WILLDAN ENERGY & SUSTAINABILIY SOLUTIONS

IECA Panel – Sep 14, 2022

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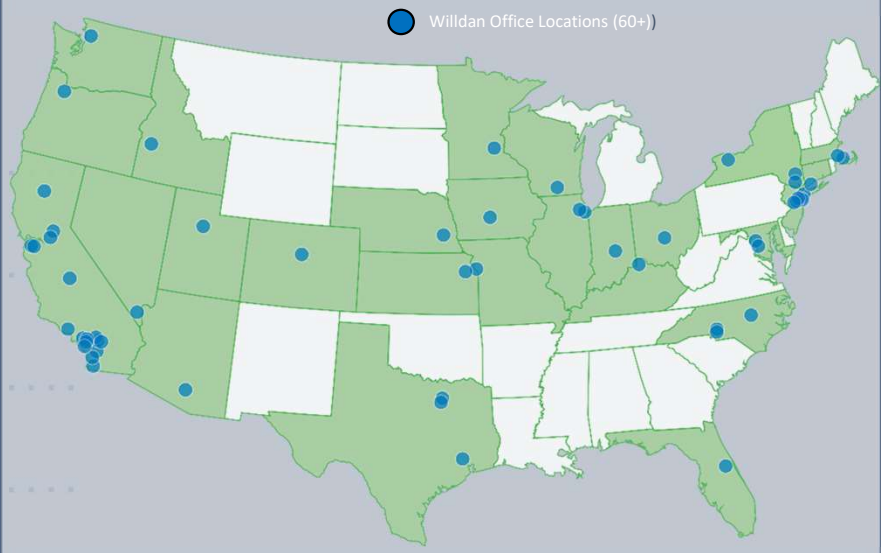
WILLDAN KNOWS INDUSTRIAL

- Founded in **1964**
- Energy and Industrial Experience **25 Years**
- More than **150** Industrial projects
  NAESCO Accredited
- Saved **1,400** MW and **6,800** GWh
- Saved **100M** Therms
- **5,400,000** Metric Tons Greenhouse Gas Emissions Avoided
- **1,600** Staff in **60** Offices



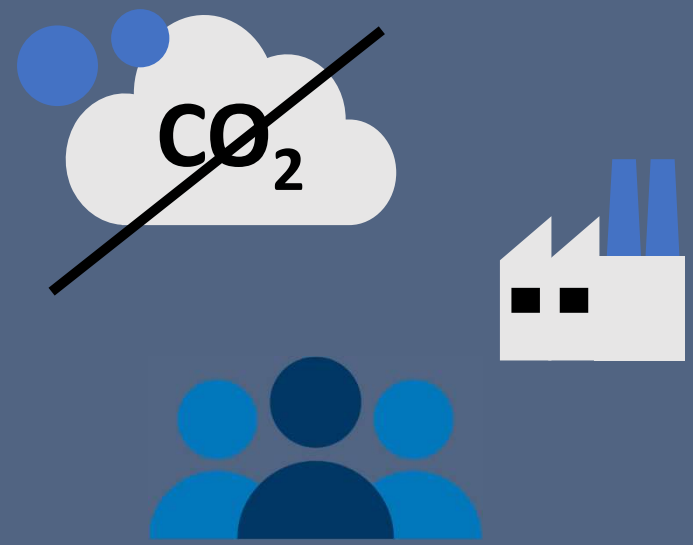
Industrial Solutions:

- Cement/Minerals/Aggregates
- Paper
- Aerospace
- Large Pharma
- Printing
- Injection Molding
- Food & Beverage
- Plastics
- Metals/Machining
- Fabrication & Extrusion
- Data Centers
- Distribution Centers
- Refrigerated Warehouses
- Telcom

Takeaway ***We know the industrial sector and we understand industrial processes***

Legislative & Societal Pressure to Reduce Carbon Footprint

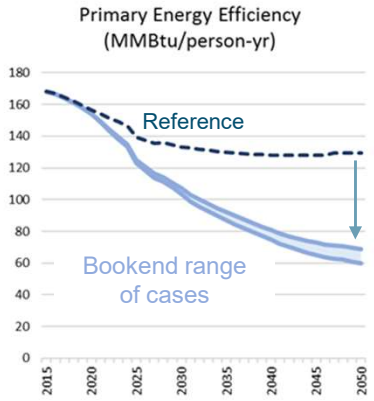
- **ACEEE**:
  - ***Industrial sector consumes 32% of U.S. energy***
    - ***Accounts for 28% of emissions***
- Energy Efficiency 1st step in emission reduction
  - Increases profitability & immediately reduces production cost
- **Promotes:**
  - Societal recognition
  - Brand loyalty
  - Customer & consumer appreciation
  - Supply chain appreciation & adoption
  - Stockholder loyalty



Takeaway ***Legislation to reduce industrial emissions is fast becoming the new normal***

PATHWAYS Model Leverages the Four "Columns" of Decarbonization

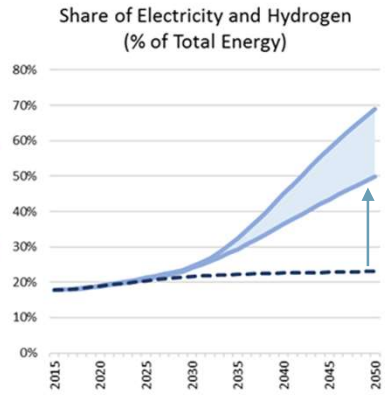
Energy efficiency & conservation



Conventional Efficiency:
- Codes and standards
- Switching to efficient devices
- Building shell improvements

Conservation:
- Behavioral conservation
- Smart growth

Electrification

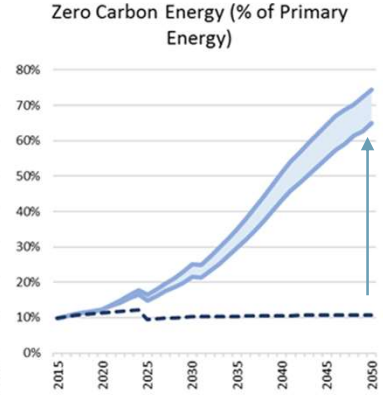


Buildings:
- Space heating
- Water heating

Transportation:
- Electric vehicles (BEV and PHEV)
- Public transportation

Industry:
- HVAC and boilers

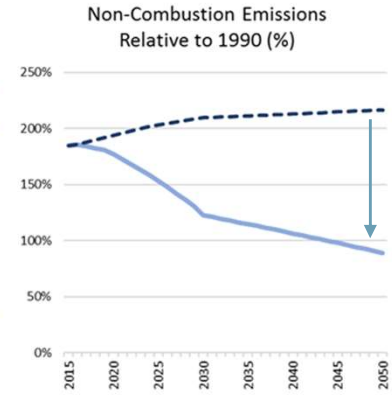
Low-Carbon Fuels



Low-carbon electricity:
- Renewables (solar, wind, hydro)
- Nuclear and CCS
- Grid integration

Low-carbon liquid and gaseous fuels:
- Biofuels
- Synthetic fuels

Reduce non-combustion emissions



Methane:
- Manure management
- Methane capture at landfills and WWTP

F-Gases
- Low GWP refrigerants

Source: Mahone et al, (2018) "*Deep Decarbonization in a High Renewables Future*", California Energy Commission CEC-500-2018-012

Inflation Reduction Act (IRA)

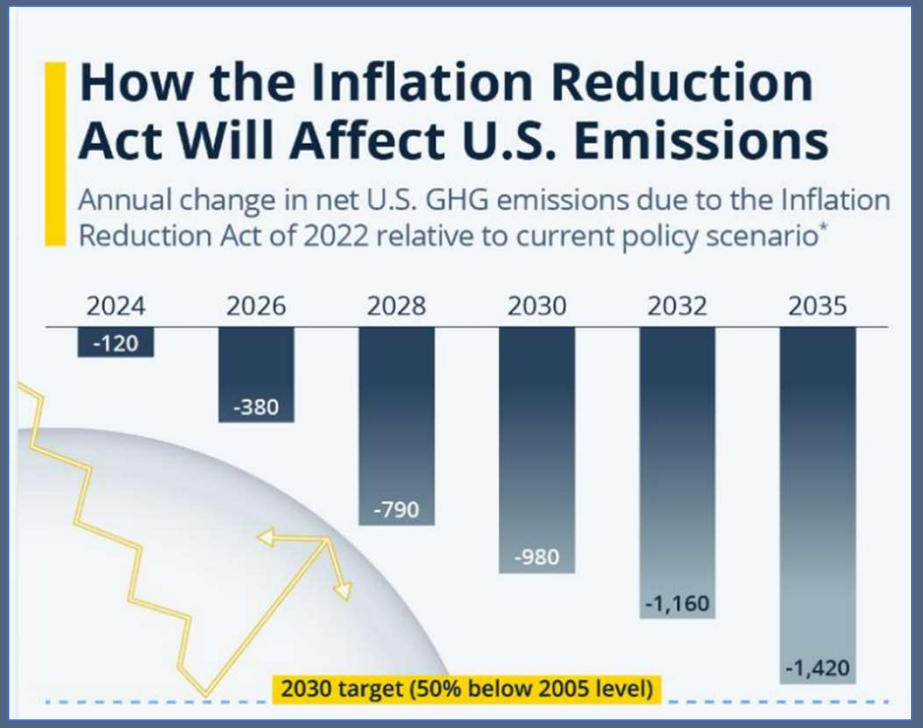
A Focus on Energy Security and Climate Change

WILLDAN

A Focus on Energy Security and Climate Change

IRA Investment Goals

1. **Bring down consumer energy costs**
2. **Increase American energy security**
3. **Substantially reducing greenhouse gas (GHG) emissions to approximately 50% compared to 2005-levels by 2030.**



* Estimates. In million metric tons of CO_2-equivalent (Mt CO_2-e).
Source: Rapid Energy Policy Evaluation and Analysis Toolkit

Funding to Decarbonize the Economy

Clean Energy and Climate Change Mitigation Initiatives

1. Roughly $369 billion in funding for energy security and climate measures over the next decade.

2. Includes incentives and tax credits for clean energy, nuclear power, carbon capture, and electric vehicles and a Methane Emissions Reduction Program to reduce the leaks from the production and distribution of natural gas.

3. Of this $125 billion (34%) goes to clean energy manufacturing and wind/solar categories that impact climate change.

Funding for Clean Manufacturing

Extends and creates Investment Tax Credits (ITCs), Production Tax Credits (PTCs), and Loans for clean energy generation

1. $30 billion in production tax credits to accelerate domestic manufacturing of solar panels, wind turbines, batteries, and critical minerals processing.
2. $10 billion investment tax credits to build clean technology manufacturing facilities including those that make electric vehicles, wind turbines, and solar panels.
3. $20 billion in loans to build new clean vehicle manufacturing facilities across the United States.

Funding for Wind and Solar

Investment Tax Credits (ITCs), Production Tax Credits (PTCs), and Loans

1. Solar projects beginning construction in 2022 thru 2024 will be eligible for the full 30% investment tax credit (ITC).

2. Expands the 1.5 cents/kWh production tax credit (PTC) for renewable energy including wind.

3. By restoring them to their original value and extending them until 2033, IRA removes the uncertainty and unpredictability of ITCs and PTCs for solar and wind respectively.

Funding to Decarbonize the Economy

Other Significant Investments

1. Nearly $6 billion in funds for heavy industry as direct investments to help reduce emissions from the largest industrial emitters like chemical, steel, and cement plants including install of carbon capture and storage at cement plants. (Funded via the DOE)

2. Over $9 billion for Federal procurement of American-made clean technologies including using green hydrogen – a carbon-free fuel made from water – to produce zero-emission steel.

3. $27 billion for the clean energy technology accelerator that supports deployment of technologies to reduce emissions. Technologies include everything from major investments in energy efficiency upgrades to transitioning currently non-electrified industrial processes to efficient, electric options.