

# BIDEN'S FIRST 100 DAYS: FUSING ENVIRONMENTAL, ENERGY, & ECONOMIC POLICY

*Presenters: Julian Brubaker, Xiaochu Ma*  
*February 19, 2021*

# Webinar outline



- ≈ The need for sound economic analysis
- ≈ The lay of the land
- ≈ How new is Biden's approach to environmental policy?
- ≈ Major shifts to the landscape
  - ≈ *Regional economies*
    - ≈ Demo: phasing out leasing federal lands to fossil fuel corps
  - ≈ *Transportation industry*
    - ≈ Demo: building EV factories
  - ≈ *Coastal resiliency infrastructure*
    - ≈ Demo: investing in sea walls to mitigate hurricane damage
- ≈ Will Biden's new take on environmental policy persist?

# Necessity of modeling



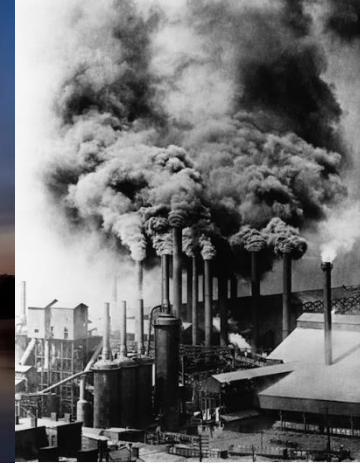
- ❑ Move from assertion and spin to evaluation
  - ❑ Because rhetoric is empty without facts & figures
- ❑ Policies that look neutral on a national level may have massive & disparate regional implications
- ❑ Modeling illustrates the dynamics of policies in a quantified modeling framework
  - ❑ Measure changes over time (dynamic) and over space (regional)
- ❑ Why not use all available knowledge to our advantage when planning for an uncertain future?
  - ❑ The only way forward that will truly limit financial suffering



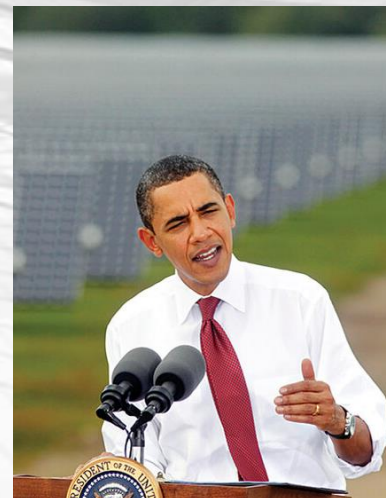
# Past shifts of this magnitude



- To the energy market
  - ▣ Industrial Revolution
- To transportation
  - ▣ Trains, cars, planes



- Presidents who championed environmental policy:
  - ▣ Teddy Roosevelt
  - ▣ Richard Nixon
  - ▣ Jimmy Carter
  - ▣ George H.W. Bush
  - ▣ Barack Obama



what does **REMI** say? <sup>sm</sup>

# Biden's environmental lens



- ❑ Environmental policy = economic policy
  - ❑ This is a new approach to economic policy
- ❑ Biden's challenge is not in vision, but in *execution*
- ❑ “Command-and-control” mandates vs. incremental reforms



# Where are we now?



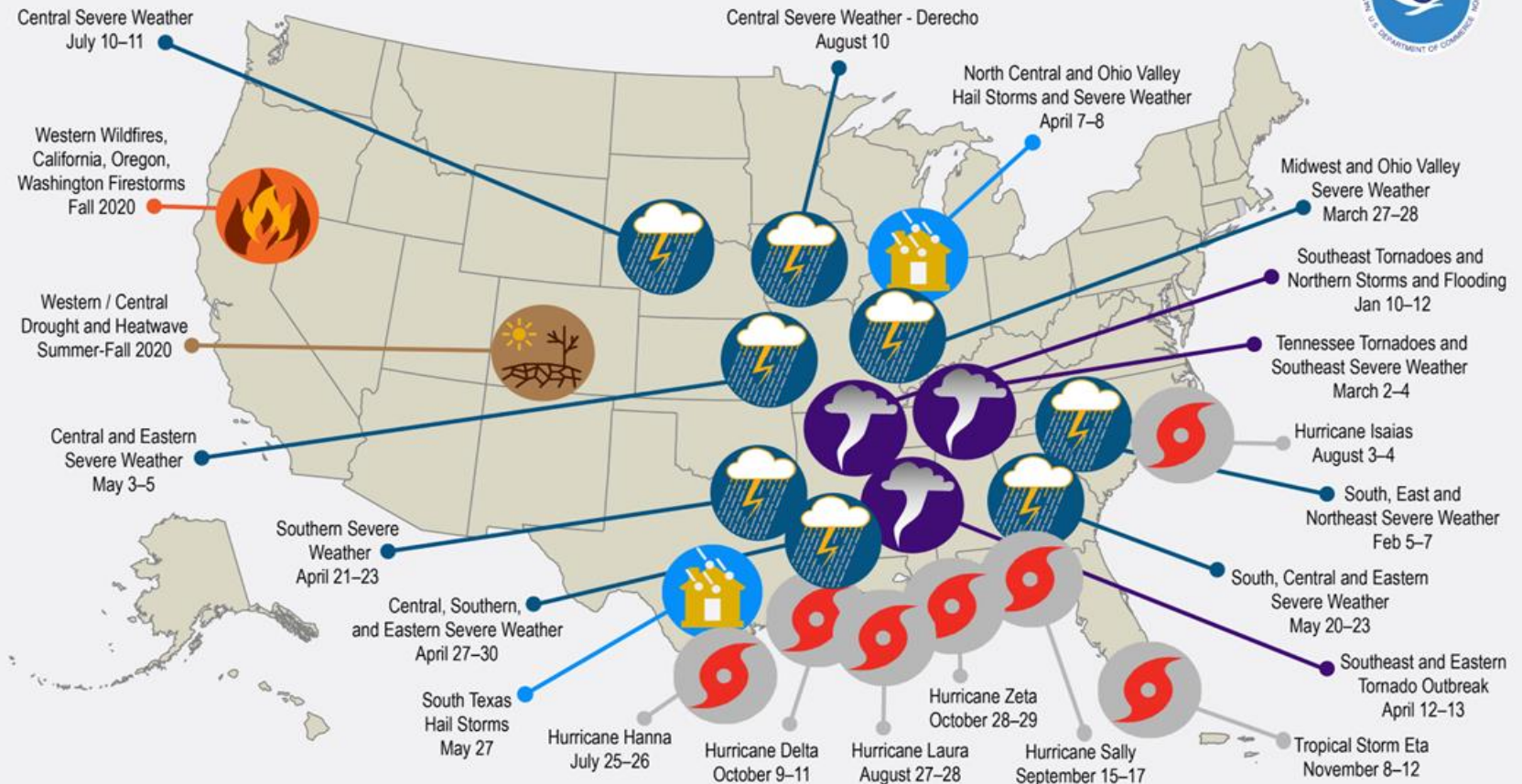
- ❑ The world is at **1.2°C right now**, on track to exceed 1.5°C **by 2030**
- ❑ Long way to go in shifting the energy market
  - ❑ In 2019, **11%** of U.S. energy consumption was renewable, plus 8% nuclear. Electricity generation in the U.S. is only **38%** clean.
- ❑ **Less than 2%** of the energy for U.S. transportation comes from electricity, about 5% comes from biofuels
- ❑ Fossil fuel companies have spent **\$359 million** on lobbying each year in recent years, to receive **\$649 billion** in subsidies a year
  - ❑ Green energy has spent roughly **\$26 million** a year on lobbying
- ❑ Renewable energy technologies (especially solar panels) are dropping rapidly in price, while fossil fuels remain cheap



# Where are we now?



## U.S. 2020 Billion-Dollar Weather and Climate Disasters



*This map denotes the approximate location for each of the 22 separate billion-dollar weather and climate disasters that impacted the United States during 2020.*

what does **REMI** say? <sup>sm</sup>

# Why now?

- ❑ A perfect storm: addressing climate change has become *economically necessary* and *politically feasible*
- ❑ It seems free enterprise cannot solve climate change on its own, without government intervention
  - ❑ Gov't has already been intervening via subsidies for the fossil fuel industry
- ❑ Possibly a wider avenue of change due to conjoined crises: COVID-19, economic recession, racial strife, & the climate crisis
  - ❑ Structural change rather than minor reforms?

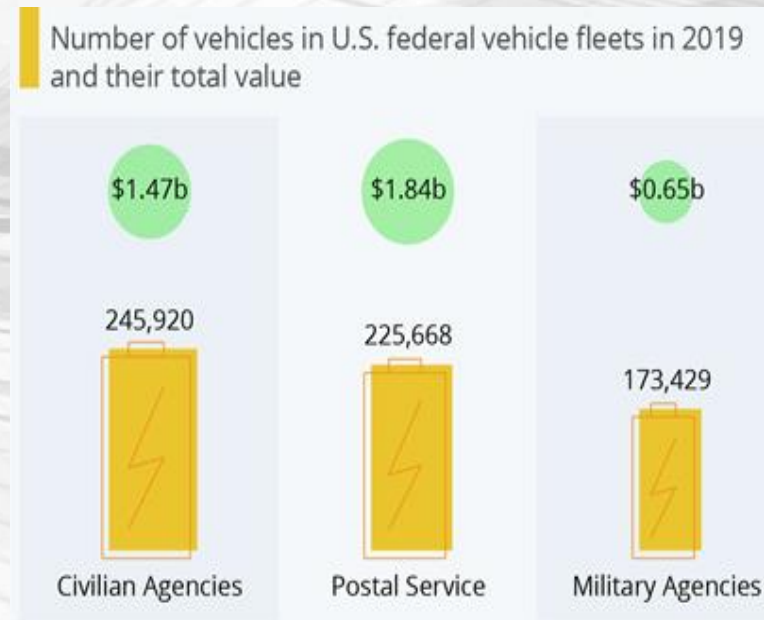




# Biden's actions thus far



- Two executive actions, Jan. 20 & Jan. 27:
  - Prioritizing the climate crisis within the federal gov't and diplomatically abroad
  - Reversing most of Trump's environmental directives and deregulation
  - Pausing Keystone XL pipeline, leasing federal land/water to fossil fuel corps
  - Designating climate crisis as national security risk
  - Replacing federal fleet with EV



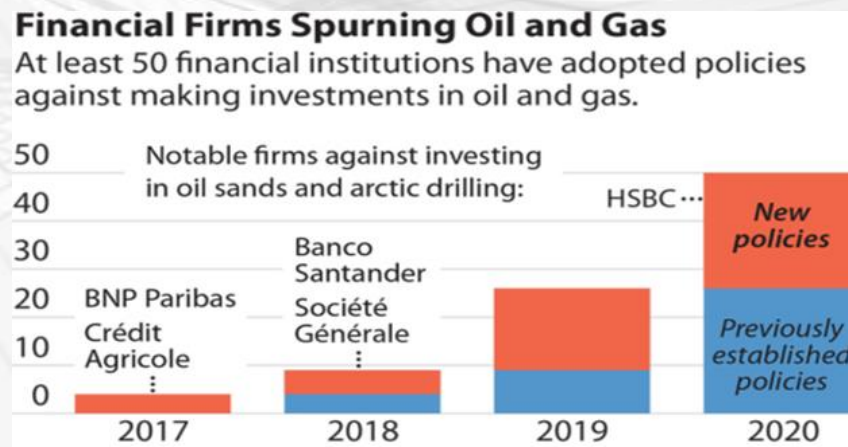
what does **REMI** say? <sup>sm</sup>

Sources: U.S. General Services Administration

# Inevitable trend towards green



- Private industry is also headed this way; Biden is *accelerating* a trend (and how fast of an acceleration is required?)
  - GM and Walmart have promised carbon-neutrality by 2040
  - Ford, BP, Shell, PGE, Duke Energy, American Airlines, Morgan Stanley, Nestle, and more have pledged net-zero emissions by 2050\*
- What message is Biden sending to the private sector?
- A race to see who will dominate the renewable energy, EV, and resiliency infrastructure industries



what does **REMI** say? <sup>sm</sup>

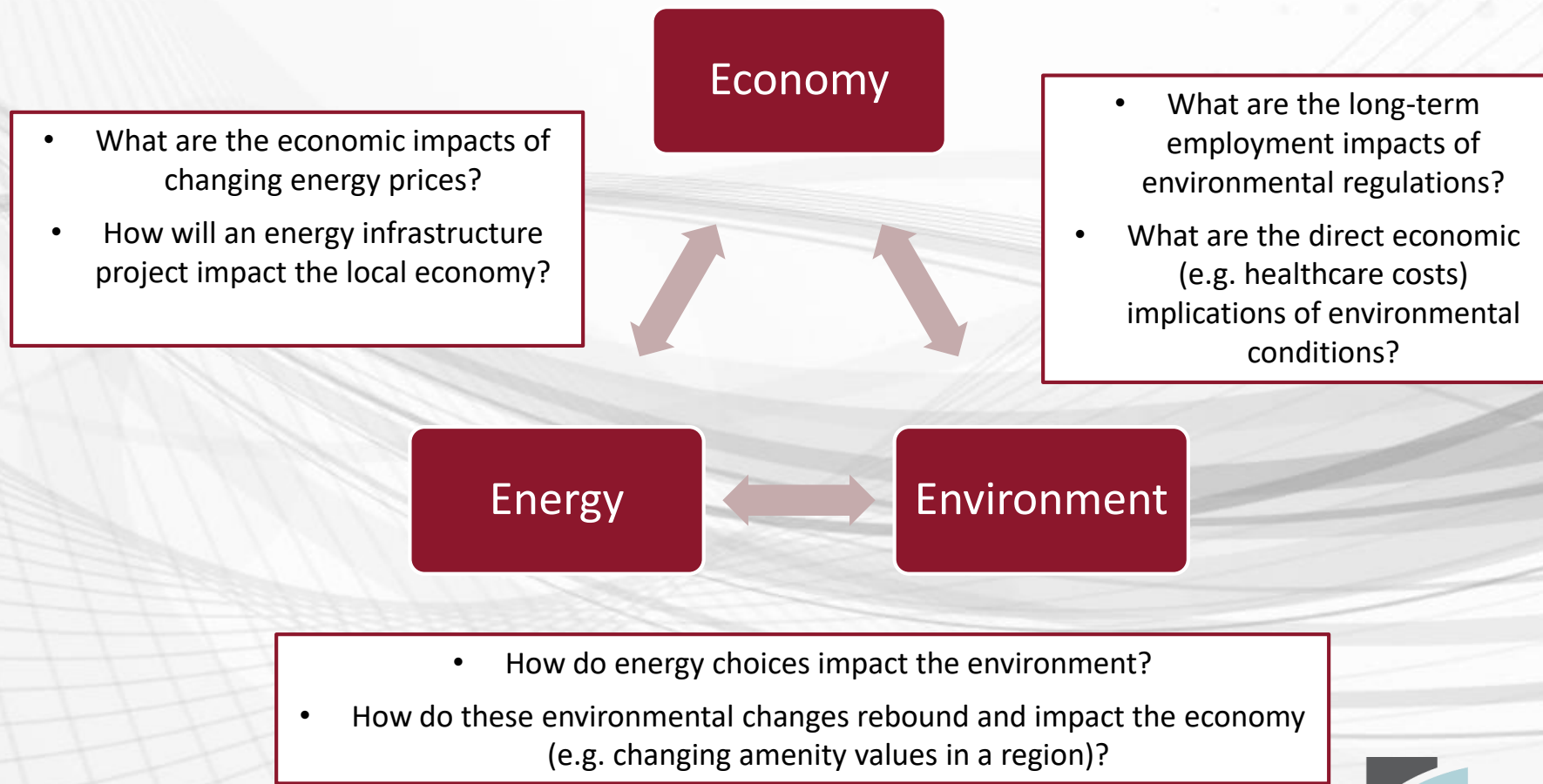
# Landscape shifting underfoot



- ≈ The need for sound economic analysis
- ≈ The lay of the land
- ≈ How new is Biden's approach to environmental policy?
- ≈ **Major shifts to the landscape** (*plus demos*)
  1. **Regional economies** (*end to leasing federal land to oil & gas*)
  2. **Transportation industry** (*building an EV factory in MI*)
  3. **Resilient infrastructure** (*sea walls before a hurricane in FL*)
- ≈ Will Biden's new take on environmental policy persist?



# Smart, Intuitive User Experience

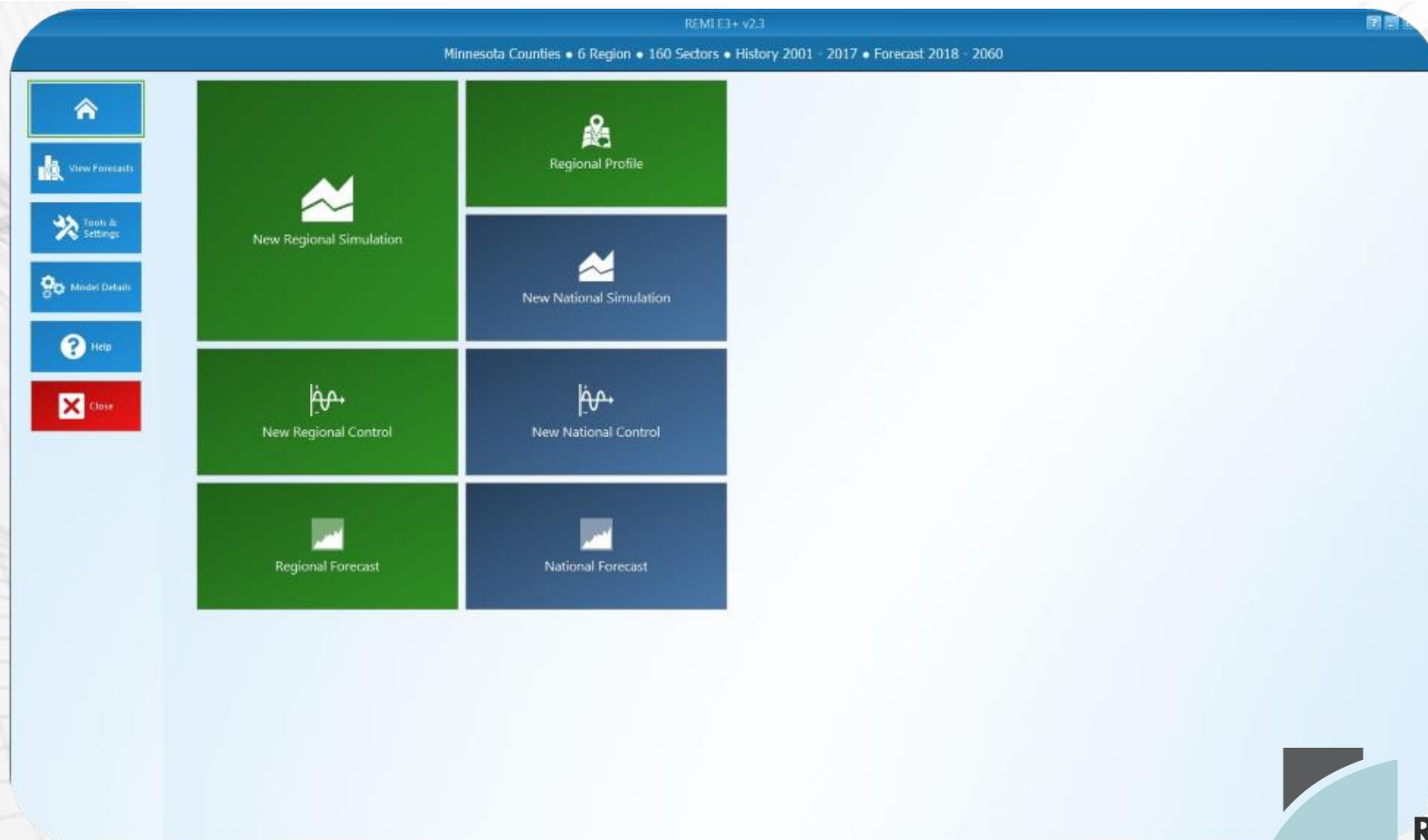


# Regional geographic shifts



- The transition to green energy will have regionally-specific effects, just like climate change itself
- Lost jobs
  - due to halting Keystone XL pipeline (see North Dakota)
  - when coal-firing plants shutter (see Adams County, OH)
  - by ending the leasing of federal land & water to fossil fuel companies (see the North Slope Borough of Alaska)
- Gained jobs
  - due to an expanding wind & solar market (Texas?)
  - building EV factories & charging stations (Rust Belt?)
  - installing resiliency infrastructure (coastal cities)

# Demo 1: phasing out oil & gas leases



what does **REMI** say? <sup>sm</sup>





# Variables & assumptions



- ❑ Demo 1: phasing out leasing federal lands and waters to fossil fuel corps
- ❑ Data:
- ❑ (1) around 18.5% of oil and natural gas production are from federal lands and waters
- ❑ (2) assume on average the leases last for 10 years
- ❑ (3) assume current leases will be phased out evenly from 2021 to 2030
- ❑ Model Input: decrease the output of oil and gas extraction industry

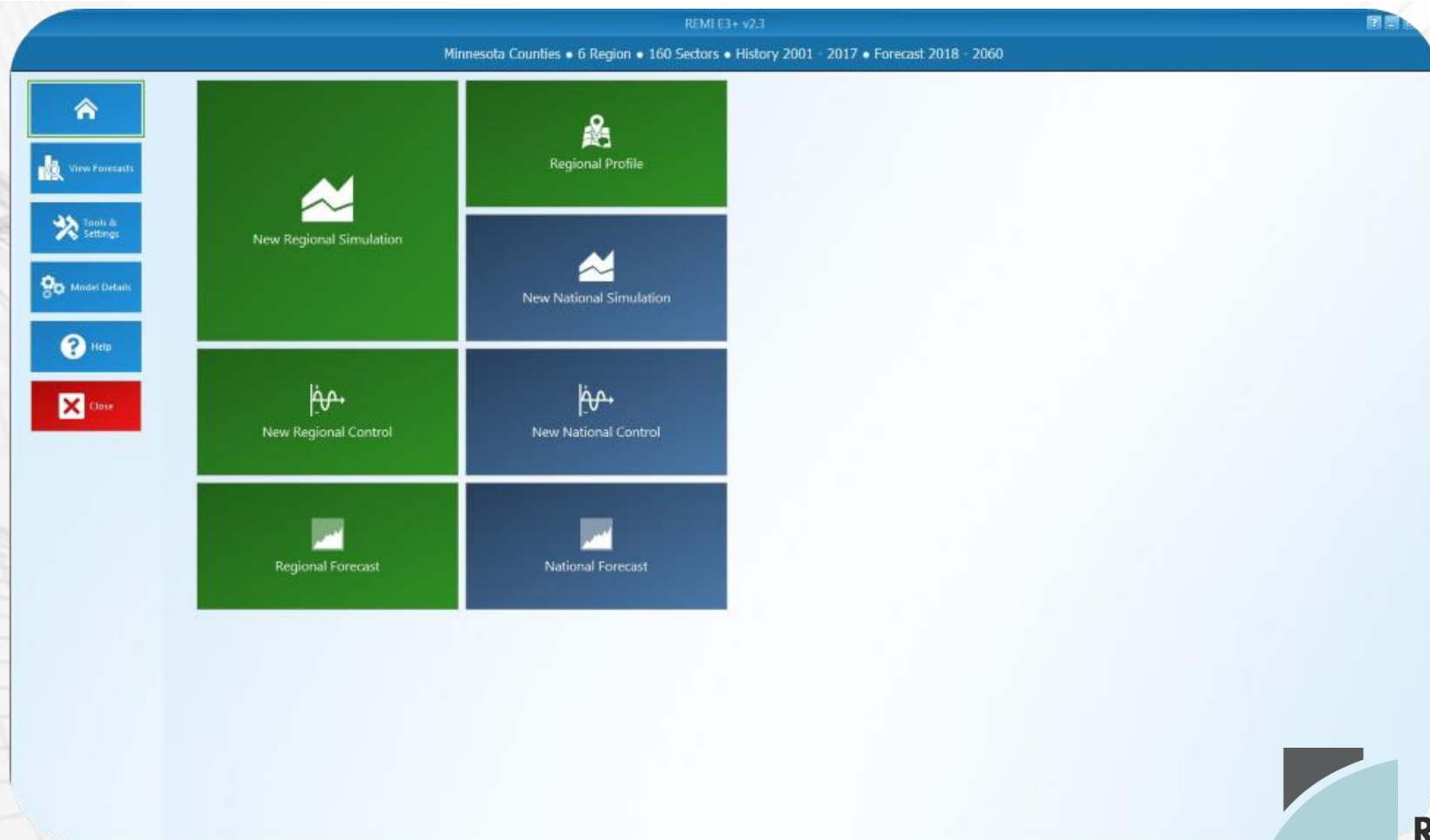
# Transitioning transportation industry



- Changing federal fleet to EV
  - ▣ Biden promises **1 million** “good-paying, union jobs”
- Biden supports state & local tax credits for EVs, plus other green economic incentives
- Charging stations? Public transit? Accessible cities?

what does **REMI** say? <sup>sm</sup>

# Demo 2: building an EV plant



what does **REMI** say? <sup>sm</sup>



# Variables & assumptions



- Demo 2: building EV plants in Michigan
- Data:
- General Motors will convert an ageing Detroit assembly plant into the manufacturing heart of its “all-electric future” and create 2,200 jobs.
- Model Input:
- (1) increase Motor Vehicle industry output in Michigan; decrease the same amount in the rest of the U.S.
- (2) consumer spending shift from motor vehicle fuels to electricity

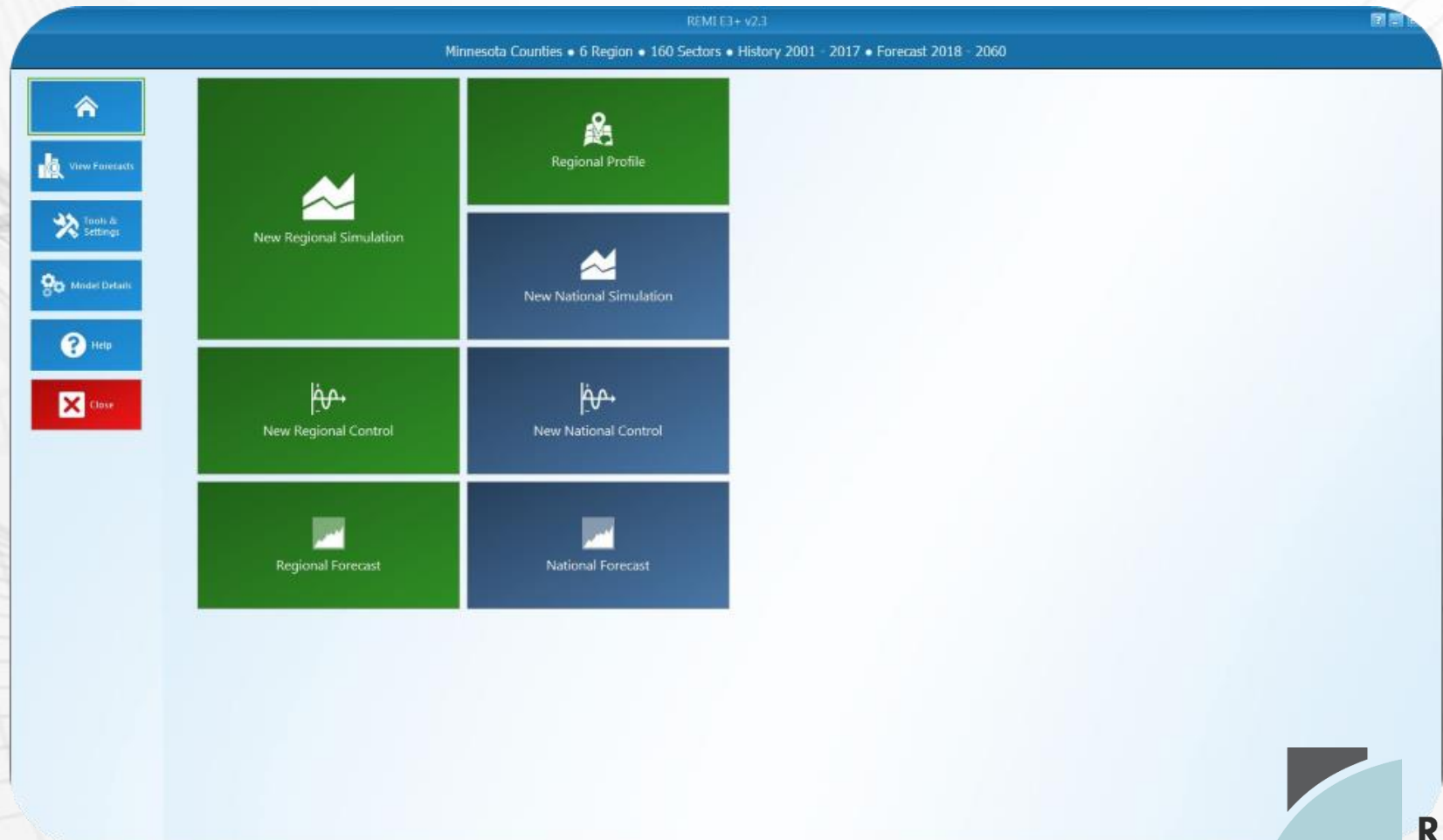
# Green investments for the future



- ❑ Sustainable investments into at-risk communities
- ❑ The (slow?) death of federal subsidies to fossil fuel
- ❑ ...mutterings of a carbon tax / fee & dividend?
- ❑ Focusing FEMA on resilience as much as on crisis response
  - ❑ Citizens Climate Corps will prioritize resilience, too



# *Demo 3: investing in a sea wall*



what does **REMI** say? <sup>sm</sup>



# Variables & assumptions



- Demo 3: investing in coastal resiliency
- Part of the whole story: how would resilience infrastructure reduce the impact of hurricane on tourism industry in Florida?
- Natural Disaster Resilience Study Feature:  
A hypothetical hurricane in Florida in 2025 & 2026  
Resilience infrastructure: seawall

# An uncertain future...



## Most optimistic case:

- Entrenches environmentalism within the American psyche and political system
- Slows climate change, prepares us for inevitable changes
- Creates “good paying, union jobs,” economic stimulation, and corporate profits
- All without exacerbating inequality and suffering

## More pessimistic cases:

- Fails to meaningfully slow climate change, too piecemeal
- Creates more economic hardship
- Cannot incentivize private companies to transition to green quickly enough
- Lowers domestic GDP and makes the U.S. less competitive globally
- Green technology can’t deliver
- All policies reversed in 4 or 8 years

# ...but modeling provides insight



- Biden has placed the highest priority on environmental considerations of any president to date
  - ▣ Will Biden's fusion of economic & environmental policy stick around? Will future presidents have a similar lens?
- Economic costs/benefits of more stringent environmental policies are distributed unequally: by geography and by industry
- Economic impact analysis can inform decisions, shine a light on complexity, communicate the importance of a policy, and alleviate suffering

# Questions?



## Email us

[xiaochu.ma@remi.com](mailto:xiaochu.ma@remi.com)

[julian.brubaker@remi.com](mailto:julian.brubaker@remi.com)

## Call us

(413) 549-1169

## Visit our website

[www.remi.com](http://www.remi.com)

what does **REMI** say? <sup>sm</sup>

