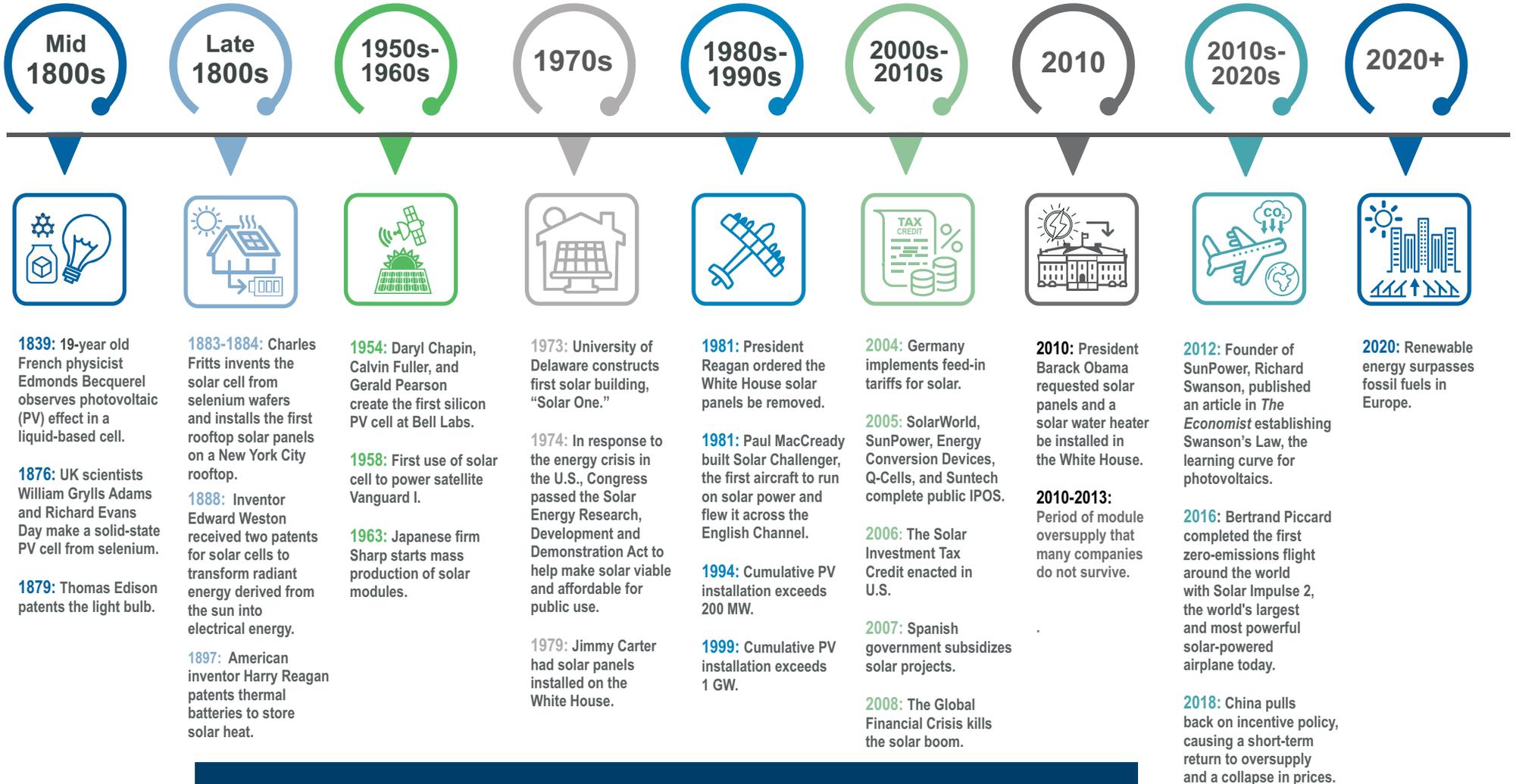




History of Solar Energy

UNDER THE SUN

There is nothing new under the sun. As long as man has walked the earth, energy from the sun has been revered and put to use. The earliest uses of solar power included focusing the sun's energy through a magnifying glass to start fires for cooking, and the design of ancient sunrooms, bathhouses and adobes to capture solar energy for its natural warmth.

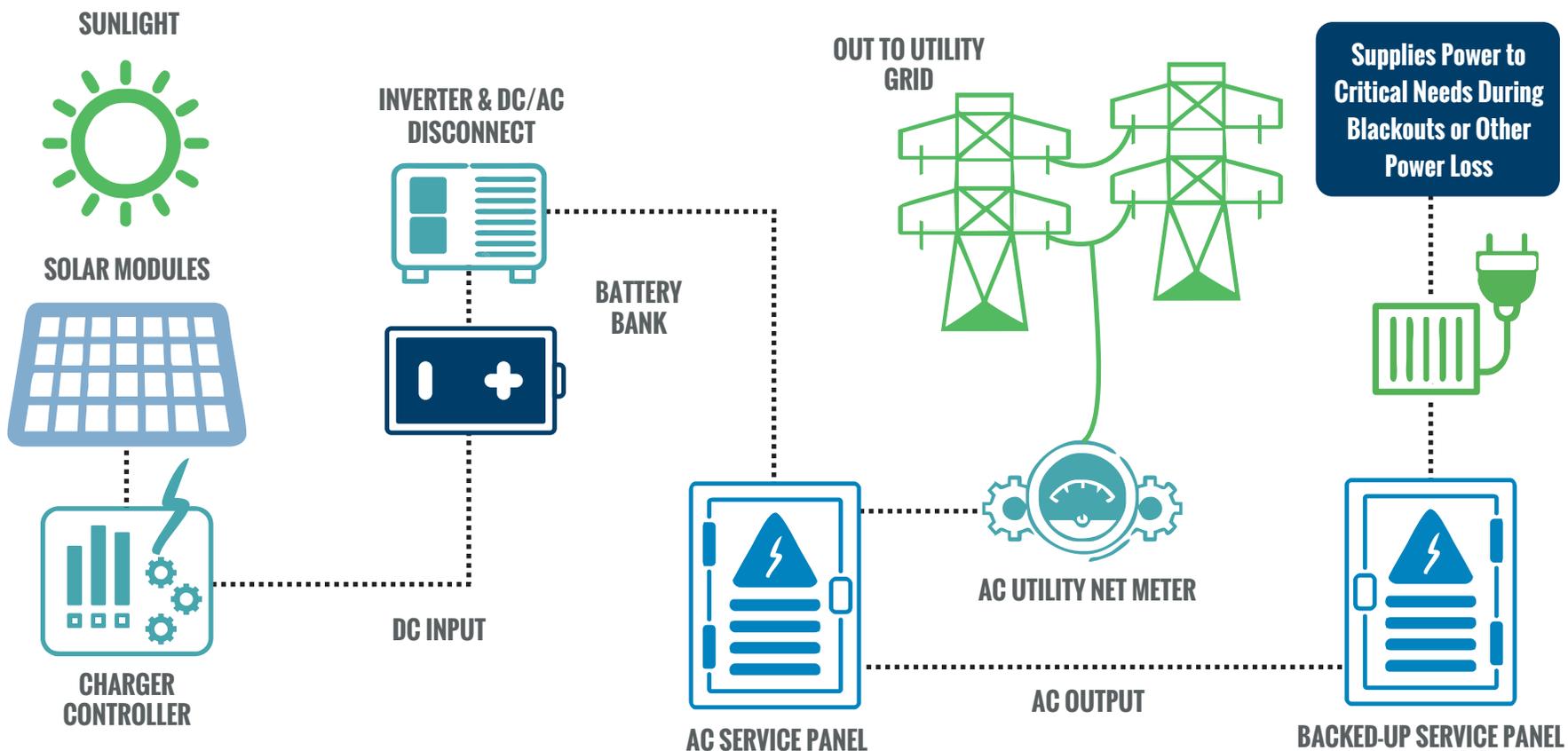




Solar Generation Process

SUN POWERED

This illustration shows how heat from the sun is captured by gadgets known as solar modules, which then stores energy into a charger controller, a battery bank and an AC service panel. The stored energy is used to power utility grids and to supply energy for critical needs during blackouts and other power outages.

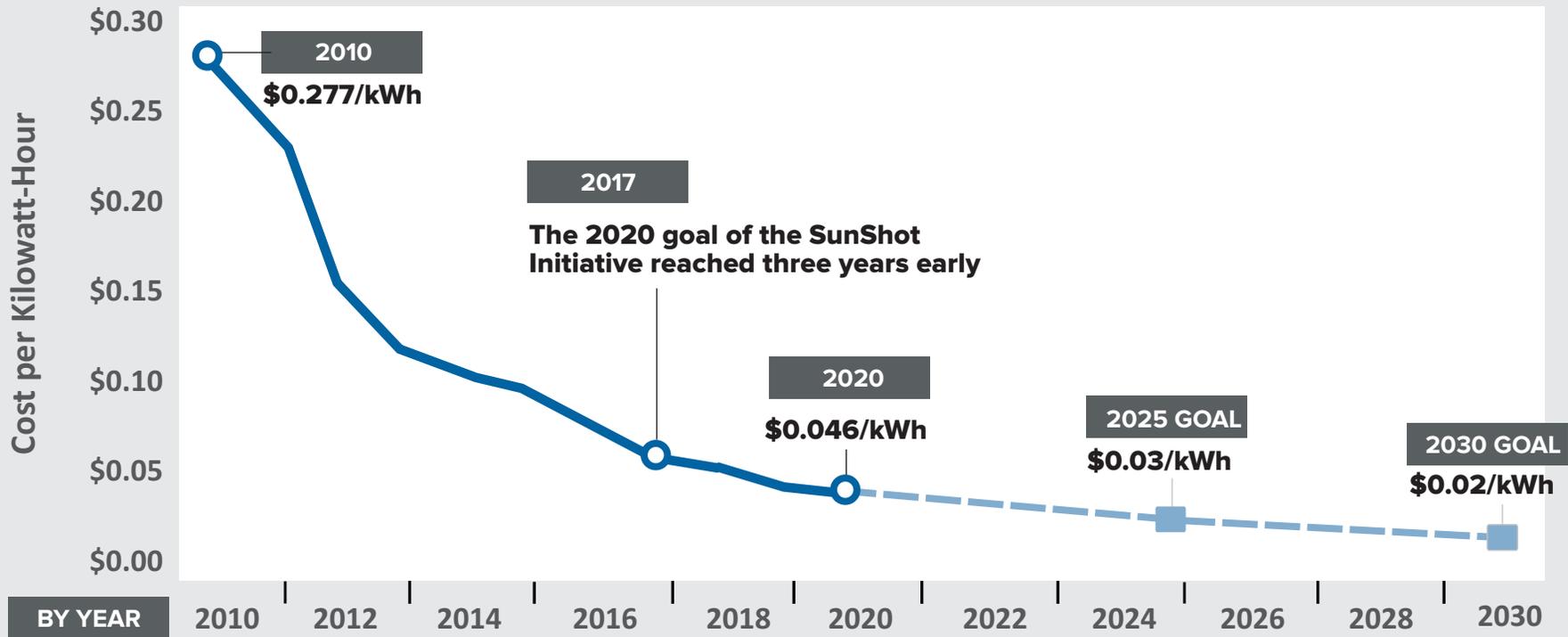




Solar Power Prices Dropping Faster than Expected

U.S. Utility-Scale Solar Power Cost

Per kilowatt hour, 2010 projected to 2030



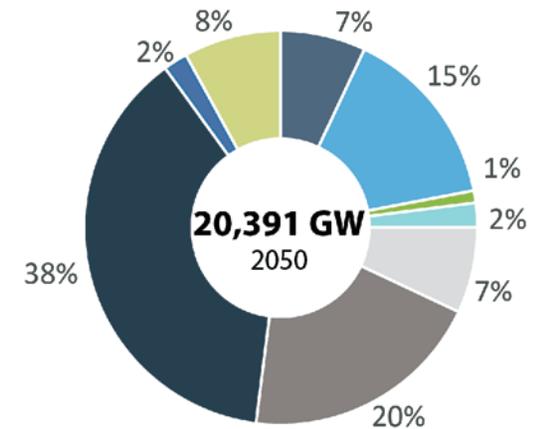
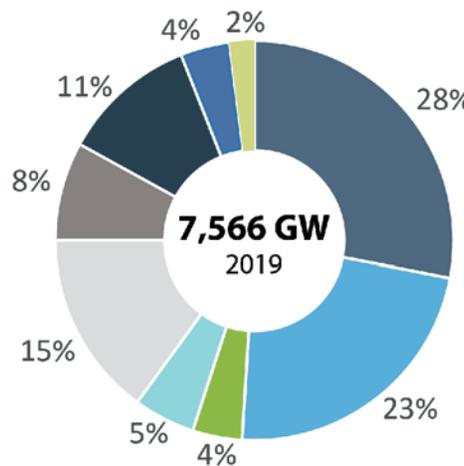
The Falling Cost of Solar - The Department of Energy has set a new goal of reducing the cost of utility-scale solar power to 2 cents per kilowatt-hour by 2030. This follows the 2011 SunShot initiative, which set a goal for 2020 and reached it three years early. Figures show the levelized cost of energy, which takes into account the cost of construction and operation.



Rapid Increase in Solar Capacity Growth

Global Installed Solar Capacity to Increase by over **800%** through the year 2050

2019 and 2050 Global Installed Power Capacity Mix



■ Coal ■ Gas ■ Oil ■ Nuclear ■ Hydro ■ Wind ■ Solar ■ Storage ■ Other

Countries and industries begin to transition. The low cost solar and clean energy solutions, are transforming worldwide electric utility power capacity is forecasted to almost triple between 2019-2050. Installed solar capacity is expected to grow even faster (over 800%). Solar's share of total installed power capacity increases from 11% in 2019 to 38% in 2050.



A Comparison of Solar Energy versus Wind Energy

PROS AND CONS

Solar Energy



Wind Energy



GROWTH	+ Faster expected growth and easier installation	+ Large-scale projects have efficiency advantages
RELIABILITY	+ More predictable energy source than wind	- Wind fluctuations can be intermittent and inconsistent
LOCATION	+ Solar panels can be installed on large- and small-scaled buildings	- Cannot be used in highly populated areas
SPACE	+ Panels require less space than wind turbines and are less conspicuous	- Requires significant space and has building and permitting issues
SOUND	+ Solar panels do not generate unwanted noise	- Wind turbine noise often raises concerns from nearby residents
COST	= The cheapest new-build energy source	= Cost competitive with solar
ENVIRONMENT	+ Good option for both rural and urban areas	+ Constructing wind turbines is less polluting than making solar panels