STRATEGEN WEBINARS

PERFECT 50-STATE STORM: COVID-19 AND THE UTILITY CRISIS

April 15, 2020 | 11 AM-12 PM PT

Today's agenda

- Announcements
- Main Presentation (40 minutes):
  - Mark Higgins, COO, Strategen
  - Matt McDonnell, Director, Strategen
  - Ron Nelson, Director, Strategen
- Q&A
- Visit www.Strategen.com

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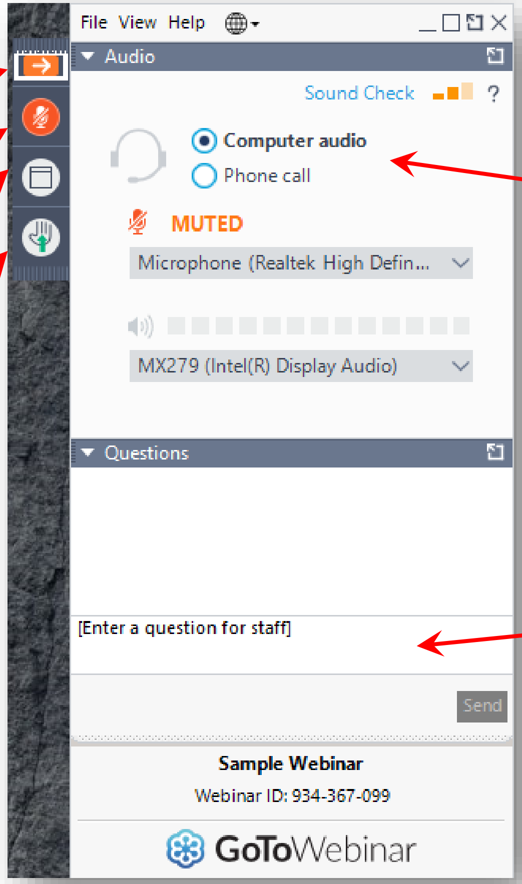
Mute microphone (all attendees are listen-only today)

Toggle full screen mode

Raise hand (not used today)



Audio options

Type you questions here – questions will be answered after all panelists have presented

Today's webinar is being recorded; the recording and slides will be available after the webinar

Today's Webinar

Perfect 50-State Storm: COVID-19 and the Utility Crisis

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V-DER Tariffs: Encouraging Good Grid Citizenship	March 2020
Energy Storage on the Move	September 2019
Energy Storage in Emerging Markets	April 2019
Storage as a Peaker Replacement	October 2018
Winds of Change: Global Supply Chain Updates for Energy Storage	September 2018
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STRATEGEN

Strategen is a mission-driven professional services firm dedicated to decarbonizing energy systems

ASSOCIATIONS

Strategen co-founded and manages the California Energy Storage Alliance, the Vehicle-Grid Integration Council, and the Green Hydrogen Coalition. Through these organizations, Strategen policy work has been pivotal in building the energy storage industry in California, the US, and around the world.

CONSULTING

Since 2005, Strategen Consulting provides analysis and insight to governments, utilities, NGO’s, and industry to help them achieve leading-edge market transformation strategies.

CONVENINGS

Strategen excels in stakeholder engagement, via customized small and large events. Strategen founded Energy Storage North America (ESNA), the largest grid-connected storage conference in North America. ESNA 2021 is affiliated with Intersolar North America.

STRATEGEN

Moderator:

Mark Higgins

Chief Operating Officer
Strategen

Matt McDonnell

Director of Consulting
Strategen

Ron Nelson

Director of Consulting
Strategen

Why are we all here?

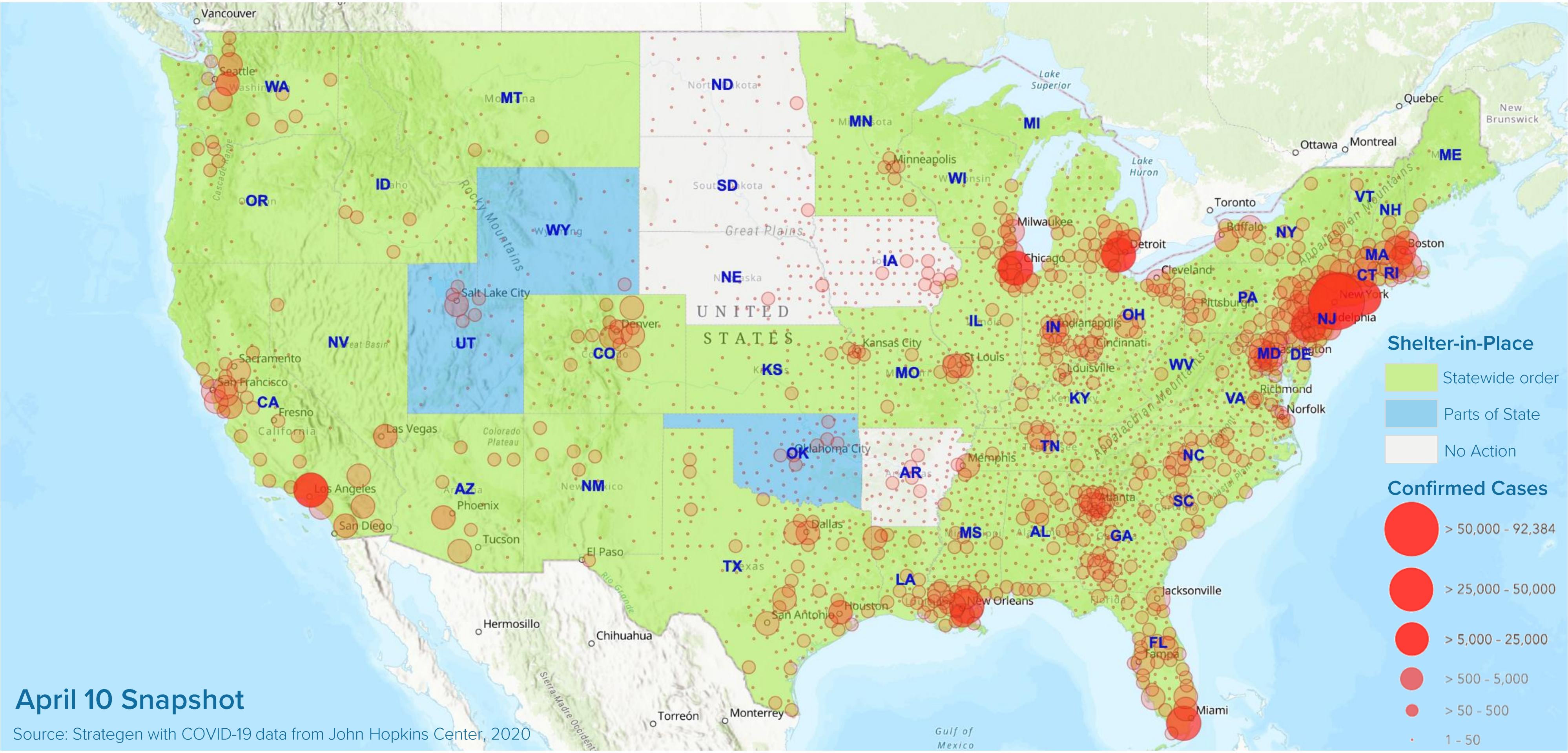
- COVID-19 is causing unprecedented impacts across the economy - electric utilities are certainly not immune from being impacted
- Our goal is to arm regulators and consumer advocates with early insight:
  - What kind of impacts may utilities and utility customers experience?
  - What kind of tools do regulators have at their disposal to manage and mitigate impacts to customers and utilities?
  - How can regulators and consumer advocates get ahead of the curve?

Agenda for today's conversation

- Understand the macro-level impacts to the US economy and resulting impacts to US utilities
- Review regulatory tools and lessons learned from historic crises
- Discuss other tools that can help manage and mitigate impacts from COVID-19
  - Initial state-level COVID-19 regulatory responses
  - Focusing limited resources: Prioritizing regulatory activities
  - Managing Rate Increases: COVID-19 regulatory asset creation
  - Revenue Decoupling: Addressing declining electricity sales
  - Low income solutions: Rate design & other solutions to ensure affordability
  - Rapid Regulatory Response Tools: Regulatory Sandbox

COVID-19 in the United States

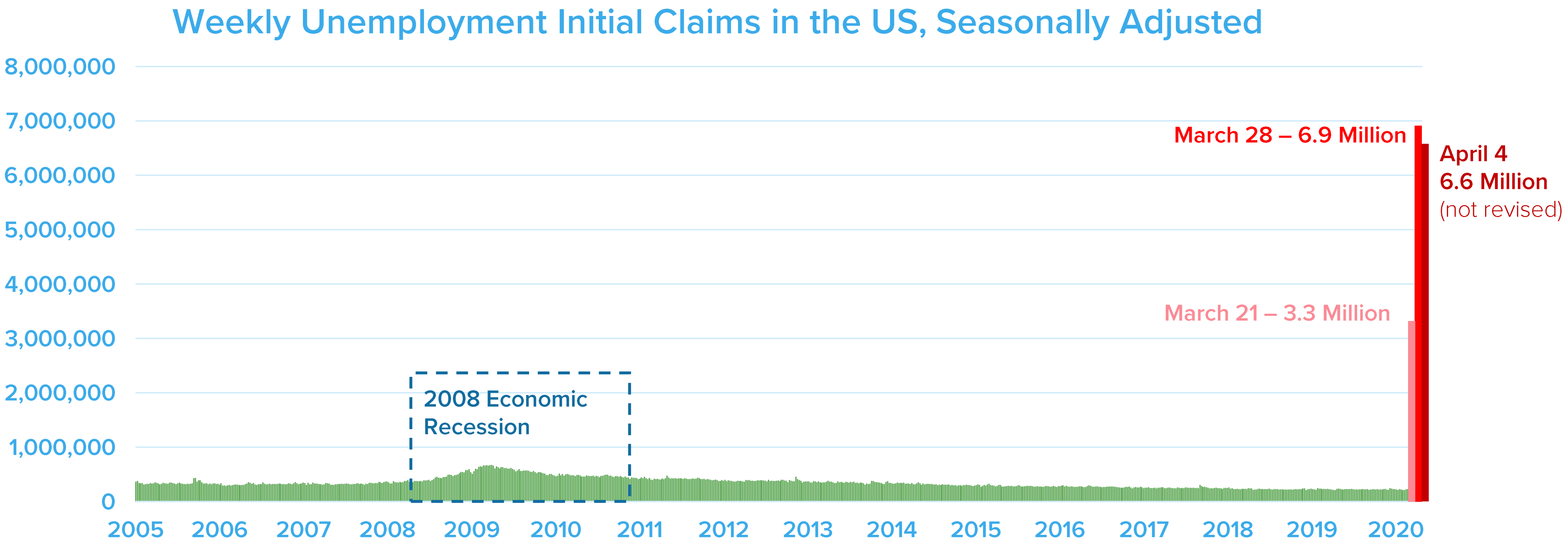
US COVID-19 cases continue to grow across the nation



Source: Strategen with COVID-19 data from John Hopkins Center, 2020

500,000+ confirmed cases nationally; 200,000+ in New York alone.
42 States have issued shelter-in-place notices

US unemployment claims reach unprecedented peak

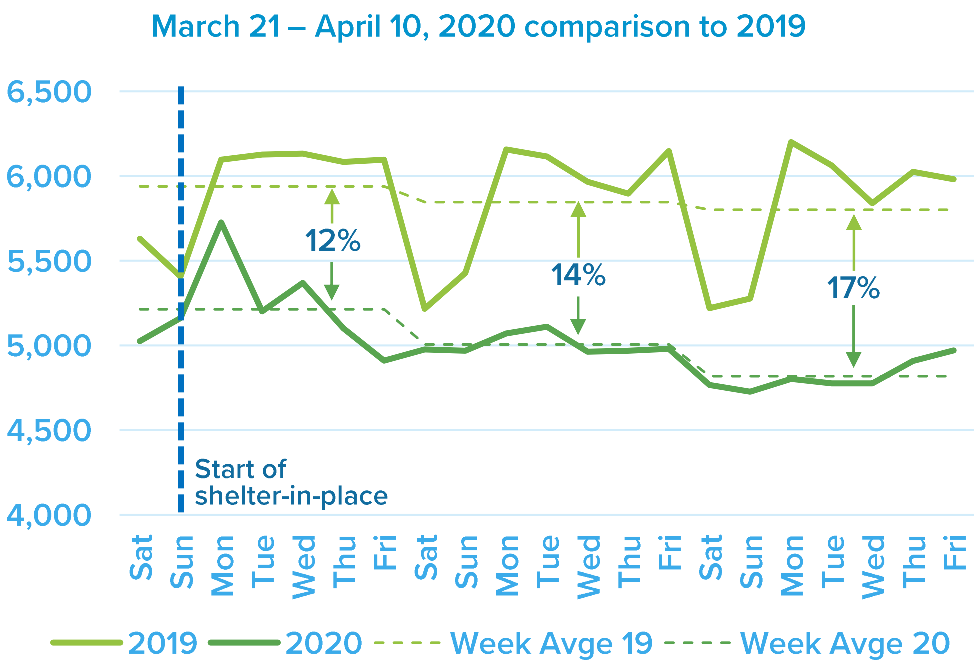


As non-essential activities were suspended and many employees ceased, Congress passed an initial $2 trillion stimulus package (10% of GDP) to counteract the economic damage.

Source: Department of Labour, Office of Unemployment Insurance Weekly Claims Report; updated April 10 2020.

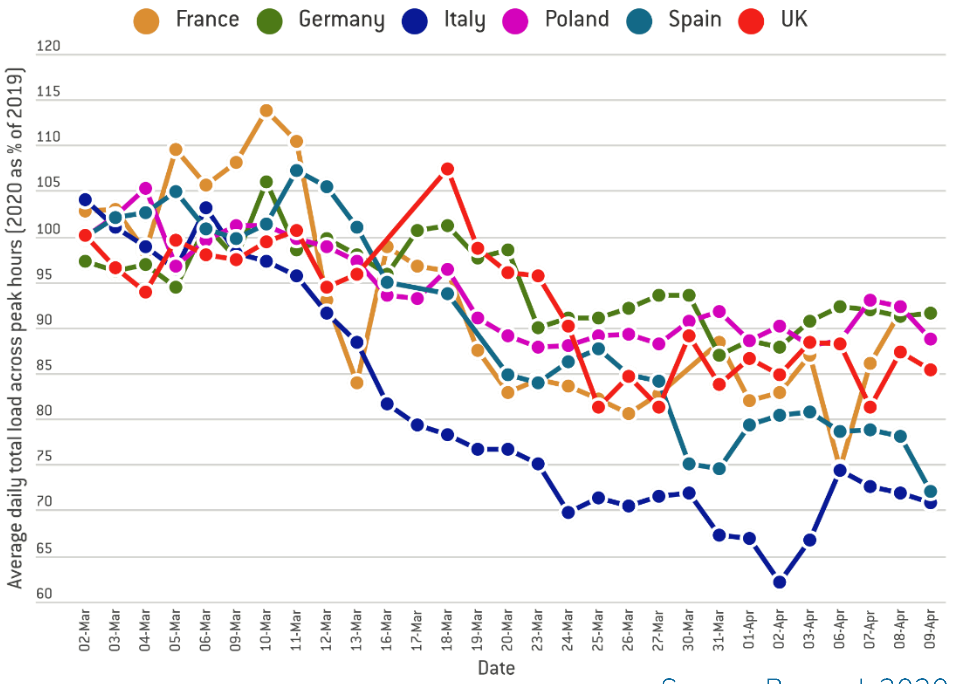
Energy demand declines 10-30%

Electric demand reductions in NYC following the closure of non-essential businesses



Source: NYISO, Load Data, 2020

Electric demand reductions in Europe



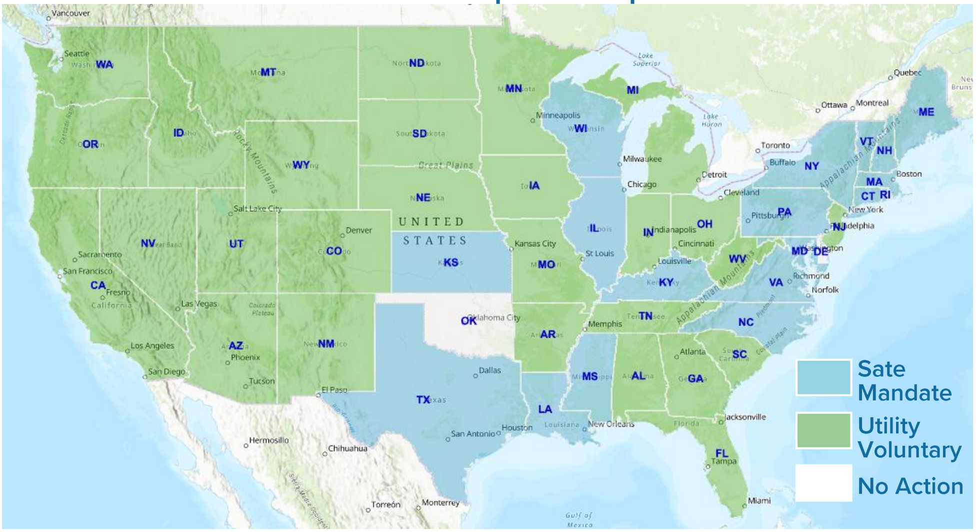
Source: Bruegel, 2020

New York City load is already experiencing significant demand reductions, primarily driven by a decrease in commercial use

Ensuring essential electric service is a priority

- Aspects of the pandemic response may be similar to responses to natural disasters
  - The electricity industry is part of the Essential Critical Infrastructure Workforce
  - 20 States have placed moratoriums on disconnections
  - Utilities have voluntary moratoriums in 29 states
- This will create COVID-related costs and drive revenues down
- If shelter-in-place orders last longer than expected, the energy industry could also face longer-term effects

Service termination moratorium in place – April 1st



Source: Energy & Policy Institute, 2020

What do these economic impacts mean for utilities?

Load Declines

- Many states have mandated partial or complete shutdowns that will heavily impact the commercial & industrial sector, which drives a significant portion of total consumption
- Load reductions may reduce generation asset utilization and overall utility revenues

Revenue-Cost Mismatches

- Many utilities have implemented a shut-off moratorium, which means that they will continue to serve certain customers even absent payment
- Revenue-cost mismatches may be more pronounced in regions without revenue decoupling
- In the long run, revenue-cost mismatches can threaten utility financial integrity

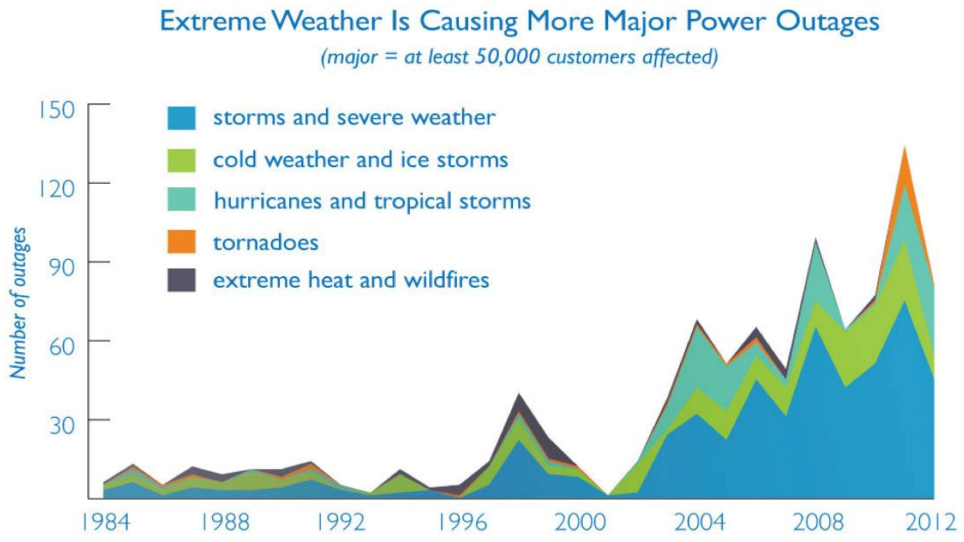
Need for Rapid Changes

- The pace and magnitude of impacts from COVID-19 is unprecedented
- Utilities and regulators may be required to act faster than the typical regulatory cycle
- It may be necessary to find ways to bypass traditional structures to ensure safe, reliable and affordable customer service

What can we learn from previous disasters?

Regulatory tools utilized in prior catastrophic events

- Significant events within the energy industry, such as Hurricane Sandy and the California Energy Crisis, have necessitated the use of alternative regulatory mechanisms
  - Cost trackers for event-specific utility costs
  - Cost deferrals with multi-year amortization periods
  - Securitized bonds
  - Low-income rate designs



Source: Climate Central, 2013

Hurricane Sandy: Estimated utility restoration costs

NJ-NYC Region

Utility	Estimated Recovery Cost
JCP&L, New Jersey	680 million
PSE&G, New Jersey	420 million
ConEd, New York City	521 million
LIPA, Long Island	800 million

Source: Rutgers, 2016

Current crisis may require use of alternative regulatory mechanisms that help protect consumers and manage the financial impacts from disruptive events

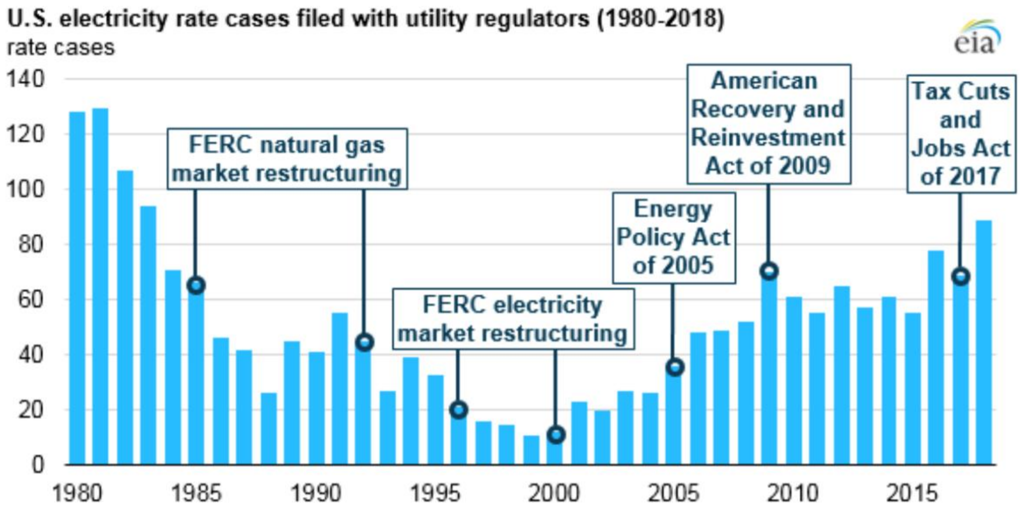
Source: https://www.eia.gov/electricity/policies/legislation/california/subsequentevents.html

Anticipating regulatory action from this crisis

- Given the magnitude and duration of impact currently expected from COVID-19, utilities will likely need regulatory approval for financial stability tools in the next 3-18 months.

- In the near term (3-6 months), those tools make take the form of balancing accounts, approval for short term borrowing, cost recovery approval for emergency actions, etc.

- In the longer term (2021 onward) this level of disruption will likely push many utilities to seek more substantial re-adjustments, including through usual rate case process



Source: EIA, 2019

Times of significant disruption have historically pushed utilities to seek rate case re-adjustment (2001, 2005, 2009)

Load and revenue declines may lead to numerous different, but interrelated, cost recovery request from utilities

Longer-term responses and best practices

State-level COVID-19 regulatory response

1. Initial Action
2. Prioritize Limited Regulatory Resources
3. Cost Recovery
4. Strategic Approaches

Near term

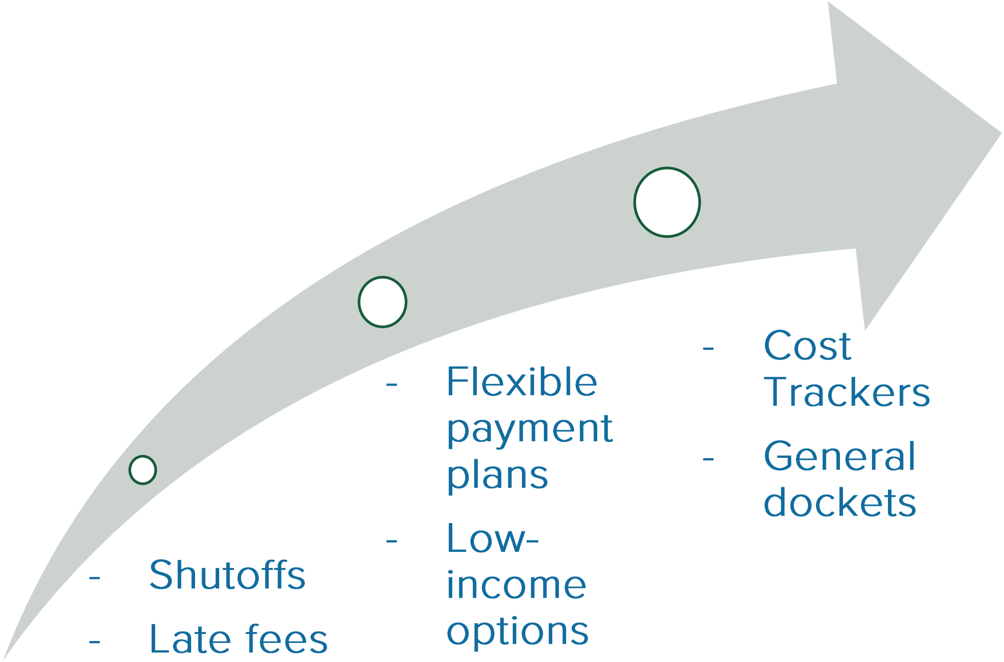
Medium term

Longer term

A variety of regulatory actions are likely to be necessary, the nature and complexity of which will evolve over time

Initial state-level responses

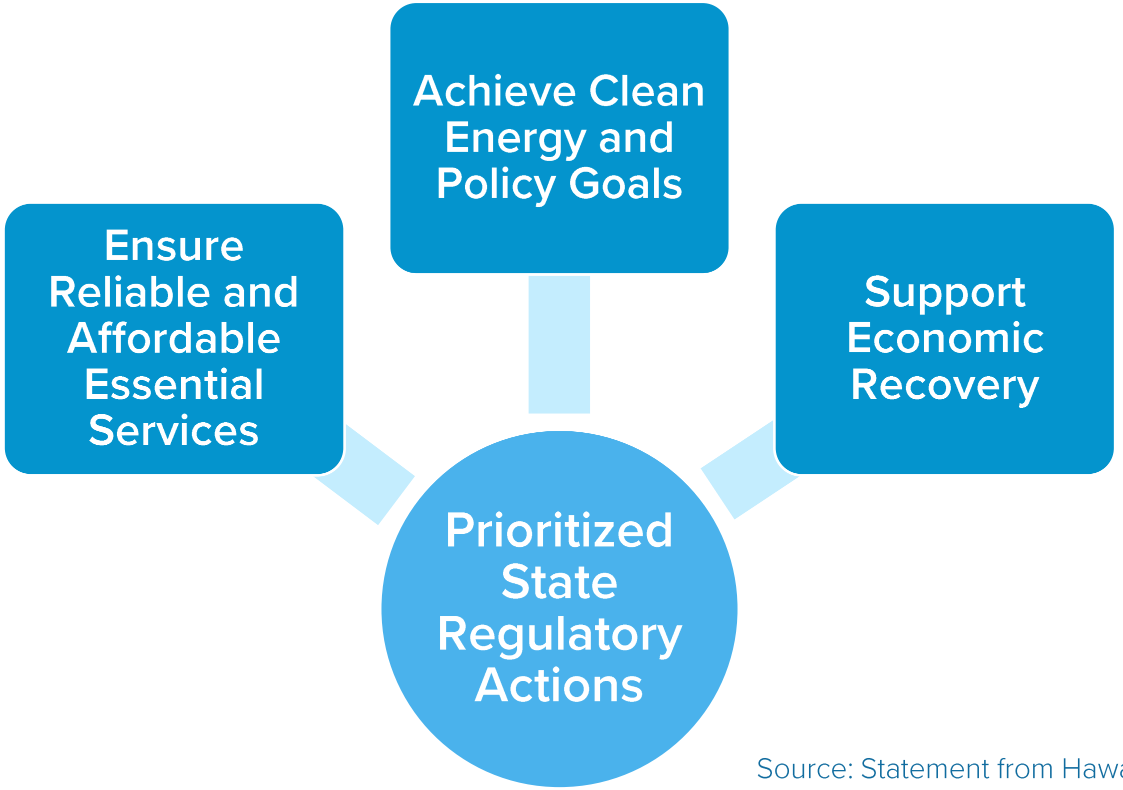
- **Many have taken actions on shutoffs, late fees, and reconnections**
- **Fewer states have taken more comprehensive actions, such as creating cost trackers and ensuring flexible payment options**



Initial state actions have varied in degree and extent

Source: https://www.naruc.org/compilation-of-covid-19-news-resources/state-response-tracker/

Focusing limited resources: prioritizing regulatory activities amid the COVID-19 crisis



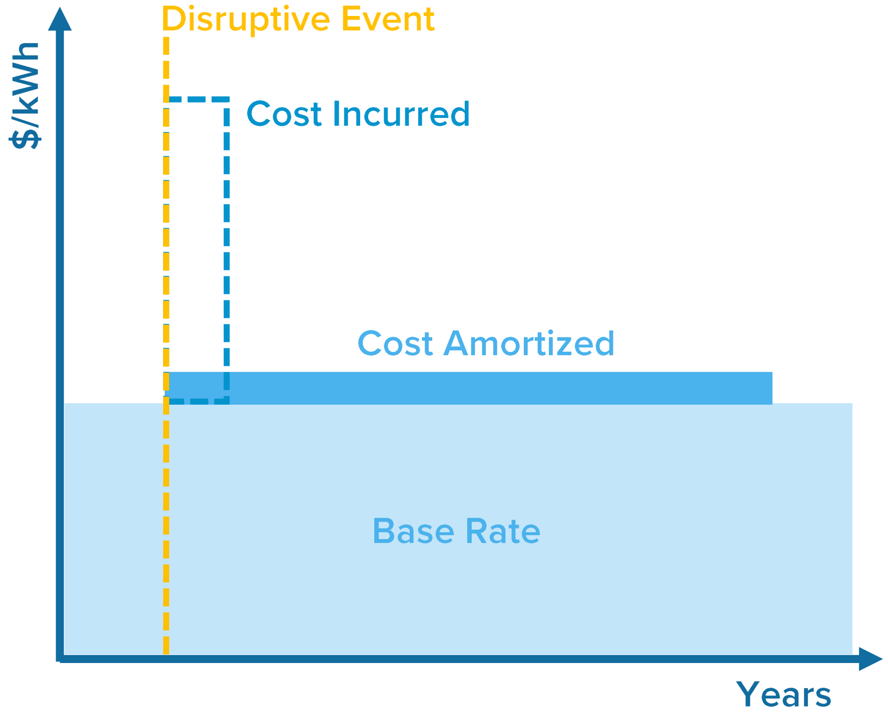
Source: Statement from Hawaii Public Utilities Commission on COVID-19 Emergency

Urgent needs are likely to develop on short notice, but states should prioritize regulatory action to support consumers achieve clean energy goals and mitigate economic impacts

Managing rate increases: COVID-19 regulatory asset creation

- Utilities are likely to incur significant financial impacts
- Cost trackers can help to identify specific incremental costs
- Regulatory assets and the use of cost trackers and/or riders enable utilities to amortize costs over multiple years and minimize customer disruption

Collecting costs from disruptive events



Source: Strategen

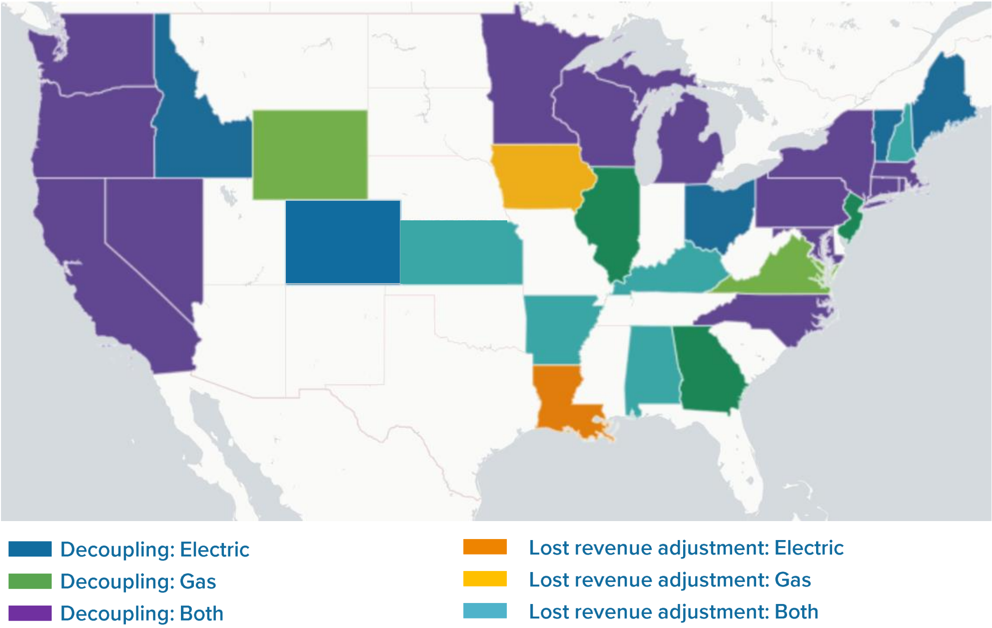
Amortizing utility costs from COVID-19 can protect customers from unplanned rate hikes, especially in areas with revenue decoupling

Revenue decoupling can help manage unexpected load shocks

- Revenue decoupling can provide some financial security to utilities during these kinds of disruptions, which helps to keep cost of capital low, benefitting all customers

- That said, revenue decoupling was not intended to manage steep declines in load and additional tools may be needed to manage the impacts

States with decoupling mechanisms



Source: Center for Energy & Climate Solutions, 2019

Revenue decoupling can help mitigate the COVID-19 related financial impact on utilities of declining load, but protections are necessary

Low-income affordability programs

Low-income assistance programs can bring social benefits along with higher net revenues for utilities.

Program Design:

1) Rate affordability
2) Arrearage forgiveness
3) Crisis intervention
4) Energy efficiency and DER
5) Eliminate the “noise” (e.g., late fees)
6) Emergency assistance programs:
   Flexible payment plans
   Altering eligibility requirements

Affordability programs may be a complement to shutoff moratoriums to help manage impacts to the most vulnerable customer groups

Source: Roger Colton (June 2016)

Rapid regulatory response tools: Regulatory Sandbox

WHAT ARE REGULATORY SANDBOXES?

They are a concept developed to address regulatory uncertainty

They give companies leeway from normal regulations and licensing requirements for a limited period

They allow new products and services to be rolled out in a limited environments as clarity is gained about regulatory implications

A regulatory sandbox could permit states to rapidly deploy innovative customer-facing solutions to help ensure affordable and reliable service

Key Takeaways & Conclusions

- COVID-19 has created unprecedented impacts, all stakeholders must give special attention to cost recovery and equity issues that will arise
- The challenges in the electric power sector are likely to be of sufficient magnitude and complexity that alternative regulatory mechanisms are needed
- A holistic and proactive approach to these issues is integral to ensure:
  - Most vulnerable customers have options for receiving essential service
  - Cost recovery mechanisms operate in an equitable manner and do not overburden a particular rate class
  - Innovative approaches to enhance regulatory speed and flexibility
- Strategen can help you to understand which of these tools or approaches might be most viable for the needs of your particular jurisdiction

Q & A

Thank you!

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