



# Decreasing Carbon Emissions Through Alternative Energy Sources

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## INTRODUCTION

### The Problem

Over the past 200 years, we have seen a major influx of fossil fuel use as our main source of power. With the use of fossil fuels come major consequences. Byproducts such as greenhouse gases linger in our atmosphere, heating up the planet and causing many serious issues. Climate change is a problem that will continue to affect future generations of humanity on this Earth. **“200 million people will be displaced due to climate change by 2050”** (Yona, 2017).

## RESEARCH METHODOLOGIES

### Preliminary Research

- Examples of Each Stage**
- Recent abnormal weather phenomena
  - Data on rising temperatures (50 years past - now)

### Data Collection

- Annual energy consumption numbers for Palo Alto High School
- Communal support at other institutions going solar

### Action Research

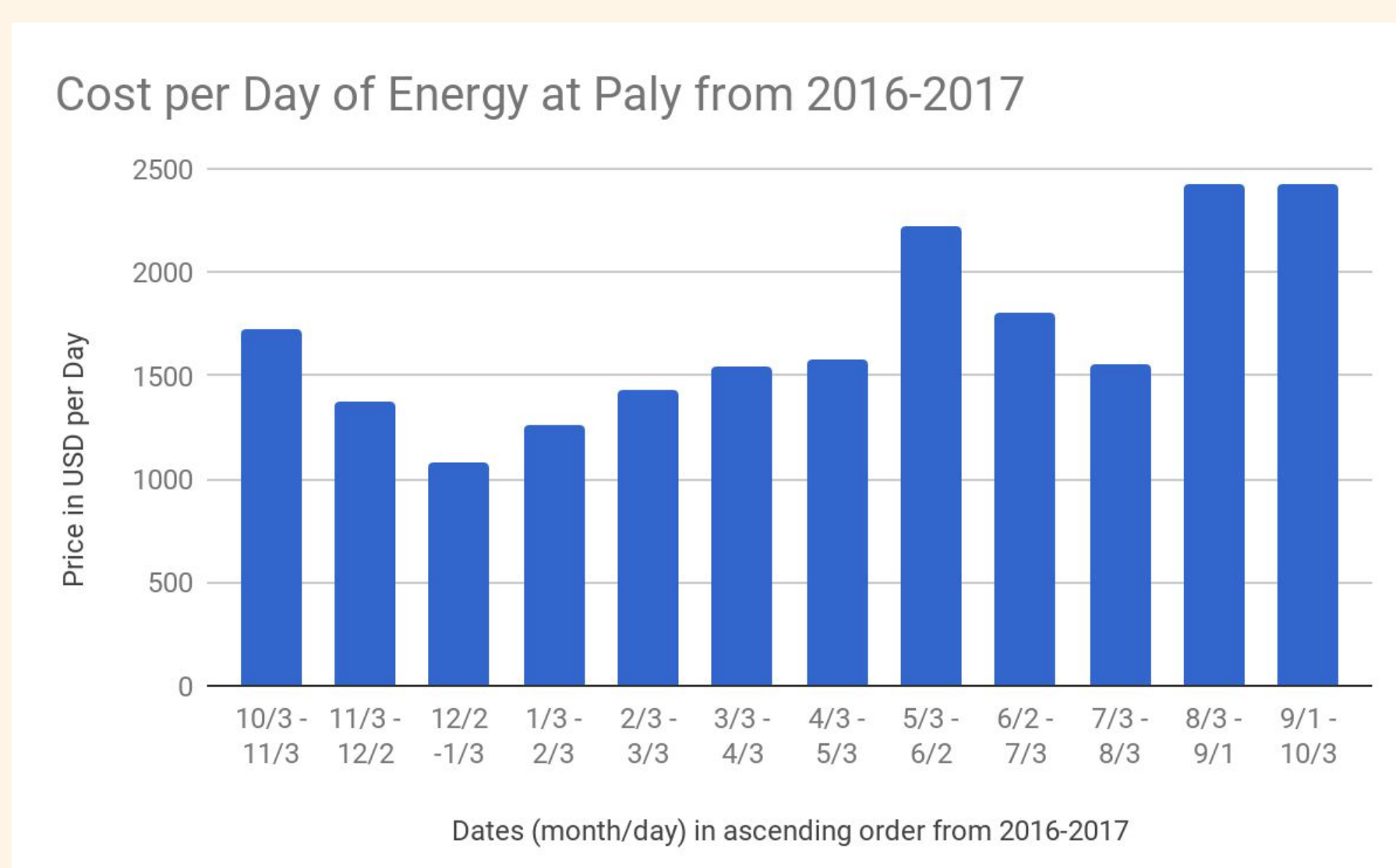
- Implementation of solar on Paly campus
- Leading community by example

## DATA AND FINDINGS

### Findings from Initial Background Research

- Solar does not give off carbon emissions
  - Solar is increasingly being used as a clean energy source.
- In the last 2 years, solar panels have increased in efficiency from 18.9% to 29.7%.
  - The higher the efficiency, the higher the capacity of energy production.

### Energy Consumption at Paly



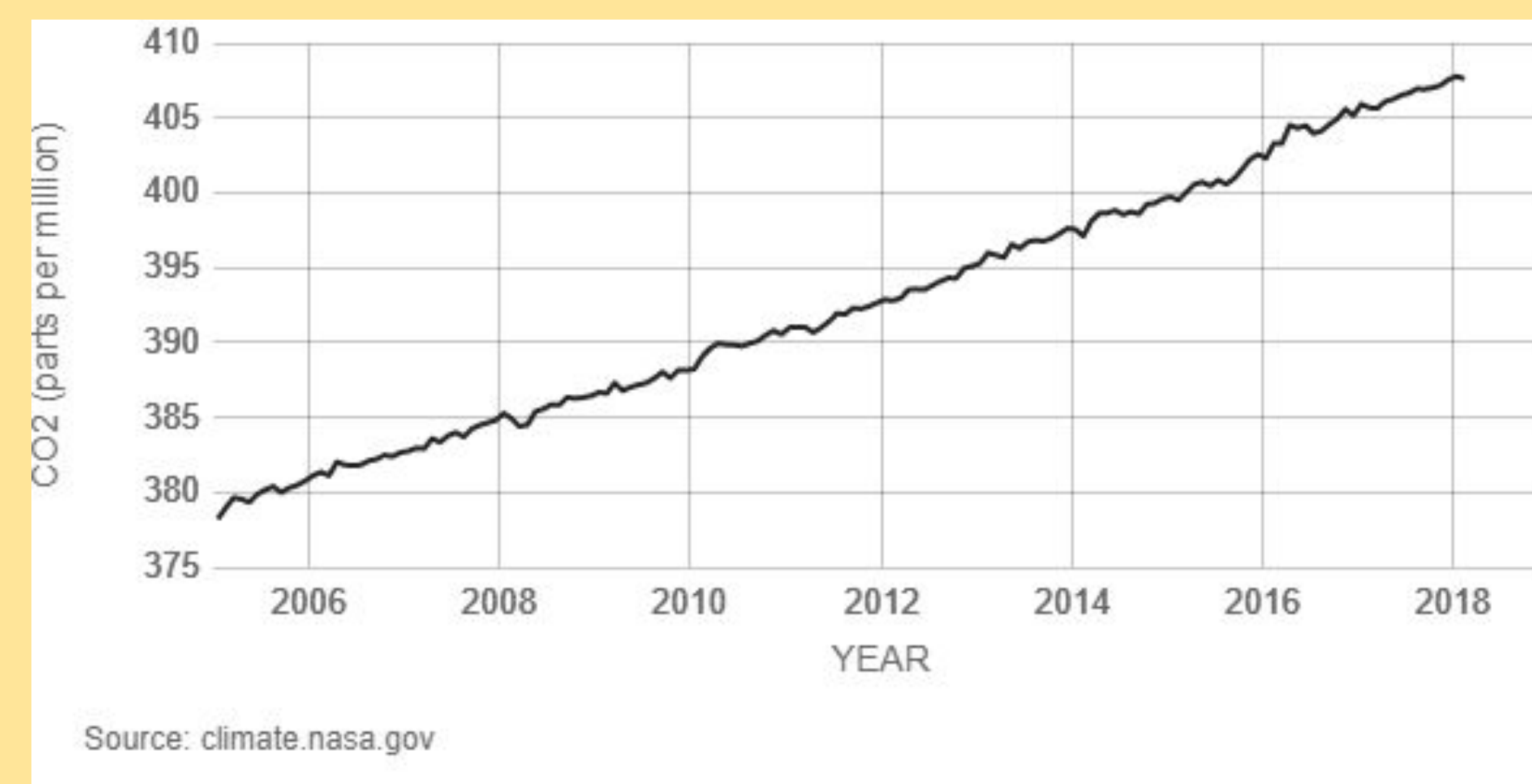
### Data Concerning Paly's Annual Energy Consumption

- Each month on average, Paly consumed 335,000 KWH
- Paly spent \$621,163 on energy from October 2016 to October 2017
- Proposed solar array would save about \$66,000 annually.

## GRAPHICAL REPRESENTATION

1. Rising rising levels of carbon dioxide are very much related to rising temperatures and sea levels.

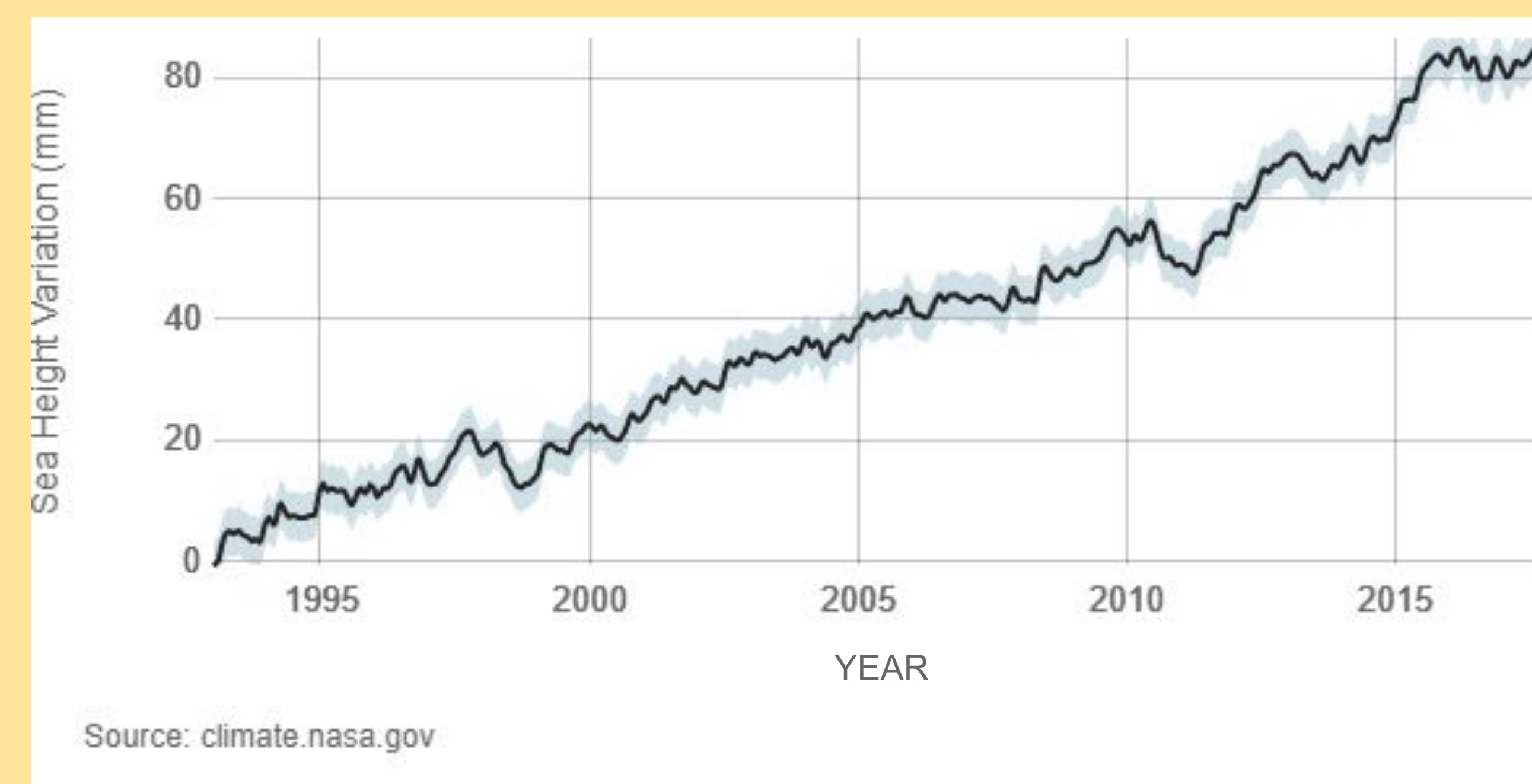
Levels of CO<sub>2</sub> (in parts per million) in the Atmosphere from 2005 - Present



Global Surface Temperatures (in degrees celsius) Relative to 1951-1980 Average Temperatures



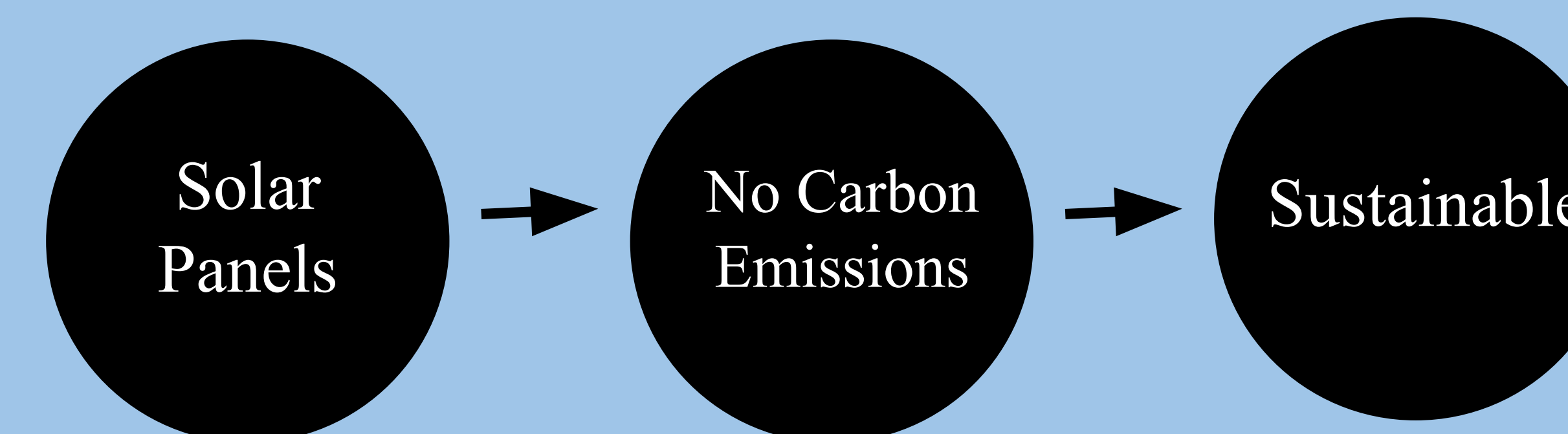
Satellite Sea Level Observations from 1993 - Present



## CONCLUSIONS, IMPLICATIONS, AND NEXT STEPS

### Coming to a Conclusion

- There is a general consensus in our community and worldwide that global warming is occurring.
- There is a push to act sooner on switching from fossil fuels to clean energy sources.
- There is an understanding within the community that saving money on energy is a good thing.



### Next Steps

- Make efforts to move toward a sustainable living.
- Continue discussion of solar and alternative energy sources inside and outside of our community.
- Continue collection of data following years of installation of such panels to track effectiveness.

## ACKNOWLEDGEMENTS / REFERENCES

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### \*\*\*Works Cited:

Yona, L. (2017, August 08). Climate Change is the Issue of My Generation. Retrieved October 23, 2017, from <https://www.thenation.com/article/climate-change-is-the-issue-of-my-generation/>