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# The Road Ahead After Transformational Climate Legislation

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*With a slim Democratic majority in both chambers, the 117<sup>th</sup> Congress delivered a suite of transformational climate legislation through the Inflation Reduction Act (IRA), the bipartisan CHIPS and Science Act (CHIPS), and the Bipartisan Infrastructure Law (BIL).<sup>1</sup> These laws will require additional administrative efforts and new policy to translate into steel in the ground. Near-term priorities for an equitable green transformation include: effectively implementing the new laws, upgrading and expanding the electric grid, and accelerating building clean energy and climate infrastructure. Fulfilling these priorities will boost American energy security at a time when exposure to volatile fossil fuel prices raises costs and increases stress for everyone, but especially for low- and moderate-income Americans who spend a greater percentage of their income on energy and fuel bills.*

## TRANSFORMATIONAL CLIMATE LEGISLATION

President Biden campaigned on tackling the climate crisis and has delivered on that promise, in many cases, in a bipartisan way. The 117<sup>th</sup> Congress was prepared to be a strong partner for the Biden-Harris Administration because less than a year earlier, under the leadership of

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Speaker Nancy Pelosi and Chair Kathy Castor, the House of Representatives Select Committee on the Climate gathered input from businesses, organized labor, environmental groups, environmental justice leaders, the faith community, and other stakeholders. Based on the input they received, the Committee then released a climate action roadmap for Congress outlining policy recommendations for all sectors of the economy.<sup>2</sup>

During the first few months of the new administration, President Biden issued an Executive Order on tackling the climate crisis, signaling his commitment to a whole-of-government approach.<sup>3</sup> He also signed the American Rescue Plan into law, providing USD 100 million for environmental justice grants.<sup>4</sup> In April 2021, President Biden convened a Leaders Summit on Climate Change and pledged to reduce harmful carbon pollution in the United States by 50 to 52 percent below 2005 levels by 2030.<sup>5</sup> This pledge is consistent with the science; the Intergovernmental Panel on Climate Change (IPCC) concluded that: (1) global greenhouse gas (GHG) pollution must peak by 2025 in order to limit the increase in average global temperatures to 1.5 degrees Celsius with no or limited overshoot to stave off the worst impacts of the climate crisis; and (2) that it is technologically possible to halve global emissions by 2030.<sup>6</sup>

While it will be a challenge, meeting President Biden's pledge is within reach. The climate investments in the BIL and the IRA put the United States on a path to reducing carbon pollution by 40 percent by 2030.<sup>7</sup> CHIPS sometimes receives less focus in this context, but the legislation provided nearly USD 55 billion for semiconductor chip manufacturing; semiconductor chips are increasingly essential components of electric vehicles, building electrification, renewable energy, and electric transmission technologies. CHIPS also authorized important research that will help develop climate solutions, including in cutting-edge clean energy technologies such as nuclear fusion and in technology to measure emissions. Together, these three pieces of transformational climate legislation—the BIL, the IRA, and CHIPS—build on the bipartisan accomplishments in the December 2020 omnibus appropriations bill,<sup>8</sup> which provided authorizations for key climate research priorities; directed measures to reduce methane leaks from pipelines; and established needed energy policy reforms.

These legislative accomplishments, as well as the September 2022 Senate ratification of the Kigali Amendment to the Montreal Protocol, which calls for reducing the potent GHGs known as hydrofluorocarbons (HFCs), put the United States in a stronger position to negotiate for more ambitious climate action from other countries, including China and India. Certainly, increased costs from pandemic-related supply chain challenges

and the war in Ukraine have hindered increased near-term climate ambition for many countries.<sup>9</sup> Long-standing calls for international climate finance for developing countries and for support for loss and damage must also be heeded to help increase global ambition. The agreement reached at COP27 in November 2022 is a welcome step in that regard, but much more is needed.<sup>10</sup> Despite these challenges, the new U.S. laws will send policy signals to the private sector that will help mobilize private capital and deploy clean energy, clean vehicles, and other climate solutions. In the same way that previous energy scenarios and forecasts underestimated technology cost declines from increased deployment, it stands to reason that current forecasts will also underestimate them. In fact, recent research on historical technology learning curves suggests that it is likely that *faster* deployment of clean energy, clean vehicles, and climate solutions will lead to even greater cost savings, making it easier to tackle the climate crisis if the pace of deployment is aggressive.<sup>11</sup>

On the domestic front, more federal policy complemented by climate action from state and local governments and businesses will be required to meet President Biden's 2030 goal, including tackling greenhouse gas (GHG) pollution from buildings, heavy industry, and heavy-duty and off-road transportation.<sup>12</sup> Methane pollution will also need to be addressed, and land sinks will need to be protected.<sup>13</sup> The war in Ukraine underscores the economic benefits of certain climate strategies: energy efficiency and electrification play a critical role in reducing demand for fossil fuels, reducing exposure to volatile fossil fuel prices, and promoting American energy security. The Ukraine crisis also highlights the wastefulness of methane leaks, routine flaring, and venting from U.S. oil and gas infrastructure. Communicating the public health benefits of these climate strategies will be helpful in building continued support for these policies.

## IMPLEMENTATION

### *Appropriations*

Federal agencies need adequate resources to implement the BIL, the IRA, and CHIPS, especially the Department of Transportation (DOT) and the Department of Energy (DOE), which are tasked with setting up many new programs under the BIL.<sup>14</sup> Numerous federal agencies experienced attrition during the Trump Administration, and the Environmental Protection Agency (EPA) in particular is facing a wave of retirements.<sup>15</sup> The 117<sup>th</sup> Congress increased appropriations for key agencies for Fiscal Year

2022, with similar increases possible for Fiscal Year 2023.<sup>16</sup> The EPA will need continued increases in funding to improve enforcement of existing environmental laws, which is a top environmental justice priority. For these reasons, the annual appropriations bills should remain a top focus.

Moreover, much of the climate policy in CHIPS involved authorizations for new climate research, so appropriations for those research initiatives will be required. Historically, there is some degree of bipartisan support for innovation policy, so this could be a promising area to pursue. Continued investments in innovation are needed for climate solutions for heavy industry, such as for the chemicals, refining, iron and steel, and cement industries. The BIL and the IRA provided robust investments for green hydrogen and carbon capture use and storage technologies, which are some of the solutions for the industrial sector. There may be new clean industrial processes that could be developed as well. Industrial sector research will be expensive, and will require federal government funds, because it is beyond the means of the private sector to provide. Innovation in solutions for heavy-duty transportation, aviation, maritime transportation, and carbon removal is also required. These research priorities are the focus of recent global innovation efforts, like Mission Innovation 2.0, the First Movers Coalition, and the Breakthrough Agenda.<sup>17</sup> Many of these hard-to-decarbonize sectors are also sources of conventional air pollution, which disproportionately affect environmental justice communities, so innovation to find cleaner technologies could have manifold benefits.

### *Environmental Justice*

Implementing the major climate investments from the BIL and the IRA to advance environmental justice must also be a priority so that we do not repeat the mistakes of the past when it comes to communities of color.<sup>18</sup> Under his Justice40 initiative, President Biden committed to ensuring that 40 percent of the overall benefits of key federal infrastructure investments flow to disadvantaged communities that are marginalized, underserved, and overburdened by pollution.<sup>19</sup> To help implement this initiative, the Biden-Harris administration created the Climate and Economic Justice Screening Tool, which helps identify disadvantaged communities by census tract according to key environmental and economic indicators.<sup>20</sup> More granular data will be needed to enhance this tool. In many cases, new, more affordable technologies, such as hyperlocal air quality monitoring sensors and data analytics are available but require more federal funding to ensure their deployment at scale.

The 117<sup>th</sup> Congress also demonstrated a commitment to environmental justice in its new laws. The BIL invested USD 21 billion in environmental remediation, the largest investment in addressing legacy pollution ever, including USD 1.5 billion to help communities clean up and reuse brownfields sites; USD 3.5 billion for remedial actions at Superfund sites; nearly USD 11.3 billion for abandoned mines; and USD 4.7 billion to plug orphan oil and gas wells on federal, state, and tribal lands. The BIL also included USD 23 billion for the bipartisan Drinking Water and Wastewater Infrastructure Act of 2021, USD 15 billion for lead service line replacement, and USD 10 billion to address Per- and Polyfluoroalkyl Substances (PFAS).<sup>21</sup>

Building on these accomplishments, the IRA provided historic investments in environmental justice. Some of the largest investments include USD 3 billion for Environmental and Climate Justice Block Grants for community-led projects; USD 4 billion for the Neighborhood Access and Equity Grant Program to reconnect communities divided by highways and reduce negative health impacts from transportation facilities (USD 3 billion from the IRA and USD 1 billion from the BIL); \$5 billion for climate pollution reduction planning and implementation grants; and USD 3 billion to reduce air pollution at ports using zero-emission equipment and technology.

In the Energy Security subtitle, the IRA creatively used the tax code to prioritize environmental justice, with bonus tax incentives for solar and wind energy projects in low-income communities, in low-income residential buildings, and on tribal land; bonus tax incentives to help attract clean energy and manufacturing investments to energy communities that need it the most, including former Brownfields sites; and bonus tax incentives if project developers meet prevailing wage and apprenticeship requirements. The IRA also provided numerous additional investments to address specific air pollution challenges facing environmental justice communities,<sup>22</sup> and dedicated funding to ensure federal agencies can track that the law will be implemented fairly.<sup>23</sup> Finally, the IRA pushed back against special interests and reinstated the Superfund excise tax on oil and gas producers, ensuring that polluters rather than taxpayers will pay to clean up waste.<sup>24</sup>

Many of these historic investments will require quick and effective implementation so that the benefits can reach environmental justice communities. Agencies must be empowered with requisite resources and personnel to issue funding expeditiously. Successful implementation of the IRA will require community engagement at the federal, state, and local levels that is multilingual and accessible for those with limited access to

high-speed internet. Application requirements should be simplified, and agencies should provide technical and financial assistance to help environmental justice communities build the capacity to apply for these grants. Agencies should also explore opportunities to ensure that IRA funds directly reach the cities and communities with the greatest need for these investments.

The Biden-Harris administration is developing guidance and regulations to implement the new laws, as well as GHG standards for power plants and heavy-duty motor vehicles and methane regulations for oil and gas infrastructure. The investments from the BIL and the IRA should help diminish the costs of cleaner alternatives and the costs of compliance with regulations. In doing so, they should facilitate more ambitious regulations. More ambitious climate regulations will better protect environmental justice communities.<sup>25</sup>

Unfortunately, in *West Virginia v. EPA*, the Supreme Court established a new “major questions doctrine” that imposes a constraint on the executive branch and is expected to limit some regulatory options for the Biden-Harris Administration.<sup>26</sup> Specifically, the Supreme Court will closely scrutinize any regulatory strategies that appear to be an exercise of highly consequential powers that Congress should expressly authorize. The administration’s efforts to modernize regulations may well be successful in many cases, as long as it ensures that the administrative record establishes that the regulatory strategy is consistent with prior approaches. Outside advocates will be making the case as well; for example, with respect to the U.S. Securities and Exchange Commission rulemaking on climate-related financial disclosures, experts highlighted that the agency has a history of updating disclosure requirements in response to new conditions and investor needs.<sup>27</sup> Each regulation will need to be defended from this new line of attack.

#### UPGRADING AND EXPANDING THE ELECTRIC GRID

Another top priority is upgrading and expanding the U.S. electric grid to connect affordable and abundant renewable energy to population and manufacturing centers in order to power homes, businesses, vehicles, and certain industrial processes with clean electricity. Older coal- and gas-fired power plants are often located in urban and rural areas near environmental justice communities. Emissions of nitrogen oxides, sulfur dioxide, particulate matter, mercury, and other air pollutants negatively impact the health of local residents and cause physical illnesses, including asthma,

bronchitis, increased emergency department visits and hospital admissions, and premature deaths.<sup>28</sup> In general, these older plants cannot be placed on emergency reserve or closed unless and until new transmission capacity is available to deliver cleaner electricity.

This is now more urgent after the passage of the new laws. The IRA incentivizes renewable energy project development, but the projects need to be able to connect to the electric grid. Otherwise, they will be delayed like far too many projects are today; there are 1,300 gigawatts of wind, solar, and storage projects stuck in interconnection queues, representing 93 percent of the total capacity in the queues.<sup>29</sup> The BIL and the IRA also promote the electrification of vehicles and buildings, which relies on clean electricity in order to maximize climate benefits.

New reforms to accelerate upgrading and expanding the electric grid and moving towards a national macrogrid (a nationally-connected high voltage transmission network) are essential because otherwise, there is no alternative to the current fossil-fuel-based economy. The climate science is clear that our current system is unsustainable – the United Nations Secretary-General referred to a recent IPCC report on the physical impacts of climate change as a “code red for humanity.”<sup>30</sup>

Independent analysis identified a risk of forfeiting much of the climate benefits of the IRA if electricity transmission infrastructure does not expand sufficiently quickly. Specifically, in the absence of upgraded and expanded electric transmission infrastructure, existing gas- and coal-fired power plants could be asked to run more to meet electricity demands from the increased electrification of vehicles and buildings, which would cause negative health outcomes for many communities and limit emissions reductions.<sup>31</sup>

Upgrading and expanding the electric grid is also an indispensable strategy for grid resilience and reliability, especially as the impacts of climate change—ranging from heat waves to drought to extreme weather events—challenge the electric grid. Nearly 250 people died during the February 2021 Texas Freeze, illustrating the critical importance of strong transmission ties between regions. Distributed energy resources (DERs) like rooftop and community solar and backup storage provide important resilience benefits, and they should be viewed as complements, rather than alternatives, to a national macrogrid. The resilience benefits of DERs were evident after Hurricane Ian wreaked havoc in Southwest Florida in September 2022 but left the Babcock Ranch planned community, powered by 150 megawatts of solar energy and built to updated building codes, unscathed.<sup>32</sup> Moreover, DERs like demand response and buildings-to-grid

and vehicles-to-grid technologies can increase the flexibility of the electric grid and consequently facilitate integration of higher levels of renewable energy.

### *Current Transmission Challenges*

The three main challenges for upgrading and expanding the electric grid are planning, funding, and siting transmission lines.<sup>33</sup> The United States is organized into regional markets where power companies and other stakeholders must reach a consensus on building and paying for new transmission lines. The process is lengthy and contentious: stakeholders struggle to prioritize projects that would achieve multiple benefits (as opposed to one primary benefit), and there is no alignment with U.S. climate goals. Proactive planning for transmission lines to connect areas rich in renewable resources to population centers and agreements to broadly allocate the costs would allow more Americans to benefit from low-cost, clean energy. Notably, new transmission lines will bring more low-cost renewable energy online and ease transmission congestion. Moving to a national macrogrid should reduce overall costs for everyone.

The siting of electric transmission infrastructure must generally be approved county-by-county and state-by-state. In contrast, the federal government has the primary authority to site natural gas pipelines. DOE does have the authority to designate National Interest Electric Transmission Corridors, in which the Federal Energy Regulatory Commission (FERC) may approve transmission siting if certain, narrow conditions are met (“backstop siting authority”). This multi-step process is inefficient, however, and was rendered effectively toothless by courts.<sup>34</sup>

As a result, it often takes as long as a decade to build inter-state transmission lines. There have also been high-profile examples of some worthy projects that could not move forward, such as some of the high-voltage direct current (HVDC) transmission lines that Clean Line Energy Partners tried to build in the Midwest to move renewable energy to major markets.<sup>35</sup> All it takes to stymie a transmission project is for one state or local government along the route to oppose it, especially if it is difficult to identify immediate benefits to local communities.

### *Congressional Action on Transmission*

The 117<sup>th</sup> Congress made major investments in transmission in the BIL and the IRA. The BIL provided USD 66 billion for power and grid



infrastructure. It also clarified that the federal government can exercise backstop siting authority if a state denies siting approval for a transmission line within a DOE-designated corridor, and added new factors that DOE may consider in designating corridors, such as whether designation would enhance the ability of energy generation projects to connect to the electric grid, reduce electricity costs for consumers, and improve energy security.<sup>36</sup> Within the USD 66 billion, the BIL established a USD 2.5 billion Transmission Facilitation Program, which is a revolving loan fund that could be used to help finance priority high-voltage transmission lines, and provided USD 3 billion for the Smart Grid Investment Grant program to increase electric grid efficiency, flexibility, and reliability.<sup>37</sup>

The IRA also provided investments to help expand the electric grid, including USD 2 billion in grants and loans for electric transmission facilities in the national interest; USD 760 million for technical assistance and economic development incentives for communities to encourage them to approve inter-state transmission lines; and USD 100 million for inter-regional and offshore wind transmission planning, modeling, and stakeholder engagement.<sup>38</sup>

Despite these legislative accomplishments, additional policies are needed. In terms of planning and paying for transmission, FERC is using its existing authority to improve transmission planning, cost allocation, and interconnection queues.<sup>39</sup> Time is of the essence, however, especially now that Congress has enacted a suite of climate investments, including billions of dollars for electric transmission. Although the United States needs to increase existing transmission capacity by between 200 to 500 percent to meet climate goals, the investment tax credit for transmission from the House-passed Build Back Better Act was not included in the final IRA.<sup>40</sup> This calls for more federal funding to meet transmission expansion targets. Congressional direction on cost allocation and interconnection queues would also be helpful.

Since there are no existing DOE-designated corridors, federal backstop siting authority is currently moot. DOE must conduct a transmission congestion study in 2023 as the first step towards designating a new corridor and actualizing the revamped federal backstop siting authority. It would be faster for Congress to equip the federal government with primary siting authority for priority inter-state high-voltage transmission lines and provide FERC legislative direction to effectively and equitably allocate costs to all beneficiaries.

### *Permitting Bill*

As a condition for his support of the IRA, Senator Joe Manchin of West Virginia developed the Energy Independence and Security Act of 2022, a permitting bill that contained provisions to accelerate fossil fuel infrastructure untethered from U.S. climate commitments and over the objection of the affected communities. The bill also contained provisions to give the federal government primary siting authority for priority interstate transmission electric lines and provisions to authorize broad allocations of the costs among beneficiaries.<sup>41</sup>

The transmission provisions in the permitting bill would have been a positive step forward, but the permitting bill was developed without input from most members of Congress and key stakeholders, including environmental justice communities. Ultimately, when it became clear that there were not enough Senate Republicans who would support the legislation to overcome the filibuster and meet the sixty-vote threshold, Senator Manchin withdrew the permitting bill from the September 2022 government funding bill.

### **ACCELERATING BUILDING CLEAN ENERGY AND CLIMATE INFRASTRUCTURE**

Bipartisan interest in improving the permitting process for energy infrastructure will likely continue. In June 2022, the House Republican Energy, Climate, and Conservation Task Force highlighted “Let America Build” as one of the six elements of their agenda for the 118<sup>th</sup> Congress.<sup>42</sup>

The IRA provided federal agencies with over a billion dollars to conduct environmental reviews and process permits more quickly, but these resources alone will likely not be sufficient to build out clean energy and climate infrastructure at the pace required to meet climate goals, especially while the United States is also ramping up domestic supply chains for climate solutions.<sup>43</sup> The war in Ukraine underscores that protecting American energy security requires increasing the ability to build clean energy infrastructure quickly and securing supply chains for critical minerals in order to reduce dependence on fossil fuels and reduce exposure to volatile fossil fuel prices. From maximizing the use of programmatic environmental reviews to modernizing outdated mining laws, a comprehensive approach is needed.

To be clear, there have been successful examples of executive branch administrative action. Under the leadership of Secretary Ken Salazar, the

U.S. Department of the Interior improved coordination and successfully licensed 10,000 megawatts of wind, solar, and geothermal energy on public lands during President Obama's first term.<sup>44</sup> However, the climate investments in the IRA and the BIL are of a much larger scale than the 2009 Recovery Act, so there is likely a need for a more comprehensive approach to accelerate clean energy and climate infrastructure development on both public and private lands.

To that end, climate action and environmental justice advocates should develop consensus principles for improving permitting for clean energy and climate infrastructure. The path forward could incorporate the principles of House Committee on Natural Resources Chairman Raul Grijalva and the late Representative Donald McEachin's Environmental Justice for All Act (H.R. 2021), which was developed with substantial input from environmental justice communities. This path forward should also respond to the concerns of the clean energy industry, which is running into roadblocks in developing projects. At a high level, it is clear that the United States should prioritize making it easier to build clean energy, clean vehicles, and other climate solutions, as opposed to conventional fossil fuel infrastructure. Project developers should be encouraged to conduct proactive community engagement and find ways to ensure that affected communities benefit from high-quality jobs and other investments. Federal agencies should be directed to conduct proactive tribal consultation to obtain free, prior, and informed consent for projects that may affect their territories. Federal agencies should also use all existing authorities to identify efficiencies in the environmental review and permitting process. All parties must work together to find creative solutions to break through the delays that stall too many crucial clean energy and climate infrastructure projects. In November 2022, the House Sustainable Energy and Environment Coalition released a policy brief outlining many of these principles; it focused primarily on upgrading and expanding the electric grid and increasing community engagement throughout the permitting process.<sup>45</sup>

If Republicans are willing to come to the table on permitting legislation, it would be worthwhile to take the opportunity seriously. Unfortunately, Republicans have not aligned their policy priorities with climate science or environmental justice principles, which makes compromise more difficult. However, a bipartisan compromise will be required to meet the sixty-vote threshold in the Senate to enact legislation to accelerate building clean energy and climate infrastructure.

A larger challenge is that the transition to a clean energy economy will

be rocky, and there will be related geopolitical challenges that the United States will need to consider and respond to.<sup>46</sup> The ongoing war in Ukraine is yet another example of how nations act in their own perceived self-interest, which is sometimes against international norms and consensus. It would be better for everyone if U.S. and world leaders focused on increased diplomacy to resolve conflicts and global collaboration to identify efficiencies through cooperation to lower the costs of the transition to a clean energy economy. Climate action advocates should certainly urge their leaders to do so. Within the United States, climate action advocates must be pragmatic and realistic regarding any bipartisan compromise that could make it easier to build new transmission lines given what is at stake for billions of people around the world and for future generations. Just this year, floods exacerbated by climate change submerged one-third of Pakistan and displaced over a million people in Nigeria, while extreme heat killed tens of thousands in Europe. In this urgent context, every opportunity to accelerate building clean energy and climate infrastructure must be pursued.

There are appropriate political economy concerns about stranded assets and empowering entrenched interests in the fossil fuel industry. It should also be noted, however, that by creating nine million family-sustaining jobs over the next decade across the country in clean energy, clean manufacturing, clean transportation, efficient buildings, environmental justice, and natural infrastructure, the IRA will create new stakeholders who support continued climate action.<sup>47</sup> The climate investments in the BIL and CHIPS will enhance that effect. A broader political coalition will be stronger and more resilient.

Moreover, if permitting roadblocks for clean energy and climate infrastructure development are removed, legacy or conventional fossil fuel infrastructure will be challenged to compete because the economic case for clean energy and clean vehicles is stronger than ever. In 2021, global investment in the energy transition exceeded USD 750 billion, representing a 27 percent increase over the previous year.<sup>48</sup> This trend will be enhanced by the U.S. federal government's climate investments in the BIL, the IRA, and CHIPS, which will mobilize even more private capital. To meet climate goals, annual global investment must triple through 2025 and then double through 2030.<sup>49</sup> In September 2022, the United Nations Net-Zero Asset Owner Alliance of institutional investors who are committed to transitioning their investment portfolios to net-zero GHG emissions by 2050 announced that their membership increased and the total assets under management quadrupled to USD 10.6 trillion since the group was established in 2019.<sup>50</sup> This is just one example of increased private sector investment in climate solutions,

which illustrates that, on a more level playing field, clean energy and climate infrastructure have the potential to win over private capital from legacy or conventional fossil fuel infrastructure. It will be possible to reduce demand for fossil fuels, reduce investments in fossil fuel projects and companies, and hasten the transition to a clean energy economy – but only if the United States can build clean energy and climate infrastructure at a pace the climate crisis requires.

## CONCLUSION

President Biden and the 117<sup>th</sup> Congress delivered a suite of transformational climate legislation, but more action is needed to ensure these new laws translate into tangible results that lower costs, create jobs, and reduce harmful carbon pollution. In addition to ensuring effective implementation of the new laws and protecting the legislation from Republican attempts to roll back or weaken the laws, near-term priorities must include upgrading and expanding the electric grid and accelerating building clean energy and climate infrastructure. To the extent that there is an opportunity to reach a bipartisan compromise to advance these last two objectives, it would be worthwhile to pursue it. *f*

## ENDNOTES

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