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6 WE WILL ALWAYS HAVE PARIS: FILLING THE LEADERSHIP

7 VOID CAUSED BY FEDERAL INACTION ON CLIMATE CHANGE

8 THURSDAY, FEBRUARY 28, 2019

9 House of Representatives

10 Subcommittee on Environment and Climate Change

11 Committee on Energy and Commerce

12 Washington, D.C.

13

14

15

16 The subcommittee met, pursuant to call, at 10:02 a.m., in
17 Room 2123 Rayburn House Office Building, Hon. Paul Tonko [chairman
18 of the subcommittee] presiding.

19 Members present: Representatives Tonko, Clarke, Peters,
20 Barragan, McEachin, Blunt Rochester, DeGette, Schakowsky,
21 Matsui, McNerney, Ruiz, Dingell, Pallone (ex officio), Shimkus,
22 McMorris Rodgers, McKinley, Johnson, Long, Carter, Duncan, and

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23 Walden (ex officio).

24 Staff present: Adam Fischer, Policy Analyst; Jean Fruci,
25 Energy and Environment Policy Advisor; Waverly Gordon, Deputy
26 Chief Counsel; Caitlin Haberman, Professional Staff Member; Rick
27 Kessler, Senior Advisor and Staff Directory, Energy and
28 Environment; Brendan Larkin, Policy Coordinator; Mike
29 Bloomquist, Minority Staff Director; Jerry Couri, Minority Deputy
30 Chief Counsel, Environment & Climate Change; Jordan Davis,
31 Minority Senior Advisor; Margaret Tucker Fogarty, Minority Staff
32 Assistant; Peter Kielty, Minority General Counsel; Mary Martin,
33 Minority Chief Counsel, Energy & Environment & Climate Change;
34 Brandon Mooney, Minority Deputy Chief Counsel, Energy; Brannon
35 Rains, Minority Staff Assistant; and Peter Spencer, Minority
36 Senior Professional Staff Member, Environment & Climate Change.

37 Mr. Tonko. The Subcommittee on Environment and Climate
38 Change will now come to order. I recognize myself for five
39 minutes for the purpose of an opening statement.

40 In late 2015, driven by American leadership, the world came
41 together to acknowledge the threat of climate change and make
42 plans for cooperative global efforts in mitigation, adaptation,
43 and finance.

44 The purpose is to reduce greenhouse gas emissions to limit

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45 global temperature increase to well below 2 degrees Celsius.
46 The ingenuity of the Paris Agreement is that it builds from the
47 bottom up. It does not dictate specific reductions or remedies.

48 Each country sets its own target, submits a Nationally
49 Determined Contribution, or NDC, to achieve those targets,
50 reports on their emissions, and, hopefully, increases their
51 ambition over time.

52 The United States, for example, committed to reduce its
53 emissions by 26 to 28 percent below 2005 levels by 2025. This
54 achievable commitment was based on a plan that included a number
55 of actions: adopting fuel economy standards for light- and
56 heavy-duty vehicles, cutting carbon pollution from new and
57 existing power plants, reducing methane emissions, addressing
58 building sector efficiency, and developing new alternatives to
59 HFCs.

60 Today, despite the obvious and growing threat posed by the
61 climate crisis, many of these policies are being delayed or undone
62 by the Trump administration. The Rhodium Group's "Taking Stock
63 2018" report found that U.S. emissions under current policy are
64 heading toward a 12 to 20 percent below 2005 levels in 2025, well
65 short of the U.S. target.

66 In June of 2017, President Trump announced his intent to

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67 withdraw the United States from the Paris Agreement, although
68 it is important to note that this cannot be done formally until
69 November of 2020.

70 Still, as time goes by, I know that many of his supporters,
71 possibly including some in this room, will come to regret this
72 decision. President Trump may not understand the importance of
73 international climate cooperation, but thousands of others,
74 including states, cities, businesses, and universities have
75 stepped up and said, "We are still in."

76 If you add them all up, these non-federal actors would have
77 the third largest economy in the world. And their commitments
78 are not just lip service. They are taking tangible steps and
79 filling America's leadership void through organizations such as
80 the United States Climate Alliance and the Climate Mayors
81 coalition.

82 Last year, California even organized the Global Climate
83 Action Summit with world leaders and garnered a new round of
84 commitments.

85 To support these efforts, the climate organization America's
86 Pledge has sought to compile and quantify subnational actions.

87 According to their "Fulfilling America's Pledge" report, these
88 actions could meet about two-thirds of what is needed for

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89 America's commitment.

90 While these efforts are keeping our targets within reach,
91 they are not enough. More must be done. We need federal policies
92 and we need real leadership.

93 While President Trump has pulled America's seat at the table,
94 other countries, including China and India, continue to write
95 the international rules on emissions monitoring, reporting, and
96 transparency, and work towards achieving their NDCs.

97 I have heard some spurious arguments from members in the
98 past about the Paris Agreement and the commitments of other
99 countries. But people must understand what we give up by walking
100 away.

101 If those members do not trust these other countries, that
102 is an important reason to stay in and fight for stronger reporting
103 and transparency rules. And if members really want other
104 countries to set bolder targets, the United States should not
105 set such a poor example and hurt our credibility.

106 At our last hearing, I was pleased to hear a new bipartisan
107 consensus around the realities of climate change. America's NDC
108 is a voluntary, non-binding commitment. If anyone thinks it is
109 too difficult to achieve, they should say so and push for a
110 different target.

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111 But if we agree that climate change is a problem, there is
112 no reason to support the president's withdrawal. Our
113 subcommittee members also seem to agree that energy innovation
114 is an important part of any climate solution.

115 In this vein, I want to remind my colleagues of the
116 announcement that coincided with Paris under the banner of
117 "Mission Innovation." Twenty countries committed to doubling
118 their clean energy R&D investment over five years, which will
119 be bolstered by private sector commitments.

120 I hope we can expect those calling for more innovation to
121 also support that initiative. Global problems require global
122 cooperation. We accept this when it comes to countless
123 security, health, and economic issues, and we know that climate
124 change impacts all of these areas, and more.

125 We cannot hide from the mantle and the accompanying
126 responsibility of being the greatest nation on Earth. The United
127 States must lead. Others will be guided by our example.

128 I said in our first climate hearing that we are behind, but
129 it is not too late. We are still in Paris and there is still
130 time to reach America's 2025 target.

131 But that takes Congress getting serious. It means pushing
132 back on administration actions that take us in the wrong direction

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133 and it means putting forward new policies that will accelerate
134 clean-energy deployment and reduce climate pollution.

135 Thank you all for being here this morning. I look forward
136 to hearing from our witnesses. Before we introduce them, I will
137 recognize Mr. Shimkus, our Republican leader on the Subcommittee
138 on Environment and Climate Change, for five minutes with his
139 opening statement.

140 Welcome.

141 Mr. Shimkus. Thank you, Mr. Chairman. I think a useful
142 purpose of the hearing this morning will be to learn more about
143 the technologies and actions that are expected to accelerate the
144 reduction of U.S. carbon dioxide emissions.

145 I am not sure all of these actions will be viable or cost
146 effective. I am also not sure that all these actions will be
147 in the best interests of the United States, especially if they
148 end up putting us in an economic or strategic disadvantage to
149 our global competitors.

150 But it is important to gather this information for the
151 committee's future consideration. Another purpose of this
152 hearing, as you have indicated, is to examine the importance of
153 the United States staying in the Paris Agreement, which President
154 Obama formally accepted in late 2016, from which President Trump

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155 announced less than 10 months later in June 2017 that the United
156 States would withdraw under the terms of the agreement.

157 Fair points may be made about what the Paris Agreement
158 represents in terms of a broad-based international cooperation
159 but that is not really the issue here.

160 The issue is how the Obama administration made expensive
161 commitments that would bind U.S. action without broad-based
162 support from congressional policymakers. The commitments, the
163 financial pledges, and the costly burdens from implementing
164 regulations that will be needed to meet our obligations were not
165 submitted to or approved by Congress.

166 Without that national political buy-in on such a complicated
167 policy that would affect all sectors of the U.S. economy and
168 people's daily lives, it is no wonder the new administration would
169 change course.

170 The consumer cost and competitive harm the commitments pose
171 to the nation deserve close and careful attention and approval
172 from policymakers. And this is not a U.S. problem alone. While
173 other developed nations may be, quote, unquote, "staying in" the
174 agreement so far, they are not actually following through on their
175 promises.

176 The Climate Action Tracker, a European consortium of

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177 research organizations, found that nations' commitments will not
178 meet the actual goals in the Paris Agreement, and the Washington
179 Post reported on this research last October. Most major nations
180 are making few if any efforts to meet their goals.

181 The European Climate Action Network, another think tank,
182 reported last summer that all European Union countries are off
183 target. No single country in Europe is performing sufficiently
184 to meet the Paris Agreement goals and those that have been making
185 the most progress on their promises did not make any large
186 commitments in the first place.

187 At the same time, we have the United Nations Gap Report
188 released this past November which assessed the situation and
189 reported that all these countries will have at least to triple
190 their efforts to meet the Paris Agreement's basic goals, if not
191 increase their goals fivefold to meet the more stringent
192 temperature targets. I am not sure that is going to go so well.

193 In France, we have witnessed the Paris riots, which were sparked
194 over government's climate-related proposal to increase gasoline
195 taxes on the rural French.

196 In Germany, according to news reports last week, a climate
197 law to get the nation back on track with its Paris emission goals
198 by 2030 has been threatening to break up the coalition government

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199 in Germany. Germany, of course, has turned away from nuclear
200 energy and increased coal production as well as emissions over
201 the past five years.

202 Finally, as we discussed in our hearing three weeks ago,
203 there is a developing -- there is the developing world, which
204 is participating in this agreement but will produce almost all
205 the growth in future carbon dioxide emissions as billions of
206 people understandably seek access to affordable energy.

207 The plain fact here is goals of the international climate
208 agreements, which are to move towards lower-emitting systems in
209 energy, transportation, industry, agriculture are not going to
210 work unless there is sufficient affordable technology to deploy
211 on a massive scale.

212 You cannot get there in a meaningful way with wind and solar
213 without undermining industrial capacity and economic well-being.

214

215 So I will continue to say, Mr. Chairman, when it comes to
216 addressing climate change let us take action. But let us be smart
217 and pragmatic about it. We should focus on realistic solutions
218 to prepare for the future and on policies that work for the
219 American people.

220 And with that, Mr. Chairman, I yield back the balance of

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221 my time.

222 Mr. Tonko. Thank you, Mr. Leader, and the gentleman yields
223 back.

224 The chair now recognizes Mr. Pallone, chairman of the full
225 committee, for five minutes for his opening statement.

226 Mr. Pallone?

227 The Chairman. Thank you. Thank you, Mr. Chairman.

228 I am not sure I want to criticize Mr. Shimkus because he
229 is probably more of an ally on this than many on the other side
230 of the aisle. But I do want to take -- I do take somewhat offense,
231 John, to the fact that when you talk about these other countries
232 that are -- that continue to adhere or want to adhere to the Paris
233 Agreement, at least they are trying.

234 I mean, sure, it is true that, you know, Macron tries
235 something and he gets resistance. Sure, it is true that the
236 chancellor in Germany tries something and they meet resistance.

237 I am not arguing that. I think we all know that. We read the
238 news.

239 But at least they are saying that the Paris Agreement as
240 a goal makes sense and that they would like to try to reach those
241 goals. The reason that I am so critical and will be -- continue
242 to be of our president is because he says the opposite. He says,

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243 I don't want to meet the goals. I want to withdraw from the Paris
244 Agreement.

245 He is not making any attempt to move forward to address
246 climate change. In fact, he is moving in the opposite direction.

247 The initiatives like the Clean Power Plan and the fuel efficiency
248 standards that were put in place under President Obama he wants
249 to scrap.

250 So I think it is a little disingenuous, I guess, to criticize
251 other countries that are trying to meet the Paris goals and leaders
252 that are trying to meet the Paris goals. Sure, they are going
253 to -- you know, they are going to have a hard time. There are
254 going to be those that push back. They are going to have pitfalls.

255 But they are at least trying.

256 The problem here is that our president is saying the
257 opposite. He said, I don't want to do that -- I don't care.
258 You know, I am going to move in the opposite direction.

259 And I think that is what is really bad is just abrogation
260 of American leadership that goes along with saying you are going
261 to withdraw from the Paris Agreement.

262 But in any case, I know I am criticizing you but I don't
263 mean to do it too hard because you are probably the best friend
264 we have.

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265 Anyway, I wanted to thank Chairman Tonko for scheduling this
266 hearing as the committee continues to discuss the growing crisis
267 of climate change and the ways that we can combat it.

268 For the last two years, President Trump, his administration,
269 and Republicans here in Congress have repeatedly pushed actions
270 and policies that would only make the crisis worse.

271 We are here today to discuss one of these actions. President
272 Trump's decision to pull out of the Paris Agreement is unjustified
273 and dangerously shortsighted. It abdicates U.S. leadership on
274 global climate action -- an issue where America has always been
275 a leader -- and breaks our promise to all nations who joined the
276 historic agreement.

277 I believe the Trump administration's retreat puts the health
278 and safety of our communities at great risk and seriously
279 jeopardizes our future security. It also puts our economic
280 future at great risk as the world embarks on a major transition
281 to a low-carbon economy.

282 President Trump now wants to pull us out of that agreement.
283 The Paris Agreement -- an agreement reached by nearly 200 nations
284 -- was an important unified stand in the fight against our changing
285 climate.

286 It sets a strong foundation for action that will accelerate

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287 the shift to a clean-energy economy and puts us on the path to
288 a safer healthier planet for generations to come.

289 It is also our best hope of mobilizing the global action
290 needed to avoid catastrophic changes to our environment and the
291 Paris Agreement represents a significant departure from past
292 efforts to secure international cooperation on climate change.

293 It allows each nation to design its own
294 emission reduction strategy that is best suited to the unique
295 circumstances of its society and economy.

296 Importantly, the Paris Agreement applies to all parties to
297 the Convention, including India and China. It also includes
298 critical transparency and accountability measures to ensure
299 countries are meeting their emissions reduction goals and have
300 the flexibility to make any necessary adjustments to stay on
301 track.

302 The Obama administration's plan to meet the goals of this
303 agreement were reasonable, achievable, and balanced. It
304 provided a framework in reducing U.S. emissions while also growing
305 our economy.

306 More energy-efficient appliances, buildings, and vehicles
307 result in lower costs for consumers and keep our manufacturing
308 industries competitive globally, all while lowering emissions

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309 of harmful air pollutants.

310 The plan also calls for controlling methane emissions from
311 the oil and gas sector, which was a long-overdue and sensible
312 step, and so too was curbing carbon emissions from the power sector
313 under the Clean Power Plan.

314 In fact, the reductions required by the Clean Power Plan
315 were so reasonable that most of the power sector is now meeting
316 them. And, yet, the Trump administration has methodically
317 stalled or rolled back all these initiatives.

318 The administration's actions reflect a determination to lock
319 in fossil fuel dependence for consumers, reversing meaningful
320 progress and setting the planet on a dangerous course.

321 The good news is that the rest of world and many states,
322 cities, and businesses here in the United States have rejected
323 the Trump administration's retreat on climate change.

324 They have declared, "We are still in." They are leading
325 the way to cleaner energy, greater energy efficiency, lower
326 consumer costs, more resilient communities, and new technologies
327 and business.

328 While each individual contribution by these nonfederal
329 actors may be small, together they add up to significant emission
330 reductions and, just as importantly, their experience lays the

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331 foundation for future progress.

332 I am going to sum up by saying the time for action to avoid
333 the worst effects of climate change is growing short, but at a
334 minimum, the U.S. must fulfill its commitments that we made in
335 the Paris Agreement.

336 And the federal government shouldn't just stand on the
337 sidelines. We have to show we are still committed to the global
338 agreement.

339 Thank you, Mr. Chairman.

340 Mr. Tonko. And Chairman Pallone yields back.

341 Okay. The chair now recognizes Mr. Walden, Republican
342 leader of the full committee, for five minutes for his opening
343 statement.

344 Mr. Walden?

345 Mr. Walden. Good morning, my friend. Thanks for having
346 this hearing as well. I think it is important to point out a
347 couple of things right out of the gate.

348 The U.S. is still a part of the Paris Agreements -- Paris
349 Accords -- and will be until 2020. The Trump administration
350 negotiators were credited recently with helping forge a
351 multinational agreement on how to measure emissions so that all
352 countries that are involved would have some higher level of

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353 confidence that each other were actually reducing the emissions
354 they said they were and they got international credit for that.

355 I think part of what we are after is, again, pursuing an
356 agenda of U.S. innovation, conservation, adaptation, and
357 preparation. We can lead the world in this space and we should.

358 We just don't want to repeat the mistakes that others have made
359 in their laboratory work, if you will, trying to tackle this issue.

360

361 They have had riots on the streets in France since November
362 as consumers said the direction France went with the high cost
363 of gasoline was more than they were willing to bear. We need
364 to keep consumers in mind in this discussion.

365 We are ready to work on developing policies, in fact, I would
366 say, build on the policies that we developed over the last several
367 Congresses in this space to make sure that we have an electric
368 grid that is reliable and secure and has the capacity to be able
369 to feed into renewable energy.

370 We have been big advocates for battery storage enhancement
371 and, indeed, in my district there is a partnership between NextEra
372 and PGE to have one of the biggest battery storage energy sectors
373 in the United States. It is the biggest, it is the first, and
374 they will link renewable energy into battery storage to help bring

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375 more firm baseload power to the grid. That will replace energy
376 now generated from coal.

377 Our country invests in these national labs that help develop
378 this technology and there is more work to be done there. You
379 know, we have learned over the years how these policies rapidly
380 transform the nation's electricity system from a system designed
381 for the economical and reliably dispatch of power to a system
382 focused on meeting federal emissions caps can have unintended
383 consequences.

384 This rapid transformation, which Congress opposed, would
385 have driven out major sources of affordable energy, threatened
386 reliability and security, and driven up consumer electricity
387 bills.

388 To achieve the goals I think we could all find some common
389 ground along we also have to make sure that we don't encourage
390 unintended consequences that could affect consumers negatively
391 to the point that they riot in the streets, as they are doing
392 in France, as well as put the grid in peril.

393 We learned that even with the economically harmful impact
394 of these and other policies targeting the fuels we use and cars
395 we drive, the goals proposed by the Paris Agreement still could
396 not be met.

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397 The policies, according to the administration's own
398 estimates, would get maybe 60 percent of the way there, and I
399 am talking about the Obama administration now.

400 Even Secretary Kerry noted at the time the negotiations that
401 the United States or even all the developed world cut their CO2
402 emissions to zero it would still not offset the emissions coming
403 from the rest of the world.

404 So, again, we can be a leader in developing new technologies
405 that we should sell to the rest of the world to reduce their
406 emissions. We have got to be smart about how we do this.

407 In short, commitments in Paris were made without a clear
408 plan to meet those promises without a full view of the cost and
409 certainly not a plan that had broad bipartisan support in
410 Congress.

411 That is what we would like to see developed here, Mr.
412 Chairman, is a bipartisan plan, going forward. This focus on
413 U.S. commitments to the Paris Agreement is the centerpiece for
414 our nation's climate policy. It kind of misses the point of what
415 we should focus on if we want to make a difference in global
416 emissions while strengthening the economy.

417 We should not lock ourselves into a narrow vision of what
418 is possible. We must consider the realities of global energy

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419 systems and the need for affordable reliable energy access around
420 the world.

421 We are fortunate in America to have electrified nearly every
422 home and business in the country. There are many parts of the
423 world that seek electricity for the first time. They will not
424 be denied that. So let us work with them to figure out how to
425 do it in an environmentally sensitive way.

426 Let us continue to work, as we have done in past Congresses,
427 to reduce barriers to innovation, enable the United States to
428 deploy new technologies to drive economic engines of the future
429 and make realistic headway in curbing emissions from advanced
430 carbon capture to nuclear technology to innovative hydropower
431 solutions.

432 And we also have to look at things I care passionately about
433 in my district in Oregon. The IPCC report going back to 2007
434 says sustainable forest management would help. We had 68 million
435 tons of carbon emissions for the fires in California last year
436 alone.

437 Now, not all those are forests -- I get that -- but there
438 is a lot of work that has been pointed out we could do to reduce
439 the excess fuel load in our forests that reduce emissions of more
440 than just carbon -- the other poisons that go up at the time --

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441 if we could come together in a bipartisan way on that.

442 So, Mr. Chairman, I look forward to working with you as we
443 always do and thank you for having this hearing, and I yield back.

444 Mr. Tonko. Thank you, and Republican leader yields back.

445 As chair, I remind members that pursuant to committee rules
446 all members' written opening statements shall be made part of
447 the record.

448 Now we welcome the witnesses to this subcommittee hearing.

449 I thank them for taking the time and sharing their intellect
450 with us.

451 Let me introduce our panel. First, we have Ms. Carla Frisch,
452 principal with the Rocky Mountain Institute; then Mr. Samuel
453 Thornstrom -- Thernstrom, I am sorry -- chief executive officer
454 of the Energy and Innovation Reform Project; Mr. Nathan Hultman,
455 director of the Center for Global Sustainability, associate
456 professor at the University of Maryland School of Public Policy;
457 and Mr. Andrew Light, distinguished senior fellow, World
458 Resources Institute.

459 We thank, again, all of our witnesses for joining us today.

460 We look forward to your testimony and thank you for sharing time
461 with the subcommittee.

462 At this time, I will now recognize each witness for five

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22

463 minutes to provide his or her opening statement. Before we begin,
464 I would like to explain the lighting system. In front of our
465 witnesses is a series of lights.

466 The light will initially be green at the start of your opening
467 statement. The light will turn yellow when you have one minute
468 left. Please begin to wrap up your testimony at that point and
469 the light will turn red when your time has expired.

470 So we will begin with Ms. Frisch. You are recognized for
471 five minutes, and welcome.

472 STATEMENTS OF CARLA FRISCH, PRINCIPAL, ROCKY MOUNTAIN INSTITUTE;
473 SAMUEL THERNSTROM, CEO, ENERGY INNOVATION REFORM PROJECT; NATHAN
474 HULTMAN, DIRECTOR, CENTER FOR GLOBAL SUSTAINABILITY, ASSOCIATE
475 PROFESSOR, UNIVERSITY OF MARYLAND SCHOOL OF PUBLIC POLICY; ANDREW
476 LIGHT, DISTINGUISHED SENIOR FELLOW WORLD RESOURCE INSTITUTE,
477 UNIVERSITY PROFESSOR, GEORGE MASON UNIVERSITY

478

479 STATEMENT OF MS. FRISCH

480 Ms. Frisch. Thank you, Chairman Tonko, Ranking Member
481 Shimkus, and members of the subcommittee for inviting me to
482 testify and for your leadership in focusing on climate change.

483 I am a principal at the nonprofit nonpartisan Rocky Mountain
484 Institute, where we work on market-based low-carbon solutions.

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485 Cities, states, and businesses and others have been working
486 to address climate and the environment for decades. But in the
487 past two years, they have scaled up their efforts and come together
488 more formally and, in part, that connects back to the announcement
489 of the intent to leave the Paris Agreement.

490 Within 72 hours from that announcement, a very diverse
491 coalition of over 1,200 states, cities, businesses, universities,
492 counties, tribes, faith-based organizations, hospitals, and
493 others came together, and today that coalition is more than 3,600
494 members.

495 Their leaders have committed to reduce their emissions, not
496 only because it is good for the climate but because it advances
497 the interests of their citizens, their consumers, and their
498 shareholders.

499 Are these commitments meaningful? America's Pledge set out
500 to find that out. Rocky Mountain Institute worked on analysis
501 which found that given existing commitments, the U.S. is, roughly,
502 two-thirds of the way towards meeting the original commitment
503 in Paris and broader engagement has the potential to put us within
504 striking distance of the Paris Agreement.

505 That means scaling high-impact near-term climate
506 strategies. But even since we published the report progress has

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507 been made. In the last three weeks alone, five gigawatts of coal
508 retirements have been announced, and also in the electricity space
509 more than 100 companies, including many Fortune 500 companies,
510 have committed to 100 percent renewable energy and they are
511 following through on those commitments and taking advantage of
512 the lower technology costs of solar and wind, which continue to
513 fall. Cities are doing that, too.

514 That clean electricity is powering clean electric
515 transportation. Late last year, we passed the 1 million electric
516 vehicles sold mark in the U.S. and sales have grown since then,
517 and one-third of our public buses are on track to become
518 emissions-free, which could significantly improve health and air
519 quality and also reduce costs for transit authorities, and that
520 in part is driven by lower battery costs, as Ranking Member Walden
521 mentioned.

522 That clean electricity is also powering homes and
523 businesses. Using electricity to heat our homes and water is
524 more efficient than using natural gas and burning that natural
525 gas directly on site.

526 It improves indoor air quality and it reduces greenhouse
527 gas emissions. And acknowledging that potential, New York State
528 has required their electric utilities achieve a portion of their

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529 energy efficiency savings through deployment of efficient
530 electric heat pumps.

531 So if we continue to scale and focus on these two priorities,
532 rapidly cleaning up electricity production and using that clean
533 electricity in our homes, businesses, and transportation systems,
534 we could address up to 70 percent of U.S. greenhouse gas emissions.

535 And the nation's rural electric co-ops have taken notice
536 of that and they are moving forward to focus on cost-effective
537 beneficial electrification. States that have taken climate
538 actions like these find that they are benefitting their economies
539 and strengthening their community.

540 Through the bipartisan U.S. Climate Alliance 21 governors
541 have come together to lead on climate change including many
542 recently-elected governors. Their climate policies have
543 attracted billions in investment and have helped support more
544 than 1.6 million clean-energy and energy-efficiency jobs.

545 Together, coalitions like these are demonstrating in real
546 time how to deliver cost-effective climate action from the ground
547 up.

548 Despite this tremendous progress, we need faster action.
549 To avoid the worst impacts of climate change and get back on
550 track for IPCC, we need action from all levels of government and

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551 participation from civil society.

552 It is not possible to solve the climate crisis without state,
553 city, and business action. It is also not possible to solve the
554 climate crisis without strong and sustained federal policy.

555 The good news is we don't have to start from scratch at the
556 federal level. Federal reengagement can build on the great
557 momentum and hard work that states, cities, and businesses have
558 underway.

559 We have to have both to ensure that America continues to
560 set the standard for international leadership.

561 [The prepared statement of Ms. Frisch follows:]

562

563 *****INSERT 1*****

564 Mr. Tonko. Thank you, Ms. Frisch.

565 Next, we will move to Mr. Thernstrom. You are recognized,
566 sir, for five minutes.

567 STATEMENT OF MR. THERNSTROM

568

569 Mr. Thernstrom. I would like to thank the chairman, the
570 ranking member, and members of this subcommittee for the
571 opportunity to speak on behalf of the Energy Innovation Reform
572 Project.

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573 The EIRP promotes public policies to accelerate the
574 development of advanced energy technologies to improve the
575 affordability, reliability, safety, and security of America's
576 energy supplies and our energy economy.

577 As Mr. Tonko and Mr. Walden both noted, President Trump
578 announced in June 2017 his intent to withdraw the U.S. from Paris
579 but for procedural reasons the U.S. withdrawal cannot take effect
580 until November of 2020. So we are still in.

581 Whether one agrees or not with the president's decision,
582 he does have the authority to make it and I tend to see his decision
583 as a reflection of the challenges in climate policy that Paris
584 tried to paper over. Resolving these challenges should be the
585 focus of our attention and I think a number of remarks today have
586 already indicated that.

587 Our central challenge is that effective mitigation depends
588 upon the availability of commercially competitive clean energy
589 technologies more than it requires treaties or other
590 international agreements.

591 We are making great progress with this challenge, as other
592 witnesses will testify to, but much more remains to be done.
593 If we can develop these technologies, international agreements
594 can constructively contribute to their global dissemination.

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595 If we do not develop them, nations are unlikely to meet
596 commitments made under international agreements and, in fact,
597 many nations are not on track to meet their Paris pledges,
598 suggesting that their ambitions exceed their abilities.

599 Aspirational international agreements may reflect worthy
600 ambitions. But domestic policy is where the decisive decisions
601 are made. Paris appropriately focused international attention
602 on each nation's domestic actions and that is where a constructive
603 conversation must occur.

604 Ultimately, the Paris Agreement was unworkable for the U.S.
605 because it was a substitute for rather than the product of a
606 domestic political consensus. Indeed, the lack of settled
607 domestic U.S. policy was among the reasons that Paris was an
608 agreement rather than a treaty.

609 Trying to make domestic policy in Paris rather than in
610 Washington was a mistake, I believe. It circumvented the role
611 of Congress and specifically ignored the importance of
612 implementing legislation and ensuring alignment between
613 America's domestic policy and our international commitments.

614 America cannot address a complex challenge like climate
615 change without bipartisan agreement on the way forward that is
616 enacted in federal law.

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617 After climate legislation failed in the Senate in 2009, the
618 Obama administration pursued its domestic policy goal through
619 the Clean Power Plan which was stayed by the Supreme Court. The
620 Trump administration is seeking to implement an alternative
621 regulation, which will certainly face judicial scrutiny of its
622 own.

623 This back and forth demonstrates the fragility of policy
624 made through regulations rather than law just as agreements are
625 poor substitutes for treaties.

626 Now, many climate advocates have despaired of enacting
627 bipartisan legislation and have consequently sought
628 alternatives. At EIRP, we believe that there is no substitute
629 for sound national policy embodied in law and so we work to promote
630 that.

631 The principal objective of federal climate legislation
632 should be to promote innovation in a broad portfolio of clean
633 energy-related technologies and ensure their economical use over
634 time.

635 A focus on accelerating technology innovation in order to
636 drive down the cost of decarbonization while avoiding the zero-sum
637 politics of some popular climate proposals is a necessary first
638 step.

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639 As a complement to innovation policies, clear and durable
640 environmental regulations would also permit innovators and
641 investors to cost effectively modernize America's energy system.

642 I do want to emphasize the importance of getting the relationship
643 between public policy and the private sector right.

644 This will require a mix of regulatory reforms and public
645 and private investments that must be appropriate to the complexity
646 of the task, not the product of a formulaic or ideological
647 approach.

648 Also, as my written testimony emphasizes, the
649 decarbonization literature is very clear about the crucial
650 importance of developing a diverse mix of energy technologies
651 and resources rather than taking a narrow path that relies on
652 renewables alone.

653 Innovation initiatives must be designed to produce clean
654 energy that is both abundant and affordable. If clean energy
655 is too expensive or impractical in other respects, it won't be
656 used broadly or adopted sufficiently rapidly.

657 Our challenge today is to combat climate change in a manner
658 that strengthens America, our economy, and our international
659 leadership.

660 At EIRP, we believe that federal policies to accelerate

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661 energy innovation will be essential to pursuing those goals
662 harmoniously.

663 Thank you all very much for your time.

664 [The prepared statement of Mr. Thernstrom follows:]

665

666 *****INSERT 2*****

667 Mr. Tonko. Thank you, Mr. Thernstrom.

668 And now we will move to Mr. Hultman. Mr. Hultman, you are
669 recognized for five minutes.

670 Thank you.

671 STATEMENT OF MR. HULTMAN

672

673 Mr. Hultman. Thank you, Chairman Tonko, Ranking Member
674 Shimkus, and members of the subcommittee for inviting me to
675 testify here today on the essential role of subnational actors
676 in an overall comprehensive strategy to set American climate
677 policy on a path toward renewed and reinvigorated leadership.

678 I am director of the Center for Global Sustainability at
679 the University of Maryland School of Public Policy and served
680 as a lead author on the recent report, "Fulfilling America's
681 Pledge: How States, Cities, and Businesses Are Leading the United
682 States to a Low-Carbon Future."

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683 It is an honor to share with the committee my perspective
684 on how subnational efforts in our country are driving progress
685 today and laying the groundwork for an effective comprehensive
686 American strategy to address climate and economic issues of
687 fundamental importance to our country.

688 My message today is in three parts. The first part answers
689 the essential question of what does it all add up to and describes
690 the significant impact resulting from accelerating subnational
691 climate actions in our country.

692 The second part illustrates how these actions can provide
693 a path to comprehensive American climate strategy that includes
694 diverse subnational actors as a basis to support and enhance
695 additional progress through new federal action.

696 The third part underscores how subnational American
697 leadership combined with a reinvigorated federal engagement can
698 catalyze global action to accelerate our ability to respond
699 effectively to the climate crisis.

700 In recent years, coalitions of subnational actors have
701 formed to enhance their own communities' interest in climate
702 action. These coalitions represent well over half the U.S.
703 population of over 173 million people and nearly 60 percent of
704 U.S. GDP and they are globally significant, representing the

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705 equivalent of the world's third largest economy and the world's
706 fourth largest greenhouse gas emitter.

707 A key question, however, is whether these actions from these
708 groups will make a difference. The answer is yes. Our study
709 estimates that existing commitments from subnational actors are
710 already making a significant impact with additional near-term
711 reductions possible.

712 Without these subnational actions, we estimate that U.S.
713 emissions would grow slightly between now and 2025 and it is in
714 this context that the contribution from subnational actors today
715 is so important, turning that potential 3 percent growth in
716 emissions from today into a 17 percent reduction below 2005 levels
717 by 2025.

718 And more is possible. Using the tools available to them
719 today, states, cities, and businesses could drive U.S. emissions
720 close to but not quite reaching the U.S.-Paris target to, roughly,
721 24 percent below 2005 levels by 2025. Such actions could include
722 more rapid expansion of renewables, reductions in methane
723 leakage, increased building energy efficiency, accelerated coal
724 power retirements, land sector policies, and a variety of other
725 approaches across sectors.

726 And, indeed, many of these actors are already stepping up

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727 to do more, particularly after the recently mid-term elections.

728

729 So existing commitments are extraordinarily helpful, making
730 a real and meaningful difference today during a period of federal
731 inaction. Nevertheless, even additional subnational
732 commitments will likely not be sufficient to get us fully on track
733 towards a long-term trajectory consistent with science-driven
734 climate goals if this work of subnational actors to implement
735 more ambitious climate actions does provide a basis for
736 accelerating economy wide climate action in the future.

737 For example, subnational actions could potentially deliver
738 accelerating emissions reductions across the U.S. economy,
739 increasing our decarbonization rate from, roughly, 1.6 percent
740 per year before 2025 to, roughly, 2.1 percent per year thereafter.

741 This rate is close to the, roughly, 2.3 percent annually
742 needed to be consistent with long-term climate goals. But the
743 key currently missing boost to this activity would be broad
744 engagement by the U.S. federal government.

745 In this way, subnational actions are laying the groundwork
746 today for faster action under an essential comprehensive approach
747 that integrates the significant policy authorities across our
748 federal system.

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749 Subnational action can also impact climate outcomes by
750 influencing the international community. In climate change,
751 U.S. global leadership matters. We are the world's second
752 largest emitter and what we do here in many ways sets the tone
753 for the level of climate action globally and this, in turn, can
754 raise the chances of our global success in addressing this
755 immediate and growing challenge.

756 The fact that American subnational actors are still making
757 significant progress in reducing our own emissions is an important
758 signal to other countries that the U.S. is still remaining engaged
759 and delivering real change.

760 In summary, we have seen a groundswell of climate action
761 over recent years with leadership from all corners of America.

762 In doing so, these states, cities, businesses, and others have
763 also helped create the conditions for a strong federal answer
764 to their own climate leadership.

765 Thank you.

766 [The prepared statement of Mr. Hultman follows:]

767

768 *****INSERT 3*****

769 Mr. Tonko. Thank you, Mr. Hultman.

770 And now to conclude, Mr. Light, you are recognized for five

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771 minutes.

772 Thank you.

773 STATEMENT OF MR. LIGHT

774

775 Mr. Light. Thank you, Chairman Tonko, Ranking Member
776 Shimkus, and the members of the subcommittee for inviting me to
777 testify.

778 I am Andrew Light from the World Resources Institute and
779 also from George Mason University. I will address the
780 international implications and limits of U.S. non-federal action
781 on climate change.

782 I previously served at the Department of State as one of
783 the senior officials working on the creation of the Paris
784 Agreement on climate change. I am going to touch on four points
785 summarized from my written testimony.

786 One, the Paris Agreement remains essential for international
787 cooperation on climate change. Two, other countries continue
788 to take ambitious steps to reduce their emissions. Three,
789 efforts by non-federal actors have been embraced internationally.

790 However, fourth, reengagement by the federal government is a
791 geopolitical necessity.

792 First, let us start with Paris. While President Trump has

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793 announced his intention to withdraw from the agreement, over 190
794 countries are still actively working to implement the agreement's
795 goals.

796 And I agree with your characterization, Chairman Tonko.
797 These targets were all done in-country. They were nationally
798 determined. They were not negotiated in Paris. They were not
799 determined by the Paris Agreement. That is very important.

800 Paris is a success because part -- because the first set
801 of commitments under it achieved higher than expected ambition,
802 significantly improving projections of temperature savings over
803 prior estimates.

804 Moreover, parties are expected to make continual pledges
805 of increasing ambition over time to put the temperature goals
806 of the agreement within reach.

807 Second, the agreement fulfills a long-sought goal of the
808 last three presidential administrations, both Republican and
809 Democratic, of creating a set of common rules for all parties
810 on reporting transparency and review of their progress on meeting
811 their targets regardless of their development status.

812 So what about progress in other countries? I am going to
813 focus here on China and India because concerns about them were
814 raised in recent hearings before this subcommittee.

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815 Both will need to do more. But under Paris, they are
816 demonstrating ample domestic ambition. China is leading the
817 world in renewable energy investment, committing to spend over
818 \$360 billion through 2020, which is expected to create 13 million
819 new jobs.

820 China launched a national emissions trading system for its
821 power sector, which will eventually become the largest in the
822 world. In 2017, the government halted or delayed over 150 coal
823 plants.

824 China remains the world's largest emitter of carbon dioxide
825 but committed under Paris to peak emissions by 2030 at the latest
826 and experts argue that they could easily peak as early as 2025.

827 India's Paris targets include a goal of 40 percent
828 electricity generation from non-fossil sources by 2030. Prior
829 to setting these target, Prime Minister Modi increased the
830 previous government's solar energy goal by himself by five times
831 to 100 gigawatts by 2022, adding 75 gigawatts of wind, biomass,
832 and small hydro, creating an estimated 330,000 new jobs.

833 The number of planned coal plants has plummeted, shrinking
834 by a quarter in the first half of 2018. What about the
835 international impact of U.S. subnational action, which we have
836 heard about so far?

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837 The groundswell of activity in the U.S. has been widely
838 embraced. German Chancellor Angela Merkel commented that it
839 emphasizes the support for the climate agreement across large
840 parts of the United States.

841 It is also spurring similar subnational coalitions abroad,
842 including in Japan. States have also increased their bilateral
843 programs. California initiated programs to work with China on
844 developing renewable energy and cooperating on zero-emissions
845 vehicles, energy storage, and grid modernization while the U.S.
846 stayed on the sidelines.

847 But there are limits to subnational action that require
848 federal reengagement. Here are three reasons.

849 First, U.S. federal leadership is absolutely necessary as
850 states and cities don't have a seat at the table in international
851 negotiations. Active participation is essential to ensure that
852 the Paris Agreement maintains elements that we value, including
853 maintaining the integrity of the currently agreed-upon rules.

854 Secondly, states and cities do not have the capacity to help
855 prepare our strategic partners abroad for climate risks
856 threatening their safety which, in turn, threatens the American
857 people.

858 Make no mistake -- climate-related security risks are

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859 happening right now and they are getting worse. This conclusion
860 was unequivocal in last month's worldwide threat assessment of
861 the U.S. intelligence community.

862 Third, states and cities can't put sufficient pressure on
863 larger countries to embrace climate smart foreign development.
864 Take, for example, China's massive Belt and Road infrastructure
865 project worth \$6 trillion that include 70 countries on three
866 continents.

867 It is, roughly, 46 times as large as the Marshall Plan.
868 Despite their domestic progress at home, from 2014 to 2017 93
869 percent of energy investments by China's Silk Road Fund and 95
870 percent of foreign energy investment by China's state-owned
871 enterprises were in fossil fuels.

872 The U.S. is not challenging China, given President Trump's
873 commitment to fossil fuels. No other countries can exert
874 pressure on China. This gap requires federal reengagement in
875 Paris and in broader international climate efforts.

876 Let me close with a few suggestions to what Congress can
877 do to get the U.S. back into the international climate arena.

878 First, pass a resolution to support the Paris Agreement that
879 also explicitly supports current subnational action.

880 Second, double funding for clean energy and carbon removal

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881 RD&D to catch up with China and make sure the money that you have
882 allocated is being spent.

883 And finally, for fiscal year 2019 you increase bilateral
884 environmental assistance to \$776 million from \$400 million.
885 These funds should be spent to help prepare countries for climate
886 change so that we can work together to create a safer and more
887 resilient world.

888 Thank you. I look forward to your questions.

889 [The prepared statement of Mr. Light follows:]

890

891 *****INSERT 4*****

892 Mr. Tonko. Thank you, Mr. Light.

893 We now have concluded with opening statements and now move
894 to member questions. Each member will have five minutes to ask
895 questions of our witnesses and I will start by recognizing myself
896 for five minutes.

897 Many of my colleagues will want to discuss subnational
898 commitments but I would like to start with some basics of the
899 agreement.

900 Dr. Light, I just want to clearly state what I believe I
901 heard you say in your -- in your just-delivered statement. Do
902 you agree that the United States and all other parties to the

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903 agreement made voluntary mitigation contributions?

904 Mr. Light. Yes, sir.

905 Mr. Tonko. So with that being said, when President Trump
906 talks about imposing draconian burdens on our country, is that
907 a fair criticism of the agreement itself?

908 Mr. Light. It is absolutely false, sir. I was at the table
909 when the agreement was being negotiated. There were no draconian
910 burdens that were put on the United States or any other country.

911 Mr. Tonko. So then this is not a U.N. mandate that
912 undermines our sovereignty?

913 Mr. Light. Not at all.

914 Mr. Tonko. Our mitigation commitment was submitted based
915 on existing and planned United States policy. Is that correct?

916 Mr. Light. Yes, sir.

917 Mr. Tonko. And, Dr. Light, one of the biggest achievements
918 of the agreement is the inclusion of large developing nations
919 such as China and India. Can you explain their commitments and
920 how they were brought to the table?

921 Mr. Light. Well, I think I sort of gave you a little bit
922 of an overview of what China and India are doing right now and
923 we can talk about, you know, what's going on in terms of emissions
924 recently with those countries and the United States.

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925 But how they were brought to the table was a very interesting
926 story. The United States and China had historically been the
927 biggest adversaries in this process.

928 So if you go back decades to the original creation of the
929 framework convention in 1992, it was just an incredible fight
930 between large blocks of countries, mostly developed countries
931 on the one side, developing countries on the other side.

932 The developing countries said, you caused the problem,
933 essentially applying a kind of "polluter pays" mentality. It
934 is your responsibility to solve it. We shouldn't be required
935 to do anything.

936 But that is just not viable, as Representative Walden said.
937 You can't reduce emissions sufficiently only on the backs of
938 developed countries because the bulk of emissions now are from
939 developing countries. We tried with different measures to move
940 forward on this. But we could never get sufficient participation
941 from these other countries to move forward.

942 The Kyoto Protocol, for example, only had the participation
943 in terms of obligations to reduce emissions from less than 20
944 percent of emissions globally from the countries that had to
945 reduce their emissions.

946 The Paris Agreement -- the countries that are committed to

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947 the Paris Agreement now, until the U.S. leaves, covers 96 percent
948 of global emissions. We worked with China behind the scenes for
949 over a year to make sure that we could bring them to the table,
950 that we would only stand next to them, as President Obama did
951 in November of 2014, with President Xi in Beijing -- we would
952 only stand with them and while they were announcing the top lines
953 of their target if we thought their target was respectable, and
954 they did the same with us. And that created a race to the top
955 that brought countries along.

956 India is another story. Prime Minister Modi has long been
957 a climate champion, and what we did is we took -- looked at his
958 domestic desire to try to move his country forward on a more
959 sustainable path. By himself he increased his own renewable
960 energy targets and then we worked with the Indian government to
961 make sure that their platform could be used to advance other
962 research and innovation programs that they wanted to create.

963 Mr. Tonko. Thank you for highlighting that.

964 Because these countries are in a different stage in their
965 development their time line may be longer than ours. But it is
966 clear that they are committed to taking action and pursuing more
967 sustainable development.

968 How is China working forward? Are they still on track to

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969 peak with its emissions around 2030?

970 Mr. Light. That -- no, sir. I believe they are actually
971 going to peak quite earlier than that. I mean, all estimate
972 evidence to date is that they will peak earlier.

973 They did have a 3 percent uptick in their emissions as far
974 as we can tell in 2018. The U.S. emissions also went up 3.4
975 percent in the same time period.

976 But there is lots of explanations for this having to do with
977 some stimulus in the Chinese economy -- for example, a huge boom
978 in construction to try to create more apartments for people, which
979 are -- 20 percent of them are actually going empty right now.

980

981 So there have been things like that that have moved along.

982 But if you look at the scale of Chinese emissions, it really
983 precipitously goes down as we get closer to the creation of the
984 Paris Agreement because that is when international pressure is
985 there. That is when the Chinese are starting to recognize that
986 they have a geopolitical advantage by becoming leaders on this
987 issue. The small countries -- small island states -- are just
988 as worried about China as they are worried about the emissions
989 coming from the United States. All those emissions are going
990 to cause sea level rise. They are going to harm them.

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991 And so what we have seen is the Chinese respond to that.

992 But, as I said at the end of my testimony, there is a worry here
993 that the Chinese could still move forward with respect to building
994 out coal facilities in other countries unless someone tries to
995 pull them back to the table. No other country can do that other
996 than the United States.

997 Mr. Tonko. Thank you.

998 Are there any other common misconceptions about the
999 agreement that you would like to clarify in a relative few
1000 questions?

1001 Mr. Light. Sure. One thing, and that is this. I have
1002 heard -- I understand the criticism that the current pledges under
1003 the Paris Agreement -- right now that parties are behind. They
1004 don't -- aren't sufficient to meet the 2 degrees Celsius goal,
1005 let alone the goal of the agreement to try to even get lower --
1006 get lower temperature response like 1.5 degrees.

1007 We have to keep in mind that Paris was created as a process.
1008 It is not just one shot, you make your pledge, and we are done
1009 and we see how good we do.

1010 It sets up a process so that parties have to come back to
1011 the table at regular intervals to make regular new commitments
1012 of increased ambition. That is going to be what is going to help

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1013 us to close the gap that some of you have articulated in your
1014 opening statements.

1015 Mr. Tonko. Thank you. Thank you, Dr. Light.

1016 I now recognize Leader Shimkus for five minutes to ask
1017 questions.

1018 Mr. Shimkus. Thank you, Mr. Chairman. Thank you all for
1019 being here.

1020 Mr. Light, I appreciate your passion and, Mr. Hultman, I
1021 am a believer in subnational activities. We are federalists,
1022 especially on this side, and we believe in local control, local
1023 government, and we want to keep encouraging those who want to
1024 go in a direction.

1025 But let me ask this question. What is -- first of all, kind
1026 of -- it can be a short response -- what is more binding, a treaty
1027 or an agreement?

1028 Ms. Frisch?

1029 A treaty. Constitutionally, it is really, there's no --
1030 Mr. Thernstrom?

1031 Mr. Thernstrom. A treaty.

1032 Mr. Shimkus. Treaty.

1033 Mr. Hultman?

1034 Mr. Hultman. Both a treaty and agreement have authority

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1035 under international law and the Paris Agreement is something that
1036 we can use to accomplish the goals --

1037 Mr. Shimkus. Okay. But for us and our Constitution and
1038 our government, which is more binding? Which has political
1039 buy-in? Which is vetted by the legislative branch?

1040 Mr. Hultman. The Paris Agreement was formulated under the
1041 U.N. Framework Convention on Climate Change, which is --

1042 Mr. Shimkus. Okay. Let me -- I just taught high school
1043 government and history. I mean, I don't profess to be an expert
1044 on the Constitution but only a treaty gets voted on by the
1045 legislative branch, and not even the House -- the Senate.

1046 Mr. Light, would you agree with that?

1047 Mr. Light. That is true, sir. But -- -

1048 Mr. Shimkus. Well, let me ask -- -

1049 (Simultaneous speaking.)

1050 Mr. Light. -- depends on --

1051 (Simultaneous speaking.)

1052 Mr. Shimkus. Let me ask you this question. Let me just
1053 ask -- let me ask you this question. Why didn't the Obama
1054 administration submit this as a treaty?

1055 Mr. Light. Because it was not a treaty. Because it was
1056 an agreement under the treaty that we had already agreed to that

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1057 passed with unanimous support in the Senate, Republicans and
1058 Democrats -- the U.N. Framework Convention on Climate Change.

1059 This was an agreement under that treaty that the Senate had
1060 already -- had already ratified.

1061 Mr. Shimkus. So, Mr. Thernstrom -- so, Mr. Thernstrom, you
1062 heard -- in your testimony you highlight the need for a national
1063 buy-in, and maybe through the subnational groups you are going
1064 to build that consensus and we may be there.

1065 There was actual shifting since this last time we had this
1066 debate and I think you can hear that on our side. Why is it
1067 important for this decision to be vetted by a legislative body?

1068 Mr. Thernstrom. As other witnesses have testified today,
1069 the subnational actors certainly can take action in many respects
1070 but they have also all called upon the federal government to use
1071 its resources, which are much greater than those of subnational
1072 actors in a coordinated fashion and, obviously, we lack a
1073 political consensus in this country, which -- to produce a federal
1074 policy on clean energy innovation and climate-related emissions.

1075 And so if we could reach that consensus, and I think this
1076 committee is obviously the place to have that conversation, I
1077 think everyone at the table here would agree that federal action
1078 -- I think that is what I have heard from all witnesses is that

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1079 federal action could be much more effective than the state and
1080 local action and it is, obviously, that political process that
1081 you are speaking of that would enable coordinated and ambitious
1082 federal action and I hope that we can get there.

1083 Mr. Shimkus. And we have this fight and this debate in our
1084 committee all the time. Can a federal agency do this? Do they
1085 need more legislative language? How do you impart it? How do
1086 you have the force of law?

1087 So other than going through the legislative process and
1088 binding us to the votes that we cast, we are going to be whipsawed
1089 back and forth by administrations here and there and we will not
1090 have a consistent national policy for the decades. And I think
1091 -- I think we all agree.

1092 I mean, if you look at the Climate Action Tracker, which
1093 I used in my opening statement, even going to the Paris Accords
1094 now you are plateauing.

1095 Talk about -- and my time is almost out so I only have a
1096 minute left -- Mr. Thernstrom, done poorly with all the different
1097 aspects of energy use in this country, how could that affect jobs
1098 and the economy and the cost?

1099 Mr. Thernstrom. As my testimony, especially my written
1100 testimony, indicates, I think climate protection is a very

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1101 important value for myself and for many Americans, most Americans
1102 even.

1103 But I think balancing climate concerns with the other values
1104 in this space such as protecting, you know, affordable energy
1105 sources for consumers is critical both to achieving the political
1106 consensus that we have been calling for in this exchange but also
1107 for the technologies to actually reach the level of economic
1108 competitiveness that would allow them to scale successfully into
1109 global markets and be used in developing nations.

1110 So I think keeping costs of clean low is crucial to both
1111 political consensus, to durability of policy over the years, as
1112 you suggest, and to acceptance within the global marketplace,
1113 which is key to environmental performance.

1114 Mr. Shimkus. My time has expired. Thank you, Mr. Chairman.

1115 Mr. Tonko. Thank you, Mr. Shimkus.

1116 The House has called for at least three votes. The time
1117 estimate for that is about 40 minutes. So what we are going to
1118 do is move to Chairman Pallone for his questioning for five
1119 minutes. Then we will take a recess to go vote and we will come
1120 back after that, 15 minutes after the last vote is called.

1121 So Chairman Pallone?

1122 The Chairman. Thank you. I had some questions to ask Mr.

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1123 Hultman but Mr. Shimkus keeps making me veer from my questions.

1124

1125 I just think this --

1126 Mr. Shimkus. It is working.

1127 The Chairman. I don't mean to be so critical, Mr.

1128 Thernstrom, but I just -- this whole argument about treaties

1129 versus agreements, look, the bottom line is it is very obvious

1130 that the Paris Agreement sets up, as I think Mr. Light said,

1131 essentially a voluntary process where the, you know, parties are

1132 going to meet from time to time to see what they can accomplish

1133 and, you know, I don't -- I don't understand why in the world

1134 the president felt it was necessary or suggesting to withdraw

1135 to this process that is, you know, essentially voluntary and,

1136 you know, my point is that President Trump is the outlier here.

1137

1138 I haven't heard anyone on the Republican side -- maybe I

1139 shouldn't bring it up but I haven't heard any of them say they

1140 think we should have withdrawn from the Paris Agreement.

1141 To me, Trump is the outlier. He just wants to send a signal

1142 that somehow we are not going to be part of this and move in the

1143 opposite direction on climate change, which is probably contrary

1144 to almost everybody in this room, regardless of being a Democrat

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1145 or Republican.

1146 I mean, even his own daughter I remember at the time was,
1147 like, you know, pleading with him, don't withdraw -- this is a
1148 voluntary agreement. I mean, I don't even know if anybody in
1149 the White House agreed with him. Certainly, his family didn't.

1150 So, you know, all this discussion about, you know, treaties
1151 versus agreements I just -- I just think it's, you know, largely
1152 irrelevant. I don't mean to be disrespectful but I just think
1153 that he was trying to send a signal that I am not going to move
1154 on climate change -- I don't believe that climate change is an
1155 issue and I am going to try to kill everything we have done under
1156 Obama to lead in that direction.

1157 And he is an outlier. We should just recognize.
1158 Unfortunately, he is the president. Let me ask Mr. Hultman, you
1159 know, it is interesting that it is almost the opposite. You know,
1160 Mr. Shimkus talked about, you know, France and other countries
1161 that, you know, where the leaders are trying to move forward and
1162 they are getting resistance.

1163 I almost feel, based on what Ms. Frisch said, it is the
1164 opposite here. Our leader is trying to move backward and the
1165 business community and the grassroots are saying, no, don't do
1166 that. It is sort of interesting in a way.

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1167 But what I wanted to ask you, Mr. Hultman, is this whole
1168 issue with the -- you know, with -- well, you call them the
1169 subnational or non-federal actors. What is it that we can do
1170 to make it easier for these subnational actors to take meaningful
1171 action and live up to our Paris commitments? You sort of
1172 suggested that they are -- at some point they are going to have
1173 their own limitations.

1174 Is there something we could do maybe on a bipartisan basis
1175 to make it easier for them to continue in that vein? Or what
1176 kind of challenges will they face because of federal inaction?

1177 Mr. Hultman. There are -- there are a few things that I
1178 think can be done now at the federal level and let me just pick
1179 up on your previous comment that, yes, we are seeing this
1180 leadership and I think this actually is an element that ties
1181 together some of the comments that we have heard today from you
1182 all, that we are building through this substantial, you know,
1183 set of leadership across party lines in some cases some ideas
1184 and some strategies for reducing emissions. We are --

1185 The Chairman. By the way, I don't have -- I have a lot of
1186 Republican mayors and county legislators. There isn't a single
1187 one of them that agrees with the president on Paris. Not one.

1188 Mr. Hultman. And in many cases, as Carla also mentioned,

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1189 that a lot of these actors are doing these in response to demands
1190 from their constituencies and being responsive and trying to lead
1191 in the ways that they see being valuable for their -- for their
1192 organizations, for their jurisdictions.

1193 So we are seeing what I would argue we had to do anyway in
1194 this country. We had to anyway leverage all of these levels of
1195 government, leverage all of the leadership.

1196 Think about what is going to work and not work in our various
1197 kinds of situations and build from the ground up a strategy that
1198 we can use then, stitched together at the federal level.

1199 The Chairman. Is there anything -- because we are going
1200 to run out of time --

1201 Mr. Hultman. Yes.

1202 The Chairman. -- is there anything that we can do to make
1203 it easier for them or challenges they are going to face because
1204 of what we -- -

1205 Mr. Hultman. I think it is important to make sure that those
1206 states and cities which want to be leading and out ahead that
1207 from the federal level we allow them to do so. I think that is
1208 sort of first and foremost -- do no harm. I would highlight the
1209 state of California in particular, which is trying to move forward
1210 on some of its regulatory actions.

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1211 Also, to make sure that we are as somebody -- I think Andrew
1212 mentioned -- spending out the funds that have been allocated to
1213 those jurisdictions -- for example, weatherization efficiency.
1214 That is helpful for low-income people, it is helpful for building
1215 the basis for future reductions.

1216 The Chairman. I know we are running out of time but, Mr.
1217 Chairman, is there something Mr. Light wanted to say?

1218 Mr. Light. Thank you, sir. I just wanted to go back to
1219 one thing you said at the top on the voluntary nature of the Paris
1220 Agreement. Absolutely correct.

1221 It is important to remember, though, that the rules on
1222 transparency, on accountability, those are binding.

1223 The Chairman. Okay.

1224 Mr. Light. That is the interesting combination we set here.
1225 This is why this is not just a vacuous agreement and it doesn't
1226 have force like a treaty.

1227 Now, you know, Mr. Thernstrom said that innovation is the
1228 key and treaties are not as important. I agree innovation is
1229 totally important. But the important thing is that we need to
1230 know whether other countries are actually fulfilling the pledges
1231 that they are making publicly.

1232 The only way we know that is if we actually have the rules

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1233 that we have agreed to under Paris that put developing and
1234 developed countries on the same terrain of accountability.

1235 Mr. Tonko. So we need to go vote. We will stand in recess
1236 and return 15 minutes after the last vote is called.

1237 With that, we are in recess.

1238 [Recess.]

1239 Mr. Tonko. We have our witnesses back at the table. We
1240 have our next member who chooses to question the witnesses here.

1241 So I call the subcommittee back to order.

1242 And now we will recognize the Republican leader of the full
1243 committee, Mr. Walden, for five minutes.

1244 Mr. Walden. Thank you, Mr. Chairman. Thank you, Mr.
1245 Chairman.

1246 Mr. Tonko. You are welcome.

1247 Mr. Walden. And thanks to our witnesses for returning.
1248 Sorry. When we have these votes on the floor they are just part
1249 of our constitutional responsibility as well.

1250 So there has been some discussion this morning, I know, about
1251 treaties versus agreements in the context of the Paris Accords
1252 and Mr. Thernstrom stated in his written testimony, and I agree
1253 and I quote, "The Paris Agreement could not succeed since the
1254 agreement was a substitute for rather than the product of a

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1255 domestic political consensus," which I think is a really important
1256 point.

1257 The role of the Congress should not be circumvented in
1258 addressing such sweeping policies that impact so many aspects
1259 of our daily lives, from our utility bills to what we pay at the
1260 pump to the livelihoods of American citizens.

1261 And that is what I hope and I trust with our chairman that
1262 we will be able to build here as a consensus -- bipartisan
1263 consensus. That is how big things get done. This is a big thing
1264 that needs to get done.

1265 Mr. Thernstrom, last November, Bill Gates was quoted at a
1266 Stanford Precourt Institute for Energy event as saying, and I
1267 quote, "The climate is easy to solve group is our biggest problem.

1268 The climate is easy to solve group is our biggest problem."
1269 He said this in context of people who assume that we have the
1270 current tools to address climate change and should be able to
1271 do so rather easily.

1272 Do you agree that this is not an easy problem to solve --
1273 that we do not currently have all the technologies needed to solve
1274 it?

1275 Mr. Thernstrom. I very strongly agree with that, Mr.
1276 Walden, and I think that the -- consequently, as I said in my

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1277 statement earlier, I think the core focus of federal policy should
1278 be on driving energy technology innovation.

1279 I do think that, obviously, as I said, we have made great
1280 improvements --

1281 Mr. Walden. Right.

1282 Mr. Thernstrom. -- in performance of clean energy
1283 technologies. Prices are coming down and we see that in the
1284 marketplace. There is a lot of adoption of those technologies,
1285 as many witnesses here has testified. So I celebrate those
1286 accomplishments.

1287 But, clearly, if the technology was where we needed it to
1288 be today --

1289 Mr. Walden. We would be done.

1290 Mr. Thernstrom. -- we would be done. We wouldn't need
1291 policy. And so I think all of the analysis that I have seen
1292 suggests that we can make improvements today but to get to where
1293 we need to be in the energy sector we need significant innovation.

1294

1295 And even the utilities that I am aware of that are most
1296 forward leaning on this -- that have made the most ambitious
1297 commitments to action all understand that this question is not
1298 just about using today's technologies. It is about getting to

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1299 better ones and there is an important role for public policy in
1300 that as well as for the private sector.

1301 Mr. Walden. I was in a meeting yesterday with some leaders
1302 from one of the world's largest oil companies and I asked them
1303 the same sort of question about innovation in their space,
1304 especially as it relates to methane capture and carbon capture
1305 and sequestration.

1306 And they started to tell me about some of the cutting-edge
1307 technologies they are investing in to see what they can get done
1308 and that is where I think, as Americans, we are unique in the
1309 construct that we believe in -- the entrepreneurial spirit.

1310 We believe in that innovation. We believe in that a couple
1311 of guys in a garage in San Jose that do some weird stuff and end
1312 up with a company named Apple or, in my context, a guy with a
1313 waffle iron that developed a little shoe we know now as Nike.

1314 You know, and I have great confidence we can do that here,
1315 and from a positive standpoint. In fact, the study you submitted
1316 in your testimony says that a bet exclusively on today's apparent
1317 winners -- solar, wind, and battery storage -- should be a mistake.

1318 Why do you think that?

1319 Mr. Thernstrom. So the point of that -- the point of that
1320 study is to say that we can see -- as I have said, I applaud the

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1321 success of renewable energy technologies in improving their
1322 performance in recent years.

1323 Mr. Walden. Right.

1324 Mr. Thernstrom. But if you think about the question of how
1325 you get to a clean energy system as a whole -- not just to have
1326 some incremental progress -- all the analyses that I have seen
1327 agree that having a diverse mix of fuel sources within the energy
1328 system is really crucial to getting to -- to maintaining low cost
1329 as we reach for higher levels of decarbonization. So --

1330 Mr. Walden. And should advanced nuclear be part of that
1331 mix? Does it have to be?

1332 Mr. Thernstrom. Absolutely. My organization is a strong
1333 believer in investing in the full portfolio of technologies, very
1334 much believe that advanced nuclear is part of that, advanced
1335 carbon capture as well and many renewable technologies. So we
1336 see value, as I say, in that full portfolio.

1337 Mr. Walden. And, I assume, hydropower?

1338 Mr. Thernstrom. Absolutely.

1339 Mr. Walden. We have studies from our own agencies saying
1340 we can increase hydropower dramatically. Now, there are some
1341 price points here, too. It is one thing to say you can do it.
1342 It is another to say the market would accept that higher price

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1343 in some of these facilities. But we know that is carbon neutral.

1344 Mr. Thernstrom. That is correct, sir. I know some
1345 advocates are working very hard on figuring out how we can get
1346 more productivity out of our existing hydropower resources and
1347 things like that and I certainly applaud those efforts.

1348 Mr. Walden. My time is expiring. I know we have focused
1349 kind of on energy in this discussion. We need to do this on
1350 manufacturing, what we can do to capture carbon. I have heard
1351 of technologies that are being developed where you could sort
1352 of drop powder in and -- elementary level here -- and it would
1353 surround the molecules and pull it out, the carbon is taken out.

1354 It would be fascinating to be able to get in that discussion.

1355 If we are going to add all these electric vehicles -- I drive
1356 a hybrid on both coasts -- but, you know, that is going to be
1357 a drain on the energy grid but it can also be a big storage battery.

1358 I mean, I have heard of that discussion.

1359 So anyway, I appreciate all our witnesses here today. Sorry
1360 I have to come and go but, Mr. Chairman, thank you for your
1361 indulgence and I yield back.

1362 Mr. Tonko. Okay. The gentleman yields back, and can I just
1363 please encourage the witnesses to speak into the mic so that we
1364 can all record well and hear well.

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1365 So with that, the chair now recognizes the gentleman from
1366 Virginia, Mr. McEachin, for five minutes.

1367 Mr. McEachin. Thank you, Mr. Chairman, and let me begin
1368 by thanking you for calling this hearing and all of our witnesses
1369 for sharing your expertise.

1370 I also want to acknowledge my friends and constituents back
1371 home who have worked hard to show that whatever the Trump
1372 administration may say or do about the Paris Agreement, Virginia
1373 is still in.

1374 I know many others up here can say the same things about
1375 their communities, their citizens and their friends back home.

1376 Part of our job is to ensure that those folks are not alone,
1377 to give them a federal government that supports and further builds
1378 on their work instead of ignoring it or trying to thwart it.

1379 I have tried to do my part. In the last Congress, I was
1380 proud to introduce a bill that would have forced the Trump
1381 administration to acknowledge over and over that the U.S.
1382 withdrawal from the Paris Agreement is disastrously out of step
1383 with the choice that all of our partners and allies around the
1384 world are making.

1385 So I think this hearing is a very important step and I hope
1386 it helps to lay the groundwork for some of the concrete policy

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1387 changes we desperately need.

1388 And with that, Mr. Light, I would like to ask you the
1389 following. Some of my friends across the aisle oppose aggressive
1390 climate action because they say the challenges we face are bigger
1391 than our one country -- we cannot solve them alone.

1392 I actually agree with that point. Other countries need to
1393 pull their weight. But the outcome -- collective action -- is
1394 exactly what the Paris Agreement was meant to achieve.

1395 Can you explain how the imperative to influence other
1396 countries makes climate action at the federal level an absolute
1397 necessity?

1398 Mr. Light. Thank you, Representative McEachin, and I just
1399 want to say I appreciate your leadership on the Paris climate
1400 act on transportation and a host of other issues for helping the
1401 country and helping the district and state.

1402 I think that the -- you know, that one of the things that
1403 has been coming out here, and Representative Walden just mentioned
1404 it, is this -- sort of this idea that we shouldn't have moved
1405 forward with Paris because there wasn't a bill that came out of
1406 Congress to support the U.S. position.

1407 And I think that this is wrong for a number of reasons that
1408 you have just touched on.

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1409 So, first of all, President Obama did ask the Congress at
1410 least three times in State of the Union speeches to bring forward
1411 legislation so that he would have a commitment that he could use
1412 to take and build a commitment under Paris.

1413 We didn't get bill come out of Congress. But climate change
1414 is moving on. The urgency was still there. The United States
1415 had to act. The United States can't solve the problem alone.

1416 But we are not going to be able to get the buy-in from other
1417 countries unless the United States is there to move them along,
1418 and I gave several examples of that in my testimony.

1419 Secondly, we are losing the competitiveness race to China
1420 and other countries. If you just take -- the ISC had a study
1421 that just looked at the pledges from developing countries alone
1422 under Paris. That created a \$23 trillion market in
1423 transformations, in energy, and infrastructure abroad.

1424 The United States has to compete with that and if we are
1425 not part of Paris, if we are not part of these coalitions, we
1426 are going to lose the race and other countries are going to gobble
1427 up those markets and gobble up the jobs from that.

1428 And so that is where you need the United States there to
1429 cooperate and bring other countries along and also not to suffer
1430 by appearing to be dragging everyone behind, which is what we

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1431 are doing now.

1432 Mr. McEachin. Thank you for that.

1433 Ms. Frisch, did I say that close? Okay. You know, we always
1434 talk about the states are laboratories for democracies -- for
1435 democracy. And you have stated that states with commitments to
1436 climate have reduced their greenhouse emissions faster than the
1437 rest of the country while growing their economies.

1438 What have the last two years taught us about the economic
1439 feasibility of large-scale action.

1440 Ms. Frisch. And thank you for that question.

1441 The initial states in the U.S. Climate Alliance not only
1442 found that they were able to reduce their emissions faster than
1443 the rest of the country but their economies grew faster than the
1444 rest of the country. They are making commitments to reduce
1445 emissions that also have all kinds of co-benefits like jobs and
1446 technology.

1447 And on the technology front, you mentioned the costs coming
1448 down. We have seen that trend just continue to go and go, and
1449 even one of the leaders of the second largest utility in the U.S.
1450 said recently that by the early 2020s, which is not that far from
1451 now, renewables plus storage -- building that new will be cheaper
1452 than continuing to operate existing coal and existing nuclear.

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1454

So we have seen that trend over the past years and can look forward to that in the future.

1455

1456

Mr. McEachin. Thank you.

1457

1458

Mr. Hultman, I am sorry. I just have a little bit of time left. But can you explain what you mean when you say why the experiences of state and local actors have actually helped ease the way for systematic federal action?

1459

1460

1461

Mr. Hultman. Sure, and very briefly, federal action can fill in some of the gaps where city, state, and business action can't, and we have a federal system. There is different policy levers that each level of government has.

1462

1463

1464

1465

What those city, states, and businesses are doing today is, first of all, building out more efficiency and more renewables in their contexts. That allows the federal government to take that and build on it and, similarly, it helps drive down costs of those technologies.

1466

1467

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1469

1470

Mr. McEachin. Thank you. Thank you, Mr. Chairman. I yield back.

1471

1472

Mr. Tonko. The gentleman yields back.

1473

1474

The chair now recognizes the gentlelady from Washington State. Representative McMorris Rodgers is recognized for five

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1475 minutes.

1476 Mrs. McMorris Rodgers. Thank you, Mr. Chairman, and thank
1477 you, Ranking Member. I appreciate everyone being here and
1478 sharing your thoughts on the issues impacting our environment.

1479 Clearly, the climate is changing and global industrial
1480 activity is a contributing factor. I believe that we must play
1481 a role in reducing carbon emissions and being good stewards of
1482 our natural resources. Part of why I have fought for the
1483 advancement of clean energy resources like hydropower, nuclear
1484 energy, biomass, hydrogen fuel cells.

1485 It is also why I have long advocated for active forest
1486 management and reforms that we need to reduce the risk of
1487 catastrophic fires like the ones that we experience regularly
1488 in the West, and these decimate our carbon-capturing forests and
1489 emit toxic smoke into the atmosphere.

1490 I believe that these and other realistic market-based
1491 solutions that incentivize use and investment in clean energy
1492 resources are the answer, not the big government proposals that
1493 harm our economy and force the American people to bear
1494 unreasonable burdens.

1495 Mr. Thernstrom, as you may know, I am a strong proponent
1496 of hydropower as a piece of the comprehensive clean energy program

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1497 that we need. My home state of Washington is a large producer
1498 of clean renewable reliable hydropower and I have supported
1499 efforts to advance this clean energy both nationally and
1500 internationally, I believe, that we should be doing.

1501 With the role that Washington State plays in hydropower
1502 energy production and the overall role that hydropower plays in
1503 the United States, I just wanted to get your thoughts on how
1504 hydropower can grow as a power resource on the international
1505 level.

1506 You note in your papers that there may be geological limits
1507 to current expansion of hydropower but you see promising
1508 technological advances that would increase its usefulness as a
1509 clean baseload power source.

1510 I just wanted you to discuss that a little bit further and
1511 also hear what you think the United States needs to do to remain
1512 a prominent player in the hydropower arena internationally.

1513 Mr. Thernstrom. Thank you very much for that question,
1514 Congresswoman, and I should say at first that I don't actually
1515 consider myself an expert on hydropower. So take my answers for
1516 what they are worth. I study it in the context of innovation
1517 and clean energy technologies, broadly.

1518 I do believe that hydropower has a very important role to

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1519 play in this, particularly because it is a renewable resource
1520 -- energy resource -- that is also firm, that it is dispatchable
1521 mostly when you need it.

1522 Obviously, weather conditions can affect the state -- the
1523 status of reservoirs and dams and therefore the ability to
1524 dispatch that power indefinitely.

1525 But, fundamentally, hydropower can be considered a firm
1526 resource and therefore plays a crucial role in a reliable low-cost
1527 clean energy system. So I applaud the role of hydropower.

1528 The question is, of course, how much more can we get out
1529 of our hydropower resources. There are limitations on the
1530 geography for where new hydropower can be developed and,
1531 obviously, there is questions of community opposition in some
1532 places.

1533 I know many environmental advocates are interested in how
1534 we can get more power out of existing resources that we have,
1535 so without building new dams, repower those and get more
1536 productivity out of that and I certainly think that is a very
1537 strong place to start with that question.

1538 Mrs. McMorris Rodgers. Thank you. You may be aware that
1539 last year this committee passed legislation to expedite the
1540 two-year licensing process for pumped storage hydropower. As

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1541 we are focussing on innovation I think we should also be focussing
1542 on identifying the regulatory barriers to implementing advanced
1543 technologies. What role do you see regulatory reform playing
1544 in serving our efforts to speed up clean technology deployment?

1545 Mr. Thernstrom. Again, thank you for that excellent
1546 question. I do think that there are many instances in the
1547 hydropower space and within -- with many of these other
1548 technologies where existing regulatory structures are an
1549 impediment to the adoption and rapid use of these technologies
1550 -- that we can make them -- we can make it easier for businesses,
1551 for utilities, for states that want to be leaders on this to
1552 actually move forward with that by looking at the regulatory
1553 barriers that we have now.

1554 I applaud that hydro bill. I think we see similar efforts
1555 in other areas with other technologies to try to make it easier
1556 to build advanced nuclear reactors, to test new fuel cycles, to
1557 build carbon capture, to move carbon dioxide through pipelines
1558 and inject it underground.

1559 Across the suite of technologies we see there are regulatory
1560 barriers to the adoption of clean energy that I think this Congress
1561 should be looking at and trying to lower in every instance.

1562 Mrs. McMorris Rodgers. Yes. Only 3 percent of the dams

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1563 actually produce hydroelectricity in America, and we could double
1564 that without building a new dam. But, unfortunately, it takes
1565 10 years on average to relicense one of those dams. So there
1566 is more to be done.

1567 Thank you very much.

1568 Mr. Thernstrom. Thank you.

1569 Mr. Tonko. The gentlelady yields back.

1570 The chair now recognizes the gentleman from California,
1571 Representative McNerney, for five minutes.

1572 Mr. McNerney. I want to thank the chair and I thank the
1573 witnesses this morning.

1574 Mr. Light, Mr. Latta, my colleague, and I co-chair the Grid
1575 Innovation Caucus and I am committed to modernizing the grid to
1576 keep up with the demands that the electoral system is going to
1577 be seeing in the future.

1578 What do you think needs to be done to educate the ratepayers
1579 and the PUCs and the policymakers and the consumers about having
1580 utilities adopt this technology?

1581 Mr. Light. Well, I think this is an excellent example of
1582 where -- again, I am all in favor of doing work on RD&D, on
1583 innovative technologies, on battery storage, on, you know, small
1584 nuclear.

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1585 We need to -- this is an all of the above -- all forms of
1586 clean energy have to be deployed to meet these larger targets.

1587 That is an excellent example of where we have got a problem right
1588 now that we solve. We can't move forward on those until we do
1589 grid modernization.

1590 Mr. McNerney. And we have to educate the different
1591 stakeholders.

1592 Mr. Light. And we have -- and we are going to have to --

1593 Exactly. We have to educate the stakeholders that there
1594 is a market out there to be had. This transition is better for
1595 them. It avoids longer-term risks.

1596 It also, at the end of the day, will lower their electricity
1597 rates and this requires programs out there -- not draconian
1598 regulations of any sort but programs out there that help people
1599 to understand the opportunities before them.

1600 Mr. McNerney. And investments as well.

1601 Mr. Thernstrom, thanks for coming in this morning. And I
1602 appreciate your comments about the need for innovation.

1603 What federal policy do you -- what federal policy do we need
1604 to encourage the adoption or -- and acceleration of clean energy
1605 technology? What federal policies are we going to need?

1606 Mr. Thernstrom. Well, obviously, there isn't a simple

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1607 answer to that question. It is a complex range of things. As
1608 you know from our previous conversations, sir, I believe in a
1609 mix of policies that could be knitted together in one coherent
1610 package.

1611 But, broadly speaking, I think it is important to have
1612 technology push -- that is, investments in innovation in the full
1613 suite of technology spaces -- renewables, efficiency, carbon
1614 capture, nuclear, hydro.

1615 Across the board we need to invest in advancing those
1616 technologies. I do think in the long run there needs to be demand
1617 pull as well. We need to know what the rules of the road are
1618 going to be in the power sector.

1619 We have a state of flux, let us say, in what the regulatory
1620 requirements will be and I think this committee is the place to
1621 think about what the long-term rules of the road will be for the
1622 power -- -

1623 Mr. McNerney. It sounds like you are advocating for
1624 consistent long-term policy.

1625 Mr. Thernstrom. That is right. I do think --

1626 Mr. McNerney. And I think everybody here would agree with
1627 that. So --

1628 Mr. Thernstrom. I think that is crucial that --

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1629 Mr. McNerney. But, I mean, the problem is getting a
1630 bipartisan agreement on that. So it is going to take pain on
1631 both sides if we are going to get there.

1632 And we are -- okay. Enough said.

1633 Mr. Thernstrom. Well, I agree with you on that point, sir.

1634 Mr. McNerney. Mr. Hultman, I am working on legislation to
1635 improve our understanding of stratospheric composition and
1636 aerosol interactions.

1637 Now, would this research be helpful in establishing a
1638 baseline of current conditions that is needed before any NGO
1639 engineering deployment could be considered?

1640 Mr. Hultman. Thank you for the question, and I want to
1641 distinguish two pieces of this question.

1642 One is that on the broad science of climate change we
1643 definitely know enough to take actions today of the kind we have
1644 been talking about I think that are being taken both at the
1645 subnational level and maybe bringing some of those ideas to the
1646 federal.

1647 That said, there are some significant uncertainties about
1648 how human interference or human contribution to a geoengineering
1649 approach to climate change would actually work, and this was
1650 highlighted in the National Research Council report of a couple

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1651 of years ago that really called for some necessary investments
1652 in understanding the scientific elements of a geoengineering
1653 strategy. So the short answer is yes.

1654 Mr. McNerney. Well, that was the only answer.

1655 Thanks. Anybody can answer this one. In order to address
1656 climate change we are going to have to move rapidly in reducing
1657 our carbon emissions and removing carbon from the atmosphere.

1658 What are the most promising technologies right now that we
1659 have out there to do that? Whoever wants to take that question.

1660 Ms. Frisch. I think the most promising technologies that
1661 we have out there are the ones that can help prevent emitting
1662 that carbon dioxide into the atmosphere in the first place.

1663 So those are ready to go and being deployed in those spaces.

1664 But as the other panellists have said, we have to bring every
1665 single technology to bear on the solution -- to bear on this
1666 problem to be able to get on track and reduce emissions as quickly
1667 as we need to.

1668 Mr. McNerney. I saw an article -- I think it was in the
1669 New York Times -- about a promising technology in Switzerland
1670 to remove carbon cheaply. I mean, there must be some really good
1671 technology out there that we need to look into and encourage.

1672 Ms. Frisch. Right. I read that article, too, and I think

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1673 the key there was that it is in the R&D phases and the costs need
1674 to come down. So we should definitely be encouraging that while
1675 we are deploying the technology that we already have.

1676 Mr. McNerney. Right.

1677 Mr. Thernstrom. If I may, I would just agree with Ms. Frisch
1678 that I think halting emissions from existing sources first and
1679 developing, say, carbon capture technologies that would
1680 facilitate the development of carbon removal in the long term,
1681 that is the pathway we need to take.

1682 Mr. McNerney. All right. Thank you.

1683 Mr. Chairman, I yield back.

1684 Mr. Tonko. The gentleman yields back.

1685 The chair now recognizes the gentleman from West Virginia,
1686 Representative McKinley, for five minutes.

1687 Mr. McKinley. Thank you, Mr. Chairman.

1688 And this subject is long overdue to having a conversation
1689 on this because there -- obviously, there are storm clouds on
1690 the horizon.

1691 Around the world there is still a voracious appetite for
1692 the use of fossil fuels and they are predicted by the next few
1693 years that the global increase -- its consumption of fossil fuels
1694 by up to 16 percent.

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1695 So the idea of how we are going to deal with that issue is
1696 complex. America could very well lead the way and we have in
1697 decarbonizing and lowering our emissions -- CO2 emissions down
1698 to 16, 18 percent -- 21 percent by some standards.

1699 But yet China and India have markedly a continued increase.
1700 So what is it, the number of -- China is up 290 percent in this
1701 decade, and India 235 percent.

1702 So the thing that I am perplexed about is that we can go
1703 about -- American continuing to lead and make our reductions where
1704 -- again, up to 20 percent. We have already begun complying with
1705 the Kyoto and the Paris Accord by making reductions.

1706 But the rest of the world isn't, and so as a result, we are
1707 going to be the ones that suffer with this. We are still going
1708 to have -- across the globe you are going to have climate change.
1709 We are still going to see the oceans rise, temperatures again
1710 increase.

1711 Miami is going to be under water and all that -- we have
1712 done everything. We have complied totally with it. So the thing
1713 that bothers me the most about this is that we are asking people,
1714 other nations of the world, to implement reductions in their
1715 emissions but we are not giving them the tools to do it. There
1716 is no technology that is economically feasible out there right

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1717 now.

1718 So the fact that, Mr. Thernstrom, we have been working
1719 together, quite frankly, so with all disclosure here to try to
1720 figure out what is a solution to give -- empower these other
1721 countries to implement something that is cost effective and
1722 because if we don't and they continue to burn fossil fuels, we
1723 are still going to have a water problem.

1724 We are still going to have droughts. We are still going
1725 to have severe weather all around the globe. Maybe not in America
1726 but around the world is going to suffer.

1727 So I think if we -- if the primary cause is how we capture
1728 carbon, I think we need to have the innovation and we have to
1729 move it up first. Do the innovation first.

1730 Show that what the technology, and then we can export it
1731 to the rest of the world and make it so that it is affordable
1732 for them to do it because they are still going to use carbon.

1733 We -- I think we have the responsibility to lead the way
1734 in doing this. But let us make sure that we don't put the reverse
1735 in -- we don't put a hammer approach. Let us use the innovation
1736 first and then go to implement the policies then to follow back
1737 with that.

1738 So if they don't have the -- Mr. Thernstrom, if we don't

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1739 have the technology yet, what are you suggesting? What now --
1740 what could we do? I know last year we passed 45Q to be able --
1741 that was a major step to show how we might be able to do that
1742 to develop that in carbon capture.

1743 What are -- what are some of the thoughts that you would
1744 have how we might do the innovation first? Unfortunately, we
1745 lost one of our members here that I know has an interest in
1746 innovation.

1747 But give me a little bit more on your spin.

1748 Mr. Thernstrom. Thank you, sir, and thank you for your
1749 leadership on this question. I guess I would start my answer
1750 to that question by you ended, with 45Q as an example of both
1751 what I think can be done that is constructively but also what
1752 more needs to be done.

1753 So full disclosure, I was up here advocating for 45Q passage
1754 for almost more years that I can remember -- I think it was seven
1755 or eight. I think 45Q was a very important step forward.

1756 At the same time, we are actually seeing very few projects
1757 are being built so far because of 45Q, although I still have high
1758 hopes that more will come.

1759 The reason for that is that 45Q is one lever within a very
1760 complex energy system. And so what I keep saying to you and others

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1761 is that if we want big outcomes from big energy systems we need
1762 big inputs.

1763 And that is why I think it is important for the members of
1764 this committee to come together around some consensus about what
1765 policy proposals would be.

1766 As you know, another theme of mine is that the innovation
1767 needs of different technology families are distinct. So my
1768 answer to you is what we need to do for fossil decarbonization
1769 is different than what we need to do to advance nuclear and that
1770 is different from what we need to do for solar.

1771 And I would encourage you and other members of this committee
1772 to look at the specific needs of those technologies, have policy
1773 responses that are tailored to them but which are comprehensive
1774 and ambitious rather than just these one-off small ball type
1775 approaches. That is how we will get to big outcomes in the energy
1776 system that we all --

1777 Mr. McNerney. Thank you. My time has expired. I yield
1778 back.

1779 Mr. Tonko. The gentleman yields back.

1780 The chair now recognizes the gentlelady from the state of
1781 Delaware, Representative Blunt Rochester, for five minutes.

1782 Ms. Blunt Rochester. Thank you, Mr. Chairman, and thank

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1783 you so much to the panel.

1784 I am very happy to be joining you here at this hearing because
1785 as I jumped out of the room for a minute I had to meet with students,
1786 our Delaware Civil Air Patrol Cadets, and I thought about the
1787 significance of this conversation and how important it is not
1788 just to my state and our country but to the planet.

1789 And I want to start by saying I am pleased to say that my
1790 home state of Delaware wasted no time joining the U.S. Climate
1791 Alliance and I believe it is encouraging to see so many local
1792 governments and communities stepping up to act on climate change.

1793 Local officials are on the front lines of protecting our
1794 communities. But they need that federal support. And I am
1795 concerned that a piecemeal approach may create an uneven playing
1796 field where some communities may take meaningful steps and look
1797 out for their most disadvantaged citizens while others may not.

1798 And, as you know, climate change is already affecting
1799 communities across the United States and those communities will
1800 only intensify over time.

1801 So I would love it if you could talk a little bit, Mr. Hultman
1802 and Ms. Frisch, have you seen any successful examples of local
1803 climate action addressing the unique challenges faced by
1804 disadvantaged communities? And what lessons can be learned at

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1805 the federal level from those case studies, again, examples of
1806 local climate action in disadvantaged communities?

1807 Mr. Hultman. So I will give two quick examples, and I think
1808 Ms. Frisch probably has some others because she has been working
1809 in -- across different kinds of technologies in this space.

1810 But, very briefly, there are two areas that I would look
1811 at and this does tap into our conversation about the simultaneity
1812 of deploying new technology but also doing innovation with, you
1813 know, as necessary.

1814 A third thing that we can imagine as part of that is jobs
1815 and economy, and I think that, for example, there has been a lot
1816 of new work, as we are talking about students and sort of new
1817 training, in looking at, for example, solar and wind installers,
1818 right. Like, that is an area where you can, with some technical
1819 training, you know, people can actually learn the toolkit.

1820 They can take sort of construction skills and apply it and
1821 be able to move forward with a career in this new and exciting
1822 -- new and exciting area.

1823 A second area that is also quite useful, which has often
1824 partnerships across federal, state, and local government is
1825 thinking about efficiency in weatherization and those are things
1826 that save everybody money and are particularly valuable for those

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1827 populations that are lower income.

1828 And also, you know, there is a lot of benefits too in terms
1829 of emissions but primarily they are also helpful to the people
1830 who live in those spaces.

1831 Ms. Blunt Rochester. Thank you.

1832 Ms. Frisch?

1833 Ms. Frisch. Thank you for the question, and two additional
1834 examples are in clean electricity production and clean public
1835 transportation that can significantly reduce air emissions, which
1836 cause all kinds of problems like asthma and can actually reduce
1837 the length of people's lives.

1838 And one of the great things about the subnational action
1839 that you mentioned with city, states, and businesses is that it
1840 is inherently local and those people's voices are coming to the
1841 table and they will talk with their policy makers and make policies
1842 that really work for them in those communities.

1843 And I think what we are learning from that is the lesson
1844 we've always known that it is good to be reminded of -- that it
1845 really is about bringing people together. And for climate action
1846 in the U.S., I mean, let's face it, the way we often do federal
1847 policy the federal government lags behind public opinion and we
1848 are seeing this wave of public opinion about climate ready to

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1849 go and it is crashing on us now.

1850 So we are happy that you and members of the subcommittee
1851 are really taking this seriously.

1852 Ms. Blunt Rochester. Thank you.

1853 Mr. Light, my next question is for you and it is based on
1854 the testimony that you gave. You had a statistic that really
1855 jumped out at me that China is investing ten times more than the
1856 United States in research and development.

1857 Can you talk about the potential consequences of that
1858 discrepancy in funding? I actually lived in China for four years
1859 and I saw it first-hand. So if you could talk a little bit about
1860 that.

1861 Mr. Light. It means that they are going to win the markets
1862 that have been created by the Paris Agreement. I mean, we can
1863 talk about, you know, whether the United States should have moved
1864 forward and the status of our pledge and whether agreement versus
1865 treaty and all that kind of stuff.

1866 And in the meantime, China and the EU, Canada, other
1867 countries, are jumping ahead and grabbing the markets that were
1868 created by the fact the rest of the world is worried about climate
1869 change, they want to do something, and the prices are plummeting
1870 so it actually is affordable for them to move to solar power and

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1871 other things.

1872 Otherwise, the prime minister of India would not be moving
1873 full force into this. If it was too expensive he wouldn't do
1874 it.

1875 Ms. Blunt Rochester. Thank you so much.

1876 I also wanted to ask a question about the impact of the \$600
1877 million going unspent that you talked about in your testimony.
1878 Can you briefly -- ten seconds.

1879 Mr. Light. Sure. You all have allocated -- the last
1880 Congress -- put money into ARPA-E -- into the Bureau of Energy
1881 Efficiency and Research. NRDC has a very interesting analysis
1882 of this that is linked to in my testimony. That money is not
1883 being spent. It is not going forward there and I think that this
1884 is something where oversight from this committee is directly
1885 appropriate to make sure that money goes out the door and it goes
1886 in programs that are not driven by ideology -- that are driven
1887 by where is the place that we can put money in the near term that
1888 is going to get us the biggest bang in terms of something we can
1889 put out there and compete with these other countries that are
1890 already way ahead of us.

1891 Ms. Blunt Rochester. Thank you so much. I yield back.

1892 Mr. Tonko. The gentlelady yields back.

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1893 The chair now recognizes the representative from the state
1894 of New York -- Brooklyn. Yvette Clarke for five minutes.

1895 Ms. Clarke. Thank you very much, Mr. Chairman. Thank you
1896 so much, Mr. Chairman, and I thank our panellists for really
1897 lending your expertise to us today as we grapple with this issue.

1898 I represent Brooklyn, as our chairman introduced me, where
1899 in 2012 we saw the impact of climate change first hand when
1900 Superstorm Sandy devastated my district and, going forward, will
1901 only get worse.

1902 I brought with me a map showing how sea level rise is an
1903 existential threat to New York City. Right there. And I wanted
1904 to talk about the flooded areas on the map are real communities.

1905 We are talking about inundation of homes in communities like
1906 Gerritson Beach and Sheepshead Bay and all of our subway lines,
1907 quite frankly.

1908 As the president claims there is a national emergency on
1909 the southern border, he is ignoring what I believe is a national
1910 emergency in his own back yard and in the absence of federal
1911 leadership, what should cities like mine be doing to increase
1912 our climate resiliency and prepare for the impact of sea level
1913 rise? And I would like to extend that the entire panel.

1914 Ms. Frisch. Thank you for that question, and New York has

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1915 been a leader in working on resilience, particularly after
1916 Superstorm Sandy and making some of the infrastructure, raising
1917 it up so it is above sea level rise in the planning.

1918 And that is a lesson that many communities across the U.S.
1919 are taking is that they need to evaluate what are those
1920 vulnerabilities and make a plan to address those vulnerabilities.

1921

1922 Ms. Clarke. Does anyone else want to answer?

1923 Mr. Hultman. I mean, you know, community resilience is
1924 something everybody wants and I think that is something that is
1925 a point of agreement across a lot of different kinds of communities
1926 and leaders in those communities.

1927 There are steps that can be taken today in a diversity of
1928 kinds of communities and New York, I think I will echo Ms. Frisch's
1929 comment, has been leading in thinking about integrating, for
1930 example, first response with kind of weather understanding and
1931 how to kind of integrate those different ways to think about
1932 near-term action to respond to natural hazards or disasters.

1933 But that also has to be coupled with a longer term planning
1934 process that does involve different kinds of stakeholders in that
1935 -- in those community groups.

1936 And looking at New York's example, looking at other places

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1937 around the country as different places, we talked a lot about
1938 emissions today and responding to climate through emissions.
1939 So I appreciate your comment about thinking of climate as a much
1940 broader set of issues affecting us today.

1941 Those same studies date and business actions that are
1942 happening on emissions we can also see a lot of the same things
1943 happening on resilience, and I think this is a moment where we
1944 can use those experiments, we can use those understandings that
1945 are developing to better inform policy.

1946 Ms. Blunt Rochester. It is an emerging industry that has
1947 to look at climate change holistically and I think that looking
1948 at this from a piecemeal perspective disadvantages us
1949 tremendously. So opponents of climate change legislation argue
1950 that the cost of sort of building out a green economy is simply
1951 too high. But they ignore the cost of inaction.

1952 You talked about raising homes. It is extremely expensive
1953 to have to retrofit old housing stock in order to raise them,
1954 and just to address the whole resiliency issue.

1955 How do we put a price tag on the damage sea level rise will
1956 continue to inflict on communities like mine?

1957 Mr. Light. So I think that the National Climate Assessment
1958 just submitted to Congress this last past fall and I was -- I

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1959 worked on the national climate assessment on the chapter on
1960 mitigation. Look at that. I think the price figures are already
1961 there.

1962 So in the higher -- in the higher scenario -- emission
1963 scenarios you are looking at sea level rise threatening a trillion
1964 dollar of assets both public and private in the United States.

1965 If that is not enough to motivate something to be put into
1966 the next infrastructure bill, which is, we hope, coming down the
1967 pike, I am not exactly sure what is.

1968 And in terms of what New York City needs to do and other
1969 cities like that, I would sort of say investment in natural
1970 infrastructure. We have known this from Superstorm Sandy. We
1971 have known this.

1972 The most effective way and the most cost effective way and
1973 the way that you can actually get lots of jobs created in your
1974 districts is by having people enhance natural infrastructure and
1975 not only just trying to build sea walls which are always going
1976 to be based on difficult propositions in the future.

1977 I think the more that Congress can do to make it possible
1978 for states to form cross-border alliances to achieve those kinds
1979 of things, because sea level rise is not going to respect the
1980 state boundaries, the better you are going to see a good outcome.

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1981 Ms. Clarke. Very well. My time has run out. I have
1982 several other questions but this is to be continued and I thank
1983 you once again for all of your insight and expertise today.

1984 I yield back, Mr. Chairman.

1985 Mr. Tonko. The gentlelady yields back.

1986 The chair now recognizes the gentlelady from Illinois,
1987 Representative Schakowsky, for five minutes.

1988 Ms. Schakowsky. Thank you very much, Mr. Chairman and
1989 panel. I am sorry that I missed most of it. Not all of it, and
1990 I really appreciate all of your participation.

1991 So, first, I want to make a few remarks dealing with
1992 innovation. It seems to me that saying that we should focus on
1993 innovation rather than ambitious federal or international climate
1994 goals is a false choice.

1995 Over the past several decades, we have seen industry claim
1996 time and time again that various federal rules and standards are
1997 overly burdensome, and maybe sometimes that is the case, but that
1998 they will put American companies out of business.

1999 The auto industry told us that, quote, "We just do not have
2000 the technology to comply," end quote, with tail pipe standards,
2001 for example. We heard that requirements for reformulation of
2002 gasoline would result in, quote, "major supply disruptions,"

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2003 unquote.

2004 But these claims were not proven true and, in fact, history
2005 has shown that strong federal regulation and goals actually help
2006 drive further innovation.

2007 The Clean Air Act is a perfect example of that. It used
2008 regulatory standards to drive technology, technological
2009 innovation, and pollution controls.

2010 The act recognizes that usually costs that -- that it usually
2011 costs less to dump pollution for free than to clean it up. So
2012 businesses generally don't control pollution absent
2013 requirements.

2014 Once an air pollution standard is in place, American industry
2015 gets to work and meets the challenge, and along the way we develop
2016 more effective and less expensive pollution control technologies.

2017
2018 Not only is our air cleaner, we also export the technology,
2019 it seems to me, that having to meet certain standards helps us
2020 develop the technologies that we can export around the world.

2021 So not only is our air cleaner, we have seen that happen
2022 over and over again. So I would really like any of you who want
2023 to comment on the balance of regulation and technology, and I
2024 would be interested if anyone on this panel actually believes

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2025 that regulation in and of itself drives down innovation.

2026 And so I would love to hear about that. Anyone, go ahead.

2027 I only have two minutes.

2028 Mr. Hultman. Thank you for the question. I will try to
2029 keep mine brief so if the others want to chime in they are free.

2030 Your comment about not being a choice between deployment
2031 today and innovation I think is absolutely correct. I also agree
2032 that your phrasing of thinking about what policy driving the
2033 deployment of technology is an absolutely essential part which
2034 Mr. Thernstrom even referred to of pulling technologies into the
2035 market and many times we need those -- need that impetus to drive
2036 down or drive the technology deployment which therefore drives
2037 down the technology costs.

2038 And I will want to kind of return to one point that has been
2039 made in a couple of ways. But we have seen -- we are in the middle
2040 of a revolution in energy costs right now -- the costs for solar
2041 and wind and, frankly, other technologies have dropped
2042 precipitously over the last decade. Even in the last seven or
2043 eight years we have seen, you know, solar costs drop by something
2044 like 70-plus percent.

2045 So those costs are dropping and they are dropping not least
2046 because innovation is happening but also that there has been

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2047 deployment across a multitude of states, cities, businesses and,
2048 frankly, other countries.

2049 Ms. Frisch. Thank you for the many participants from
2050 Illinois and we are still a coalition.

2051 So to answer your question, analysis has shown that
2052 technology push plus from the policy pull including the
2053 regulations that you are talking about can actually get us further
2054 than either of the two. So think of one plus one equals three.

2055 You have to have both you only get so far with the technology
2056 push. You have to have the policy pull to move along.

2057 So as far as the federal role, there is really an important
2058 role to make the priority clear so then the market can follow
2059 and get the progress and the benefits that you are talking about.

2060 Ms. Schakowsky. I think, clearly, and predictability is
2061 really important but it seems to me, I know we are talking about
2062 -- oops, we will discuss it later offline.

2063 Ms. Frisch. Would love to.

2064 Ms. Schakowsky. Thank you. I yield back.

2065 Mr. Tonko. I believe Mr. Light had a quick comment to make.

2066 Mr. Light. Very quick. Very concrete example.

2067 The conversation we were just having about 45Q that Mr.
2068 McKinley started was a great example of where -- we have got a

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2069 regulation. The incentive has created through 45Q -- that is
2070 supposed to help the technology like direct air capture go from
2071 this exploratory phase, way too expensive to be deployable to
2072 get something there.

2073 But the price is not there. And so but if you combine the
2074 innovation side on direct air capture with 45Q and then you put
2075 it in a state like California which has got a carbon market, so
2076 you got policy innovation, then you are talking about combined
2077 price that starts to make a technology like that feasible and
2078 profitable.

2079 That is the way they all three work together. The idea that,
2080 you know, we have got to sort of choose one path or another is
2081 just false.

2082 Mr. Tonko. Thank you very much. I believe that concludes
2083 all the members who were choosing to be recognized.

2084 I again thank the panel for their participation today and
2085 enduring the recess that required our absence for votes.

2086 I now ask -- request unanimous consent to enter the following
2087 into the record: a report entitled "Getting to Zero Carbon
2088 Emissions in the Electric Power Sector" by Jesse Jenkins; the
2089 report entitled "Tracking Progress of the 2020 Climate Turning
2090 Point" by the World Resources Institute, the executive summary

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2091 of the report entitled, "Fulfilling America's Pledge: How States,
2092 Cities, and Businesses are Leading the United States to a
2093 Low-Carbon Future" by America's Pledge; the first United States
2094 Nationally Determined Contribution to the Paris Agreement; a
2095 letter from the U.S. Chamber of Commerce; the text of the Paris
2096 Agreement; and President Trump's statement on the
2097 administration's intended withdrawal from the agreement.

2098 And so request unanimous consent there.

2099 Without objection, so ordered. And, again, thank you to
2100 our panel. I remind members that pursuant to committee rules
2101 they have 10 business days by which to submit additional questions
2102 for the record to be answered by the witnesses who have appeared.

2103 I ask each of our witnesses to please respond promptly to
2104 any such questions that you may receive.

2105 And at this time, the subcommittee is adjourned.

2106 [Whereupon, at 12:56 p.m., the committee was adjourned.]

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