



# The Growth of Renewable Energy in America

Kayson Ijisesan, Zach Appiah, Brady Williams,  
Jacob Kobayashi

# Context

- Renewable Energy – any energy source that is consumed at the same rate at which it is replenished
- Multiple Benefits of Renewable Energy
  - Almost zero greenhouse gas emissions
  - Nearly inexhaustible sources of power
  - Creates new jobs for the installation and maintenance of energy projects

# Purpose

- As a group, we analyzed data trends to see how the and where the use of renewable energy has grown, and to find out...
- What are the most promising areas for the future of renewable energies?



# Background Research

- Large variety of renewable energy sources
  - Wind, solar, hydroelectric, biomass, geothermal, among many others
- Increasing demand in all sectors
  - 48% of businesses in 2018 were looking to invest in renewable energy
  - 53% of consumers indicated that renewable energies were very or extremely important to them
- Constantly improving technologies → Renewable energy systems are constantly being made more efficient



## Interview with an Expert

Our group interviewed via email David Williard, co-founder of renewable energy consulting firm Sage Renewables. Williard's team has worked with schools, governments, and private businesses to develop all kinds of alternative energy projects.

"I believe that renewable energy has advantages far beyond sustainability and a reduction in greenhouse gas emissions. Solar and wind power installations lower overall energy costs, create jobs, and greatly improve public health, among countless other benefits."

David Williard



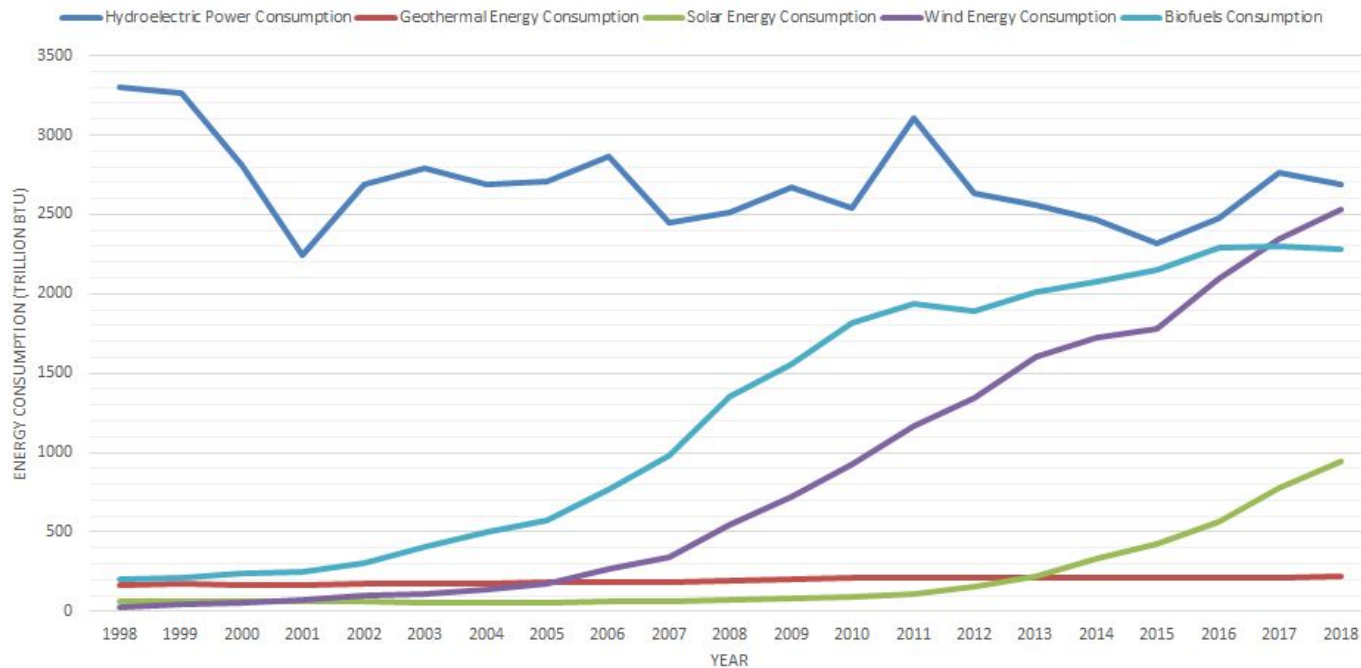
# Data Set 1 - Consumption of Renewable Energy Sources

# Purpose of this Data Set


- Obtained from US Energy Information Administration (EIA)
- To analyze data to see what renewable energy sources are in highest use
- Show what sources have increased the most in consumption



## Annual Total Consumption of Different Renewable Energy Sources







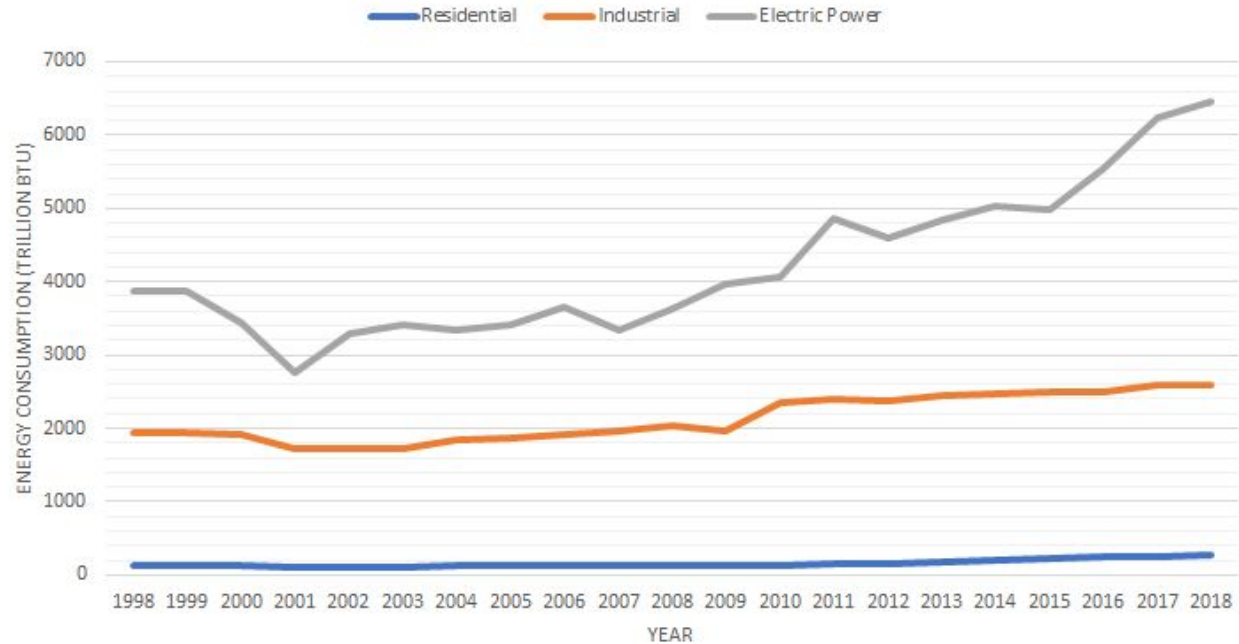
# Data Set 2 - Renewable Energy Consumption by Sector

# Purpose of this Data Set

- Different renewable energy sources are used for different purposes
  - For example, while solar power is often used in residential and other smaller-scale projects, hydroelectric and wind power are almost exclusively used in utility-scale facilities
- Allows us to see which sectors have benefited most from the development of alternative energy projects
- Also obtained from EIA



## Total Renewable Energy Consumption by Sector



\*Electric power refers to plants that only generate either electricity and or heat



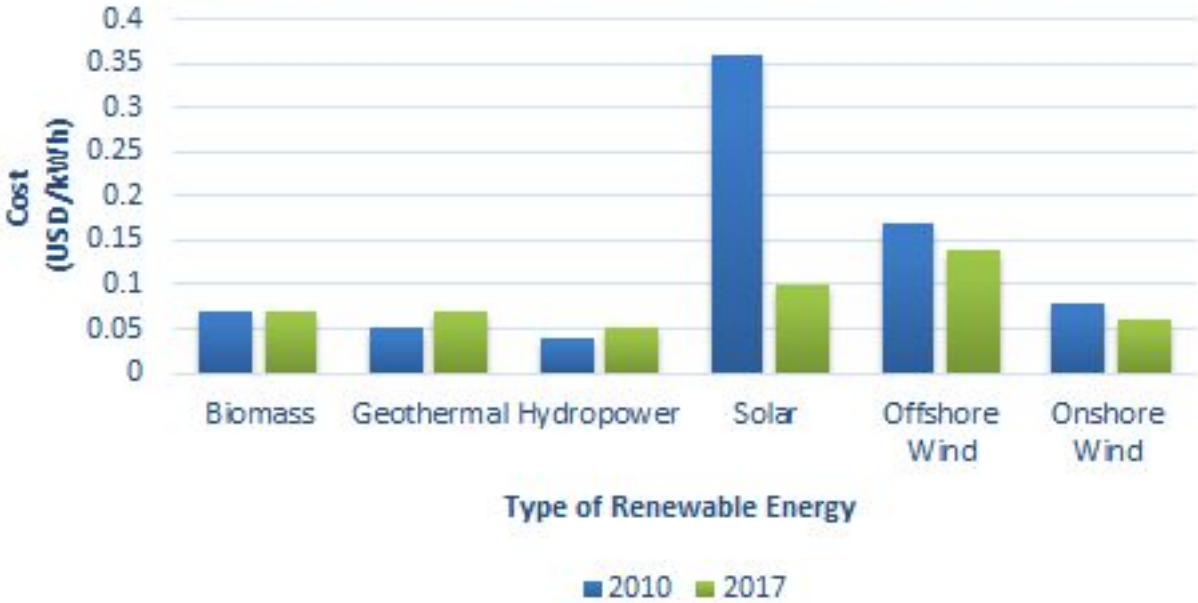
# Data Set 3 - Cost of Renewable Energy Sources Over Time

# Purpose of this Data Set

- Shows how renewable energy industries have been affected by improvements in technology
- Gives an indication as to which energy sources will likely be the most popular in the near future
- Data obtained from International Renewable Energy Agency (IRENA)



# Change in Costs of Renewable Energy



# Conclusions

Our study of the development of renewable energy found that:

- Wind and solar power are currently the fastest growing alternative energy industries
- Renewable energy is being used and continues to grow the most in utility-scale electricity and heat generation plants
- Wind but especially solar have experienced the most significant drops in cost in recent years



# Conclusions pt. 2

- Overall, **Solar Power** is the most promising area of renewable energy for the near future
  - Incredible recent growth
  - Rapidly falling prices
  - Wide variety of applications
  - Broad economic benefits





# References

- <https://marketbusinessnews.com/renewable-energy-growth-usa/197651/>
- <https://www.irena.org/costs/>
- <https://www.eia.gov/renewable/data.php>