

STATE OF NEW YORK  
PUBLIC SERVICE COMMISSION

At a session of the Public Service  
Commission held in the City of  
Albany on January 18, 2024

COMMISSIONERS PRESENT:

Rory M. Christian, Chair  
Diane X. Burman  
James S. Alesi  
John B. Howard  
David J. Valesky  
John B. Maggiore

CASE 20-E-0197 - Proceeding on Motion of the Commission to  
Implement Transmission Planning Pursuant to the  
Accelerated Renewable Energy Growth and  
Community Benefit Act.

ORDER ESTABLISHING PROCEDURES FOR THE ADVANCED TRANSMISSION  
TECHNOLOGIES WORKING GROUP

(Issued and Effective January 19, 2024)

BY THE COMMISSION:

INTRODUCTION

On January 20, 2022, the Public Service Commission  
(Commission) issued the Order on Power Grid Study  
Recommendations, which directed the State's major investor-owned  
electric utilities (Utilities)<sup>1</sup> and Department of Public Service  
Staff (Staff) to establish a working group to evaluate, test,  
and deploy advanced transmission technologies and submit a

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<sup>1</sup> The Utilities include Central Hudson Gas & Electric Corp.;  
Consolidated Edison Company of New York, Inc.; Niagara Mohawk  
Power Corporation d/b/a National Grid; New York State Electric  
& Gas Corporation; Orange & Rockland Utilities, Inc.; and  
Rochester Gas and Electric Corporation.

research plan and progress report on those efforts.<sup>2</sup> The Commission tasked the group with, among other things, vetting advanced transmission technologies and establishing pathways to their deployment in utility capital planning. The Advanced Technology Working Group (ATWG) has come together to serve as this working group and filed a Research and Development Plan in July 2022 (the Plan) and a progress report (Progress Report) in January 2023. The instant order approves the ATWG's proposals, with the modifications and additions described below.

#### BACKGROUND

The Utilities initially proposed creating the ATWG in response to the Commission's May 2020 Order that initiated this proceeding.<sup>3</sup> The Utilities' filing identified several transmission technologies that they recommended for evaluation, proposed establishing a consortium of experts to carry out demonstration projects, and suggested charging the consortium with developing an implementation plan.<sup>4</sup>

In the Power Grid Study Order, the Commission largely accepted the proposals. It directed the Utilities to establish a working group as the forum for "identifying and removing barriers to the deployment of new technologies."<sup>5</sup> It described the group's objective as covering both technology assessment and

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<sup>2</sup> Case 20-E-0197, et al., Order on Power Grid Study Recommendations (issued January 20, 2022) (Power Grid Study Order).

<sup>3</sup> Case 20-E-0197, Order on Transmission Planning Pursuant to the Accelerated Renewable Energy Growth and Community Benefit Act (issued May 14, 2020).

<sup>4</sup> Case 20-E-0197, Utility Transmission and Distribution Investment Working Group Report (filed November 2, 2020), pp. 251-268.

<sup>5</sup> Power Grid Study Order, p. 38.

finding pathways to implementation of technologies that prove to have benefits.<sup>6</sup> The Commission directed the Utilities to (1) draw up a plan for researching and deploying dynamic line ratings, power flow controls, and energy storage for transmission and distribution services; (2) propose a budget for the work, based on existing research and development (R&D) budgets; (3) file the research plan, budget, and deployment recommendations within six months of the date of the order; and (4) file a progress report within one year of that date.

In August 2023, the Commission ruled on the Utilities' CGPP proposal.<sup>7</sup> Among other things, the August order linked the ATWG's technology assessment role to the planning process. The Commission determined that the ATWG "has a critical role to play in identifying advanced technology applications that will help reduce the cost" of new transmission infrastructure developed through the CGPP. While directing the Utilities to consult with the ATWG, the Commission expressed concern that the focus of the ATWG was too narrow. To address this deficiency, the Commission recommended that the ATWG take steps to broaden the range of technologies under review in a time frame that would inform the solutions available to utility planners engaged with the CGPP.<sup>8</sup>

#### THE FILINGS

The Utilities filed a "Research and Development Plan for Advanced Distribution and Transmission Technologies" on

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<sup>6</sup> Ibid.

<sup>7</sup> Order Approving a Coordinated Grid Planning Process (issued August 17, 2023) (CGPP Order).

<sup>8</sup> Id., pp. 24-25.

July 20, 2022 (the Plan).<sup>9</sup> In the Plan, the Utilities describe their approach to R&D and recommend a three-pronged approach to R&D work. The first element comprehends a number of actions necessary to organize what the Utilities call a “sustainable working group.”<sup>10</sup> Rules for membership, member responsibilities, and use of consultants and task forces are specified.<sup>11</sup> The Utilities propose that the group will make decisions by consensus of the membership. The filing provides for the submission of analyses to the Department of Public Service (DPS) that describe areas of consensus and any alternative approaches preferred by member where consensus is not reached but does not suggest a particular role for DPS in such a case.

The second component of the proposed R&D program is identifying and evaluating technologies. The first step in this process is described as “Technology Survey and Screening,” which involves characterizing a technology’s functionalities and the grid services it might support, among other things. Next, the Utilities propose to perform assessments of the most promising technologies identified in the technology scouting step and to compare their costs and benefits against traditional utility solutions. In recognition of the Utilities’ previous filing<sup>12</sup> in this proceeding of a proposal for a Coordinated Grid Planning Process (CGPP), the Plan states that the ATWG would “work

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<sup>9</sup> Case 20-E-0197, Utilities Filing - Research and Development Plan for Advanced Transmission and Distribution Technologies (filed July 20, 2022).

<sup>10</sup> Id., pp. 1-2, 21.

<sup>11</sup> The Plan identifies the members of the ATWG as Staff, New York State Energy Research and Development Authority, each of the Utilities, Long Island Power Authority and/or PSEG Long Island, New York Power Authority, and the New York Independent System Operator, Inc.

<sup>12</sup> CGPP Proposal (filed December 17, 2021).

towards identifying viable [Transmission and Distribution (T&D)] solution sets” to support the new process.<sup>13</sup> In the near term, the Utilities would focus on the three technologies identified in the Power Grid Study Order (i.e., dynamic line ratings, power flow controls, and energy storage).

The January 2023 Progress Report states that the ATWG’s activities in 2022 included providing input on the development of the Utilities’ CGPP proposal and the establishment of a task force on energy storage focused on evaluating potential T&D use cases. Looking ahead to 2023, the ATWG proposed, among other things, to continue assessing the capabilities and possible applications of the three designated technologies and to develop appropriate paradigms for benefit/cost evaluations. The group also proposed to hold a technical conference for interested stakeholders, and to establish a twice-yearly cadence for future stakeholder sessions.<sup>14</sup>

NOTICES OF PROPOSED RULE MAKING

On August 9, 2022, the Secretary to the Commission issued a Notice Soliciting Comments on the Plan. In addition, pursuant to the State Administrative Procedure Act (SAPA) §202(1), Notices of Proposed Rule Making were published in the State Register on August 16, 2023, regarding the Plan [SAPA No. 20-E-0197SP15] and the Progress Report [SAPA No. 20-E-0197SP16].

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<sup>13</sup> Plan, p. 9.

<sup>14</sup> The first technical conference was held on April 27, 2023. In its August 17, 2023 Order in this proceeding, the Commission required the ATWG to hold a second stakeholder session in the first half of 2024 “to report on its technology scouting efforts and to take comments and suggestions from technology developers and other interested stakeholders.” CGPP Order, p. 25.

The time for submission of comments pursuant to these notices expired on October 16, 2023. The comments are summarized and addressed below.

COMMENTS

Transource Energy LLC and Transource New York LLC (together, Transource) submitted joint comments on both the Plan and the subsequent Progress Report. In those comments, Transource states strong support for the Commission's efforts to encourage the adoption of advanced transmission technologies but avers that the Plan's focus on dynamic line ratings, power flow controls, and energy storage is too narrow. Transource asserts that the Plan leaves out proven technologies that are more efficient and cost effective than traditional technologies, such as their transmission line design known as Breakthrough Overhead Line Design (BOLD).

Transource suggests that New York ratepayers would benefit if the planning process included consideration of alternatives that reduce impedance, eliminate the need for series capacitance, reduce line and system losses, and minimize environmental impacts. Transource claims that the BOLD technology meets these criteria and can be deployed at a lower cost due to aspects of its design. On this point, Transource asserts that the BOLD compact tower design reduces the amount of raw materials needed, reduces the need to use heavy equipment in construction, and reduces labor costs due to simplified assembly, features which tend to reduce both project costs and impacts. Transource also argues that the BOLD design is a good "fit" for a system that depends on wind generation because it may eliminate the need for equipment such as series capacitors and costly sub-synchronous resonance compensating devices for wind generators.

Transource warns that failure to consider compact tower designs such as BOLD in the present CGPP cycle would be a missed opportunity to upgrade the grid in a cost-effective and environmentally sensitive way. Thus, Transource urges the Commission to expand the scope of the ATWG to include technologies that share the attributes of BOLD. Transource also states that the ATWG's evaluation process should take into account manufacturing and equipment costs, installed cost, reduction in other equipment needs, reduced line losses, and a technology's effects on utilization of rights of way and the environment.

NY-BEST supports the Commission's effort to foster advanced technology and its recognition of energy storage, stating that cost-effective alternatives to traditional T&D technology should be fully considered in utility planning and implementation. NY-BEST offers several recommendations to improve on the proposed process. First, the Plan should distinguish commercially available technologies from others that may require more study and provide a fast track to deployment for such well-established alternatives. Second, NY-BEST notes the importance of ensuring that advanced technologies are considered on a timeline that facilitates their inclusion in utility investment proposals. Third, the ATWG should be expanded to include industry representatives. Finally, NY-BEST suggests that the ATWG develop a plan for assessing long-term storage.

Multiple Intervenors (MI) asks the Commission to provide for direct consumer participation in the ATWG and to ensure that the group's outreach activities extend to customers. MI also states that advanced technologies should only be deployed where they are demonstrably cost-effective, or where they are beneficial to reliability. MI suggests modifying the

ATWG mission statement to reflect those principles. In addition, MI argues that funding for the ATWG's activities should not involve incremental customer collections, and that the ATWG should seek grants from outside sources.

The New York Solar Energy Industries Association (NYSEIA) states that the Plan should include near term solutions that would create "headroom" on the distribution system for distributed energy resources. These solutions would stay in place temporarily while cost-effective upgrades are being developed and constructed. NYSEIA offers flexible interconnection technology as one such interim solution. In addition, NYSEIA recommends a more transparent and inclusive stakeholder engagement process for the ATWG, modeled on the existing Interconnection Technical Working Group and Interconnection Policy Working Group.

Ecogy Energy (Ecogy), a developer and owner of DER projects, supports the Utilities' proposal to establish the ATWG and to develop an R&D program that will help achieve CLCPA goals. Ecogy believes the three technology areas that are the focus of the Plan should remain a high priority.

#### LEGAL AUTHORITY

The Accelerated Renewables Act directs the Commission and DPS Staff to take action to ensure that renewable energy can be efficiently and cost-effectively injected into the State's transmission and distribution system for delivery to regions of the state where it is needed.<sup>15</sup> The Accelerated Renewables Act further requires the Commission to develop plans that "provide for the timely development of local transmission and

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<sup>15</sup> Accelerated Renewables Act §7(2).



distribution upgrades" by the state's regulated utilities and LIPA.<sup>16</sup>

In addition, the Public Service Law (PSL) provides the Commission with broad authority to direct actions to ensure that energy supplies and transmission resources are adequate to meet demand in a manner that is protective of the environment. In particular, PSL §4(1) expressly imbues the Commission with "all powers necessary or proper to enable [the Commission] to carry out the purposes of [the PSL]" which include, without limitation, the provision of safe and adequate service at just and reasonable rates,<sup>17</sup> environmental stewardship, and the conservation of resources.<sup>18</sup> Further, PSL §5(1) provides that the "jurisdiction, supervision, powers and duties" of the Commission extend to the "manufacture, conveying, transportation, sale or distribution of ... electricity." Under PSL §5(2), the Commission is required to "encourage all persons and corporations subject to its jurisdiction to formulate and carry out long-range programs, individually or cooperatively, for the performance of their public service responsibilities with economy, efficiency, and care for the public safety, the preservation of environmental values and the conservation of natural resources."

In addition, PSL §65(1) grants the Commission authority to ensure that "every electric corporation and every

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<sup>16</sup> Accelerated Renewables Act §7(3).

<sup>17</sup> See Int'l Ry. Co. v. Pub. Serv. Comm'n, 264 A.D. 506, 510 (1942).

<sup>18</sup> PSL §5(2); see also Consolidated Edison Co. of N.Y., Inc. v. Pub. Serv. Comm'n, 47 N.Y.2d 94 (1979) (overturned on other grounds) (describing the broad delegation of authority to the Commission and the Legislature's unqualified recognition of the importance of environmental stewardship and resource conservation in amending the PSL to include §5).

municipality shall furnish and provide such service, instrumentalities and facilities as shall be safe and adequate and, in all respects, just and reasonable." The Commission has further authority under PSL §66(5) to prescribe the "safe, efficient and adequate property, equipment and appliances thereafter to be used, maintained and operated for the security and accommodation of the public" whenever the Commission determines that the utility's existing equipment is "unsafe, inefficient or inadequate." Moreover, PSL §66(2) provides that the Commission shall "examine or investigate the methods employed by ... persons, corporations and municipalities in manufacturing, distributing and supplying ... electricity ... and have power to order such reasonable improvements as will best promote the public interest, preserve the public health and protect those using such ... electricity." The actions taken in this Order fall within the scope of this authority.

#### DISCUSSION

We consider the ATWG process in the context of the State's progress on long-term transmission planning and the necessity of finding cost-effective solutions to transmission needs. We see opportunities to establish the ATWG as an integral component of the CGPP and to ensure productive dialogue among its members and technology developers, now and into the future. With those objectives, we accept the two filings with the modifications discussed below. Some of these modifications relate to near-term activities and others relate to the ATWG process itself.

#### Near-Term Requirements

We agree with Transource that a broader range of technologies should be evaluated to support the CGPP. As of the date of this Order, the first cycle of the planning process is

underway. Data bases have been built, scenarios identified, and system assessment studies are about to begin. Assuming the Utilities' work stays on schedule, we expect the solution review phase to start by January 1, 2025. Thus, while a widely expansive technology scouting and assessment effort may not be possible, we believe there is enough time in the schedule to require the ATWG to look beyond the three designated technologies for other options that might reduce the cost or improve the performance of the solutions developed in this CGPP cycle.

Therefore, we will direct the ATWG to conduct at least one open call for stakeholders to submit advanced technology proposals ahead of the technical conference previously directed in the CGPP Order.<sup>19</sup> This call shall extend only to additional technologies that: (1) are not already under consideration pursuant to the Plan; (2) can demonstrate a track record of deployment in New York or other United States jurisdictions; and (3) for which a reasonable quantum of cost data exist.<sup>20</sup> The ATWG shall specifically invite information about compact tower designs, such as the BOLD technology. The ATWG, upon consultation with Staff, may specify other information requirements and criteria that will facilitate its review of any compliant proposals. The ATWG may invite stakeholders to discuss their technologies at the technical conference. Within

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<sup>19</sup> As suggested in the CGPP Order, the ATWG technical conference is to be held in early 2024 and in coordination with Stage 1 of the CGPP.

<sup>20</sup> We leave to the Utilities to decide where to set this threshold, as they are responsible for presenting cost estimates to the Commission with respect to any CGPP investment proposals. However, we do not mean by this that a proposer must present all of the cost data that would be needed to support an investment proposal at the point of submitting a technology for consideration under this order.

60 days of the conclusion of the conference, the ATWG shall file its initial assessment of the proposals submitted pursuant to this Order and identify any proposals it intends to consider further for potential implementation in the ongoing cycle of CGPP.

Process Modifications

As suggested by some of the comments, the Commission finds that the ATWG process should be modified to enhance its transparency and improve information flow between technology innovators and utilities.

First, we will require the ATWG to amend its process so that future assessments are not limited to dynamic line rating, energy storage, and power flow controls. The ATWG must add technologies to its evaluation portfolio even as work on the original three technologies continues toward deployment recommendations. Thus, using the Plan's three stage diagram, new ideas should be entering the process at Step 1 as other technologies are being considered at Steps 2 and 3. This approach requires the ATWG to build a pipeline of technologies at all phases of evaluation and will maximize the opportunity to deploy potentially cost-effective proposals.

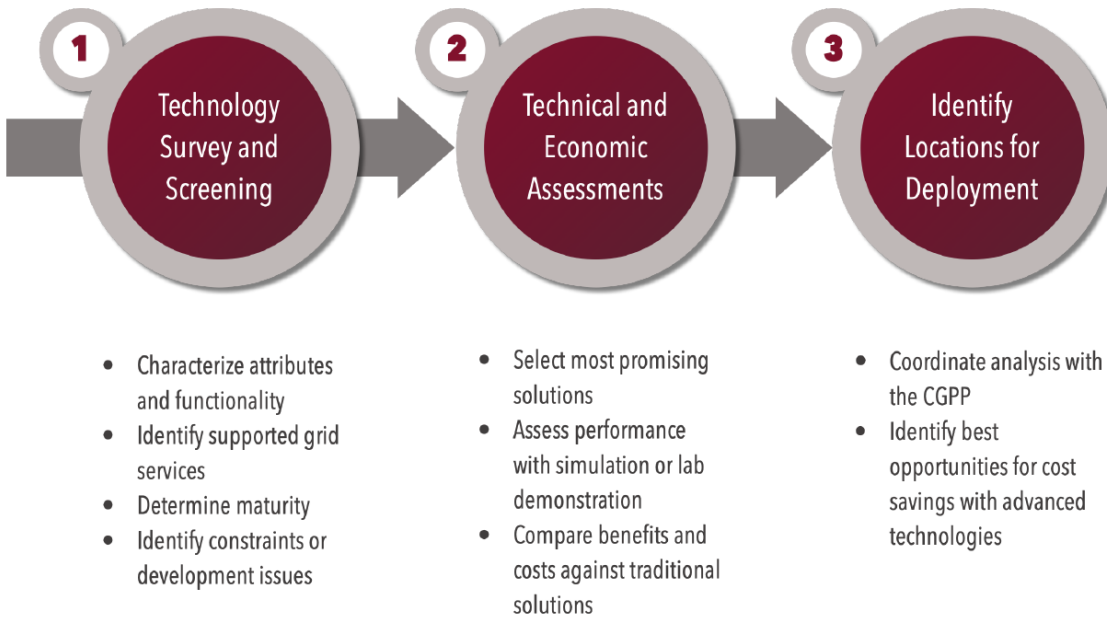


Figure 12, Plan, p. 7.

This “pipeline” approach can be achieved by modifying the ATWG process. First, we will require the ATWG to broaden the technology scouting stage. We find that the survey efforts described in the Plan, which primarily rely on information collected by EPRI, are important but not sufficient. As a supplement, we require the ATWG to offer an opportunity each calendar year for technology developers to submit proposals directly to the group. To inform such future submissions, we direct the ATWG to publish the technology survey screening criteria discussed at Section 2.2.1 of the Plan, and any revisions that may be applied in the future, ahead of the opening date for submissions.

Second, interested technology developers must know ahead of time when each annual technology solicitation will open. To accomplish that, we will require the ATWG to publish an annual calendar for its activities. The first such calendar shall be published by January 31, 2025, in coordination with the annual report as described below, and shall schedule the major ATWG activities described in the Plan for the following year,

including a start date for the commencement of the 2025 technology scouting effort. The ATWG may, in consultation with Staff, also publish information requirements and other guidance for technology proposers in addition to the screening criteria. The ATWG shall consider the proposals submitted into the solicitation as part of the technology screening stage described in the Plan and shall advance those ideas that its members determine merit further assessment, as provided in the Plan. With these changes, the scouting process will re-open every year to new technologies, while proposals selected for review in prior years undergo evaluation in stages 2 and 3.

The success of the program also requires that the results of, and rationales for, the ATWG's conclusions at the end of the evaluation process be available to stakeholders and the public. For this reason, we further direct the ATWG to file an annual report each year summarizing its activities, its current assessment of the technologies that are under review, and the results of pertinent studies. The report shall identify technologies that the ATWG recommends for deployment and describe the status of any advanced technology deployments, by utility. The ATWG shall discuss the annual report and the status of its assessments at one of the quarterly stakeholder engagement meetings proposed in the Plan. Finally, each annual report shall include a budget for the calendar year's work identifying the sources of the anticipated funding.<sup>21</sup> The first such annual report shall be due no later than January 31, 2025, and on each year on January 31 thereafter.

Finally, while this Order sets deadlines for particular deliverables, we are concerned that the ATWG's work

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<sup>21</sup> We agree with MI that the ATWG should actively seek grants to support its work and avoid the need for new customer collections.

be organized to support the next CGPP cycle, as well as future cycles. We direct the ATWG to consult with Staff to enable a workable alignment between the two processes.

Responses to Comments

We agree with MI on the importance of cost-effectiveness as a driver of advanced technology assessment and deployment. We find that it would be appropriate to highlight this factor in the Plan and concur that adding language to the mission statement cited in Section 2 would accomplish this. Thus, we will require the ATWG to revise the second paragraph of Section 2.1.2 to include the language italicized below:

The ATWG aims to identify, discuss, and resolve technical barriers and challenges associated with developing and deploying *cost-effective* advanced technologies on the New York electric T&D systems. ATWG's goal is to ensure that the necessary policies, procedures, and standards exist to address technical, regulatory, and economic concerns.

However, we disagree with the other commenters' suggestion that we conform the ATWG organization to the stakeholder-driven model followed by the existing Interconnection Technical Working Group (ITWG) and Interconnection Policy Working Group (IPWG). Our intention in creating the ATWG is to create a forum that allows the Utilities, who will ultimately be responsible for operating a grid that includes new technologies, to adopt and implement an evaluation process whose results they will fully support in their capital plans and rate cases. We believe direct stakeholder participation is not necessary so long as the ATWG's scouting and evaluation processes are transparent and include defined points of entry for new technologies. The modifications required by this Order address these latter issues.

We also decline to add flexible interconnection technologies to the ATWG "dashboard" at this time. We understand that these have been the subject of discussion at both the ITWG and IPWG, and we will not disrupt those processes here.

#### CONCLUSION

The ATWG's proposed Plan and Progress Report are accepted, with the modifications required by this Order. We direct the ATWG to file a revised version of the Plan reflecting the requirements set forth herein within 30 days of the date of this Order.

#### The Commission orders:

1. The Advanced Technology Working Group shall conduct at least one open call for stakeholders to submit advanced technology proposals ahead of the technical conference, as discussed in the body of this Order.

2. Within 60 days of the conclusion of the conference, the Advanced Technology Working Group shall file its initial assessment of the proposals submitted pursuant to this Order and identify in the assessment any proposals it intends to consider further for potential implementation in the ongoing cycle of CGPP, as discussed in the body of this Order.

3. The Advanced Technology Working Group shall publish the technology survey screening criteria discussed at Section 2.2.1 of the Plan, and any revisions that may be applied in the future, as discussed in the body of this Order.

4. The Advanced Technology Working Group shall publish a calendar of its activities by January 31 of each year, beginning in 2025, as discussed in the body of this Order.



5. As discussed in the body of this Order, the Advanced Technology Working Group shall file an annual report each year on January 31, beginning January 31, 2025, summarizing its activities, its current assessment of the technologies that are under review, and the results of pertinent studies. The report shall include a budget and identify technologies that the Advanced Technology Working Group recommends for deployment and describe the status of any advanced technology deployments, by utility. The Advanced Technology Working Group shall discuss the annual report and the status of its assessments at one of the quarterly stakeholder engagement meetings proposed in the Plan.

6. As discussed in the body of this Order, the Advanced Technology Working Group shall consult with Staff to support alignment between the Coordinated Grid Planning Process and Advanced Technology Working Group processes and regarding information requirements and guidance for technology proposers.

7. As discussed in the body of this Order, we direct the Advanced Technology Working Group to file a revised version of the Plan reflecting the requirements set forth here, including the revision of the second paragraph of Section 2.1.2 identified above, within 30 days of the issuance of this Order.

7. In the Secretary's sole discretion, the deadlines set forth in this Order may be extended. Any request for an extension must be in writing, must include a justification for the extension, and must be filed at least three days prior to the affected deadline.

8. This proceeding is continued.

By the Commission,

(SIGNED)

MICHELLE L. PHILLIPS  
Secretary