

WEST NORRITON TOWNSHIP

READY FOR 100 INITIATIVE

Villanova University

*Brandon Simons, Mohamed Abaas, Jessica
Vairo, Clay Reilly, Heather Hill, Hersh Patel*

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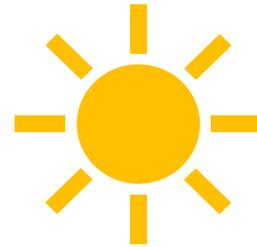
Agenda

1. Recap - Goals
2. Methodology
3. Energy Analysis
 - Energy Star Portfolio Manager
 - Energy Sourcing
 - Greenhouse Gases & Electricity
 - Vehicles & Rebates
4. Community Days
5. Next Steps
6. Council Input/Questions

West Norriton Township's Ready For 100% Resolution



100% renewably
sourced electricity
by 2035



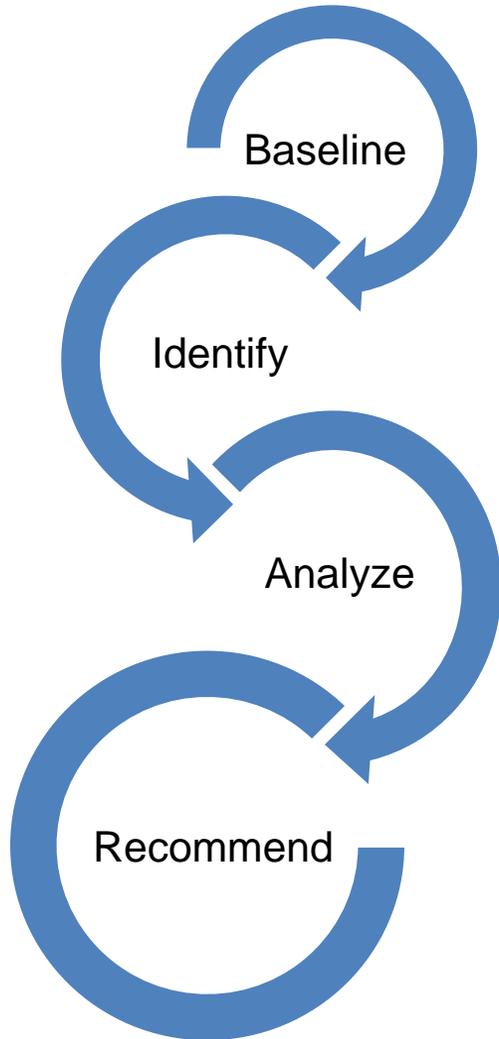
100% clean,
renewable energy
for heating system and
transportation equipment
by 2050



100% renewable
energy sources
for township vehicle fleet
(where feasible)
by 2030

CLEAN, EFFICIENT, RESILIENT, AFFORDABLE, EQUITABLE

Methodology



Annual Energy Consumption



Energy Star Portfolio Manger



Greenhouse Gases & Carbon Footprint



Vehicles and Equipment



Predominant Energy Consumers



Potential Solutions – Electrification and Energy Efficiency



Rebates and Loans

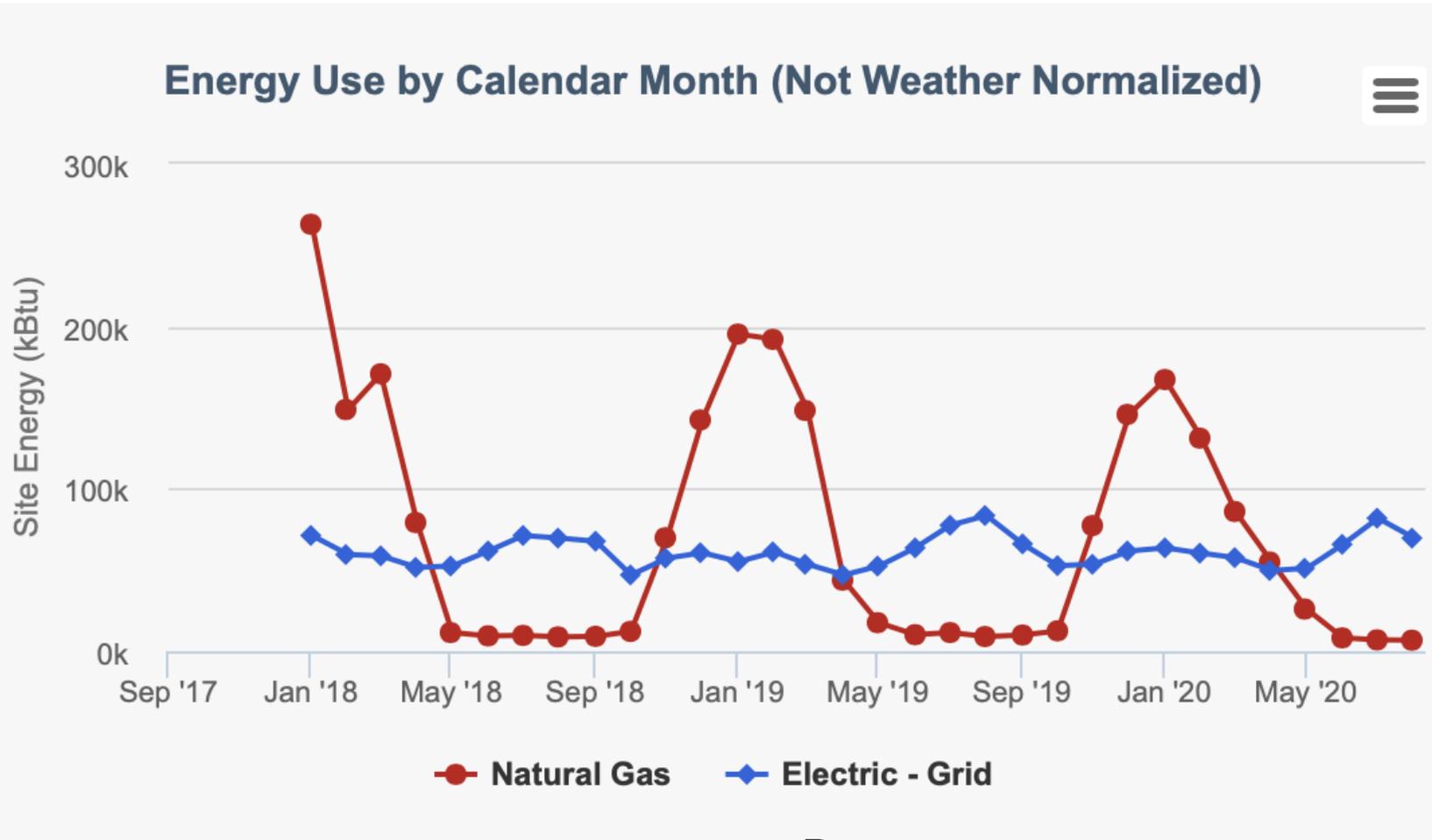
Building Audits

Electricity Purchasing and Generation Options

Cost – Benefit – Environment Analysis

Final Recommendations

ENERGY STAR Portfolio Manager



1630 W Marshall Property



- Enrollment of all municipal accounts on EPA's ENERGY STAR Portfolio Manager®
- Ongoing energy use tracking

West Norriton Twp Total Electricity Use (kWh)



Energy Sourcing Cost Analysis

1

2

3

4

5

6

Grid Mix
(Baseline)

Solar PPA
(0.06\$/kwh)

Wind PPA
(0.04\$/kwh)

PA Hudson
(100% Clean Energy
5-year Contract)

PA Hudson
(100% Grid Mix)

PA Hudson
(100% Clean Energy-
1-year Contract)

Expected Energy cost
over 20 years

\$1,578,365

\$1,263,032

\$842,021

\$901,637

\$915,204

\$1,048,316

Expected average
annual utility bill

\$78,918

\$63,151

\$42,101

\$45,081

\$45,760

\$52,415

Expected average
kWh Price

9.1¢

7.3¢

4.9¢

5.2¢

5.3¢

6.1¢

Total Savings with
respect to grid price

0%

20%

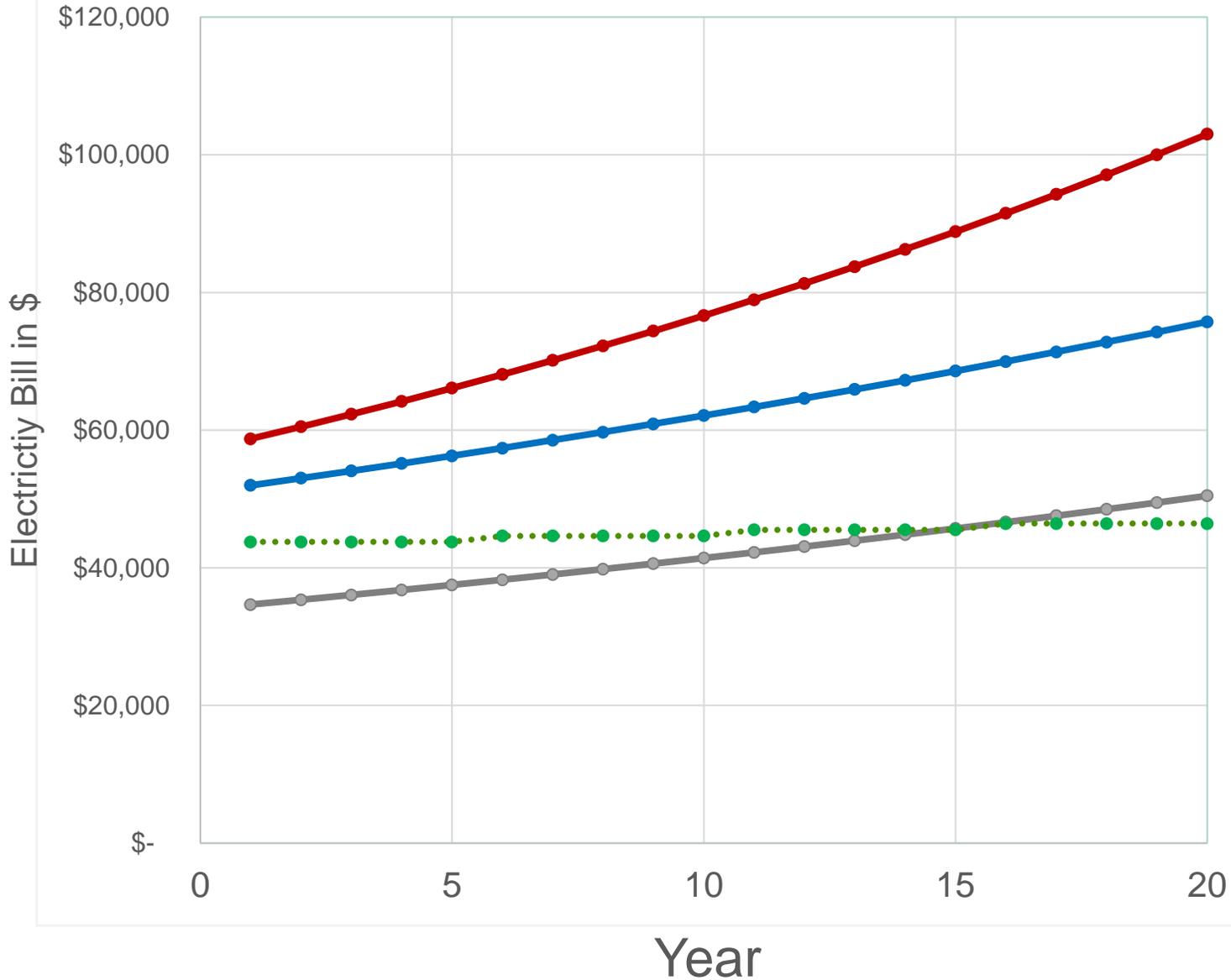
47%

43%

42%

34%

Projected Annual Projected Electricity Bill (2021-2040)

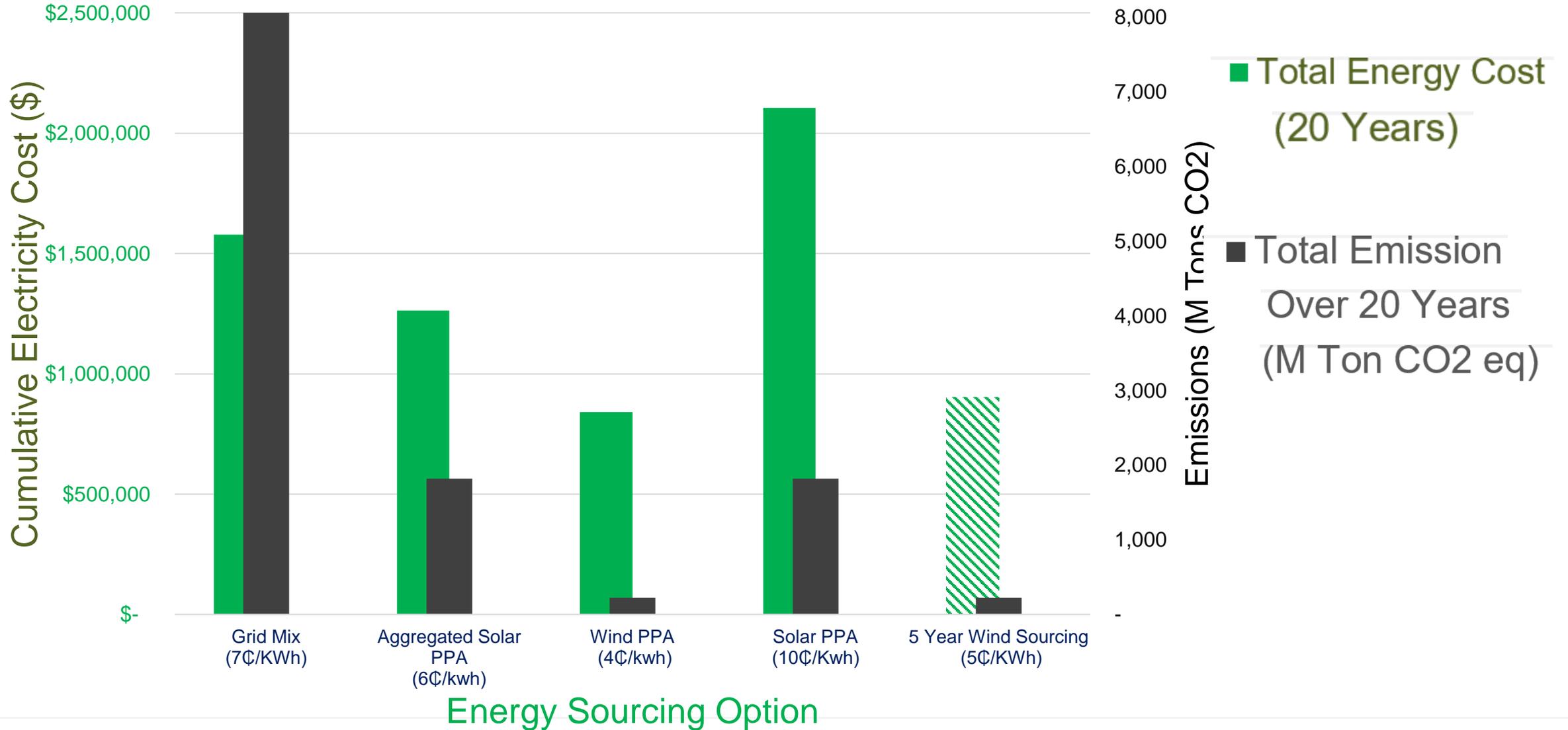


Annual Tariff Trend and Economic Analysis

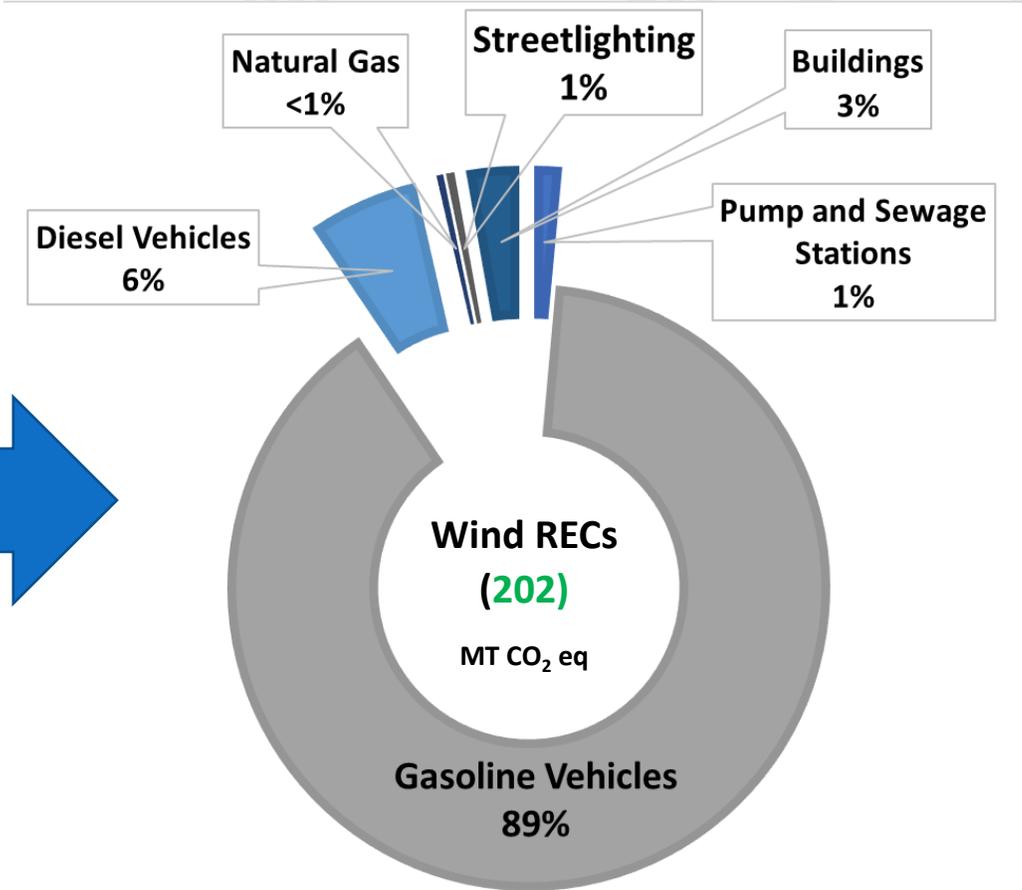
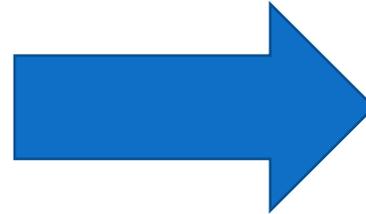
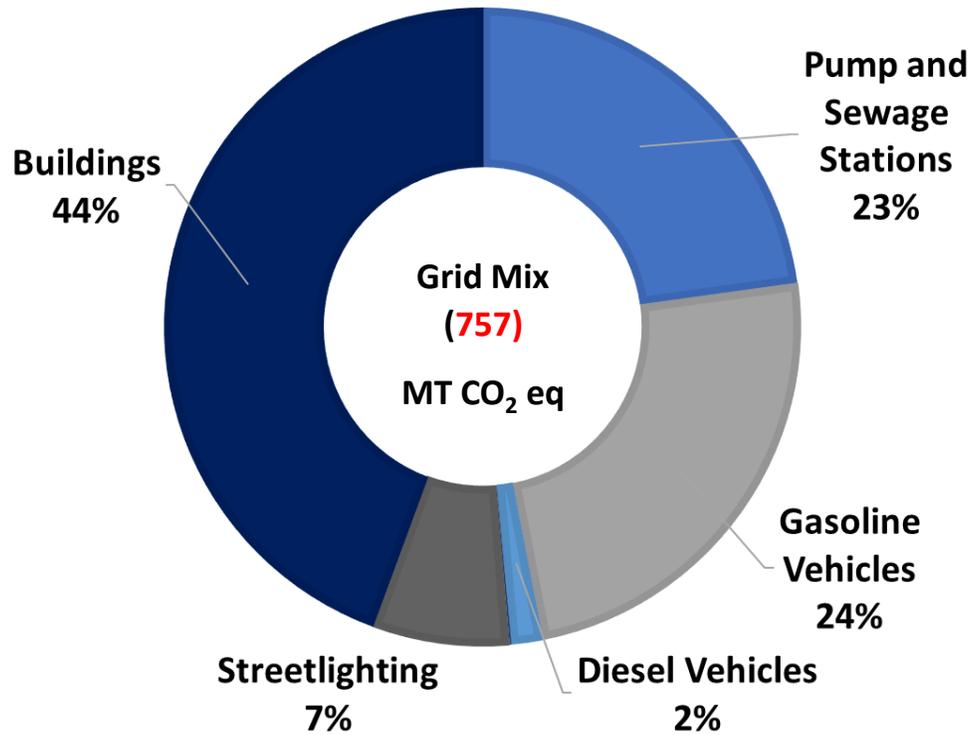
- Grid Mix (7¢/KWh)
- Aggregated Solar PPA (6¢/ kWh)
- Wind PPA (4¢/ kWh)
- 5 Year Wind Sourcing (5¢/KWh)

The matrix shows that the township's choice is the second optimum choice

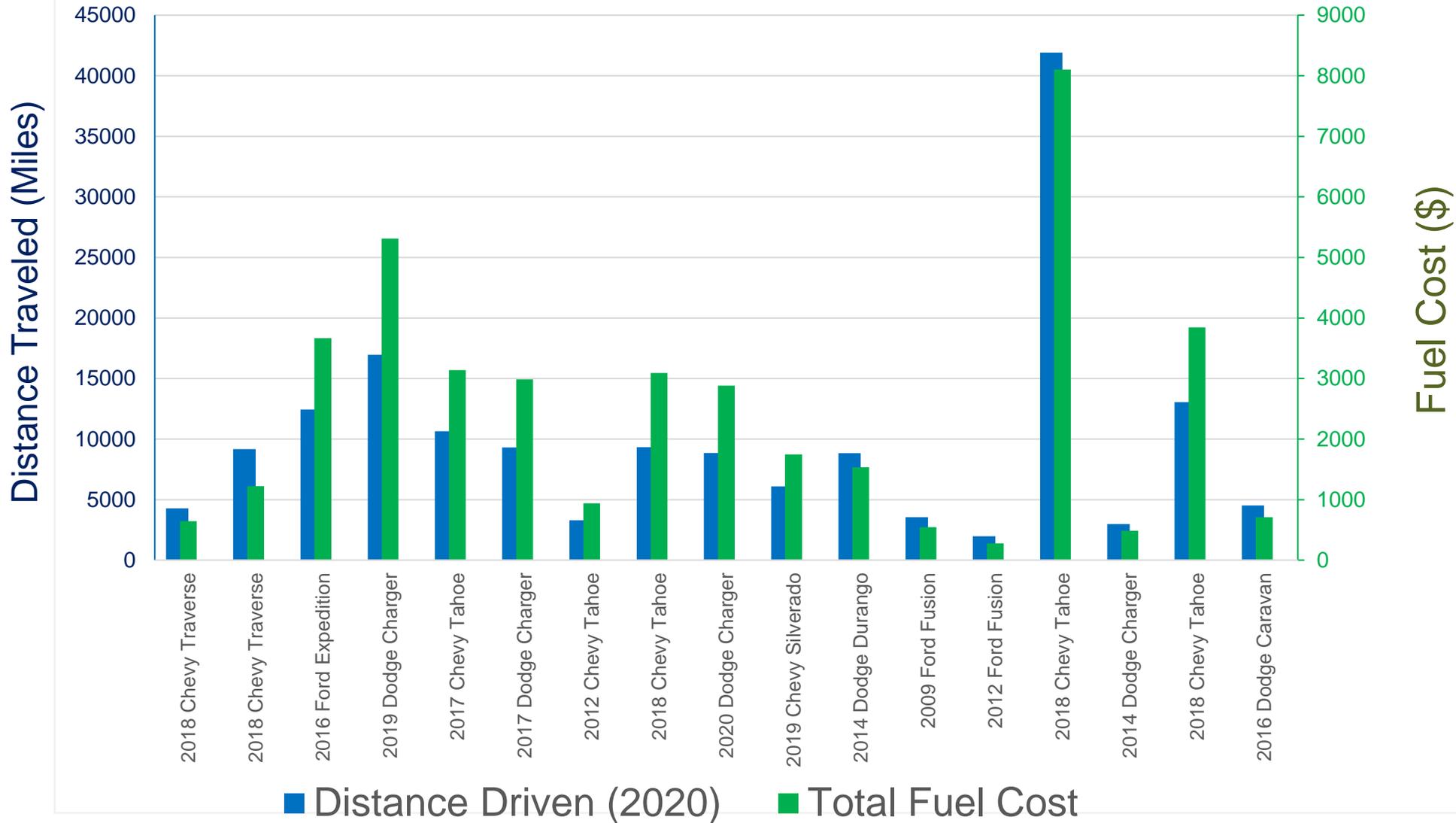
Economic-Environmental Energy Sourcing Comparison Matrix



Annual GHG Transformation



Vehicles Fuel Cost Vs. Miles Traveled

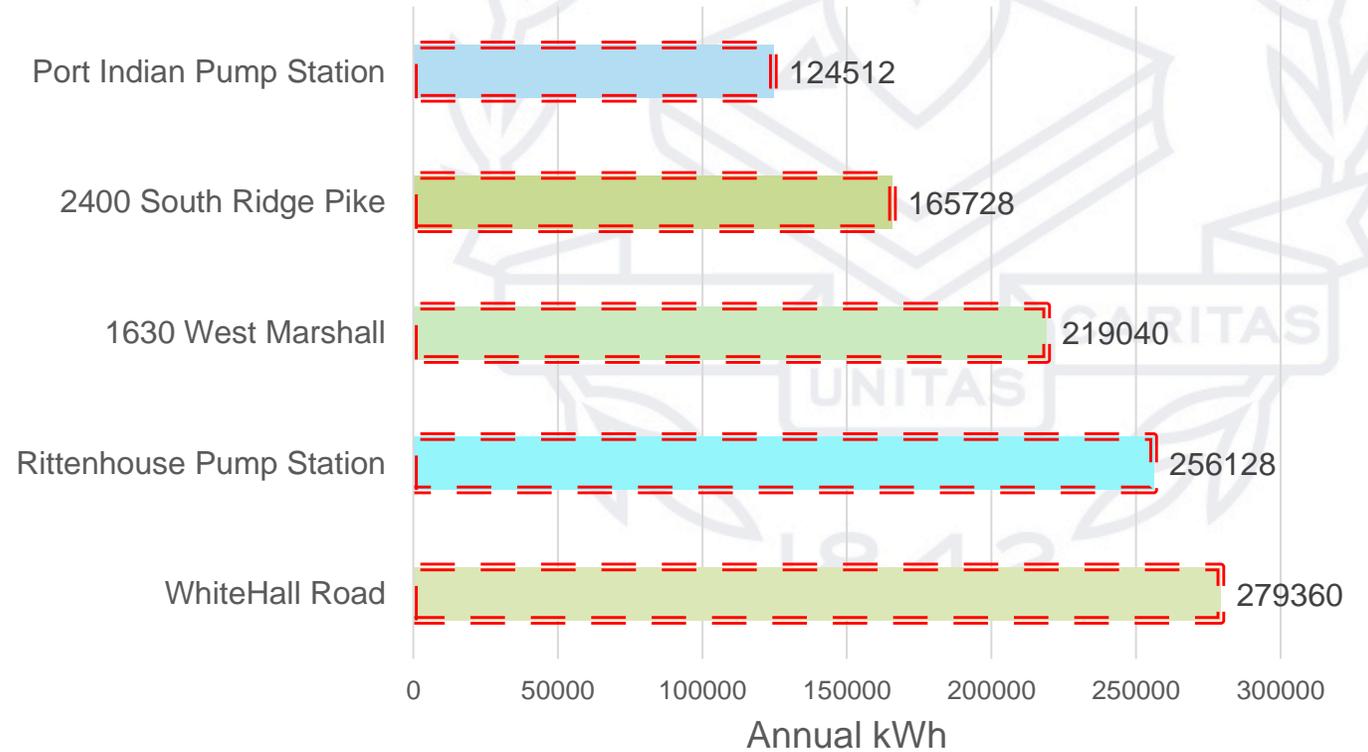
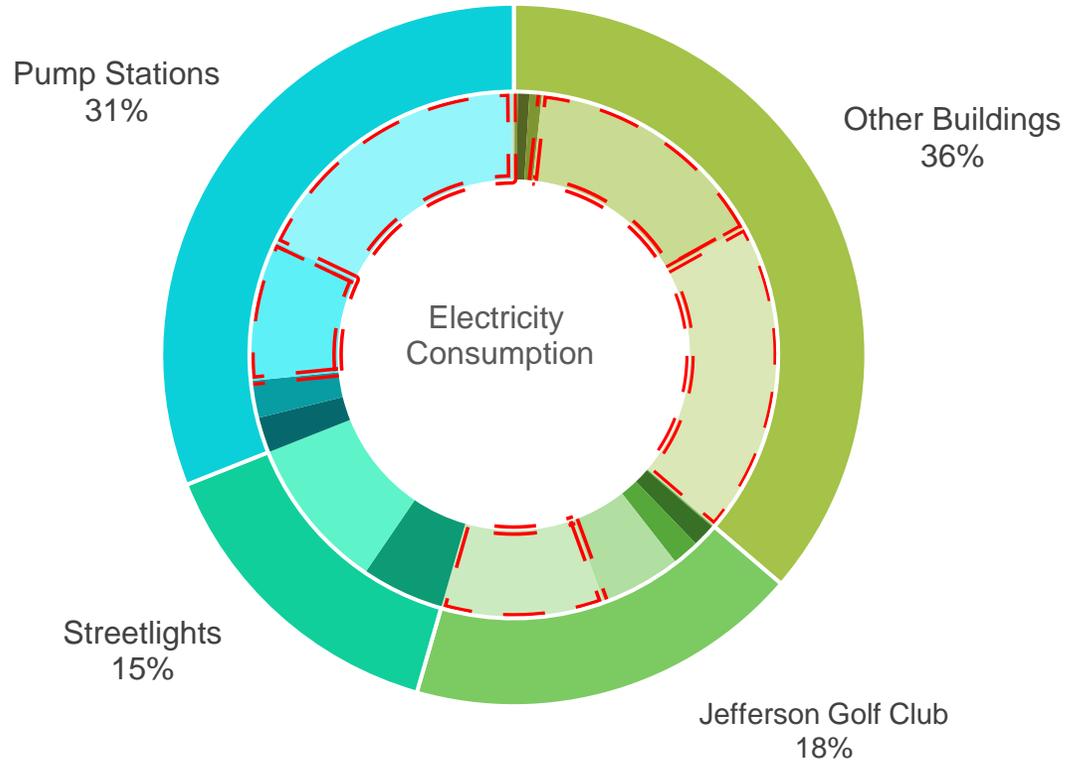


21,214 GAL
GASOLINE



1,170 GAL
DIESEL

Township Top Electricity Consumers



Rebates

- DSIRE USA
- PECO
 - Lighting
 - Instant Rebates
 - PECO Marketplace
 - HVAC
 - Incentives for Heat Pumps and Air Conditioning
 - Project Planning Submissions



Instant Lighting Discounts for Business

Effective November 12, 2020

| Lighting Equipment | Lumen Level | Discount Level |
|---|--|----------------------|
| DLC 2', 3' TLED Tubes | All Lumens | \$2 |
| DLC 4' TLED Tubes | All Lumens | \$2 \$4 |
| DLC 8' TLED Tubes | All Lumens | \$2 \$7 |
| DLC High-Bay and Low-Bay Fixtures and Retrofit Kits | > 3,850 | \$50 \$70 |
| DLC Exterior Fixtures and Retrofit Kits for Streetlights | > 250 | \$50 \$75 |
| DLC Exterior Fixtures and Retrofit Kits for Canopies and Garages | > 250 | \$30 \$50 |
| DLC Exterior Fixtures and Retrofit Kits for Wallpacks | > 250 | \$30 \$40 |
| DLC Exterior Flood Fixtures or Retrofit Kits | All Lumens | \$20 |
| DLC 2' Troffers, Surface and Suspended Linear Fixtures and Retrofit Kits | 1,500–5,500 | \$4 |
| DLC 4' Troffers, Surface and Suspended Linear Fixtures and Retrofit Kits | < 12,783 | \$8 |
| DLC 8' Troffers, Surface and Suspended Linear Fixtures and Retrofit Kits | < 9,871 | \$10 \$20 |
| LED Exit Sign, Single-Sided* | N/A | \$3 |
| LED Exit Sign, Double-Sided* | N/A | \$5 |
| ENERGY STAR® LED Screw-In Globe, PAR, R20 and Specialty Lamps | All Lumens | \$2 |
| ENERGY STAR LED Screw-In BR30, BR40 Lamps | 400–1,200 | \$2 |
| ENERGY STAR LED Recessed Downlight Fixtures or Retrofit Kits | 300–4,500 | \$8 |
| ENERGY STAR LED MR16 Lamps (GU5.3, GX5.3, GU10 Pin Base) | < 11 Watts) 500–1,000 Lumens (12–16 Watts) 1,001–1,500 Lumens (All Watts) > 1,501 Lumens | \$2 |
| ENERGY STAR LED GU24 Pin-Based Lamps, DLC 4-Pin Replacement Lamps for CFLs | < 11 Watts) 500–1,000 Lumens (12–16 Watts) 1,001–1,500 Lumens (All Watts) > 1,501 Lumens | \$0.50 |

Community Day Green Recommendations



Energy Saving Tips



Upcoming
E-Cycling Events
Schedule



Curbside Recycling
Tips



Upcoming
Hazardous Waste
Events Schedule



'Green' Products for
sale



Energy Saving Tips for Residents

- Lighting
 - LEDs
 - Natural Light
- Appliances
 - Washing with cold water
 - Prioritize Night Utilization
 - No Heated Dry
 - Oven Time Reduction
- Reduce strain on the power grid

WAYS TO SAVE MONEY AND ENERGY



Energy Saving Tips for Winter Months

- Set your thermostat lower
 - Save 3% of heating per degree!
- Winterize windows
- Change filters once a month
- Make sure your fireplace is airtight
- Inspect all ductwork for any air leakage



Next Steps

1. Vehicles



EVs



Police



PHEVs

2. Building Audits



HVAC



Rebates



Lighting

3. Energy



Rooftop Solar

4. Equipment



Lawn Care



Carts

5. Carbon Emissions



Scope Expansion

QUESTIONS?

