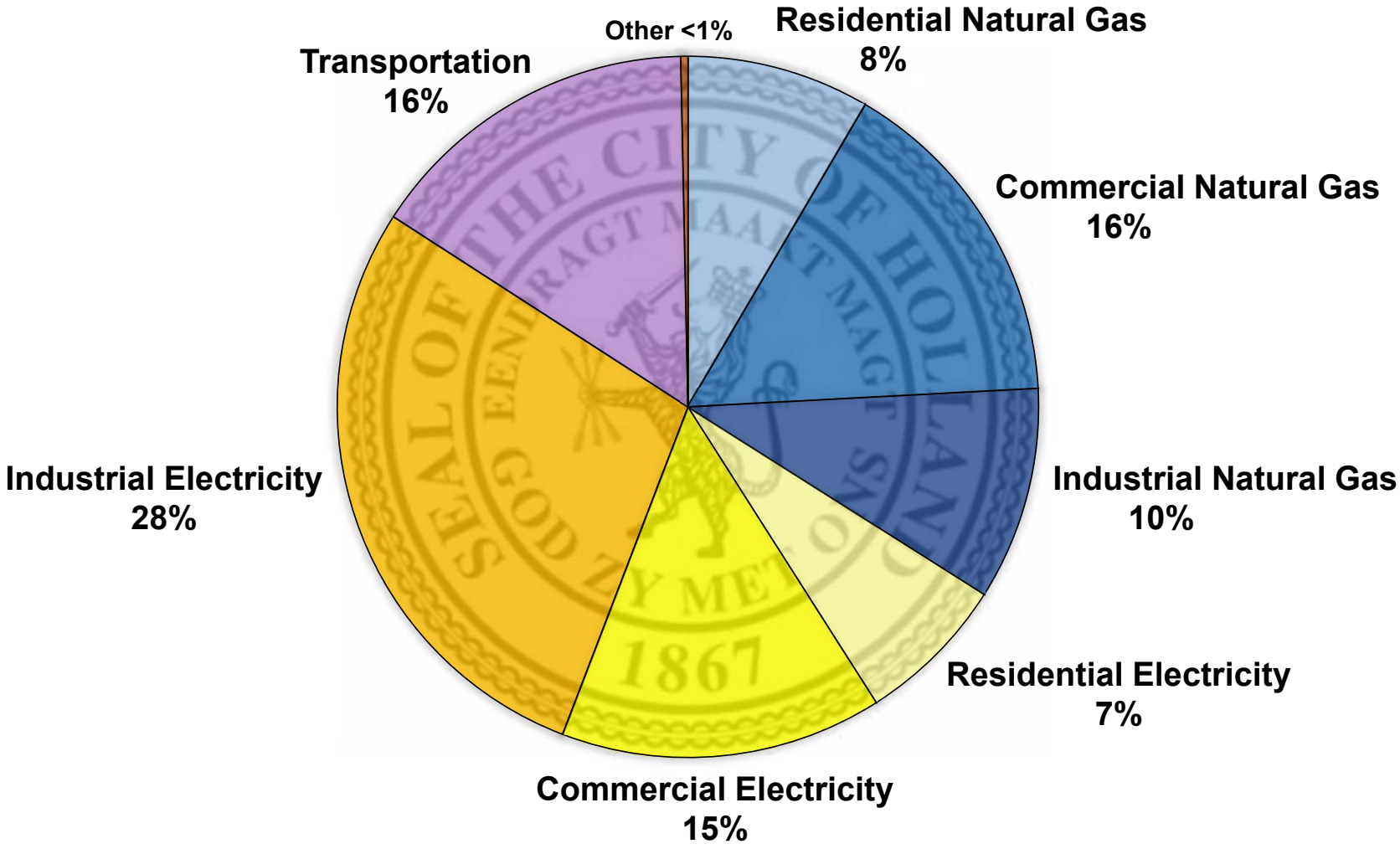

Holland
MICHIGAN
Community Energy Plan
Progress Update
Presented to City Council: December 2023
BPW
Holland Board of Public Works

Background

- Community Energy Plan (CEP) published in 2011
    - Ensure Economic Competitiveness
    - Protect the Environment
    - Provide Reliable and Affordable Energy
- Updated most recently by the Strategic Development Team (SDT) in 2021; five “levers” of renewed focus:
    - Electric Portfolio
    - Building Energy Consumption
    - Transportation
    - Educations
    - Carbon Offsets

Where Do Our Emissions Come From?



Vehicle miles traveled (miles)

÷

Fuel efficiency avg (miles/gal)

X

Emission Factor (tons CO_{2e}/gal)

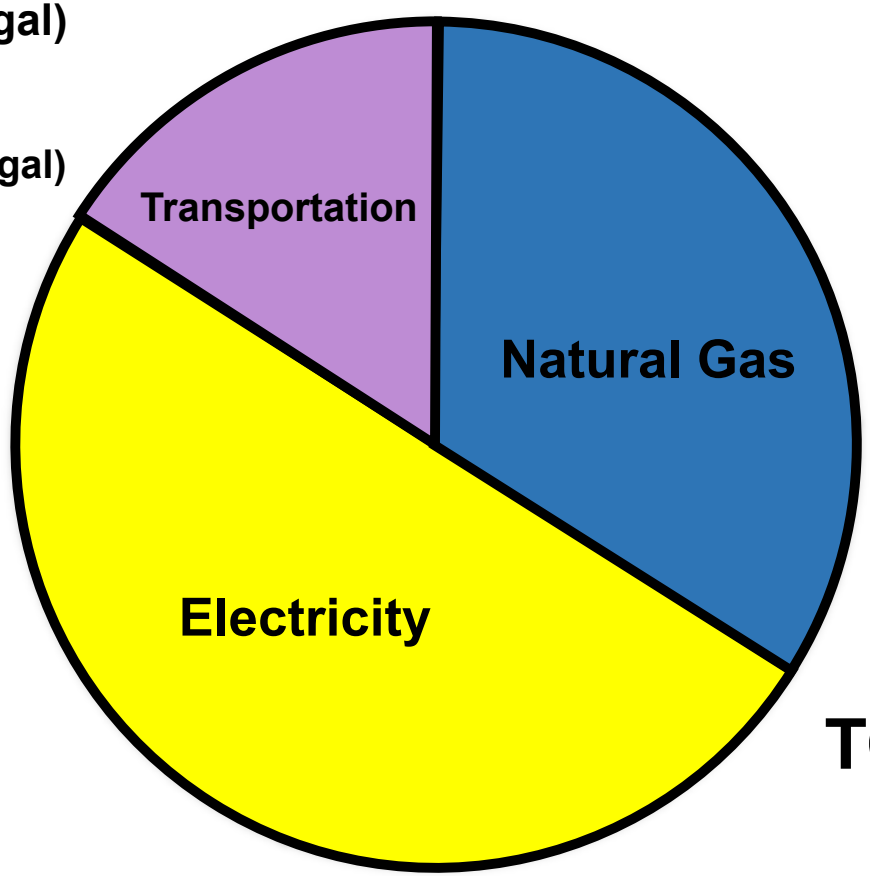
= **tons CO_{2e}**

Energy use (therms)

X

Emission factor
(tons CO_{2e}/therm)

= **tons CO_{2e}**



Energy use (kWh)

X

Emission factor
(tons CO_{2e}/kWh)

= **tons CO_{2e}**

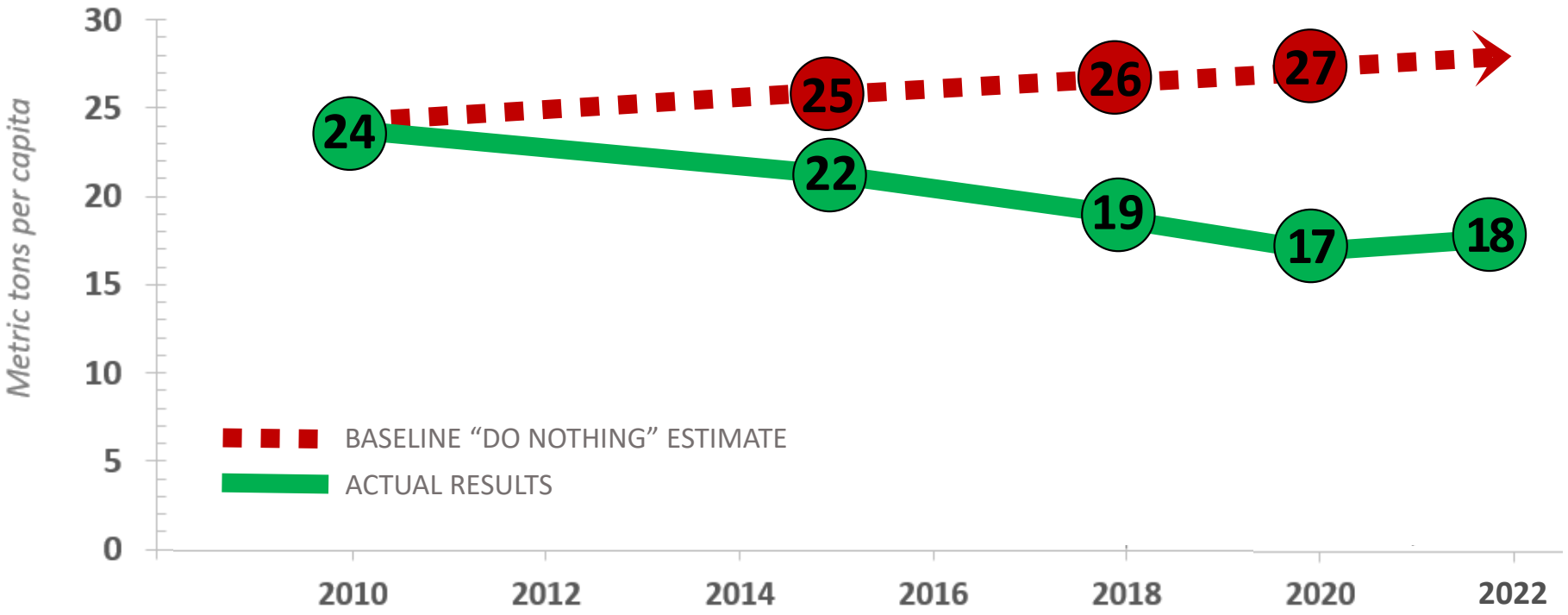
Emissions per capita =

TOTAL tons CO_{2e}

÷

Holland population

2022 Carbon Results

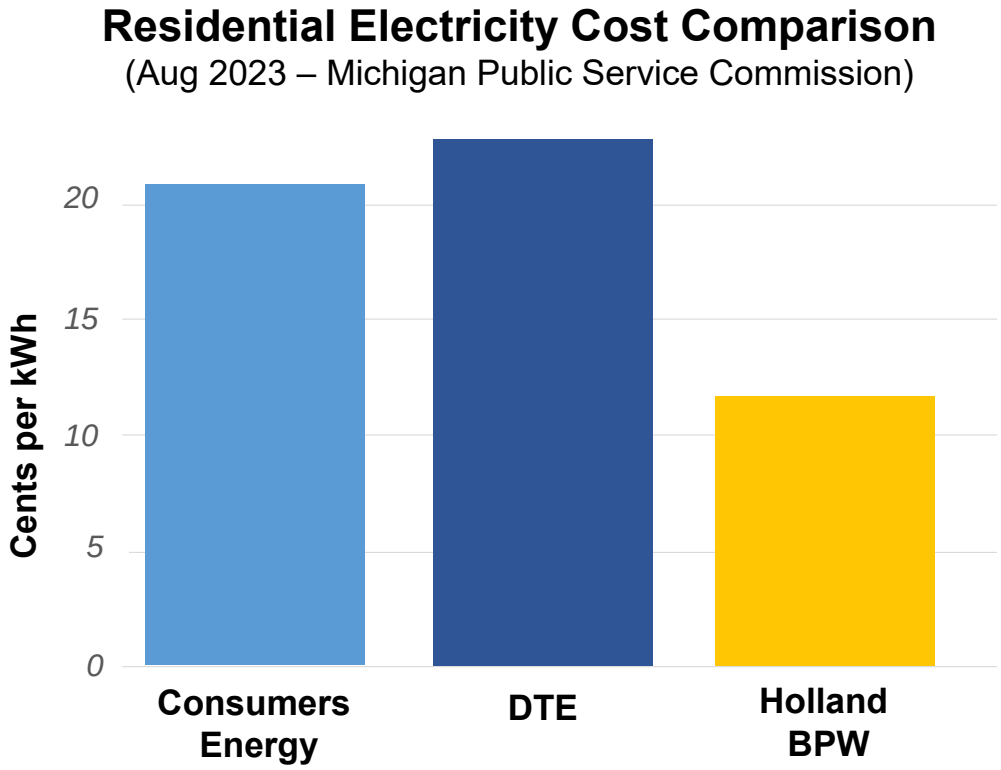


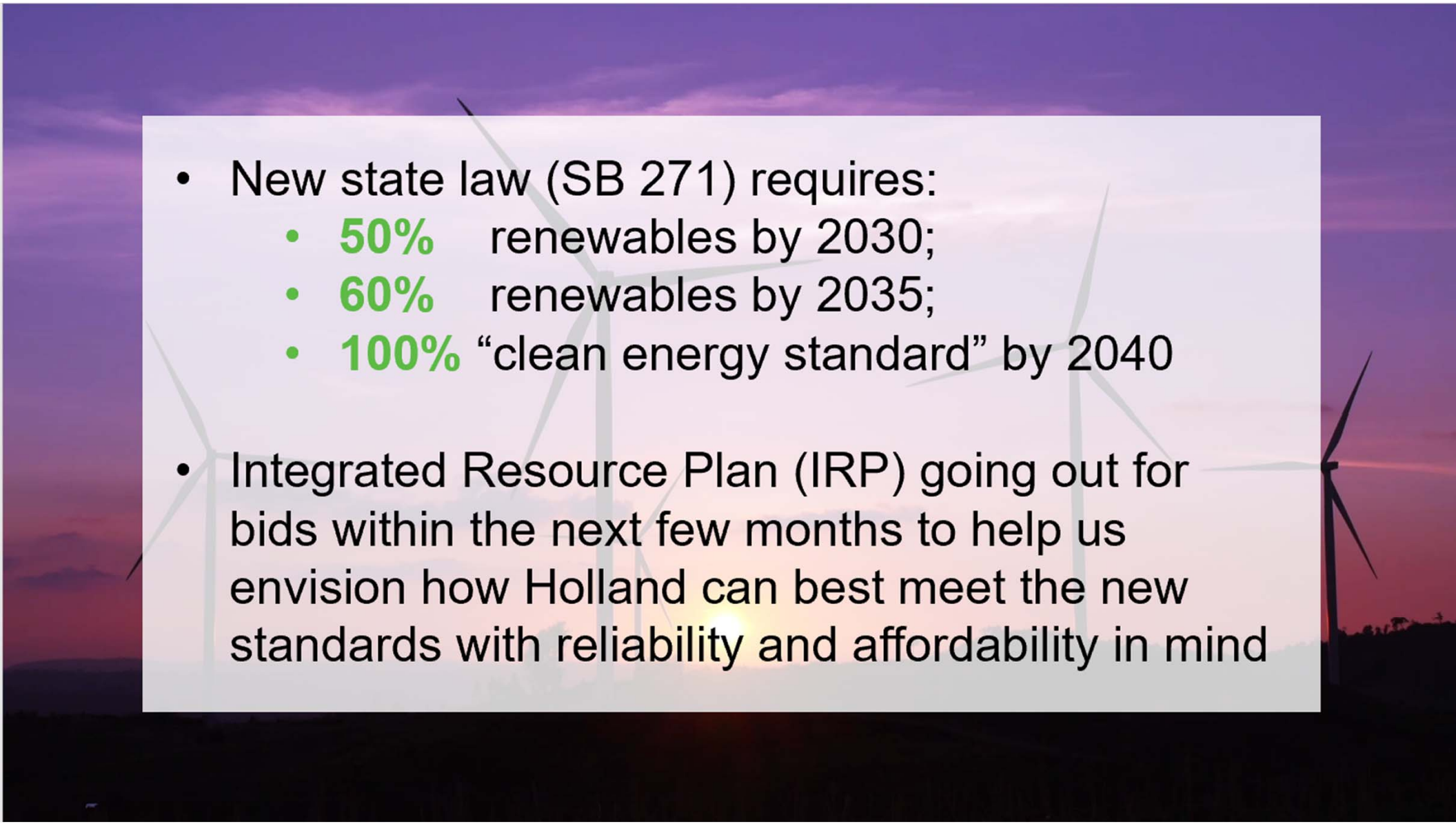
Electric Portfolio

Portfolio currently includes

16.4%

Renewable Energy





- New state law (SB 271) requires:
  - **50%** renewables by 2030;
  - **60%** renewables by 2035;
  - **100%** "clean energy standard" by 2040

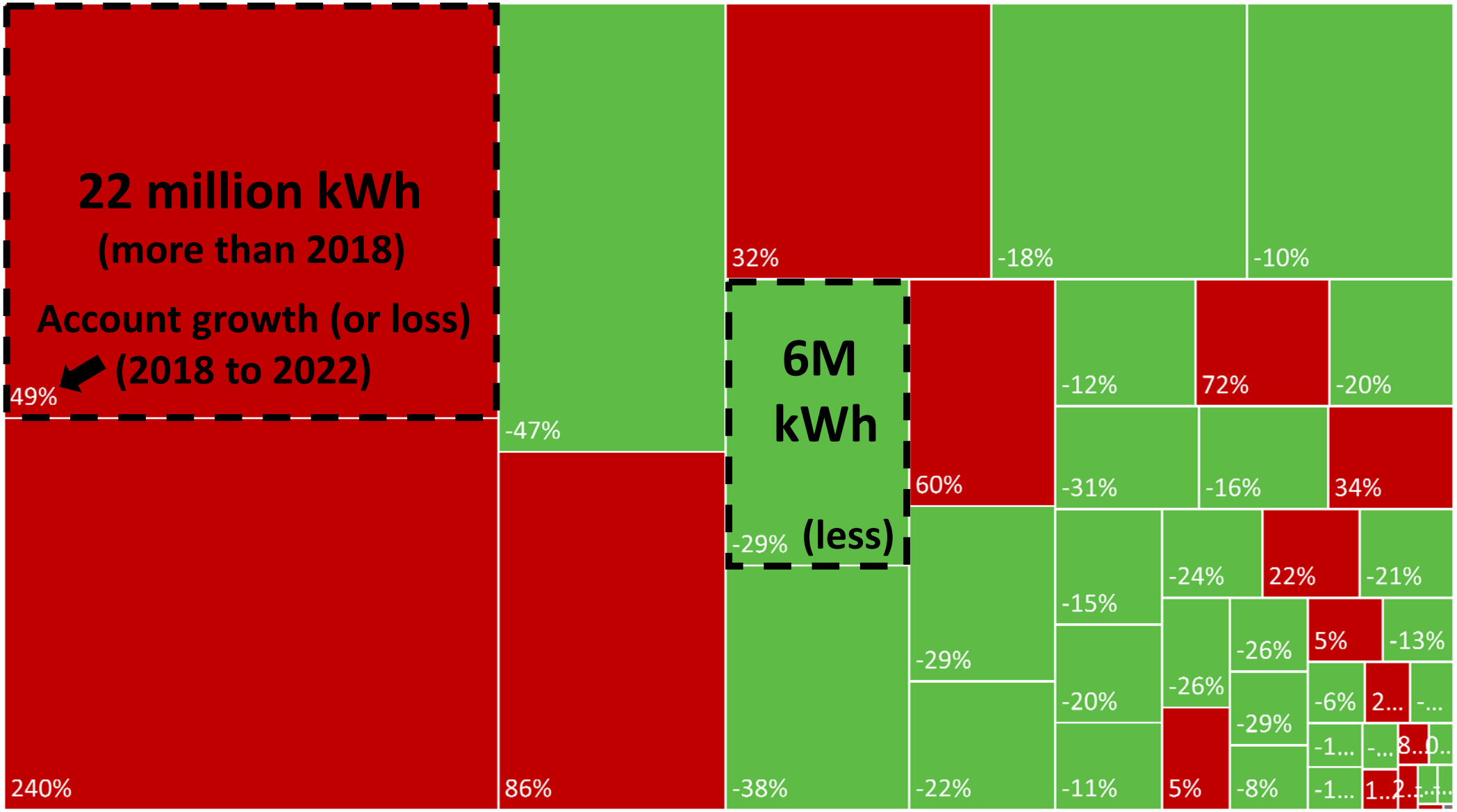
- Integrated Resource Plan (IRP) going out for bids within the next few months to help us envision how Holland can best meet the new standards with reliability and affordability in mind


50%
Less CO_2 per kWh
(Compared to 2005)

Building Energy Consumption

ELECTRICITY

	2022 Usage (kWh)	2022 Usage vs 2020	2022 Usage vs 2018
Industrial	404,124,992	10% ↑	3% ↑
Commercial	183,129,358	5% ↑	-4% ↓
Residential	87,454,724	-7% ↓	-7% ↓

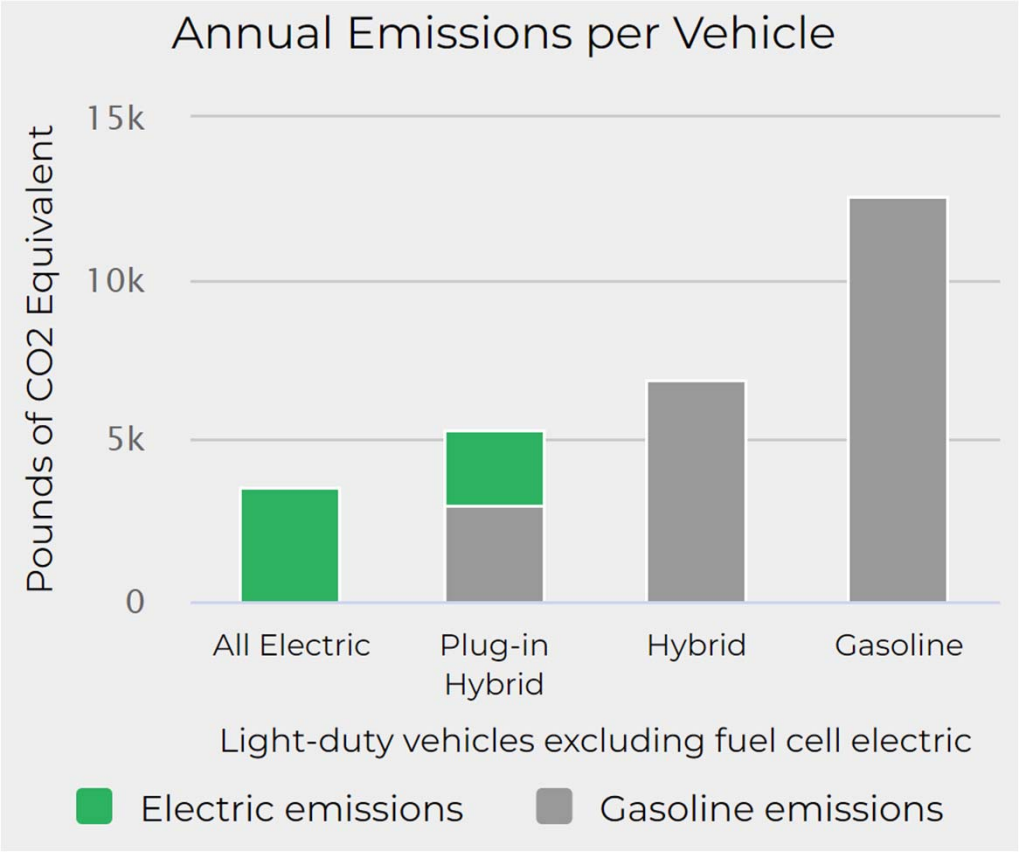

22 million kWh
(more than 2018)
Account growth (or loss)
(2018 to 2022)
49%
240%
-47%
86%
32%
-18%
-10%
6M
kWh
-29% (less)
-38%
60%
-12%
72%
-20%
-31%
-16%
34%
-29%
-22%
-15%
-20%
-11%
-24%
22%
-21%
-26%
5%
-26%
-29%
-8%
5%
-13%
-6%
2...
-...
-1...
-...
8...
0...
-1...
1...
2...

Building Energy Consumption

NATURAL GAS

	2022 Usage (MMBtu)	2022 Usage vs 2020	2022 Usage vs 2018
"Transport" (Industrial)	1,131,446	8% ↑	-15% ↓
GS-3	862,645	92% ↑	61% ↑
GS-2	503,300	6% ↑	6% ↑
GS-1	441,606	17% ↑	0%
Residential	972,193	7% ↑	-6% ↓

Transportation



For every vehicle that converts from gas to electric:

+ 2 tons carbon
(added electricity – *2023 portfolio*)

- 6 tons carbon
(reduced gasoline)

- 4 tons carbon
(net reduction)

Transportation

COMING SOON!

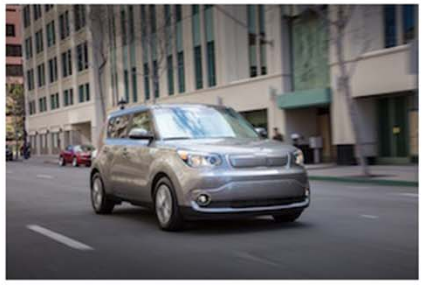
Holland Board of Public Works

INTRO | VIEW EV MODELS | SAVINGS & CHARGE TIME | TAX CREDITS & INCENTIVES | HOME CHARGING | PUBLIC CHARGING | EV FACTS

Learn about electric vehicles, fuel savings and charging.

View Available Models

Explore available models and find the All-Electric or Plug-in Hybrid Electric Vehicle model that fits your lifestyle.



Explore EV Models

Lower Fuel Cost & Charge Time

See how much you'll save when you switch from a gas or diesel vehicle to an electric vehicle - and find out how long it'll take to charge it!

Savings & Charge Time

Education

Education


holland
sentinel
com


ENERGY
SMART
HOME

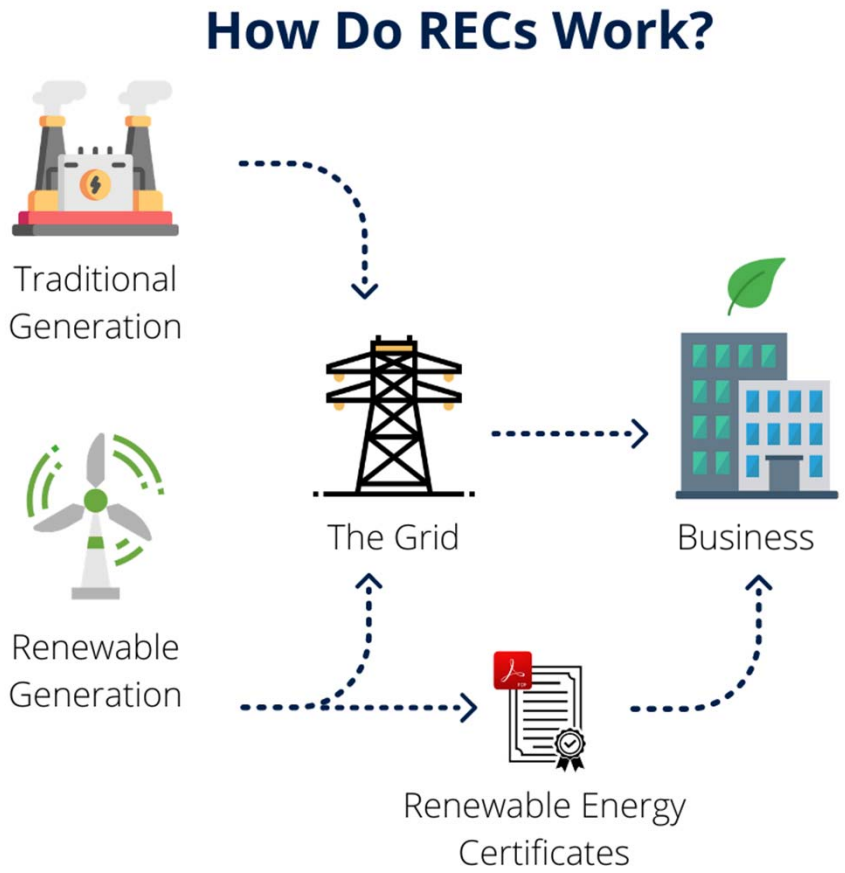

HOME ENERGY
101


TRAINING · EDUCATION · EFFICIENCY
COMPRESSED AIR
CHALLENGE


Westcore
Neighbors
Heights
of Hope
laup
LEARN TODAY
LEAD TOMORROW
community
Action
PARTNERSHIP
3sixty
GreenHome
INSTENSTITUTE
Good
Samaritan
Lakeshore
Habitat
for Humanity
utdoor
Discovery Center

Carbon Offsets

- Ability to buy renewable energy regardless of local portfolio transition progress
- Customers can buy from HBPW or third parties
- Challenging to track third-party REC sales to our customers, but it should be counted in carbon calculations



Carbon Offsets

cfhz community foundation Holland/Zeeland Area

Looking Ahead

- If the electric portfolio reaches 50% renewables by 2030, the emissions attributable to electric use will decrease to roughly 30-35% of the City's total, and the per-capita emissions would be roughly **14 mt/capita**
- If 3,000 additional vehicles convert to electric by 2030, our overall metric would drop an additional **0.5 mt/capita**
- Energy efficiency (all customers) and electrification (residential customers) can achieve another **1-3mt/capita** reduction by 2030
- **All these results combined (if achieved) would put us at or below the CEP goal of 12.15 mt/capita by 2030**