City of Ames

Climate Action Plan

Supplemental Input Committee: Implementation

February 13th, 2023
6:00 PM-8:00 PM

CITY OF ames™

SSG SUSTAINABILITY SOLUTIONS GROUP



Meeting Agenda

Results Review

Impact of IRA

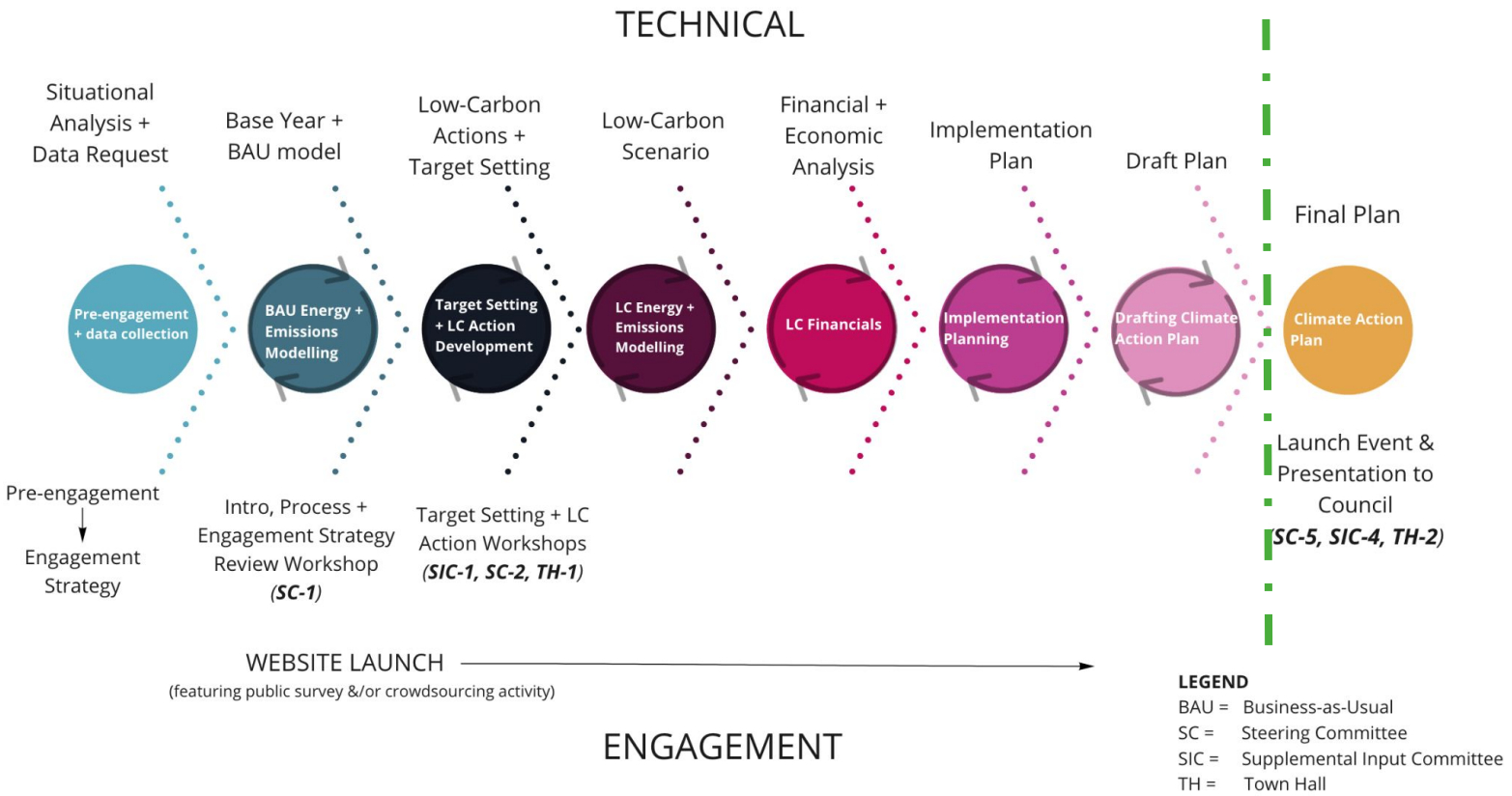
Impact of Natural Gas Prices

Implementation Actions

Questions & Discussion



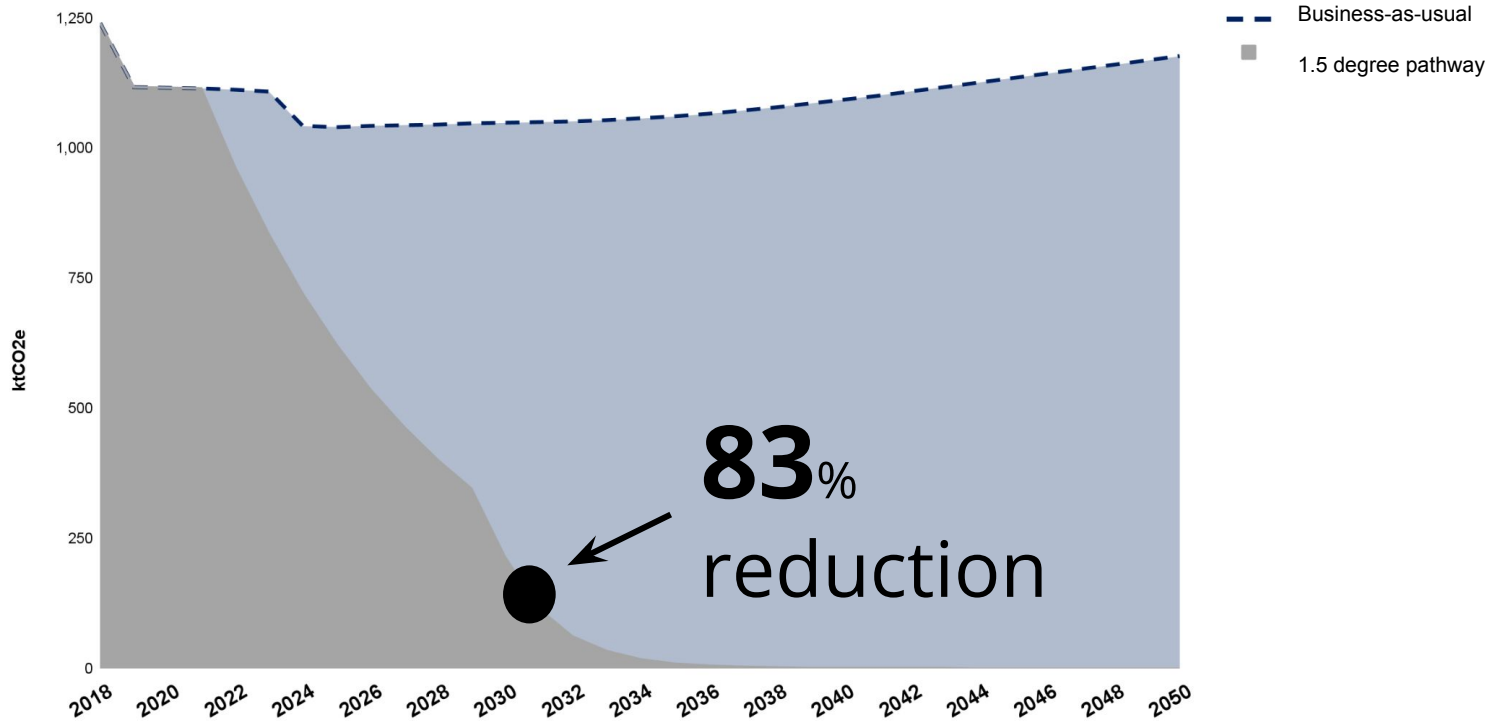
Project Overview

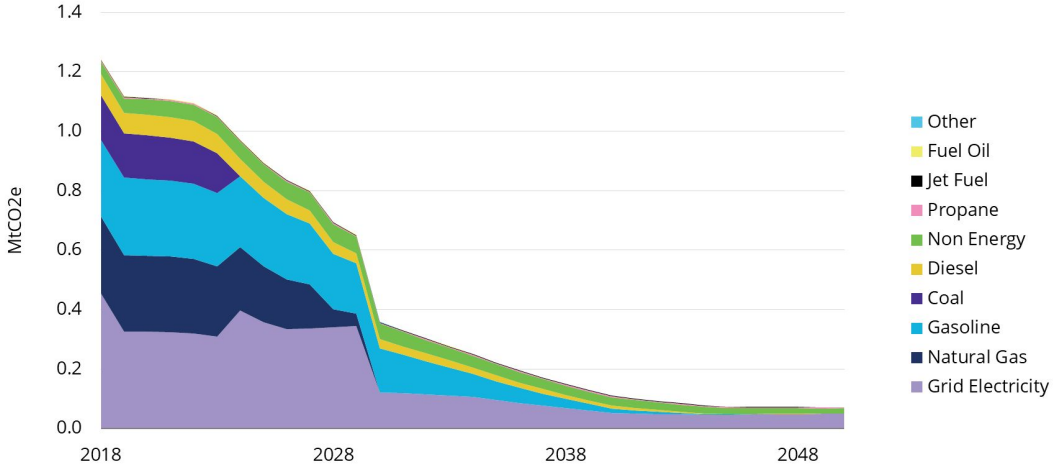


Results Review



A reminder of the low carbon pathway selected





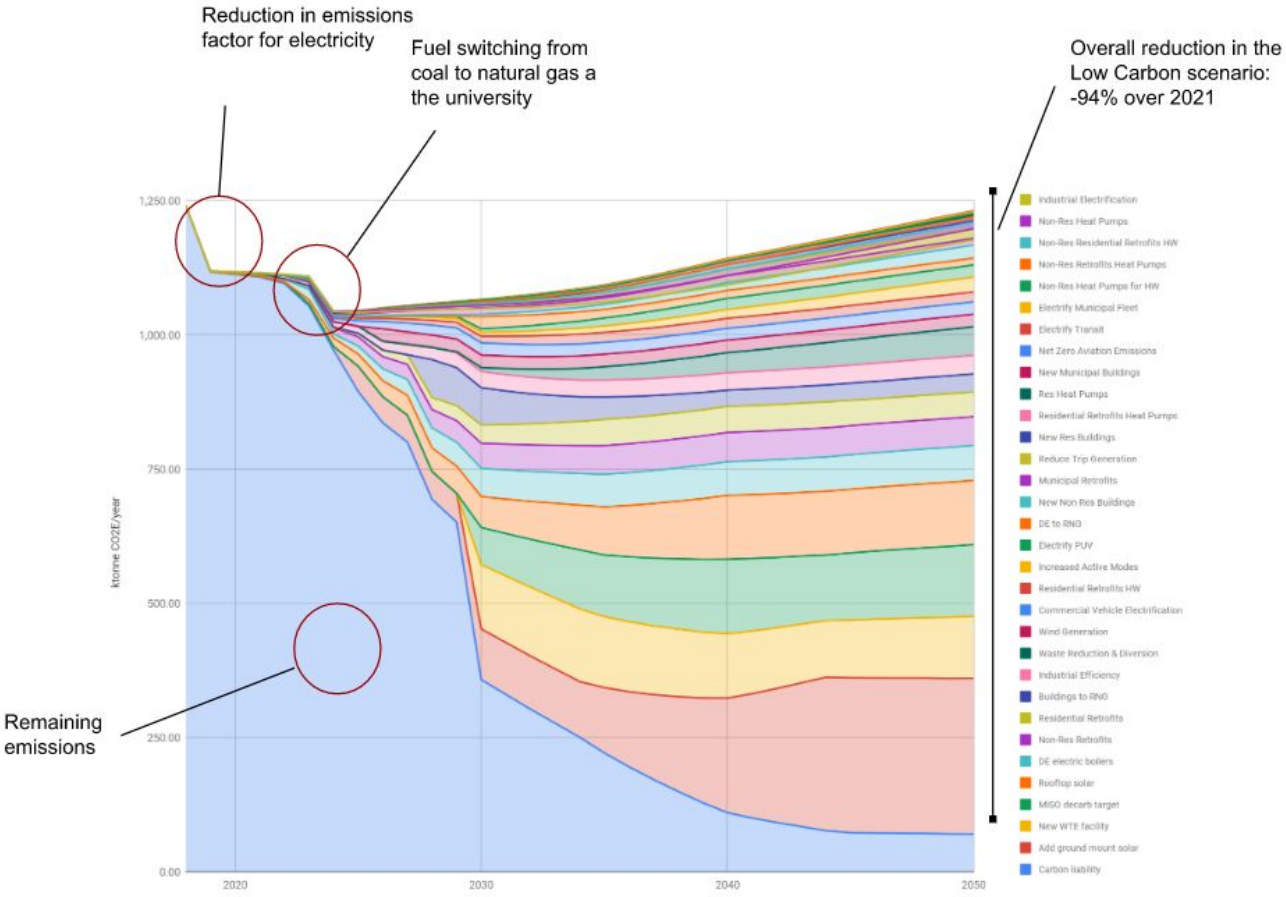
Results

70% reduction by 2030

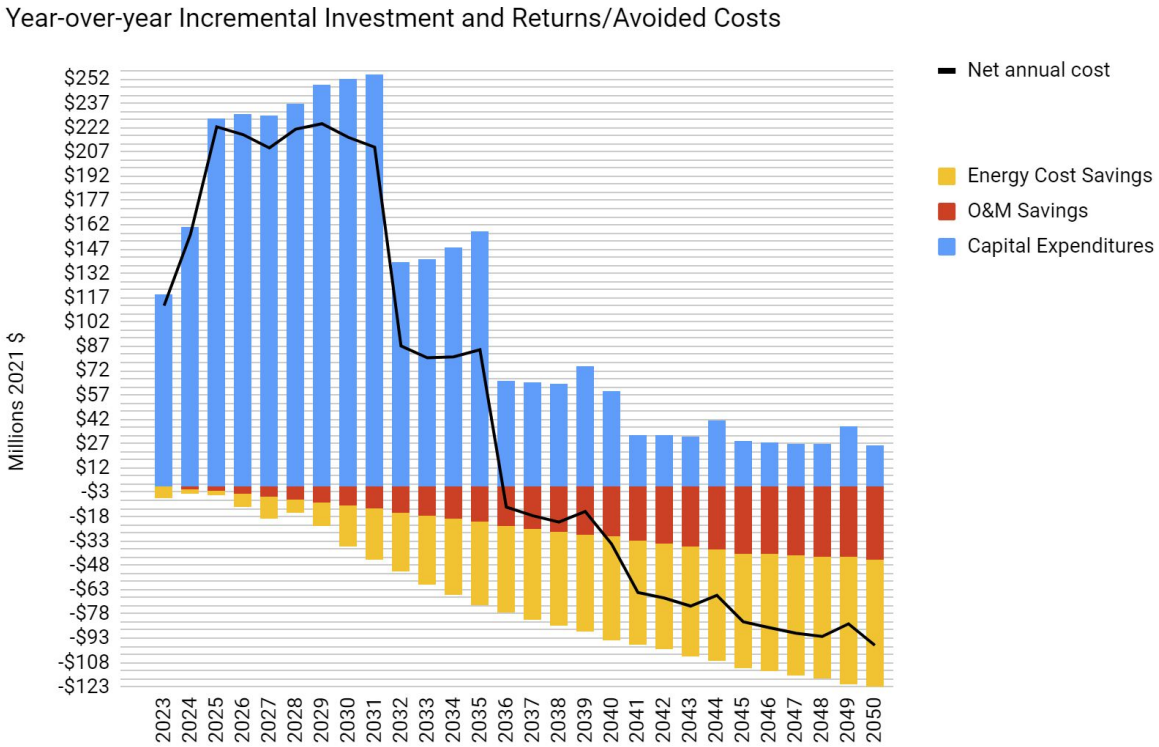
94% reduction by 2050

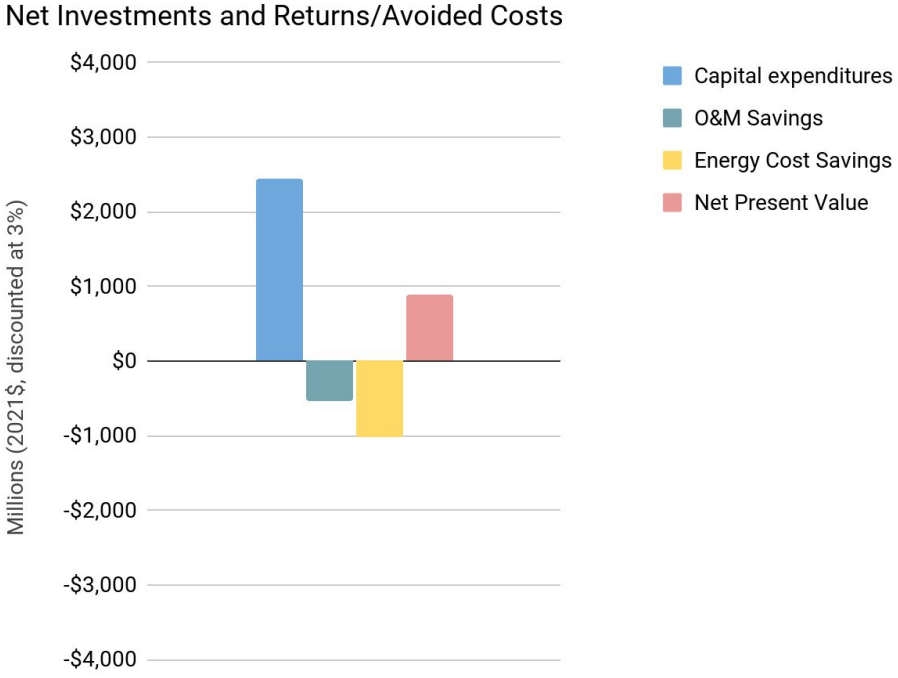
4.8 tonnes GHG emissions per capita by 2030

0.8 tonnes GHG emissions per capita by 2050


Reduction in emissions factor for electricity
Fuel switching from coal to natural gas a the university
Overall reduction in the Low Carbon scenario: -94% over 2021
Remaining emissions
ktonne CO2E/year
1,250.00
1,000.00
750.00
500.00
250.00
0.00
2020
2030
2040
2050
Industrial Electrification
Non-Res Heat Pumps
Non-Res Residential Retrofits HW
Non-Res Retrofits Heat Pumps
Non-Res Heat Pumps for HW
Electrify Municipal Fleet
Electrify Transit
Net Zero Aviation Emissions
New Municipal Buildings
Res Heat Pumps
Residential Retrofits Heat Pumps
New Res Buildings
Reduce Trip Generation
Municipal Retrofits
New Non Res Buildings
DE to RNG
Electrify PUV
Increased Active Modes
Residential Retrofits HW
Commercial Vehicle Electrification
Wind Generation
Waste Reduction & Diversion
Industrial Efficiency
Buildings to RNG
Residential Retrofits
Non-Res Retrofits
DE electric boilers
Rooftop solar
MISO decarb target
New WTE facility
Add ground mount solar
Carbon liability

Getting over the upfront costs





How much will it cost?

CAPITAL COST

$2.4 billion

SAVINGS

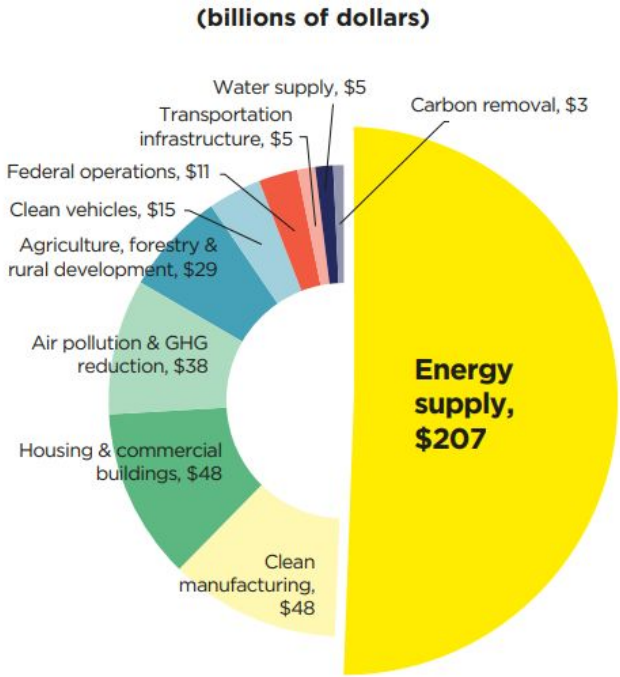
1.5 billion

NET COST

$900 million

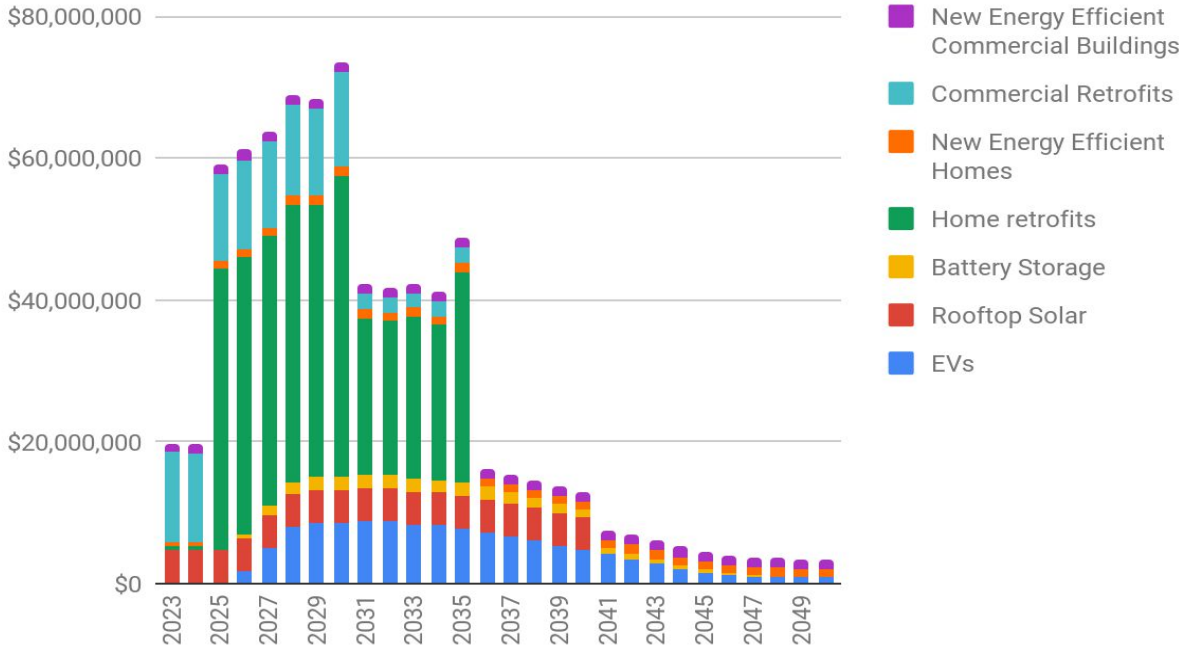
Impact of IRA

The **Inflation Reduction Act** makes the single largest investment in climate and energy in American history.

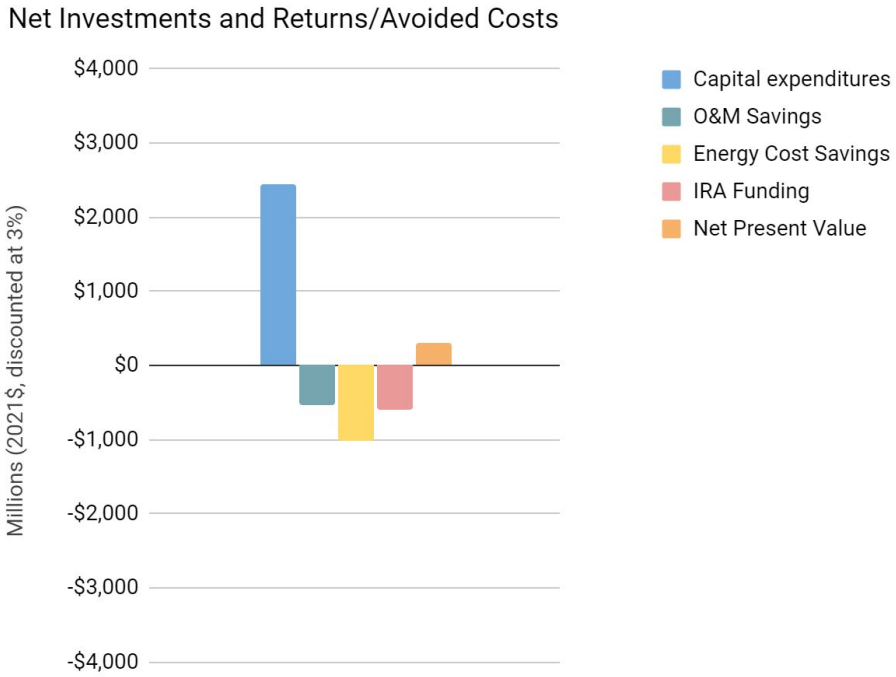


Source: C40

IRA savings by category



How much will it cost?



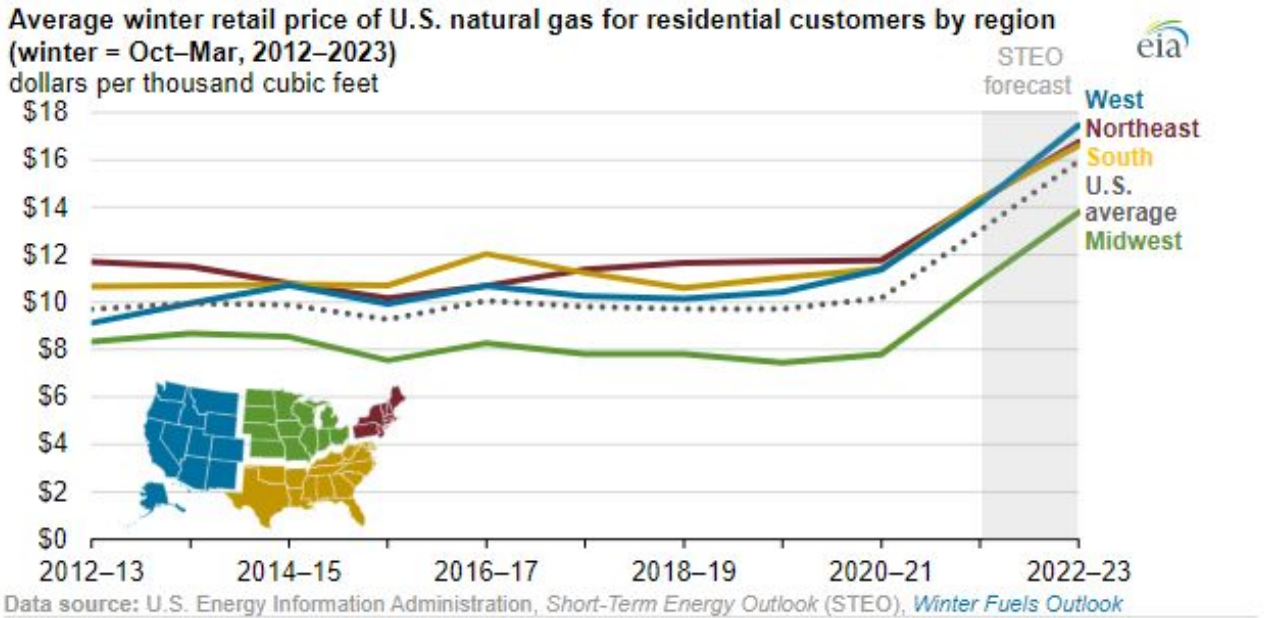
Adding IRA Funding

Net Cost $300 million

$160 per capita per year

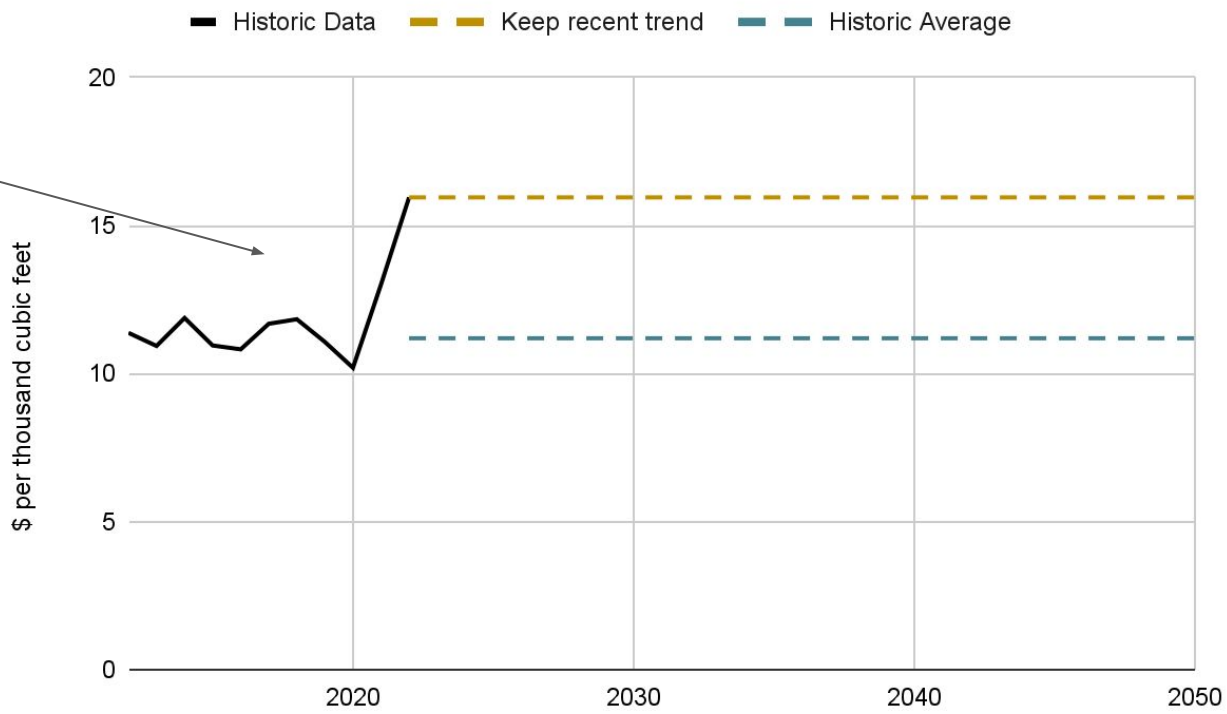
Energy Security and Geopolitics

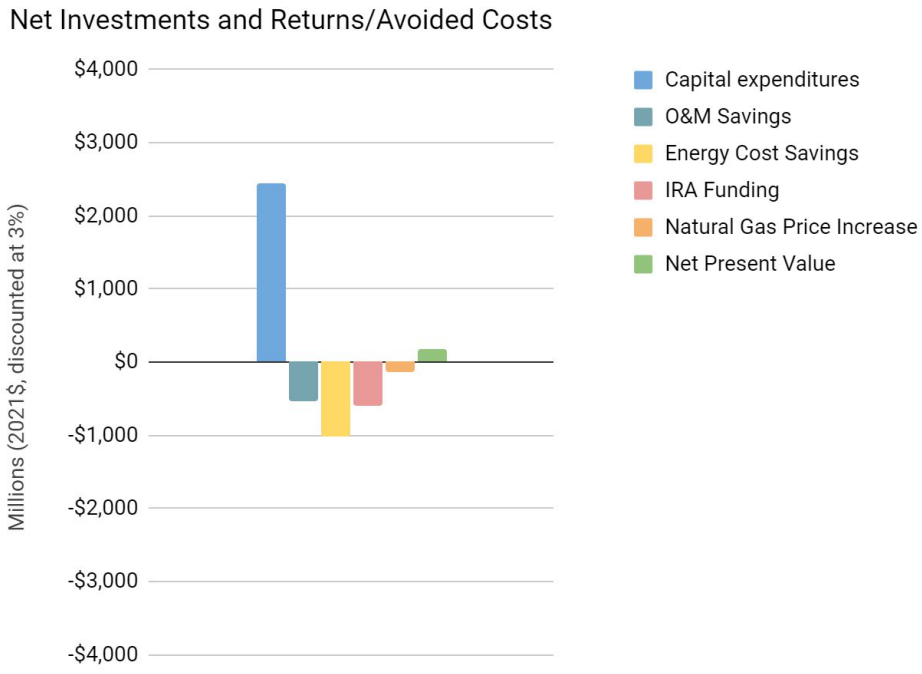
Energy Security and Geopolitics



Midwest Natural Gas Prices

40% increase
from 2021





How much will it cost?

Adding IRA Funding

Net Cost: $300 million

$160 per capita per year

Adding NG Price Increase

Net Cost: $170 million

$90 per capita per year

Implementation Strategy



Low Carbon Actions

Community Wide

Physical change required to 2050

High-level strategic roadmap

Implementation

City of Ames Specific

Near term action, next 5 years

Specific initiatives supporting the roadmap

Building Retrofits



Emission Reductions: **3000 kt**

% of cumulative reductions: **15%**

Net Cost: **$930 million**

Implementation

Heat Pumps

- Loans and financial incentives
- Repository of vendors and installers
- Contractor training
- Resident feedback

Retrofits

- Pilot retrofit program focusing on older homes
- Partner with retrofit service companies
- Retrofit Municipal Buildings by 2030
- Energy use disclosure for large buildings
- Partner with a community loan provider

Neighborhood Finance Association





- Currently Available in Des Moines and Cedar Rapids
- Loans for energy upgrades and home improvements
- $10,000 energy advantage 0% interest loan
- $10,000 to $15,000 forgivable loans for home improvements
- Ames could partner with NFA to offer loans for building upgrades

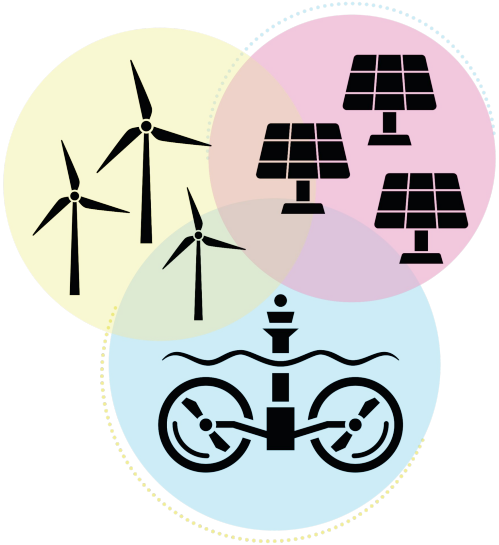
IRA funding for electrification

Direct LMI Consumer Rebates for Electrifying Homes and Buildings

Electric Appliances and Equipment	Maximum Rebates for LMI Households
Heat Pump Water Heater	$1,750
Heat Pump HVAC	$8,000
Cooktop (including induction), Oven, and Heat Pump Clothes Dryer	$840
Electric Load or Service Panel Upgrade	$4,000
Insulation and Air Sealing	$1,600
Electric Wiring Upgrades	$2,500
Maximum Per Home	**$14,000**
Additional qualified contractor incentives	$500

Source: Forbes

Renewable Energy Generation



Reductions: **10 000 kt (47%)**

Net Cost: **$850 million**

Implementation

Ground Mount Solar and Wind Generation

- 50 Megawatts by 2025 through power purchasing agreements (PPA)
- Explore AMES owning its own generation
- Public education

Rooftop Solar

- Solar group buy program
- Incentives for solar ready buildings
- Financial incentive to building owners who add rooftop solar to their buildings
- Partner with a non-profit loan provider (NFA)

Solar Group Buy

GROW SOLAR
POLK COUNTY

Solar Group Buy, MREA

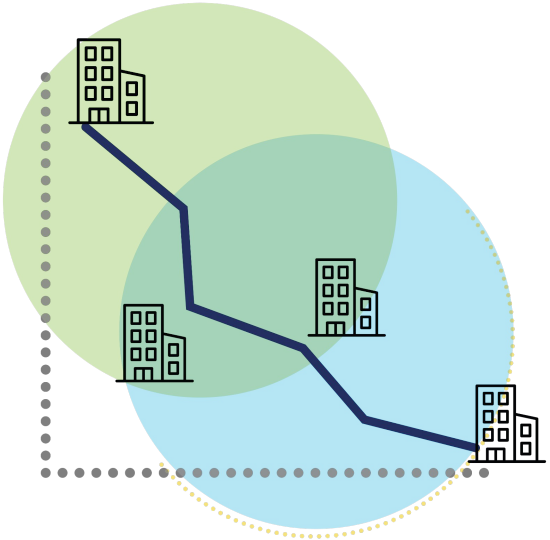
Since 2013, the MREA has facilitated over 50 Solar Group Buy programs around the Midwest, educating over 11,600 individuals with our Solar Power Hour information sessions, and leading to more than 17,000 kW on over 2,660 properties.

- Education
- Financial Incentive
- Trusted process
- Ames could partner with MREA



Source : Group Buy Solar Installations, Midwest Renewable Energy Association

Net-Zero New Construction



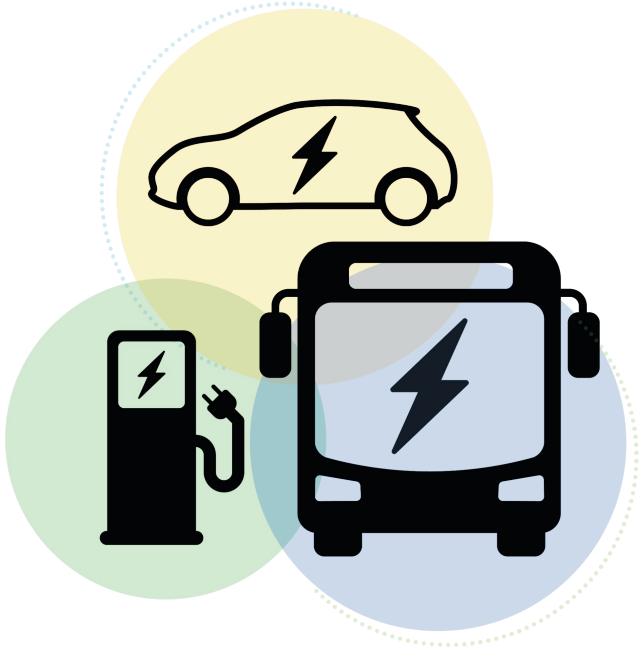
Emission Reductions: **580kt (3%)**

Net Cost: **$180 million**

Implementation

- Zoning code requirements and tax incentives for new NZ buildings
- All new municipal buildings starting in 2025
- Builder training in net zero and passive house design principles
- Energy use disclosure for large new buildings

Reducing Vehicle Emissions



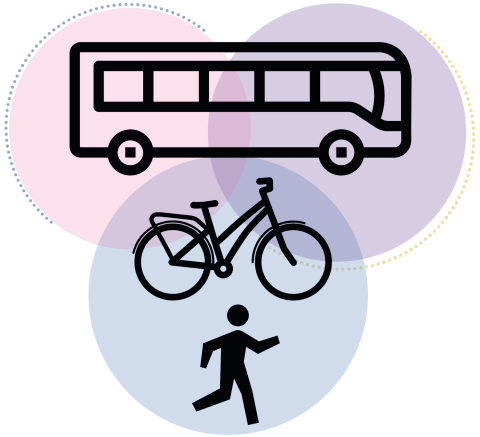
Emission Reductions: **930kt (4%)**

Net Saving: **$960 million**

Implementation

- Education about IRA Clean Vehicle credit (30D), $7,500 credit for new and a $4,000 credit for used
- EV infrastructure policies/by-laws for new MURBs, commercial buildings & parking lots
- Municipal policy for new vehicle purchases
- Support CyRide with their their decarbonization plan. Collaborate on applying for funding opportunities.

Increase Active Transportation and Transit Use



Emission Reductions: **660 kt (3%)**

Net Saving: **$660 million**

Implementation

- Work with ISU to introduce a bikeshare program
- Improve and expand active transportation infrastructure
- CyRide bus pass partnerships with large employers
- Increase transit frequency in downtown core and from key neighbourhoods to ISU
- Car free zones downtown and near ISU

Reduce Waste Emissions



Emission Reductions: **730 kt (3%)**

Implementation

- Implement an organized garbage collection system
- Education to residents on composting and waste reduction
- Implement an alternative waste to energy system which allows for refuse to be combusted in a separate boiler

Questions & Discussion



Thank You!

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