

A landscape photograph showing a hill with several wind turbines in the distance. In the foreground, there is a village with houses and a field of yellow flowers. The sky is a mix of blue and orange, suggesting a sunset or sunrise.

# 20 35

THE REPORT

PLUMMETING SOLAR, WIND,  
AND BATTERY COSTS  
CAN ACCELERATE OUR  
CLEAN ELECTRICITY FUTURE



# CORE PARTNERS

GOLDMAN SCHOOL  
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ENERGY INNOVATION   
POLICY & TECHNOLOGY LLC

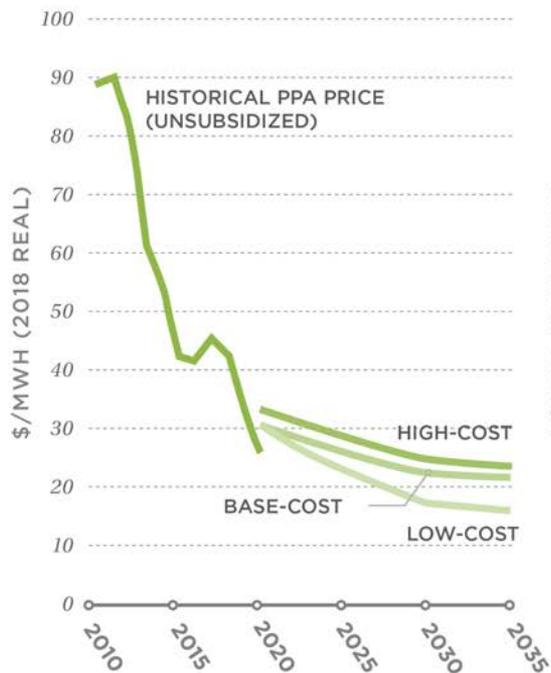
# WHY 90% CLEAN BY 2035?

- The electric sector is a major contributor to greenhouse gas emissions (GHG) –
  - cuts to climate pollution from electric power by 2035 is a critical step needed to cut economy-wide emissions
- Low-cost reductions in GHG emissions must be pursued soon to avoid worst climate change impacts
  - Renewables and storage are now less expensive than fossil power
- This is the first study to show that wind, solar and storage can deliver massive emission reductions w/o increasing consumer costs
- The build out of renewables and storage envisioned is aggressive but feasible
- Economic, health and climate benefits of a 90% clean generation sector are massive and could significantly contribute to COVID-19 economic recovery



# DRAMATIC COST DECLINES ARRIVED SOONER THAN ANTICIPATED

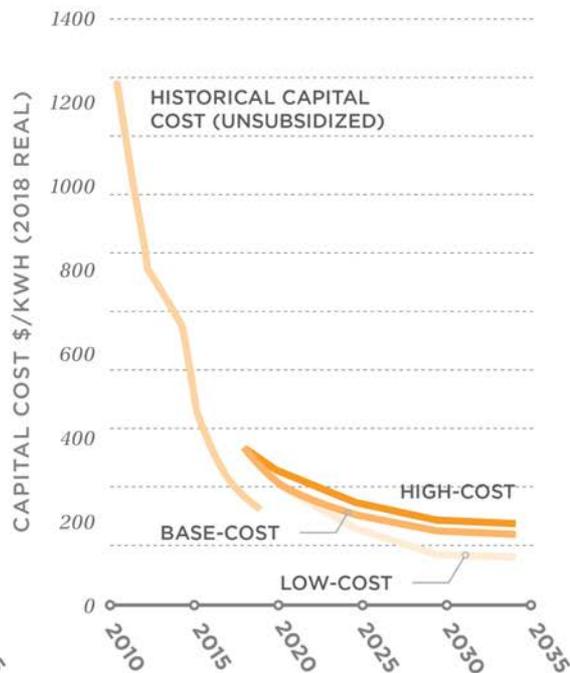
## WIND LCOE



## SOLAR LCOE

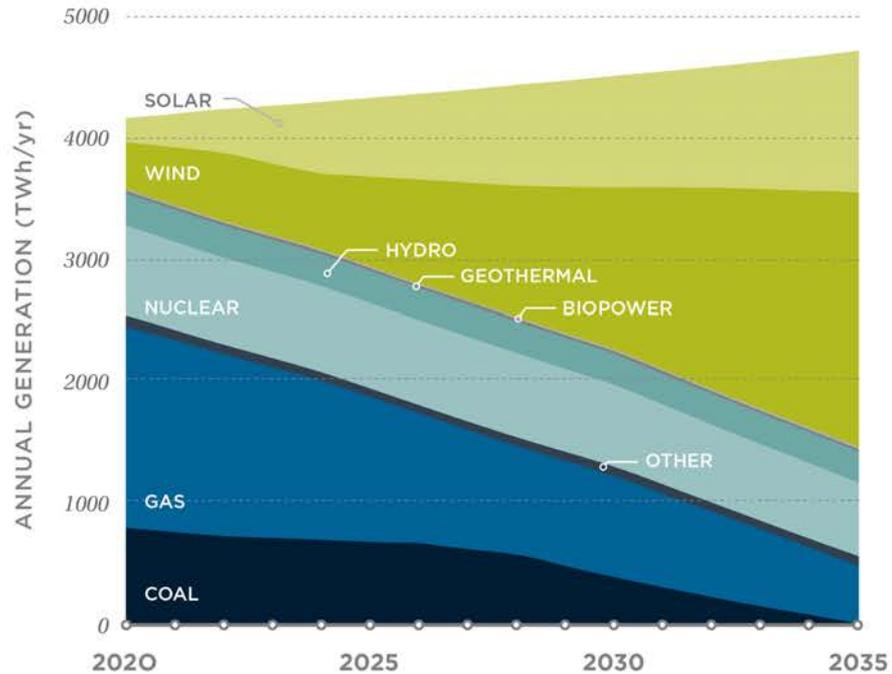


## BATTERY STORAGE CAPITAL COST

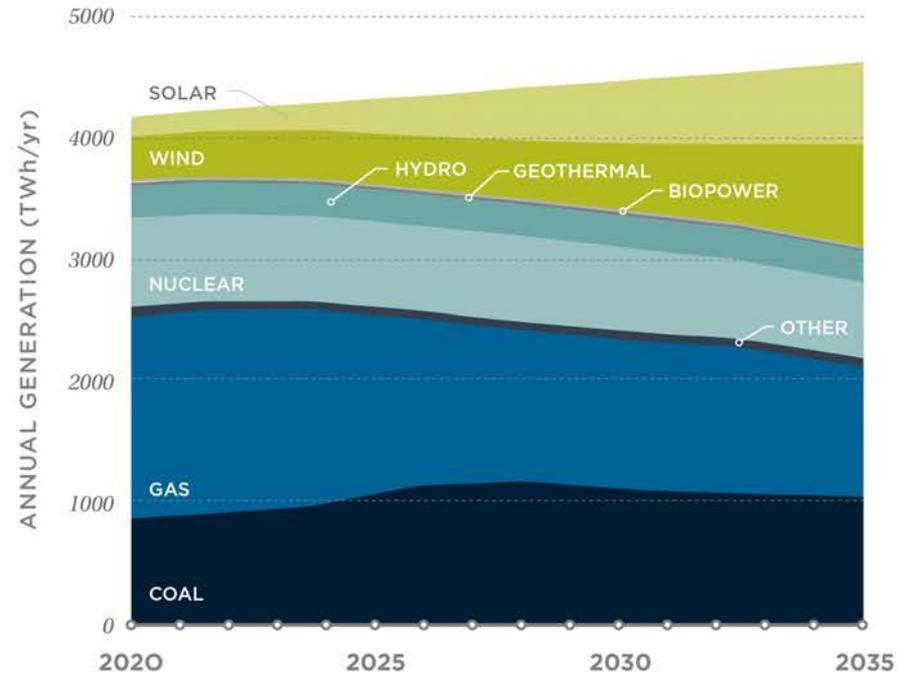


# STRONG POLICIES REQUIRED FOR A 90% CLEAN GRID BY 2035

ANNUAL GENERATION | **90% CLEAN**

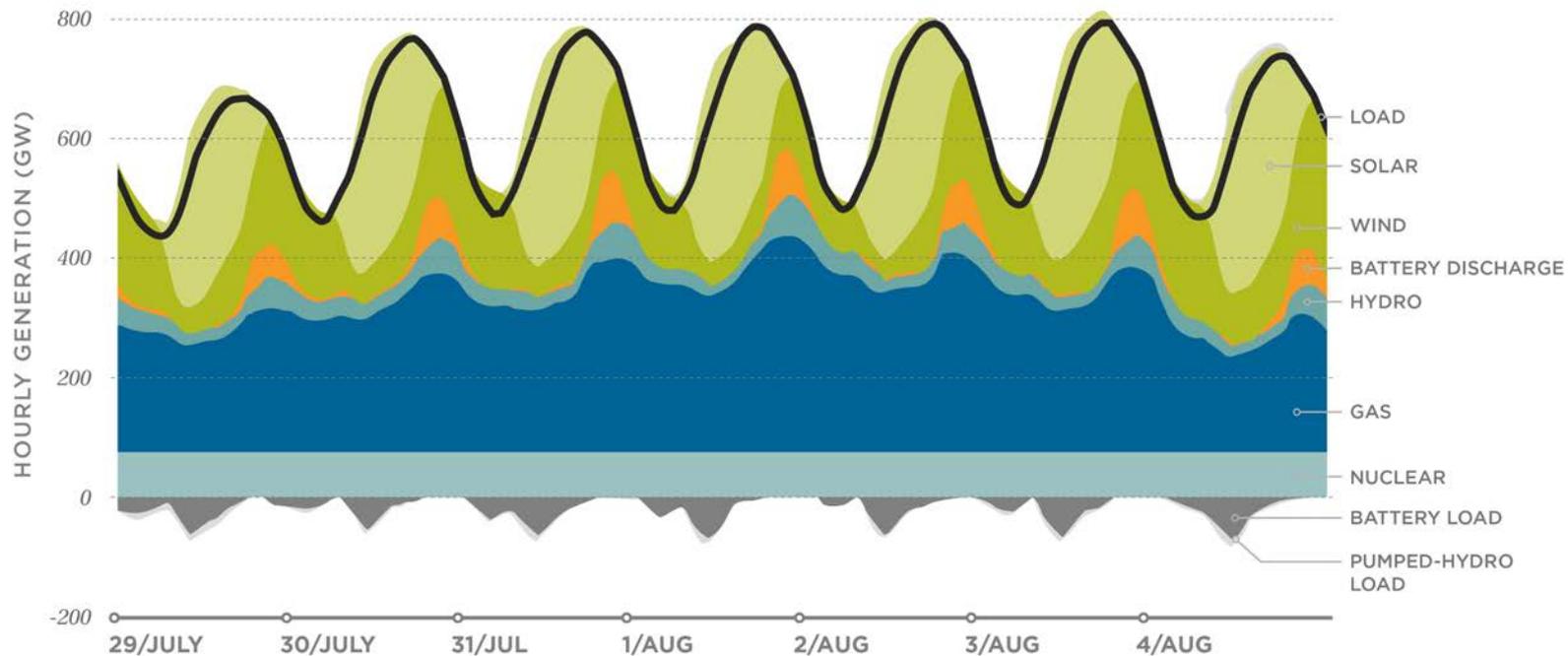


ANNUAL GENERATION | **NO NEW POLICY**

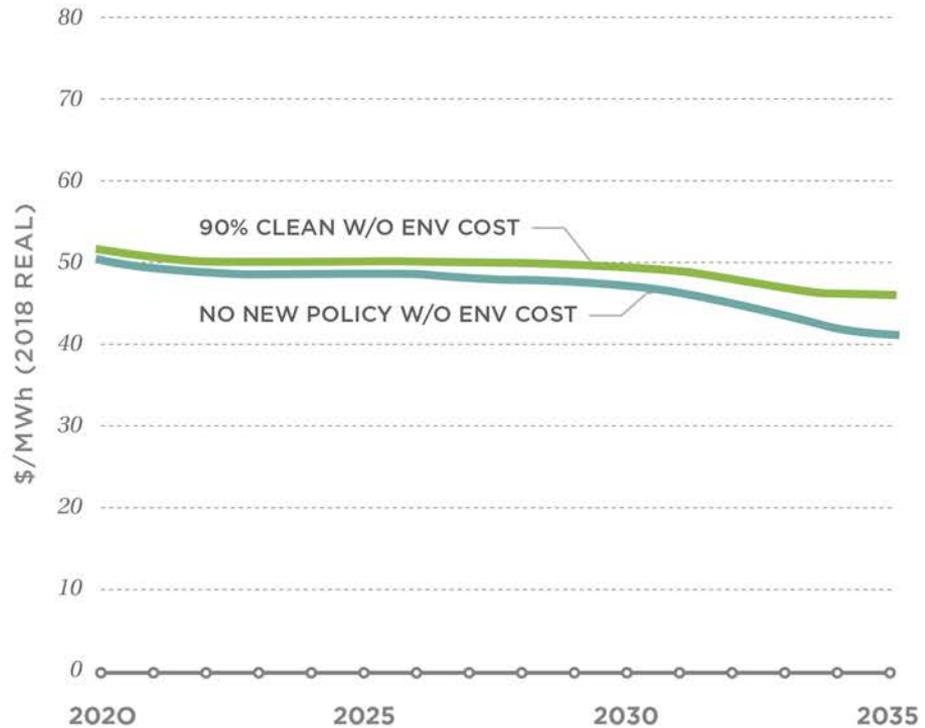
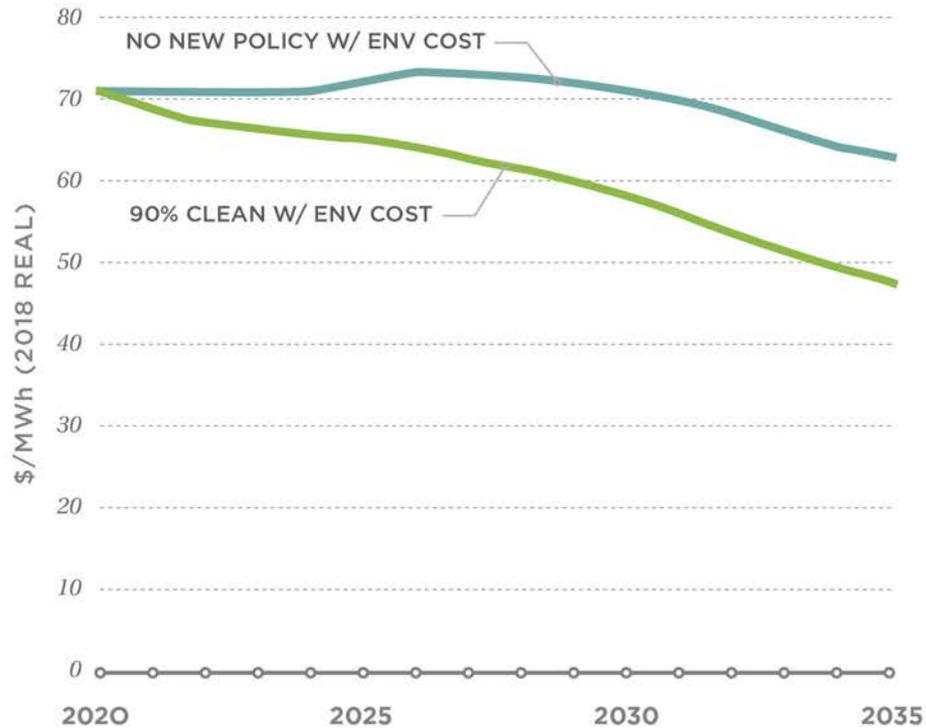


# DEPENDABLE WITHOUT COAL OR NEW GAS

HOURLY DISPATCH DURING THE MAX GAS GENERATION WEEK

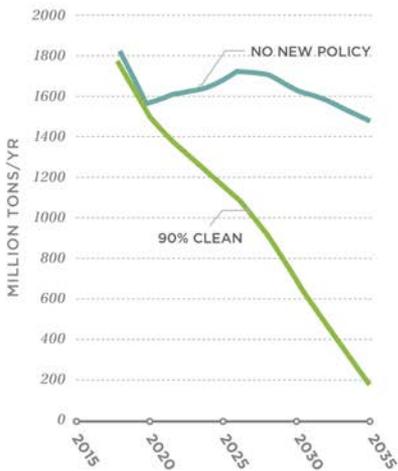


# ELECTRICITY COSTS LOWER THAN TODAY

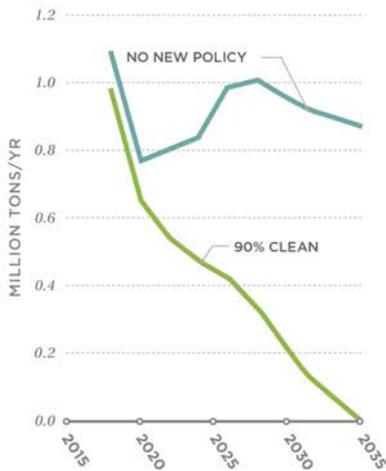


# AVOIDS \$1.2T IN HEALTH AND ENVIRONMENTAL DAMAGES

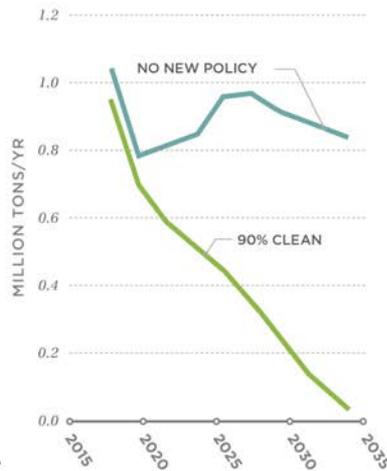
### CO<sub>2</sub> EMISSIONS (MILLION TONS/YR)



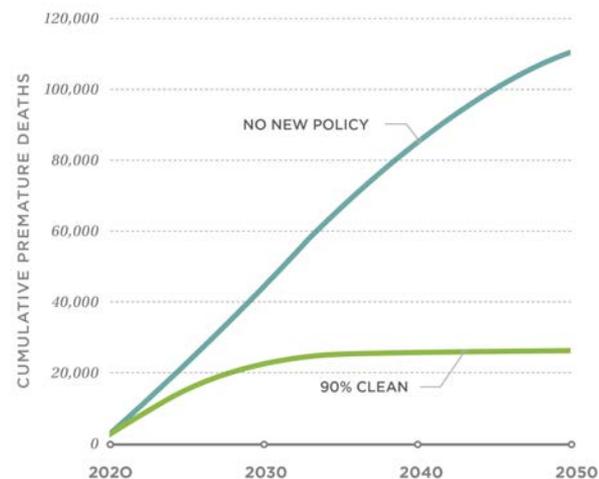
### SO<sub>2</sub> EMISSIONS (MILLION TONS/YR)



### NO<sub>x</sub> EMISSIONS (MILLION TONS/YR)

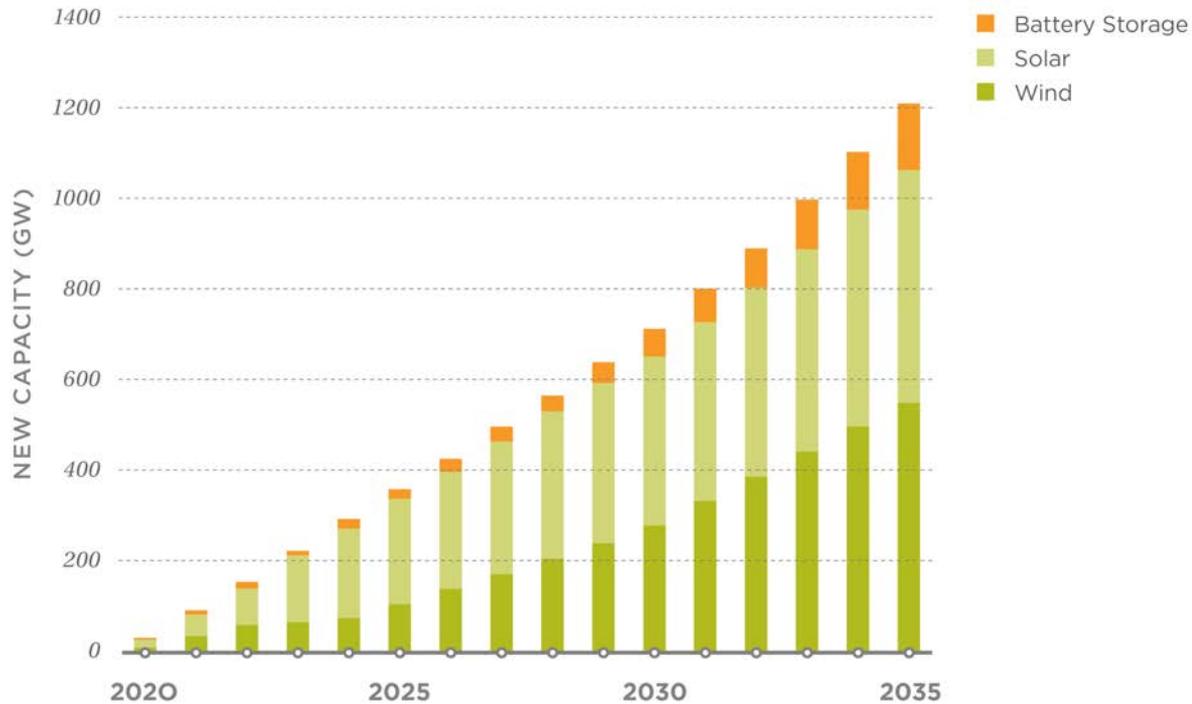


### CUMULATIVE PREMATURE DEATHS



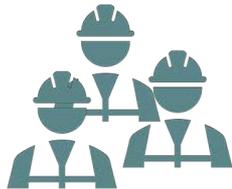
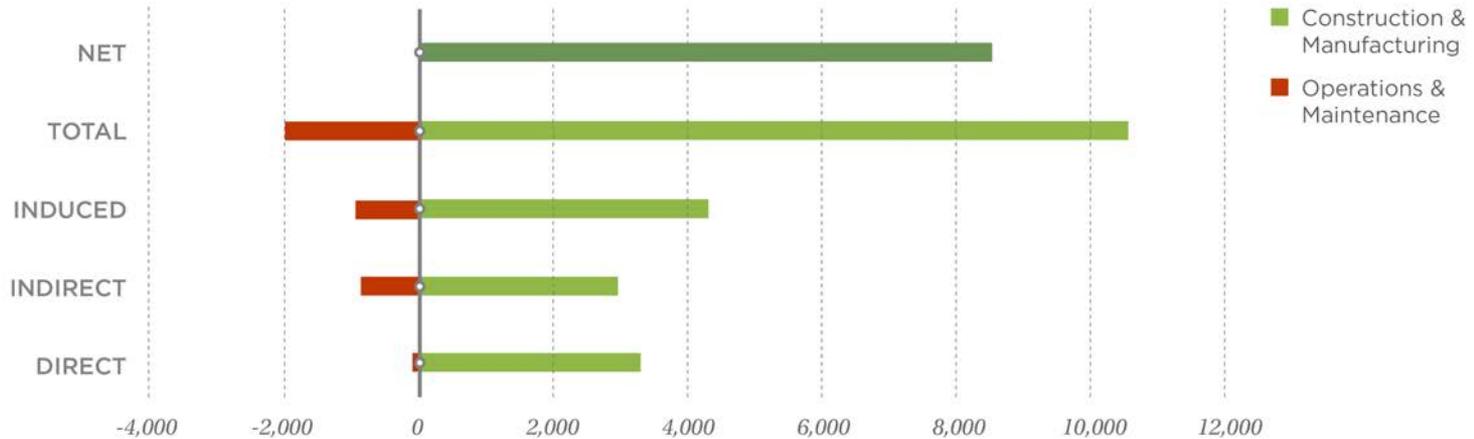
# SCALING UP RENEWABLES IS FEASIBLE

## CUMULATIVE NEW CAPACITY ADDITIONS



# SIGNIFICANTLY INCREASES ENERGY SECTOR EMPLOYMENT

CUMULATIVE JOB YEARS ('000), 90% CLEAN COMPARED TO NO NEW POLICY



**Supports 500,000 more jobs**  
each year through 2035 than business as usual

# CLEAN ELECTRICITY IS THE ROAD TO RECOVERY



Economic  
recovery opportunity



Jobs and infrastructure



No increased costs for  
customers

# INVESTMENT AND TAX CREDITS ALONE WILL NOT GET THERE

Adopt a national clean  
energy standard of:

- 55% by 2025
- 75% by 2030
- 90% by 2035
- 100% by 2045



## ADDITIONAL POLICY LEVERS NEEDED



Reinstate the advanced manufacturing tax credit from the American Recovery and Reinvestment Act to support domestic manufacturing.



Offer federal debt financing for utilities.



Shore up worker pension and healthcare funding and support communities through the coal transition.



Work with DOE, DOI, FERC, and states to expand and improve supporting programs.





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THE REPORT

QUESTIONS?