

**PUBLIC VERSION**

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF COLORADO**

DOCKET NO. 16A-0588E and DOCKET NO. 18A-0194E

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IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF COLORADO FOR AN ORDER GRANTING A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR DISTRIBUTION GRID ENHANCEMENTS, INCLUDING ADVANCED METERING AND INTEGRATED VOLT-VAR OPTIMIZATION INFRASTRUCTURE

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IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF COLORADO FOR APPROVAL TO ACTIVATE THE HOME AREA NETWORK PURSUANT TO THE DECISION APPROVING THE SETTLEMENT AGREEMENT IN PROCEEDING NO. 16A-0588E

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**MOTION TO REOPEN, JOIN PROCEEDINGS, ESTABLISH A PROCEDURAL SCHEDULE, EXTEND THE DEADLINE FOR FILING RESPONSES, AND FOR AN ORDER PROHIBITING PUBLIC SERVICE COMPANY OF COLORADO FROM TEMPORARILY DEPLOYING CERTAIN ADVANCED METER SOFTWARE APPLICATIONS**

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**PUBLIC VERSION**

**TABLE OF CONTENTS**

I.	INTRODUCTION .....	3
II.	STATEMENT REGARDING CONFERRAL (RULE 1400(a)) .....	3
III.	REQUEST FOR EXTENSION OF TIME TO FILE RESPONSES.....	4
IV.	PROCEDURAL HISTORY.....	4
V.	TECHNOLOGY BACKGROUND INFORMATION.....	10
A.	Protection of ratepayer interests.....	11
B.	Protection of a competitive marketplace .....	13
VI.	REASONS TO REOPEN THE AGIS PROCEEDING.....	16
A.	DI is outside the scope of the AGIS CPCN.....	16
B.	DI capabilities raise public policy questions about fair competition .....	17
C.	The DI App Store could enable Public Service to engage in self-dealing .....	18
D.	DI capabilities are reminiscent of SmartGridCity, which lacked a strategic plan and provided inadequate customer benefits .....	19
E.	Reopening the AGIS proceeding now may lead to lower ratepayer costs.....	20
F.	Reopening the AGIS proceeding enables access to the prior administrative record .....	22
VII.	REASONS TO REOPEN THE HAN PROCEEDING AND JOIN WITH THE AGIS PROCEEDING.....	22
A.	Public Service has unilaterally changed the HAN technology without Commission oversight.....	23
B.	The Commission should examine and exert oversight over public policy questions raised by new HAN technology .....	25
C.	HAN and Distributed Intelligence capabilities are inextricably linked and must be considered together.....	27
VIII.	REQUEST FOR PROCEDURAL SCHEDULE.....	28
IX.	RECOMMENDED SCOPE FOR THE RE-OPENED PROCEEDINGS.....	28
X.	REASONS FOR AN ORDER TEMPORARILY PROHIBITING PUBLIC SERVICE FROM DEPLOYING CERTAIN ADVANCED METER SOFTWARE APPLICATIONS .....	29
XI.	CONCLUSION .....	34

**PUBLIC VERSION**

**I. INTRODUCTION**

Mission:data Coalition, Inc. (“Mission:data”), by and through undersigned counsel, and pursuant to C.R.S. Section 40-5-102, C.R.S. Section 40-5-103, 4 CCR 723-3-3102, 4 CCR 723-3-1033, 4 CCR 723-1-1400 and 4 CCR 723-3-3025 through 3033, respectfully requests the Commission: (1) reopen the Advanced Grid Infrastructure and Security (“AGIS”) proceeding (16A-0588E) due to new technology functionalities in the meter that were not approved within the scope of the AGIS Certificate of Public Convenience and Necessity (“CPCN”); (2) reopen and join the Home Area Network (“HAN”) proceeding (18A-0194E) with the reopened AGIS proceeding (16A-0588E); (3) set a procedural schedule; (4) extend the deadline for filing responses to the instant motion by seven days; and (5) issue an order temporarily prohibiting Public Service from deploying certain advanced meter computer software applications (“apps”) that are not within the scope of the AGIS proceeding’s CPCN, and as grounds therefore states:

**II. STATEMENT REGARDING CONFERRAL (RULE 1400(a))**

Pursuant to Commission Rule 1400(a), Mission:data has conferred with all parties regarding this Motion and is authorized to state for Trial Staff, “Trial Staff supports Mission:data’s motion for reasons it will describe in a responsive pleading”; for the Colorado Office of Consumer Counsel (“OCC”), “The OCC supports the Motion to the extent that the assertions are valid that the Company would have a *de facto* monopoly into unregulated arenas with distributed intelligence capabilities. The OCC agrees with the assertion made in the Motion that the Company’s ratepayers are paying for the meters, the associated technology investments (and indeed the entire AGIS project), and the Company should not be allowed to monopolize the software applications and revenue streams that will flow from any unregulated functions flowing from these technologies”; for Western Resource Advocates (“WRA”), “WRA shares the concerns put forward in the motion, but takes no position on the requested relief at

**PUBLIC VERSION**

this time. It is exploring alternative procedural pathways and intends to file a written response with this proposed approach”; and for Public Service Company of Colorado, “the Company opposes the substance of the motion and is exploring alternative procedural pathways and intends to file a written response with this proposed approach.”

Colorado Solar and Storage Association (“COSSA”) supports the motion.

The following parties take no position: Energy Outreach Colorado; the City of Boulder; Colorado Energy Consumers; and the South Western Energy Efficiency Project.

**III. REQUEST FOR EXTENSION OF TIME TO FILE RESPONSES**

Pursuant to Commission Rule of Practice and Procedure 4 CCR 732-1-1400(b), “...the responding party shall have 14 days after service of the motion, or such lesser or greater time as the Commission may allow, in which to file a response.” Also, pursuant to Commission Rule of Practice and Procedure 4 CCR 732-1-1300, a party may request a variance from a Commission rule. Due to the pending holidays, on behalf of parties that intend to respond, Mission:data respectfully requests an extension of time of seven days for the filing of responses. During discussions involving the conferral request several parties suggested an extension of time for filing responses. While Mission:data explains below the significant public policy reasons for the Commission to proceed promptly, Mission:data fully agrees that the pending major holidays provide sufficient good cause for an extension of time.

**IV. PROCEDURAL HISTORY**

On August 2, 2016, Public Service filed an application seeking a CPCN for the AGIS initiative. The Company sought a CPCN for investments in advanced metering infrastructure (“AMI”), Integrated Volt-VAr Optimization infrastructure (“IVVO”) and related information

**PUBLIC VERSION**

technology (“IT”) and other networking investments, totaling some \$612 million in ratepayer costs.

On May 8, 2017, a Joint Motion to Approve the Unopposed Comprehensive Settlement Agreement was filed by the Company and the parties to 16A-0588E (the “Settling Parties”). The City of Boulder was the sole party not joining and did not oppose the settlement agreement. Attachment A to the Joint Motion was the Unopposed Comprehensive Settlement Agreement (“AGIS Settlement”). On June 21, 2017, the Commission issued Decision No. C17-0556 (“AGIS Order”), approving the AGIS Settlement with clarifications and granting the CPCN.

The AGIS Settlement, approved in the AGIS Order, describes several improvements to the Company’s distribution system: AMI meters that measure and transmit distribution system information (e.g., voltage and current) to more efficiently manage the distribution grid; IVVO using the advanced meters as sensors; and providing certain kinds of energy usage data to customers and customer-authorized third parties.<sup>1</sup> The energy usage data originally described in the Company’s AGIS testimony was 5-minute or 15-minute usage data,<sup>2</sup> to be made available via Green Button Connect My Data (“GBC”) according to the AGIS Settlement;<sup>3</sup> and real-time usage data, approximately every seven (7) seconds, to be made available from the advanced meter via the Home Area Network (“HAN”).<sup>4</sup> Neither the AGIS Settlement nor the Company’s testimony envisioned “Distributed Intelligence” (“DI”) capabilities, further described below, in which advanced meters would have a computer capable of running software applications or

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<sup>1</sup> AGIS Settlement at 4.

<sup>2</sup> (“The consumption of kWh/kW can be recorded by the advanced meter in intervals as short as five or 15 minutes, or longer intervals if desired.”) *Direct Testimony and Attachments of Russell E. Borchardt*. Hearing Exhibit 103. Proceeding 16A-0588E, August 2, 2016 at 1.

<sup>3</sup> Green Button Connect My Data (“GBC”) is a standard for exchanging energy-related information from a utility to a customer-authorized third party.

<sup>4</sup> *Answer Testimony of Michael Murray on behalf of Mission:data Coalition*. Proceeding 16A-0588E, January 25, 2017 at 40:1-4.

**PUBLIC VERSION**

“apps” deployed through an “App Store”<sup>5</sup> that can measure and analyze energy, voltage and current up to thousands of times per second.<sup>6</sup>

Further, the 2017 AGIS Order envisioned continuous monitoring of the AMI deployment by Settling Parties and Trial Staff. The AGIS Order states:

The reporting requirements enhanced by the Settlement Agreement, the recognition that additional metrics may be warranted and the right of stakeholders to request additional metrics via information requests or through litigated proceedings are essential to our decision to approve the AGIS investments. The Commission through its Staff will closely analyze and monitor the semi-annual reporting regarding AMI meter installation, costs, results, and customer education programs to ensure that the project is being properly implemented and that the expected benefits will materialize for ratepayers.<sup>7</sup>

Under the AGIS Settlement, the Company was required to file a subsequent application setting forth an implementation plan for the HAN. The HAN allows customers’ devices such as in-home displays or internet gateways<sup>8</sup> to receive real-time electric usage information broadcast from their smart meter over a radio signal. The AGIS Settlement also required the Company to consider the specifics of the HAN, including “The communication protocols utilized, how they do or do not promote easy data access by customers and energy service providers and why they were chosen.”<sup>9</sup>

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<sup>5</sup> The “App Store” is the terminology of Public Service’s chosen meter vendor, Itron, for its application management software that installs, configures, licenses, monitors and upgrades software applications deployed to “grid edge” devices such as advanced meters. <https://developer.itron.com/content/distributed-intelligence-introduction>

<sup>6</sup> Itron marketing material describes meters producing data “in the 4 kHz range,” or four thousand times per second: <https://www.itron.com/-/media/feature/products/documents/white-paper/the-active-grid-a-case-for-edge-intelligence-on-the-lower-voltage-network.pdf>  
Other Itron marketing material describes measurements at “1 second or better intervals”:  
<https://www.itron.com/-/media/feature/products/documents/brochure/load-disaggregation.pdf>

<sup>7</sup> Decision No. C17-0556, Proceeding No. 16A-0588E. *Decision Granting Joint Motion to Approve Unopposed Comprehensive Settlement Agreement; Approving Settlement Agreement with Clarifications; Granting Application as Modified by the Settlement Agreement; and Granting a Certificate of Public Convenience and Necessity*. Mailed date: July 25, 2017, para 37 at 12.

<sup>8</sup> See, e.g., <https://rainforestautomation.com/rfa-z114-eagle-200-utility/>

<sup>9</sup> AGIS Settlement, Section G(2)(a)(ii).

**PUBLIC VERSION**

On March 30, 2018, the Company detailed its HAN approach in Docket No. 18A-0194E in testimony, which formed the basis of Commission Decision No. R18-0590 (“HAN Order”) approving the uncontested HAN application. Company witness Mr. John D. Lee stated Zigbee Smart Energy Profile 1.1 (“Zigbee SEP 1.1”) was selected as the communication protocol for the HAN radio to serve customer-provided devices.<sup>10</sup> Zigbee SEP 1.1 is much simpler than the wide array of internet communications traffic with which consumers are familiar; it is quite limited, carrying only a few pieces of read-only energy usage data.<sup>11</sup> One of the stated reasons Public Service selected Zigbee SEP 1.1 was to align with the most widely-used communication protocol used by other utilities across the United States and supported by device manufacturers.<sup>12</sup>

On May 31, 2019, the Company filed its CPCN Annual Actuals Report for 2018 in the AGIS Proceeding (16A-0588E). In this filing, the Company provided its first public notice to the Commission that there would be materially changed technology capabilities within the advanced meters and delays in the ordered deployment schedule. The Company stated:

While the Company signed a limited notice to proceed with a meter vendor in 2018, the sourcing process has provided significant and valuable new insights into the evolving AMI marketplace. The Company has identified an alternative deployment plan due to evolving technologies that we will discuss with stakeholders in the AGIS CPCN in the near future. In order to deploy the meter that best matches – and even enhances – the long-term benefits of the AMI program, meter manufacturers need an additional 12 months to complete the development of required configuration for the Company’s consideration.<sup>13</sup>

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<sup>10</sup> *Direct Testimony and Attachments of John D. Lee*. Proceeding No. 18A-0194E. Dated June 29, 2018 at 24:13.

<sup>11</sup> *Direct Testimony of Michael E. Murray on behalf of Mission:data Coalition*. Proceeding 16A-0588E. January 25, 2017 at 44:5-12.

<sup>12</sup> *Direct Testimony and Attachments of John D. Lee*. Proceeding No. 18A-0194E. Dated June 29, 2018 at 25:5-7.

<sup>13</sup> Grid CPCN Annual Actuals Report for 2018. Public Service Company of Colorado. Proceeding No. 16A-0588E, dated May 31, 2019 at 14.

**PUBLIC VERSION**

On September 17, 2019, the Company issued a press release titled “Xcel Energy and Itron collaborate to bring advanced technology to energy industry.” The release stated:

The relationship will help bring **cutting-edge** smart meters to Xcel Energy customers over the next five years and create opportunities for innovative **new software applications, or apps, which will enable customers to transform the way they use energy**...The new apps are expected to be able to **generate real-time energy usage information for homes and businesses**, in order to help customers save electricity and money. The technology will be capable of things like **monitoring the energy efficiency of individual appliances in customers’ homes** and allow for the development of submetering for charging electric vehicles.<sup>14</sup> (emphasis added)

On October 31, 2019, the Company filed the CPCN Annual Forecast Report for 2020 stating that changes to the AGIS Settlement would be necessary.<sup>15</sup> Deployment deadlines within the AGIS Settlement, including HAN and Green Button Connect My Data availability, would be pushed from 2020 to 2021.<sup>16</sup> This delay impacts the customer’s ability to enable third party energy management companies, also known as distributed energy resources (“DER”) firms,<sup>17</sup> to access the customer’s energy usage data, thereby retarding an important benefit of Public Service’s smart meter investment. At the time, the Company affirmed its commitment to abide by the HAN order in Decision No. R18-0590 regarding the communications protocol, Zigbee SEP 1.1.<sup>18</sup> However, the Company mentioned a new technology, “Distributed Intelligence”:

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<sup>14</sup> Xcel Energy press release. September 17, 2019. Available at [https://www.xcelenergy.com/company/media\\_room/news\\_releases/xcel\\_energy\\_and\\_itron\\_collaborate\\_to\\_bring\\_advanced\\_technology\\_to\\_energy\\_industry](https://www.xcelenergy.com/company/media_room/news_releases/xcel_energy_and_itron_collaborate_to_bring_advanced_technology_to_energy_industry)

<sup>15</sup> Grid CPCN Annual Forecast Report for 2020. Public Service Company of Colorado. Proceeding No. 16A-0588E, dated October 31, 2019 at 4 (“In 2020, the Company will begin to plan for the purchase and delivery of AMI meters that will be installed in 2021”), at 8 (Table 2 describes a modified deployment schedule).

<sup>16</sup> *Id.* at 8.

<sup>17</sup> Examples of DER firms include rooftop solar installers who need access to their customers’ energy usage data to size solar and storage systems, and smartphone apps that analyze your energy usage data to identify wasteful plug loads (e.g., <https://corp.hea.com/dr-power>).

<sup>18</sup> Grid CPCN Annual Forecast Report for 2020 at 15.



**PUBLIC VERSION**

In mid to late 2018, Company became aware of new, advanced grid edge computing capabilities, called Distributed Intelligence (“DI”) being planned, developed, and offered by some AMI meter manufacturers. DI capabilities became a major focus for the Company’s AMI meter evaluation due to the potential for advanced customer facing, operational and other future proofing capabilities that DI could offer. As a result, the company solicited new information from a shortlist of suppliers for AMI meters with DI capabilities. An AMI meter contract was signed in August 2019.<sup>19</sup>

Beginning in approximately 2016 and later, Itron, the Company’s selected meter vendor, began offering new, higher technology meters that contain a computer.<sup>20</sup> This computer can run advanced software applications which can be developed by any entity, whether Itron, the Company, or third parties. It is this computer and its ability to run apps, referred to by Itron as DI, that was not contemplated nor approved in the AGIS Order or AGIS Settlement.

On March 22, 2020, the Commission issued Decision No. C20-0170 granting Mission:data and Western Resource Advocates the ability to view, under an extraordinary, highly-confidential protective order, the agreement between Xcel Energy and Itron (the “Itron Contract”).

On July 17, 2020, the Company filed to revise its No. 8 Electric Tariff to implement an Advanced Grid Rider (“AGR”), Proceeding No. 20AL-0301E, in order to recover costs for the AGIS projects, including AMI. The AGR Advice Letter described in greater detail the changes to the AGIS Settlement and changes to the meters that are underway. For example, testimony of the Company confirmed that the Company intends to unilaterally postpone Green Button Connect My Data implementation from 2020 to 2021; modify the HAN communication protocol from Zigbee SEP 1.1 to Wifi, further described below;<sup>21</sup> and introduce DI capabilities not within

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<sup>19</sup> *Id.* at 16.

<sup>20</sup> See, e.g., Itron press release at <https://investors.itron.com/news-releases/news-release-details/avista-selects-itron-transform-energy-network-and-enable-smart>

<sup>21</sup> Hearing Exhibit 105, *Direct Testimony and Attachments of Wendell A. Reimer*. Public Service Company of Colorado. Proceeding No. 20AL-0301E. July 17, 2020 at 30:5-6.

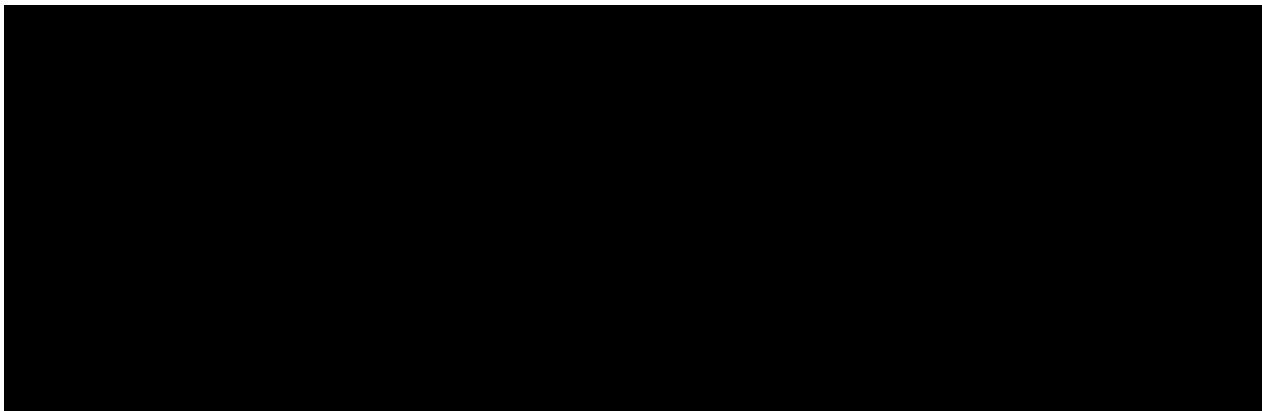
**PUBLIC VERSION**

the scope of the AGIS CPCN (“...this DI capability allows for the installation of applications on the meter -- similar to how applications are installed on a smart phone”).<sup>22</sup> The Office of Consumer Counsel’s Motion to Dismiss the AGR Advice Letter proceeding was granted on October 29, 2020 in Decision No. R20-0754, in which the Administrative Law Judge concluded that the AGR was a collateral attack on the AGIS Settlement because the AGIS Settlement only contemplated cost recovery in a base rate proceeding, not a rider.

To date, the Company has not filed a motion for variance with regard to either the AGIS CPCN Order or the HAN communications protocol decision.

**V. TECHNOLOGY BACKGROUND INFORMATION**

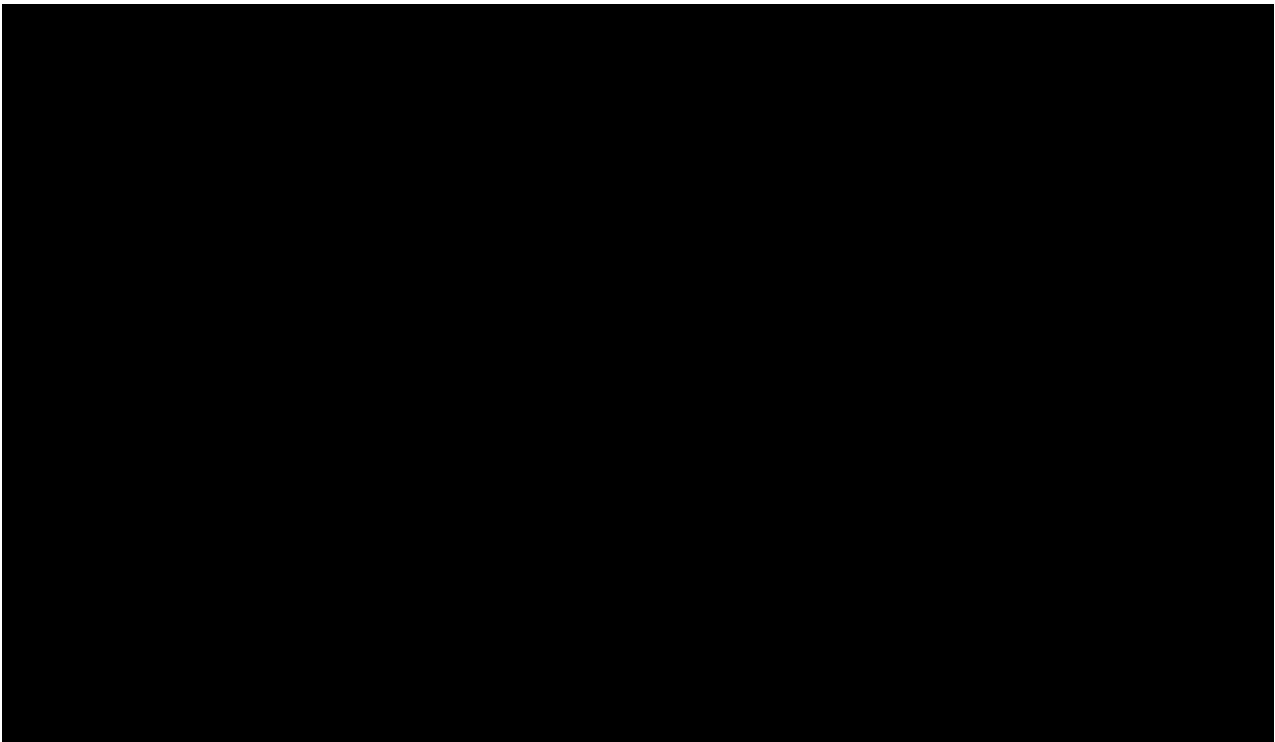
Public policy goals are implicated with these new technologies, such as protecting and realizing consumer benefits, allocating the inherent value of customers’ energy usage data among various stakeholders, and supporting economic and environmental goals. The timing is ripe for the Commission and stakeholders to evaluate the enormous potential of these new technologies and ensure transparency between regulated and unregulated functions.



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<sup>22</sup> Hearing Exhibit 104, *Direct Testimony and Attachments of Chad S. Nickell*. Public Service Company of Colorado. Proceeding No. 20AL-0301E. July 17, 2020 at 37:9-11.





**A. Protection of ratepayer interests**

DI capabilities include significant public policy implications, including ratepayer benefits and risks. For example, benefits include Public Service installing utility-facing apps to diagnose problems such as voltage issues or broken neutral lines, or customers installing their own apps that could provide tailored energy efficiency recommendations to customers based upon highly-detailed analysis of power, voltage and current flows. Example risks include ratepayers funding AMI and DI capabilities and not receiving their full benefit, or substantially limiting customer choices for competitive DER products and services by excluding independent DER providers from using DI capabilities. DER products and services have great potential to promote public-interest benefits, but this potential is squashed if the Commission does not act now to ensure equitable and timely access to the App Store.



<sup>25</sup> See footnote 2 *infra*.

**PUBLIC VERSION**

Itron markets its “App Store” functionality as allowing utilities to deploy apps made by any entity onto AMI meters that “have access to the meter’s data, implement algorithms, and then send the results of these computations to a backend server for further analysis and/or display.”<sup>26</sup> Highly-detailed power, voltage and current information analyzed on the meter is extremely valuable to help customers better understand and manage their monthly bills; the potential for energy efficiency and demand response benefits from DI and highly granular data is quite significant. Itron has announced that it is working with numerous entities of its choosing to develop apps for several purposes, one of which is to algorithmically disaggregate electricity usage measured at the meter thousands of times per second into the usage of individual devices and appliances.<sup>27</sup> Indeed, DI capabilities are perhaps the greatest advancement in the smart metering industry in the past decade.

The ability for customers to select a software app from a competitive DER marketplace, much like through a mobile device’s “app store” today, could enable innovation in energy management, support time-shifting of usage, and significantly enhance the customer experience. These insights into energy usage can be used to target and prequalify customers for efficiency offerings that are specific to their home – for example, customers could be informed if they have a specific brand of window-mounted air conditioner that is aging and particularly inefficient. In the context of time-of-use rates, recommendations generated by algorithms could direct customers toward the simplest measures to reduce their usage by knowing exactly what types of lights, electronics, and appliances are being used during on-peak times. There is great potential for customer bill savings and consumer market value.

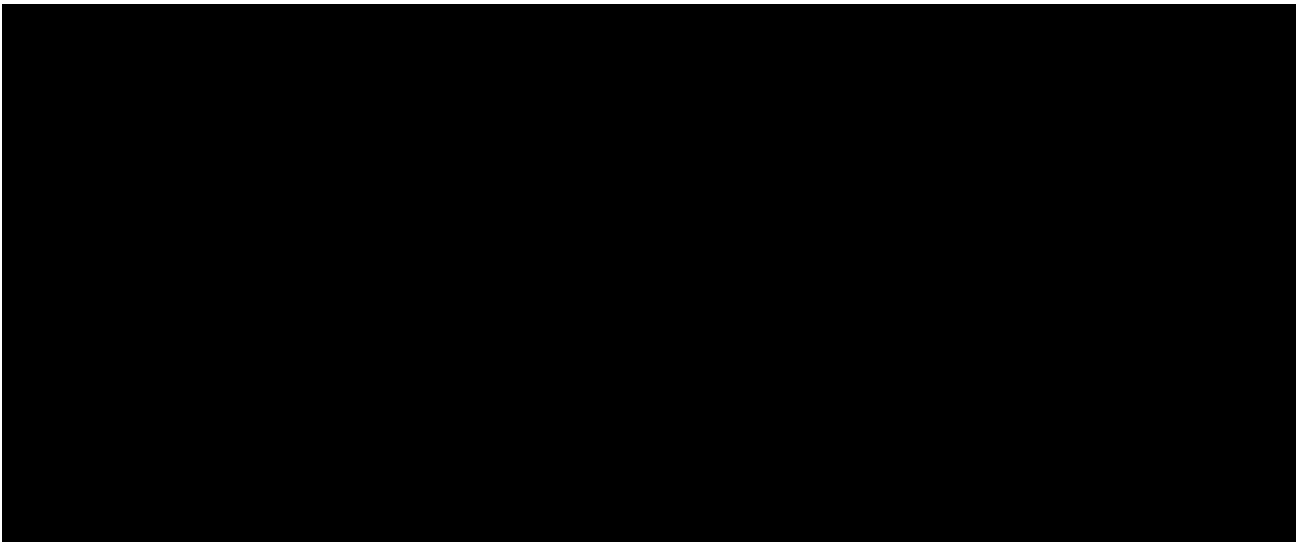
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<sup>26</sup> <https://developer.itron.com/content/distributed-intelligence-introduction>

<sup>27</sup> <https://investors.itron.com/news-releases/news-release-details/itron-and-bidgely-bring-combined-distributed-intelligence-and>

**B. Protection of a competitive marketplace**

There are also significant economic and market benefits and risks. The AGIS Settlement was approved by the Commission in part because customers would be able to have their energy information (at the time, envisioned as 5- or 15-minute usage via GBC or 7-second usage via the HAN) transferred to third parties, consistent with Rule 3027, 4 CCR 723-3.<sup>28</sup> According to the AGIS Order, third parties such as DERs could “enhance the customer experience and provide benefits to both the customer and the distribution system.”<sup>29</sup> Utility customer’s energy usage data at high granularity has great market value, yet to be unlocked.

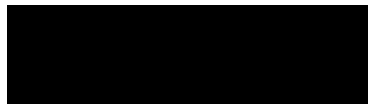


One substantial risk is that DI capabilities allow Public Service to damage innovative DER firms that operate in a competitive market. Many DER firms in Colorado help customers reduce their monthly bills and reduce carbon dioxide emissions, but Public Service could substantially harm DER businesses by denying equitable access to the App Store and exploiting its asymmetric information advantage (in the form of power, voltage and current readings

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<sup>28</sup> Decision C17-0556, para 21, p. 7.

<sup>29</sup> AGIS Order at para 12, p. 38-39.



**PUBLIC VERSION**

measured thousands of times per second) to offer enhanced digital energy products and services that are not regulated but are based upon regulated assets.<sup>32</sup> Third party DER providers, who provide products and services such as rooftop solar, battery storage, behavioral demand response, home energy management systems, and smart consumer devices could have the energy-saving potential of their products and services severely diminished by Public Service retaining exclusive access to the meter-based App Store. Additionally, Public Service has the capability with DI to undercut DER providers by only making available inferior 5-minute or 15-minute usage data while retaining the highly-detailed, kilohertz-level appliance analysis for itself. This means the Company would have a *de facto* monopoly on the most innovative demand-side technologies and services including, for example, itemized utility bills, appliance-specific efficiency recommendations, and alerts and notifications when a customer turns on a specific device during an “on-peak” period. Currently, for DER providers to access the same detailed level of information requires purchase of a device of at least \$299 that must be installed in a residential customer’s electrical panel by a licensed and certified electrician, costing several hundred dollars more.<sup>33</sup> [REDACTED]

[REDACTED] To date, the Company has neither committed to nor described a process by which customer-authorized third parties could develop and load apps on customer meters, saying only that third parties authoring apps for customers to choose is a “potential.”<sup>35</sup>

Even if the App Store were made widely accessible and customers could choose to load an app of their choice onto their meter, an absence of Commission oversight means that Public

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<sup>32</sup> For an example of a similar, unregulated service using meters, Public Service today operates a fee-for-service energy analysis website to its commercial customers that generates unregulated revenues and profits. See Attachment 1 hereto describing “InfoWise.”

<sup>33</sup> See, e.g., <https://sense.com/buy>.

<sup>35</sup> Hearing Exhibit 104, *Direct Testimony and Attachments of Chad S. Nickell*. Proceeding No. 20AL-0301E. July 17, 2020 at 37:3 – 38:3.

**PUBLIC VERSION**

Service would, by virtue of its control over the App Store, have the ability to digitally inspect DER providers' products and customers, gaining competitive knowledge unfairly about how competitive software apps work, what algorithms are being executed, and how customers interact with in-home devices made by third parties. In other sectors of the economy, unregulated app stores, such as Apple's on iOS, have experienced similar information asymmetry in which the app store operator gains tremendous power to surveil the marketplace of apps in an anti-competitive fashion.<sup>36</sup> In light of these experiences with other app stores and strong incentives, the Commission should examine these risks with an eye towards open, fair, non-discriminatory third party access to the DI App Store through public-interest oversight.

Finally, the Commission has previously recognized that smart grid technologies that reach into the customer's home or business deserve attention from the Commission, noting that utilities could easily exceed their monopoly license and enter unregulated markets such as home energy management. The SmartGridCity project from ten years ago has echoes that are highly relevant to today's DI capabilities. In 2011, in a decision upholding the disallowance of some \$16.6 million due to Public Service's lack of a strategic plan for SmartGridCity investments and disappointing consumer benefits, the Commission stated:

We also anticipate that over time the Commission will have to address the boundary between regulated and unregulated activities, particularly as smart meter technologies cause the regulated utility to interact with its customers on the customer's side of the meter.<sup>37</sup>

The Commission foresaw the challenges posed by DI capabilities nearly ten years ago: Similar technological capabilities allow a regulated utility to interact with customers and customers' in-home devices in ways that go beyond the scope of traditional regulation. Now is the time to consider the boundary between regulated and unregulated activities and regulatory,

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<sup>36</sup> *Investigation of Competition in Digital Markets: Majority Staff Report and Recommendations*. United States House of Representatives Subcommittee on Antitrust, Commercial and Administrative Law, 2020. Available at [https://judiciary.house.gov/uploadedfiles/competition\\_in\\_digital\\_markets.pdf](https://judiciary.house.gov/uploadedfiles/competition_in_digital_markets.pdf).

<sup>37</sup> Colorado Public Utilities Commission. Decision No C11-0406, Docket No 101-099EG, para 7, p. 4.

**PUBLIC VERSION**

technological or contractual structures that can support a competitive market for DER services by reopening the AGIS and HAN proceedings (16A-0588E and 18A-0194E). Without Commission oversight in short order, such boundaries will be established unilaterally and perhaps irrevocably by Public Service, and it may be costly, difficult or impossible to change them once the widespread rollout of AMI with unregulated DI capabilities in Colorado has begun.

**VI. REASONS TO REOPEN THE AGIS PROCEEDING**

Given the Company's substantial deviations from the AGIS Settlement, the near-irreversibility of installed smart meters over their 20-year useful life, and a novel technology – DI capabilities – about which the Commission lacks even the most basic information, Mission:data urges the Commission to reopen this proceeding and establish a procedural schedule. The Commission is well-poised to consider ratepayer and market exposure to the new benefits and risks. Good cause exists to reopen the proceeding in order to consider a revision to the AGIS CPCN, or a new CPCN, for the DI capabilities and App Store, as explained below.

**A. DI is outside the scope of the AGIS CPCN**

First, the DI capabilities were not part of the CPCN. DI capabilities were not mentioned in the AGIS proceeding: according to Public Service, the Company only became aware of them in “mid to late 2018,”<sup>38</sup> whereas the AGIS CPCN was granted in 2017. The Company has substantially and unilaterally modified the scope of the technology covered under the AGIS CPCN without providing justification. Although the Commission may be persuaded that DI investments will, with a plan and if adequately regulated, provide net benefits to ratepayers and

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<sup>38</sup> Grid CPCN Project 2019 Actuals Report. Public Service Company of Colorado. Proceeding No. 16A-0588E, dated May 31, 2020 at 17.



**PUBLIC VERSION**

Colorado, the fact is that DI capabilities have not been reviewed or approved by the Commission.

**B. DI capabilities raise public policy questions about fair competition**

Second, DI capabilities raise serious public policy questions about the expansion of Public Service's monopoly into unregulated arenas. Ratepayers are expected to pay for the meters and the associated technology investments. But software apps are not a natural monopoly, and the Company has not demonstrated how to manage the incentives and risks associated with ratepayers funding unregulated functions and revenue streams. Itron markets its DI App Store as a "third party developer environment" that provides an "open ecosystem" for innovators,<sup>39</sup> but the Commission has never been presented with a plan for creating this open ecosystem that addresses the ability of competitive DER providers (i.e., entities other than Xcel Energy or Itron) to offer software that runs on ratepayer-funded meters. Oversight of DI capabilities is an appropriate regulatory role for the Commission, and addressing fair competition is one of the primary objectives to reopening both proceedings.

Furthermore, Itron markets its DI-capable meters as a tool for utilities to prevent fair competition with DERs. Itron states in marketing material that utilities should purchase DI-capable meters in order to remain "relevant" and "in control" of financial transactions involving DERs, thereby mitigating DERs' competitive threat:

Now that consumers own generation on an increasingly large scale and regulatory initiatives are beginning to allow distributed generators to sell power directly to consumers across the distribution grid, the traditional volumetric utility business model is imperiled...If utilities are to survive and thrive amid these disruptive and **competitive challenges**, they will need to turn these challenges into business opportunities and **leverage their "energy incumbency"** and relationships with customers to be the key

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<sup>39</sup> Itron, "Distributed Intelligence Developer Program." Available at <https://www.itron.com/-/media/feature/products/documents/brochure/itron-distributed-intelligence-developer-program-web.pdf>

## **PUBLIC VERSION**

player in an increasingly distributed and transactive grid. **This is another reason why distributed edge intelligence is crucial for utilities.**

Edge intelligence-enabled meters, sensors and other devices on the distribution network can communicate and manage these transactions and power flows in real time, **keeping the utility relevant and in control of their distribution system and the financial transactions that ensue.** As the incumbents, utilities will be the logical choice to perform this function, but only if they are ready to provide the services when required. If they're not ready, other technology vendors such as Google, Nest and the cellular providers will happily step up and fulfill that role.

**Implementation of edge processing capability**, and the business agility it provides to manage these transactions **is their best defense against that outcome.**<sup>40</sup> (emphasis added)

The Commission should decide the boundaries of regulated and unregulated services, and what Public Service's role should be in the home energy management market. The Commission should investigate how to ensure a level playing field moving forward and exert oversight so that DERs can fairly compete in Colorado.

### **C. The DI App Store could enable Public Service to engage in self-dealing**

Third, the DI App Store creates opportunities for the Company to engage in self-dealing. Xcel Energy is an investor in a venture capital fund, Energy Impact Partners ("EIP"). EIP's portfolio includes at least one software company<sup>41</sup> engaged in the development and sale of DI apps.<sup>42</sup> At this time, the Commission is unaware of which apps the Company plans to purchase, install onto meters or list in the App Store, or even whether customers will be able to load apps of their choosing onto their meter. Without Commission oversight, the Company could favor those apps developed by a company it partially owns and would have an incentive to erect

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<sup>40</sup> Emphasis added. See page 3, <https://www.itron.com/-/media/feature/products/documents/white-paper/the-active-grid-a-case-for-edge-intelligence-on-the-lower-voltage-network.pdf>

<sup>41</sup> Sense is listed as an portfolio company: <https://www.energyimpactpartners.com/investments/equity/>

<sup>42</sup> Xcel Energy is listed as a "Nexus Partner": <https://www.energyimpactpartners.com/partners/>

**PUBLIC VERSION**

barriers to competitive apps. Generally, a competitive marketplace for apps offers lower prices and superior products and service.

**D. DI capabilities are reminiscent of SmartGridCity, which lacked a strategic plan and provided inadequate customer benefits**

Fourth, the Company's vague communications about making DI capabilities valuable to customers is strongly reminiscent of the SmartGridCity ("SGC") CPCN. One of the lessons learned from SGC is that utilities should not be permitted to make large, high-technology investments without a well-grounded plan for how to diligently deliver the full potential value to ratepayers. In 2011, the Commission disallowed \$16.6 million in cost recovery for "smart grid" investments, including an early version of advanced meters, in the City of Boulder because the Company had not provided a credible and detailed plan for bringing benefits to ratepayers from customer-facing technologies, including in-home devices. In directing the Company to "articulate and defend a strategic plan for the use of SGC investment," the Commission reflected on the reasons for its cost disallowance, stating:

The Commission was of the opinion that SGC was still in the development stage and that Public Service, up to that point, had not fully evaluated the capabilities of SGC. The Commission was not assured that those capabilities would likely be realized and expressed concern whether SGC would become an integral part of the distribution system on a going-forward basis....Additionally, the Commission found a lack of detail regarding the planned use of the project going forward....<sup>43</sup>

To date, the only exposition about DI capabilities provided by the Company to the Commission is a few paragraphs in direct testimony filed in the AGR proceeding. The Company has described five "potential use cases" in brief phrases only, including "energy usage control

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<sup>43</sup> Colorado Public Utilities Commission. Decision No. R13-0096, Docket No. 11A-1001E. January 17, 2013 at para 25-26, p. 8-9.

**PUBLIC VERSION**

and savings” and “smarter controls to better manage and integrate different systems.”<sup>44</sup> With regulatory oversight, a vibrant competitive market for software apps could create customer value and bill savings. It is likely a competitive marketplace (assuming non-discriminatory DER access to the App Store) would generate many more consumer-friendly use cases. Furthermore, additional economic and environmental policy goals could be achieved in Colorado with a competitive marketplace for apps.

**E. Reopening the AGIS proceeding now may lead to lower ratepayer costs**

Fifth is the issue of timing. By reopening the AGIS proceeding and examining DI capabilities now as opposed to later, the Commission can reduce risk, enhance benefits and help ensure lower costs for ratepayers. If the Commission decides to exert oversight over DI capabilities, and Public Service subsequently makes compliance modifications to its DI plans as a result of Commission oversight, modifications to IT systems will likely come at a much higher cost if Public Service has already completed the build-out of significant new IT functions. Public Service has an impressive slate of new IT systems planned for 2021, including new meter reading and billing systems, integration with outage management systems, integration with customer care systems, new over-the-air firmware update systems, implementation of a “meter data lake” to support analytics, and many other IT investments.<sup>45</sup> It could enhance the value of the over \$600 million AGIS and HAN investment if the IT systems are designed to maximize the value of energy data for customers and accomplish non-discriminatory access to the App Store. If public policy considerations are not carefully integrated into IT system design at the beginning, ratepayers may pay unnecessary and higher costs for later corrections. Such higher costs could

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<sup>44</sup> Hearing Exhibit 104, *Direct Testimony and Attachments of Chad S. Nickell*. Public Service Company of Colorado. Proceeding No. 20AL-0301E. July 17, 2020 at 37:23 - 38:2.

<sup>45</sup> AGIS CPCN Annual Forecast Report for 2021. Public Service Company of Colorado. Proceeding No. 16A-0588E, October 30, 2020 at 16-17.

**PUBLIC VERSION**

destroy innovation and erect various technical barriers to the deployment of third party software apps. Acting now may increase the Commission's flexibility and reduce risk before the Company's IT systems have been fully built.

The Colorado Commission has the opportunity to learn from experiences in other jurisdictions. These experiences illustrate that ratepayers may be burdened with significant and unnecessary IT costs related to making full use of DI capabilities if the Commission does not act soon. Many utility IT projects involve expensive and unnecessary "change requests," because the requirements were not adequately defined up front in the meter vendor contract and in IT system design. In California, despite approval of Pacific Gas & Electric's ("PG&E") smart metering deployment that promised the capability of "over-the-air" firmware upgrades, it was necessary to charge customers \$41.90 *per meter* in "meter reprogramming" fees in order to accommodate a fairly mundane change from 60-minute intervals to 15-minute intervals as was required for residential customer demand response participation in California's wholesale market.<sup>46</sup> Whether caused by vendor lock-in, poor contract administration, lack of planning or other reasons, PG&E's initial claims of "future-proof" infrastructure and seamless upgrades ultimately evaporated, with disastrous impacts on residential demand response in California that cost ratepayers millions of dollars in unnecessary expenses to resolve.

By reopening the proceedings and with careful stakeholder review, Colorado has the opportunity to avoid such costly mistakes. Concerns about vendor lock-in and the ability to make windfall profits from ratepayers as a result of "change requests" demonstrate the need for the Commission to quickly re-open the AGIS proceeding.

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<sup>46</sup> *Decision Addressing Budgets for Real-Time and Ancillary Services During the Initial Implementation Step of Third-Party Demand Response Direct Participation*. California Public Utilities Commission, Decision D.16-03-008 (March 17, 2016) at 7. Available at <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M159/K632/159632605.PDF>.

**PUBLIC VERSION**

**F. Reopening the AGIS proceeding enables access to the prior administrative record**

Finally, reopening the AGIS proceeding will also offer the Commission the added procedural benefit of allowing parties and the Commission access to the prior administrative record in the proceeding. This will permit the Commission and parties to access information and evidence regarding the technological capabilities of the metering infrastructure proposed in that case, as compared to the metering infrastructure that has now been acquired. Re-opening the AGIS proceeding would thus be administratively efficient because of the existing, extensive record.

**VII. REASONS TO REOPEN THE HAN PROCEEDING AND JOIN WITH THE AGIS PROCEEDING**

The Commission should join the Home Area Network proceeding, 18A-0194E, with the AGIS Proceeding, 16A-0588E for the following reasons: (i) Public Service has unilaterally chosen a new, non-Commission-approved HAN technology, and is moving forward with AMI meters that incorporate the non-approved technology; (ii) there are significant interrelated public policy questions about the new HAN technology that could be simultaneously addressed in an administratively efficient manner with AGIS discovery and testimony, such as: whether Public Service should be able use their software apps to control customer devices; whether the new HAN technology is widely used and supported by a sufficient number of hardware and software makers to benefit customers; and whether the process for customer activation of the new HAN technology meets the objectives of the AGIS Order to provide customers with easy-to-use options for managing energy use; and (iii) HAN and DI capabilities are technologically and inextricably linked, meaning that it would be impractical and inefficient to consider the HAN separately from the AGIS CPCN.

**PUBLIC VERSION**

**A. Public Service has unilaterally changed the HAN technology without Commission oversight**

Under the AGIS Settlement, the Company was required to “select and install meters that incorporate the HAN hardware, which is a software-defined radio in the AMI meter, as part of this CPCN.”<sup>47</sup> The Company also agreed:

- “In a separate HAN Application, the Company will present a plan to activate the HAN in a manner that meets cybersecurity concerns *consistent with industry standards and best practices at the time*, while striving to provide easy data access to the extent prudent” (emphasis added).<sup>48</sup>
- The HAN Application shall also include...The communications protocols to be utilized, *how they do or do not promote easy data access by customers and energy service providers and why they were chosen*” (emphasis added);<sup>49</sup>
- “Within the customer portion of the Application, the Company shall consider and present information regarding the Company’s position and recommendation on a customer’s ability to (1) provision their own device to interact with the HAN on the Company’s web portal in as few steps as possible, and (2) “bring your own device” (“BYOD”), in which any customer with an AMI meter after AMI implementation with FAN connectivity may connect any device of their choice so long as it is standards compliant.”<sup>50</sup>

In its HAN application, 18A-0194E, Public Service chose Zigbee SEP 1.1 as the communications protocol. Zigbee SEP 1.1 is a low-power, short-distance wireless communications protocol developed to transmit real-time electric usage information from advanced meters to in-premise devices. Zigbee SEP 1.1 is a relatively simple communications method. According to intervenor testimony in 16A-0588E, “[Zigbee] SEP 1.1 supports only the single purpose of conveying energy usage and related information”<sup>51</sup> – in other words, Zigbee SEP 1.1 can only be used for “read-only” functions, not device control. Using Zigbee SEP 1.1, customers can read their real-time electric usage via an in-home display or – and this is more

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<sup>47</sup> AGIS Settlement, Section G(1)(a).

<sup>48</sup> *Id.* at

<sup>49</sup> *Id.* at G(2)(a)(ii).

<sup>50</sup> *Id.* at G(2)(a)(viii).

<sup>51</sup> *Answer Testimony of Michael Murray for the Mission:data Coalition*. Proceeding No. 16A-0588E. January 25, 2017 at 44:11-20.

**PUBLIC VERSION**

common – they could install a device that sends real-time usage information to a cloud-based, DER service using the customer’s internet connection. Public Service stated that the majority of the HAN technology currently on the market utilizes the Zigbee SEP 1.1 standard, which was released in 2006.<sup>52</sup> According to intervenor testimony in 16A-0588E, in 2016 Zigbee SEP 1.1 was used in at least 23.4 million electric meters across the U.S.<sup>53</sup>

However, in the 2019 Grid CPCN Actuals Report in 16A-0588E, the Company provided its first public indication that it was **not** installing AMI meters with a Zigbee SEP 1.1 HAN.<sup>54</sup> Without seeking a variance from the HAN Order in 18A-0194E, Public Service revealed that it had selected AMI meters with a Wifi HAN. A Wifi HAN is different from the Zigbee SEP 1.1 HAN because Wifi supports a broad range of communications traffic, including, but not limited to, the ability of the utility to control devices inside the home or premise via the AMI meter – a substantial change from Zigbee SEP 1.1.

Public Service provided further explanation of its change in direct testimony in the AGR proceeding. According to Public Service, the AMI meters it is moving forward with installing will **not** support Zigbee SEP 1.1 (“...the new Itron AMI meters that the Company plans to deploy will support HAN capabilities via Wifi *and will not support previous generation [sic] of Smart Energy Profile 1.1 standards, nor contain a Zigbee radio as anticipated in the HAN proceeding*”; emphasis added).<sup>55</sup> This comes despite the AGIS Settlement calling for a “software-defined

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<sup>52</sup> Hearing Exhibit 100, *Amended Direct Testimony and Attachments of John D. Lee*. Public Service Company of Colorado. Proceeding No. 18A-0194E. June 29, 2018 at 24:17-20.

<sup>53</sup> *Answer Testimony of Michael Murray for the Mission:data Coalition*. Proceeding No. 16A-0588E. January 25, 2017 at 46:10-12.

<sup>54</sup> Grid CPCN Project 2019 Actuals Report. Public Service Company of Colorado. Proceeding No. 16A-0588E, dated May 31, 2020 at 17.

<sup>55</sup> Hearing Exhibit 105, *Direct Testimony and Attachments of Wendell A. Reimer*. Proceeding No 20AL-0301E. July 17, 2020 at 31:20-22.



**PUBLIC VERSION**

radio” for the HAN that “may be updated remotely without hardware replacement.”<sup>56</sup> The Company testified in 18A-0194E that the AMI meters could be upgraded from Zigbee SEP 1.1 to Wifi/IEEE 2030.5 using an over-the-air upgrade,<sup>57</sup> but it is now evident that the reverse is not true. The Commission has not had the opportunity to review the pros and cons of the Wifi HAN as the Company made its procurement decision contrary to the Commission’s order in 18A-0194E.

**B. The Commission should examine and exert oversight over public policy questions raised by new HAN technology**

There are significant questions about the new HAN technology that should be addressed through discovery and testimony. Whereas Proceeding Nos. 16A-0588E and 18A-0194E provided substantial opportunity for intervenors and the Commission to understand the implications of Zigbee SEP 1.1 technology, such opportunities have not been afforded with regard to the Wifi HAN and IEEE 2030.5, the new protocols selected by the Company to transmit usage data as well as to conduct control functions on devices inside the home.

Rather than being merely a communications protocol substitution, the functions of the Wifi HAN using IEEE 2030.5 are dramatically different from the Zigbee SEP 1.1 HAN. Whereas a Zigbee SEP 1.1 HAN merely provides the customer’s devices with one-way broadcasts of energy usage, a Wifi HAN can support two-way communication. For example, in-home devices such as electric vehicle chargers or smart thermostats can report back to the utility with their operational status, and the utility can schedule when these devices will consume load. The control capabilities of a Wifi HAN raise significant public policy questions – including, but not limited to, how the Wifi HAN is different from the approach taken for the SmartGridCity project, whether customers will feel comfortable with the utility having access to their home Wifi network,

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<sup>56</sup> AGIS Settlement at Section G(1)(b).

<sup>57</sup> Hearing Exhibit 100, *Amended Direct Testimony and Attachments of John D. Lee*. Public Service Company of Colorado. Proceeding 18A-0194E. June 29, 2018 at 25:21 – 26:2.

**PUBLIC VERSION**

which entities should be able to control devices, should customers be given the opportunity to choose who controls their devices, and what relationship customers or aggregators of controlled devices should have with the utility. These questions can be explored more effectively by joining both proceedings.

In addition, the Company's choice of a Wifi HAN should be interrogated from a customer perspective. A large reason why the Company originally selected the Zigbee SEP 1.1 HAN was that it was "the most widely available from electric meter and HAN device manufacturers in the utility marketplace today,"<sup>58</sup> giving customers a large array of potential devices to choose from. While Wifi is common, IEEE 2030.5 is not nearly as widespread. According to intervenor testimony in 2017 in 16A-0588E, IEEE 2030.5 is unusual and not consistent with technologies used by comparable utilities across the country, because no other utility has implemented IEEE 2030.5 in the smart meter.<sup>59</sup> Just because a customer's device such as a smart thermostat supports Wifi doesn't mean it can interact with the Wifi HAN; the smart thermostat *must also* support IEEE 2030.5 in order to acquire real-time usage data. Whether the Company's new HAN technology is widely used and supported by a sufficient number of software and device makers to benefit customers is an open question that should be examined by the Commission.

Moreover, the Wifi HAN raises simple questions which have not yet been answered by Public Service. For example, what is the process by which a customer connects a device to their meter to get real-time usage data? Whereas the Zigbee SEP 1.1 HAN has a well-defined and straightforward device connection process used by many utilities across the country, IEEE 2030.5 by itself does not specify **how** device authentication and authorization are supposed to work; it is the Company's responsibility to outline this process. An easy-to-use customer

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<sup>58</sup> Hearing Exhibit 100, *Amended Direct Testimony and Attachments of John D. Lee*. Public Service Company of Colorado. Proceeding 18A-0194E. June 29, 2018 at 25:5-7.

<sup>59</sup> *Id.* at 43:3-5.

**PUBLIC VERSION**

experience in connecting devices of their choice was of particular importance to the parties to the AGIS Settlement, who argued that a poor customer experience would lead to significantly reduced utilization and reduced energy savings.<sup>60</sup> Section G(2) of the AGIS Settlement was devoted to the customer experience for this reason. To date, no customer process for utilizing the Wifi/IEEE 2030.5 HAN has been submitted by the Company for Commission approval. Commission protection and oversight would be particularly valuable during a formal process examining these questions.

**C. HAN and Distributed Intelligence capabilities are inextricably linked and must be considered together**

Proceeding No. 18A-0194E should be joined for the simple reason that HAN and DI capabilities are inextricably linked, and it would be inefficient and difficult to discuss one without the other. Based on information and belief, the Wifi HAN capability from Itron is offered through a software app installed onto an AMI meter; in other words, there is no way to provide the Wifi HAN capability with the Itron meters selected by Public Service **except** by deploying an app. The software app contains a module that “speaks” IEEE 2030.5 and interfaces with the AMI meter’s metrology and Wifi radio.<sup>61</sup> While the Commission considers the issues raised regarding DI capabilities, it should consider the Wifi HAN app within the same context. It would be wasteful of intervenors’ and the Commission’s time to have two separate, overlapping proceedings involving the AMI meters’ App Store. HAN and DI capabilities should be considered together to make the best use of intervenors’ and the Commission’s resources.

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<sup>60</sup> See, e.g., *Answer Testimony of Michael Murray on behalf of Mission:data Coalition*. Proceeding 16A-0588E, January 25, 2017 at 37:5-10.

<sup>61</sup> Of course, it is possible that third parties could develop their own HAN apps for customers that provide different or improved capabilities than what Public Service has envisioned.

**PUBLIC VERSION**

**VIII. REQUEST FOR PROCEDURAL SCHEDULE**

Discovery and testimony are necessary to bring critical facts about the Company's plans to light and establish easy competitor access to the App Store and appropriate regulatory treatment of DI. As explained, re-opening both proceedings is fundamentally necessary for appropriate Commission oversight of the DI computing capabilities of the AMI meters. The reopened AGIS CPCN proceeding should consider whether a new or modified CPCN is required. The reopened HAN proceeding should consider whether a new application, amended application, or variance is appropriate. Establishing a procedural schedule for the joined proceedings will allow the Commission to exercise its authority, incorporating the interests of stakeholders with appropriate due process. Moreover, allowing formal discovery to proceed forthwith is necessary for all stakeholders to evaluate the DI capabilities and public policy implications. The Commission should establish a procedural schedule requiring, at a minimum, the filing of additional, supplementary direct testimony from the Company, and the opportunity for responsive testimony from intervenors. A hearing is also requested. These procedural requirements will ensure the Commission is well-informed and positioned to exercise its regulatory authority wisely.

**IX. RECOMMENDED SCOPE FOR THE RE-OPENED PROCEEDINGS**

Mission: data requests that the Commission establish the following scope in this re-opened proceeding:

1. Whether the AGIS CPCN should be modified, or a new CPCN required;
2. Whether and how to establish easy-to-use, fair, reasonable and non-discriminatory access to, and use of, the DI App Store by customers and competitive third parties, thus providing the greatest benefits to ratepayers, DER providers, and Colorado;

**PUBLIC VERSION**

3. Consider modifications to the HAN application, 18A-0194E, as a result of the Company's selection of a different HAN technology;
4. Ensure that AGIS investments support fair competition for customer energy management with customer-authorized third parties by addressing relevant topics noted in the U.S. Congress House of Representatives Anti-Trust Subcommittee report<sup>62</sup> pertaining to app store operators including, but not limited to, information asymmetry and potential anti-competitive conduct; and
5. Establish appropriate treatment of DI costs and revenues.

**X. REASONS FOR AN ORDER TEMPORARILY PROHIBITING PUBLIC SERVICE FROM DEPLOYING CERTAIN ADVANCED METER SOFTWARE APPLICATIONS**

Finally, Mission:data respectfully requests the Commission issue an order temporarily prohibiting Public Service from deploying certain non-CPCN software apps, as defined below, on AMI meters due to the risk of irreparable anti-competitive harm to third party DER providers, and to enhance and protect other public policy interests. Such an order should remain in effect until a subsequent Commission order is issued in the combined proceedings (16A-0588E and 18A-0194E) that establishes adequate consumer and economic protections against anti-competitive activity. We explain below the types of apps that should be included in the Commission's prohibition and what is meant by "deploy." Mission:data respectfully requests a Commission order containing a temporary prohibition because the risks of issuing such an order are relatively low, while the costs to third party DER providers of not instituting such a prohibition are high. Such a prohibition would ensure that the Commission has sufficient time to

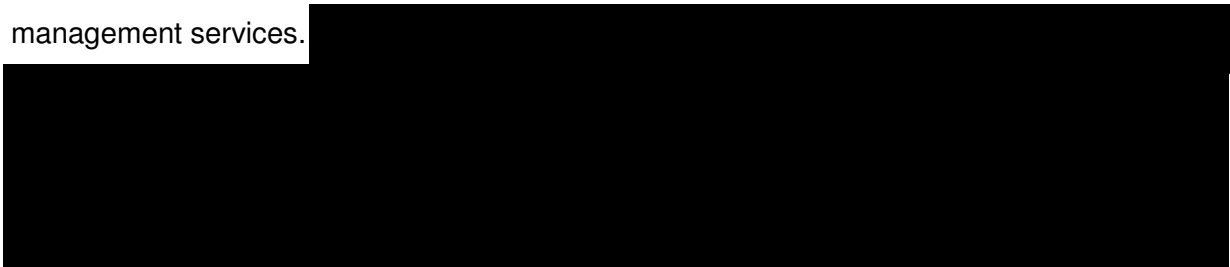
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<sup>62</sup> *Investigation of Competition in Digital Markets: Majority Staff Report and Recommendations*. United States House of Representatives Subcommittee on Antitrust, Commercial and Administrative Law, 2020. Available at [https://judiciary.house.gov/uploadedfiles/competition\\_in\\_digital\\_markets.pdf](https://judiciary.house.gov/uploadedfiles/competition_in_digital_markets.pdf).

**PUBLIC VERSION**

holistically examine the boundaries of regulated and unregulated services prior to the release of this novel technology.

The types of apps that should be included in a temporary prohibition are apps that perform functions (i) not described within the AGIS CPCN and (ii) not directly related to distribution grid operational functions involving safety, IVVO or preventing theft. The components of the AGIS CPCN include: (a) IVVO, in which voltage measurements taken by AMI meters will optimize the distribution system's voltage;<sup>63</sup> (b) the communications network known as the Field Area Network ("FAN"); and (c) AMI. While AMI meters "are utilized for more than measurement of a customer's consumption for billing purposes,"<sup>64</sup> nowhere in the AGIS Settlement or the AGIS Order were DI capabilities described as a possibility. IVVO, the HAN, ensuring safety and preventing electricity theft all benefit ratepayers, are consistent with the AGIS Settlement or are necessary functions of a monopoly utility; therefore, software apps providing these functions should be excluded from the Commission's temporary prohibition. However, the Company should be prohibited from deploying any app, including portions of an app, that fall outside of these boundaries, including, but not limited to, apps for disaggregation. The identification of individual devices in the home and their accompanying energy usage information would give Public Service tremendous advantages over competitors in terms of unregulated energy management services.



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<sup>63</sup> AGIS Settlement at 2.

<sup>64</sup> AGIS Settlement, Section E(4) at 18.



**PUBLIC VERSION**

“Deployment” is defined as the loading of software apps onto AMI meters, whether in the manufacturing process or via network transmission. Apps can be pre-loaded onto meters during the manufacturing process prior to installation, or apps can be uploaded to installed AMI meters via the FAN. We respectfully request the Commission prohibit both types of loading certain software apps onto AMI meters.

Preventing the pre-loading of certain apps on AMI meters during the manufacturing process – even if such apps remain unused or “latent” once the AMI meters are installed – is necessary because third party DERs offering their own DI apps will remain at a fundamental competitive disadvantage to Public Service’s pre-installed apps. Requiring customers to authorize and wait for the installation and execution of a third party DERs’ app takes more time, focus and dedication of a customer than does instantly using an app pre-loaded onto an AMI meter by the Company.

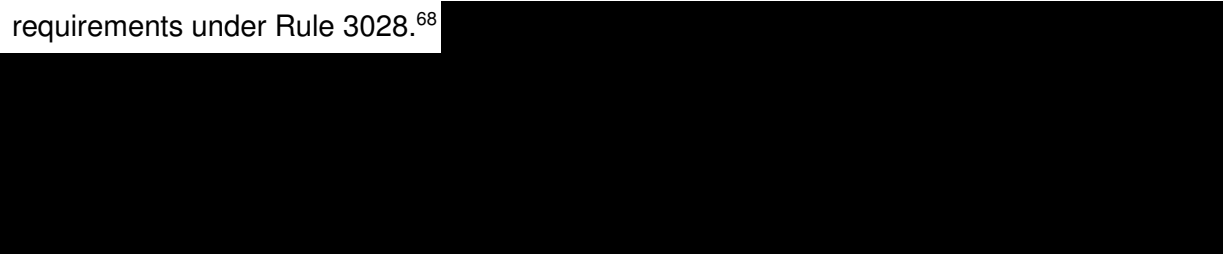
A potential Company decision to self-preference their own apps by making them the default creates an un-level playing field for competition because obstacles stand in the way of customers choosing an app from a non-incumbent provider. In other unregulated app stores, such as Apple’s, default or pre-installed apps have been shown to have negative consequences for innovation. For example, the U.S. Congress’s Anti-Trust Subcommittee described the harm to app developers of Apple’s decision to unfairly compete by offering duplicative, pre-installed apps: “Consumers will download apps that compete with pre-installed apps only when there is a noted quality difference, and even then, lower-quality pre-installed apps will still enjoy an advantage over third-party apps.”<sup>66</sup> Since anti-trust enforcers in the U.S. are increasingly recognizing the competitive harm of pre-installation bias in app stores, it would be prudent for the Commission to issue an order granting the temporary prohibition described above until the Commission has thoroughly reviewed testimony on this topic.

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<sup>66</sup> Footnote 62 *infra*, at 352.

**PUBLIC VERSION**

Furthermore, the data and insights generated by DI needs to be considered relative to the Commission’s preexisting rules on customer data. 4 CCR 723-3 defines “standard customer data” as “customer data maintained by a utility in its systems in the ordinary course of business.” With gigabytes of data and new customer insights from DI apps on the cusp of entering Public Service’s IT systems, the Commission needs time to consider whether DI apps such as disaggregation, which are not covered by the AGIS CPCN, constitute “the ordinary course of business.” In addition, the Commission should consider whether DI apps such as disaggregation trigger the need for tariff revisions pursuant to Rule 3027(c)<sup>67</sup> and the notice requirements under Rule 3028.<sup>68</sup>



In addition to pre-installation bias, an irreparable harm to competitive DER providers that would result without a temporary prohibition is that Public Service cannot “un-learn” the unique insights about customer energy usage from DI capabilities. Once Public Service is exposed to the highly-detailed, kilohertz-level analysis of customer energy usage patterns – analysis which was never before possible or imagined with advanced meters until DI – that knowledge cannot be reversed. AMI with DI provides not just visibility into the previously-opaque distribution system: it provides a powerful microscope into the devices and appliances that consume power. As a result, DER providers that offer non-wires alternatives (“NWAs”) could forever be at a disadvantage because Public Service can possess and then withhold critical information that

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<sup>67</sup> Rule 3027(c) requires utilities to include in its tariffs “a description of customer data that the utility is able to provide to the customer or to any third party recipient to whom the customer has authorized disclosure...”

<sup>68</sup> Rule 3028 requires utilities to provide annual written notices to its customers regarding what data is collected about them, including data that “may provide insight into their activities within the premises receiving service,” among other requirements.



**PUBLIC VERSION**

only it knows about the composition of load at a given home, or on a given distribution feeder. Colorado would be better served by prudently evaluating these risks through testimony **before**, not after, the Company gains irreversible and elaborately detailed knowledge about energy usage patterns.

Additionally, the prohibition is appropriate because it is narrowly tailored. The prohibition is not permanent; it merely remains in effect until a subsequent Commission order. The prohibition excludes functions that are necessary for billing customers or managing the distribution grid, such as identifying broken neutral lines, detecting theft, and identifying areas of high impedance. In short, the prohibition targets only functions that appear to fall outside of an electric utility's natural economic monopoly. As a result, harms to Public Service and the grid imposed by this prohibition are minimal. When compared against the harms to the DER industry in Colorado, the benefits of granting a temporary prohibition outweigh the risks.

Finally, should the Commission decide not to grant the temporary prohibition herein, Mission:data asks the Commission for an order requiring Public Service to take measures to isolate and segregate the data, information, knowledge and insights about customers gained from non-GPCN apps, including, but not limited to, disaggregation apps, deployed onto AMI meters. By separating this information from the rest of the Company's intricate and interconnected information technology systems, the Commission can ensure accessibility to the information in the future, making it possible for customers to access information about them and potentially neutralize a potential unfair competitive advantage over DER providers. Containment of the entire set of information derived from apps – not just “raw” customer energy usage but the insights and inferences made about customers' homes and habits – is essential to preserving the possibility of fair competition in the future. Furthermore, isolation and segregation of this information is particularly important to counteract subsequent cost barriers for delivery of such information to customers or customer-authorized third parties upon request, as such information could be easily dispersed in innumerable sub-systems across Xcel Energy's multi-state

**PUBLIC VERSION**

enterprise. Although a temporary prohibition on app deployment is highly preferable for the reasons discussed above, sequestration of such information after app deployment has occurred is a beneficial additional requirement or alternative, and it is a practical solution to mitigate the problem of “unscrambling the omelet.”

**XI. CONCLUSION**

WHEREFORE, for the foregoing reasons, Mission:data Coalition respectfully moves the Commission to grant the requests described herein, and for such other and further relief as the Commission deems just and proper.

Respectfully submitted this 23rd day of December, 2020.

Respectfully submitted,



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