

Welcome to the City of Phoenix Climate Action Plan Draft 2021 Youth Workshop

June 26, 2021



C4O
CITIES

Climate Strike



Sept 20, 2019 - over 1000 participants

Introduction



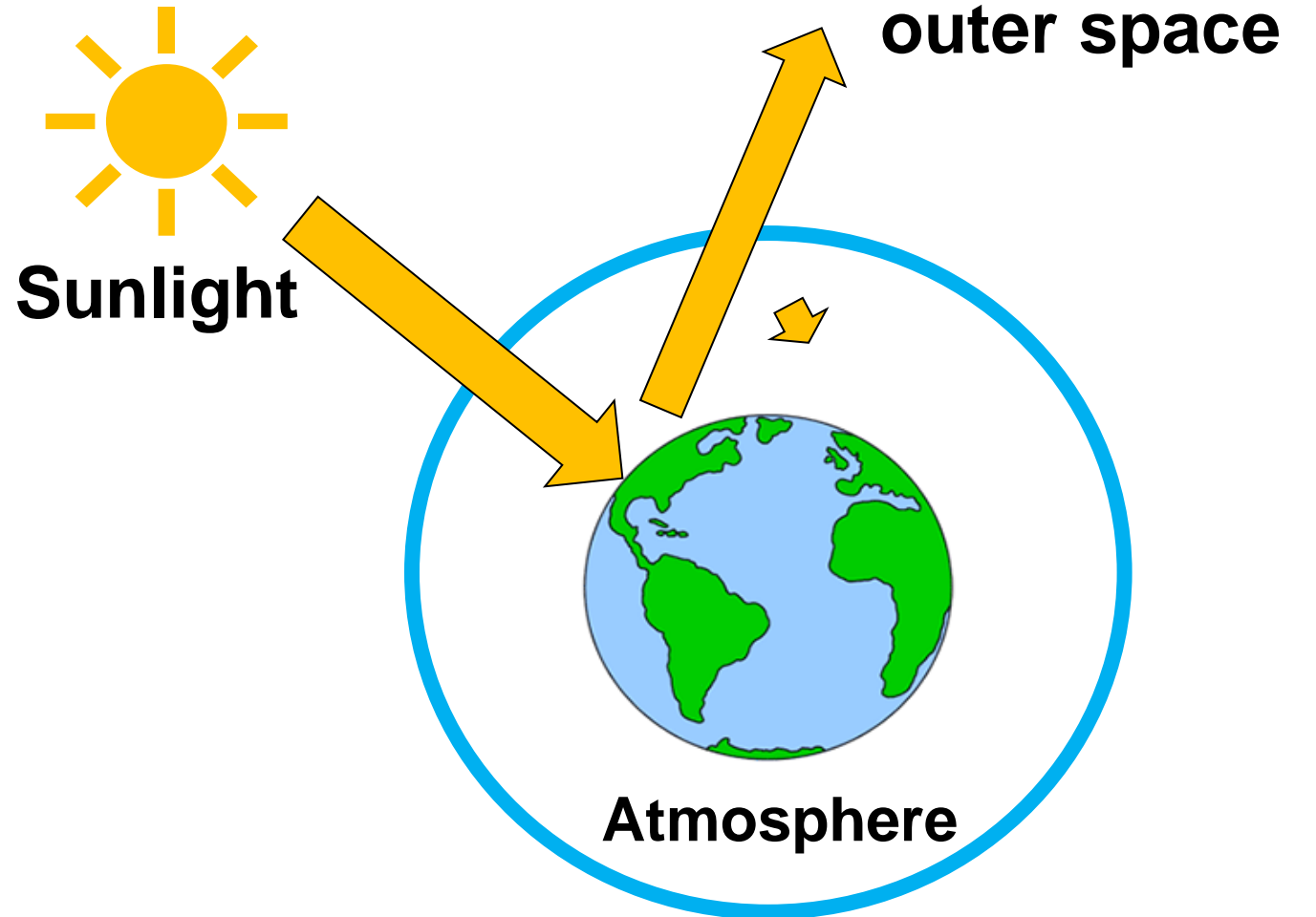
- Phoenix joined **C40 Cities** in Feb. 2020
- Mayor Kate Gallego affirmed Phoenix commitment to the **Paris Climate Agreement**
- C40-compliant Climate Action Plan by Dec 2021



Introduction - Why Greenhouse Gases?



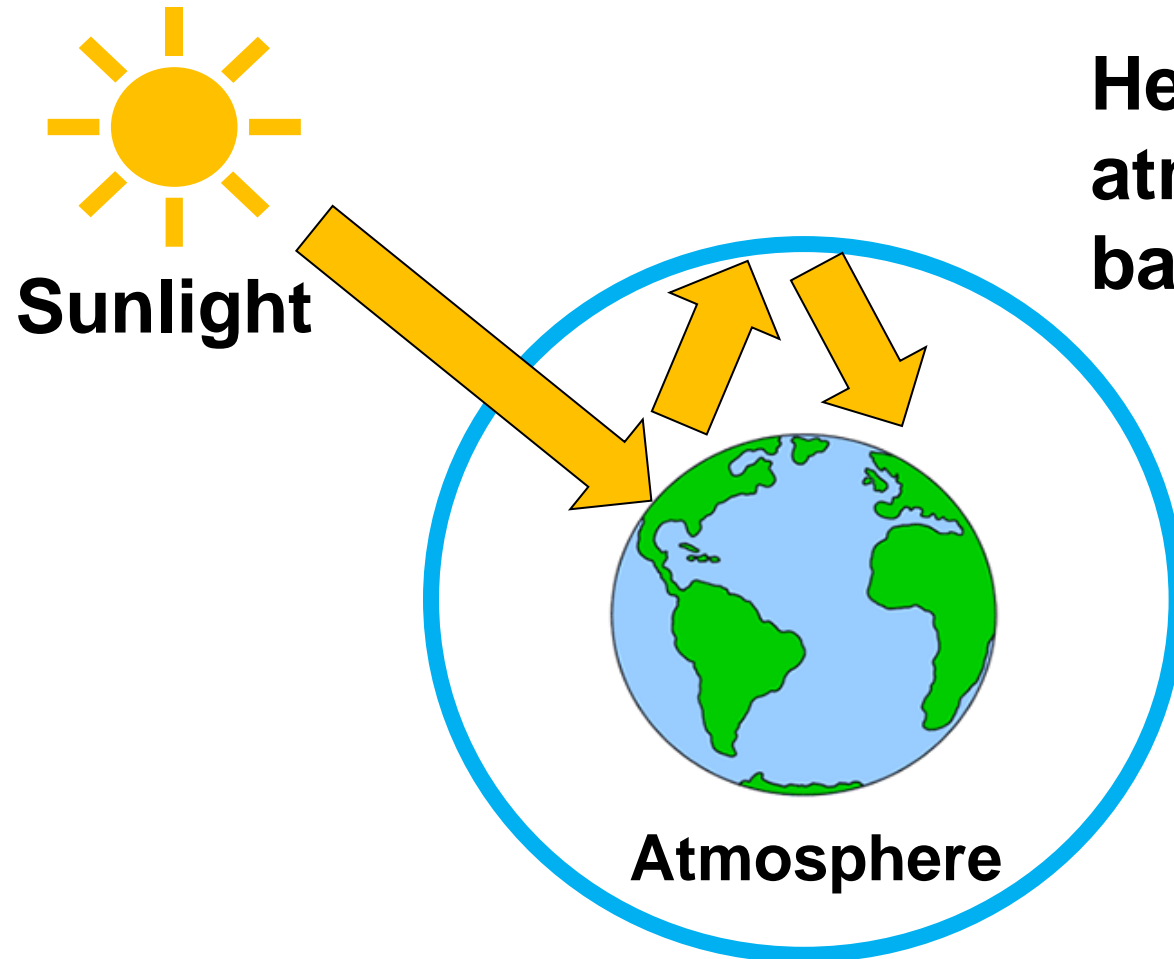
Greenhouse Effect



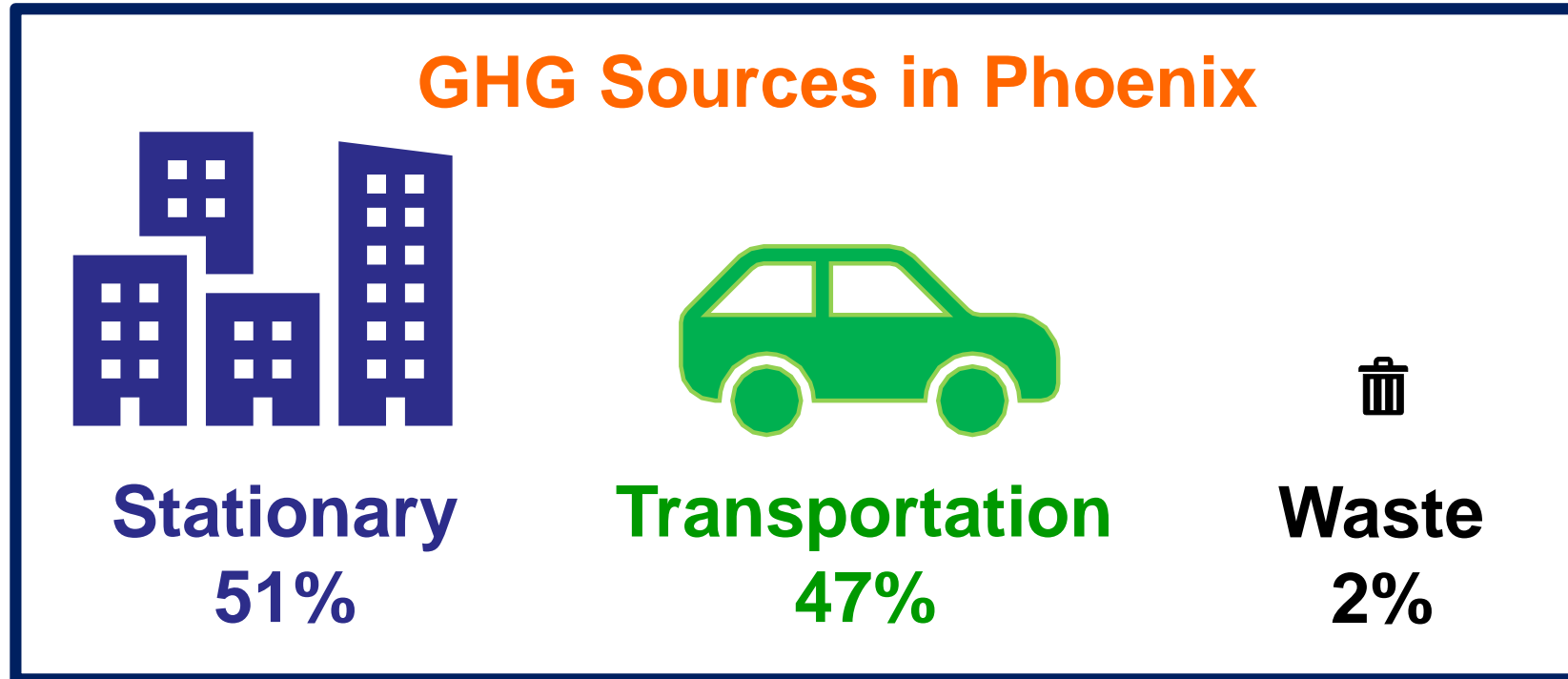
Introduction - Why Greenhouse Gases?



More GHGs in atmosphere means more heat for us

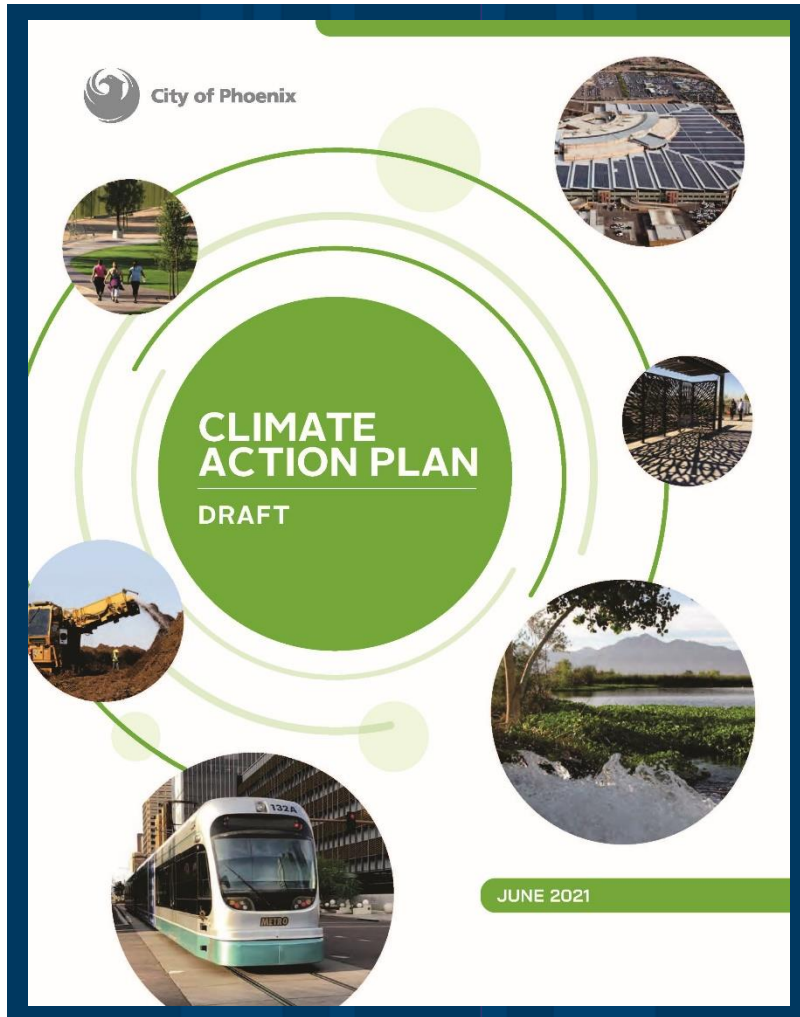


Heat stays in atmosphere and goes back to surface



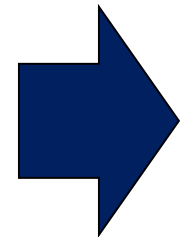
The largest sources of GHGs are from generation of electricity and gasoline fuel.

Climate Action Plan Draft

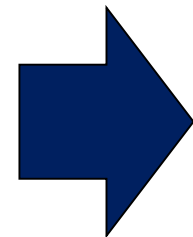


phoenix.gov/climate

Climate Action Planning



- Stationary Energy Sector**
- Transportation Sector**
- Waste Sector**



- Air Quality**
- Local Food Systems**
- Heat**
- Water**

Stationary Energy Goals



2050 Goal:



New buildings are
Net Positive
in energy & materials



15
vibrant compact
complete centers

Goal 1
Municipal Operations
net-zero GHG
emissions by 2035.

Goal 2
Three new
conservation and
renewable-energy
programs by 2025.

Goal 3
Promote development
of **microgrids**.

Goal 4
Net-Positive
Buildings by 2050.

Goal 5
Net-zero electrical
grid for all by 2050

Transportation Goals



2050 Goal:



Transit
in every Phoenix
neighborhood



90%
of residents
within 10-minute
walk of transit



40%
of commutes by
walking, biking,
transit & car-share

Goal 1

Implement the city's Complete Streets Policy and Active Transportation Program to encourage **multiple modes of transportation.**

Goal 2

Increase the use of **low carbon fuels.**

Goal 3

Increase the adoption and rollout of **electric vehicle and electric-vehicle charging stations.**

Goal 4

Reduce the number of **single occupancy vehicle trips taken.**

Waste as a Resource Goals



2050 Goal:



Zero Waste

through participation
in the circular economy



40%

Waste diversion
by 2020

Goal 1

Implement programs to increase the **reuse and recovery of waste materials** and promote social and economic value.

Goal 2

Reduce GHG emissions resulting from degradation of waste by increasing **landfill gas capture**.

Goal 3

Increase waste-diversion **participation by all residents and businesses**.

Goal 4

Transition to **green alternatives** from environmentally hazardous materials.

Goal 5

Expand **brownfield redevelopment along the Rio Salado** in Phoenix.

Goal 6

Reduce GHG emissions from water and wastewater treatment by **capturing biogas from treatment processes**.

Local Food Systems Goals



2050 Goal:



Goal 1
All people living in Phoenix should have enough to eat and have access to **affordable, healthy, local, and culturally appropriate food.**

Goal 2
Businesses that produce, process, distribute, and sell local and healthy food should be recognized as integral to the economy and **encouraged to grow and thrive** in Phoenix.

Goal 3
Growing food in Phoenix and the region should be **easy and valued**, for personal or business use.

Goal 4
Food-related waste should be prevented, reused, or recycled via sustainable food production practices that maintain a healthy environment.

Goal 5
Develop food policies and actions that address local and global challenges posed by climate change, urbanization, political and economic crises, population growth and other factors.

Local Food Systems – Quickstart Example



Convene local food producers with city staff, leaders, and elected officials to build trust and understanding by 2020.



Maricopa County
COMMUNITY FARMER ROUNDTABLE

- **Farmer Roundtable in October 2020 with Local First Arizona**
- **Steering Committee member for Coalition for Farmland Preservation**

Phoenix Food Facts

- **Food desert: poverty rate above 20% where more than 33% are more than 1 mile from fresh and healthy food.**
- **43 food deserts in Phoenix**
- **75% of food deserts in Maricopa County**
- **42% of the population in Phoenix is in a food desert**

Local Food Systems – Key Achievement



Maricopa County Food System Coalition (MarCo)

- **Voluntary community organization with mission of supporting and growing a food system that is healthy, equitable, sustainable, and thriving.**
- **Completed county's first comprehensive regional food assessment.**



Develop Consistent Messaging



Support the Adoption of
Policies and Regulations that
Strengthen the Community
Food System



Foster Urban Food Production



Reduce Food Loss and Recover
Food Waste

Local Food Systems – Community Impact



Spaces of Opportunity Farm and Garden



Air Quality Goals



2050 Goal:



Clean Air

Out-performing
federal standards



Excellent or
good visibility on
90% of days

Goal 1

Meet U.S. EPA National Ambient Air
Quality Standards (NAAQS)

Heat Goals



2050 Goal:



Everyone within a
**5-Minute
Walk**
of a park or pathway



25%
Tree and
shade canopy

Goal 1:

Create a **network of cool corridors** in vulnerable communities to facilitate movement from residents' homes to their places of employment, education and play.

Goal 2:

Increase **shade** provided by trees or constructed shade in parks, streets and right-of-way.

Goal 3:

Provide **resources and services** to residents to manage heat.

Goal 4:

Increase the use of high albedo, or **reflective, materials** in infrastructure projects.

Goal 5:

Develop **HeatReady** certification for cities.

Water Goals



2050 Goal:



100-Year

Clean & reliable
supply of water

Goal 1:
Identify and implement
infrastructure projects to
ensure **water security**.

Goal 2:
Improve **conservation** of water
resources by improving stormwater
management, optimizing water use,
conducting water audits, and utilizing
wastewater.

Goal 3:
Increase **outreach** and provide
programs to residents and
businesses to reduce water use.

Raffle Winners

Thank you for your participation in the workshop!

- **Two participants** will each win one \$50 e-gift card.
- Winners will receive an email from Rosanne Albright next week.

**Winners will be announced
on our Twitter.**

@phxenvironment





AZ YOUTH CLIMATE COALITION



HOW DO I GET INVOLVED?

- ★ Fill out an organizer form:



Follow us on social media at
@azyouthclimate

We're on Instagram, Twitter, and
Facebook!



CLEAN ENERGY SOURCES



OVERVIEW:

- ★ Solar Energy
- ★ Wind Power
- ★ Hydroelectric Power
- ★ Geothermal Energy
- ★ Nuclear Energy (not clean)



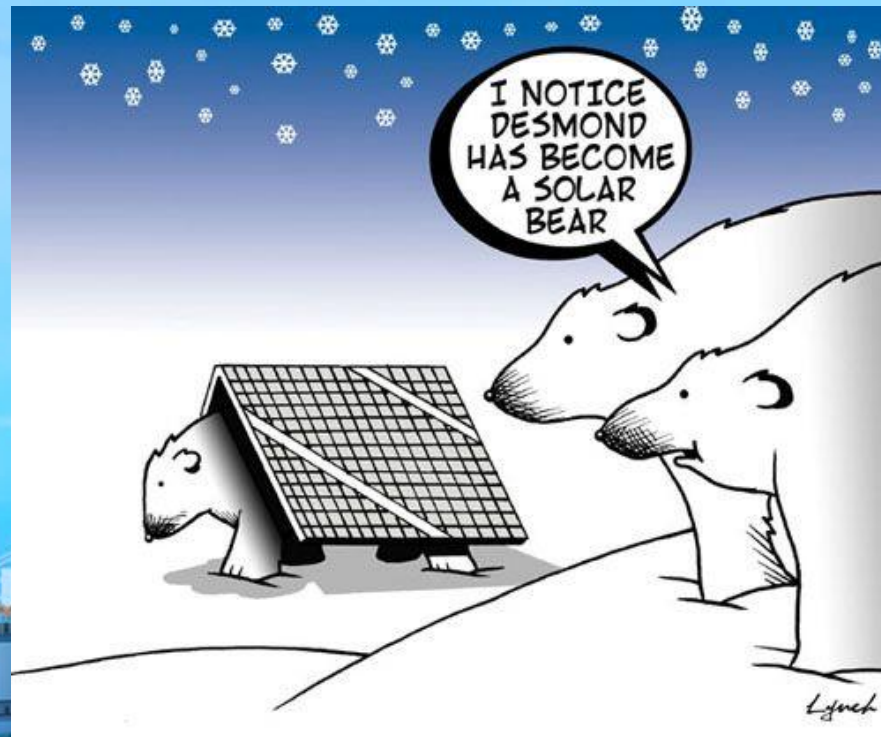
SOLAR POWER

**THAT MOMENT WHEN
YOU GET YOUR POWER BILL**



AND YOU HAVE SOLAR

HOW DOES IT WORK?



- ★ We have tons of sunlight in AZ! Might as well use it!
- ★ How do solar panels work?
 - Sunlight hits the panels, activating the cells on the panel. Those cells make an electric current, which is then converted to energy that you can use!
- ★ Does anyone have solar panels?



PROS AND CONS OF USING SOLAR ENERGY



PROS

- ★ Renewable energy source!
- ★ Saves money on electric bill long-term
- ★ Long-lasting
- ★ Zero-waste

CONS

- ★ Immediate expense is a lot
- ★ Not good for on the move
- ★ Weather dependant



WIND ENERGY





HOW DOES IT WORK?

- ★ When the wind blows, a wind turbine converts the kinetic energy of the wind into usable electricity.
- ★ Where have you seen wind turbines?



PROS AND CONS OF USING WIND POWER



PROS

- ★ Renewable and really clean energy
- ★ Zero-waste

CONS

- ★ Dangerous to some wildlife (birds)
- ★ Large initial expense
- ★ Limited building space



HYDROELECTRIC POWER

I LOVE HYDROELECTRIC POWER

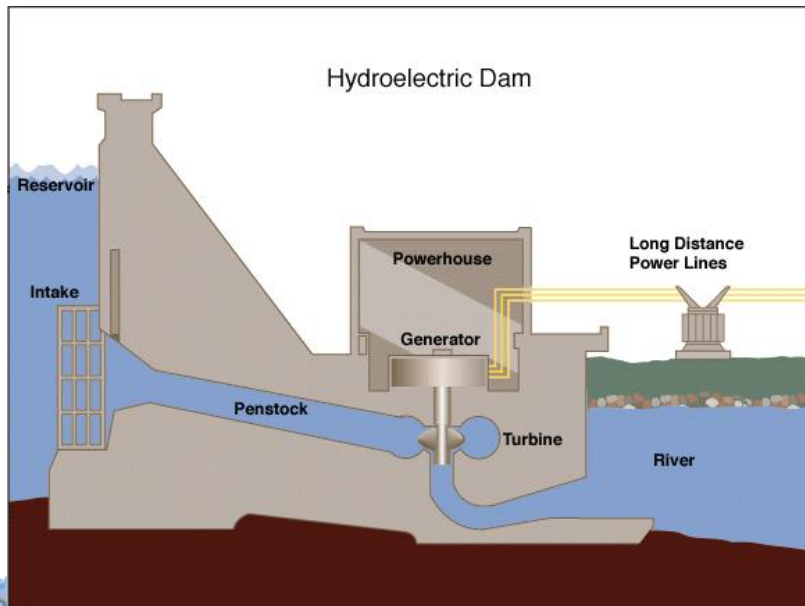


DAM IT



HOW DOES IT WORK?

Hydroelectric power is created through motion of water. Moving water rotates a turbine in a dam, which generates power that we can use! Has anyone been to Hoover Dam?





PROS AND CONS OF USING HYDROELECTRIC POWER

PROS

- ★ Renewable energy source
- ★ Clean energy source

CONS

- ★ May lead to environmental damage
- ★ Costly to build



GEO THERMAL ENERGY



**Geothermal
Energy**

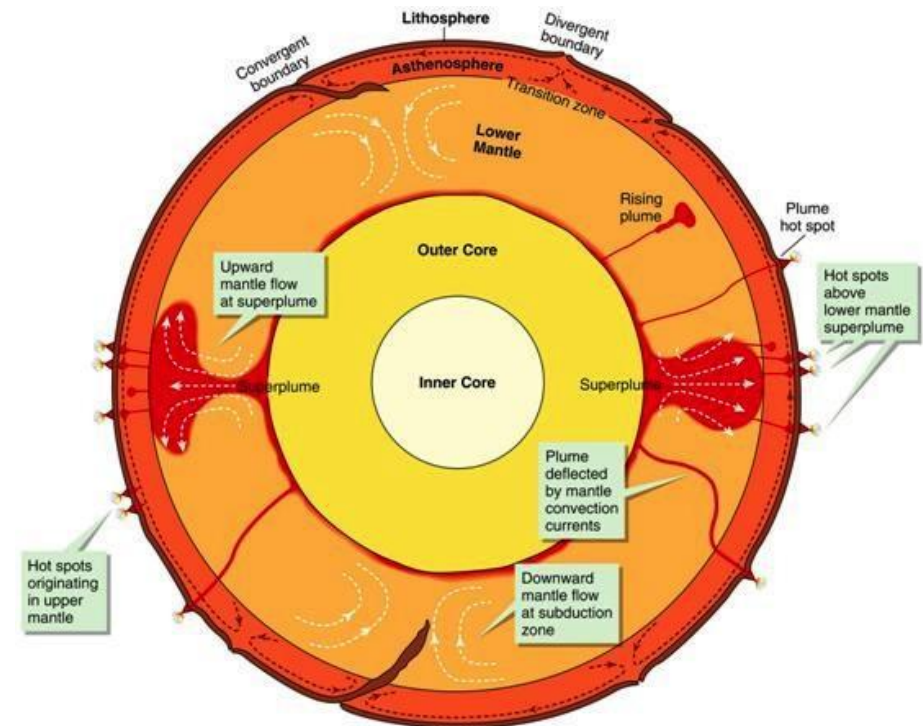


So hot right now

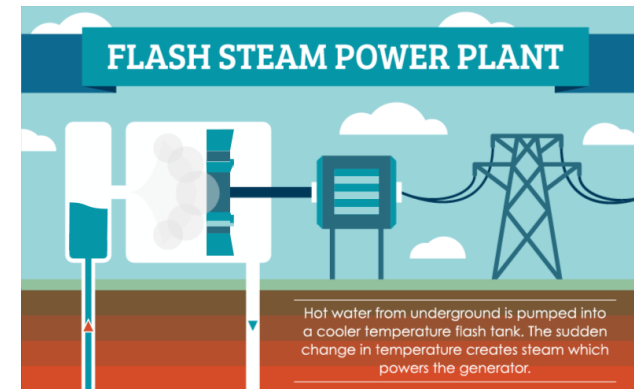
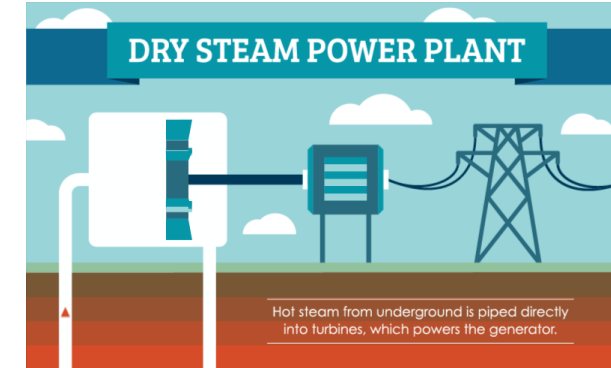


HOW DOES IT WORK?

- ★ “Geothermal Energy” means heat that is generated in the earth
- ★ Two methods:
 1. Radioactive decay of isotopes (primary)
 2. Friction and gravitational pull (secondary)
- ★ Radioactive decay in the core allows for temperatures to reach around 5,000°C
- ★ Magma is a good example



- ★ Two examples of geothermal power plants:
 - **Dry steam plants**-most common type of geothermal power plant
 - **Flash steam plants**-less common.
- ★ These pipes that transport water can also be used for heating and cooling buildings.





PROS AND CONS OF USING GEOTHERMAL ENERGY

PROS

- ★ Reliable source of power
- ★ Small land footprint
- ★ Renewable!

CONS

- ★ Location specific
- ★ High initial cost



NUCLEAR ENERGY

NUCLEAR POWER

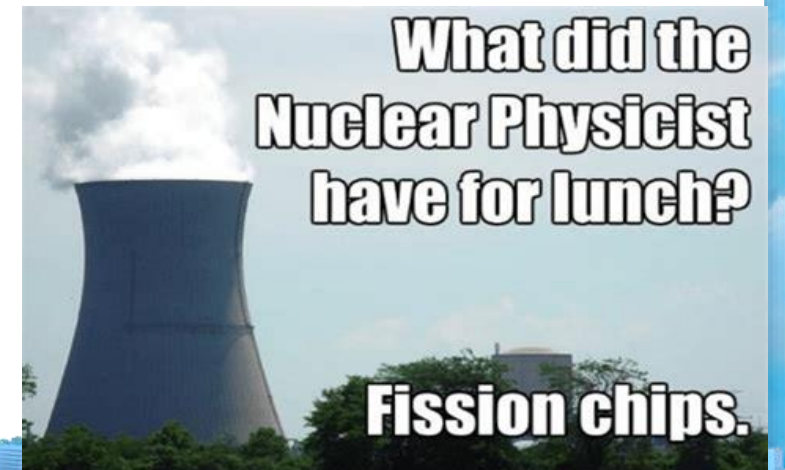


ISN'T BOHRING



HOW DOES IT WORK?

- ★ Energy in the nucleus, or core, of an atom
 - **Nuclear fission**, atoms are split to release that energy
- ★ Nuclear reactions occur which releases nuclear energy
 - Produces electricity in power plants
- ★ Not clean energy source: the fuel is **finite**





**WHY IS PUBLIC OPINION
GENERALLY AGAINST IT?**

- ★ Super Expensive
 - **capital vs operating** costs
- ★ They don't have an actual waste storage facility
 - Some people are scared about that
- ★ The fear of accidents (Chernobyl)
- ★ Fear of nuclear weapons

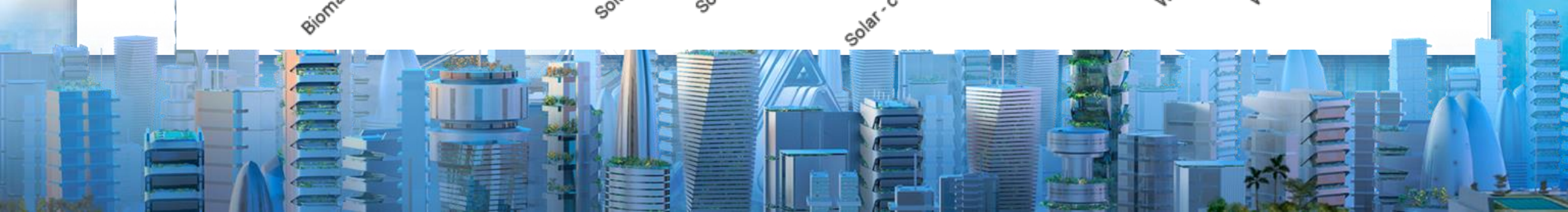
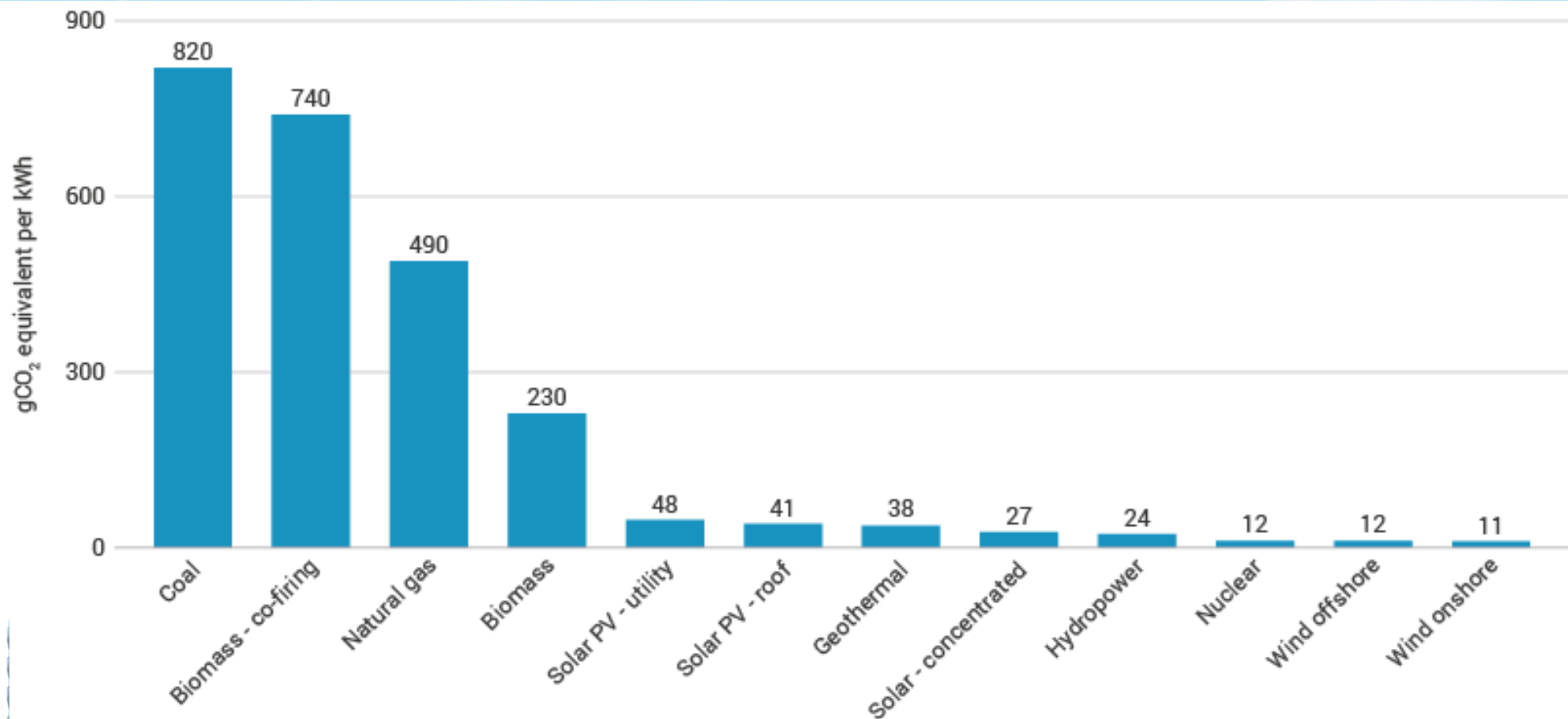


WHY IS NUCLEAR IMPORTANT IN COMBATING CLIMATE CHANGE?



- ★ Paris Climate Agreement says that the goal is to not raise temperatures by more than 1.5 °C but by 2030 that could surpass the level
- ★ Low-carbon source of energy
- ★ Produces a large amount of energy and is a good alternative to carbon power plants







PROS AND CONS OF USING NUCLEAR ENERGY

PROS

- ★ Require less maintenance
- ★ No carbon emissions
- ★ Can produce a substantial amount of energy (highest capacity factor)

CONS

- ★ Not clean (finite resources)
- ★ Expensive
- ★ Radioactive waste products
- ★ Uranium is nonrenewable and will eventually run out
- ★ Safety Risk (accidents)



PALO VERDE POWER PLANT

The image features a panoramic view of a futuristic city with various architectural styles, including tall skyscrapers and buildings with green facades. The sky is a deep, clear blue, filled with soft, white clouds and bright sunbeams radiating from the top left. The overall atmosphere is clean, bright, and optimistic. The text 'PALO VERDE POWER PLANT' is centered in the upper half of the image in a bold, yellow, sans-serif font.

- ★ Located in District 5 (Glendale, Chandler) Palo Verde Power Plant provides power to people in Arizona, Nevada, and Southern California.
- ★ It is currently shifting over to renewable energy sources like nuclear and solar.
- ★ This shows that we can shift over to using more renewable energy sources!





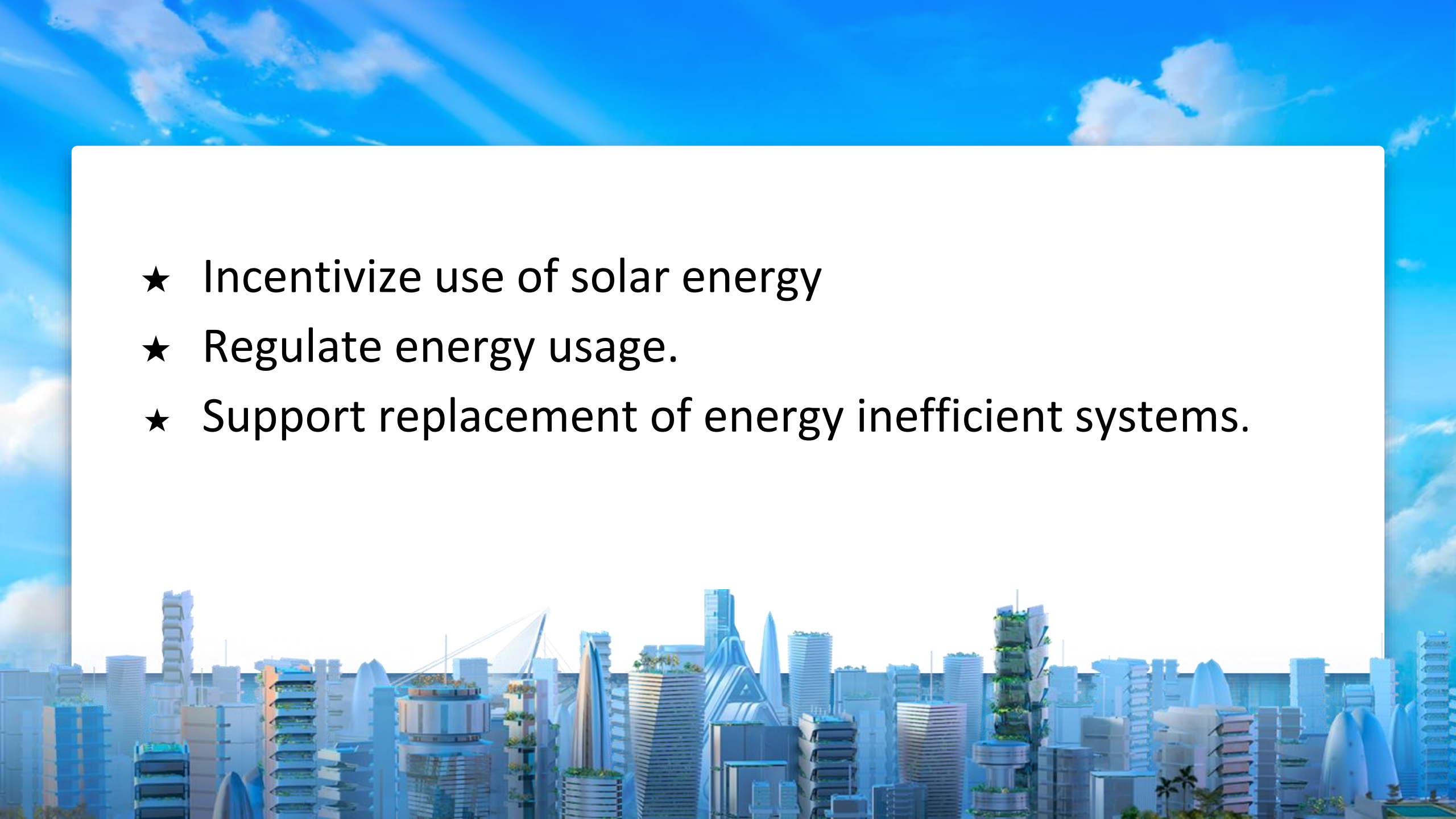
WHAT CAN YOU DO?

- ★ Learning about renewable energy sources!
- ★ Call/Email and/or email your local elected officials!
- ★ Sign petitions!
- ★ Voting!





WHAT CAN THE STATE DO?

- 
- ★ Incentivize use of solar energy
 - ★ Regulate energy usage.
 - ★ Support replacement of energy inefficient systems.

A vibrant, futuristic cityscape is shown from a low-angle perspective, looking up at a bright blue sky. The city features a variety of architectural styles, including tall, slender skyscrapers, rounded buildings, and structures with greenery integrated into their design. Sunbeams stream down from the top left, creating a dramatic, hopeful atmosphere. The overall color palette is dominated by blues and yellows, with the sunbeams providing a warm contrast to the cool sky.

THE END

Share your Opinions and Ideas

Climate Page, Survey, Future Workshop Information

www.phoenix.gov/climate

Submit questions to
climate@phoenix.gov



[@phxenvironment](https://twitter.com/phxenvironment)

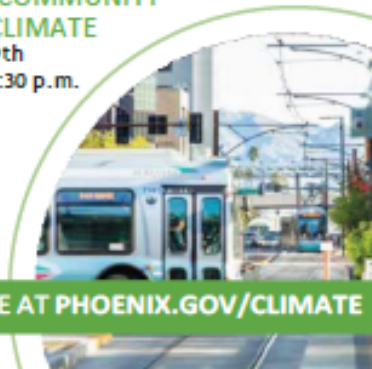


THE FUTURE OF PHOENIX DRAFT CLIMATE ACTION PLAN

Join the City of Phoenix and provide your input on addressing climate change. Share your concerns, needs, and ideas to co-create solutions. Your collaboration is needed to help the City determine priorities, needs, and opportunities to address climate change.

VIRTUAL WORKSHOP SERIES:

- | | |
|--|--|
| BUSINESS AND CLIMATE
June 16th
11:30 - 1:00PM | COUNCIL D7 AND D8
June 26th
10:00 - 11:30AM |
| WATER AND CLIMATE
June 17th
5:00 - 6:30PM | YOUTH CLIMATE
June 26th
3:00 - 4:30PM |
| HEAT AND CLIMATE
June 22nd
11:00 - 12:30PM | YOUR COMMUNITY AND CLIMATE
June 29th
5:00 - 6:30 p.m. |



Help plan the Future of Phoenix

REGISTER ONLINE AT PHOENIX.GOV/CLIMATE