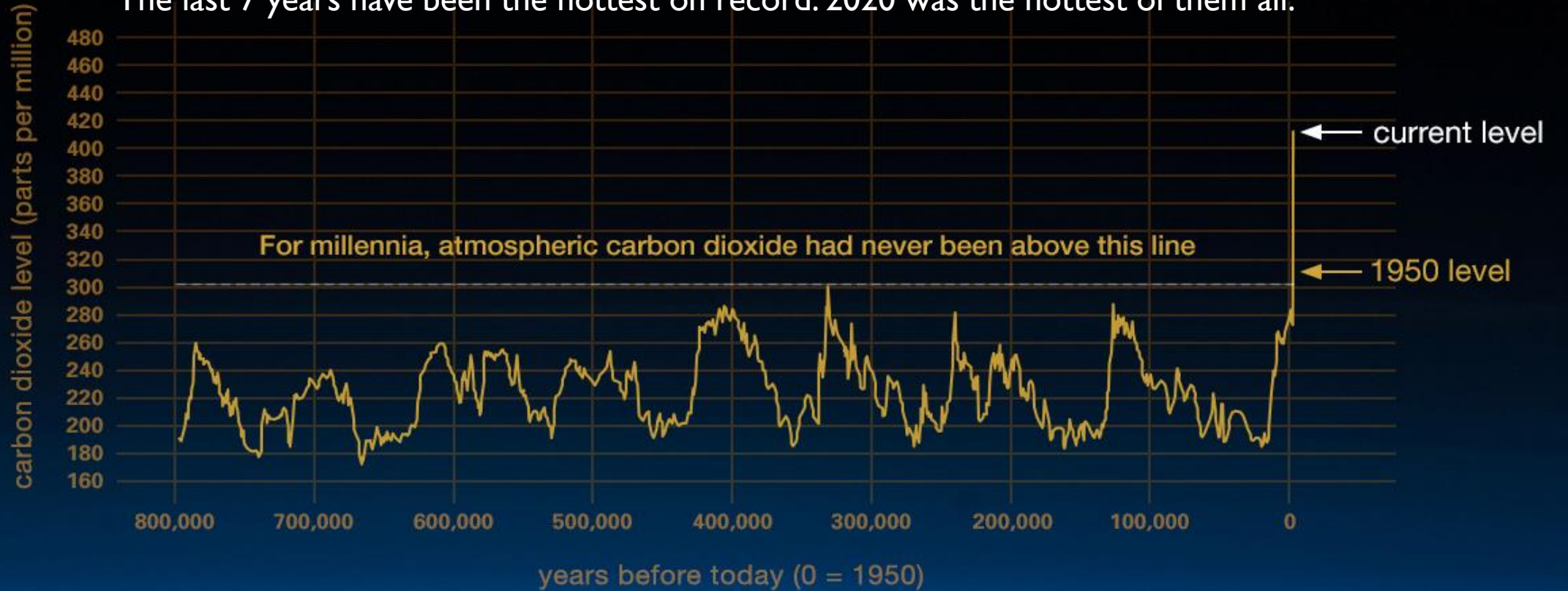


# *Vermont's renewable energy generation challenges*

President and Founder: Solaflect Energy  
D.Phil. Economics: Oxford University  
Bill Bender (bbender@solaflect.com)



The last 7 years have been the hottest on record. 2020 was the hottest of them all.

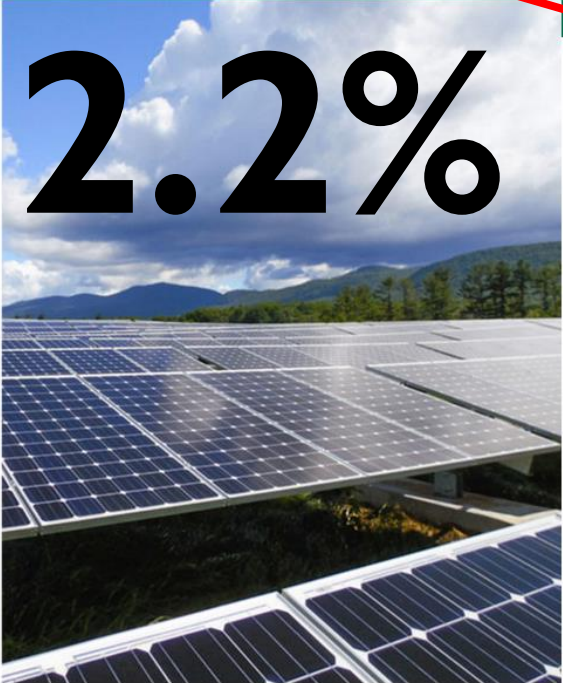


A GLOBAL CLIMATE EMERGENCY AND **VERMONT IS FAILING**

# Energy Mix

GMP's Energy Supply is 94% Carbon Free and More Than 63% Renewable

94% Carbon Free!!



63% Renewable!!

SCREENSHOT FROM GREENMOUNTAINPOWER.COM

	
	
 <p><b>Energy</b></p> <p>The nation's leading independent certification and verification program for renewable energy.</p>	
<p>Five Other New England States (ME, NH, MA, CT, RI)</p>	
<p>Vermont Department of Public Service Vermont Public Utilities Commission Green Mountain Power</p> <p>And now: Air Quality and Climate Division, ANR? Vermont Climate Council?</p>	

# IS VERMONT'S ELECTRICITY GREEN?

*It depends upon who you ask*



- **Additionality:** ... we seek to purchase energy only from newly constructed generation facilities or expansions of existing projects, rather than simply redirecting renewable energy outputs from pre-existing projects. Google Environmental Report (<https://static.googleusercontent.com/media/www.google.com/en/green/pdf/google-2016-environmental-report.pdf>), page 32.



**... new renewable energy ... prioritizing the creation of projects, instead of taking away existing renewable energy available to others** Apple Environmental Progress Report 2020, ([https://www.apple.com/environment/pdf/Apple\\_Environmental\\_Progress\\_Report\\_2020.pdf](https://www.apple.com/environment/pdf/Apple_Environmental_Progress_Report_2020.pdf)): page 18.



**Energy**

**... it is from new projects ... built within 15 years** <https://www.green-e.org/docs/Green-e%20Energy%201-pager.pdf>

## **Other New England States (MA, CT, RI, NH, ME)**

Vermont “recognizes all forms of new and existing renewable energy and **is unique** in classifying large-scale hydropower as renewable” (<https://www.iso-ne.com/about/key-stats/resource-mix>).

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Vermont Department of Public Service  
Vermont Public Utilities Commission  
Green Mountain Power

And now:

Air Quality and Climate Division, ANR?  
Vermont Climate Council?

**VERMONT BUREAUCRACY: WE ARE GOOD!**

# Preliminary Emissions Estimates (2017 & 2018)

- Estimated emissions for 2017 and 2018 calculated wherever data was available
- Where data for standard methodology wasn't available values were either carried forward or adjusted based on other methods or indicators
- 1990 – 2017 Emissions Inventory report expected to be released quarter 1, 2021

Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018
Transportation	4.09	3.93	3.83	3.88	4.10	4.33	4.34	4.32	4.22
Residential/ Commercial/ Industrial (RCI) Fuel Use	2.53	2.56	2.29	2.52	2.71	2.92	2.68	2.69	2.72
Agriculture	1.13	1.14	1.11	1.15	1.18	1.19	1.19	1.16	1.16
Electricity Supply & Demand (Consumption - based)	0.43	0.43	0.93	0.81	0.84	1.00	0.81	0.49	0.19
Industrial Processes	0.67	0.66	0.63	0.59	0.55	0.57	0.58	0.57	0.56
Waste Management	0.28	0.29	0.24	0.22	0.21	0.16	0.15	0.14	0.15
Fossil Fuel Industry	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03
Gross Emissions Total	9.15	9.03	9.04	9.19	9.62	10.19	9.76	9.41	9.02

Presented to Vermont Climate Council December 21, 2020

Calculated Value
Value Carried Forward
Differing methodology

*If real, one of these happened:*

- Vermont built 1.54 Gigawatts of solar, more than 5 times everything built before this
- 1/3 of Vermont's cars were taken off the road

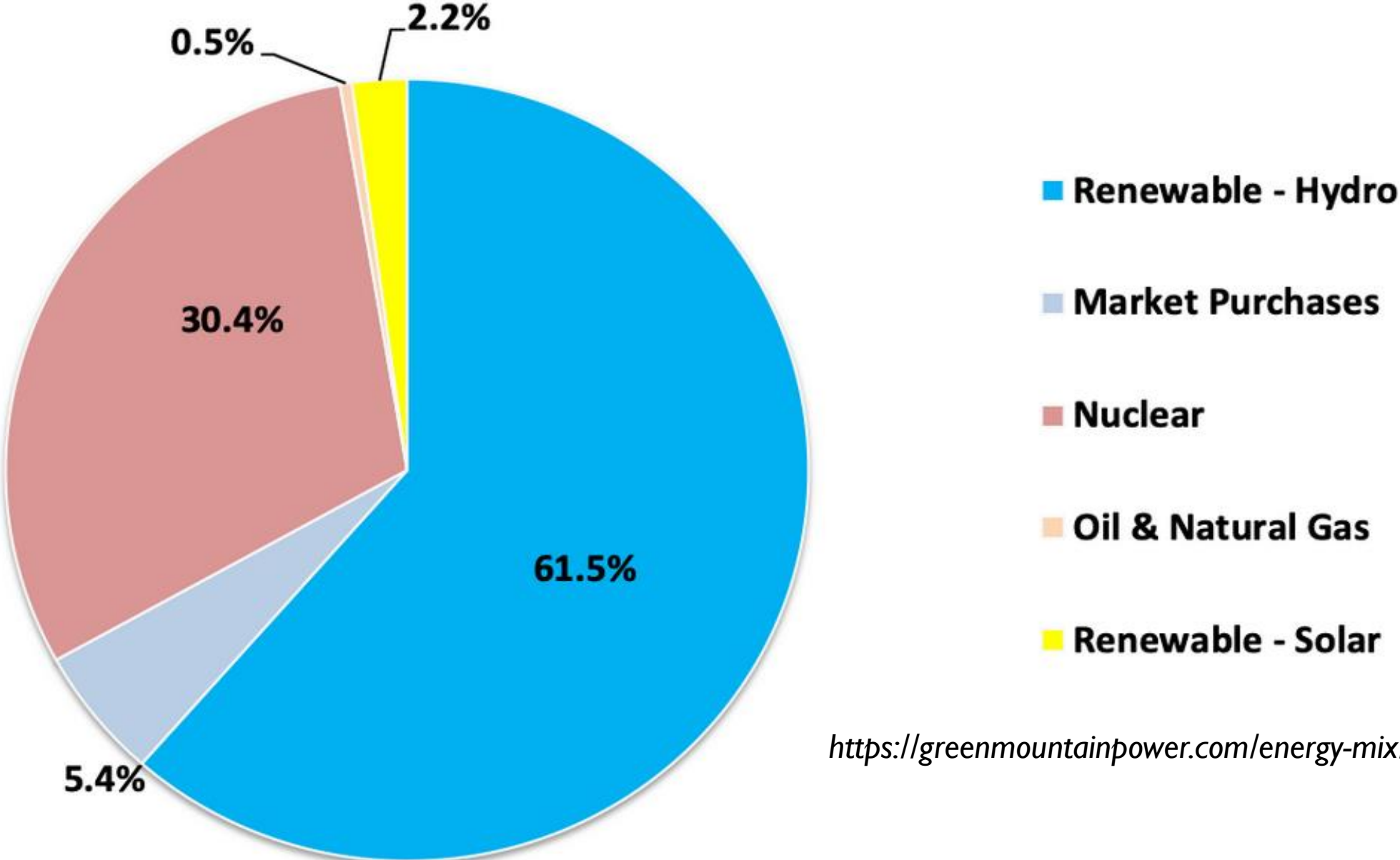
**Nothing Changed**



WHERE DID 620,000 METRIC TONS OF CARBON GO IN 2 YEARS????



# 2019 estimated fuel mix relative to retail sales



<https://greenmountainpower.com/energy-mix/>

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# 20<sup>th</sup> Century (and 19<sup>th</sup> Century) Dams and Nuclear Plants Do NOT Address Climate Change

*We need to build solar and wind; there is nothing else. We can't efficiency our way to zero.*

## VT Is The Only State In New England That Accepts Old Hydro As Clean Energy. Here Is Why It Shouldn't:

- Hydro Quebec Plants Are Over 40 Years Old
- HQ Does Not Add New Carbon Offsetting Renewables To The Grid
- Hydro Quebec Flooded 6 Million Acres Of Forests Which Rot And Release Massive Amounts Of Methane Which Is A 30x More Potent Greenhouse Gas Than CO2
- VT's Enabling of the Purchase Of HQ RECs Allows Us To Consume Fossil Energy Without Penalty, But Does Nothing For The Planet



**Vermont is  
6,000,000 Acres**

**HQ Flooded  
6,000,000 Acres**

**VERMONT'S CLEAN ENERGY MIX CLAIM IS A DECEPTION**

# COST SHIFT ARGUMENT

- Koch Brothers Sponsored
- Designed to support fossil fuel production over renewables
- The REAL cost shift: shirk climate responsibility and destroy the biosphere



# ECONOMICS 101: CONSUMERS ARE QUEEN/KING

## Monopoly Utility Perspective

- Regulated profit
- Costs shift from adopters to non-adopters
- Expensive resource compared to alternative
- No societal benefit
- Regulators maintain monopoly



## Consumer Perspective



# ECONOMICS 101: CONSUMER CHOICE!

- Vermonters WANT solar (save the planet)
- Vermonters WANT to own their solar (investment return). We support home ownership, why not solar ownership??
- Vermonters WANT on-site energy production (family security)
- Vermonters WANT resilience
- Renters / low-income Vermonters want the same thing: **COMMUNITY SOLAR**



# ELECTRIFICATION OF SOLAFLECT CUSTOMERS

- Survey results from 2020

*Compared to all of Vermont:*

- 10X the rate of adoption of batteries
- 10X the rate of adoption of EVs
- 10X the rate of adoption of heat pumps
- Not all the credit, but a lot of it (close communication with customers)



## Department of Public Service Calculated Cost of the Net Metering Program to Rate Payers

- 2021 Residential Rate Impact = **0.036¢ / kWh**
- The Residential base rate is 16.41¢ / kWh
- The NM Rate Impact adds **0.22%** to the customers bill
- This adds **24.1¢** to the average monthly VT electric bill\*
- Compares to Energy Efficiency Charge of about **\$6.72** added to the average monthly electric bill\*

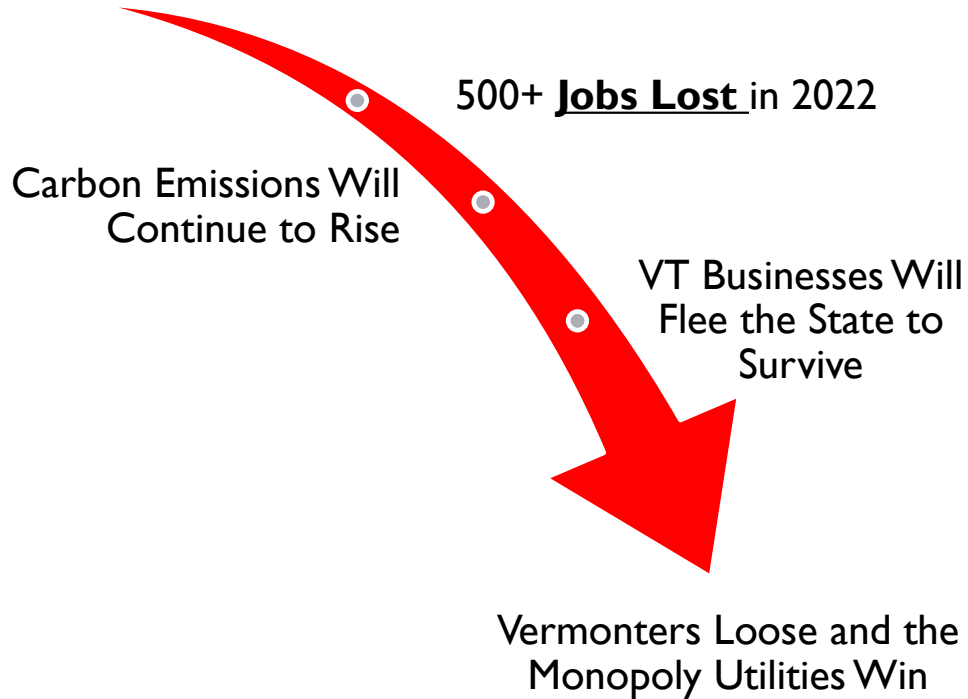


\*Based on an average VT residential energy usage of 565kWh/month



# There Are Two Options

## Allow the Assault on Net Metering



Or

## Support Net Metering



THE FUTURE DEPENDS ON THE CHOICES WE MAKE...

## LEGISLATION NOW

- STOP Greenwashing
- Create right to solar for Vermonters and businesses
- Would you tax home-grown tomatoes or firewood cut in the back lot? Then why tax solar?
  - Behind-the-meter solar will be charged 34% starting September, penalizing storage.
  - Eliminate the solar production meter.
- No cap for on-site solar (would we limit the size of a garden?)
- Competition, not “cost shift”. Replace utility lost revenue with increased electrification
- Accelerate existing 10% in-state renewable goal to next three years
- Double in-state renewable goal to 20%
- Stop killing net metering
- Make community solar viable again



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