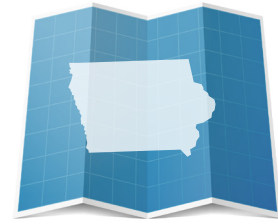


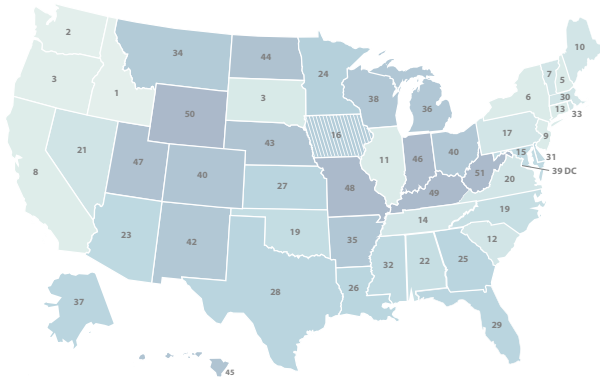
# HOW DOES IOWA STACK UP ON CLEAN ENERGY?



DATA AS OF 2020

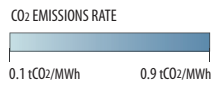


## LOWEST CO<sub>2</sub> EMISSIONS RATE

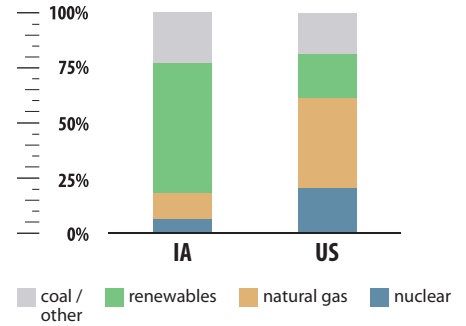


# #16

0.28 tCO<sub>2</sub>/MWh



## ELECTRICITY SOURCES



## CLEAN ENERGY JOBS

# #32

32,641 (2020)



COVID-19 job losses totaled at least 3,975 March-December 2020 (cumulative).



## CLEAN ENERGY RANKINGS

# #36

ENERGY EFFICIENCY SCORE = 13



# #41

12% GENERATION FROM NATURAL GAS



# #8

59% GENERATION FROM RENEWABLES



## RENEWABLE ELECTRICITY CAPACITY

# #4

1888 MW (2020)

NEW BUILD



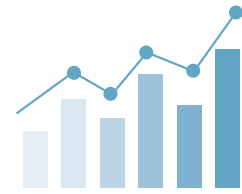
# #5

12,073 MW

CUMULATIVE



# ENERGY INNOVATION IN A 21<sup>ST</sup> CENTURY ECONOMY



## WHAT ENERGY INNOVATION MEANS FOR IOWA



**\$10.5 MILLION** Office of Energy Efficiency and Renewable Energy Grants in FY20

**\$17.8 MILLION** Office of Science grants in FY20

**\$64.8 MILLION** State and Indian energy programs, environmental cleanup, and other routine activities in FY20

**\$13.2 MILLION** Advanced Research Projects Agency-Energy grants since FY2009

**8 GRANTS** By ARPA-E since 2009

## IMPACTS OF FEDERAL R&D IN ENERGY SECTOR (TOTAL, 2018)

**#13** 1,670 JOBS SUPPORTED

**#13** \$159 MILLION CONTRIBUTED TO GDP

## BUSINESS SPOTLIGHT

FRONTLINE BIOENERGY (AMES, IA) | [FrontLineBioEnergy.com](http://FrontLineBioEnergy.com)



Frontline Bioenergy converts biomass and waste-based feedstocks into valuable products such as energy, fuels, and chemicals. The company received a Department of Energy grant to develop a pilot biomass-to-jet/diesel fuel plant using an innovative gasification and Fischer-Tropsch process, based on Frontline's patented gasification technology. Separately, the company is developing an estimated \$130 million renewable natural gas project near Bakersfield in the San Joaquin Valley of California.