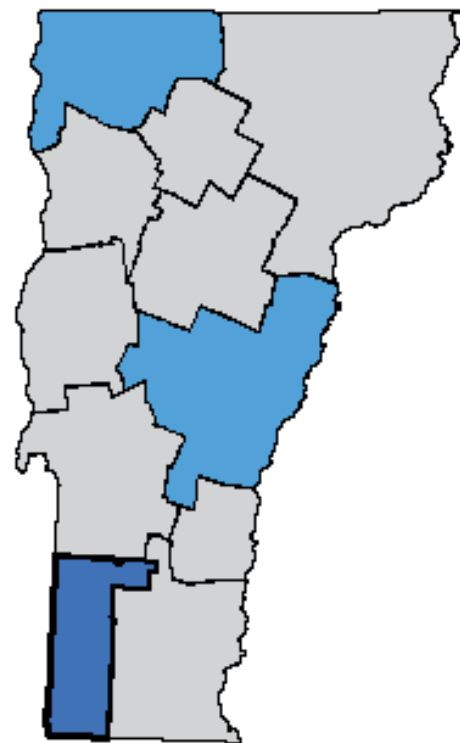
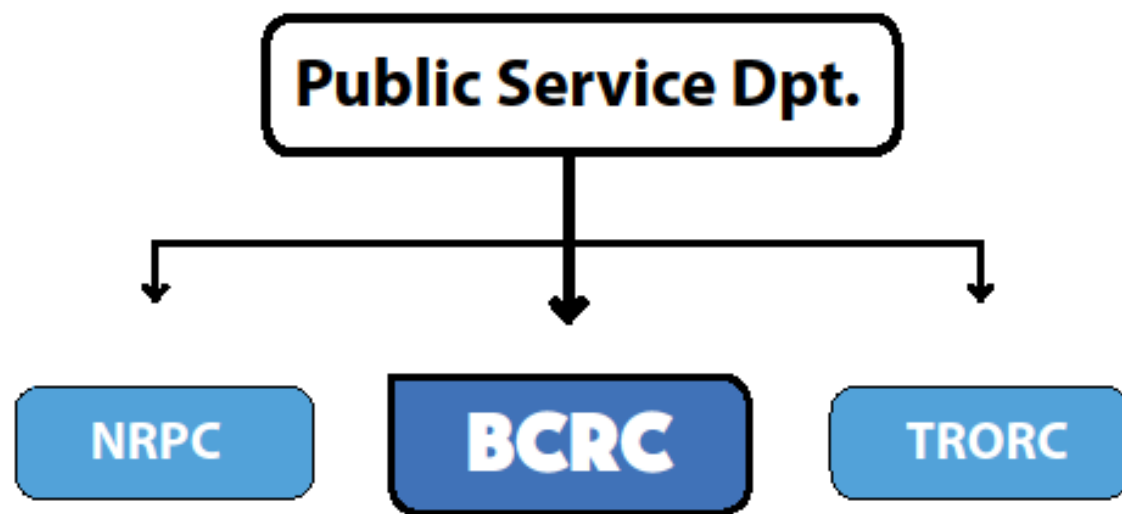


# REGIONAL PLANNING INITIATIVE

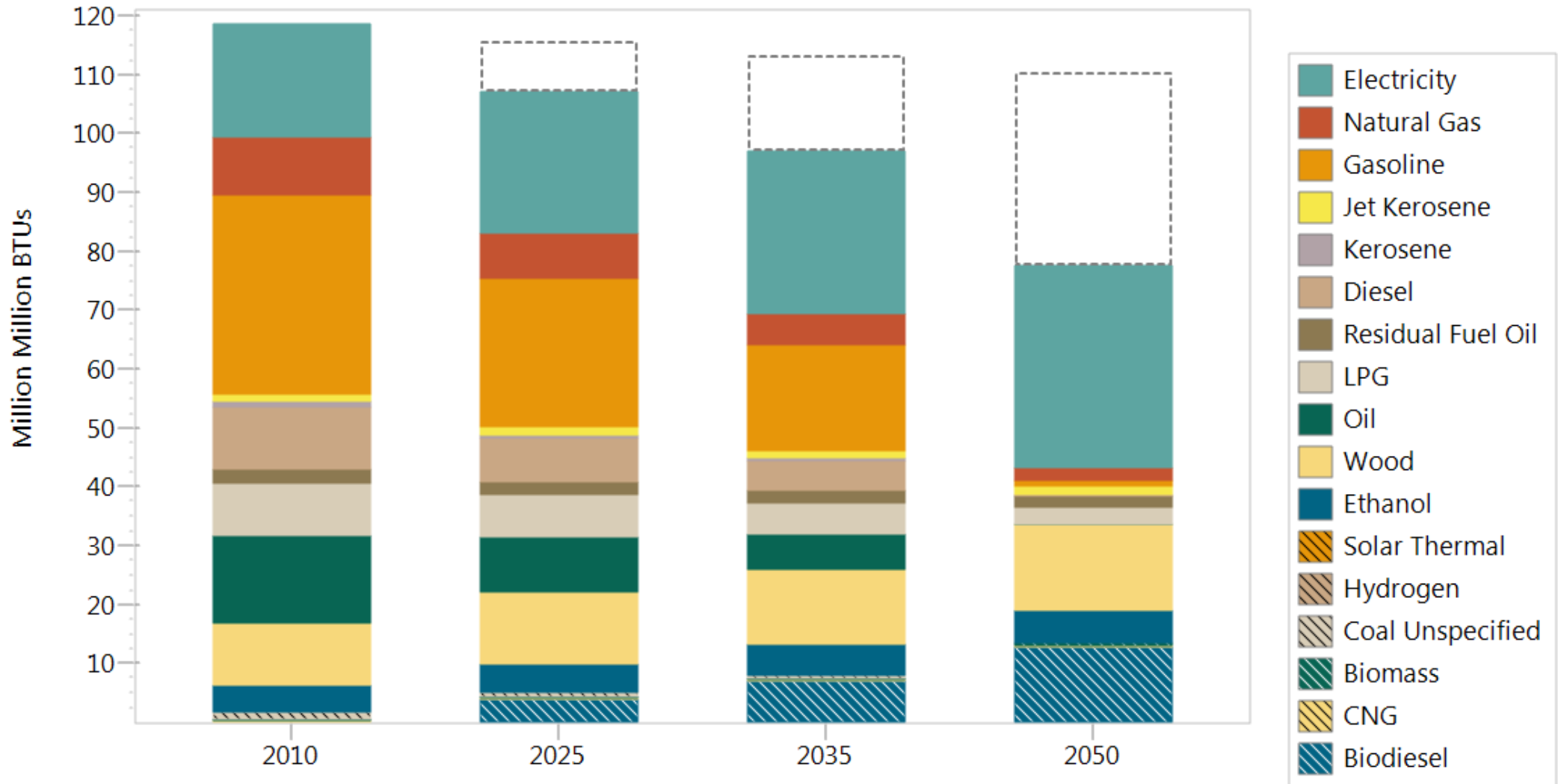
The PSD is funding three of Vermont's Regional Planning Commissions to create region-specific energy plans that sync with state goals. BCRC is the project lead. Initial plans will serve as pilots for all other regions.

**First three plans will be completed in 2016.**



# Vermont

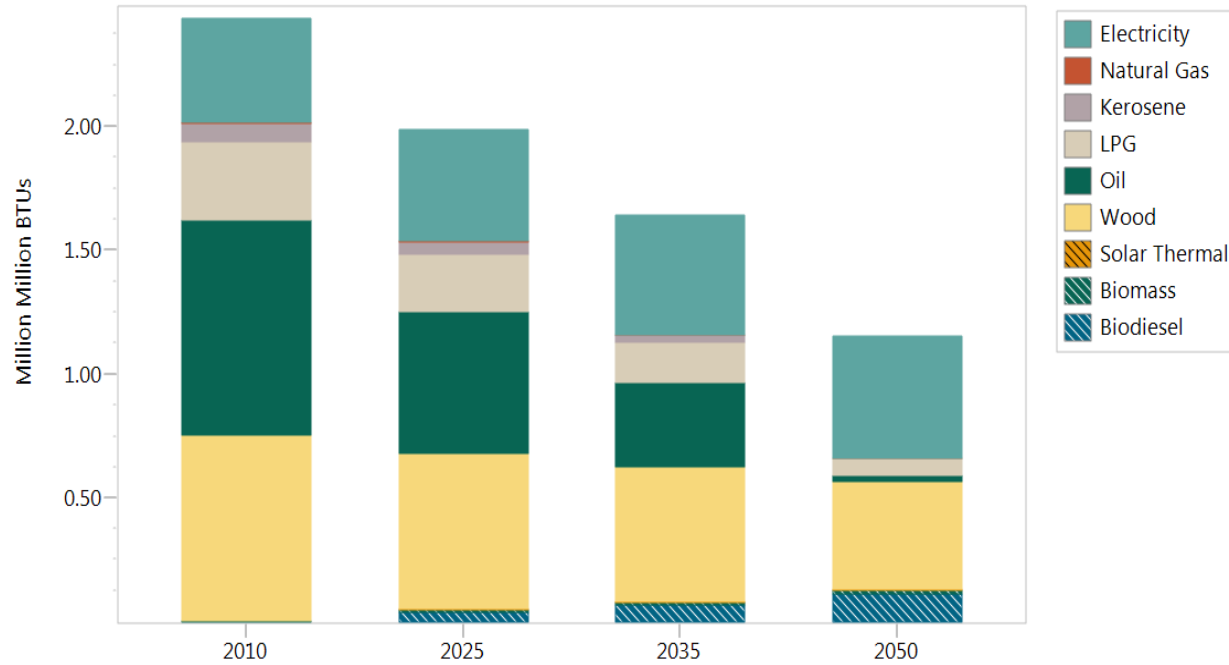
## Energy Demand by Fuel Type: 2010 - 2050



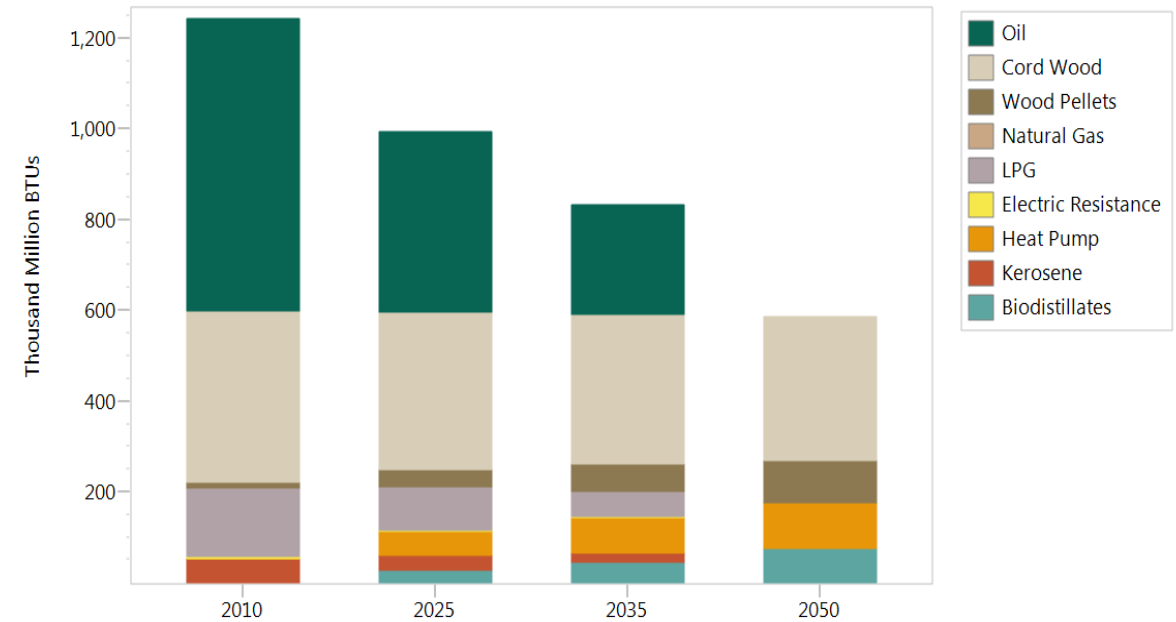
# Bennington Region

## Residential Energy Demand: 2010 - 2050

### Total Residential Energy Demand

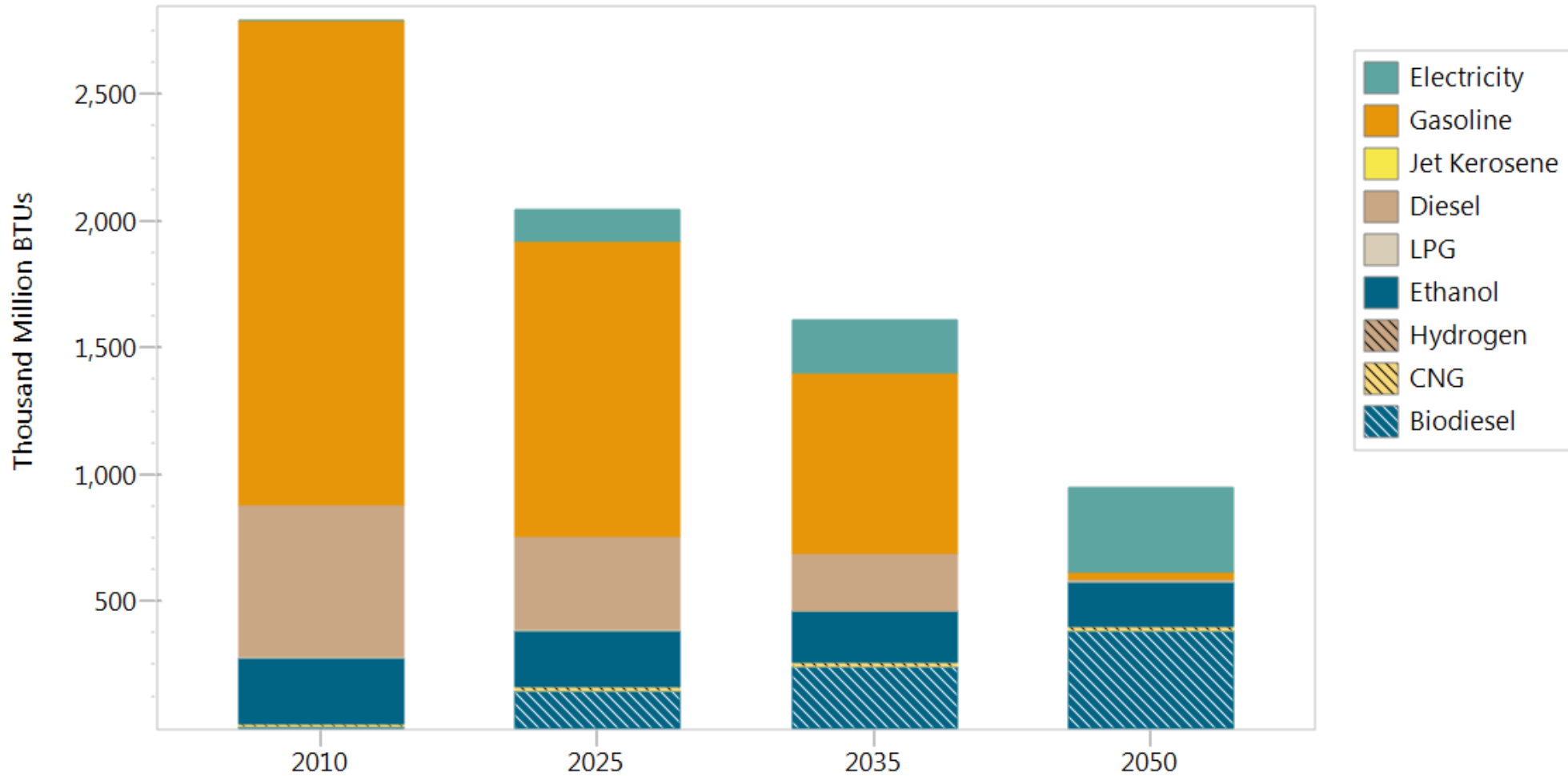


### Single-Family Heating Energy Demand



# Bennington Region

## Transportation Energy Demand: 2010 - 2050



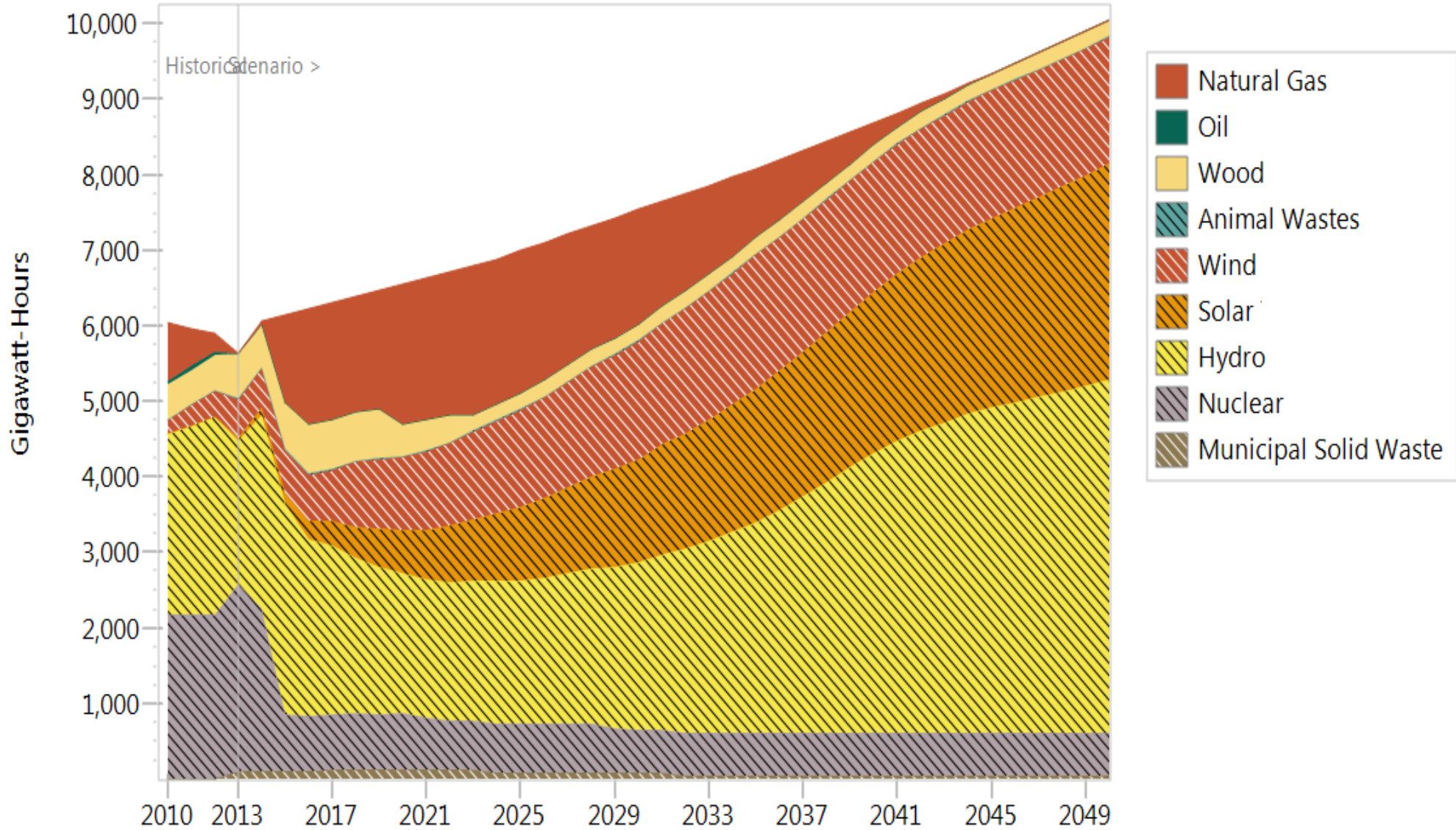
# How do we get there?

Strategy development will look at existing resources and programs, ideas from stakeholders and experts in the field, and local input.

- **Thermal:** improving building stock, changing and improving heating systems and fuels.
- **Transportation:** reducing the amount of driving and transforming the vehicle fleet.
- **Electricity:** continuing efforts at conservation and opportunities for new generation in the region.

# Vermont

## Electricity Demand: 2010 - 2050



# NEW IN STATE ELECTRICITY GENERATION 2010 – 2050.

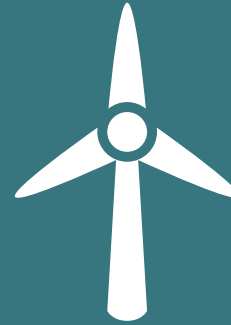
Region	Year	Electricity Consumption (1000 GWh)	New Wind (MW)	New Hydro (MW)	New Solar (MW)
Statewide	2010	5,623	-	-	-
	2025	6,991	200	25	445
	2035	8,073	400	50	926
	2050	10,044	400	93	1,647
Northwest	2010	523	-	-	-
	2025	658	21	3	47
	2035	782	42	5	98
	2050	1,063	42	10	174
Two Rivers	2010	487	-	-	-
	2025	599	17	2	38
	2035	687	34	4	78
	2050	847	34	8	139
Bennington	2010	318	-	-	-
	2025	381	9	1	21
	2035	421	19	2	44
	2050	473	19	4	77
Rest of State	2010	4,281	-	-	-
	2025	5,323	152	19	337
	2035	6,143	303	38	701
	2050	7,610	303	70	1,248

# ① VCGI/VSJF analysis from Renewable Energy Atlas



## Solar

Topography of land analyzed based on slope and direction (azimuth) conducted in GIS for ground-mounted solar.



## Wind

Digitally modeled wind speed (based on topography) analyzed at 3 hub heights



## Hydro

Existing dams analyzed for potential capacity based on Community Hydro report. No new dams considered.



## Biomass (wood)

Land coverage used to determine location/area of harvestable wood.



## ② Determined “constraints”, classified as Level 1 or Level 2

### Level 1 Constraints

Conditions which would likely make development unfeasible.

*These were removed entirely.*

- Floodways & River Corridors
- Federal Wilderness
- Rare and Irreplaceable natural areas
- Vernal Pools
- Class 1 and 2 Wetlands

### Level 2 Constraints










Conditions which could impact development, but which would not necessarily prevent it.

*These are shown on maps in color (where they overlap).*




- Agricultural Soils (all ag-rated soils)
- Habitat Blocks (ANR class 9 and 10)
- Hydric Soils
- Conserved Lands
- Special Flood Hazard Areas
- Deer Wintering Areas
- Class 3 Wetlands

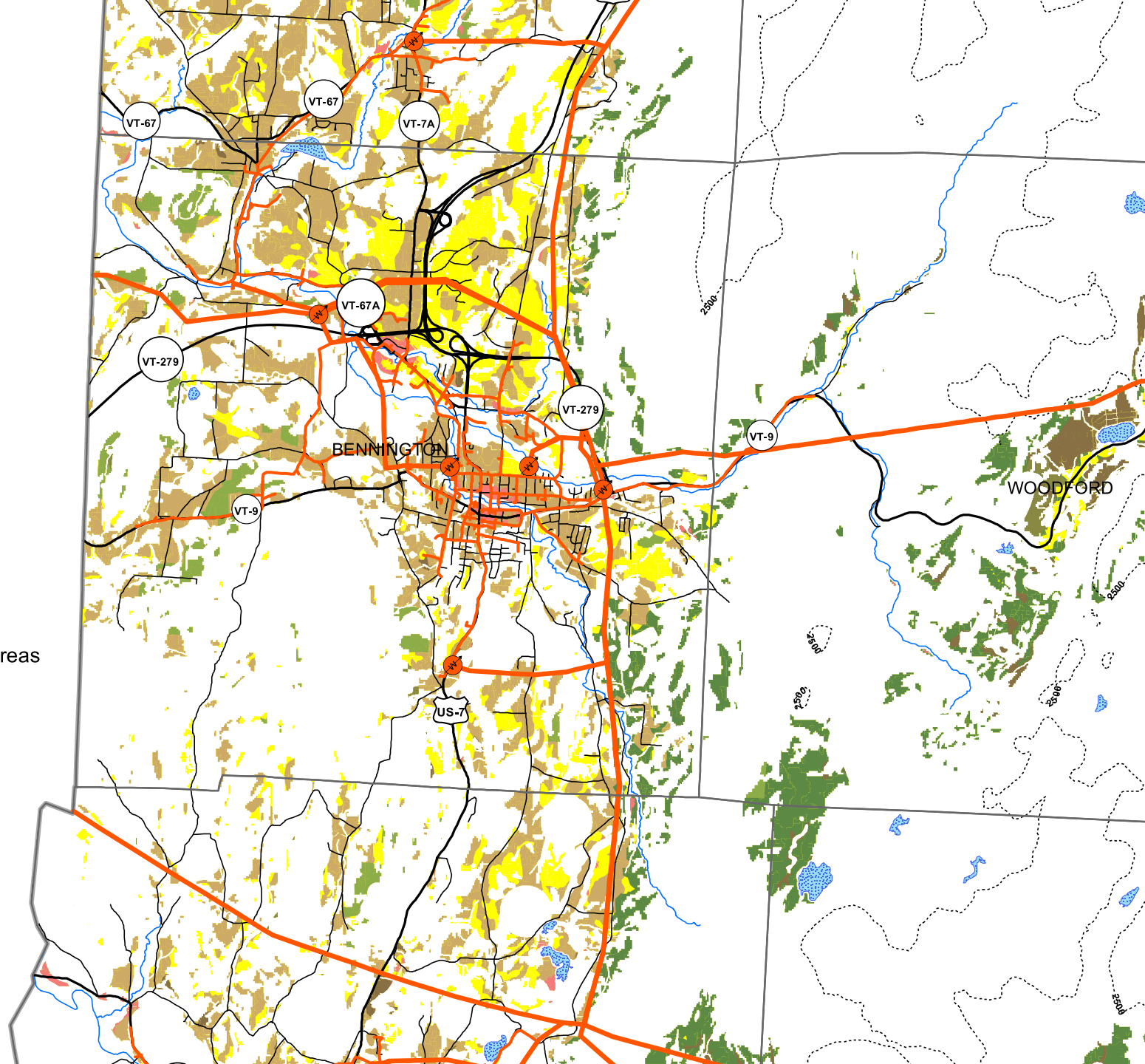
# SOLAR MAP

- Prime Solar = Yellow
- Includes Level 2 Constraints

-  Substations
-  3 Phase Power Lines
-  Transmission Lines
-  Major Roads
-  Secondary Roads
-  Rivers/Streams
-  Lakes/Ponds
-  2,500 Ft Elevation
-  Prime Solar Potential - No Level 1 or Level 2 Constraints

## Level 2 Constraints

-  Class 3 Wetlands
-  Deer Wintering Areas
-  Special Flood Hazard Areas
-  Conserved Lands
-  Hydric Soils
-  Habitat Blocks \*
-  Agricultural Soils \*\*



**THIS IS THE  
AMOUNT OF  
LAND AREA  
IN THE  
BCRC REGION**

*(about 370,00 acres, or 575 sq. miles)*

**THIS IS THE  
AMOUNT OF  
THAT AREA  
WHICH IS  
CONSIDERED  
"PRIME SOLAR."**

*(about 14,500 acres)*



**AND THIS IS ABOUT  
THE AMOUNT OF  
AREA THAT WOULD  
BE NEEDED TO REACH  
OUR 2050 GOAL OF  
77MW ADDITIONAL  
IN-REGION CAPACITY.**

*(about 700 acres)*



# WHAT ABOUT ROOFTOP SOLAR??

Residential structures in BCRC Region: **14,000**

If 50% are oriented properly and structurally compatible, and 50% of those choose to install systems at an average of 4KW capacity, that's...

**14 MW**

Small Commercial Structures (less than 40K sq ft): **2,000**

If 50% are oriented properly and structurally compatible, and 50% of those choose to install systems at an average of 20KW capacity, that's...

**10 MW**

Large Commercial Structures (greater than 40K sq ft): **100**

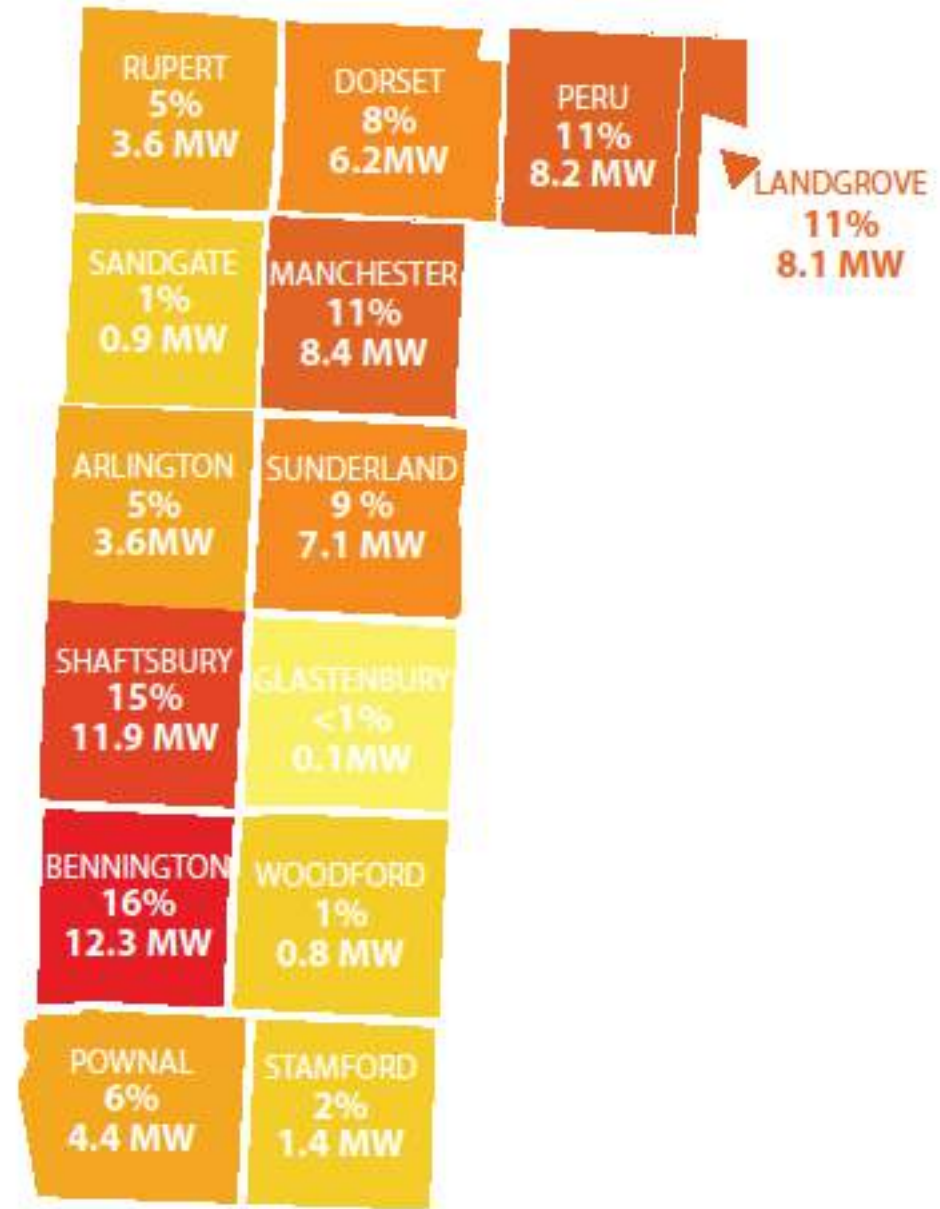
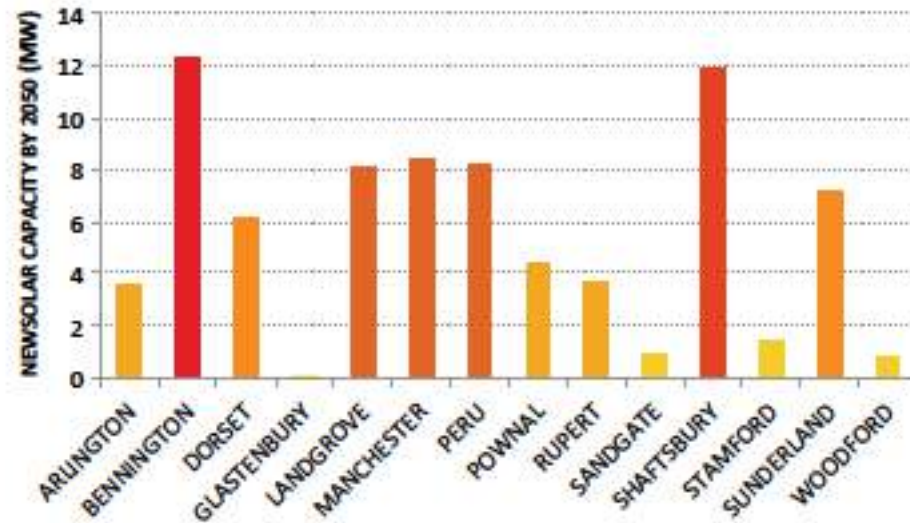
If 50% overall choose to install systems at an average of 200KW capacity, that's...

**10 MW**

ESTIMATE FOR TOTAL  
ROOFTOP POTENTIAL:

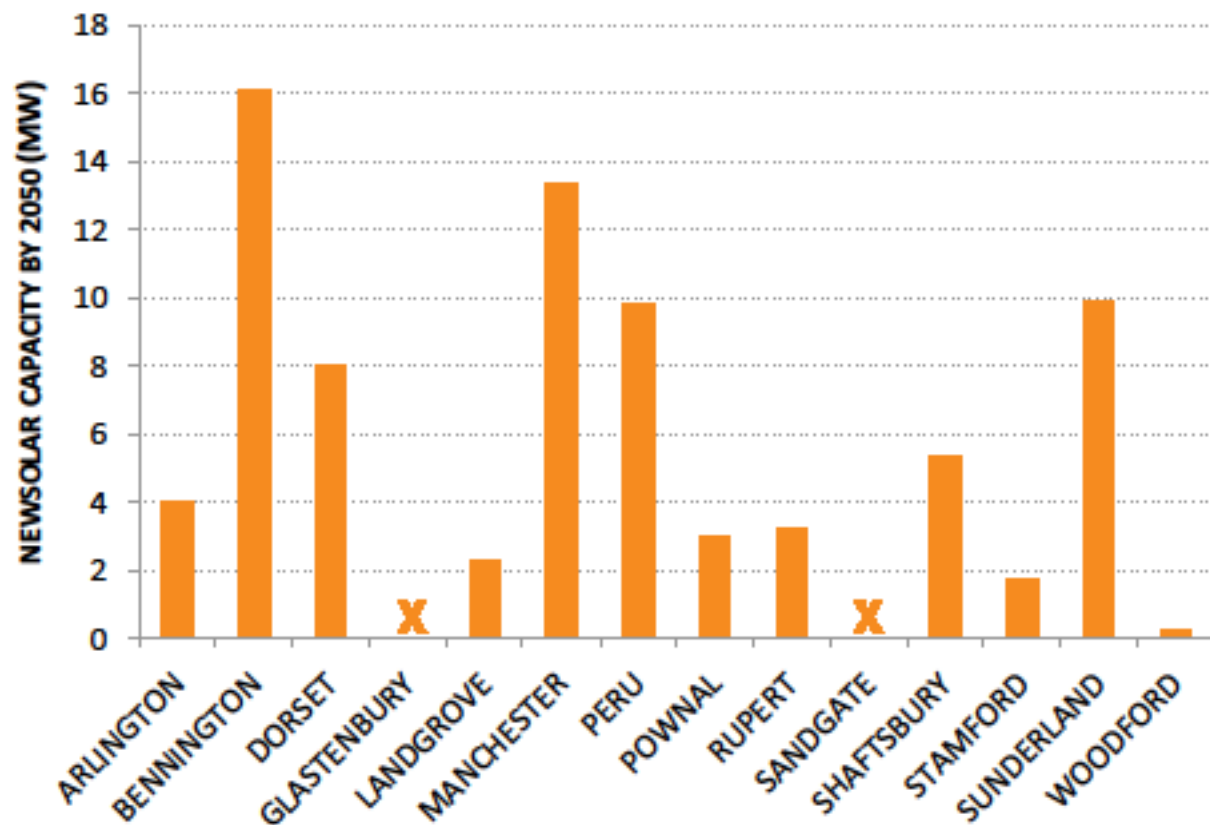


# MAP OF BCRC ALLOCATION BASED ON PRIME SOLAR



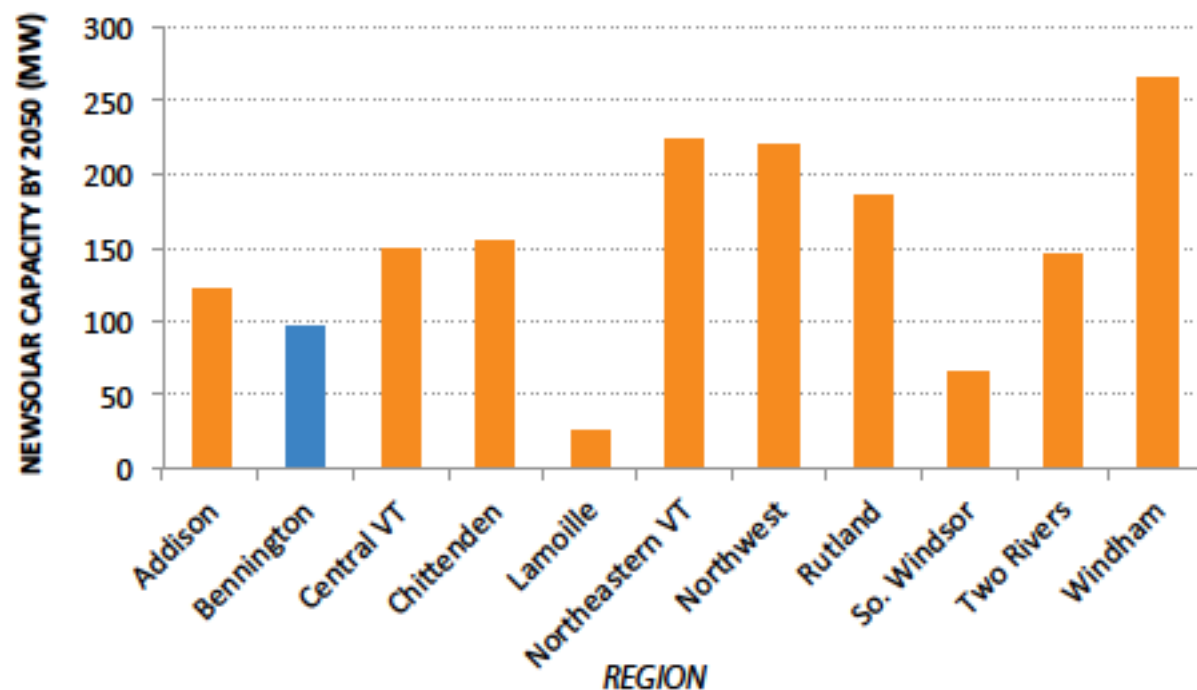
# WHAT IF YOU FACTORED IN THE LOCATION OF POWER LINES?

IF YOU ALLOCATED THE 2050 GOAL OF 77MW BASED ON THE LOCATION OF "PRIME SOLAR" THAT IS WITHIN ONE MILE OF THREE-PHASE...



# HOW DOES BCRC COMPARE WITH OTHER REGIONS?

THIS IS WHAT THE DISTRIBUTION WOULD LOOK LIKE IF THE 2050 GOAL OF 1,647 MW OF IN-STATE GENERATION WERE ALLOCATED REGIONALLY BASED ON "PRIME SOLAR."



Bennington Region  
Constrained Wind Energy  
Potential

