



Nebraska Public Power District

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CURRENT STATE OF U.S. CLIMATE CHANGE POLICY

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2021 Power Summit
October 26, 2021

MEMORY LANE

My “Conclusions” from 2015 presentation

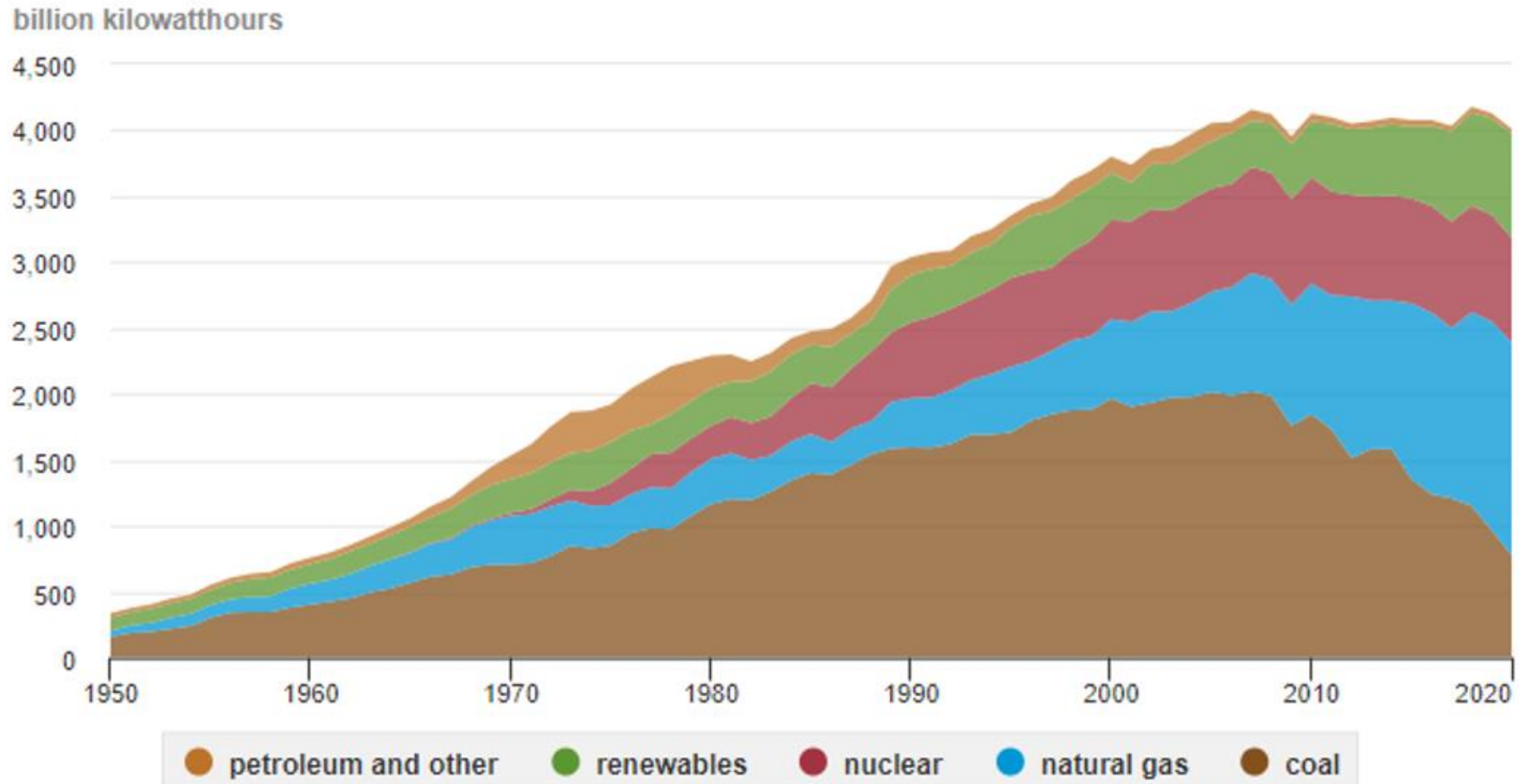
- The Nation remains deeply divided politically, socially and geographically.
- National energy policy is increasingly made by federal regulatory agencies and not by Congress.
- The use of coal to produce electricity will continue to decrease nationally; but remain significant in certain geographic regions.
- Renewables and distributed generation will continue to grow, but will face increasing integration challenges in some regions.

MEMORY LANE

My “Conclusions” from 2015 presentation

- Natural gas will continue to play a growing role in the production of electricity.
- Transmission expansion will be required to incorporate more renewables.
- Litigation over the Clean Power Plan will leave a cloud over the program until addressed by the Supreme Court (2018/2019).
- Tax subsidies have major impacts on electricity markets.

U.S. ELECTRICITY GENERATION BY MAJOR ENERGY SOURCE, 1950-2020

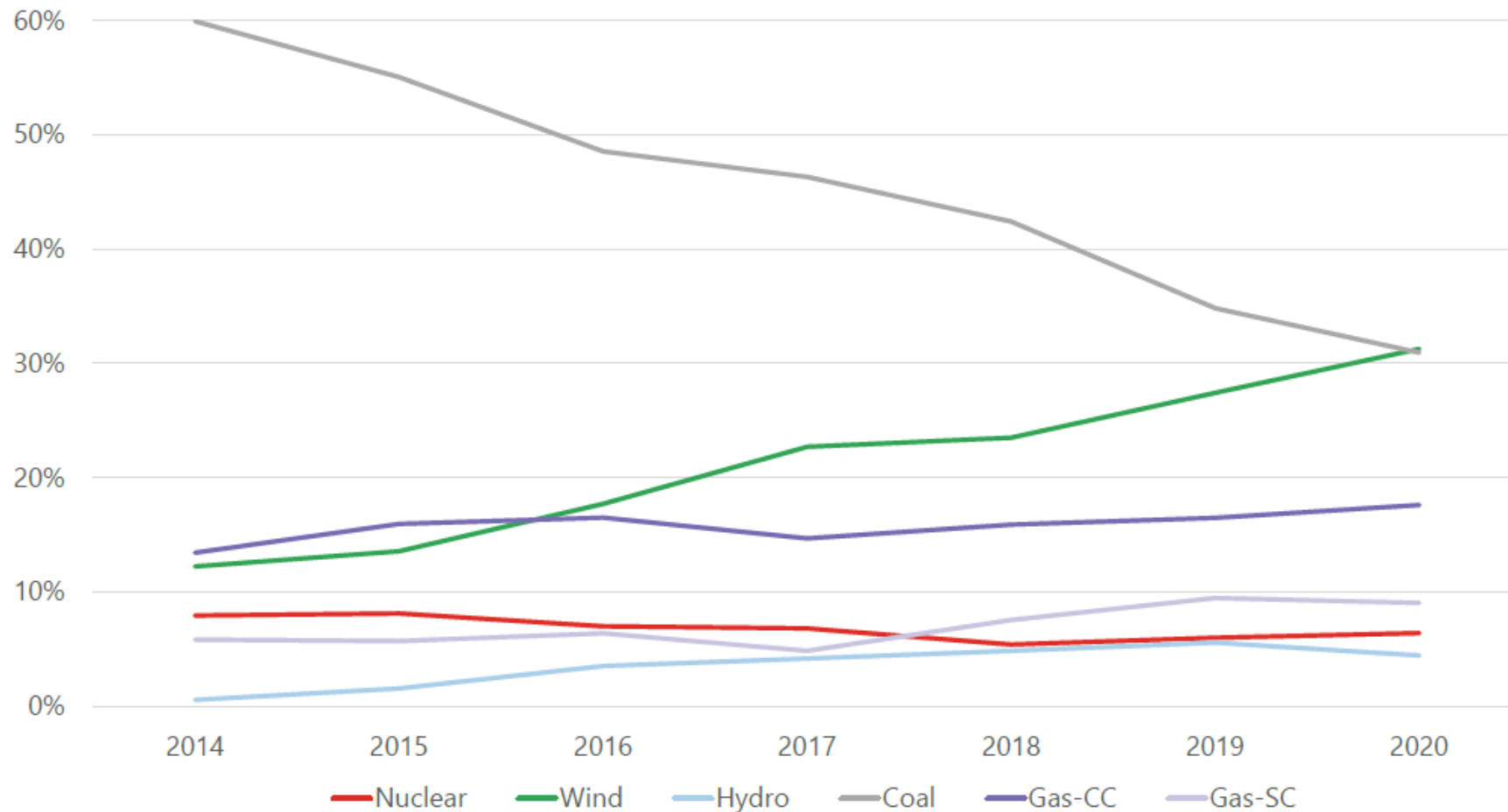


Note: Electricity generation from utility-scale facilities.

Source: U.S. Energy Information Administration, *Monthly Energy Review*, Table 7.2a, January 2021 and *Electric Power Monthly*, February 2021, preliminary data for 2020

EVOLVING SPP ENERGY MIX

GENERATION BY FUEL TYPE - ANNUAL



CARBON FEDERAL POLICY TIMELINE

- **2007 Massachusetts v. EPA**
 - 5-4 Supreme Court decision
 - Greenhouse gases are air pollutants
- **2008 Waxman Markey (Cap & Trade)**
 - Approved in House 219-212; never taken up in Senate
- **2014 Obama Clean Power Plan Proposed**
- **2015 Paris Agreement**
- **2016 Obama Clean Power Plan Stayed by Supreme Court**

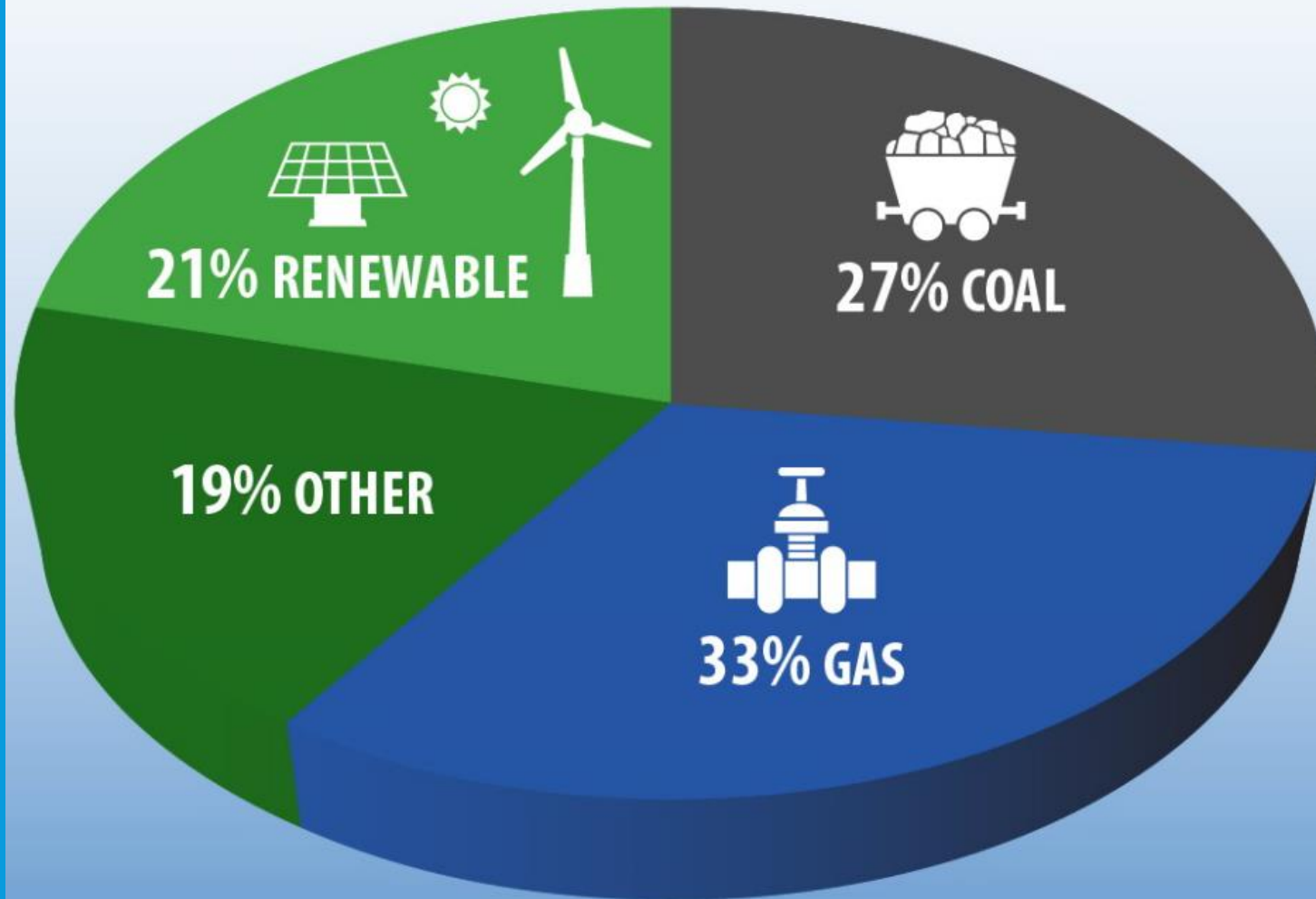
CARBON FEDERAL POLICY TIMELINE

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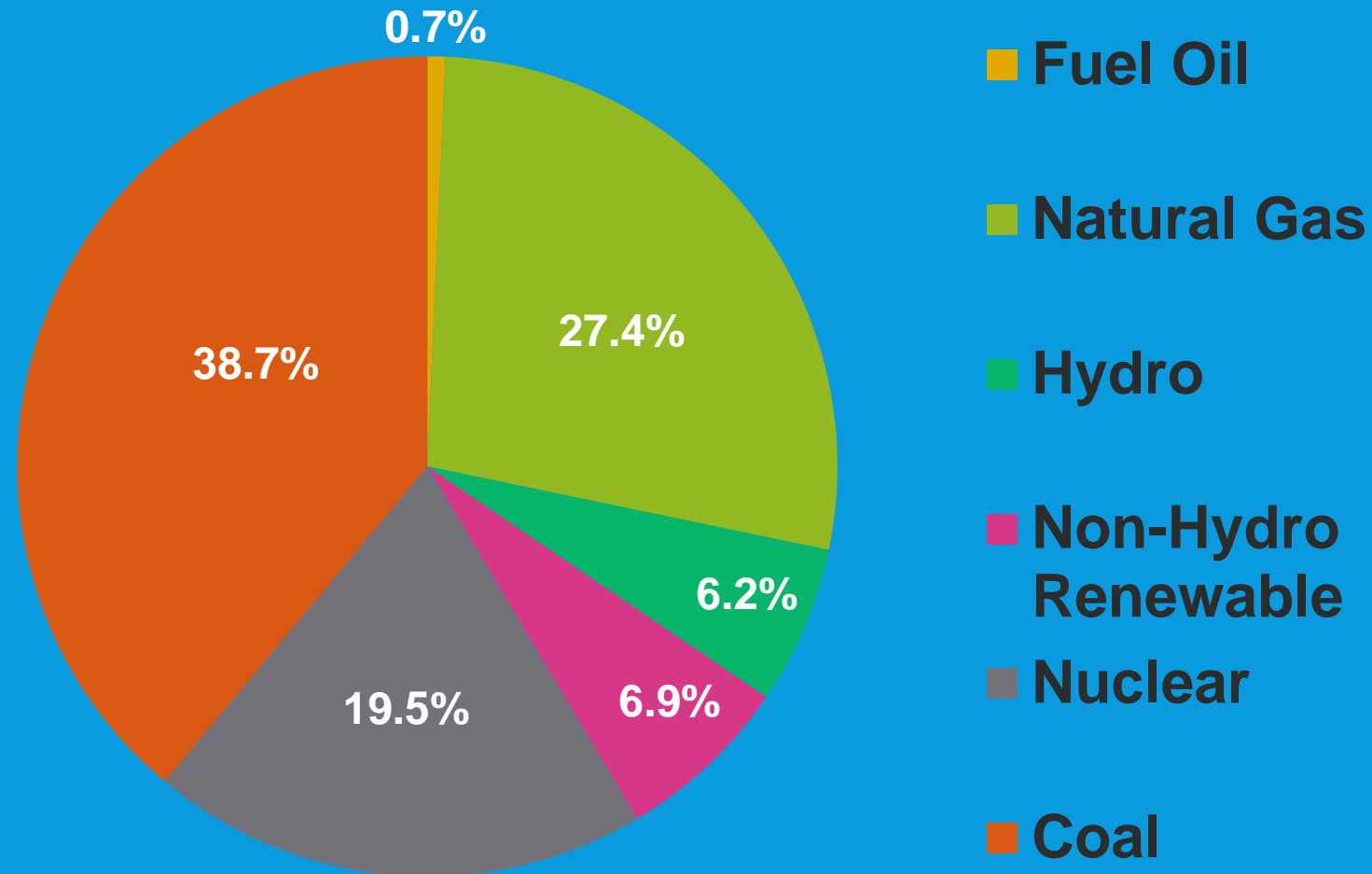
- **2018 Trump Affordable Clean Energy Rule Proposed / Published July 2019 / Vacated by D.C. Circuit**
- **2019 Democratic Controlled House of Representatives**
 - Numerous hearings on climate but action in 2019 unlikely
- **2019 Republicans in House & Senate beginning to acknowledge Carbon Policy Significance**
- **2021**
 - New administration – Climate action among top 4 priorities
 - Democratic Congress with narrow majority
 - Legislative action - \$3.5 trillion ‘infrastructure legislation’

NATIONAL ENERGY MIX IN 2030

UNDER OBAMA CLEAN POWER PLAN – PROPOSED JUNE 2014



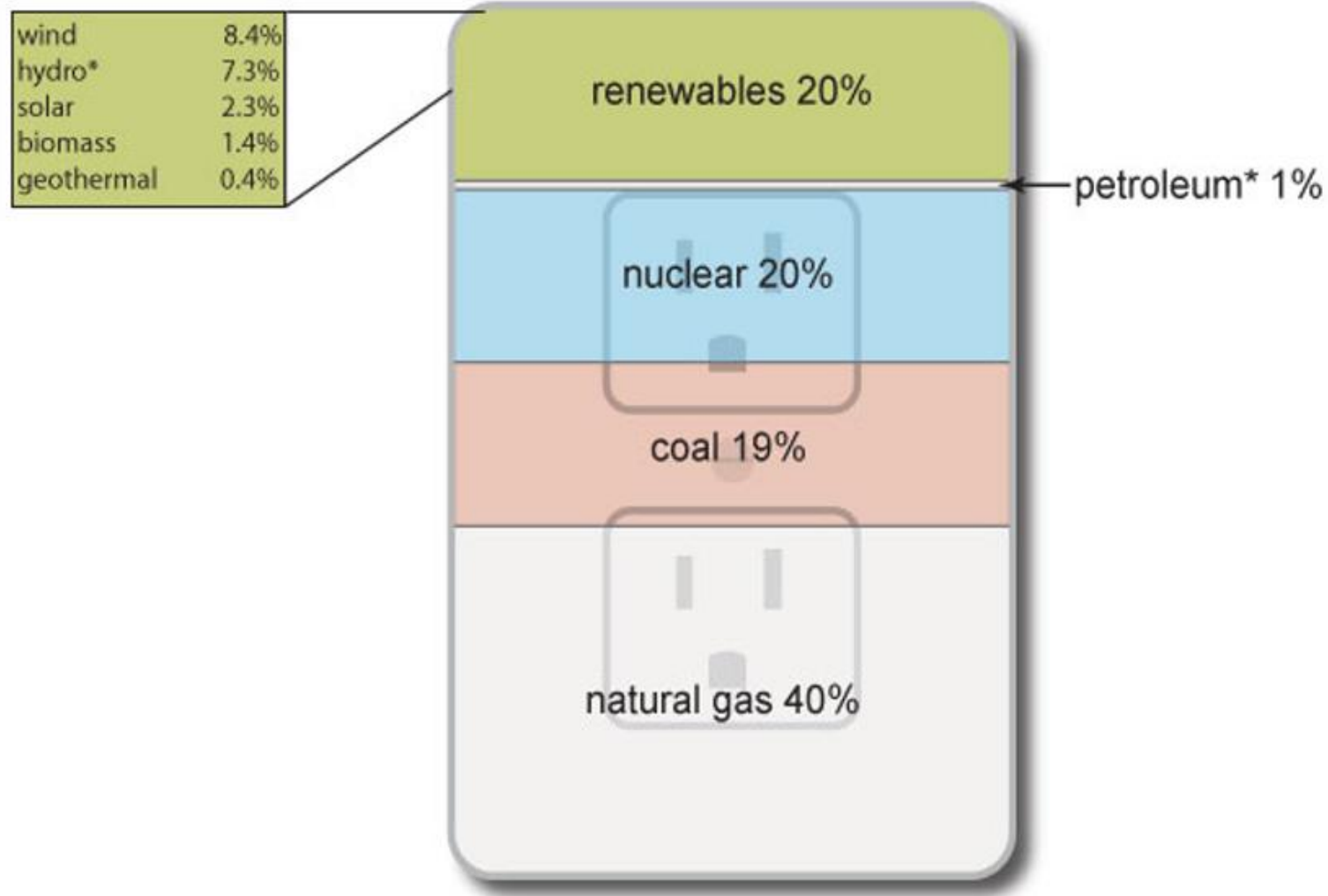
ELECTRIC ENERGY BY FUEL 2014 U.S.



Source: EEI

SOURCES OF U.S. ELECTRICITY GENERATION, 2020

TOTAL = 4.12 TRILLION KILLOWATTHOURS



Note: Electricity generation from utility-scale generators. * Hydro is conventional hydroelectric; petroleum includes petroleum liquids and petroleum coke, other gases, hydroelectric pumped storage, and other sources.
Source: U.S. Energy Information Administration, *Electric Power Monthly*, February 2021, preliminary data

PRESIDENT BIDEN

- **Climate is one of top 4 policy priorities**
- **“Whole of Government” approach to climate**
- **Many Climate veterans from Obama Administration**
- **Many players with environmental / climate NGO experience**

GLASGOW – NOVEMBER 2021

- **2021 United Nations Climate Change Conference (COP26)**
 - Huge U.S. Delegation
 - President Biden
 - Numerous Cabinet Secretaries
 - Kerry, McCarthy & Others with Key Climate Roles

CONGRESS

- **Razor thin Democratic Majority**
 - Senate
 - Budget Reconciliation Process
 - House
 - Can only lose three votes

CONGRESS

- **President Biden's \$3.5 trillion infrastructure package (Build Back Better)**
 - Major Climate Components
 - \$150 billion Clean Electricity Performance Program
 - 4% annual increase in clean energy
 - Tax incentives & direct pay provisions
 - Financial support for existing nuclear plants

MOST POWERFUL MAN IN WASHINGTON D.C.?



U.S. Senator Joe Manchin

CURRENT STATE OF CONGRESS

Build Back Better

- **Cap more likely \$1.8 – 2.2 trillion, not \$3.5 trillion**
- **Which programs will be eliminated or reduced?**

JUDICIAL ACTIONS

D.C. Circuit Court of Appeals

August 2021 decision directing FERC to consider the “social cost of carbon” in LNG permit proceeding

(Request for rehearing denied 10/15/21)

FEDERAL ENERGY REGULATORY COMMISSION

- **5 Member federal commission**
- **Jurisdiction over wholesale electricity markets**
- **Increasingly focused on policies promote renewables and decarbonization**
- **Democratic majority soon**

PARTING THOUGHTS

- **Further decarbonizing electricity requires a diverse generation mix**
- **Renewable energy alone can provide neither a reliable or affordable electricity supply**
- **Storage technology must advance significantly to provide sufficient supply of backup generation**
- **Existing and advanced nuclear are critical resources for carbon-free generation**

PARTING THOUGHTS

- **Transmission additions will become increasingly important and increasingly difficult to permit**
- **Opinions of customers, vendors, lenders, insurance companies, and credit rating agencies are having significant impacts on decarbonization strategies**
- **Extreme weather events are impacting both public policy discussions and energy planning and operational decisions**

QUESTIONS

