Advanced Energy in Michigan

Institute for Energy Innovation

michigan EIBC | MICHIGAN ENERGY INNOVATION BUSINESS COUNCIL

February 24, 2021

Dr. Laura S. Sherman

Institute for Energy Innovation

The Institute for Energy Innovation (IEI) is a Michigan-based non-profit that works to promote greater public understanding of advanced energy and its economic potential for Michigan, and to inform the policy and public discussion on Michigan's energy challenges and opportunities.

Michigan Energy Innovation Business Council

Michigan EIBC's mission is to grow Michigan's advanced energy economy by fostering opportunities for innovation and business growth and offering a unified voice in creating a business-friendly environment for the advanced energy industry in Michigan.

Leadership Council

Members

Members


harvest solar
HELIOS ENVIRONMENT ECONOMICS SOLAR ENGINEERING
HSC HEMLOCK SEMICONDUCTOR
HOMELAND SOLAR Own Your Own Power Residential • Commercial • Municipal
INCLUSIVE PROSPERITY CAPITAL
inmansolar A COMMERCIAL & UTILITY SCALE PROVIDER
inovateus SOLAR
COUNTY OF KENT MICHIGAN
KEY CAPTURE ENERGY
lean & green MICHIGAN
LEX TM3 SYSTEMS
MACKINAW POWER
Montcalm Community College
MagellanWind
Martin Waymire PUBLIC RELATIONS / DIGITAL STRATEGY
METRO CONSULTING ASSOCIATES RELATIONSHIPS • REPUTATION • RESULTS
Michigan Biomass
Michigan CAT
MICHIGAN energy options .ORG
michigan saves
Sustainability MICHIGAN STATE UNIVERSITY
MSS MichiganSolarSolutions
McNAUGHTON-McKAY ELECTRIC COMPANY
NEXTENERGY ACCELERATING INNOVATION
NEXTera ENERGY RESOURCES
NCG NEWMAN CONSULTING GROUP
NTH Consultants, Ltd. Infrastructure Engineering and Environmental Services
NOKIA
NOVI ENERGY
OLSON BZDOK & HOWARD Public Interest Lawyers Since 1972
OAK Generators Electrical·Solar Heating·Cooling Plumbing
ORACLE
ORION RENEWABLE ENERGY GROUP LLC
PACE LOAN GROUP
Peracchio & Company
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PETROS PACE FINANCE
PHOENIX CONTACT
PINEGATE RENEWABLES
Pivot Energy
plug smart intelligent energy solutions
PLUNKETT COONEY
powerley
PE Prime Energy C.S.
PSC
PUBLIC SECTOR CONSULTANTS
Quantalux SUSTAINABLE ENERGY TECHNOLOGIES
RENEWABLE ENERGY EVOLUTION
Redmo Associates
RENEWABLE PROPERTIES
RWE
SAMSUNG
SAMSUNG RENEWABLE ENERGY
SAWATCH
SEIA Solar Energy Industries Association®
Life Is On Schneider Electric
SKYSPECS
SPARTAN RENEWABLE ENERGY
S·POWER An AES and AIMCo Company
SOUTHERN CURRENT
SWCA ENVIRONMENTAL CONSULTANTS
SUNPOWER®
WhitePine RENEWABLES
sunrun
TRC
uplight
VENTOWER INDUSTRIES
Volta Power Systems
Warner
WINDEMULLER Partners in your success

OUR MEMBERS

Michigan EIBC represents companies across the full range of the advanced energy sector:

Wind

Solar

Advanced Materials

Electric Vehicles & Mobility

Batteries & Energy Storage

Combined Heat & Power

Biomass & Biofuels

Demand Response

Lobbying & Advocacy

Geothermal

Law

Consulting

Smart Grid & Grid Optimization

Energy Efficiency

Lighting

Purchasers of Renewable Energy

Community Development

Performance Contracting

What Do We Do?

Represent the voice of the advanced energy industry to legislators, regulators, and state government

- Legislator education
- Legislative policy
- Regulatory policy
- Industry networking
- Stakeholder convenings

Legislator Education

New Committee Member Orientations

Transportation Committee: February 26
Agriculture Committee
Energy Committee

Energy 101 Lunch and Learn Events

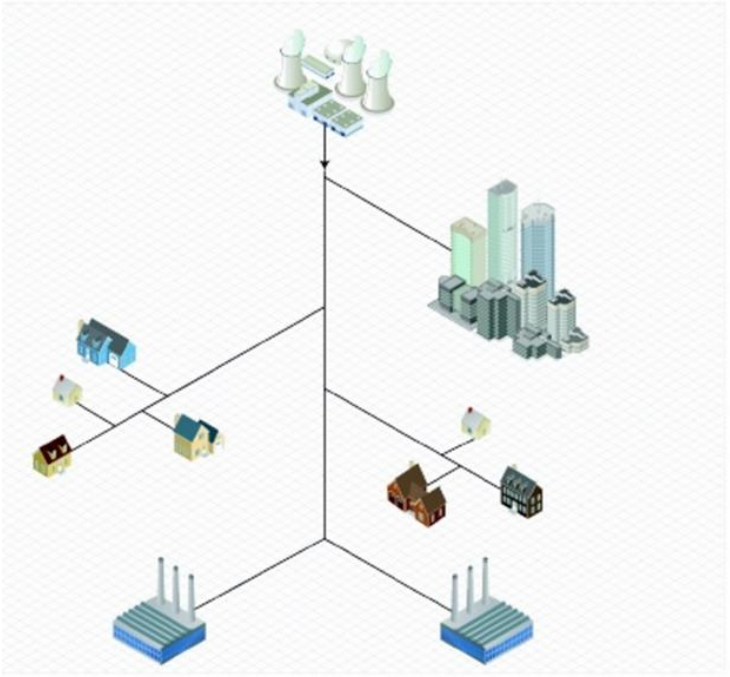
12pm – 1pm, Mackinac Room
October 6, December 7

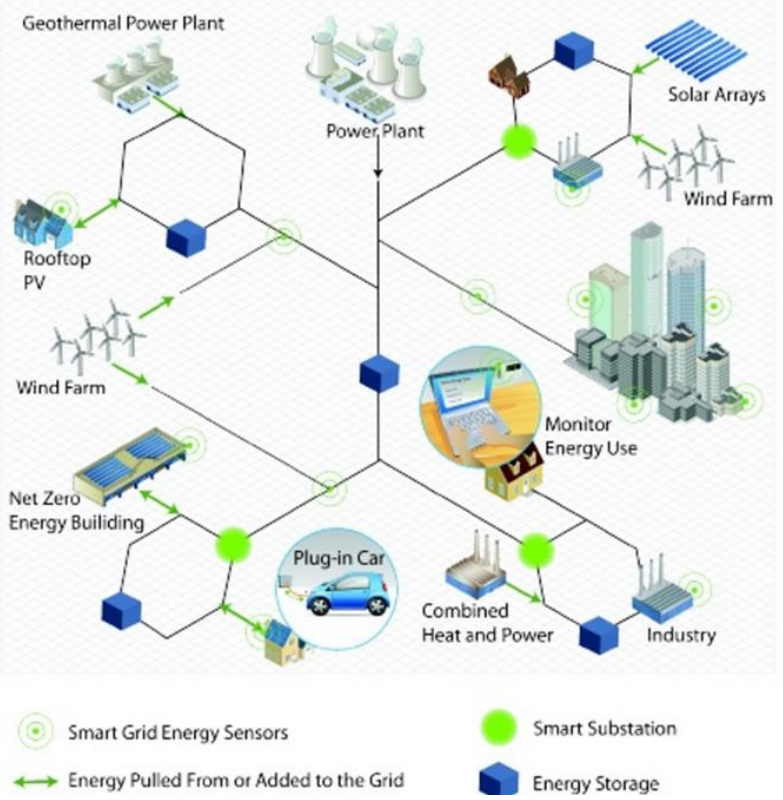
9th Annual Energy Innovators Conference: April 7th

Key Policy Priorities

- Eliminate limits on distributed generation.
- Enable community solar projects.
- Expand opportunities to use Commercial Property Assessed Clean Energy Financing.
- Support extension of energy efficiency standards for municipal and cooperative electric utilities beyond 2021.
- Clarify and level tax treatment for utility-scale renewable projects.

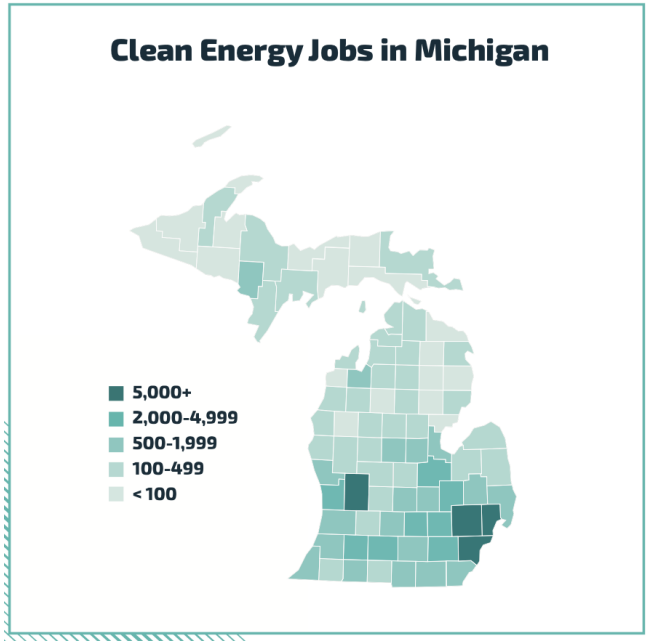
A Transforming Energy System

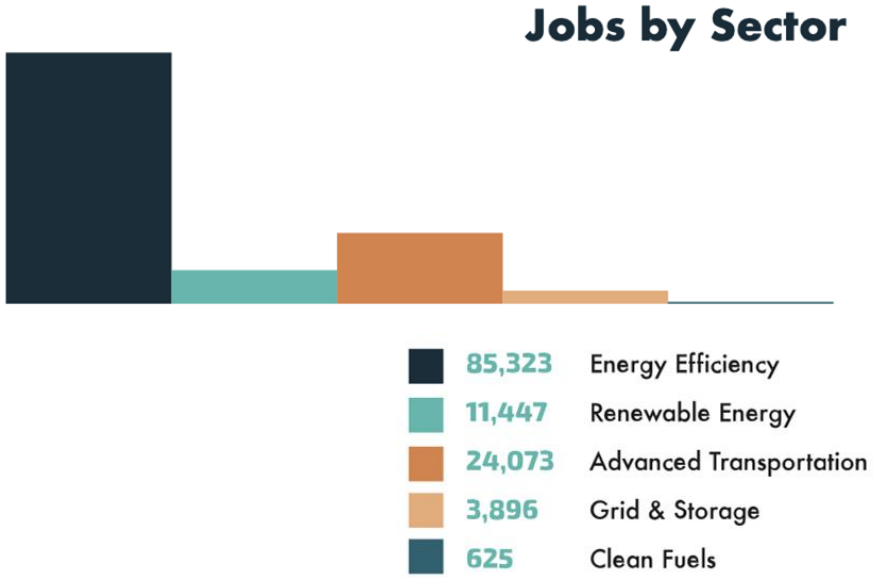




Clean Energy Jobs

2019: 125,300 Michigan jobs

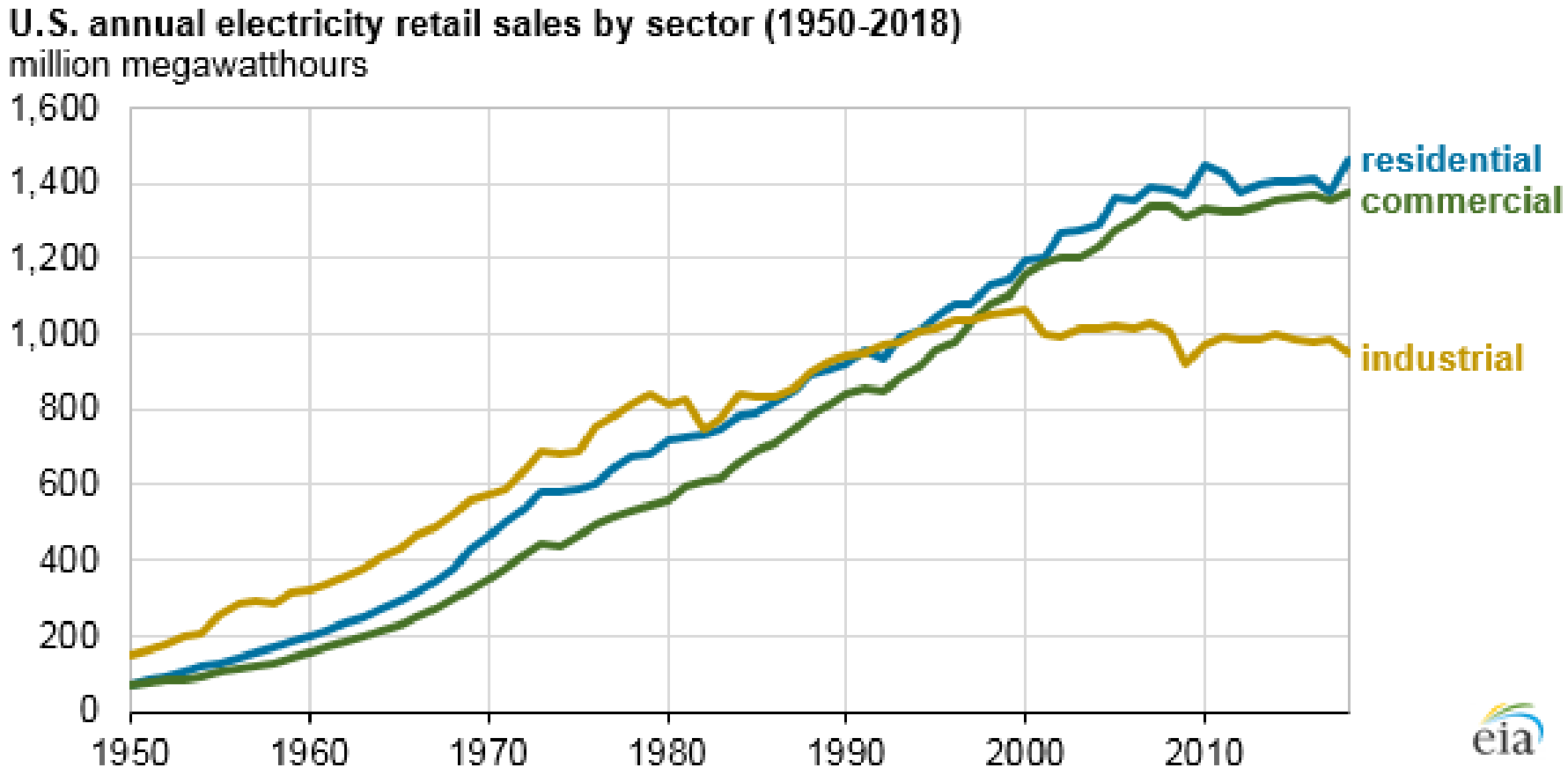




March, April, May 2020: 31,120 Michigan jobs lost

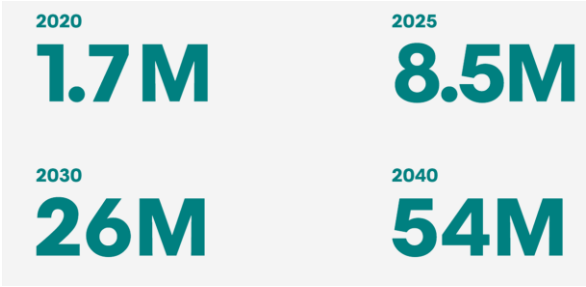
By December 2020: 2019: 9,200 jobs re-created

Electricity Sales



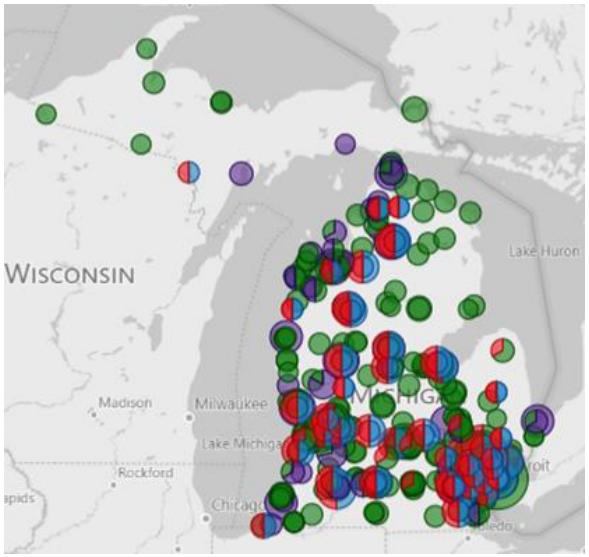
Electric Vehicles

Annual Global EV Sales



G.M. Announcement Shakes Up U.S. Automakers' Transition to Electric Cars

- 4,210 all-electric vehicles registered in Michigan
- 1400 charging outlets at 480 locations

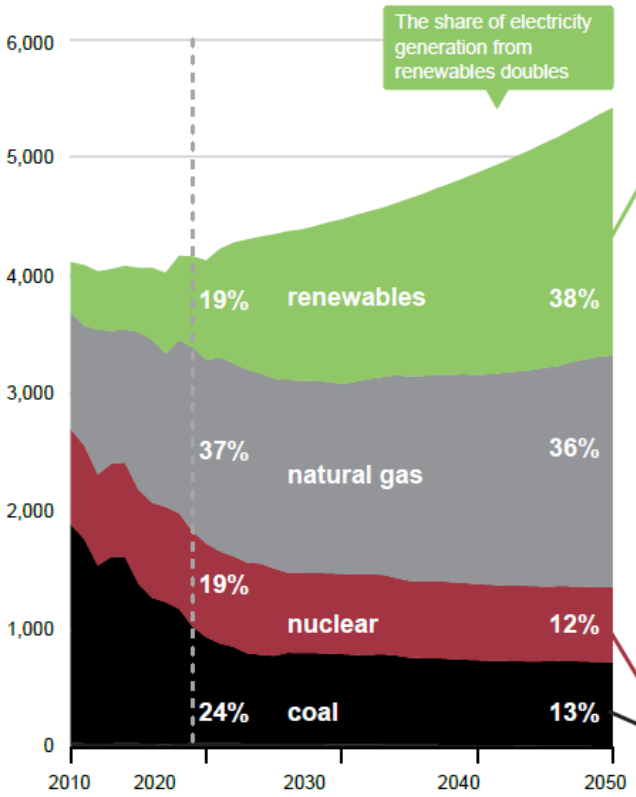


U.S. Energy Information Administration

AEO2020 Reference case

Electricity generation from selected fuels

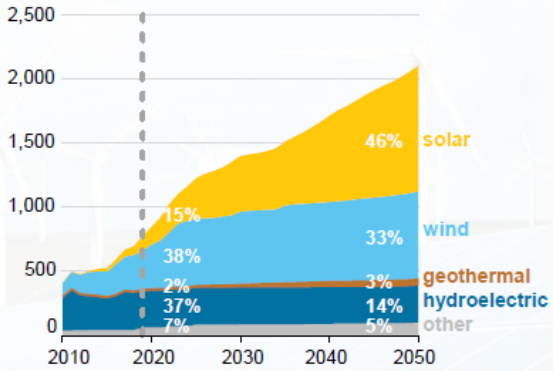
billion kilowatthours



U.S. renewable electricity generation is the fastest-growing electricity resource throughout the projection period.

Renewable electricity generation, including end use

billion kilowatthours



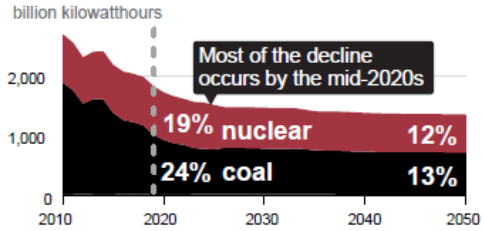
Most of the growth in renewable electricity generation is from solar and wind.

Continued declines in the capital costs for solar and wind are supported by federal tax credits and higher state-level renewables targets.

U.S. coal-fired and nuclear electricity generation declines

Electricity generation from nuclear and coal

billion kilowatthours



The share of coal-fired electricity generation falls from 24% to 13%.

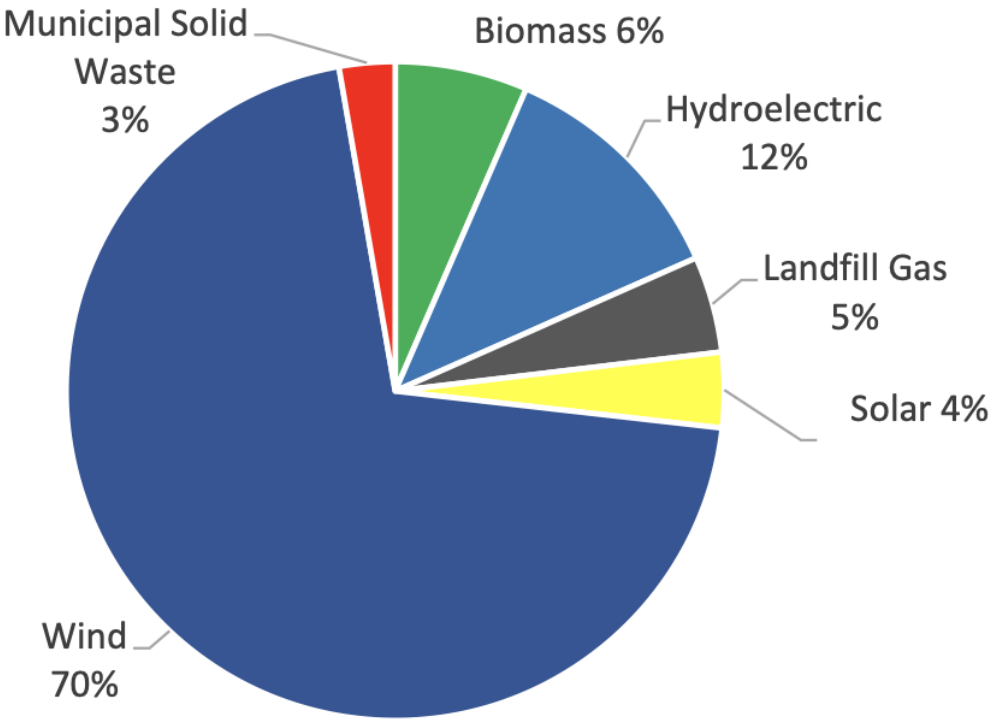
The share of nuclear generation falls from 19% to 12%.

Source: U.S. Energy Information Administration, *Annual Energy Outlook 2020* (AEO2020) Reference case

Michigan Electricity: Renewables

Figure 4: Renewable Energy Generators in Michigan, by Technology Type

Approximately 3,100 MW Nameplate Capacity



2020 MPSC Report on PA295

Cost of Energy Generation

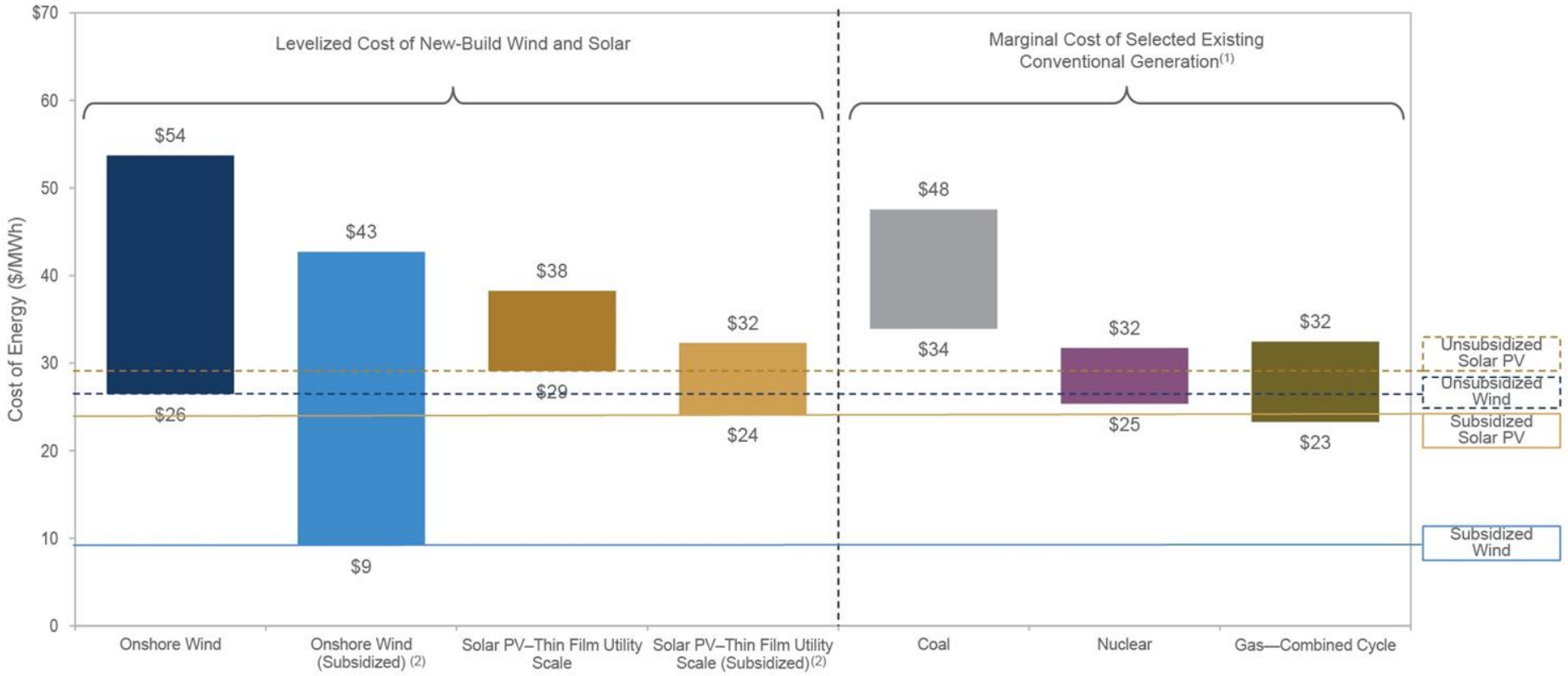
Levelized Cost of Energy Comparison—Unsubsidized Analysis

Selected renewable energy generation technologies are cost-competitive with conventional generation technologies under certain circumstances

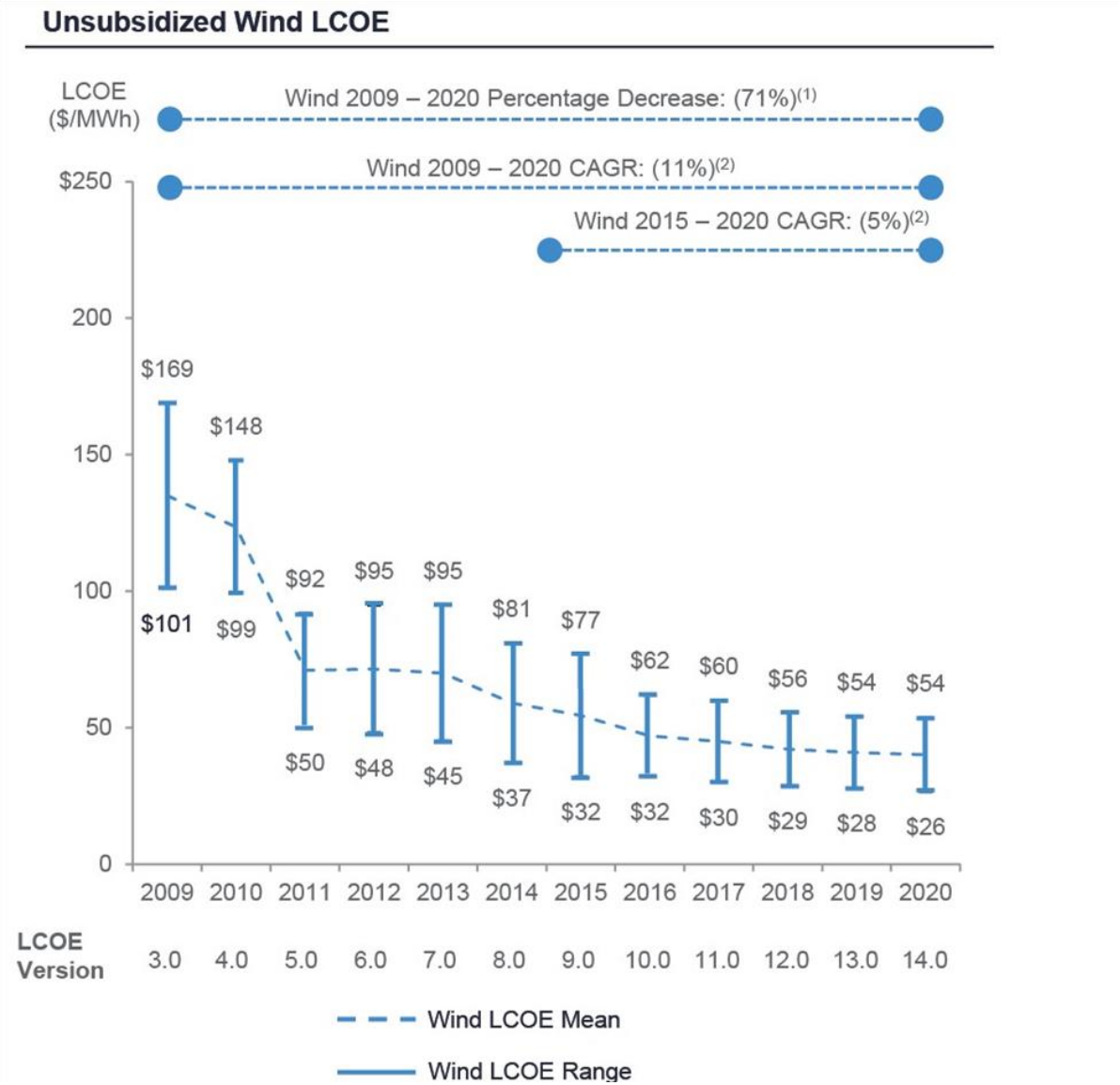
Cost of Energy Generation

Levelized Cost of Energy Comparison—Renewable Energy versus Marginal Cost of Selected Existing Conventional Generation

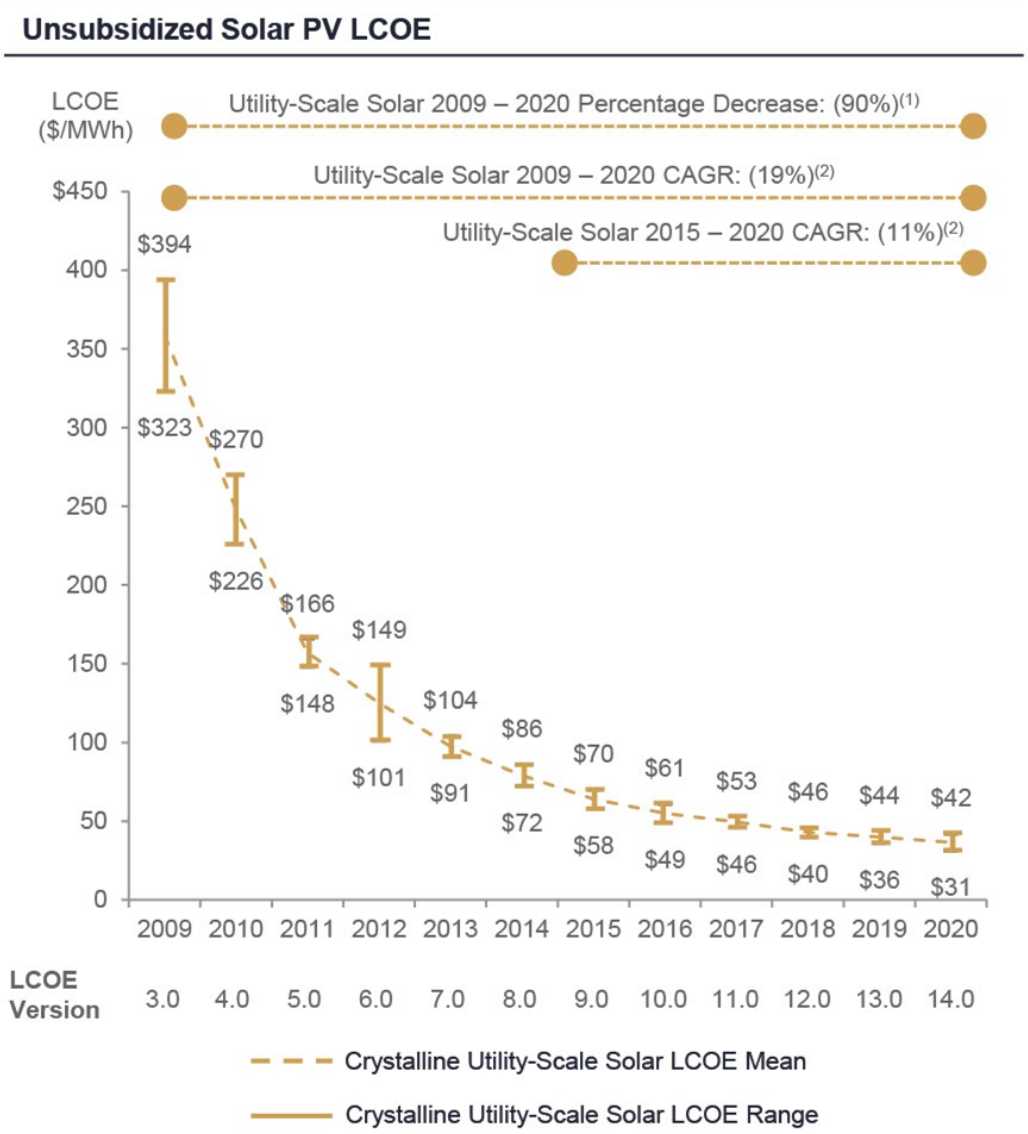
Certain renewable energy generation technologies have an LCOE that is competitive with the marginal cost of existing conventional generation



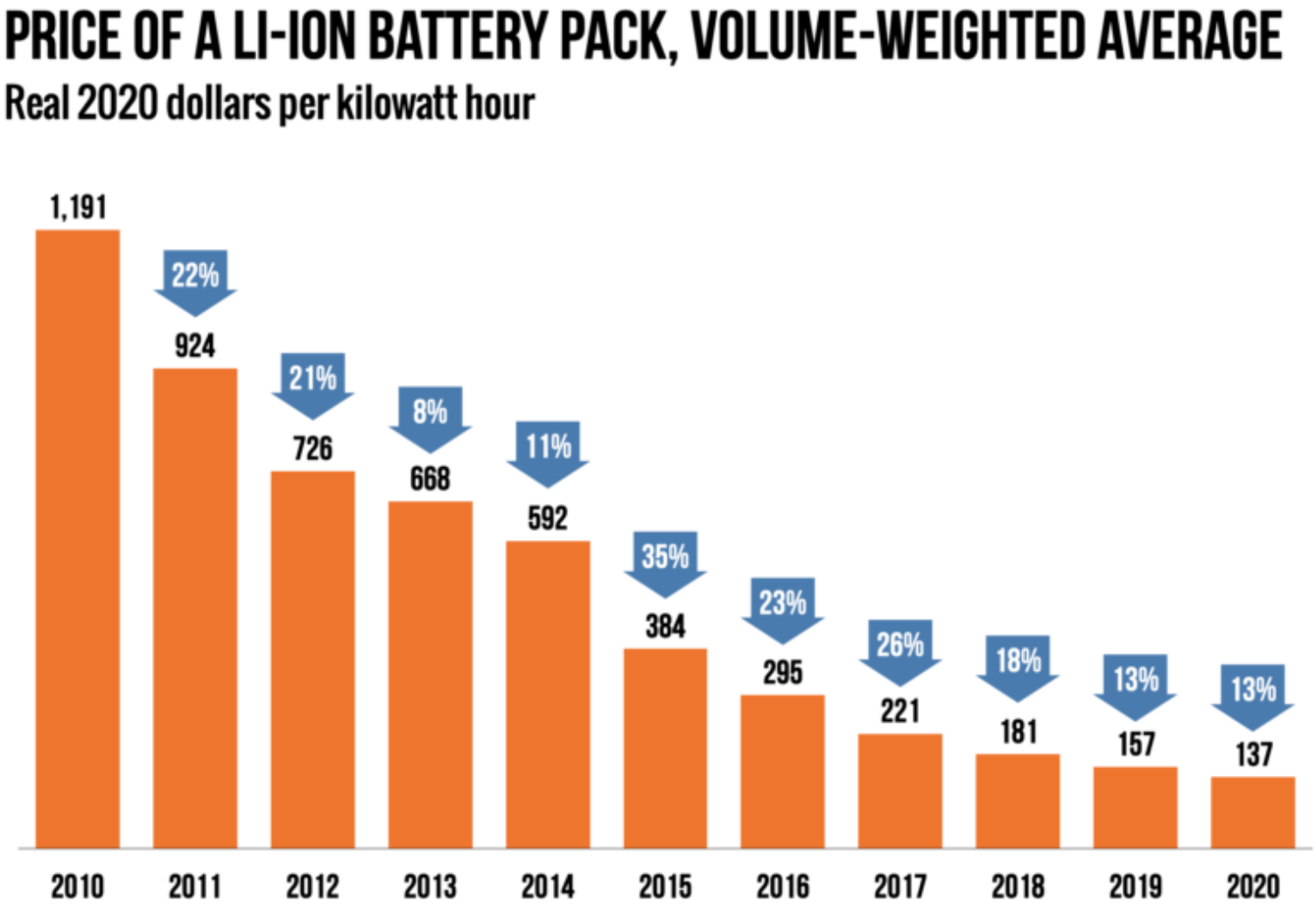
Cost of Energy Generation



Cost of Energy Generation



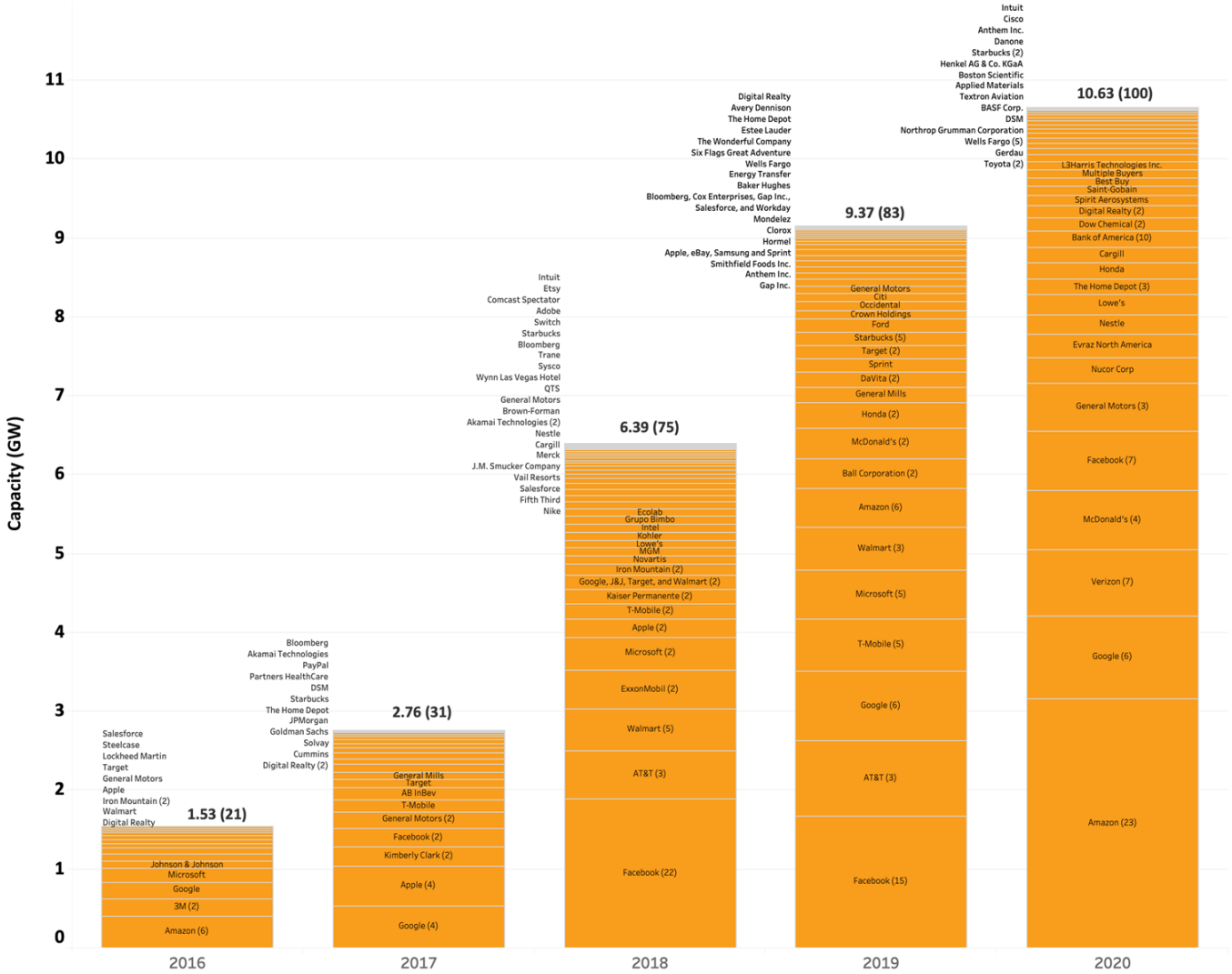
Cost of Energy Storage



REBA
Renewable Energy Buyers Alliance

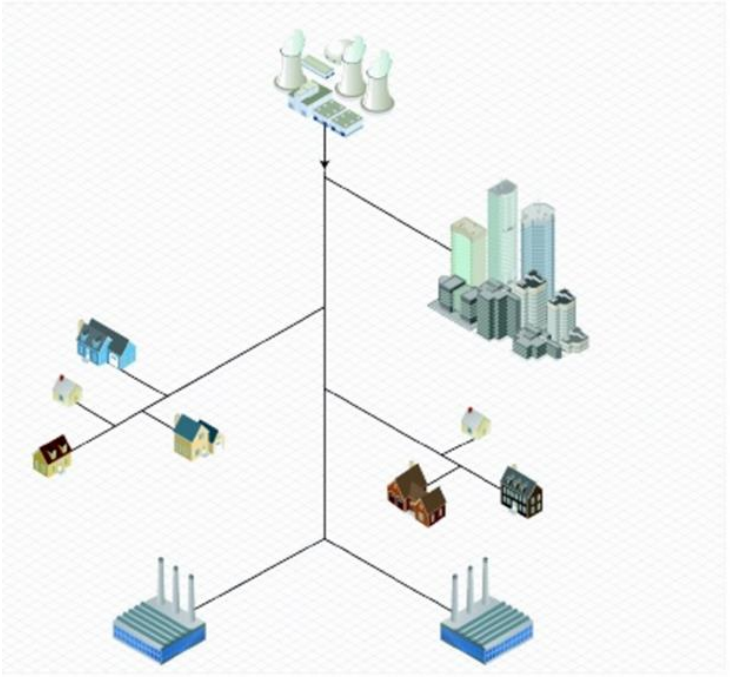
REBA Deal Tracker

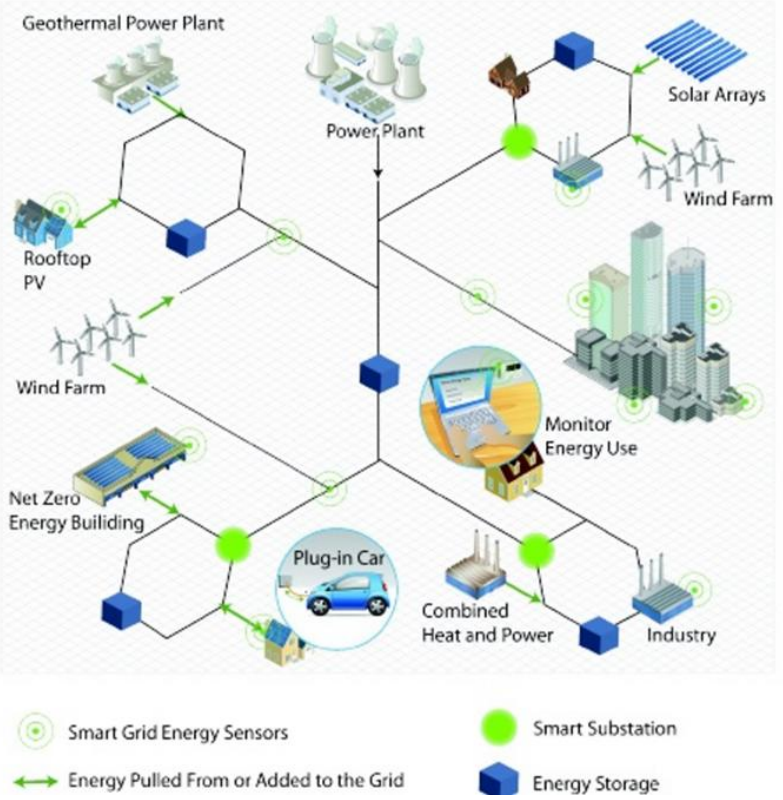
Large Energy Buyers Accelerate Renewable Energy Deals



As of December 31, 2020. Publicly announced contracted capacity of corporate Power Purchase Agreements, Green Power Purchases, Green Tariffs, and Outright Project Ownership in the US, 2015 – 2020. Excludes off-site generation (e.g., rooftop solar PV), deals with operating plants and deals meant to meet RPS requirements. (#) indicates number of deals each year by individual companies.

A Transforming Energy System



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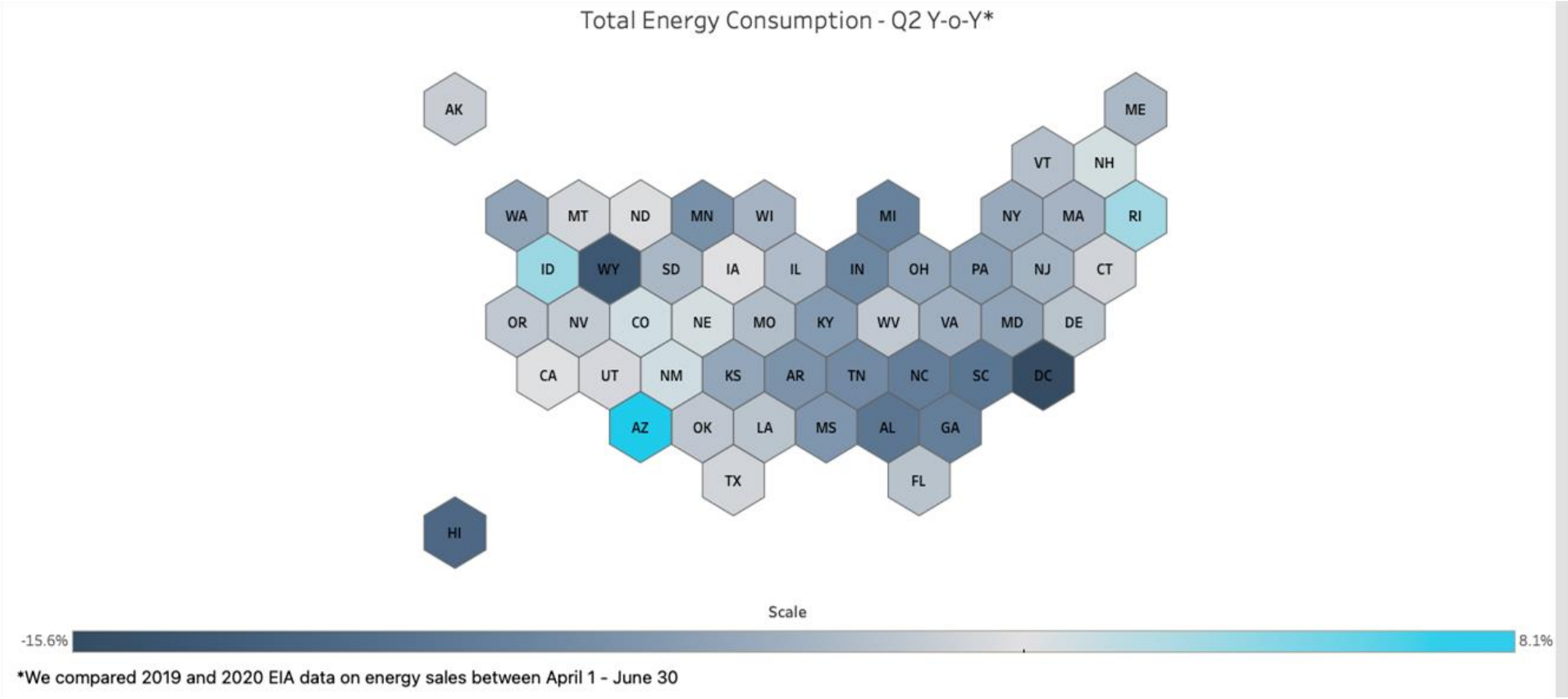
Electricity Sales: Covid-19

Michigan:
32% drop in industrial electricity usage
21% increase in residential electricity usage



*We compared 2019 and 2020 EIA data on energy sales between April 1 - June 30