

JPD\_18

# InnovateCO SOLAR PV

BALANCING ENERGY DEMAND

*MAY 19, 2023*



# Our Team

Boston University Master's in Statistical Practice.



**Jiun Lee**  
*Leader*  
*Data Analyst*



**Priam Vyas**  
*Data Analyst*

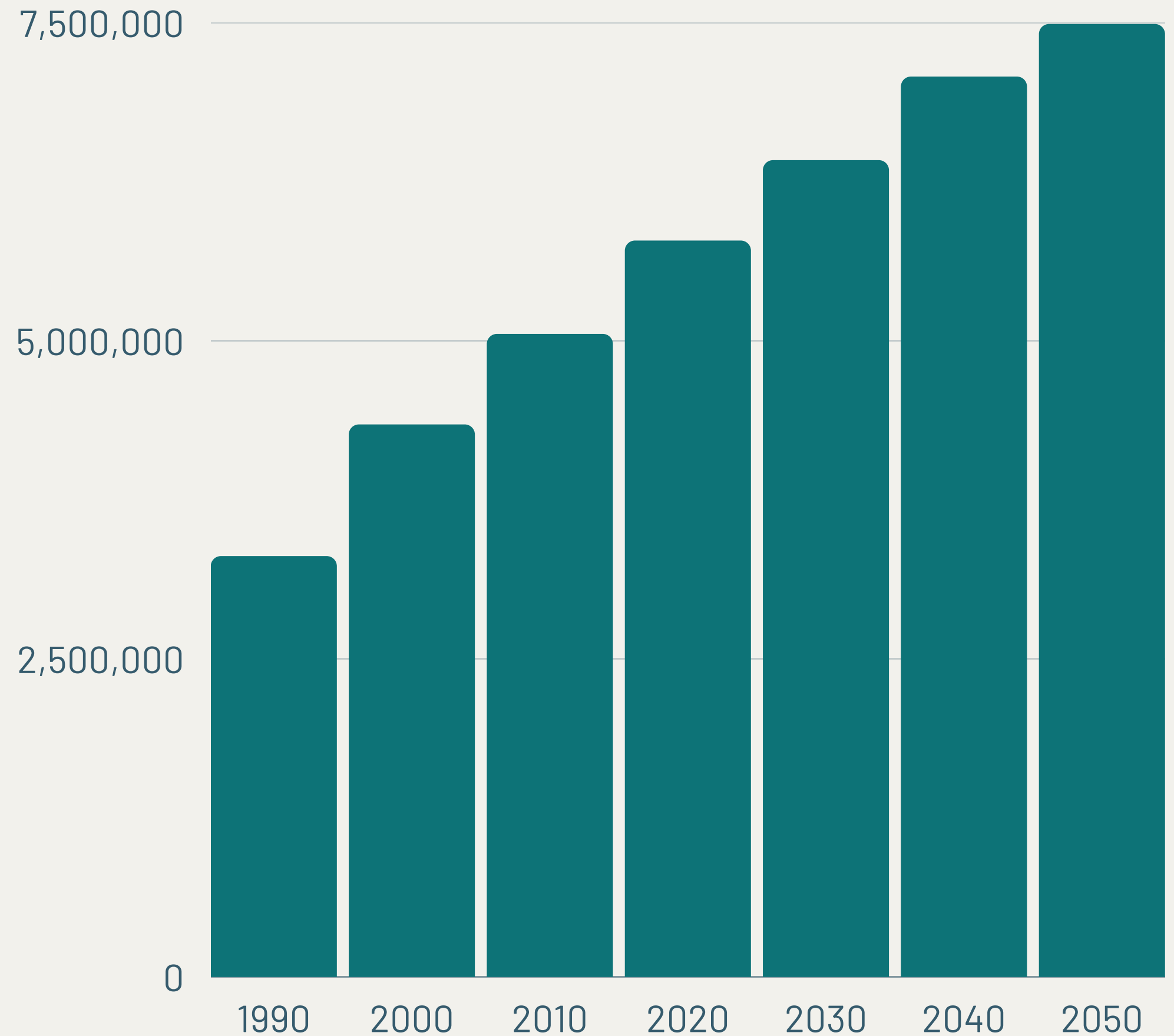
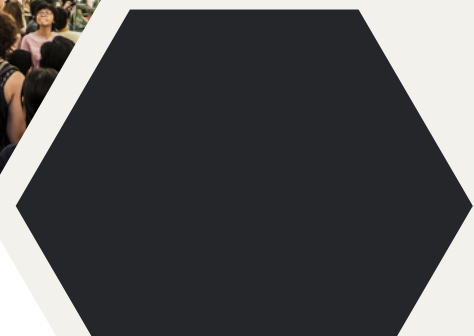


**Danya Zhang**  
*Data Analyst*



# GROWING POPULATION

Projected population growth.



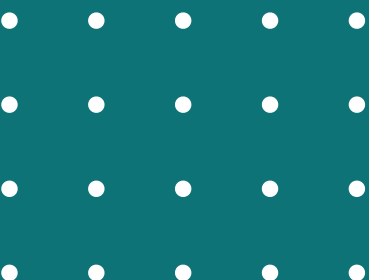


# COAL USAGE

What percent of electricity is generated from coal in the average Colorado household?

**38%**

of electricity is generated  
from coal





# SOLUTION: SOLAR

- 1 REDUCED COST
- 2 ENERGY INDEPENDENCE
- 3 SCALABLE & MODULAR
- 4 100% RENEWABLE



# CONSUMPTION

How much electricity did people consume in 2019?

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5.74 mil

Population

(+1% from last year, 2018)

42 mil kWh

Total Coal Consumption

(+5.5% from last year, 2018)

614 kWh

Monthly Coal  
Consumption per Capita

(+4.4% from last year, 2018)



**How many solar  
panels are needed to  
offset coal?**

**11.22**

Panels per capita.

**Assumptions:**

Panel power rating: 300 Wh

Peak daily sunlight hours: 6

# HOW MUCH COAL ARE YOU ELIMINATING?

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100.8 lbs

per month per person


Holy Smokes!




Incentive	Summary	End Date
Federal Solar Investment Tax Credit (ITC)	Colorado homeowners can receive a 26% discount when they purchase home solar systems.	December 31st, 2022
Colorado Solar Sales Tax Exemption	Colorado will exempt you from paying any state sales tax when you purchase a solar panel system.	None
Colorado Solar Property Tax Exemption	This incentive excludes the added value of a solar panel system from a home's value in Colorado.	None
Colorado Net Metering	This program allows homeowners to offset their unused solar generation on the grid for their next energy bill.	None
Cash Rebates	EnergySmart Colorado: Receive a cash rebate between \$400-\$2,500, depending on your location.Holy Cross Energy: This cash rebate incentive is calculated per kilowatt, and you can save as much as \$3,000.	None



**Savings**  
An average of \$1,750 per year.  
\$35,000 savings over 20 years



**Installation Costs**  
\$11000 - \$16000 per person.



**Break-Even**  
10 - 15 years

# SAVINGS & COST

# 100% RENEWABLE

In 2019, the Polis Administration unveiled the roadmap to achieve 100% renewable energy by 2040, a call to action for addressing climate change.



# 2040 OUTLOOK

% of electricity to replace	Panels per person
50%	15.22
60%	18.26
70%	21.30
80%	24.35
90%	27.39
100%	30.43

# Aim for a Cleaner Future

We hope that we have given you enough insight so that you can start thinking about the future implications of increasing energy demands.

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# Contact Us

Thank you for your time.

Email : [jiun0806@bu.edu](mailto:jiun0806@bu.edu)



# REFERENCES

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