

Contextualizing the Covid-19 pandemic for a carbon- constrained world

PROFESSOR BENJAMIN SOVACOO, DIRECTOR
B.Sovacool@sussex.ac.uk

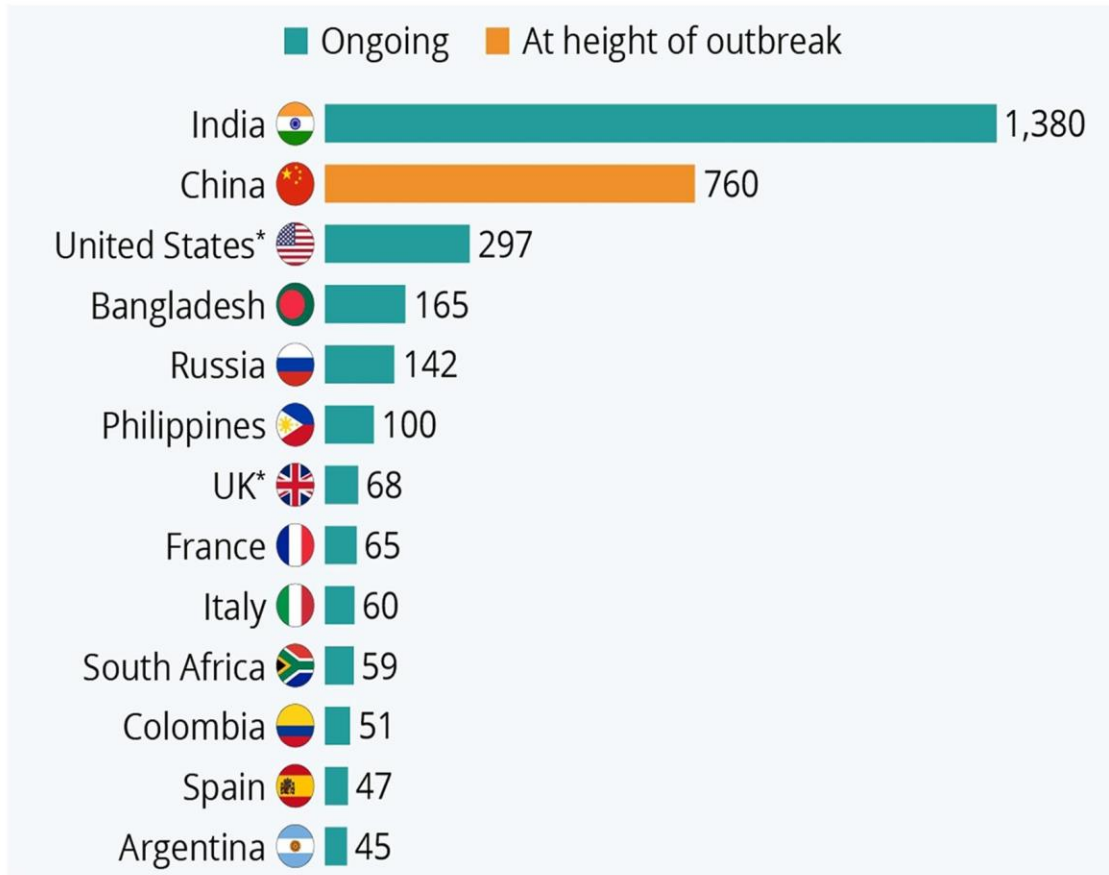
US
UNIVERSITY
OF SUSSEX

Insights from a Special Issue (October 2020) of *Energy Research & Social Science*

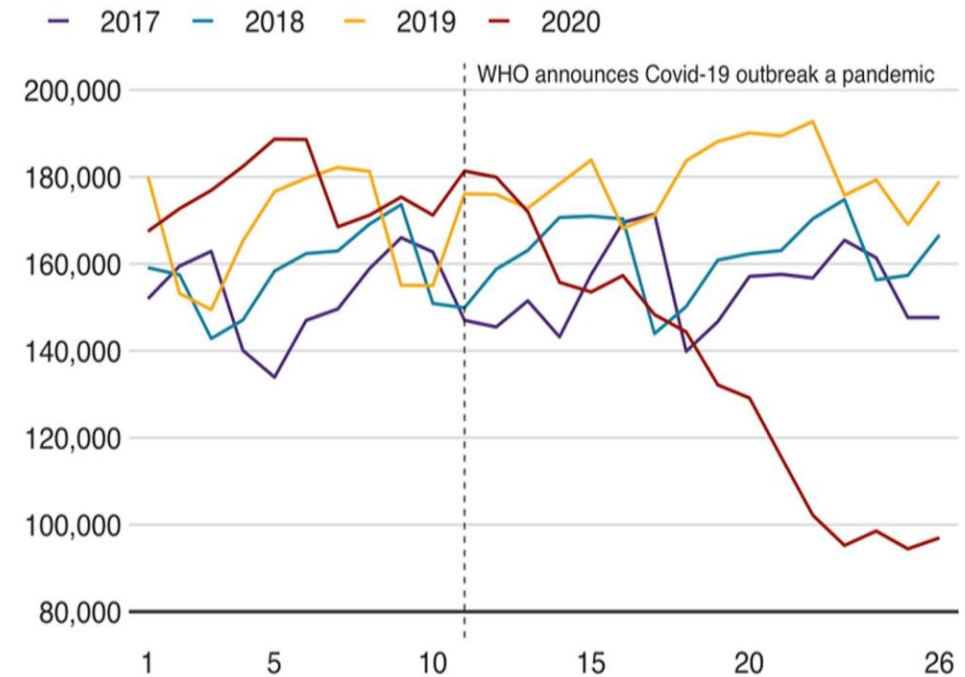
- 16 articles available at <https://www.sciencedirect.com/journal/energy-research-and-social-science/vol/68/suppl/C>
- 14 disciplines
- Organized roughly into four topics
 - The energy and climate impacts of the pandemic
 - Implications for social practices or sustainability transitions
 - Connections with energy justice and vulnerability
 - Insights for research practice and methodology
 - Some articles already available here: <https://www.sciencedirect.com/journal/energy-research-and-social-science/vol/68/suppl/C>

The energy and climate impacts of the virus

a



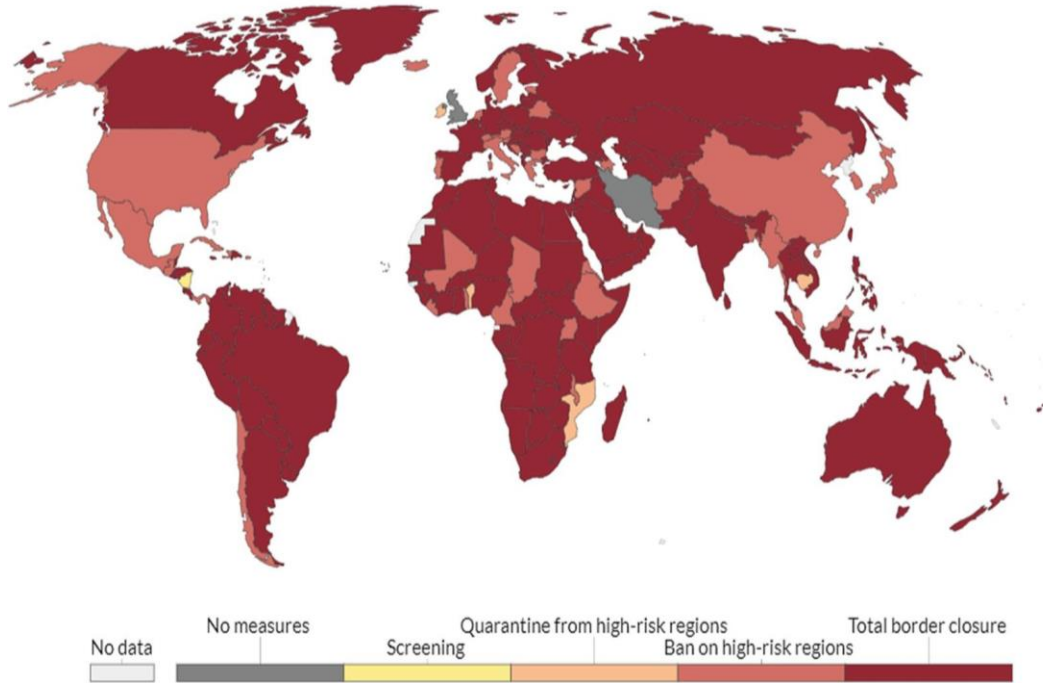
c



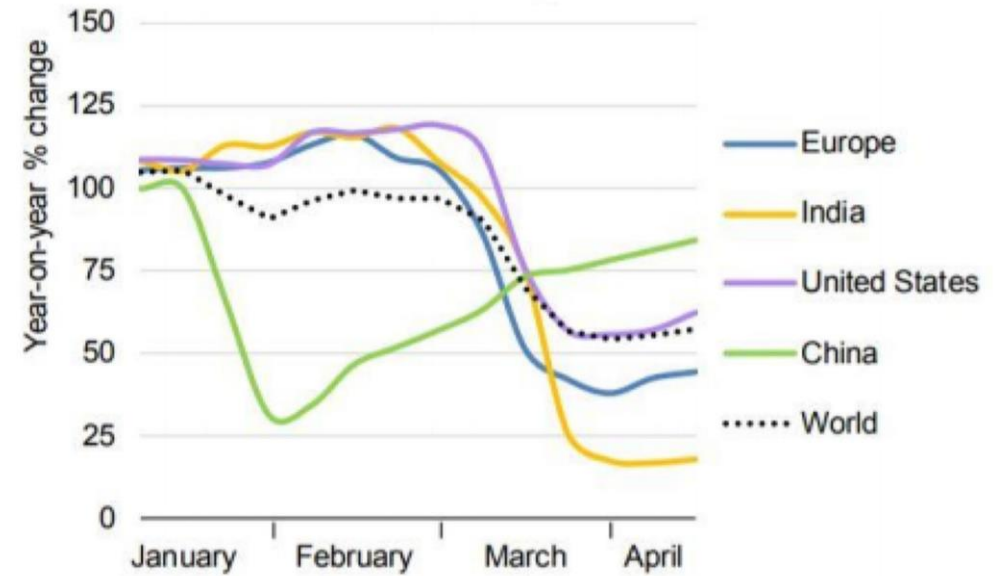
A. Size of lockdowns by national population (millions of people).. C. Number of daily commercial flights in March 2020.

The energy and climate impacts of the virus

b



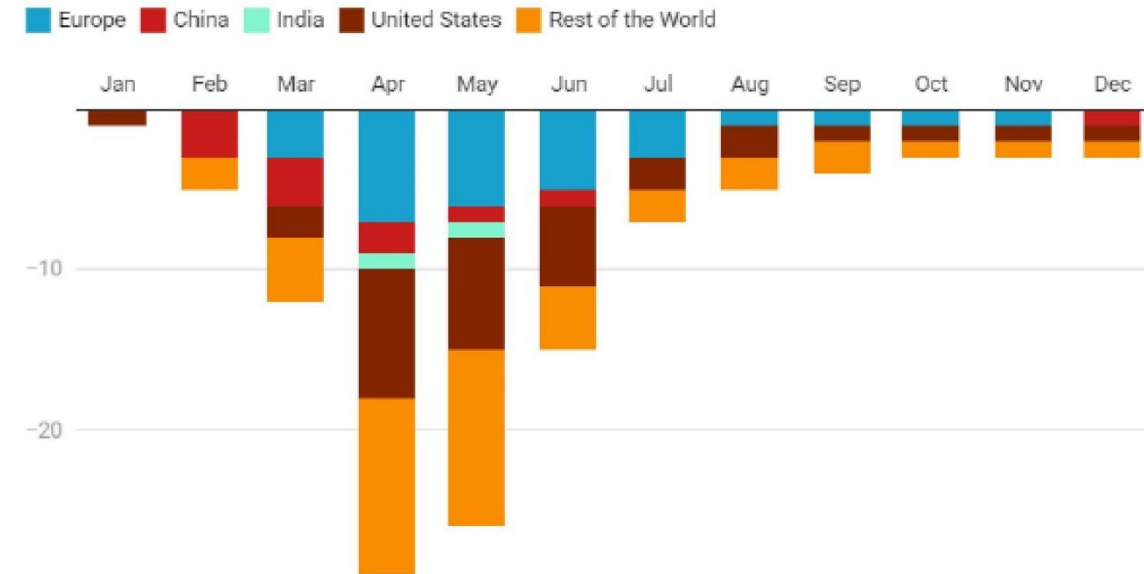
d



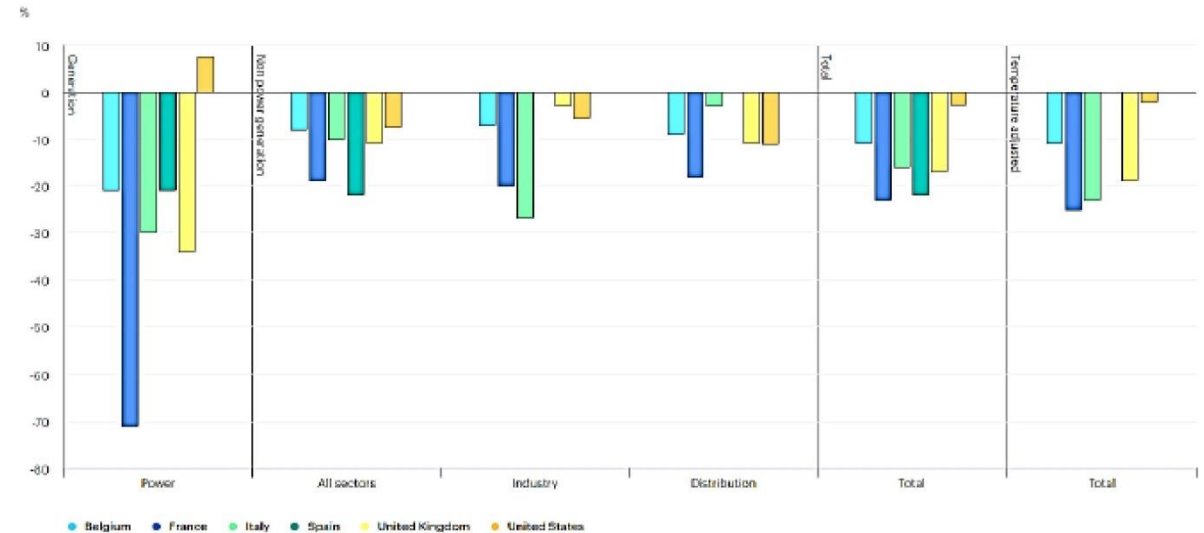
B. Countries with travel restrictions or bans on international movement in April 2020. D. Road transport activity in early 2020.

The energy and climate impacts of the virus

a



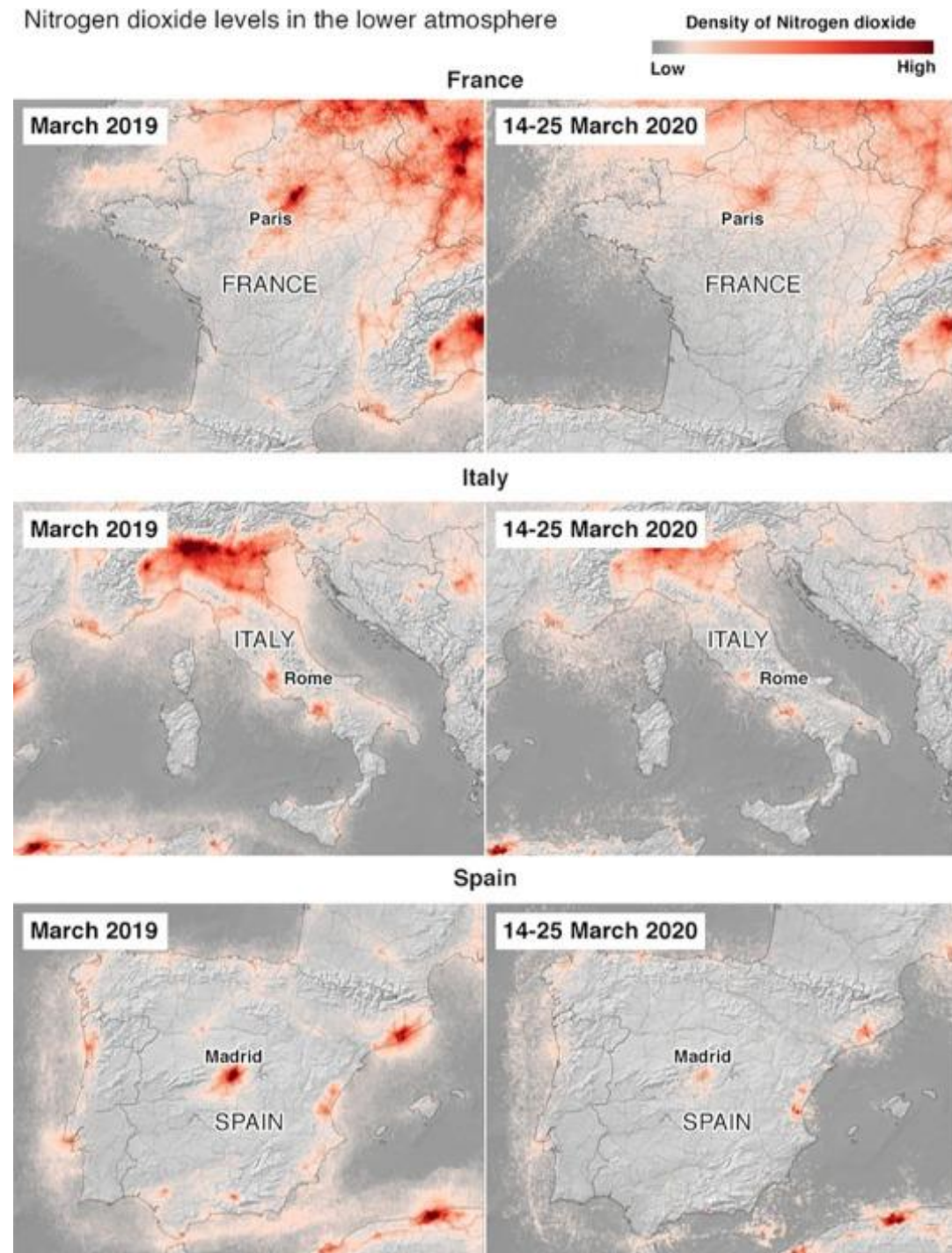
b



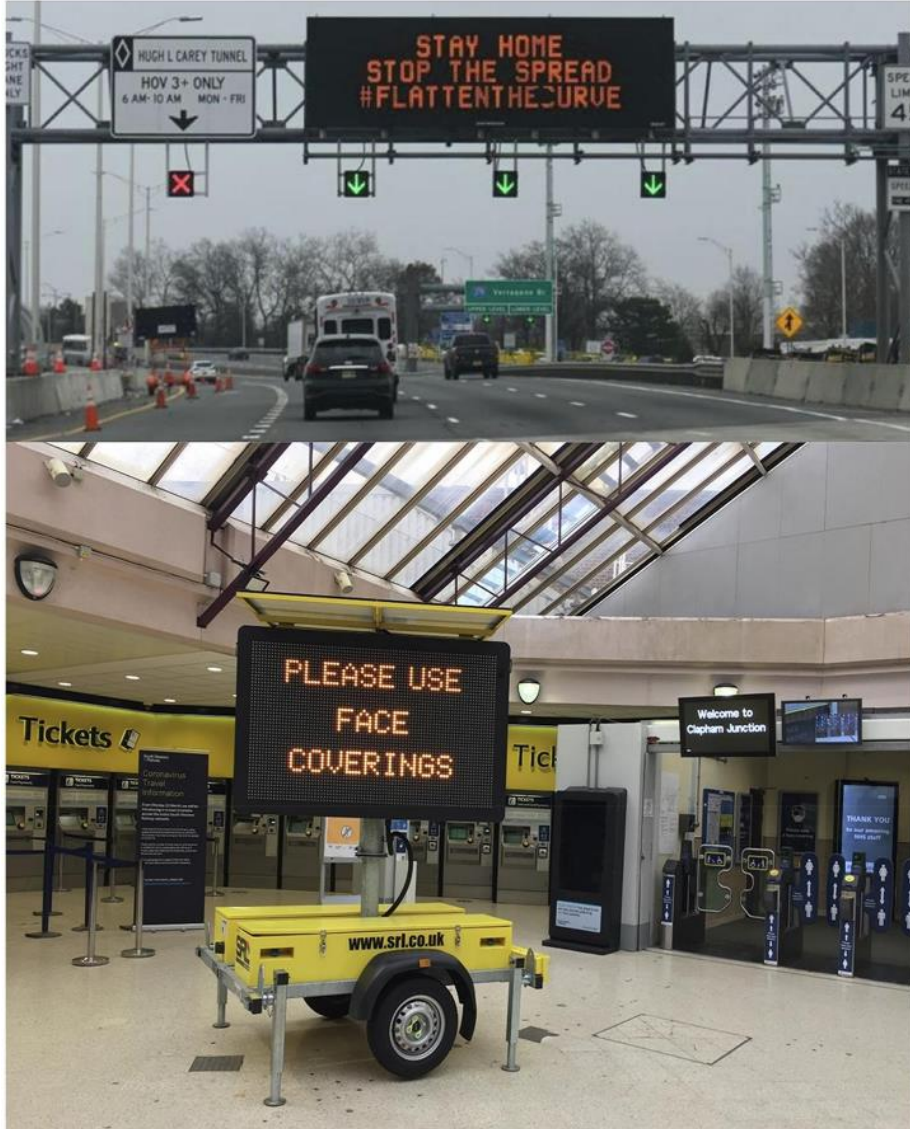
Impacts of Covid-19 on global oil and gas supply and demand. a. Projected reductions in global oil demand in 2020 compared to 2019 (million barrels per day). B. Effects of Covid-lockdowns on sectoral natural gas consumption (from the first day of 2020 to 15th April 2020).

The energy and climate impacts of the virus

Impacts of Covid-19
on air pollution in
Europe in March
2020



Implications for social practices and sustainability transitions



Consistent messaging and the “Christmas effect”

Implications for social practices and sustainability transitions

New social practices (e.g., social distancing, mask wearing, self-quarantining, hand washing, sanitizing)

a



c



b



d



Connections with energy justice and vulnerability

- The pandemic is worsening already terrible inequalities in health care access among the Navajo Nation in the United States, where hospitals were overburdened before Covid-19 outbreaks with caring for indigenous peoples harmed from coal mining and extraction as well as increases in kidney disease and cancer that resulted from many years of living next to abandoned uranium mines.
- The pandemic is compounding environmental injustices as Covid-19 most affects those with preexisting medical conditions, and yet decades of poor environmental and air quality leave minority groups at heightened risk of having those conditions.
- It is undermining the ability of energy firms to guarantee the provision of energy access and modern energy services in times of austerity and uncertainty.
- It is lastly serving as a mechanism for powerful incumbent interests to usurp various regulatory processes that back their own narrow interests at the expense of the public good
- There are emergency measures in place to address some of these, research suggests that two are “best” at minimizing vulnerability: direct energy assistance programs and bans on disconnections, the latter being the most widespread measure introduced by governments during the pandemic.

Insights for research practice and methodology

- Reconsidering the role of pandemics and shocks in conceptual frameworks
- Appreciating cultural variation and specificity in messaging (>>>)
- Struggling with validity
 - Questioning research done before the pandemic given that society may never be the same after
 - Questioning the future robustness of any research conducted during the pandemic, a situation of extreme anxiety and stress far removed from “normal” life, potentially making findings less stable over time



Insights for research practice and methodology

- Reconsidering the role of online and electronic formats of digital interaction

Interaction	Main characteristics	Digital formats and tools
<i>Lecture, course</i>	Highly formal interaction mainly from one speaker to many attendants	Webinar (e.g., Zoom webinar, GoToWebinar), e-learning platforms (e.g., Open-edX, Udemy)
<i>Seminar</i>	Highly formal interaction from one or a few speakers to a few attendants	Webinar, video-streaming (e.g., Zoom, YouTube, Skype, GoToMeeting)
<i>Interview</i>	Formal interactions. One-to-one or small groups	Video-streaming, automated video interviews (e.g., Sonru)
<i>Workshop</i>	Formal interaction with inputs to and from a few participants. Diverse formats, often aimed at active engagement	Video-streaming, web-based text processors (e.g., Google Docs, Microsoft Sharepoint), online facilitation tools (e.g., IdeaFlip, Stormz)
<i>Team meeting and group working</i>	Formal interaction among a few participants	Video-streaming, web-based text processors, web-based project organization and communication tools (e.g., Trello, Asana, Slack, Microsoft Teams)
<i>Conference</i>	Highly formal and informal interaction. Combines multiple formats, typically involving tens to thousands of participants	Video-streaming, online facilitation tools, web-based event tools (e.g., Sched)
<i>Networking</i>	Informal interactions. One-to-one or small groups	Video-streaming

Finding 1: Covid-19 will have a *dualistic* impact on sustainability trends

	Positive intersections with sustainability	Negative intersections with sustainability
Energy and climate impacts of the virus	<ul style="list-style-type: none">- Sharp reductions in travel related energy consumption and carbon emissions- Immediate reductions in electricity consumption- Depression of fossil fuel markets (particularly coal, oil and gas)- Immediate reductions in global air pollution- Redistribution of scarce energy resources in African nations to homes or national health care system- Acceleration of African stimulus packages for low-carbon transitions	<ul style="list-style-type: none">- Disruption of clean energy jobs- Disruption of clean energy supply chains- Risk of real and substantial rebounds in consumption accelerated by stimulus and recovery packages- Disruption of off-grid energy markets and eroded progress on energy access programs

Finding 1: Covid-19 will have a *dualistic* impact on sustainability trends

	Positive intersections with sustainability	Negative intersections with sustainability
Implications for social practices and sustainability transitions	<ul style="list-style-type: none">- Potentially bolstered trends in the electrification of private transport- Shifted financial and investment flows away from carbon intensive assets- Transformed social and professional practices in ways that are less energy intensive (e.g., working from home, walking, cycling)	<ul style="list-style-type: none">- Undercutting of demand-side innovations such as ride-sharing or mobility-as-a-service- Dis-incentivizing mass-transit and public transport due to social distancing norms- Calling into question the increasing interconnectivity and globalization of socio-technical systems- Accelerating a geopolitical divide between the United States and other actors (e.g. China, World Health Organization)

Finding 1: Covid-19 will have a *dualistic* impact on sustainability trends

	Positive intersections with sustainability	Negative intersections with sustainability
Connections with energy justice and vulnerability	<ul style="list-style-type: none">- Implementation of a variety of emergency protective measures including bans on disconnection and targeted assistance packages- Increased attention to the principles of a “Just Transition” and the need for stimulus packages to be low-carbon and equitable	<ul style="list-style-type: none">- Overburdening of health care systems already dealing with the health impacts of fossil fuels- Compounding existing environmental injustices related to preexisting conditions and air quality- Undermining the provision of universal energy services and energy as a human right- Facilitating the exploitation of various energy policy or permitting processes

Finding 1: Covid-19 will have a *dualistic* impact on sustainability trends

	Positive intersections with sustainability	Negative intersections with sustainability
Insights for research practice and methodology	<ul style="list-style-type: none">- Augmenting the ability to devise conceptual frameworks and heuristics that better incorporate pandemics as landscape shocks- Heightening academic appreciation for culturally appropriate communication- Increasing the familiarity of academics with digital modes of interaction	<ul style="list-style-type: none">- Threatening external validity and the stability of research findings over time- Rapidly changing the demographics of sample populations and surveying techniques- Exposing academics to digital surveillance or cyber security issues through online formats

Finding 2: The “Coronavirus effect” has a model:

- Instructing people how to immediately alter and change their **routines and practices** in response to a crisis (e.g., social distancing, wearing masks, quarantining, and handwashing);
- Bolstering the strength and resilience of **infrastructure** and institutions (e.g., of hospitals and medical research institutions);
- Building capacity to **monitor** and manage emergency measures (e.g., trace infections, test people);
- Properly **financing** social responses in ways commensurate to a grand challenge (e.g., donations to National Health Services or the World Health Organization);
- Restoring economic activity gradually and via approaches that are backed by **science** (e.g., mandatory lockdowns and partial reopening, deployment of government rescue and stimulus funds);
- Harnessing **innovation** and rapidly developing critical new technologies (e.g., new therapeutics and vaccines);
- Utilizing a variety of **trusted institutions** and individuals to convey information and messages (e.g., the CDC, major news outlets, doctors and medical professionals);
- While undertaking these steps, **protecting the vulnerable** (e.g., those with preexisting conditions, the unemployed and/or the indigent).

Finding 2: This offers a possible blueprint for climate and energy:

- Instructing people how to immediately **reduce** their **carbon footprints** (e.g. using energy efficient technologies in their homes, eating less meat, avoiding air travel);
- Bolstering **infrastructure**, institutions and industrial strategy (e.g.. incentives for clean energy manufacturing and deployment including wind turbines, solar panels, electric vehicles);
- Building **capacity** to mitigate, monitor and manage emergency measures (e.g., tracking plans for universal energy access and SDG7, deployment of micro grids, bans on disconnection);
- Properly **financing** social responses in ways commensurate to the challenge (e.g., substantially increase funding for national and multinational climate and development organizations or green investment banks, investment for deployment of low-carbon technologies and infrastructure);
- Restoring economic activity gradually and via approaches that are backed by **science** (e.g., development pathways synchronized to the NDCs of the Paris Accord or the finding of the IPCC, investment of economic stimulus funds in low-carbon technologies, Green New Deals);
- Harnessing **innovation** and the development of new technologies (e.g., the next generation of transport fuels, energy storage, smart grids or hydrogen fuel cells) ;
- Utilizing **trusted institutions** and individuals to convey persistent and repeated information (e.g, churches, restaurants and celebrities sent persistently through various media channels) ;
- While undertaking these steps, **protecting the vulnerable** (e.g., households in energy or mobility poverty, marginalized groups or indigenous peoples) .

Finding 2: But there is also a warning here

- As much as we see great progress in efforts toward ameliorating the Covid-19 crisis, we also see the same types of hindrances that have plagued progressive energy policy and climate action:
 1. Lack of attention to warnings about a potential crisis
 2. Delayed responses to building evidence of crisis onset
 3. Nationalism at the expense of the global good
 4. Politics overshadowing social welfare
 5. Marginalized populations (e.g., people of low socio-economic status, or people in low and middle income countries) experiencing adverse consequences at higher rates
 6. Conspiracy theories
 7. Fatigue of mitigation measures

In many ways
Covid-19 will
be far less
severe than
climate change

