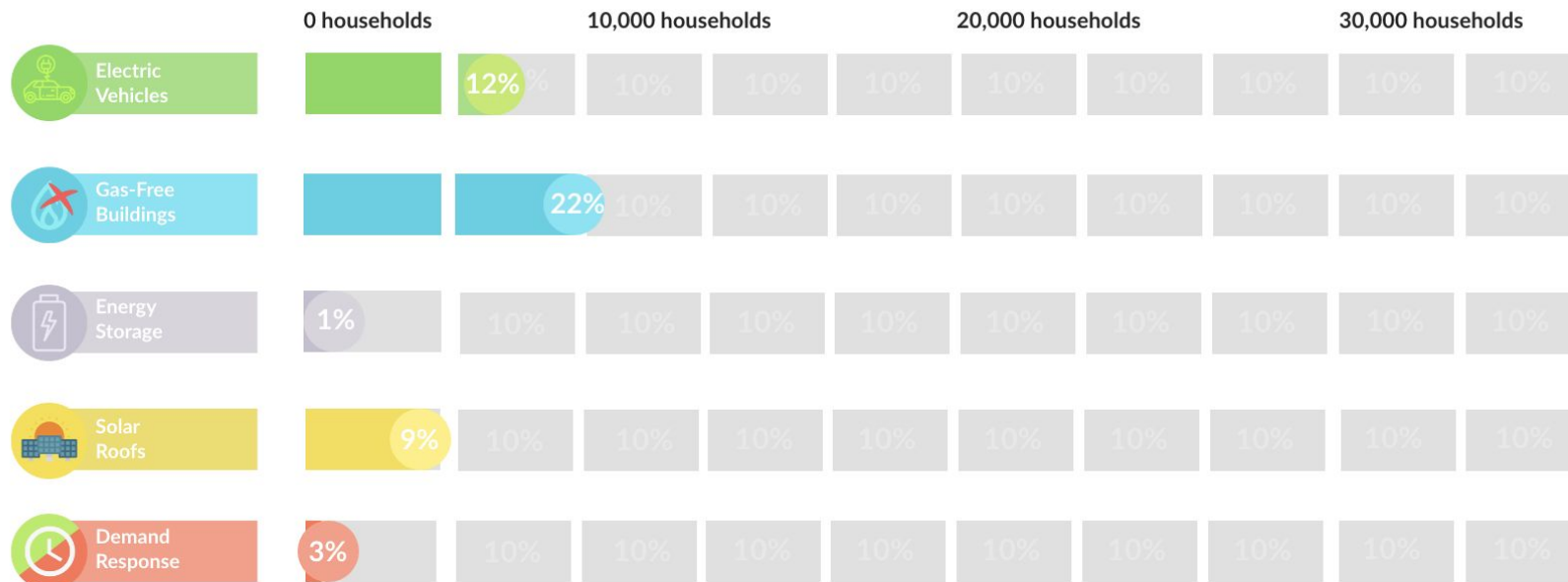
Last month, Mountain View residents released 22% less emissions per household than nearby areas in Santa Clara County. Great job!



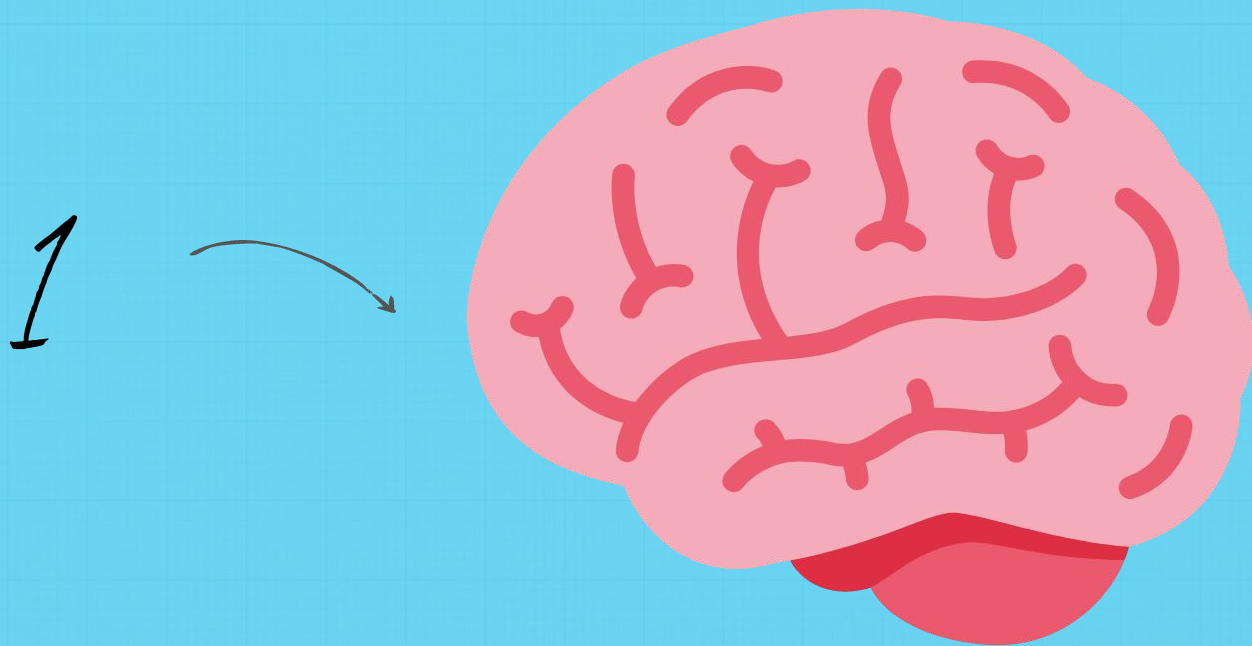
\*Metric tons of carbon dioxide emissions per household for the month of May

## ACTIONS

Progress on climate upgrades made across Mountain View's 33,000 households.

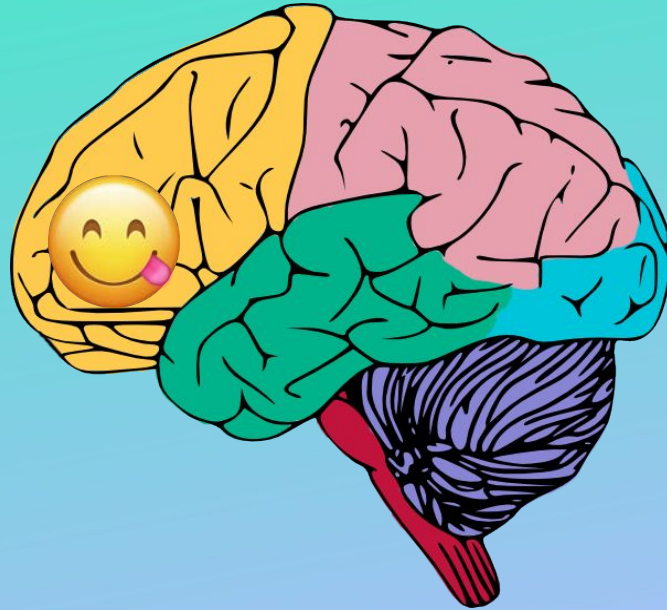


# Rewards





# THE REWARD CENTER OF THE BRAIN



# Badges, awards, and rewards

## Wikipedia volunteers



20% ▲



LEVELS

Your city is currently at

# LEVEL 2

-  12.6%
-  18.1%
-  34.3%

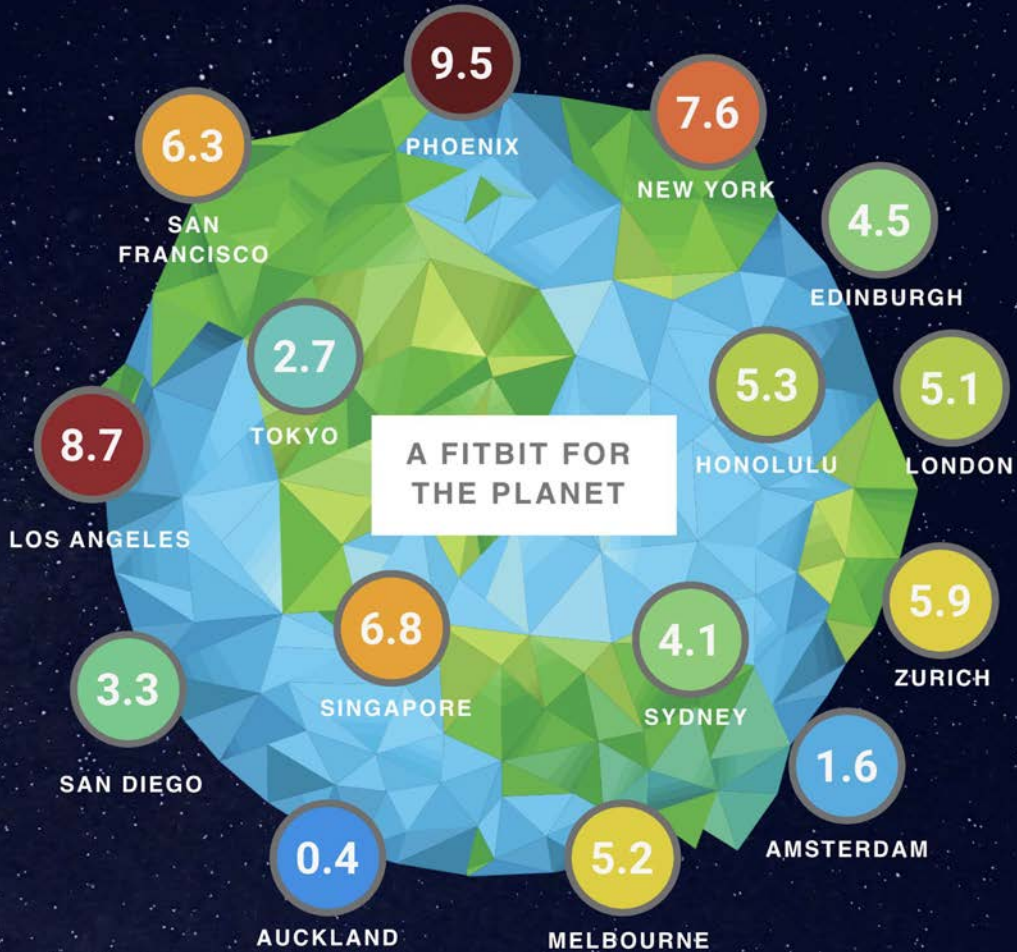
What you need to do to reach level 3:

-  Switch **2,640** more vehicles to EV.
-  Get **660** more buildings fully electrified.



\*Percentage of households with an EV, are gas-free, & using clean grid electricity.





# Novelty





AIR POLLUTION

ELECTRICITY

THERMAL

WATER

GREEN COVER

GREENTOPIA

FLOWERTOPIA

21  
w/sqft

HIGH  
PERFORMER!  
★★★★★

45  
w/sqft

32  
w/sqft

27  
w/sqft

43  
w/sqft

51  
w/sqft

11  
w/sqft

49  
w/sqft

32  
w/sqft

13  
w/sqft

25  
w/sqft

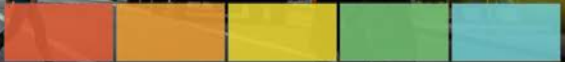
45  
w/sqft

47  
w/sqft

19  
w/sqft

HIGH  
PERFORMER!  
★★★★★

34  
w/sqft



AIR POLLUTION

ELECTRICITY

THERMAL

WATER

GREEN COVER

GREENTOPIA

FLOWERTOPIA







# Greentopia



AIR POLLUTION

ELECTRICITY

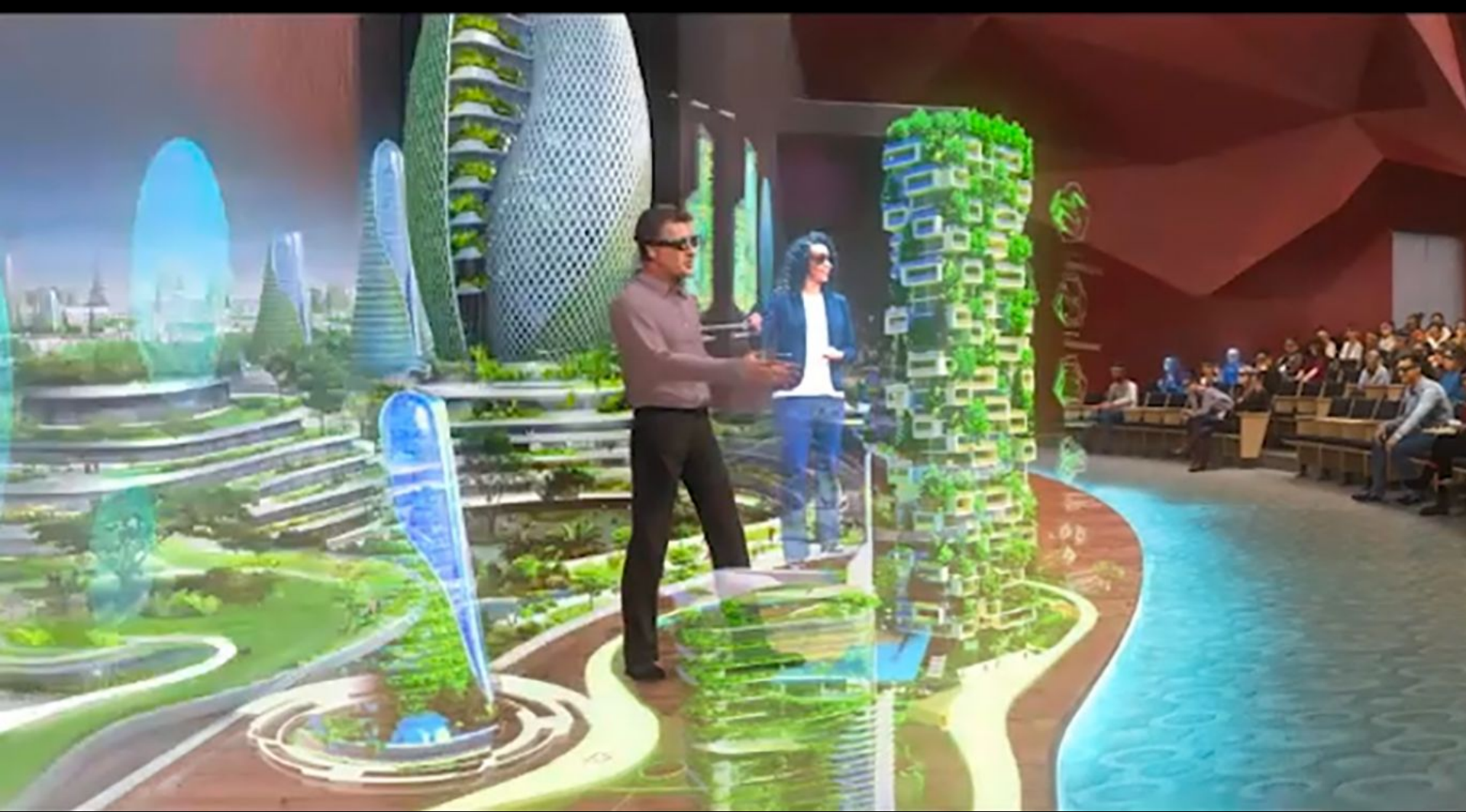
THERMAL

WATER

GREEN COVER

**GREENTOPIA**

FLOWERTOPIA





lala.ruhr



lala.ruhr

# Social Position

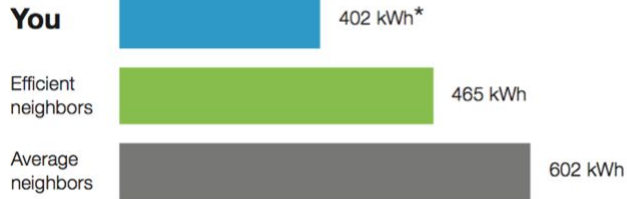


# 2.5 Social comparison


Opower

## Here's how you compare to neighbors

Last bill



 Great

 Good

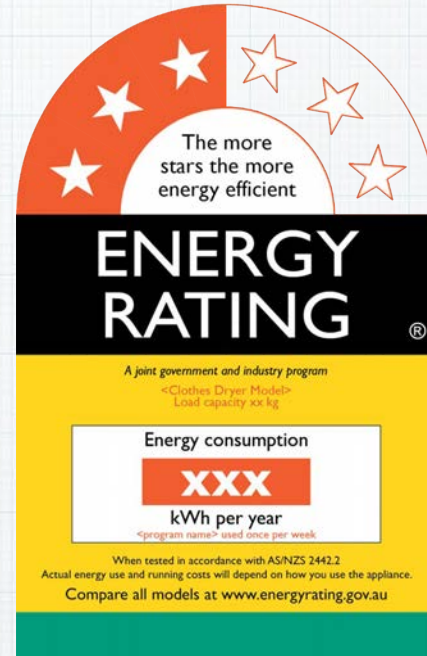
 Using more than average

3% 

# Star ratings

LARGE CARS				
Ford	Falcon FG/FG-X	08-14	★ ★ ★ ★ ★	Safe Pick
Holden	Statesman/Caprice WM/WN	06-14	★ ★ ★ ★ ★	Safe Pick
BMW	5 Series E39	96-03	★ ★ ★ ★ ★	
Holden	Statesman/Caprice WK/WL	03-06	★ ★ ★ ★ ★	
Mercedes Benz	E-Class W211	02-09	★ ★ ★ ★ ★	
Toyota	Aurion	12-14	★ ★ ★ ★ ★	
Holden	Commodore VE	06-13	★ ★ ★ ★ ★	
Mercedes Benz	E-Class W210	96-02	★ ★ ★ ★ ★	
Mitsubishi	380	05-08	★ ★ ★ ★ ★	
Toyota	Aurion	06-12	★ ★ ★ ★ ★	
Ford	Fairlane & LTD AU	99-02	★ ★ ★ ★ ★	
Ford	Fairlane & LTD BA/BF	03-07	★ ★ ★ ★ ★	
Ford	Falcon BA/BF	02-08	★ ★ ★ ★ ★	
Holden	Commodore VY/NZ	02-07	★ ★ ★ ★ ★	
Holden	Monaro	01-05	★ ★ ★ ★ ★	
Lexus	ES300/Winom	92-01	★ ★ ★ ★ ★	
Mitsubishi	Magna TL/TW/Verada KL/KW	03-05	★ ★ ★ ★ ★	
Nissan	Maxima	06-09	★ ★ ★ ★ ★	
Toyota	Avalon	00-05	★ ★ ★ ★ ★	
Volvo	850/S70/V70/C70	92-99	★ ★ ★ ★ ★	
Ford	Fairlane N & LTD D	95-98	★ ★ ★ ★ ★	
Holden	Statesman/Caprice WH	99-03	★ ★ ★ ★ ★	
Ford	Falcon AU	98-02	★ ★ ★ ★ ★	
Ford	Falcon EF/EL	94-98	★ ★ ★ ★ ★	
Holden	Commodore VT/VX	97-02	★ ★ ★ ★ ★	
Holden	Statesman/Caprice VR/V5	94-98	★ ★ ★ ★ ★	
Holden/Toyota	Commodore VR/V5/Lexcen	93-97	★ ★ ★ ★ ★	
Mitsubishi	Magna TE/TF/TH/TJ/ Verada KE/KF/KH/KJ/ Diamante	96-03	★ ★ ★ ★ ★	
Mitsubishi	Magna TR/TS/Verada KR/KS/ V3000/Diamante	91-96	★ ★ ★ ★ ★	
Nissan	Maxima/Cefiro	95-99	★ ★ ★ ★ ★	

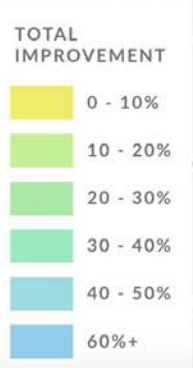
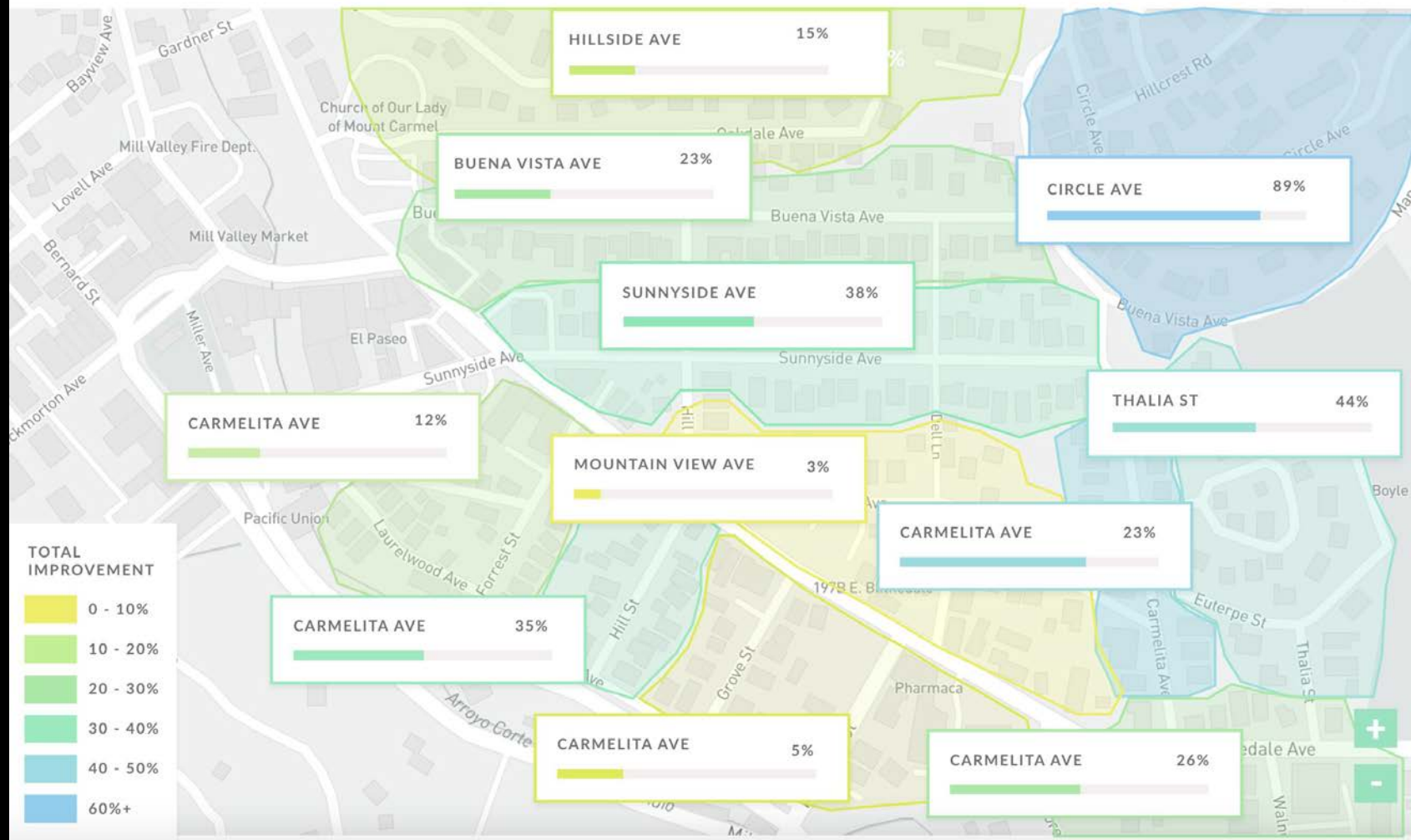
22%



25%





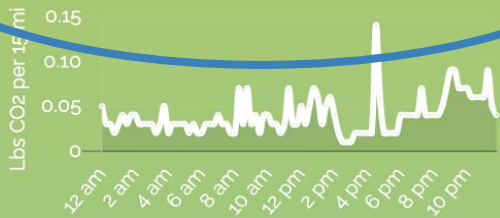


Katie!  
On Wednesday, 7/1  
your home released

**3.8**

Pounds of CO<sub>2</sub>

That's 28.3% lower than other homes  
with 3 people near you.



How to improve

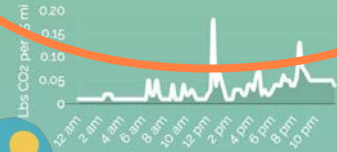
Energy Lollipop

Katie!  
On Tuesday, 6/2  
your home released

**2.9**

Pounds of CO<sub>2</sub>

That's 45.3% lower than other homes  
with 3 people near you.



How to improve

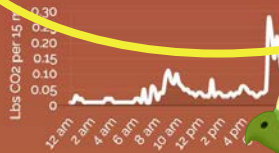
Energy Lollipop

Katie!  
On Friday, 4/24  
your home released

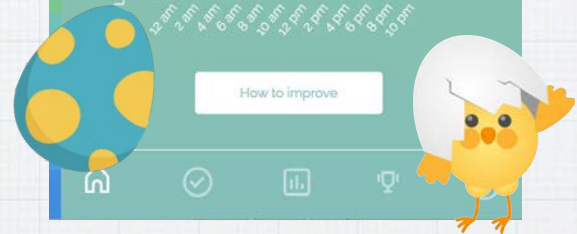
**5.6**

Pounds of CO<sub>2</sub>

That's 5.7% higher than other homes  
with 3 people near you.



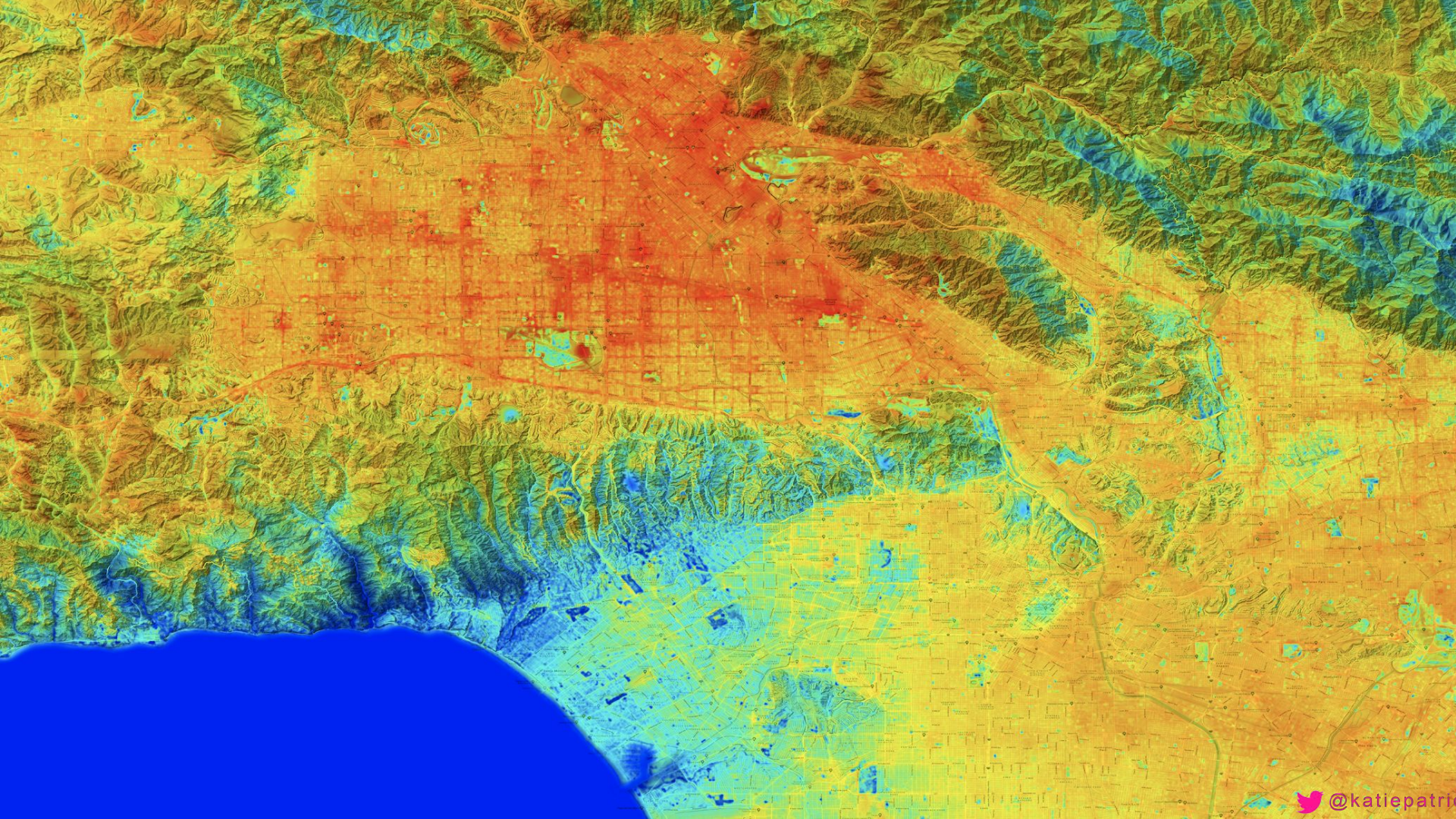
How to improve



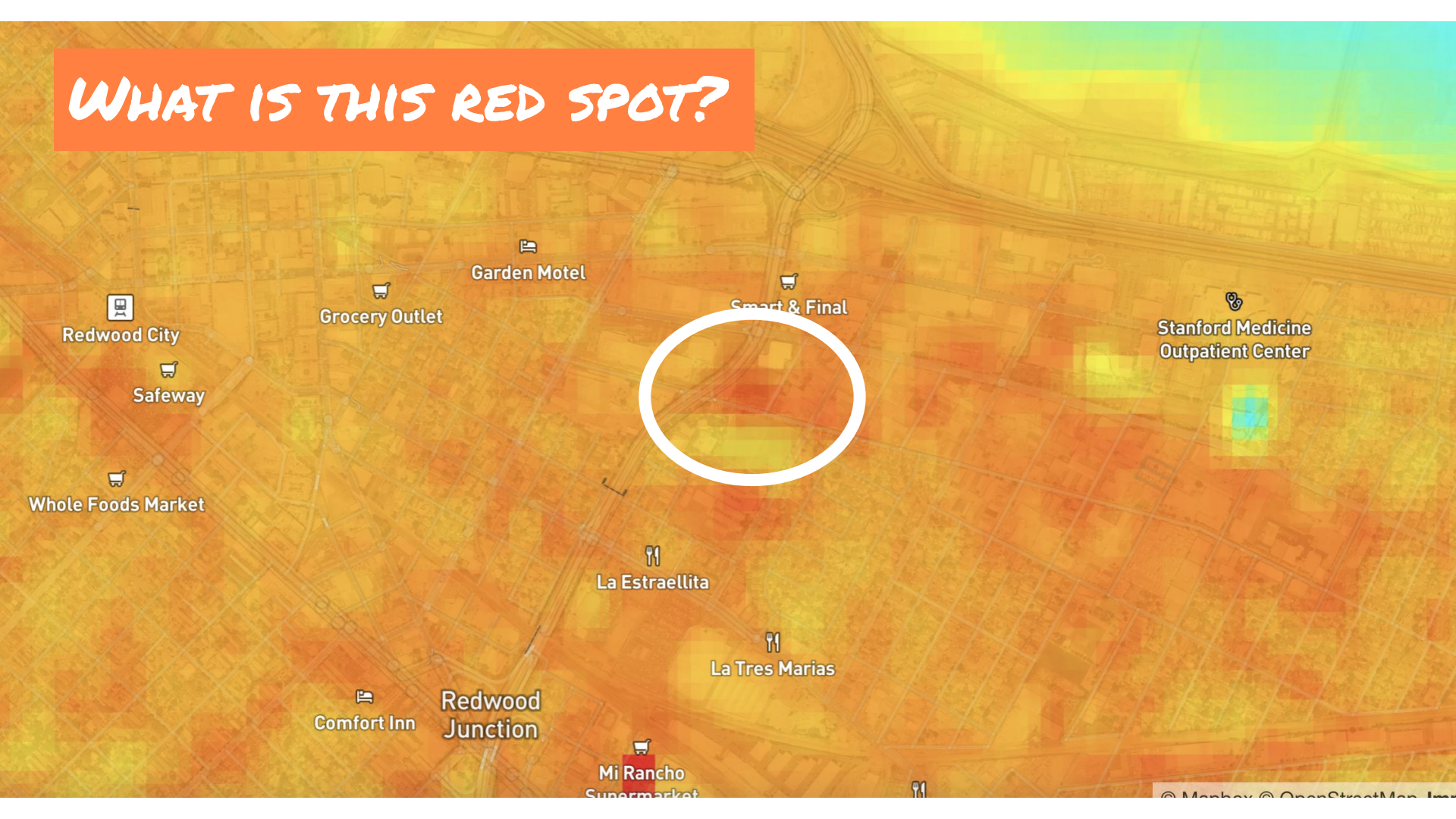


## Green cover by city





# WHAT IS THIS RED SPOT?



# A GIANT BLACK ROOF!

US Bank:  
Jennifer Piccinini

Hoover Park  
Sports courts  
& swimming  
pools

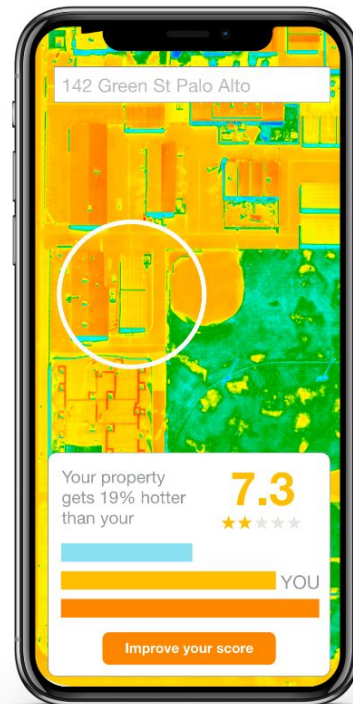
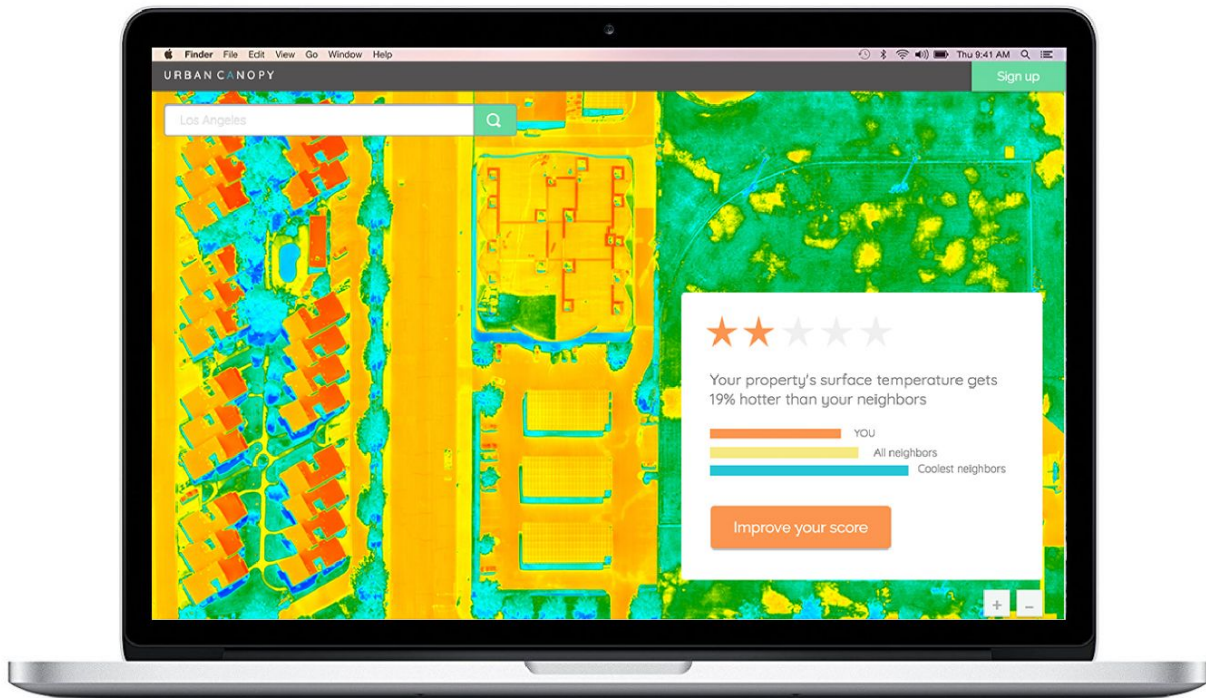


## Parking

2100 Spring St, Redwood City, CA ...

37.483833, -122.214888





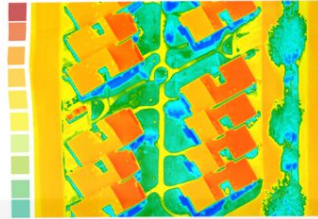


## ENERGY UTILITY

Sandra Lee  
364 Waterloo St  
Sacramento  
California

### What's your property's heat score?

The Electricity Utility helping to make your summer cooler, greener, and less expensive. This picture is a thermal image that shows you the surface temperature of your property and surrounding neighborhood during the hottest time of the year.



**Why do urban heat islands matter?** During summer the paved surfaces made from concrete or asphalt store heat, making the city up to 20F hotter than surrounding areas. This means you need more air conditioning during the summer and creating a peak load on the electricity grid. Good news is that there are many ways to reduce heat such as planting more trees, white roofs, green roofs, and turning paved surfaces into permeable surfaces.

### How your heat score compares to your neighbors

Your roof is **33% hotter** than your cool roof neighbors.



Other building owners with similar scores to you have successfully reduced their score into the green zone.

See how **161** other properties are comparing to yours at [urbanacnomy.io](http://urbanacnomy.io)

### How your heat score compares to your neighbors

Your roof is **33% hotter** than your cool roof neighbors.



Other building owners with similar scores to you have successfully reduced their score into the green zone.

How you're doing



# URBAN OVEN INDEX

Cities are getting really hot in summer. It's not just global climate change causing it. Urban environments are hotter than they need to be because there is too much dark asphalt and not enough trees or light surfaces. Extreme heat causes buildings to consume vast amounts of electricity to power AC, which releases CO2 emissions and can lead to summer blackouts. Extreme heat also causes more fatalities than all other weather events combined. These are the top 10 business in your city that have the highest surface temperatures. That means they are contributing the most to your city's extreme urban heat.

Rank	Company Name	Address	Heat Score
1			10.0
2			9.7
3			9.5
4			9.4
5			9.4
6			9.3
7			9.2
8			9.1
9			9.0
10			

# COOLEST COMPANY INDEX

Cities are getting really hot in summer. It's not just global climate change causing it. Urban environments are hotter than they need to be because there is too much dark asphalt and not enough trees or light surfaces. Extreme heat causes buildings to consume vast amounts of electricity to power AC, which releases CO2 emissions and can lead to summer blackouts. Extreme heat also causes more fatalities than all other weather events combined. These are the top 10 business in your city that have the coolest surface temperatures.

Rank	Company Name	Address	Heat Score
1			10
2			12
3			15
4			17
5			18
6			19
7			20
8			22
9			23
10			

## How much energy do you use compared to your neighbors?

Position	Apartment Number	kWh Last 7 Days	Message
Most energy efficient apartment	1st #12	98 kWh	Great job!
	2nd #5	112 kWh	Great job!
	3rd #11	123 kWh	Great job!
	4th #3	131 kWh	Great!
	5th #6	136 kWh	Great!
	6th #1	142 kWh	Great!
Average apartment's energy use	7th #8	149 kWh	Not bad!
	8th #2	155 kWh	Room for improvement!
	9th #4	173 kWh	Room for improvement!
	10th #9	228 kWh	Room for improvement!
	11th #10	273 kWh	Room for improvement!
Least energy efficient Apartment	12th #7	398 kWh	Room for improvement!

[Learn how to improve your rank](#)

Apartment energy use is ranked by apartment number.



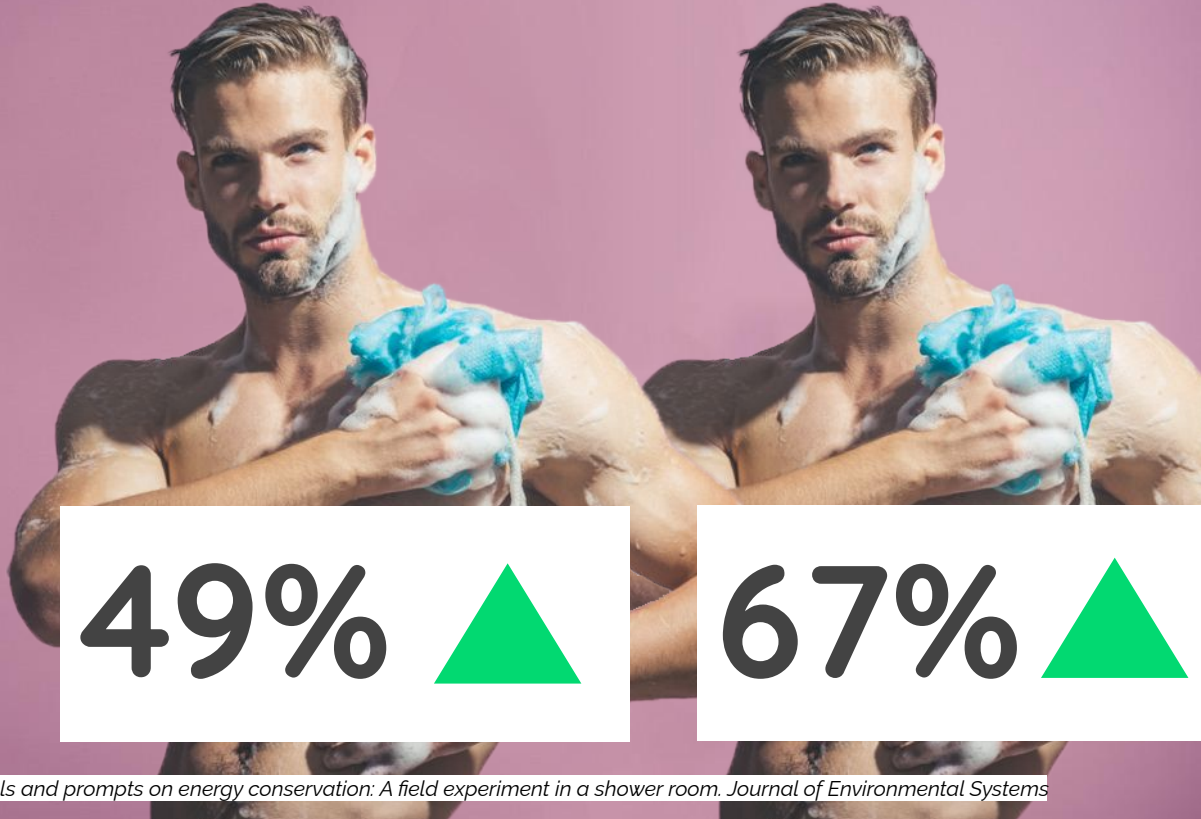
# Imitation

3 →



## Soaping up

Please help  
save water and  
turn off the  
shower while  
soaping up.



49% ▲

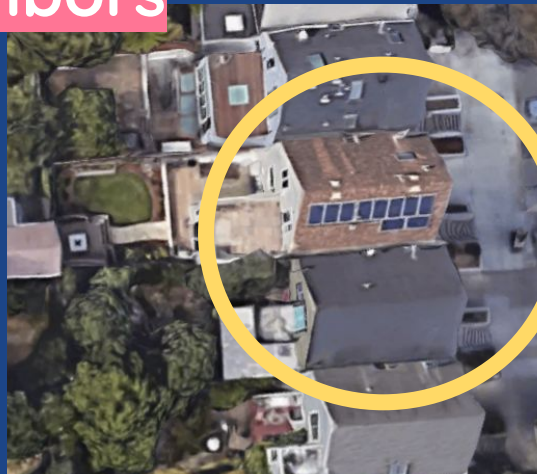
67% ▲

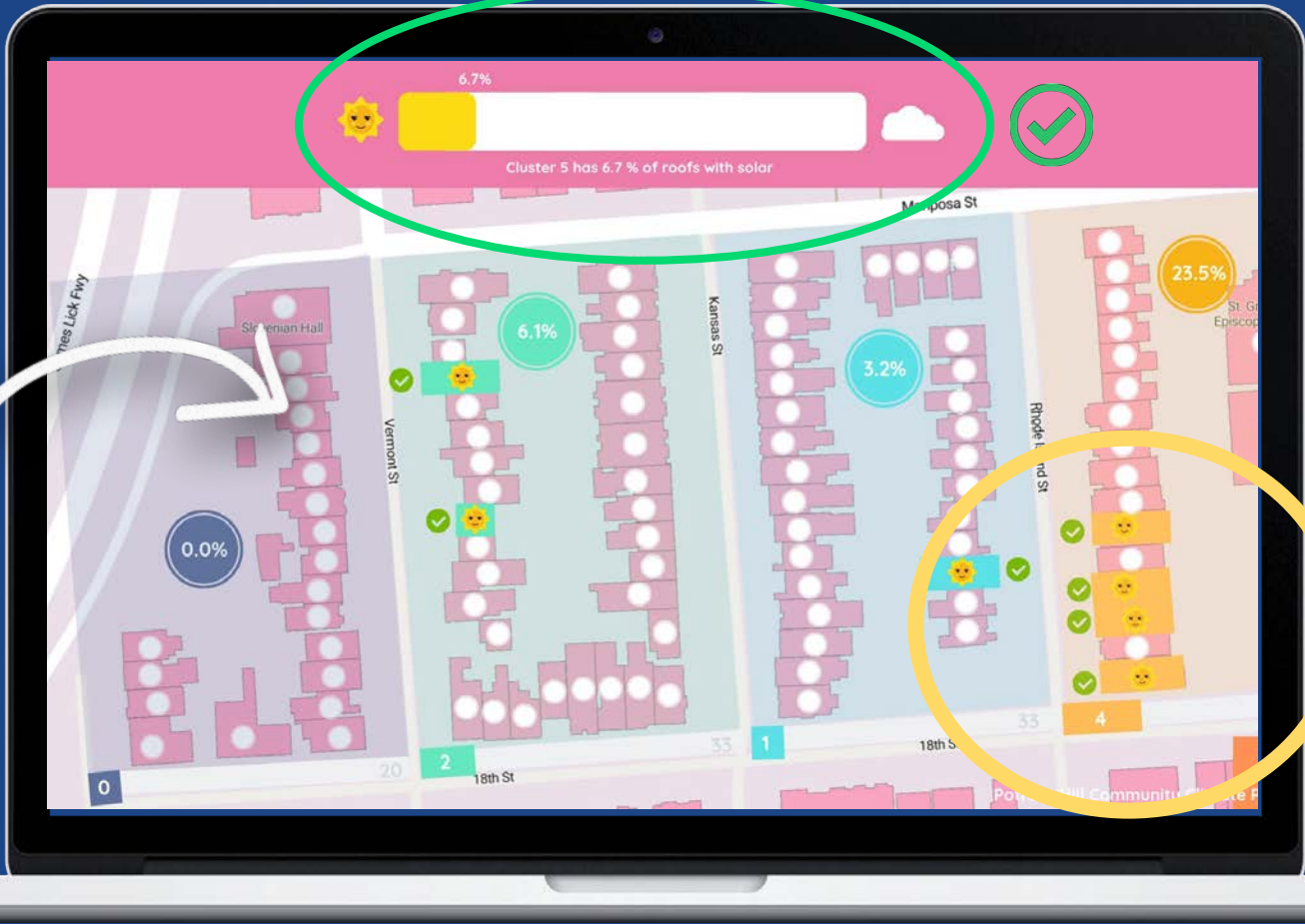
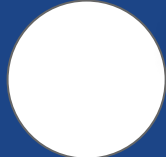
# Social imitation

People **copy each other** all the time



# Neighbors







Here's your house:

You have three badges available for big-ticket CO2-slaying items – that's getting off gas, switching to an electric vehicle, and installing solar.



112 Sunnyside Ave



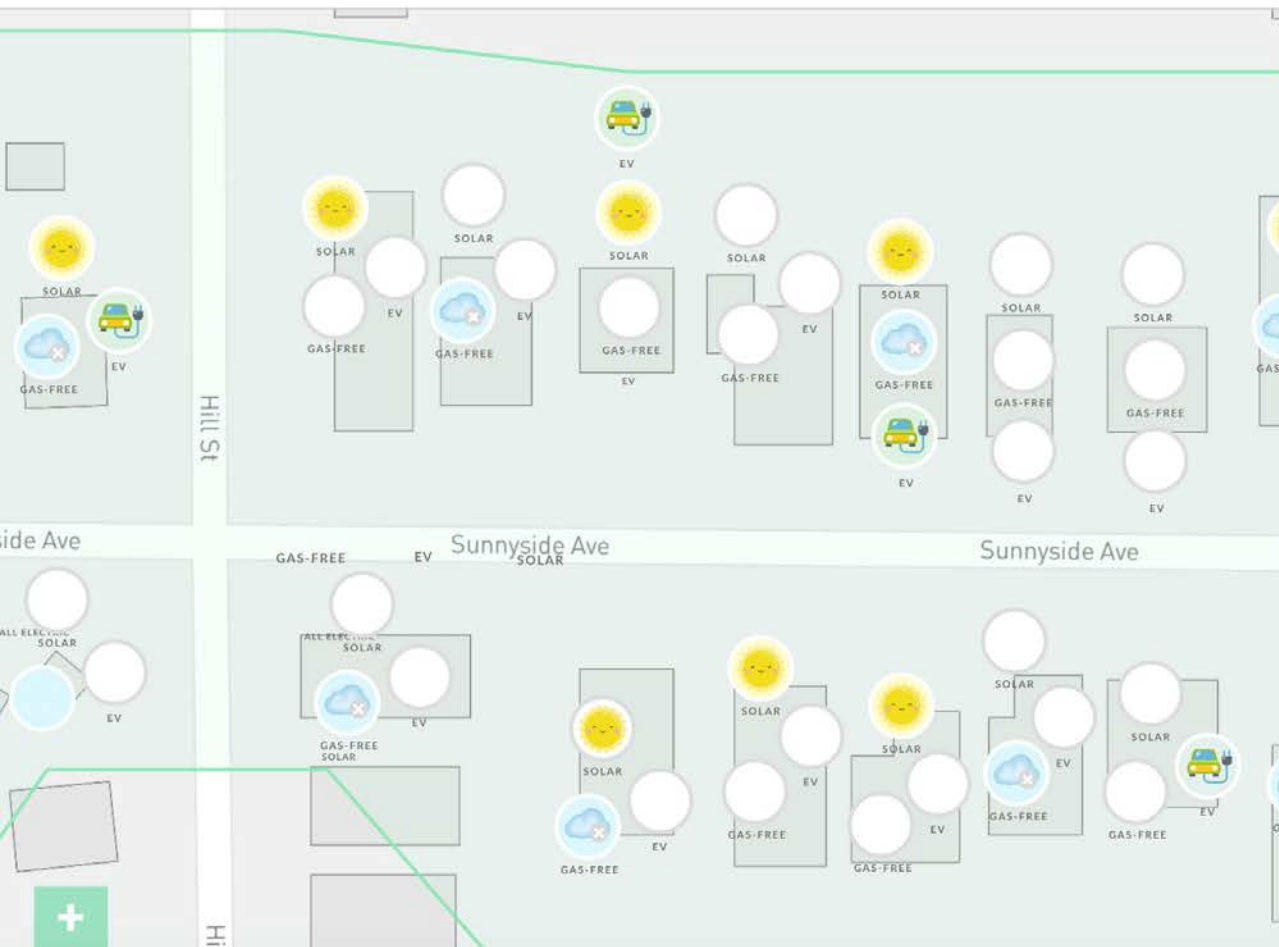
Electric  
Vehicle



Gas-free



Solar



### Community chat



**Gloria Deen**

Has anyone used the local heat pump installer? I just got a quote and wondering if he was the best one to go ahead with.

12 Comments



**Barry Smith**

What are your thoughts on the new electric cars? Wondering if to buy new or second hand. Do the batteries wear down much?

3 Comments



**Anjelica Schwartz**

I have a question: I would like to convert a shed into a house (a shouse). I'm looking at the frame being in metal (and load bearing for the roof) then filling walls with heat treated wood

5 Comments

# Climate Upgrade Performance

Woodleaf & Eunice Ave

73

Homes



SOLAR

15 🏠

18

37

55

73 🏠

21%



GAS-FREE

?

18

37

55

73 🏠



EV

?

18

37

55

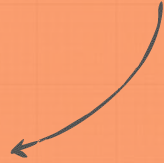
73 🏠





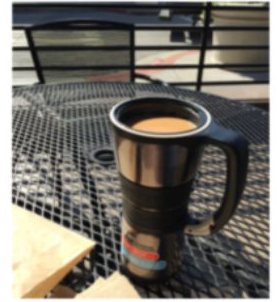
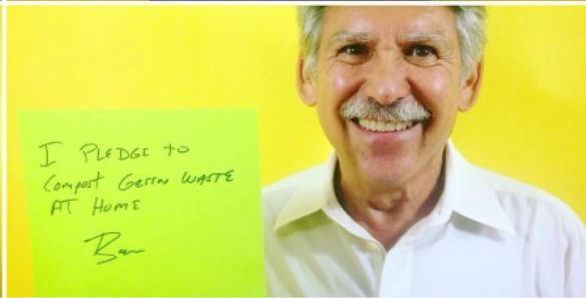
4

**Trust**



# Pledges





Pledge Met! Target: eliminate coffee cups from this stack (lower right)! Umm, on-the-go lifestyle habits proving challenging to change. [Edit caption](#)

My zero waste pledge is to ...

*I pledge to . . . .*





5



**Groups**



# 100 DAYS TO #BEATPLASTICPOLLUTION



Say No To Single-Use

[Lead.me/bpp-sritsu](https://lead.me/bpp-sritsu)



Drowning In Plastic

[Lead.me/bpp-dip](https://lead.me/bpp-dip)



Clean Our Oceans

[Lead.me/bpp-coo](https://lead.me/bpp-coo)













Meet The Reusables

[Lead.me/bpp-mtr](https://lead.me/bpp-mtr)

# My Change Card

Give yourself a sticker for each time you've helped a person or household make these changes.

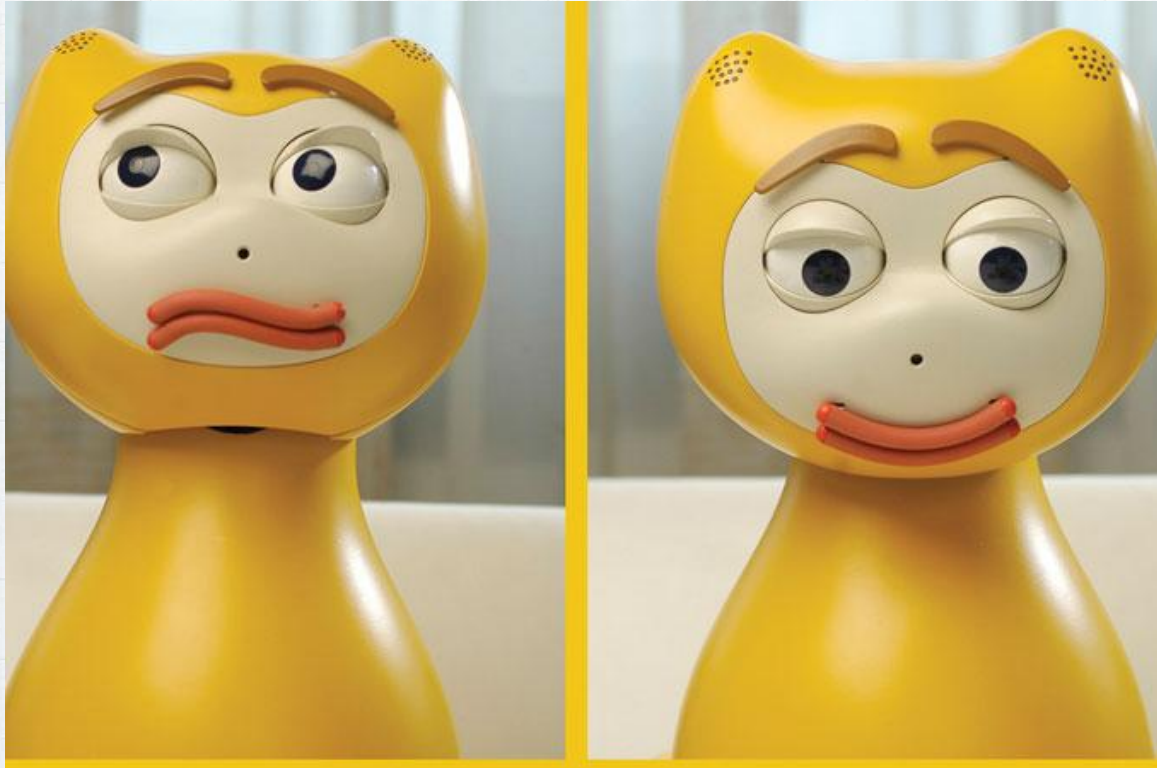
Psst! Change happens person to person. Influence the people you know.

 Houses turned off natural gas						5!
 Solar panels installed						5!
 Food gardens built						5!
 Cars switched to EV or bike						5!
 Eating plant-based						5!



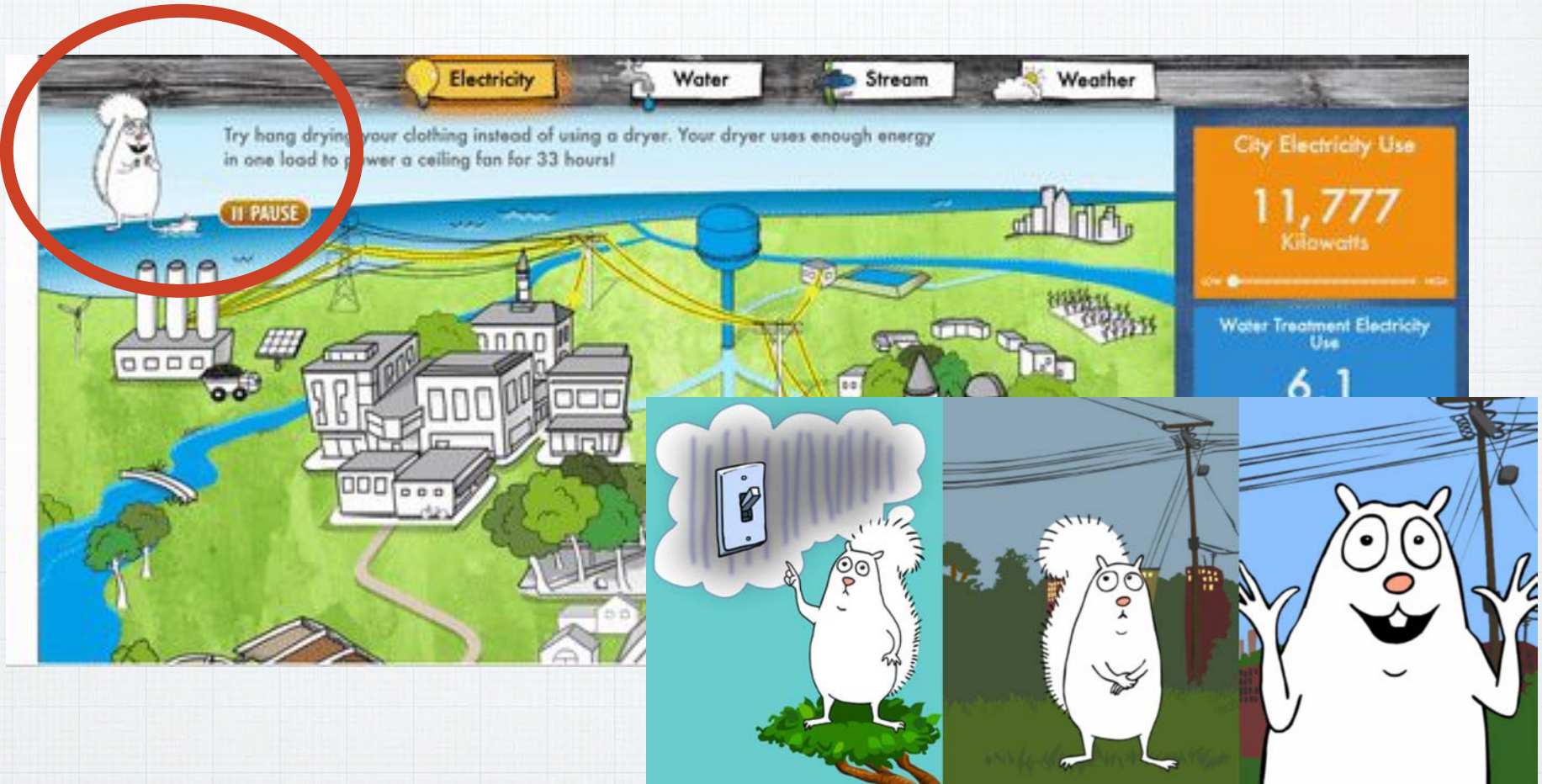
25!

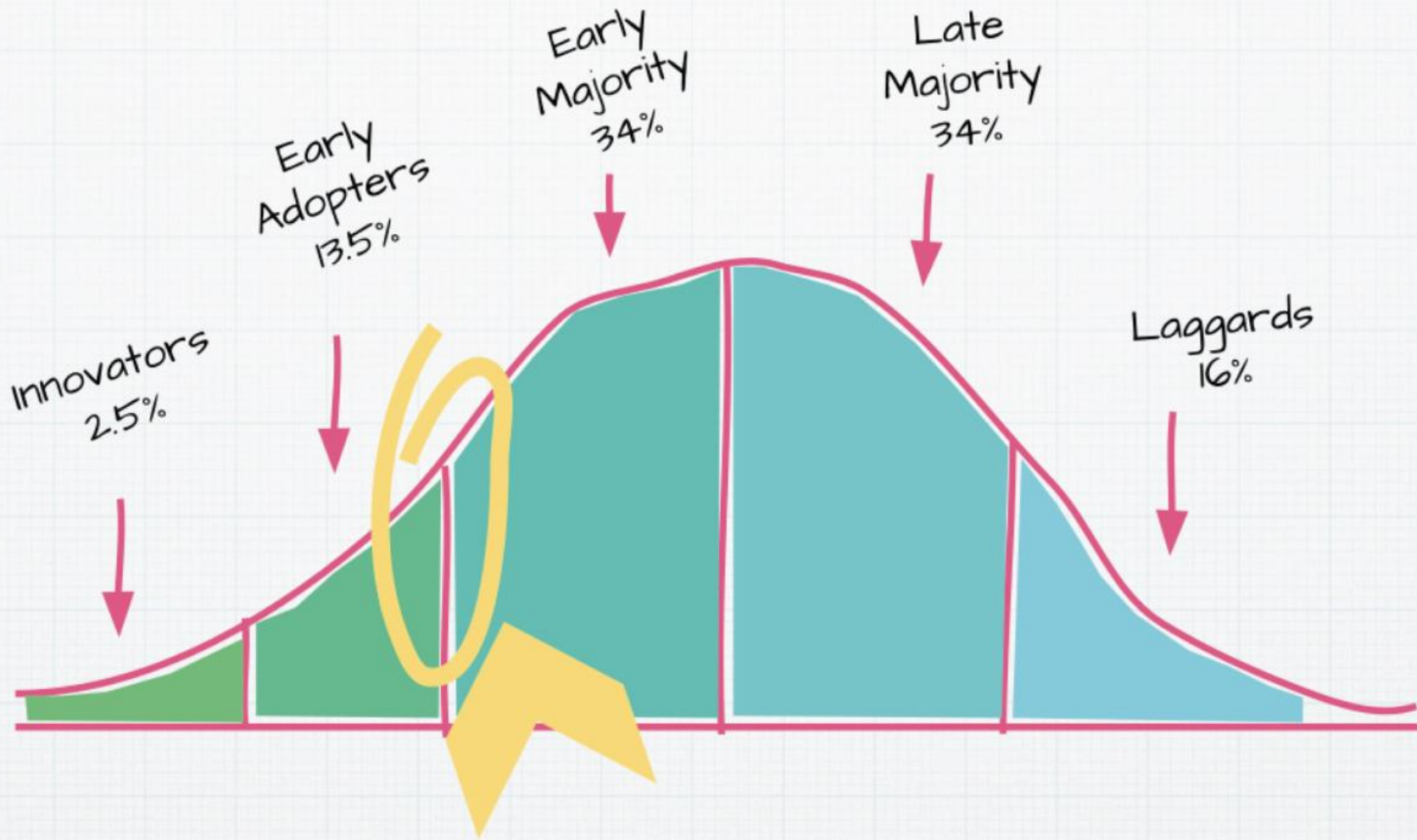
## The iCat



47% ▼

# Environmental Dashboard





# Our Potential



IMPACT  
MAKERS



# Ecological Imagination

Environmental imagination exercises lead to increased political engagement and pro-environmental behaviors

Building Good ENVIRONMENTAL CREDITIVE ALTERNATIVES

Inspiring a Sustainable World  
Measuring Citizens' Engagement in the Environmental Movement

John D. Wight and Michael T. Schmitt  
Baylor University

This research was supported through a Social Sciences and Humanities Research Council of Canada (SSHRC) grant to the second author.

Correspondence should be addressed to John D. Wight, Department of the History, Religion, and Philosophy, 6000 University Drive, Baylor, Station 600000, Waco, TX 76798. E-mail: [jwight@baylor.edu](mailto:jwight@baylor.edu)

\*All data are open access available here: <https://doi.org/10.1017/etp.2020.1>

Environmental credit: 1 and 2 are available here: <https://doi.org/10.1017/etp.2020.1>



# Earth Imagination Day

Imagine - Inspire - Engineer



WHAT'S YOUR  
"I HAVE A DREAM..."  
FOR THE PLANET?

#EarthImagination

# Earth Imagination Toolkit

Let's re-imagine, re-invent, and  
re-design the ecologically harmonious  
world we do want



## What makes up an eco-city?



Green roofs



Shading by trees  
and vines



Electric cars, trains,  
buses, and trucks



Electric charging stations  
for bicycles and cars



Green walls



Wetlands to treat  
waste water



Natural gutters and swales  
to absorb rainfall runoff



Art to make  
it beautiful



Nice lighting



## Idea Storm

Come up with one hundred ideas for what it will take to reach your vision of a vibrant ecologically harmonious world. Add your ideas for how to get there, branching off the circle in the middle of the page. Don't hold back - throw down everything you can think of! You never know which idea could be your special calling.



## What does an eco city NOT have?



No disposable plastic  
packaging that can  
be littered



No large concrete  
expanses or large  
paved surfaces



No gas or petrol fuel  
stations, coal power  
stations, or pipelines



No large black asphalt  
parking lots and dark  
colored surfaces



No animal  
factory farming



No over-abundance  
of parking spaces  
or cars

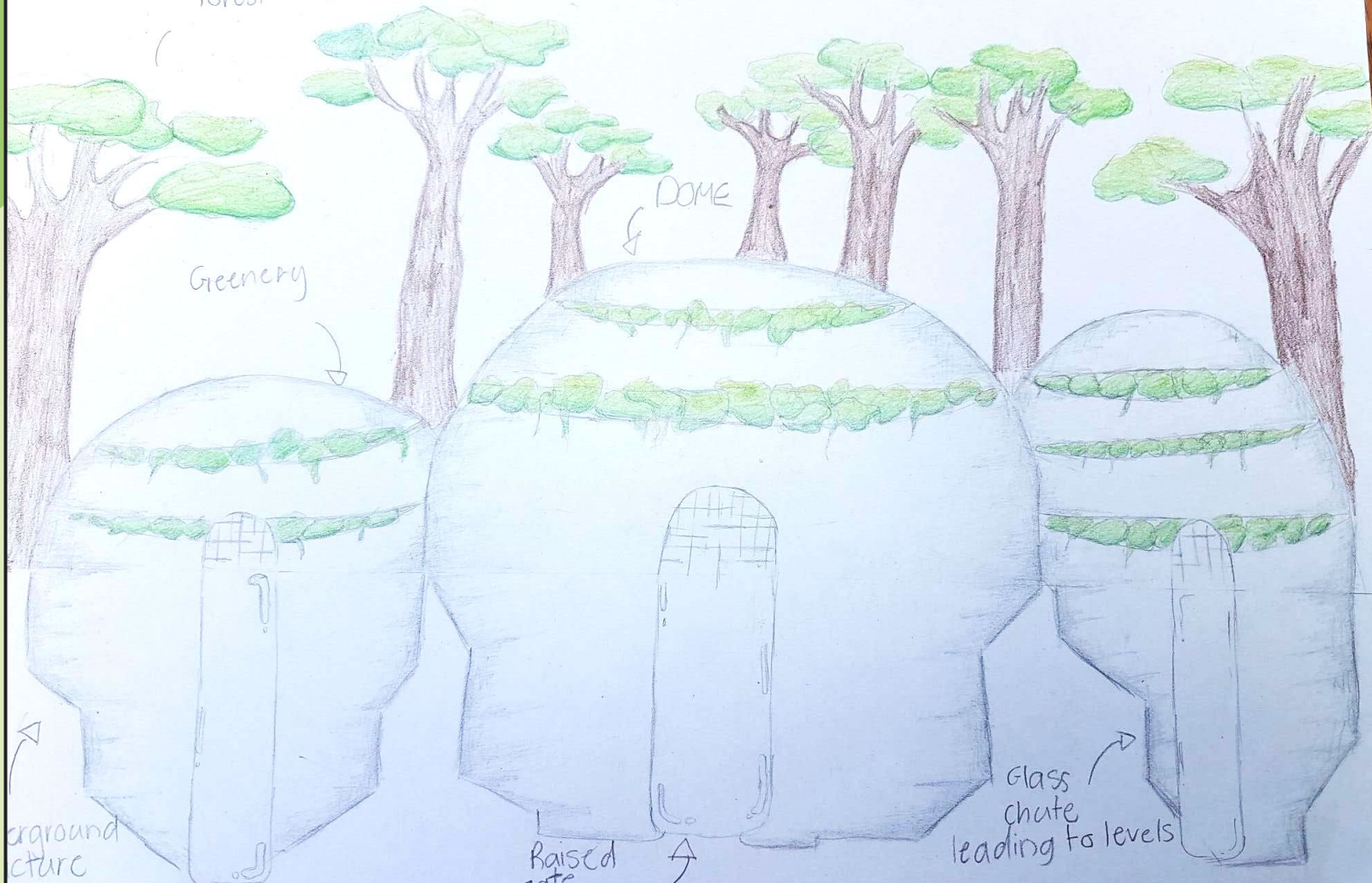








Forest



DOME

Greenery

Subground structure

Raised gate

Glass chute leading to levels

HOW DOES A  
CHILD'S EARTH  
IMAGINATION  
PROJECT  
INFLUENCE THE  
WHOLE FAMILY?



THIS IS WHAT  
PARENTS SAID



“(Our daughter) has taught us so much about sustainability and we’ve made many changes in our house and life as a result.

We’re all so excited about what she’s learning and grateful to her for teaching us.





We are putting a water tank  
in our garden and solar  
panels on the roof.

We've joined a food co-op  
which means less packaging  
and more sourcing food from  
local farmers. We have also  
started composting.



“We have cherished spending time with (our child) to watch her interpret concepts into action. When we went for a walk during the day and she saw rubbish in the creeks and wanted to clean them up.”

- PARENT OF  
ECO-IMAGINEER, FAMILY 1



What would a  
“Before and After”  
of our communities look like?

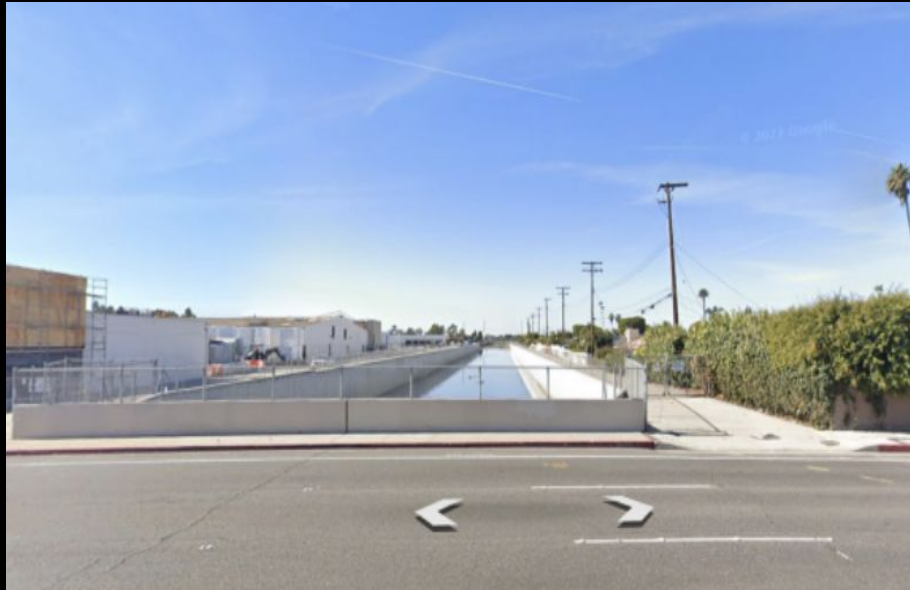
BEFORE



AFTER



**BEFORE**



**AFTER**



BEFORE



AFTER



BEFORE



AFTER



BEFORE



AFTER





BEFORE



AFTER



**BEFORE**

**Estonia, Tallinn 27.03.2022**



**AFTER**

**Estonia, Tallinn 27.07.2122??**



BEFORE



AFTER



**BEFORE**



**AFTER**



“The practical dreamers have always  
been, and always will be, the  
pattern-makers of civilization.”

- Napoleon Hill



“Over the long term, the future is  
decided by optimists.”

- Kevin Kelly, Author



