



LOS ALAMOS

County of Los Alamos
Minutes
Board of Public Utilities

1000 Central Avenue
Los Alamos, NM 87544

*Jeff Johnson, Chair; Carrie Walker, Vice-chair; Paul Frederickson, Stephen McLin and
Kathleen Taylor, Members
Tim Glasco, Ex Officio Member
Harry Burgess, Ex Officio Member
Christine Chandler, Council Liaison*

Wednesday, September 19, 2018

5:30 PM

1000 Central Avenue
Council Chambers

REGULAR SESSION

1. CALL TO ORDER

The regular meeting of the Incorporated County of Los Alamos Board of Public Utilities was held on Wednesday, September 19th, 2018 at 5:30 p.m. at 1000 Central Ave., Council Chambers. Board Chair, Jeff Johnson, called the meeting to order at 5:30 p.m.

Present 5 - Board Member Johnson, Vice-chair Walker, Board Member Frederickson, Board Member Taylor and Board Member Glasco

Absent 2 - Board Member McLin and Board Member Burgess

Deputy County Manager Mr. Steve Lynne attended for Mr. Burgess.

2. PUBLIC COMMENT

Mr. Johnson opened the floor for public comment on items on the Consent Agenda and for those not otherwise included on the agenda. Members of the public gave the following summarized comments:

1) Mr. Brady Burke, 2310 39th Street - Mr. Burke mistakenly thought that the agenda item for Advanced Metering Infrastructure was on the Consent Agenda and asked that it be moved to Business.

2) Ms. Dawn Trujillo Voss, 256 Canada Way - Ms. Voss is in favor of smart technology but questioned the timing of implementing Advanced Meter Technology. She cited other competing high priority Utilities issues, such as the Otowi 2 Well drilling and recent issues with the billing system. She is concerned about the risks of smart metering and associated lawsuits world-wide. She would like the Board to ensure that the Department has addressed all technical reliability and maintenance issues related to smart meters as well as customer communication. She would like the Board to reconsider their no-opt-out policy.

3) Ms. Helen Melinski, 1651 36th Street - Ms. Melinski spoke about utility billing issues and provided written comment, which is included in the minutes as an attachment.

3. APPROVAL OF AGENDA

Ms. Taylor moved that the agenda be approved as presented. The motion passed by the following vote:

Yes: 4 - Board Member Johnson, Vice-chair Walker, Board Member Frederickson and Board Member Taylor

Absent: 1 - Board Member McLin

4. BOARD BUSINESS

4.A. Chair's Report

Mr. Johnson had nothing to report.

4.B. Board Member Reports

Board members reported on the following items:

1) Ms. Taylor - Ms. Taylor recently had an opportunity to tour Otowi Well #2. She found it to be very interesting and helpful. She spoke with the Project Manager there, who told her there would have been an opportunity to drill a pilot well, which may have revealed some of the problems in advance. She suggested this may be something to consider for the future.

4.C. Utilities Manager's Report

Mr. Glasco provided a written report, which is included in the minutes as an attachment.

4.D. County Manager's Report

Mr. Lynne had nothing to report.

4.E. Council Liaison's Report

Ms. Christine Chandler had nothing to report.

4.F. Environmental Sustainability Board Liaison's Report

Ms. Susan Barns was not present. No report was given.

4.G. General Board Business

4.G.1 10696-18 Approval of Possible Updates to the Board of Public Utilities Policies and Procedures Manual and Annual Affirmation

Presenters: Jeff Johnson

Board Chair Mr. Jeff Johnson presented this item. The following is the substance of the item being considered.

Article 1.9 of the Board of Public Utilities (BPU) Policies and Procedures Manual (PPM) states that each year during the July BPU meeting each board member will affirm that he/she has received, read, understands and agrees to abide by the PPM and the applicable documents referenced in its appendix. The Board had opportunities to discuss

and review any potential changes to the PPM over the 2018 July and August BPU meetings. The Board collectively did not recommend any changes to the PPM and affirmed that they had read the PPM.

4.G.2 [10916-18](#) Approval of Department of Public Utilities Mission, Vision and Values, Strategic Goals and Objectives

Presenters: Tim Glasco

Utilities Manager Mr. Timothy Glasco presented this item. The following is the substance of the item being considered.

DPU senior staff held its annual Strategic Planning Meeting on August 30th of this year. The emphasis this year was less on development of new goals and objectives and more on evaluation of performance data and presentation format. As the Department is planning on preparing a Quality New Mexico Zia application in satisfaction of the County Charter requirement for a five-year Management Audit, the team evaluated each goal and analyzed the associated performance data with a view to its inclusion in the report. Staff felt that the existing Mission, Vision and Values are still appropriate and did not recommend any changes. The FY2019 goals and objectives also remain unchanged for FY2020.

The Board discussed this item and requested clarification where necessary.

Mr. Frederickson moved that the Board of Public Utilities affirm the existing Mission, Vision and Values statements, and the FY2020 Goals and Objectives as presented. The motion passed by the following vote:

Yes: 4 - Board Member Johnson, Vice-chair Walker, Board Member Frederickson and Board Member Taylor

Absent: 1 - Board Member McLin

4.G.3 [11084-18](#) Quarterly Conservation Program Update

Presenters: James Alarid

Deputy Utility Manager of Engineering Mr. James Alarid presented this item. The following is the substance of the item being considered.

Upon approval of the Energy and Water Conservation Plan in March 2015, the Board requested that staff provide quarterly updates on the Conservation Program and on progress towards the goals and actions identified in the plan. Mr. Alarid presented a summary of recent conservation activities.

The Board discussed this item and requested clarification where necessary.

4.H. Approval of Board Expenses

There were no expenses.

4.I. Preview of Upcoming Agenda Items

4.I.1 [11190-18](#) Tickler File for the Next 3 Months

Presenters: Board of Public Utilities

No additional items were identified for the tickler.

5. PUBLIC HEARING(S)

No public hearings were scheduled for this meeting.

6. CONSENT AGENDA

Ms. Taylor moved that the Board of Public Utilities approve the items on the Consent Agenda as presented and that the motions contained in the staff reports be included in the minutes for the record. The motion passed by the following vote:

Yes: 4 - Board Member Johnson, Vice-chair Walker, Board Member Frederickson and Board Member Taylor

Absent: 1 - Board Member McLin

6.A [11188-18](#) Approval of Board of Public Utilities Meeting Minutes

Presenters: Department of Public Utilities

I move that the Board of Public Utilities approve the meeting minutes of August 15th, 2018 as presented.

6.B [AGR0595-18](#) Approval of Task Order No. 03 Under Services Agreement No. AGR17-45 with Alpha Southwest, Inc. in the amount of \$77,866.52, plus Applicable Gross Receipts Tax, for the Purpose of Chlorine Generator Equipment Acquisition and Installation for Guaje Booster Station No 2.

Presenters: Jack Richardson

I move that the Board of Public Utilities approve Task Order No. 03 Under Services Agreement No. AGR17-45 with Alpha Southwest, Inc. in the amount of \$77,866.52, and a contingency of \$5,000.00, for a total of \$82,866.52, plus Applicable Gross Receipts Tax, for the Purpose of Chlorine Generator Equipment Acquisition and Installation for Guaje Booster Station No. 2.

6.C [AGR17-914](#) Approval of Amendment No. 1 to Services Agreement No. AGR17-914 with Alpha Southwest, Inc. in the amount of \$300,000.00 and Task Order No. 02 in the amount of \$66,254.50, Plus Applicable Gross Receipts Tax, For the Purpose of Inspection, Repair, and Ancillary Services on County Well and Booster Pumps.

Presenters: Jack Richardson

I move that the Board of Public Utilities approve Amendment No. 1 to Services Agreement No. AGR17-914 with Alpha Southwest, Inc. in the amount of \$300,000.00, for a revised total agreement amount of \$450,114.00, plus applicable gross receipts tax, for the purpose of Inspection, Repair, and Ancillary Services on County Well and Booster Pumps, and forward to Council for approval. I further move that the Board of Public Utilities approve Task Order No. 02 under AGR17-914, in the amount of \$66,254.50, plus applicable gross receipts tax, pending Council approval of Amendment No. 1 to AGR17-914.

- 6.D [RE0382-18](#) Approval of Incorporated County of Los Alamos Resolution No. 18-21; A Resolution Authorizing the County Council Chair or Los Alamos County Utilities Manager to Approve Submission of Completed Applications and Necessary Documents for 2019 Applications to the Water Trust Board for Funding Non-Potable Water Systems Projects

Presenters: James Alarid

I move that the Board of Public Utilities Approve Incorporated County of Los Alamos Resolution No. 18-21; A Resolution Authorizing the County Council Chair or Los Alamos County Utilities Manager to Approve Submission of Completed Applications and Necessary Documents for 2019 Applications to the Water Trust Board for Funding Non-Potable Water Systems Projects, and forward to Council for approval.

7. BUSINESS

- 7.A [AGR0590-18](#) Approval of Services Agreement AGR19-912 with Ferguson Incorporated in the Amount of \$5,559,480.00, Plus Applicable Gross Receipts Tax for Advanced Metering Infrastructure (AMI) Equipment and Services, Approval of the License and Technical Support Agreement with Sensus Incorporated, and Approval of Related Budget Revision 2019-04

Presenters: Bob Westervelt

Deputy Utility Manager of Finance and Administration Mr. Bob Westervelt presented this item. The following is the substance of the item being considered.

Mr. Westervelt introduced Mr. Bob Ferlic from Power Systems Engineering. This item was also presented to the Board for consideration at the August 2018 meeting. This contract is for equipment, supplies, installation, software and project management services for implementation of a systemwide advanced metering infrastructure (AMI). The system will provide accurate, near real time read capability for electric, water and gas services for DPU customers. DPU began considering implementation of AMI several years ago as the capabilities of the available systems improved in response to the development of more complex pricing models which began to emerge, primarily in the electric industry, in the early 2000s. The DPU conducted a pilot deployment as part of the New Energy and Industrial Technology Development (NEDO) Project in 2012 through 2014. While the project was limited in scope and distribution, the Department did learn and realize the impact advanced metering could have on its systems and business model and made the strategic decision to explore the business case for system-wide deployment. In 2015, the Department engaged Power Systems Engineering, a consulting firm specializing in electric grid modernization and utilities metering systems, to conduct a business case analysis for full implementation of advanced metering in all of the metered services (electric, gas, and water) system wide. The study identified both economic benefits and

non-economic benefits, both of which have been considered in the decision to move forward.

The Board discussed this item and requested clarification where necessary.

Mr. Johnson opened the floor for public comments. Members of the public gave the following summarized comments:

1) Mr. Cornell Wright, 700 Totavi - Mr. Wright provided written comments, which are included in the minutes as an attachment.

2) Mr. Brady Burke, 2310 39th Street - When balancing costs for other necessary projects, Mr. Burke sees this project as something that is wanted rather than something that is needed. He does not believe the money would be best spent on this project at this time. He would like to have a better understanding of the costs to the customer should the meters not be 100% compatible with their homes. He expressed concerns about rate structures being used as punishment. He questioned the wisdom of the Department's plans for reducing costs through eliminating meter reader positions and filling vacancies as they arise with meter readers. He expressed concerns about the safety of the smart meter transmission technology.

3) Ms. Dawn Trujillo Voss, 256 Canada Way - Ms. Voss reiterated her earlier statements that she is not against AML. She believes, however, that there are other more important projects at this time. She shared possible opposing arguments for the community to consider. Ms. Trujillo Voss asked a number of questions about the technical specifications and reliability of the meters, possible billing calculation changes, how "green" the meters really are, costs to maximize benefits of smart meters through smart and high-efficiency appliances, and customer costs to turn on the meters.

4) Ms. Helen Melinski, 1651 36th Street - Ms. Melinski provided written comments, which are included in the minutes as an attachment.

Ms. Taylor moved that the Board of Public Utilities approve Services Agreement AGR19-912 with Ferguson Incorporated in the amount of \$5,559,480.00 plus a contingency in the amount of \$971,950.00 for a total of \$6,531,430.00, plus applicable gross receipts tax, and forward to Council for approval. She further moved that the Board of Public Utilities approve execution of the License and Technical Support Agreement between The Incorporated County of Los Alamos and Sensus, Incorporated, funding for which is included in and payable through the Ferguson agreement; and she further moved that the Board of Public Utilities approve budget revision 2019-04 and forward to Council for approval. She further moved that the budget revision be included in the minutes as an attachment for the record. The motion passed by the following vote:

Ms. Taylor moved to table the motion. The motion to table passed by the following vote:

Yes: 3 - Vice-chair Walker, Board Member Frederickson and Board Member Taylor

No: 1 - Board Member Johnson

Absent: 1 - Board Member McLin

7.B **11150-18**

Consideration of Change Order No. 5 to Services Agreement AGR17-30 and Budget Revision 2019-16 for the Otowi Well #2 Design, Drilling and Development Project

Presenters: James Alarid

Deputy Utility Manager of Engineering Mr. James Alarid presented this item. The following is the substance of the item being considered.

The drilling of Otowi Well #2 began on January 16, 2018. The drilling operation was originally schedule to take 60 days to complete the drilling and install the screen and casing. The driller was using the reverse rotary mud drilling method and encountered a fissured basalt geological formation at about 50 feet below ground level. The fissures in the basalt caused the drilling mud to be lost into the formation and drilling was stopped since the cuttings could not be removed from the bore hole due to the loss of circulation. Through February and March, the contractor and the DPU negotiated the project's first change order that modified the drilling equipment and technique. Several iterations of cementing the bore hole and re-drilling through the cement were performed between April and August. The cost for applying the cement, re-drilling through the cement and the time to perform this work through the 300 foot layer of fissured basalt were the subject of Change Orders 2 and 3. The costs associated with stabilizing a second 140 foot layer of basalt is the subject of Change Order No. 4. As of August 23, 2018 the drilling has progressed well through sand, clay and gravel geological formations. The current project schedule has the drilling operation ending on November 10, 2018, approximately 8 months later than originally scheduled. The contractor has made a claim of \$446,490.16 for the cost associated with the additional time it has taken to drill due to the complications from the unforeseen conditions. Change Order #5 is presented for the payment of the claimed amount. Staff is in agreement that the fissured basalt geological formations encountered during drilling is an unforeseen condition, and the contractor is justified additional payment.

The Board discussed this item and requested clarification where necessary.

Mr. Johnson opened the floor for public comments. Members of the public gave the following summarized comments:

1) Ms. Helen Milenski, 1651 36th Street - In future well digging projects, Ms. Milenski would like to see a pilot well drilled so that potential issues such as this might be caught in advance.

Ms. Taylor moved that the Board of Public Utilities approve Change Order No. 5 to AGR 17-30 for the Otowi Well #2 Design, Drilling and Development Project in the amount of \$446,490.16 and forward to County Council for approval. She further moved the Board of Public Utilities approve Budget Revision 2019-16 as summarized on Attachment D, and forward to County Council for approval. She further moved the budget revision be included in the minutes. The motion passed by the following vote:

Yes: 4 - Board Member Johnson, Vice-chair Walker, Board Member Frederickson and Board Member Taylor

Absent: 1 - Board Member McLin

7.C [OR0816-18](#)

Incorporated County of Los Alamos Code Ordinance No. 687, An Ordinance Authorizing the Incorporated County of Los Alamos to Enter Into a Loan Agreement and Promissory Note With the New Mexico Environment Department for the Purpose of Obtaining Loan Funds for the Construction of a New Wastewater Treatment Facility, Declaring the Necessity for the Loan, Restricting the Use of the Loan Funds Solely for the Project, and Pledging Loan Will be Payable from the Revenues of the Wastewater System; and Incorporated County of Los Alamos Resolution No. 18-18, a Resolution Authorizing the Utilities Manager to Execute Documents With the New Mexico Environment Department on Behalf of Los Alamos County Relating to the White Rock Waste Water Treatment Plant, Project Number CEWRF083 and Authorizes the Designation of Official Representatives and Signatory Authorities

Presenters: Bob Westervelt

Deputy Utility Manager of Finance and Administration Mr. Bob Westervelt presented this item. The following is the substance of the item being considered.

For the past two or more years the DPU and BPU have been discussing and planning for the necessary replacement of the White Rock Treatment Facility, which, built in 1965, is already operating beyond its design life expectancy. Several actions have already been taken to ensure the utility is financially capable of proceeding with this badly needed project. In May, the Board considered financing options for the new plant. After considering the various alternatives, the Board elected to pursue a thirty-year repayment schedule for the loan. NMED is offering long-term financing for projects such as this at a 2-3/8 percent annual financing cost, and will finance the project for up to thirty-five years. This ordinance authorizes and effects that financing option. Staff is recommending authorization to proceed with a loan amount not to exceed \$17M, with the term length not to exceed the projected life of the project. Also included in the recommended action is approval of a resolution authorizing specific designated individuals to take such actions as are specified to complete the loan process and servicing.

The Board discussed this item and requested clarification where necessary.

Ms. Walker moved that the Board of Public Utilities approve Incorporated County of Los Alamos Code Ordinance No. 687 as presented and forward to Council for adoption. She further move that the Board of Public Utilities approve the related Resolution No. 18-18 authorizing the assignment of authorized officer(s) and Agent(s) and forward to Council for approval. The motion passed by the following vote:

Yes: 4 - Board Member Johnson, Vice-chair Walker, Board Member Frederickson and Board Member Taylor

Absent: 1 - Board Member McLin

7.D [10947-18](#)

Update on Using Low Flow Hydro on Some of the In-town Systems

Presenters: Steve Cummins

Deputy Utility Manager of Electric Production Mr. Steve Cummins presented this item. The following is the substance of the item being considered.

At the recommendation of a citizen ad hoc committee and the direction of the Board of Public Utilities, the Department of Public Utilities (DPU) was tasked to explore the feasibility and estimate the costs of pumped hydro storage within LA County. There are several sites within the county that have the necessary changes in elevation to accommodate a low flow high head turbine generator. In 2010, staff took a close look at pumped hydro using the existing LA Reservoir and the snow making pond at the top of Pajarito Mountain. However, cycling the reservoir on a daily basis would not make a sustainable fish habitat nor make it safe as a community recreation area. For these reasons staff did not pursue this as an option any further. This current effort looked at small scale possibilities, specifically looking at using the existing potable water infrastructure. However, staff recommends that small-scale pumped storage is financially infeasible for LA County and does not merit further consideration as an energy storage approach.

The Board discussed this item and requested clarification where necessary.

The following actions were identified for follow-up:

1) Mr. Cummins will return to the Board at a future date with a presentation on producing power using water distribution system pressure regulating valves.

7.E 11039-18 Present Indicative Pricing for Distributed Generation Photovoltaic Solar

Presenters: Steve Cummins

Deputy Utility Manager of Electric Production Mr. Steve Cummins presented this item. The following is the substance of the item being considered.

Mr. Cummins introduced Engineering Associate Mr. Ben Olbrich, who then took over the presentation. At the recommendation of the Future Energy Resources committee, a citizen ad hoc committee, and the direction of the Board of Public Utilities, the Department of Public Utilities (DPU) was tasked to evaluate the feasibility of a community solar garden. The first step in the process was to gauge the communities' interest. DPU surveyed the public, which established interest in at least 300 kilowatts of subscription depending on the cost. Since the survey, staff has been researching potential sites to accommodate a community solar garden. Staff presented indicative pricing for these solar PV sites being considered.

The Board discussed this item and requested clarification where necessary.

The following actions were identified for follow-up:

1) Staff will return at a future meeting to discuss concepts of solar gardens, present feasibility information and make recommendations to the Board for a path forward.

8. STATUS REPORTS

8.A 11189-18 Status Reports

Presenters: Board of Public Utilities

The following informational status reports were provided to the Board in the agenda packet:

- 1) Electric Reliability Update
- 2) Safety Report

9. PUBLIC COMMENT

Mr. Johnson opened the floor for public comment on any items. Members of the public gave the following summarized comments:

1) Mr. Brady Burke, 2310 39th Street - Mr Burke appreciates the efforts to assess hydro flow and photovoltaic (PV) solutions. Because space is limited, he believes that the Department should look into other spaces such as soccer fields in town or possible land or facilities outside Los Alamos. He is in favor of the PV solutions and believes they should not be cost prohibitive at a public level.

10. ADJOURNMENT

The meeting adjourned at 9:42 p.m.

APPROVAL

Board of Public Utilities Chair Name

Board of Public Utilities Chair Signature

Date Approved by the Board

Budget Revision 2019-16 Otowi Well

Board of Public Utilities Meeting Date: Sep 19, 2018

Council Meeting Date: Sep 25, 2018

	Fund/Dept	Brass Org	Revenue (decrease)	Expenditures (decrease)	Transfers In(Out)	Fund Balance (decrease)
1	Water Production Fund	54285699 8369		\$ 546,491		\$ (546,491)
<p>Description: The purpose of this budget revision is to increase the expenditure budget by \$546,491 for change order #5 in the amount of \$446,491 and \$100,000 contingency to the construction contract for Otowi Well No 2 (Contract: AGR17-30). No amendment necessary because the agreement allows for change orders (for unforeseen conditions in drilling the well) to increase funding up to the total amount budgeted. The unforeseen condition is enountering a fissured basalt geological formation.</p> <p>Fiscal Impact: The net fiscal impact to the Water Production Fund is an increase to expenditures and a decrease to fund balance in the amount of \$546,491.</p>						

ATTACHMENT
OFFICER REPORTS
SUBMITTED AT THE MEETING

MANAGER'S REPORT

September 19, 2018

1. Billing problems mostly solved, including incorrect graph and period of service lines. Still working on the mobile app and customer bank payments.
2. Customer Service week will be observed the first week in October. There will be booths from the various county department set up in the Municipal Building lobby on Wednesday afternoon, October 3.
3. DPU will hold our annual All-Hands Meeting on Thursday, September 27 at 8:30AM in Building 1 and PCS. We will close the customer care center for two hours that morning so the staff can attend the meeting.
4. Due to the exceptionally large amount of customer visits after the Munis roll-out, staff has been unable to get the Quarterly Report out as planned. We will be sending the report out the last week of September.
5. Staff met with NNSA representatives on September 13 to discuss options for renewal of the ECA. It is apparent that the NNSA intends to have its own generation resources that will probably not be shared with the County. Much more discussion will have to occur on what model will be recommended for any future ECA.
6. We plan on inviting the NNSA to begin negotiations on a new water sales agreement. The existing water sales contract expires in September of 2019.
7. Changes were made to the stipulations in the New Mexico Gas Company rate case after the County Council voted to support an earlier version. As there is not time to schedule another vote on the revised stipulations, our attorney, Dan Najjar advises that the County simply take no position, either in support or opposition, to the new stipulations.
8. Our Safety Employee of the Quarter for the fourth quarter of FY18 is Adam Cooper, Hydroelectric Plant Engineer.

ATTACHMENT WRITTEN PUBLIC COMMENTS

People who give public comment at a meeting may submit a written copy before, during or after the meeting to be included in the minutes.

Kephart, Jaime

From: Helen Milenski <helen.milenski@gmail.com>
Sent: Wednesday, September 19, 2018 5:24 PM
To: Kephart, Jaime
Subject: Re: Written Comments for BPU Minutes

Helen M. Milenski
Presentation During Public Comment
(10 Min Requested via Email)
BPU Meeting
September 19, 2018

- A. Utility bill discrepancies, errors, and scope
 - a. List of persons with Utility Bill Issues and circumstance summary
 - i. All indiv Util Meter audit request process (Published)
 - b. Addressing the scope and mitigation of future error
 - . Beta testing and community confidence
- B. Smart Meter
 - . Upgrade to existing system needs vs. cost
 - . What percent of the, “significant portion of the existing water meters” actually are facing immediate replacement? And what is the average cost of replacement for normal vs RFID?
 - a. Wells and Water system - Need for CIP expansion
 - . Piping age
 - i. WWTP
 - ii. Growth Factor
- iii. Wells with costly problems Existing and New (Over budget with

Kephart, Jaime

From: Cornell Wright <cornell.cwms.org@gmail.com> on behalf of Cornell Wright <cornell@cw-ms.org>
Sent: Monday, September 17, 2018 11:40 AM
To: Board of Public Utilities
Subject: September 19 BPU Meeting - Planned Comment on AMI item
Attachments: Win_Landmark_Seventh_Circuit_Decision_Electronic_Frontier_Foundation.pdf;
FAQs_Advanced_Metering_Infrastructure_Project-Los_Alamos_County.pdf;
Naperville_Smart_Meter_Awareness_vs_City_of_Naperville.pdf

Dear BPU,

I intend to make the following points as public comment at the September 19 BPU meeting after the Advanced Meeting Infrastructure agenda item. Copies of related documents to which I will refer to are attached.

I am generally in favor of the AMI plan. I think it will save the DPU money and eventually allow more efficient and economical use of energy and water by the DPU and its customers.

The United State Court of Appeals for the Seventh Circuit recently decided a case -- Naperville Smart Meter Awareness v. City of Naperville. The court's decision found that smart meter data collection constituted a search under the Fourth Amendment. The decision also found that under the limited circumstances in this case, i.e., the data was used just for utility management and the utility had a privacy policy in place, the data collection is a reasonable search and thus allowed by law.

Further information about the case can be found on the Electronic Frontier Foundation web site at:
<https://www.eff.org/deeplinks/2018/08/win-landmark-seventh-circuit-decision-says-fourth-amendment-applies-smart-meter>

Now I'm not a lawyer and I realize that New Mexico is not in the Seventh Circuit, never the less, this court decision means to me that the federal courts are beginning to recognize that utility customers have a reasonable expectation of privacy in their detailed utility consumption data not being used for any purpose beyond management of the utility. This is important because one can easily imagine situations where unlimited access to the records could serve as a trigger for domestic abuse or allow law enforcement searches without a warrant based on probable cause.

The DPU's Advanced Metering Infrastructure Frequently Asked Questions states:

DPU is a county-owned utility, which means that we fall under New Mexico sunshine laws and provisions. Under the Inspection of Public Records Act (IPRA), citizens may request to inspect a customer's consumption data today. There will be no change after the installation of the advanced metering infrastructure.

The FAQ can be found at:

https://losalamosnm.us/government/departments/utilities/meters_billing/faqs_advanced_metering_infrastructure_project/

That statement says to me that no one's utility data will be private. I think this policy is effectively at odds with the Naperville decision and with DPU customer's reasonable privacy expectations.

In order to ensure DPU customer privacy I urge the BPU to:

1) Establish and publish a privacy policy for detailed utility consumption data that would prohibit the use or release of the data for any purpose other than management of the utility or to satisfy a search warrant. (And also modify the FAQ

DRAFT - These minutes have not yet been approved by the Board of Public Utilities
to reflect the policy.)

2) Re-examine the New Mexico IPRA and other relevant statutes to see if there is an exception to the right of public records inspection that would allow withholding inspection of individual utility records.

3) Not collect or record detailed utility data until the privacy policy can be legally implemented.

Cornell Wright
700 Totavi Street
Los Alamos

--

Cornell Wright

cornell at cw-ms.org



GOVERNMENT

SERVICES

DOING
BUSINESSTHINGS
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FAQs Advanced Metering Infrastructure Project

LOS ALAMOS COUNTY » GOVERNMENT » DEPARTMENTS » DEPARTMENT OF PUBLIC UTILITIES » METERS & BILLING CYCLES » FAQs ADVANCED METERING INFRASTRUCTURE PROJECT



• Meters & Billing Cycles

FAQs Advanced Metering Infrastructure Project

Frequently Asked Questions Advanced Metering Infrastructure (including Smart Meters)

Q. What is Advanced Metering Infrastructure?

A. Advanced Metering Infrastructure or AMI is a method of using communication technology to read meters remotely without having to access the meters located in meter boxes or in the ground.

Q. Is the Department of Public Utilities installing Advanced Metering Infrastructure and does that include smart meters?

A. Yes. DPU will be upgrading its meters with Advanced Metering Infrastructure for electric, gas and water. However, only the electric meters will be smart meters. Communication modules will be attached to the existing gas and water meters that will send consumption reads through a mesh radio network.

Q. When will this work begin?

A. Installation of the AMI, including smart meters, could begin as soon as six months after the award of a contract. DPU is currently in the process of completing a contract with a vendor for the purchase and installation of the AMI. Crews will start installing electric smart meters, and the communication modules for gas and water meters in Pajarito Acres first. They will then

proceed to La Senda and finish up the rest of White Rock. From there crews will move to the townsites. It could take up to 18 months to have the entire county upgraded to the new AMI.

Q. Will you be replacing the smart meters already installed in North and Barranca Mesas?

A. Yes. The electric smart meters that were installed during the demonstration smart grid project with Japan's New Energy and Industrial Technology and Development Organization are not compatible with the new AMI architecture. Unfortunately, we will need to replace those.

Q. Is there an opt-out program for smart meters?

A. No. As a condition of receiving utility services to any home and/or business, the County provides equipment, such as transformers, utility poles, electric lines and meters, on a utility easement. Upgrading equipment is the DPU's obligation to ensure that it is adequately and safely providing customers electric, gas, and water services and it is measuring consumption accurately. Furthermore, the Board of Public Utilities voted against an opt-out program due to the added expense for the DPU to maintain manual meter reading services for what is expected would be a very small number of customers.

Q. Does that mean I won't have someone in my yard reading my meter?

A. Eventually that will be the case. However, the county is also moving to a new Enterprise Resource Planning software system which includes a new utility billing system. This means it may take a few months to get the two new systems to interface smoothly. We will continue to have some meters read manually until we are certain that the two systems will be billing correctly with minimal glitches.

After the new AMI and billing system are interfacing, there may be rare occasions when a manual meter read may be necessary in the event of a meter or communication malfunction.

Q. Are the new smart meters and communication modules safe?

A. Yes. Smart meter and the communication modules transmit at a lower radio frequency power than a baby monitor, cell phone or microwave.

- 1) The Federal Communications Commission (FCC) has adopted radio frequency (RF) exposure limits that ensure safety for the public and workers, and the actual RF emissions from smart meters are a fraction of the limit allowed.
- 2) Radio frequency from a smart meter has been shown to be 125 to 1,250 times below that of a cell phone.
- 3) There has never been a documented injury or health problem associated with smart meters or the communication modules.

Q. Are smart meters and communication modules a security risk?

A. No. Smart meters and communication modules have inherent security features built in to keep information private and secure.

- 1) Any traffic sent over the AMI network uses industry-proven encryption combined with a proprietary protocol.
- 2) The meters and communication modules are password protected.
- 3) The AMI architecture contains intelligence technology to alert a highly secure data center of any suspicious activity.

Q. Does the AMI allow the DPU to access my private data?

A. No personal information is stored in or on a smart meter or communication module. Instead, smart meters and communication modules use a code associated with the customer's account to track consumption. In the same way that the DPU has always read and reported to customers the amount of electricity, gas and water usage for billing purposes, the AMI will send the same information for the same purpose.

Q. Is my consumption data private?

A. DPU is a county-owned utility, which means that we fall under New Mexico sunshine laws and provisions. Under the [Inspection of Public Records Act \(IPRA\)](#), citizens may request to inspect a customer's consumption data today. There will be no change after the installation of the advanced metering infrastructure.

Q. Will my utility bill go up?

A. The AMI will not raise or change your utility costs. Some customers, however, may see increased bills as older, worn out, and less accurate mechanical meters are replaced with newer and more accurate meters. By charging customers for their actual consumption reduces expenses that are leveled to all customers for unaccounted for water or gas resulting from less accurate meters.

Q. Can I access my readings online?

A. Yes. Note that once the AMI is fully implemented, customers can access electric, gas, and water consumption data online and in near-real time. This knowledge of when and how much electricity, gas, and water are being consumed can assist customers in reducing bills. Rather than waiting for a meter technician to read a meter every thirty days, customers have the ability to check their consumption throughout the month. This allows them, if they choose, to change habits and lower bills.

Q. Can the AMI alert me to service problems?

A. Yes. The AMI will be able to alert the DPU and the customer of service problems, such as a water leak. Customers can also set up alerts to notify them if consumption levels are approaching certain thresholds to avoid the surprise of high bills.

Q. Does the AMI interfere with other electronics?

A. No. The AMI network meets federal standards to operate without interfering with other devices.

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In the
United States Court of Appeals
For the Seventh Circuit

No. 16-3766

NAPERVILLE SMART METER AWARENESS,

Plaintiff-Appellant,

v.

CITY OF NAPERVILLE,

Defendant-Appellee.

Appeal from the United States District Court for the
Northern District of Illinois, Eastern Division.
No. 11 C 9299 — **John Z. Lee**, *Judge*.

ARGUED MARCH 27, 2018 — DECIDED AUGUST 16, 2018

Before WOOD, *Chief Judge*, and BAUER and KANNE, *Circuit Judges*.

KANNE, *Circuit Judge*. The City of Naperville owns and operates a public utility that provides electricity to the city's residents. The utility collects residents' energy-consumption data at fifteen-minute intervals. It then stores the data for up to three years. This case presents the question whether Naperville's collection of this data is reasonable under the Fourth

Amendment of the U.S. Constitution and Article I, § 6 of the Illinois Constitution.

I. BACKGROUND

The American Recovery and Reinvestment Act of 2009 set aside funds to modernize the Nation's electrical grid. The Act tasked the Department of Energy with distributing these funds under the Smart Grid Investment Grant program. Through this program, the City of Naperville was selected to receive \$11 million to update its own grid. As part of these upgrades, Naperville began replacing its residential, analog energy meters with digital "smart meters."

Using traditional energy meters, utilities typically collect monthly energy consumption in a single lump figure once per month. By contrast, smart meters record consumption much more frequently, often collecting thousands of readings every month. Due to this frequency, smart meters show both the amount of electricity being used inside a home and when that energy is used.

This data reveals information about the happenings inside a home. That is because individual appliances have distinct energy-consumption patterns or "load signatures." Ramyar Rashed Mohassel et al., *A Survey on Advanced Metering Infrastructure*, 63 Int'l J. Electrical Power & Energy Systems 473, 478 (2014). A refrigerator, for instance, draws power differently than a television, respirator, or indoor grow light. By comparing longitudinal energy-consumption data against a growing library of appliance load signatures, researchers can predict the appliances that are present in a home and when those appliances are used. *See id.*; A. Prudenzi, *A Neuron Nets Based Procedure for Identifying Domestic Appliances Pattern-of-*

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Use from Energy Recordings at Meter Panel, 2 IEEE Power Engineering Soc'y Winter Meeting 941 (2002). The accuracy of these predictions depends, of course, on the frequency at which the data is collected and the sophistication of the tools used to analyze that data.

While some cities have allowed residents to decide whether to adopt smart meters, Naperville's residents have little choice. If they want electricity in their homes, they must buy it from the city's public utility. And they cannot opt out of the smart-meter program.¹ The meters the city installed collect residents' energy-usage data at fifteen-minute intervals. Naperville then stores the data for up to three years.

Naperville Smart Meter Awareness ("Smart Meter Awareness"), a group of concerned citizens, sued Naperville over the smart-meter program. It alleges that Naperville's smart meters reveal "intimate personal details of the City's electric customers such as when people are home and when the home is vacant, sleeping routines, eating routines, specific appliance types in the home and when used, and charging data for plug-in vehicles that can be used to identify travel routines and history." (R. 102-1 at 14.) The organization further alleges that collection of this data constitutes an unreasonable search under the Fourth Amendment of the U.S. Constitution as well

¹ Residents may request that Naperville replace their analog meters with "non-wireless" smart meters. But these alternatives are smart meters with wireless transmission disabled. They collect equally rich data. The difference is that the data must be manually retrieved. (R. 117 at 3.)

as an unreasonable search and invasion of privacy under Article I, § 6 of the Illinois Constitution.²

The district court dismissed two of Smart Meter Awareness's complaints without prejudice. Smart Meter Awareness requested leave to file a third, but the district court denied that request. It reasoned that amending the complaint would be futile because even the proposed third amended complaint had not plausibly alleged a Fourth Amendment violation or a violation of the Illinois Constitution. Smart Meter Awareness appealed. Because the district court denied leave to amend on futility grounds, we apply the legal sufficiency standard of Rule 12(b)(6) *de novo* to determine if the proposed amended complaint fails to state a claim. *See, e.g., Gen. Elec. Capital Corp. v. Lease Resolution Corp.*, 128 F.3d 1074, 1085 (7th Cir. 1997).

II. ANALYSIS

The Fourth Amendment of the U.S. Constitution protects “[t]he right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures.” Similarly, Article I, § 6 of the Illinois Constitution affords people “the right to be secure in their persons, houses, papers and other possessions against unreasonable searches, seizures, invasions of privacy or interceptions of communications by eavesdropping devices or other means.”

We can resolve both the state and federal constitutional claims by answering the following two questions.³ First, has

² Smart Meter Awareness challenged the smart-meter program on a number of other grounds that are not relevant to this appeal.

³ The Illinois Supreme Court applies “a ‘limited lockstep’ approach when interpreting cognate provisions of [the Illinois] and federal constitutions.” *See, e.g., City of Chicago v. Alexander*, 89 N.E.3d 707, 713 (Ill. 2017)

the organization plausibly alleged that the data collection is a search? Second, is the search unreasonable? For the reasons that follow, we find that the data collection constitutes a search under both the Fourth Amendment and the Illinois Constitution. This search, however, is reasonable.⁴

A. The collection of smart-meter data at fifteen-minute intervals constitutes a search.

“At the [Fourth Amendment’s] very core stands the right of a man to retreat into his own home and there be free from unreasonable government intrusion.” *Silverman v. United States*, 365 U.S. 505, 511 (1961). This protection, though previously tied to common-law trespass, now encompasses

(citing *People v. Caballes*, 851 N.E.2d 26, 35–36 (Ill. 2006)). Under this approach, the Illinois Supreme Court will interpret a provision of the Illinois Constitution in the same way as a similar provision in the Federal Constitution absent certain exceptional circumstances. See *Caballes*, 851 N.E.2d at 31–46 (tracing the development and application of the limited lockstep approach). Here, our analysis focuses on two terms: “searches” and “unreasonable.” These terms appear in both documents in analogous fashion. Neither party has “made a case for an exception to the lockstep doctrine.” *Id.* at 46. And we see no reason for an exception. Thus, our analysis of Smart Meter Awareness’s claim under the Fourth Amendment also resolves its claim under Article I, § 6 of Illinois Constitution.

⁴ Smart Meter Awareness also claims that smart meters are an invasion of privacy under Article I, § 6 of the Illinois Constitution. It’s certainly possible that this is the case. But the Illinois Supreme Court conducts reasonableness balancing for the invasion of privacy under the same framework as searches under the Fourth Amendment. *In re May 1991 Will Cty. Grand Jury*, 604 N.E.2d 929, 934–35 (Ill. 1992). Even were we to find that the data collection was an invasion of privacy as well as a search, our reasonableness analysis for both claims would be the same. We therefore decline to conduct the additional analysis.

searches of the home made possible by ever-more sophisticated technology. *Kyllo v. United States*, 533 U.S. 27, 31–32 (2001). Any other rule would “erode the privacy guaranteed by the Fourth Amendment.” *Id.* at 34.

“Where ... the Government uses a device that is not in general public use, to explore details of the home that would previously have been unknowable without physical intrusion, the surveillance is a ‘search.’” *Id.* at 40. This protection remains in force even when the enhancements do not allow the government to literally peer into the home. In *Kyllo*, for instance, the intrusion by way of thermal imaging was relatively crude—it showed that “the roof over the garage and a side wall of [a] home were relatively hot compared to the rest of the home and substantially warmer than neighboring homes in the triplex.” *Id.* at 30. The device “did not show any people or activity within the walls of the structure” nor could it “penetrate walls or windows to reveal conversations or human activities.” *Id.* (quoting Supp.App. to Pet. for Cert. 39–40). Nevertheless, the Supreme Court held that law enforcement had searched the home when they collected thermal images. *Id.* at 40.

The technology-assisted data collection that Smart Meter Awareness alleges here is at least as rich as that found to be a search in *Kyllo*. Indeed, the group alleges that energy-consumption data collected at fifteen-minute intervals reveals when people are home, when people are away, when people sleep and eat, what types of appliances are in the home, and when those appliances are used.⁵ (R. 102-1 at 14.) By contrast,

⁵ Smart Meter Awareness directed the court to academic studies demonstrating the revealing nature of smart-meter data collected at fifteen-minute intervals, *see, e.g.*, Ramyar Rashed Mohassel et al., *supra* at

Kyllo merely revealed that something in the home was emitting a large amount of energy (in the form of heat).

It's true that observers of smart-meter data must make some inferences to conclude, for instance, that an occupant is showering, or eating, or sleeping. But *Kyllo* rejected the "extraordinary assertion that anything learned through 'an inference' cannot be a search." *Id.* at 36 (quoting *id.* at 44 (Stevens, J., dissenting)). What's more, the data collected by Naperville can be used to draw the exact inference that troubled the Court in *Kyllo*. There, law enforcement "concluded that [a home's occupant] was using halide lights to grow marijuana in his house" based on an excessive amount of energy coming from the home. *Id.* at 30. Here too, law enforcement could conclude that an occupant was using grow lights from incredibly high meter readings, particularly if the power was drawn at odd hours. In fact, the data collected by Naperville could prove even more intrusive. By analyzing the energy consumption of a home over time in concert with appliance load profiles for grow lights, Naperville law enforcement could "conclude" that a resident was using the lights with more confidence than those using thermal imaging could ever hope for. With little effort, they could conduct this analysis for many homes over many years.

Under *Kyllo*, however, even an extremely invasive technology can evade the warrant requirement if it is "in general public use." *Id.* at 40. While more and more energy providers are encouraging (or in this case forcing) their customers to

478; A. Prudenzi, *supra*, and to commercially available products that can identify what appliances are used in a home and when they are used based on smart-meter data. See *Disaggregation*, Ecotagious, <https://www.ecotagious.com/disaggregation/> (last visited July 25, 2018).

permit the installation of smart meters, the meters are not yet so pervasive that they fall into this class. To be sure, the exact contours of this qualifier are unclear—since *Kyllo*, the Supreme Court has offered little guidance. But *Kyllo* itself suggests that the use of technology is not a search when the technology is both widely available and routinely used by the general public. See *id.* at 39 n.6 (quoting *California v. Ciraolo*, 476 U.S. 207, 215 (1986) (“In an age where private and commercial flight in the public airways is routine, it is unreasonable for respondent to expect that his marijuana plants were constitutionally protected from being observed with the naked eye from an altitude of 1,000 feet.”)). Smart meters, by contrast, have been adopted only by a portion of a highly specialized industry.

The ever-accelerating pace of technological development carries serious privacy implications. Smart meters are no exception. Their data, even when collected at fifteen-minute intervals, reveals details about the home that would be otherwise unavailable to government officials with a physical search. Naperville therefore “searches” its residents’ homes when it collects this data.

Before continuing, we address one wrinkle to the search analysis. Naperville argues that the third-party doctrine renders the Fourth Amendment’s protections irrelevant here. Under that doctrine, a person surrenders her expectation of privacy in information by voluntarily sharing it with a third party. See *Carpenter v. United States*, 138 S. Ct. 2206, 2216 (2018) (citing *Smith v. Maryland*, 442 U.S. 735, 743–744 (1979) and *United States v. Miller*, 425 U.S. 435, 443 (1976)). Thus, when a government authority gathers the information from the third

party, it does not run afoul of the Fourth Amendment. *Id.* Referencing this doctrine, Naperville argues that its citizens sacrifice their expectation of privacy in smart-meter data by entering into a “voluntary relationship” to purchase electricity from the city.

This argument is unpersuasive. As a threshold matter, Smart Meter Awareness challenges the collection of the data by Naperville’s public utility. There is no third party involved in the exchange.⁶ Moreover, were we to assume that Naperville’s public utility was a third party, the doctrine would still provide Naperville no refuge. The third-party doctrine rests on “the notion that an individual has a reduced expectation of privacy in information knowingly shared with another.” *Carpenter*, 138 S. Ct. at 2219. But in this context, a choice to share data imposed by fiat is no choice at all. If a person does not—in any meaningful sense—“voluntarily ‘assume the risk’ of turning over a comprehensive dossier of physical movements” by choosing to use a cell phone, *Carpenter*, 138 S. Ct. at 2220 (quoting *Smith*, 442 U.S. at 745), it also goes that a home occupant does not assume the risk of near constant monitoring by choosing to have electricity in her home. We therefore doubt that *Smith* and *Miller* extend this far.

⁶ This alone renders Naperville’s reference to the Eighth Circuit’s decision, *United States v. McIntyre*, 646 F.3d 1107 (8th Cir. 2011), irrelevant. Whereas here residents contest the utility’s initial collection of the data, McIntyre challenged law enforcement’s subsequent warrantless collection of traditional meter readings from the utility.

B. The data collection is a reasonable search.

That the data collection constitutes a search does not end our inquiry. Indeed, “[t]he touchstone of the Fourth Amendment is reasonableness.” *Florida v. Jimeno*, 500 U.S. 248, 250 (1991). Thus, if Naperville’s search is reasonable, it may collect the data without a warrant. Since these searches are not performed as part of a criminal investigation, *see Riley v. California*, 134 S. Ct. 2473, 2482 (2014), we can turn immediately to an assessment of whether they are reasonable, “by balancing its intrusion on the individual’s Fourth Amendment interests against its promotion of legitimate government interests.” *Hiibel v. Sixth Judicial Dist. Court*, 542 U.S. 177, 187–88 (2004) (quoting *Delaware v. Prouse*, 440 U.S. 648, 654 (1979)). Although in this case, our balancing begins with the presumption that this warrantless search is unreasonable, *see Kyllo*, 533 U.S. at 40, Naperville’s smart-meter ordinance overcomes this presumption.

Residents certainly have a privacy interest in their energy-consumption data. But its collection—even if routine and frequent—is far less invasive than the prototypical Fourth Amendment search of a home. Critically, Naperville conducts the search with no prosecutorial intent. Employees of the city’s public utility—not law enforcement—collect and review the data.

In *Camara v. Municipal Court*, the Supreme Court noted that this consideration lessens an individual’s privacy interest. 387 U.S. 523, 530 (1967). And though the Court held that a warrantless, administrative, home inspection violated the Fourth Amendment in that case, it did so based on concerns largely absent from this one. *Id.* at 530–31. Indeed, unlike the search in *Camara*, Naperville’s data collection reveals details

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about the home without physical entry. *See id.* at 531 (highlighting the “serious threat to personal and family security” posed by physical entry). Moreover, the risk of corollary prosecution that troubled the court in *Camara* is minimal here. *See id.* (noting that “most regulatory laws, fire, health, and housing codes are enforced by criminal process.”). To this court’s knowledge, using too much electricity is not yet a crime in Naperville. And Naperville’s amended “Smart Grid Customer Bill of Rights” clarifies that the city’s public utility will not provide customer data to third parties, including law enforcement, without a warrant or court order. Thus, the privacy interest at stake here is yet more limited than that at issue in *Camara*.

Of course, even a lessened privacy interest must be weighed against the government’s interest in the data collection. That interest is substantial in this case. Indeed, the modernization of the electrical grid is a priority for both Naperville, (R. 120-1, Smart Meter Agreement between Naperville and the Department of Energy), and the Federal Government, *see Smart Grid*, Federal Energy Regulatory Commission (Apr. 21, 2016), <https://www.ferc.gov/industries/electric/indus-act/smart-grid.asp>.

Smart meters play a crucial role in this transition. *See id.* For instance, they allow utilities to restore service more quickly when power goes out precisely because they provide energy-consumption data at regular intervals. *See, e.g.,* Noelia Uribe-Pérez et al., *State of the Art and Trends Review of Smart Metering in Electricity Grids*, 6 *Applied Sci.*, no. 3, 2016, at 68, 82. The meters also permit utilities to offer time-based pricing, an innovation which reduces strain on the grid by encourag-

ing consumers to shift usage away from peak demand periods. *Id.* In addition, smart meters reduce utilities' labor costs because home visits are needed less frequently. *Id.*

With these benefits stacked together, the government's interest in smart meters is significant. Smart meters allow utilities to reduce costs, provide cheaper power to consumers, encourage energy efficiency, and increase grid stability. We hold that these interests render the city's search reasonable, where the search is unrelated to law enforcement, is minimally invasive, and presents little risk of corollary criminal consequences.

We caution, however, that our holding depends on the particular circumstances of this case. Were a city to collect the data at shorter intervals, our conclusion could change. Likewise, our conclusion might change if the data was more easily accessible to law enforcement or other city officials outside the utility.

III. CONCLUSION

Naperville could have avoided this controversy—and may still avoid future uncertainty—by giving its residents a genuine opportunity to consent to the installation of smart meters, as many other utilities have. Nonetheless, Naperville's warrantless collection of its residents' energy-consumption data survives our review in this case.

Even when set to collect readings at fifteen-minute intervals, smart meters provide Naperville rich data. Accepting Smart Meter Awareness's well-pled allegations as true, this collection constitutes a search. But because of the significant

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government interests in the program, and the diminished privacy interests at stake, the search is reasonable. We therefore AFFIRM the district court's denial of leave to amend.



Win! Landmark Seventh Circuit Decision Says Fourth Amendment Applies to Smart Meter Data

The Seventh Circuit just handed down a [landmark opinion](#), ruling 3-0 that the Fourth Amendment protects energy-consumption data collected by smart meters. Smart meters collect energy usage data at high frequencies—typically every 5, 15, or 30 minutes—and therefore know exactly how much electricity is being used, *and when*, in any given household. The court recognized that data from these devices reveals intimate details about what’s going on inside the home that would otherwise be unavailable to the government without a physical search. The court held that residents have a reasonable expectation of privacy in this data and that the government’s access of it constitutes a “search.”

This case, *Naperville Smart Meter Awareness v. City of Naperville*, is the first case addressing whether the Fourth Amendment protects smart meter data. Courts have in the past held that the Fourth Amendment *does not* protect monthly energy usage readings from traditional, analog energy meters, the predecessors to smart meters. The lower court in this case applied that precedent to conclude that smart meter data, too, was unprotected as a matter of law. On appeal, EFF and Privacy International filed an [amicus brief](#) urging the Seventh Circuit to [reconsider](#) this dangerous ruling. And in its decision, released last week, the Seventh Circuit wisely recognized that smart meters and analog meters are different:

"Using traditional energy meters, utilities typically collect monthly energy consumption in a single lump figure once per month. By contrast, smart meters record consumption much more frequently, often collecting thousands of readings every month. Due to this frequency, smart meters show both the amount of electricity being used inside a home and when that energy is used."

The Seventh Circuit recognized that this energy usage data “reveals information about the happenings inside a home.” Individual appliances, the court explained,

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have distinct energy-consumption patterns or “load signatures.” These load signatures allow you to tell not only *when* people are home, but *what* they are doing. The court held that the “ever-accelerating pace of technological development carries serious privacy implications” and that smart meters “are no exception.”

This is critical precedent. Last year, roughly 65 million smart meters had been installed in the United States in recent years, with 88% of them—over 57 million—in homes of American consumers; more than 40% of American households had a smart meter. Experts predict that number will reach about 80% by 2020. And [law enforcement agencies](#) are already trying to get access to data from energy companies without a warrant.

In this case, a group of citizens called Naperville Smart Meter Awareness challenged Naperville’s policy of requiring every home to have a smart meter, objecting on Fourth Amendment and other grounds. The district court [held](#) that smart meter data—despite being collected directly a city utility, not any non-governmental third party—was subject to the so-called “third party doctrine.” In other words, the lower court reasoned that simply because the utility company held the data, it was automatically devoid of constitutional protection.

The Seventh Circuit reversed the district court's decision, holding that the third party doctrine did not apply. The court first noted that application of the third party doctrine would make no sense in this case. The city itself collected the data; there was no third party. The court then cited the Supreme Court’s recent decision in [Carpenter v. United States](#), which [rejected](#) the third party doctrine in a case involving cell site location information. In *Carpenter*, the Supreme Court [held](#) that this antiquated doctrine does not apply to the exhaustive stores of personal information collected today by wireless carriers, which can be used “detailed chronicle of a person’s physical presence compiled every day, every moment over years.” The Court reasoned that people do not “voluntarily ‘assume the risk’ of turning over a comprehensive dossier of physical movements” just by choosing to use a cell phone. The Seventh Circuit held that the same goes for smart meter data: “a home occupant does not assume the risk of near constant monitoring by choosing to have electricity in her home.” As the court explained, the third-party doctrine rests on “the notion that an individual has a reduced expectation of privacy in information knowingly shared with another” and “in this context, a choice to share data imposed by fiat is no choice at all.”

After concluding that smart meter data is protected by the Fourth Amendment, the Seventh Circuit next assessed whether the municipal utility’s “search” was

reasonable. The court, after weighing the city's interest in collecting the data with the residents' privacy interest, concluded that the city's collection of smart meter data *in this context* was reasonable. The court explained that smart meters play a crucial role in the modernization of the energy grid, allow utilities to restore service more quickly when power goes, permit utilities to offer time-based pricing to reduce the strain on the grid by encouraging consumers to shift usage away from peak demand periods, and reduce utilities' labor costs because home visits are needed less frequently.

Critically, the court noted that its analysis would be different if Naperville conducted the search with "prosecutorial intent," if the search was conducted by law enforcement instead of the city's public utility, or if the data was more easily accessible to law enforcement or other city officials outside the utility. The court cited the city's policy of not providing customer data to third parties—including law enforcement—without a warrant or court order. The court also noted that its conclusion might also change if the city were to collect data at intervals shorter than every 15 minutes.

The court did, however, chide the city for failing to give residents the option of keeping traditional meters: "Naperville could have avoided this controversy—and may still avoid future uncertainty—by giving its residents a genuine opportunity to consent to the installation of smart meters, as many other utilities have."

We applaud the Seventh Circuit for recognizing that smart meters pose serious risks to the privacy of all of our homes, and that rotely applying analog-era case law to the digital age simply doesn't work. We hope that courts around the country follow the Seventh Circuit in concluding that the Fourth Amendment protects smart meter data.

Special thanks to [David Gulbransen](#), pro bono counsel for the plaintiff, for his hard work on this landmark victory.

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