

Austin Energy Utility Oversight Committee Meeting Transcript – 04/24/2017

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[9:32:00 AM]

Pool: All right. Let's go ahead and get started. Thanks. Good morning, everybody. This is Leslie pool and I'm the chair of the Austin energy utility oversight committee and it is April 24, 2017, and it is right now 9:32 A.M. I wanted to get started. We're shy of a quorum so we won't officially call the meeting to order and get approvals on minutes until we have everybody here which I expect will happen pretty soon. I don't have anybody signed up for citizens communication. Is there anybody who wanted to speak on issues not on the agenda but hasn't signed up yet? Very good. So item -- we'll move into item 3, the general manager's report. Good morning, miss sergeant Howell. How are you? Thanks for being here. >> Good morning, chair, councilmembers. The first thing I wanted to do was provide you with an overview of some items that you've had interest in and then a couple of purchase items that you are going to need to approve, and just a reminder I'm going to touch briefly on these things and in the event you have any

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questions or would like some more discussion, I'll work with the chair so that we can provide that information to you. Due to some scheduling conflicts with councilmembers and staff, we are going to be canceling a utility oversight committee meeting. The first item that I want to talk is the transition of utility billing system structure from IBM to Oracle. [Inaudible] To Oracle. This was a seamless transition to our customer base and to you. Oracle will now host, maintain and support ccmb under a contract council approved in spring of 2016. The infrastructure transition provided immediate improvements including enhanced system response time and performance speed for the system's end users. In the next 24 to 36 months, Oracle will support city utilities with a revamped customer portal and improved capabilities. This was a huge effort and I would like to recognize my staff to developed and implemented a great plan. And you know it's a great plan when something like this takes place and you don't even know that it happened. So please join me in recognizing my staff. [Applause] >> Pool: And I'll just go ahead and really quick since we now have a quorum, I will officially call our meeting to order and you can continue. The general manager is just on her first item. >> Thank you. Next I wanted to inform you that Austin energy did issue a solar request for professional or a solar rfp in April that closes may 31.

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We are looking to additional solar energy online prior to December 2019. Austin energy [inaudible] To help us meet renewable that have been established. Next I want to talk about two large procurements that will require your approval. There are rcas that are still to come before council on may 18. These are for Austin energy's line clearance program. An essential program for Austin energy and all electric utilities and managing vegetation located near power program include [inaudible]. Ensuring compliance with federal regulations as detailed by the North American electric utility corporation or nerk. These services require specially trained personnel, specific expertise and safe work practices. The first rca is for energized distribution line clearance services to be awarded to aspln -- three 12-month extensions of up to 12 million each for a total of \$70 million. And the second rca is for energized transmission line clearances to be awarded to spin with three 12-month

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extensions for a total of \$13.5 million. The contract authorization amounts are based on cost increases due to the city's living wage increase, increased demand for tree services in the Austin area, increased vegetation growth rates due to the increased rainfall and the need to ramp up the program to get back to a four to five-year cycle on distribution lines. The recommended companies were selected through a competitive solicitation and represent the best offers met and established by minority and women owned business contracting goals. As a point of reference, both companies have the current contracts for services which will expire on may 20, 2017. Are there any questions? >> Pool: So you will be bringing this to you on our may 4th meeting; is that right? >> May 18. >> Pool: So we have about three weeks before this contract will come to us for approval on an agenda. Yeah. Two plus weeks. >> About three weeks. >> Pool: So if anybody has any questions -- here today. Through question and answer. Nerc has standards or requirements and if we don't meet those there are fines up to a million dollars a day per incident. So we have to meet those. And also it makes good business sense in order to make sure we're protecting the

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public and the assets we've been entrusted to manage so it's very important work and very important we have the right people do this work so they don't get hurt while performing this because the lines are energized. >> Pool: Councilmember Houston. >> Houston: Just a quick question. [Inaudible] Get a customer's number and followup. >> Sometimes people mistake communication lines with power lines and so we would do a verification to make sure in fact that was an energized line, that it was a Austin energy line. If not, we would probably direct them to the appropriate authority. >> Houston: Okay, so you would make that soft handoff to the appropriate authority or would you say to the customer that's calling you need to call this number instead? >> If it's an energized power line, we would take the lead and contact the appropriate utility because it is a hazard. >> Houston: But if it's telephone, some kind of communication line, who is responsible for saying -- letting them know that -- sometimes -- >> It depends -- >> Houston: Overhangs everything. >> Sometimes it's okay and sometimes it's not so it would be on a by occurrence basis and the decision would have to be made as to whether or not someone needed to be notified. But if we had crews that went out and made an observation that this was a hazard, we would inform if it wasn't our group that needed to take care of it, we would inform the correct personnel or the correct company that would need to manage that. >> Houston: I think that's

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what I was asking. I'll be calling 3191 today about something on airport boulevard. -- Calling 311. >> Sounds like a plan. You can always call us too. >> Houston: I'm going to go through the right process. >> Pool: Mayor pro tem. >> Tovo: I wanted to ask a quick question about these services. Have you evaluated whether or not it makes sense to have people on staff rather than use contract services? >> So I think that in the past there has been some work that's been done, looking at this, and typically what the utilities do whether it's Austin energy or others they hire experts because it's detailed work and cyclical. When we have times of drought, we may not have to do as much trimming as when we have increase so you have these peaks and valleys and sometimes having people on staff creates a problem because what are you going to do in downturn times. During those times they can focus on other places in the country or maybe more residential needs or that sort of thing. >> Tovo: Seems like, though, despite there might be fluctuations given the temperature, that there would always be a base need for some of this work to continue. And so I would be interested between now and the council meeting if there has been an evaluation of whether or not the base need is sufficient enough that it would be cost effective to have those -- to have those services brought in-house, that would be -- >> Certainly we'll get back to you. >> Tovo: Thank you. >> Pool: Any other questions on this item? >> Tovo: Let me clear, to have some of those services brought in for the reasons you said about how it does fluctuate. >> Pool: Okay, great. I'm going to turn it over to dependly manager mark and they are going to talk about our performance dashboard. >> Pool: While they are coming up, we had skipped over

[9:44:04 AM]

approval of notes of the minutes, waiting for a quorum. So we do have a good quorum here now. Would someone -- councilmember Casar moves approval of the notes and councilmember alter seconds. Any updates, corrections or changes? All in favor of approving the minutes? That is unanimous with councilmember Renteria and mayor Adler off. Thank U that passes. All right. Good many. We're now on -- good morning. We're now on item 4. >> I'm ulana ball, deputy manager and chief operating officer. We're going to continue briefing you all on the dashboard we're use to go communicate how the utility is operating as well as our strategic plan and initiatives. Mark and I are going to discuss business excellence. Business excellence is defined binary as being the best go ahead utility where culture is focused on customer needs and we're meeting those needs thoroughly and efficiently through optimal use of resources. So we're focused on business excellence for a handful of reasons, but really it really comes down to having a high performance culture, improving our work processes and utilizing performance measurement to contribute to the accomplishment of all of our other strategic goals. Business excellencist really the engine to accelerate all the other strategic initiatives that we have. Business excellence is very much tied to our affordability goals. We're really focused on making sure that we're making smart decisions both with our capital improvement programs and resource planning and in general operations. Metrics we have and we're going to communicate to you all monthly on are not

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inclusive of all of our activities but these are the metrics we feel if we execute will will contract to our customers and support our affordability goals. I wanted to give you a flavor for some of the initiatives we're focusing on as a utility. Active initiatives that are in flight right now are resource planning. You all are very aware that we have an active resource plan work -- working group going on right now. We do expect probably in the time frame to bring back the results of that effort. You may or may not be aware, but we also are -- our iso1009 registered. Many use that to drive continuous improvement and excellence in their operations. To my knowledge I believe we're the only utility in the U.S. That are iso certified and we're iso certified in power production and delivery and customer account management

and customer services area. We're also working on budgeting improvements. We're going through an exercise specific toggler based budgeting -- zero based budgeting. We also have several new initiatives that we're kicking off as a result of business excellence. While we have lots of data and lots of analytics as a utility, we're refocusing in order to drive in customer satisfaction and management areas, our grid modernization areas and really in just making decisions on spend and how we utilize our resources. Closely tied to that is use of business cases. We've had business cases as a utility in many areas for a long time. However, in our I.T. Area we have start working on amping up business case proficiency and lookto -- spread that

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across all of our programs and standing up around asset management. Many of these should improve multiple areas of our operations. So with that, at each of your seats you should have the April 2017 dashboard. It's a tri-fold. The data in this tri-fold is from February of this year. So we have about a two-month lag in the data that we report to you. And that's really just a function of data collection in several areas. If you turn to the business excellence section, you'll see of measures. The first two up top deal with our controllable assets, our thunderstormal generation. So these generation assets are really a physical hedge in our marketplace for our customers and we'll go into more depth in a minute why we measure these particular measures. Then we also have our power supply adjustment. This is the -- largely the variable component of our customers' bills and you've seen the components with the -- mark will go into more detail on that and we also have our capital improvement budget. We are working to make sure we are requesting capital in the areas of greatest need in our growing community and execute our capital plans with excellence. We have some improvements in this area. We have traditionally not been able to exercise all of our capital within each fiscal year so we're working to improve our fiscal discipline in this area. So I'll turn it over to mark for the power supply adjustment. >> Good morning, chief financial officer, Austin energy. Business excellence is -- can really be seen through the power supply adjustment, and

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that's because this is where our resource plan directly impacts the utility. And having good analytics in conducting that resource plan is important. Decisions made in resource planning could impact the power supply for years to come. We have the impact and competitive power market in the usa and that's a market Williamson creek participate in but don't control. It's an open market. It's important to have solid data analytics in that area. Within that power market we're looking at current prices of fuel including natural gas, coal, uranium and our biomass plant as well as projected power purchases in terms of price and megawatt hours so there's a lot of number crunching going on. The power supply as we present here is really defined by the city of Austin's electric tariff and has flee main components, and that's the electric reliability council of Texas or ERCOT settlement pro social -- fuel costs, costs for fuel, transportation as well as hedging gains and losses. Finally our net purchase power cost agreement. We buy some of our power through agreements and includes those elements. So a little how to read the graph here in your dashboard. First column is load zone and this represents the cost of purchase, the electricity from ERCOT to serve our customers. This is a pure market number. Every 15 minutes we're out buying power to serve our load. And so this just represents that bill that we get from ERCOT to serve the load. The next line is called owned assets.

[9:52:07 AM]

Formerly -- the assets Austin energy owns and dispatches into the market. Right now those all happen to be thermal. And so that includes the revenue we get from ERCOT because we sell 1-% of the power we produce we sell it to ERCOT and then deduct the cost of fuel and transportation as our tariff requires. I would note on note 1 which is the capital cost in operating expenses for thermal generation is recovered in base rates, not the power supply adjustment. And part of that is because we own the assets and we deappreciate them. The next line is renewables or we could call it power purchase agreements. It just so happens that all of our PPAs are for renewable energy, but in the future we anticipate owning our own renewable energy resources once tax laws become more favorable for that. So this represents all of the revenue that we get from ERCOT for selling that power into the market, less the contract price that we have with the producer. And so those three elements what we refer to ERCOT settlement. It's really those three items. The next part of your read is called green choice. This is revenue that we get from our retail customers who are electing the green choice product. This is totally voluntary and it's back because we have renewable resources. And so these are customers who are agreeing to take that power. The next line is called bilaterals and this represents purchases and sales of either physical or financial transactions between ourselves and another party under negotiated terms. So this is outside of the ERCOT market. Then we have hedging. So these are the financial instruments we use to really

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limit our loss and it can also limit our gain from price volatility in the power and natural gas markets. It's like an insurance. It's generally going to be a cost, just like you pay your car insurance every month, we hope you are not having a car accident, so it's that loss but it does protect you. And finally you add all those together and we get what we call the net power supply. So it's just the sum of all the previous bars. I would add that the PS rate that we calculate and we approve during the budget each year also contains an additional element called over or under. Obviously trying to estimate this cost, we don't get it right every year and so if we overcollect one year, we give those moneys back to the customer by reducing rate and if we under collect we increase that -- >> Garza: Can I ask a question? Can you give an example of bilateral agreement? You said it's outside the ERCOT transactions? >> That's correct. >> Garza: Like an example would be? >> Austin energy could, for example, take power from ICR at a plant and sell it to a buyer, and we would know that transaction from wherever cost is and actually deliver the power to that customer or settle it financially. >> Garza: Okay. >> As opposed to selling the power into ERCOT and getting that market price. Regardless of the market price, we would get what we agreed to in that negotiation. >> Garza: Thanks. >> And finally, the PSA does not have a general fund transfer component. So that 12% of GFT does not apply to power supply adjustment. I would -- before we move on, there's been some discussion

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over old assets, renewables or PPAs. This chart is not designed to be a cost comparison and it should be read that way. This is reflecting the power supply adjustment, give you a sense where that is going. This is one of the most volatile components of our rates, much is outside our control. The idea is by using good analytical forecasting, we're guiding you through the force of the year to see where the power supply. It's not a cost comparison, it's not comparing one type of asset to the other. >> And to complete what Mark just shared, really where we conduct that comparison of different types of resources and the financial, environmental and other attributes of different resources is this the resource planning process. And so we do have a vehicle and a process currently in flight to conduct those comparisons. So I'm going to go ahead and move into the commercial availability and start success portions of the dashboard. You will see this information every month. Again, this information that we're discussing

today is from February of this year. So what we're talking about, looking at psa, the light blue bar currently is showing [inaudible] Of net revenue to the utility. This is the section of the psa that we're discussing relative to our owned assets performance. The goal of our owned fleet is to reduce power supply cost and also wholesale price risk for ae customers. We measure this in two large ways. First is commercial availability, and we measure commercial availability of our larger generators. These are the large steam units that are at decker, at fayette and south Texas as well as at sand hill. What commercial availability

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really means is when market prices are above our variable production cost, we ask the question is the unit available, yes or no. So you can think about commercial availability as reliability when it counts. We focus our target goals [inaudible] But we measure commercial availability year round. Ultimately we're trying to maximize commercial availability, however, during nonpeak periods we do take units out for planned maintenance. So for example, if you look at February's performance, you'll see sand hill, fayette and south Texas all at 100% commercial availability. That means every time the units were in the money they were available. You'll see decker at 47%. We had one of our large steam units out for a planned maintenance, in fact they are still in that window, that's what is affecting the commercial availability in February. Moving on to start success. So we have ten other generators which are quick start. These are jet engines that are able to start and get to full output within 10 minutes. Start success measures these quick start units' reliability. A successful start for these units is achievement of full generation output in 10 minutes or less. We strive year round to maximize start success. So we measure that year round not specific to the peak period. These are some of our most effective price hedges and our ae load zone control opportunities. So for the month of February, we had 100% start success. And just for order of magnitude, I look back at how often are we starting these units. In the fall and spring when we do see milder temperatures and milder pricing, we'll usually call on these units about 80 times a month. In the summer it can be 200 to

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300 times so these machines are starting often. >> The next area on our dashboard is our capital improvement budget. It represents our capital improvement plan or cip. And the reason why we conduct these projects really is either to increase capacity of our assets or to extend our use of life or upgrade or modify those assets. It could be software, hardware, power production, it could be facilities. It's anything that creates an asset for the utility. Use three types of funding. One is debt. We have a commercial paper program here in the city of Austin in which we issue commercial paper through the course of the year and periodically we will convert that commercial paper over to a long-term bond. Usually do that about every two years. Just to give you a sense of different or commercial paper, we pay about somewhere around half a percent of interest on that with our long-term, we're paying around four and a quarter so it's advantageous to hang on to that commercial paper until we reach our limit. We also use our cash, which civilian terms they call it equity. And it really does, it converts a current asset on your balance sheet into a long-term asset. Back in 2012 the utility went to 100% recovery of line extension so we have a new customer sign up whether it's a large commercial building or some other customer, in order to connect that service, we recover 100% of that cost from the customer up front. We then take that, we book that as an asset on our balance sheet and own and maintain it in perpetuity from that point. Those are three ways we fund

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those assets. Our capital budgets -- designed to add economic value to the bent of the utility and our customers. That's really the focus on that. The business excellence initiatives that are designed to improve that return on investment for us, there's a multitude of them, but the key ones are asset management, we talk about here which is looking at the life cycle of the asset. Sometimes that could be 30 or more years and that's why having good analytics is important in making these decisions about our capital plan. Business case proficiency, making sure we're making the right decisions. Data and analytics making sure those decisions are informed with confidence. Resource generation plan, we're balancing between environmental goals and -- important to have solid analytics in that area. >> Pool: Thanks so much. Does anyone have any questions on this section? I noticed that the difference between the graphs on page 9 and what's in our handout is just passage of time. One of them is the end of December, the other is the end of February. >> That's correct. This comes out -- we usually have this ready for you by each month's oversight committee which is around the 20th of the month. Takes about two months to collect all the data and analyze it and the presentation was prepared about a month ago. >> Pool: Great. Thanks so much. Appreciate it. Moving on to item number 5, Austin energy facilities management. Are you going to help with that too? Great. Thanks. Good morning. >> Lorraine Wright, city of

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Austin real estate who is supporting Austin energy. So we wanted to give you an update on our facilities master plan which is sort of an ongoing plan we have, but we do have some information we want to share with you this morning. It's been a while since we briefed the committee on our facilities so first I wanted to highlight where our major facilities are. So you can see we are all over Austin. With nine major facilities. The ones that we're really going to be focused on today are facilities number 1 and number 2 which is our town lake center and 811 Barton springs across from from palmer garage and airport Justin lane, Ryan, Lamar, kind of the center of the universe up there. I've broken down the facilities both leased and owned for you just as a comparison. About 79% of our total square footage is owned, so we have a history of owning our facilities. And as we've grown over time, rather than buying new facilities, we've gone out and leased those facilities. And so really what this morning's briefing on is really about how we're working at converting those leases over to owned because it's much more efficient for us. You'll see under leases, 811 Barton springs, it's about 72,000 square feet. It's an eight-story building off of Barton springs and we have a significant footprint. That lease was a five-year -- [inaudible]. About 7,000 square

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feet, which we use for storage of our -- we own space, the town lake center, which Austin energy has been in probably since sometime in the early to mid '80s. It's about 126,000 square feet. That's our major corporate office, also holds our utility contact center. And then we have five acres with a number of buildings. We use that as warehouse, which is at the intersection of Ryan drive and Justin lane. One of the issues that we have is the constraints of our current facilities is just grown over time and right now our contact center customer service are both growing. In order to meet that growth we have used our conference rooms and training rooms and reconfigured them to hold our customer service staff. I've got a couple pictures we took last week actually. So rather than using it as conference rooms and meeting rooms we have staff in there. The picture on the bottom, this is a training room we used to use for our software training for our staff. We've had to convert that over to customer care space. Making it unavailable for training. Also the unacceptable conditions of our property at Ryan drive at Justin lane,

it's really under utilized. Some of the buildings we can't even put people on the roof to fix the roofs. It's under utilized footprint. I have a picture there of one of the buildings out there, you can see sort of the condition there. The excavating leasing expenses at 811 Barton springs, so both the building at 811, we also lease some parking spots over at the palmer center, costs about

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\$220,000 a year. Both of those increase our operating costs. Operating expenses and future renovation at town lake center. The building is aged. In order to make it continue as a safe and functional work space and make it environmental friendly it's going to cost a significant amount of money to renovate that building. Finally is traffic congestion. We all want to see what we can do to decrease the traffic on the business areas. Many of our employees here have no other purpose coming down here except to work at tlc so the question is do they need to be down in the central business area. Those are some of the constraints we're faced with. The goals of our master plan most importantly is improve service to our customers. Namely that utility contact center. We would also like to reduce our operating expenses. We have an affordability goal at nagger and we are doing whatever -- Austin energy and doing whatever we can to maintain costs. We would like to -- our central business district. Provide a safe, functional work space for our employees. We would like to structure this with little to no impact on customer bills and perhaps even reduce our customer bills. Finally would like to support the city of Austin's comprehensive planning goals. Sort of a busy slide here, but just to give you a sense that we've been looking at our facilities for some time. In fact, back in 2014 we brought forward a request for council action concerning new office and parking, but it was not approved by council and so we've fallen back, regrouped and thought about what we needed and where it might go. That's what we've been working on the last few years. As opposed to doing it individually we teamed with the city of Austin real estate group to capitalize their

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knowledge. Since that time we've been doing strategic planning internally as well as a third-party real estate expert. Just this year we approved a design criteria that standardizes office space across the city not just at Austin energy but across the city. With those is how we've come up with some of our requirements to meet those space needs. We looked at a multitude of options and modeled these with the external consultant and come down with really three options for exiting these buildings and one for maintaining. First is to build using city of Austin's request for proposal process that you guys are familiar with, we're using with other facilities. We could also buy and renovate a building which would take a little bit longer. The process we sort of recommended in '15 was Austin energy would submit a separate request for proposal through the market. Regardless of what we do, we have a current lease at 811 that we will require as long as we don't have additional office space. And that goes through 2018 with the option to extend after '18 at almost more than double rate that we're currently paying. In the meantime, our contact center as I showed you with those pictures is growing. Again, that serves all of the utilities at the city, not just Austin energy. As our customer base grows, we need for customer service representatives, we have more contact with customers. They are currently on the third floor of the town lake center. We also have them in several other buildings across the city in conference rooms including both the service control center off of grove and montopolis, as well as at 811. So we would have to go out and lease about 50,000 square feet

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of contact center for them. So our space requirements, that's really based upon the requirements that were conducted and approved in January. We hired a company called ginsler who looked at what this office space would look like and function and that was adopted from the city of Austin as a whole so that's what we're proposing to use as we look at designing this office space. What we need is about 200,000 square feet to house our corporate office and our utility contact center and our training and meeting spaces. If you look at our total footprint, that's comparable, maybe even a little less because as you adopt new standards you can create more efficiency in our footprint. We're confident about 200,000 square feet. We're also looking for 200,000 square feet of indoor warehouse with adjacent lay-down yard. This would be to consolidate all of those leases we have like Todd lane as well as the warehouse we have on Justin lane to make it more efficient. And so we would be exchanging 135,000 square feet of what we currently have as well as five acres of outside storage for 200,000 indoor or one acre or less than lay-down yard. A lot of our materials we store outside would be much more efficient and we would get less wear and tear on assets if they are stored inside. And also would consolidate our warehouse into one location which would minimize staff to take care of that inventory. Finally we're looking for 5,000 square feet in the south area for customer payment center. We have two now, with our growing customer base we believe we need one in the south side of town and I'm going to get into a little more on that.

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One of the things we did look at was where employees live since they are going to be commuting back and forth to work every day. Austin energy has about 1700 employees. We have about 800 employees that come to work at tlc and 811 Barton springs. And so we did a heat map here, it's a little tough to read. I'll summarize it for you. Which is the heaviest concentration of our employees live south of highway 290. You can see in the blue areas it's by zip code, so each of those zip codes have 50 to 100 employees in them. We also have a large concentration of employees that live east of I-35 by the darker pink numbers spread out there and goes all the way out to bastrop. We have a concentration in the pflugerville area. These are where our employees are commuting from every day to come into tlc and 811. So it's one thing that we want to consider whether we're looking at where we would place our new office space. In addition we want to look at, make sure we get as many transit options as possible for our employees to get to work. So we have a couple of consents we want to present you today. The first is for our corporate office and contact center. We believe the most cost effective is the total relocation. Which would either build or buy office property. We would relocate all of our staff from tlc and 811. We would capture the fair market value of the property we currently have on Barton springs and vacate the 811 lease as well as the palmer lease for parking. And we would avoid leasing new utility contact space, that's at 50,000 square foot. It also gives us the benefit of keeping our entire workforce together. Which would -- it's easier to function as an organization when you are all co-located.

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This meets our workforce needs. It meets the time constraints of getting out of 811 Barton springs. We won't meet it by the 2018 deadline. It's an economic approach to developing a functional and safe work space for employees. And allows us to have an environmentally responsible building is one of the things we're pursuing being at tlc, it's really tough. It's an old building with a poor envelope and the cost of renovating that would be exorbitant. Finally it helps reduce traffic joins in -- traffic congestion in the -- congestion in the downtown area. We have several locations where we store materials. Across the city including Ryan drive, Todd lane, south Lamar. What I'm going to do is consolidate that into a single modern warehouse. We cannot renovate Justin lane. And even if we could, the highest and best use is

not industrial warehouse in that part of town. It's a poor work environment for our employees. We have rodents that live in the wall. We have Turkey buzzards that nest in the ceilings. We have so much wasted space because at some areas it's unsafe so we don't go into those sections of the buildings. As mentioned, it allows us to consolidate and reduce staffing rights for maintaining that warehouse so it just makes sense. Give a concept there, one of the things we're looking forward to is by having a modern warehouse using newer technologies, we can reduce the amount of inventory, reduce the amount of space, reduce staffing and improve service to customers and make it more environmentally friendly. Customer payment centers.

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Credit to Google. I took the images off the internet there. And so we have one which is in our east branch at rosewood and zargosa and another at 183 and we have a growing customer base and really where we need another customer center is down on the tout -- the south side. We're looking at area around cannon and manchaca area as potential site. If we get one with a drive-through, it would really be convenient for our customers. Part of just meeting our customers' expectations, they don't want to drive across town to meet with customer service reps so it's important to have one in the south area. And also relieves pressure to customers going over and overwhelming other customer sites. So with that, how do we pay for all this. We have a couple ideas. The first is capture the market value from those properties that have already been acquired through utility rates and reinvest it in new facilities. So it's recycling that funding. Property leverage acquisitions with cash funding and long-term debt. As we told you under the dashboard plan, we play for our capital facilities with both cash and debt and how we do that really impacts rates. So we want to be strategic about how we pay for that. The concept of credit tenant lease financing which you were briefed on several months ago by city of Austin is a concept we're looking at. And if it's beneficial, we should take advantage of that. We should strengthen the balance sheet with long-term assets. And that's important for our credit rating. As opposed to leases, which are simply an operating expense. We should reduce our lease and maintenance expense. If we have a newer facility, we're looking at about \$9 per

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square foot as operating cost for those buildings. We'll probably double that or triple that. So we'll decrease operating budget as well. It's very important we take advantage of the expertise and capabilities of our real estate advise their city of Austin has under contract. We're not real estate experts. We're not developers. We're not experts on buildings and so it's really important that we tap into that expertise and leverage that, especially in a market like Austin. I know we've looked at 18 separate buildings over the last year and a half or so. 16 are already gone. It's a hot real estate market, especially on the commercial side. And so trying to do this as an office is not the way to do that. Finally we wanted to achieve this with little to no impact on customer bills and if at all possible reduce customer bills. That's what our goal is. So with that, we've run a couple scenarios looking at two of these concepts. So the first is maintain the status quo. We stay in 811, stay in tlc. We do what we can to reduce our cost. We go out and we get a utility contact center under lease. The cost there is really about 164 million over a 30-year period. And that adds about 38 cents to an average residential customer bill. If we do the facilities master plan concept, the one I just briefed you on, we're looking at probably \$12 million over that 30 years or about three cents on an estimated residential bill. We could reduce bills 35 cents, which is pretty significant, by looking at these concepts. Of course, we don't have final numbers so these are intended to just give you an indication where we might go. The main drivers here is, you know, by maintaining those leases such as 811 and palmer

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and our warehouse, most of those leases have escalators built into them. And so over time you pay more and more for that lease. And you are also not acquiring an asset and getting depreciation. Maintaining and renovating current facilities, it's very expensive and difficult to do with a growing workforce because you have to temporarily relocate them as you are doing the renovations. Finally the market value we have on assets such as tlc is stranded. That means we don't recover that. That's one of the most significant cost reductions between these two alternatives. So with that we're going to do a couple things. First is, as you were briefed by the city of Austin, we're going to issue an rfp to really look at market-based solutions. Again, we're going to tap into the expertise and take a look and see what the market can provide us. And that would be around corporate office in the contact center as well as a warehouse and adjacent lay-down yard. We're going to coordinate with city of Austin for a potential acquisition of that customer payment center on the south side to we can serve our customers on the south side of town and come back to you in the fall with these proposals and for additional conversations with you about what direction we might want to go. With that, we're open for questions and anything about the rfp, city of Austin, Lorraine can answer those as well. >> Pool: Great. Thanks so much. As far as the consolidation of the lay-down yards, do you have kind of a general idea, moving it to land that's currently owned by the city, I think there was some conversation around the airport where the remanufacturing hub would be located. >> I would say we don't have specific property located yet and that's part of the rfp process is look at all those considerations, find out what's best for the utility,

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for our customers. >> Pool: Will you be looking at city-owned land that might be appropriate for it? >> I think all options are on the table this morning. >> Pool: And the time line on that is built into the time line on the head quarters? >> That's correct. Our intent is come back in the fall, once we hear from the market, that's really what's going to drive us once we get those proposals and bring them back to council for consideration. >> Pool: Does anybody have questions? I think councilmember Houston has her light on. >> Houston: Thank you so much. Tell me, is the lay-down yard on Mendel and decker lane, is that leased or owned? >> That's owned. >> Houston: That's owned space? >> Yes. >> Houston: And so I'm not sure how large it is, but -- >> I can find that out. Let's see. >> Houston: It's not noticed on any of your -- >> It's about five acres. >> Houston: Okay. And I noticed in your handout you said the decker trailer was leased. What does that mean? >> We have -- some time ago we needed office space out there so rather than building we used one of those portable building trailers and that's located out there, so it's office space. >> Houston: Okay, but it's just a trailer because the land belongs to the city, right? >> That's correct. I believe the idea was that they weren't sure what was going to happen to the property in the long-term so didn't want to build a facility there, but it's been there for quite a while. >> Houston: Thank you. >> Pool: Mayor pro tem. >> Tovo: Thank you for this presentation. I wanted to back up and say it was my understanding or my memory of it that actually the city manager pulled the proposal for the purchase of the Austin energy building. I'm not sure it actually got voted down by council but I may be misremembering that. >> I wasn't here then, we can find out. >> Tovo: Some way the narratives get moving, but as I recall there were certainly concerns, but am I remembering correctly the manager pulled

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the proposal? I don't think it actually came up for a council vote. So I have a series of questions. I guess the first I wanted to ask is what -- when you say you are going out for an rfp, will it involve -- are you looking for -- what will be the scope? Are you asking people to imagine what could be done with the current assets or are you asking them to look at the needs and come back with solutions? And I think the question -- I think one of my colleagues asked the question about city-owned lands and I would add to that will that be the priority? It would seem we should look first at city-owned lands and I would be interested to know to what spent that will factor into the rfp. >> Certainly economic and customer service O. Are our two highest priorities. If it costs more expensive because of zoning issues or highest and best use of that property, it may not be. But as far as the rfp process, Ms. Rogers can answer those. >> Councilmembers, still evaluating whether we would include the reuse of the facility that they are in now as part of it, but I think where we're leaning towards without going through a full look at it is that we would separate the two to make -- make the current sites available and then coming back to council once we know what we're doing with the sites that -- that we're moving. >> Tovo: So when you say that you would separate them with the current sites, are -- are you moving -- are you suggesting that you would be moving forward with the sale of the "-or an rfp for the current tracts? >> Yes, ma'am, we move forward with that rfp on the current tracts and try to find sites for those, and then once we identify what those sites or

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what the rfps look like, when we come back with the rfp to council, we would have a better idea of different potential uses for the site that we're moving out of. >> Tovo: So let me say thank you so very much for approaching us really early with these items because I think that council, we should have a really extensive policy discussion about that piece. The 6909 Ryan drive tract has been identified as a potential for housing for longer than any of us have been on council, probably decades at this point, and then the previous, previous council, have to say like two previous, I initiated a plan to look at Ryan drive and ask staff to look at what is possible. It's next to crestview station, next to a neighborhood that has high need for a park and we had initiated some discussions about using that tract for the purposes identified by housing report after housing report after housing report as potentially a site for some housing that is affordably priced and family friendly, and then we added some other things to it. And then the planning, there were some various and sundry about how to move forward on that project and councilmember pool has taken on that initiative, but I certainly think that tract is a key tract to consider for what kinds of community benefits we might achieve. Now, I I fully understand it's in Austin energy's portfolio and Austin energy would need to be compensated for it. I believe our previous city manager and previous general manager had talked about how that could happen, and, you know, what the tract had originally cost and what some other opportunities were for doing an exchange that would benefit Austin energy and make them hold for that tract. But I really would urge us not

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to move forward in selling that tract without considerably more discussion about what the opportunities are there. And I would like to have that discussion with town lake center, too. I think that 15, 20 years from now, the city council at that time will look back and say we once had a piece of property there, and maybe the city has grown to such a point city hall cannot house all the employees who need to work downtown, and we were then in the position of trying to find downtown space, which at that point will only be more expensive. So, again, thank you for bringing these items for our discussion. I'm not sure how we should proceed at this point, but I would really encourage us to have -- to have a fuller conversation. And it occurs to me that the resolutions we sponsored last week -- last fall, asking to go

forward and look at city-owned tracts might even have some things in mind, might even be returning to us for some proposals for Ryan drive, so looks like Ms. Reiser might have -- I don't know if you have information upped to offer back about that. I have some other questions, but I'll leave it there for now if my colleagues have questions, and I can come back to now. >> Pool: Ms. Rizer. >> On the Ryan drive, I've hired a consultant to look at a way to meet all the needs that council has identified, creative work space and potentially reusing -- the warehouses, parkland and multifamily and how we would move forward to achieve all those goals. >> Tovo: Well, that's great. Then how would it work -- then would that not be part of the rfp we were just discussing to talk about selling the tract, or -- >> No, the rfp that we're looking for -- now I understand where you're -- where the confusion is, is the rfp that we're wanting to move forward with is an rfp to find them a new site to move into, and to make these sites vacant and

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available. Then step two would be a decision on what to do with these tracts. But on Ryan drive, we're working concurrently, we have been working, really diligently, especially in the last 30 days, to be able to come up with some ideas on that and hopefully bring it back to council in the next month. >> Tovo: Thanks for that clarification. When you were talking about doing something with the existing tracts, we had a complete misunderstanding, so I'm really glad to hear that. And it's what it sounded like from your presentation, that the first step would be to see what is available out there for the new buildings. But I wanted to be sure that the tracts that we have aren't going to be part of that rfp, and it sounds like you've answered that question. Are the financial assumptions that are on page 13 -- are they assuming the sales of the two tracts in question? >> We have a number of properties, and we used dabbled used -- believe it's about \$55 million of total market value. That's sort of on the low end. It wasn't necessarily key to keeping or selling any one particular property except for tlc, either sale or transfer. But the other properties that we have, it could be a combination of those. It really depends on city of Austin's more strategic goals on whether we retain a property or dispose of it. >> Tovo: But the financial assumption on page 13 assume the sale of \$55 million worth of property. >> That's correct. >> Pool: I don't see any other lights on. Okay. Councilmember Houston. >> Houston: We have the square footage. Can you tell me how many acres that would be, as far as the acreage you're looking for? >> Well, we're looking for -- of the office space and utility contact center, it's 200,000 square feet. >> Houston: Yeah, but that's not what I'm asking. I saw 200,000, 200,000, and

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5,000. How much acreage are you looking for in total to be able to place those structures on the site? >> Councilmember, as part of rfp process, we'll be doing a massing study and working with Austin energy to see the types of vehicles that they'll be placing on the site. That really -- the types of vehicles really -- and the types of -- of items they're going to be storing there will determine the total size of land that they need. And so I don't have that information for you today. We just wanted to add that to the presentation so you know that we're moving forward with that concept. >> Houston: And as we've talked about city-owned land and other land, other jurisdictional lands, I think it's worthwhile to say does Travis county have anything that we could swap or trade with or -- we can look at that as well. >> Pool: My guess is, that's part of your search. Correct? >> Yes. That's part of our standard process. We will contact all the governmental entities, including ACC, county, school, everybody. >> Pool: And the state? >> And the state as well, yes. >> Pool: Mayor pro tem, did you have a couple other questions you wanted to ask? >> Tovo: I do. Thanks. Yeah. I mean, I really -- I'm glad to hear that city-owned and jurisdictional lands are going to be part of the first step. The first question I had was whether the activities that are going on at Justin lane could be relocated to the tracts that we just authorized the

purchase of for the airport -- I mean not the airport, the convention center. They just bought some -- the lands that they just bought -- >> Yes. >> Tovo: -- Out by the airport sounded like storage-ish areas. >> That's correct, councilmember. That land is vacant land and they're going to be coming back with a request to build on that land. And I think, from what I've seen at Austin energy, they actually need a building to store their equipment in. And so we're really going to be doing an rfp probably for land

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and a warehouse building that's at least 200,000-square-foot. So vacant land will not work for us, but we are looking at ways to combine it or do short-term leases if we need to, if we find a plan for the Ryan lane. >> Tovo: Yeah. I had an opportunity, as you know, to tighter. To tourist some years, and it didn't seem like there was a whole lot of activity going on. It's mostly storages and the center didn't really have very many employees, I don't think. A dozen or so? >> We have about five or six employees who are permanently assigned there. Part of the idea, what you didn't slew, is all the other lease properties we have around town that are scoring meters and equipment. >> Tovo: That's right. >> We really just want consolidate all of that and have modern systems, single buildings, so those five people can be how much more productive in managing our inventory. >> Tovo: Right. But in terms what I was just talking about, the fact that -- sorry -- I shouldn't talk with my hands on the microphone. The tract that's out by the airport that they're -- that the convention center is going to be used for -- using for storage, is that a possibility of just relocating all that activity there and building -- if you have to build somewhere anyway. >> Right now I'd say everything is a possibility because we're looking at broad areas. We're also looking at what the current zoning is, and would it be appropriate to put a warehouse on the property, if we were to develop a piece of raw property, what was the cost of construction and environmental issues. So a lot of those things are to be determined. I would say we haven't ruled out anything yet. >> Tovo: Okay. Well, I mean they were using it as warehouse. That's one of the reasons why I was thinking it probably has the zoning you would need for warehouse. But anyway, the point I guess, as I recall the discussion we had around the Austin energy building, there was a real

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interest in seeing, as I recall the discussion, and it might have just been my own desires, but to really encourage Austin energy to be very creative in its thinking, when it sounds like you're being, but looking at existing asset, seeing what's possible within our existing estates, and partner think with other departments if possible and appropriate. I trust that that work is going to happen and would just like to encourage it, especially if we're purchasing tracts for one -- one -- you know, one slice of the city's producing city's --warehousing possibilities and you need warehousing possibilities, I would expect that to be a high level -- one of the first to explore. >> Councilmember, I just want to add that we are looking at that, but we hope to bring back to you some exciting reuse of city facilities to meet some of the goals that you guys have set forth for us, and -- you know, in previous ifc's with affordable housing and some other things, and that some of the reuse of these facilities, they're in neighborhoods, so some of these types of things that we want to store in the warehouse really don't mix well with neighborhoods, especially with the types of trucking. We are looking at combining uses for -- you know, for different groups to work together on if it facilities. So I think as we keep moving forward, you're going to keep seeing some good things. >> Tovo: That's great. I am eager to see that in fact, while we were talking, I just e-mailed one of my staff to check on when that is coming back. I wasn't suggesting we relocate Ryan drive in somebody else's neighborhood, I was thinking about the vacant land we just purchased for the rental center to store their extra stuff. It just seemed like a natural fit. I have a question that you may or

may not be able to answer right now. Somewhere in my files I have the information, I think, about what -- what Austin energy

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initially paid for the Ryan drive tract, but I'm not sure when and for how much Austin energy acquired the town lake center. And I wondered if you had that information available today. >> I don't, but I can find that for you. >> Tovo: That would be super. Thanks. And I guess the question for Ms. Reiser is, will you be evaluating opportunities as the process moves forward for hanging onto town lake center for some of the reasons I mentioned earlier, but doing a long-term lease if Austin energy vacates that space? >> We will be looking into that just to make sure we all note that if it does become a general fund asset or another asset, that Austin energy will need to be reimbursed for that, since they are a utility. >> Tovo: Right. I remember that, and that was one reason why I was interested to know what Austin energy paid for it. >> Yeah. >> Tovo: Thank you. >> Pool: Just to touchback on the Ryan drive issue, that is something that has been pending for the neighbors for quite a while, and I'm really excited to see -- I knew there were steps moving in this direction, and I'm glad you've daylighted them with the facilities plan. I know we still have a long time, road ahead of us, but it's -- it will be really a great -- it'll be great news to the people in that part of the city who have been looking for some kind of useful development on that site. It backs right up to the train. So, anyway, we've numerous meetings, both in my office and with the owner of the property directly to the east that fronts on Lamar, and also with the neighborhood, so there's a lot of good, creative thinking going into what can happen in that area. And I was -- I think -- I don't know exactly where the relationship of the convention center site for the warehouse is to where the remanufacturing hub is over by the airport.

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>> The remanufacturing hub is closer to the formula one site. The Austin convention center site is just north of 183 and 71. It's in that little area where you're coming from the airport and you curve around to Riverside and see some vacant land, kind of behind cactus rose. >> Pool: Okay. Great. I know you'd be looking for places that would not be prime for people to live. >> That's correct. >> Pool: Okay. So if it's under a flight path, for example, that would be appropriate for an industrial use, but not residential. >> That's correct. >> Pool: Okay. All right. Does anybody have any other questions on the facilities plan? All right. Thanks so much. We'll be watching with much interest, so keep us posted. And we are moving on now to item 6, which is amendments to the city's energy code to require that new residential and commercial buildings are constructed to be solar ready. And we have two citizens signed up for this. Let me refresh this to see. We have two citizens. I think what I'd like to do is go ahead and have the presentation from staff, and then we'll invite Mr. Coleman and Ms. White up to speak. Welcome, Ms. Kimberly. Good to see you. How are you today? >> I'm great. Thanks. Debbie Kimberly, customer energy solutions and curt stogdell, manager of Austin energy green sustainability program. >> Good morning, everybody. I'm here this morning to give you an update on where we are with the proposed solar ready amendments to the energy code. First I'd like to start with giving you a little context -- you had asked for how solar ready fit into the overall building codes for the city of

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Austin. First of all, development services enforces code and takes new codes and associated amendments through council for approval. For Austin, the international energy conservation code is the governing code for energy. There are other codes that make up the body of the entire technical building

code, includes fire, building, residential, plumbing, mechanical, property maintenance, so energy is one component of the overall technical building codes for the city of Austin. Texas -- house bill 1736 mandated adoption of the 2015 international energy conservation code by all local jurisdictions, so it's a legislative mandate. In 2015 -- 2015 iecc, international energy conservation code, became effective in Austin with local amendments September 1st. The reason that the solar ready amendment is being placed in the energy code, the precedence for that, is that it was placed in the appendix of the 2015 iecc, so the code council determined that solar ready should be in the energy code through that. So we're following that precedence and that's why we're putting solar readiness within the context of the energy code. In addition, the solar ready amendment is compatible either with the uniform plumbing code or the international plumbing code, so it's compatible with either one. This is a timeline of what we've done so far with regards to solar ready. Solar ready was initiated by the resource management commission in April of 2016. We initiated stakeholder engagement and feedback around the proposed amendment beginning in May, and that has been ongoing since that date and continues now.

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Initial drafts of the solar ready amendments were approved by both the electric utility commission and the resource management commission in June of 2016, and then June of 2016, energy code was passed by council. Energy code became effective September 1st of 2016. And then in February of 2017, there was an item from council for proposed solar ready. And at that time you asked staff to solicit additional feedback on solar ready from the relevant boards and commissions, so we're reporting that, we're still in the process of that. We heard the -- the electric utility commission heard solar ready again last week in our monthly meeting. The resource management commission pushed that meeting out until May, so they're going to hear that in May, and we'll report on those results when we move that forward. And then in April also, as well, the international residential building code, the rfc, was passed by council. So to that end, what does solar ready really do? Solar ready is meant to address both new commercial and residential construction. So it's a new construction ordinance. It amends the 2015 iecc. What it's really meant to do is, during the design stage, to get the designer to designate a portion of the roof as solar ready, or a solar ready zone. So what is a solar ready zone? Well, that's an area free from obstructions. For example, vents or mechanical systems such as air conditioning. It also looks to ensure that the orientation of that zone is appropriate for solar, facing rooftops are challenging from a solar production perspective, so having a solar ready zone on a rooftop that faces north

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would be problematic. It also asks that there's space reserved in the electric panel and that it's marked "Solar ready," so there's space specifically dedicated within that design to be able to accommodate future interconnection of solar. It also supports local solar goals. It also allows for exceptions. For example, solar on the downtown network can be problematic and has some limitations. If a building is located in the downtown network, it allows for exceptions for that. It allows for exceptions for shading. That can be either for trees or other buildings. Roofs that are too small make it difficult, so it allows for exceptions for that. It allows for an exception for existing on-site generation or plans to put on-site generation within -- within the building plan, so if they're already in the plans. Rooftop parking skylights or heliostats, all would be examples of our exceptions. Something that it doesn't do, it does not require you to install solar or install conduit as part of the ordinance. So, again, it is a design standard or design ordinance. It is not built as a requirement to have you install solar. Looking at some examples of solar ready and specific applications, starting first with commercial, here's a couple of examples of buildings that would be challenging from a solar ready perspective. The building in the upper left has a lot of

mechanical systems on the roof. It would be really difficult to put solar on this roof. The building on the bottom right has a whole host of challenges. It's a very compact sight, it has lots of roof sections with different orientations.

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It has very densely packed mechanical systems. It also has shading. So this building would be very difficult from a solar ready perspective, but there are a whole number of exceptions that we've already talked about that would cover this building, and would still allow it to be built, it just wouldn't be able to accommodate solar ready. Here's an example of a couple of different commercial rooftops that are excellent examples of buildings that are solar ready. The building on the left has a number of skylights and some mechanical systems, but they've allowed a lot of space over on the far left, open from any kind of obstructions or shading, which would be grade for accommodating solar. The building on the right is a precompact overall roof space, but what they've done is they've clustered the mechanical systems in the vents to allow as much space as possible to be able to accommodate future solar. Staff estimates are that the vast majority of new commercial buildings as designed today for new construction would already meet solar ready. Looking at residential systems, we've got a couple of different examples of south-facing roofs. The roof on the top picture has the vents clustered up along the ridge line, leaves a lot of space down lower on the roof line possibility accommodate unobstructed solar. The building on the bottom has a large number of different vents and roof penetrations widely spaced. It would be much more challenging to do solar on this. You could do it, but you would probably have a pretty scattered installation, and it certainly cuts down on the overall capacity of the system. I'd also like to look at affordable housing within the context of solar ready. Affordable housing generally tends to have simpler roof designs which makes

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accommodating solar more straightforward. We anticipate that 80% or more of affordable homes, as designed today, may already be solar ready as they're currently designed without any changes. As we look at the potential cost of solar ready, we also want to look at the cost implications or the potential benefits of solar ready, or not having solar ready. So for commercial, you know, it requires, again, consideration in the design process. The big challenges on the commercial side are when the rooftop is occupied by features integral to code, something that might be -- a future code issue might be access for future firefighters to have workability in the case of fire. Or for occupancy, again, we go to the idea of street -- of mechanical systems or heliports, that sort of thing, make it challenging from a solar perspective. We anticipate that the material impact of most projects will be negligible and again, we allow for exceptions. Looking at the cost implications for residential side of things, we anticipate that there's going to be an approximate \$50 cost to the -- added to the home in a review and administration of solar ready. So development services will do a review of the plans and make sure that it is compliant with solar ready. That does have an additional cost that the designer has to put forward to be able to make sure that they're compliant with that. If a house isn't compliant, we anticipate 100 to \$500 in additional expenses for houses to require adjustment. But, again, if they do it in the design stage, which is really what is anticipated here, that should be very minimal, and once your design community

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gets informed and educated, we shouldn't see much of this. For other housing, we anticipate similar review and administrative costs. Costs for houses out of compliance that aren't affordable are more

variable because they tend more complex and have more complex designs. It was hard to have an idea of what a really good estimate was there. And, again, we allow for exceptions to help accommodate a lot of these instances. So talking to opportunity costs for solar ready, currently, our solar installers aren't moving vents for installing solar systems. They're working around them. The result of this is, it impacts the size of the installation, and possibly the aesthetics. So we've got an example of a solar array with a panel missing out of the middle of it. You can see a vent coming up out of the middle of that that they had to work around. Couple of issues, they can't build over a vent. Also, it provides shading, which cuts down on the overall potential production of the system. So what they did is they just worked around it. Potentially, not -- this isn't very widespread, but potentially, if you have too many vents, you could eliminate the possibility of solar altogether. A direct cost to having a system that isn't designed as solar ready could potentially be a lack of electric panel space, and costs for that have been estimated to range anywhere from \$300 up to \$1,400 if they need to provide a new panel. So in summary, solar ready designates a portion of the roof as a solar-ready zone. It reserves space in the electric panel for future interconnection of solar and marks that space as reserved for solar. It supports council-approved

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solar goals, and it allows for exceptions. Most new buildings, as currently designed, already comply with solar ready. That said, there is a cost. We believe that that cost will be limited for commercial and for residential, we think that for affordable housing, you'll see costs in the neighborhood of \$50 for the planning and review stage and a cost of a hundred to \$500 in additional costs if they had to move the vents. For other residential housing, we anticipate similar costs in the review and administrative review phases as well. So moving forward, next steps, we need to add -- well, excuse me. We'll be going to the [indiscernible] Today, the building and fire code on the 26th. We'll be going back to the resource management commission in may to catch up on that meeting that we missed. In June, development services department will be bringing this forward to council. When passed, will initiate stakeholder awareness and outreach to let the community know that this is coming and how to be able to comply and be able to anticipate that. We'll initiate training with development services department beginning in August to bring their staff up to speed in what solar ready is and how to help enforce that, so we'll be working with plan and review staff for training on that. And continue with stakeholder awareness and outreach, and then October 1st of 2017, solar ready would become effective. And we would also issue solar ready guidelines to help the community be able to understand what they need to be able to do to be able to be compliant. And that what I have. Do you have any questions? >> Pool: Thanks, curt. Yes, councilmember alter. >> Alter: Thank you.

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So early in your presentation, you mentioned that the solar amendments were consistent with either plumbing code. Could you tell us a little bit -- I understand it's compliant with the codes, but is one of the cods better or worse, or is there material differences that we should understand for their implications for adoption of solar or the costs involved? >> So I'm going to bring you a couple folks from dsd to speak to that. >> Good morning, councilmembers, I'm a division manager for building inspections. We actually work with amendments on the plumbing codes. Tony Hernandez also is a program manager with building inspections. This has to do with design before it's built. So it would work with both. The plumbing on the irc allows for a smaller venting, but using either one, they can relocate if they actually plan for it. It's possible. >> Alter: But are there more costs involved in one more than the other? I mean I understand you're saying it works either way, which is great. I'm just trying to understand -- >> It would be more cost effective with the plumbing on the irc. >> Alter: That's the international residential -- by

how much? >> I don't have those numbers, but it would allow for a smaller venting in the house. We haven't run the numbers on how much more. We have -- we are in conversations with neighborhood housing right now on affordability statement because we were actually instructed by council to bring the irc back in June, so we are working on that right now. >> Alter: Okay. Thank you. >> Pool: Yeah. This is the item we approved for public hearing at our last meeting. There's some significant disagreement between our staff and the plumbers who actually do the work on which is the better code to be using. It's between uniform and international. >> That is correct. >> Pool: So we'll be getting some pretty good public input, I think, on that

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topic. Thanks. Anybody else have any questions on this? Yes, councilmember Garza. >> Garza: I think it's good that there's exceptions, but I'm just curious, are the exceptions, I guess, tight enough where it won't just be easy to get one of those exceptions? Like I'd want the -- whatever the requirements are, to have, like, teeth, and then if you really need an exception, obviously those would include how it affects the cost because that just gets passed on to the buyer, but is that to be taken into consideration? That there's teeth? >> It absolutely has, and we've tried to strike a balance. We're not trying to impose a requirement that is onerous. So we're trying to -- to strike a balance. What we've tried to do is find something that really is beginning to get the design community to consider solar as part of the initial design, not so much to catch people at the tail end. So it's really designed to catch people initially up front where there isn't a big impact to them and to try and incentivize as much compliance as possible. >> Garza: Okay. >> Pool: I have a question, real quick question. On page 11, the cost for making the changes, retrofitting or otherwise, that one picture where you have the panel missing with the pipe in the center, I guess that's on page 12, if you were moving a vent, you also have to repair the roof and put the panel -- put the roofing tiles on it. Right? So I could see where it would be a lot less expensive and a lot less time to have the plans drawn up in advance of building a home, to have those vents all clustered, as you're demonstrating here, or putting them all on the shaded side of a roof instead of either the west or the southern facing. It makes so much sense. I think it's kind of like -- what we're looking at here

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is the accommodating a change for a new type of energy where people, I don't know, 50 years ago, were retrofitting their little Austin bungalows to put in air conditioning, and that was a difficult situation; it was probably pretty expensive for people to retrofit their homes to put in all those vents, but now it's just a standard application of we know where that -- where those vents are going to go, and it's done at the front end, and it's even more efficient than it would have been in the retrofitting. Would you say that that is a similar situation, as what we're trying to do here? >> Absolutely. And it really syncs up well with the solar goals that have been set forth in our current -- and what's going to be proposed in the generation resource plan. So recall that those goals are 200 megawatts of local solar by the year 2025, with at least 100 megawatts being customer sited. So what we're trying to do is be reasonable. In looking at maps, we believe that already you see a number of structures that are solar ready, but by the same token, we want to ensure we don't create challenge. Curt mentioned the downtown network. Downtown network can accommodate solar, it's just a question of size. So a very large system that is on a commercial property that might be vacant during the day but operates at night would back-feed onto the network and create power quality and reliability problems. So we believe that we've struck a reasonable balance. >> Pool: Councilmember troxclair, do you have -- I see your light's on. >> Troxclair: Yes. So could you go back to the cost slide where it talks about -- it said affordable housing and then

other housing, so do you mean affordable housing, capital a, subsidized housing? Or is that -- >> Yes. Yeah, it's really meant to address more simplistic

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construction versus more complex. You know, affordable housing tends to have simpler roof lines, simpler mechanical systems, less venting. So generally, there's less impact from a solar ready perspective to a design -- most of the houses are already designed that way, currently. That was really the point we were trying to get to with that. >> Troxclair: So when you're using the term "Affordable housing," you just mean housing that is more simplistic in nature, not necessarily -- >> Well, it generally tends to be low cost and -- you know, affordable housing can be built solar ready with, you know -- you know, very reasonable accommodations in design. We've seen examples of it already. The cover slide shows a -- an example of Guadalupe Saldana project that we helped with the design on that is solar ready. So it's more to show that the two are very compatible with one another. Solar -- you know, affordable should -- isn't impacted by solar ready in a material way from a design standpoint. >> So it's not necessarily restricted, just, for example, to section 8 housing, if that's the nature of your question. And it's one of the reasons why we work actively with neighborhood housing and community to develop the cost estimates which are part of what we -- frankly, dsd takes forward when the ordinance comes before council for a vote. >> Troxclair: Lug to onewill you go to one slide, earlier slide, slide 11? I'm just wondering if there are different costs for something that is deemed by the city as affordable housing. Because they're separated here. >> No. >> Troxclair: So I'm trying to understand if there's two different processes or two different -- >> No. >> Troxclair: Okay. You're just saying that it's easier that the lower cost -- that the less expensive housing tends to be, I guess, easier to install solar. And then for the commercial

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development, I mean, you said a couple times in the presentation that -- that the cost is to -- I don't think I've -- I think last time we voted O this iidn'tsuore to think that it's so ridiculous that when we have this affordability crisis, we're going to charge everybody who's building a house -- home in Austin up to 500, possibly more dollars to build a house that has the potential to be able to put in solar, in case they want to put in solar and in case that they -- I guess basically to make up for the fact that somebody might think it's not aesthetically pleasing to look at a roof that has a missing solar panel to make room for a vent. So that's not -- I know that you're just doing what you have been requested by -- or directed by council to do, so we're just -- I just have a differing opinion on that. So I have -- I question whether or not the statement that commercial -- that the cost is negligible for commercial developments is accurate or not, because I think that it's -- that \$500 for an affordable house is a lot. >> Well -- >> Pool: If I could just interject here, are you saying that if we don't change the locations for the vents, it could cost as much as \$500 to retrofit a roof that has the vents penetrating in all different spots and -- >> During -- >> Pool: And the difference is, you move the vents, it costs maybe \$50 to change those plans, and then a larger portion of the landscape of the roof is open so that you could, in fact, easily install the panels without having to work around vents or move

[11:09:10 AM]

vents? >> Yeah. And this, again, speaks to during the design phase, not during construction or after construction. After construction, the cost could be substantially higher. >> Pool: Right. >> You know, to councilmember troxclair's question, what we've found, as we indicated in the presentation, is new

commercial development that is going up right now already tends to have the mechanical equipment, the skylights fairly clustered, so we don't see a real issue. What we do see, frankly, is a real interest in commercial solar, and you'll see this in the next presentation, given rate of uptake from commercial customers in solar, and this is intended to, from the start, construction buildings where you've got the clustering of mechanical equipment, which generally commercial properties will do just from various design and loading standpoints. They like to see it clustered. So just making it easier to avoid the expense of having to relocate that equipment, should a commercial customer choose to install. As we said, about 95%, according to -- as Mark gave credit to Google previously, we would give credit to Google here because that's what we used in looking at the territory. >> Pool: Councilmember alter. >> Alter: I just wanted to -- I'm not sure I totally understood the answer to councilmember pool's question, in combination request councilmember troxclair's, in terms of the expenses. Are these expenses that we're talking about at the design end, or just, you know, you didn't sign it in, and if you are retrofitting it, it would cost this much more? >> If you did not design initiation it would cost, we estimate, 100 to \$500 during the design phase to redo your design. The costs are much higher to have an existing building relocate vents, other

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mechanical equipment, and a service panel. That can run into the thousands. That's what we're trying to avoid. So the up-front piece is purely, design the numbers that we cited, but then we also showed some dollar costs associated with having to do that work after the fact on an existing building. >> Alter: Right. I think as councilmember troxclair said, if it was \$500 up front, that that seemed to be a lot. But you're saying it's more like the \$50 if you design it in, and that 500 comes to play later on once it's about the built if you're trying to retrofit? >> No, the 500 comes into play if the property has not been designed to be solar ready, in which case the builder would have to go back and relocate on their designs the vents so that it would comply with the solar ready code. >> Pool: And then it would be even more expensive if the vents were already through the roof and you needed to design around them -- >> Correct. >> Pool: Or redesign the roof -- >> That would be after instruction. >> Alter: But wouldn't they build that in if it was in the code, from the get-go, they would have started, so you wouldn't really be seeing the additional 500? >> You would hope. You would certainly hope. >> Pool: And I'll just point, we have 20 minutes to go for the meeting and one more item to do, plus about five speakers. Councilmember troxclair, because y'all are able to talk with staff after the meeting as well, but is there something else you'd like to add that we haven't already raised? Troxclair yes. Just to clarify, I think, what councilmember alter was trying to get to, was -- or maybe that y'all are trying to get to, is that a lot of times, these things -- I don't have certainty at this point that our codes and our codes are always catching these things at the beginning, so it seems that you're already -- that we're planning for the very real possibility that a lot of these things wouldn't be

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designed -- wouldn't be included in the design phase, and possibly not caught by, say, a city inspector until after a building is already complete. Because I know that I have several constituents that are dealing wishes that, you know, they hadn't signed off from the city, now the city coming back and say, well, actually, you didn't do this right. So it's those people that would be required to potentially spend thousands of dollars to completely relocate a vent or something like that, again, for the possibility that they may one day want to install solar, and when they did, that they wouldn't want to have one panel missing. >> So this gets into how it's enforced, and our discussions with dsd have been that they plan to enforce it in plan review, and that that would be when it would get caught. There isn't right now a plan

to have -- that I'm aware of, to have enforcement in the field and inspections in the field. So it's just during the review process. >> Troxclair: And when you say plan, does that mean design? >> Mr. Coleman, you're first, D you hehree minutes. And then Ms. Height, you'll be next, and you have three minutes also. Welcome. >> Thank you, councilmembers. Thank you for your service, and I'll be brief. So since you're going to hear a little bit more about this item later, I want to just skip some of the history that you're familiar with. I'm here -- Glenn Coleman, I'm representing the greater Austin area home builders association this morning, and, you know, we have been watching this item as it makes its way through various other cities. For example, city of Dallas, we did not oppose this item. We felt like, yes, it is true that on a residential building it does add a little bit of cost. And we don't know exactly what that cost is. I mean, it's just kind of hard to think, well -- but we estimate it's about three

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to five hundred dollars, and we also think that that cost will fall as builders become more adept at factoring that into their plans, their architect, and this is more of an initial cost and we'll see that cost drop as it becomes more customary. However, in the city of Austin, where we have the uniform plumbing instead of the international plumbing code, we estimate an extra three to five hundred dollars. I'm not surprised your staff doesn't have this number. We don't have it either. We don't know exactly what it will cost in using the other code, but most tell us three no five hundred dollars, it depends on the house and depends on the product. And that is a cost that we see over and over again, because the upc, which we only have, isn't large in this city, as far as large Texas cities go, is just harder to work with, it affects venting, how replace the vents, and clustering they were talking about earlier. One thing this council could do, our ask would be in your deliberations moving forward -- we're going to support -- we worked really hard with kaiba and with the club to get an ordinance that, yes, it's going to be more course of business but we feel like it's fair. We feel like it's better than Dallas's ordinance, frankly, we feel like we can live with it, although we're regretting that it is going to add a little cost to our homes. And one thing this council could do, right now -- not right now, but in a month, in June, is move forward with the ipc and you would wipe out the cost, extra cost of adopting solar ready, and probably find out -- and probably pick up some auxiliary benefits as well. So we're going to remain in support of our friends in the environmental community, and we are not in opposition to this bill. But with regards to affordability, we would ask this council take a big step, put is into the 21st century with the international plumbing code, let us absorb those costs which we will have every day, in every house we build, and move forward with a healthier planet and more robust solar market and more

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affordable homes. Thank you. >> Pool: Thanks very much. Ms. White? >> Hi. Kaiba white, public citizen. Thank you for the opportunity to speak. We are definitely in support of the solar ready code amendment. This is really common sense policy, as you've heard from staff, and it meshes right in with our adopted goal to have new homes be net zero and energy capable. And that requires, of course, very efficient construction, but also the ability to produce some energy on site to supply what is needed in any building. So this, you know, has been -- has been quite a process, and there have been a few changes so I just want to address a couple of them that you'll see when this comes to you. There -- there are he separate requirements for different types of construction, single-family, townhomes, multifamily. There is an existing requirement at Mueller, and this is a 35% requirement for multifamily. And so it is my hope that what we adopt here for citywide will mirror that, because it seems to be working in the Mueller development. In the last version that I saw, that has been reduced down to 25%, so I just want to call your attention to that now because I think that that is particularly important, given that

multifamily is a big, kind of gaping hole in our solar adoption here in the city. It has, by and large, been for those in single-family residence, and those I think equity considerations as a result. So I just wanted to call your attention to that. There's also -- you know, there are a number of exceptions. One of them is if you actually install solar on the property, you don't have to make it solar ready because you've actually installed. That's great. That exception was initially per square foot of building

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space, and I would encourage that is an appropriate metric to use. Again, the last draft I saw had a two kilowatt system minimum as another option. Two kilowatts is the smallest system that Austin energy will rebate because it is -- I shouldn't say insignificant, but it's very small. And so if you were building a larger home, you know, if you have a 4,000-square-foot home, two kilowatts just doesn't make sense. So having the per--square-foot requirement is, I think, where we should go with this. I did want to address something that I just heard from staff for the first time about not enforcing this in the field. You asked the question about how much teeth this will have, and of course enforcement is where you actually, you know, have the teeth in any policy requirement, really. So this should be enforced, definitely in plan review. But how do you know if those plans have actually been implemented if you don't inspect it in the field? And I think -- I've been before you to talk about this issue with the energy code in general. If we're going to go to the bother of adopting policies, we need to enforce them at all phases. Thank you. >> Pool: Thanks very much, Ms. While. Yes, councilmember Garza. >> Garza: Thanks for pointing out other cities that have implemented this, so this is not just an Austin kind of thing. Besides Dallas, are there other Texas cities that have solar ready codes? >> Yes. There are. I'd have to -- I can get you a list good. >> Garza: Okay. >> And they're each a little bit different and enforced a little bit differently, but I can certainly provide that for you. >> Houston adopted it, although they've been making some changes. >> Houston adopted this and it became effective, I believe, last November. Then there are other cities around the country that have adopted something similar to this as well. >> Garza: Is Houston's more stim to the proposed Austin one? >> If I remember correctly,

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the Houston code requires that the property have conduit small, irrespective of whether the property will have solar. >> Go ahead. >> I heard that there were real problems with the Houston solar ready. >> So they delayed it for about a month or two before it was finally adopted. >> Garza: Uh-huh. >> And I know that that's one area in which it's different, and I believe there's some -- also some differences relative to venting requirements. But we'd be happy to get you more information, councilmember. >> Garza: Okay. Thanks. it's interesting to know we're actually kind of behind the curve on this one, but thanks. >> Pool: Okay. Great. No more questions on that one, then we'll move to our last item, 7: Current solar programs for commercial customers and proposed commercial value for solar. And we have three people who have signed up to speak on this, and I'll call those folks after the staff presentation. Ms. Kimberly. >> We'll move quickly through this, and this is Daniel murry who manages our solar program. >> Good morning, everybody. So last year in our rate case, one of the items we were asked to look at as part of our discussions with the stakeholders was a commercial value of solar. You may be aware that our residential solar commerce customers moved to a value commercial rate in 2012 and they wanted to be commercial move in that direction. We looked at that. We hired a third party to look at our value and give us recommendations is to what would be appropriate, if any changes needed to be made to apply that to commercial. They completed that in February, and we have had ongoing stakeholder engagement both before that came out, and since, to look at the results and decide on a path forward for our commercial solar customers. We will be back in front of you in June with the details

on the actual rate that's being proposed. We do that every may for residential and we'll do the same for commercial, so we

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don't have time to get into all the details today, but have no fear, we will be back. So commercial customers currently can receive benefits in two ways by installing solar. First off is simply through the rate instruct. If they are producing a kilowatt hour of energy on their roof by solar, they don't buy it from Austin energy. To they're reducing what they buy from us, and, therefore, whatever charges they have on their bill that are based per kilowatt hour, they reduce by not buying that from us. That's a little bit different for every commercial customer, depending on the rate class they're in. We also have a differentiation between customers with solar systems that are over 20 kilowatts and those that are under 20 kilowatts. So a little bit different depending on the customer. They can also benefit through our incentive program, so if they choose to go through our performance-based incentive program, they also receive an incentive for every kilowatt hour that they produce from the system for the first ten years of its life. Previously, before 2010, that was actually more similar to to your residential program and up front rebate and we changed to that bombs-based performance based, it's paid over time to make sure the system is being maintained and the way we expected when we gave them that incentive money. So what we're proposing is moving, again, like residential, towards a value of solar for commercial customers, as well as maintaining our performance-based incentive program. If you aren't familiar, the way works is that you have solar panels up on your roof. You have a pv meter, also known as a solar meeting, then you have your Normal revenue meter, which is a net meter. So under a solar tariff, you would get a value of solar credit for every kilowatt hour that produces as measured on the solar meter or pv meet. They would also be charged at the regular rate structure for everything they use in the house, whether that's coming from the grid directly or pv meter and pv system.

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What we're proposing is that this new commercial value solar rate would apply to all of our demand rate customers, so that's sec 2 and up. And we would keep our now -- non-companion demands rate customers on the residential value of solar as currently set up because they do look a lot more similar, they're on a similar rate structure that doesn't have the demand charges built in and they tend to have much smaller systems because they have smaller usage. So looking at what the actual -- the commercial value of solar methodology would be, we're proposing to move towards a market-based methodology. The residential value of solar was developed back in 2006. There have been a lot of changes in the Texas electric market since then. We've moved to a fully deregulated approach, with a fully market-based energy buying and selling system, and so we want to move to a value of solar that better reflects that. And it's a little more transparent to our customers as well. So what that would mean is that we would have three parts of the value of solar for commercial customers, an energy value, transmission and distribution value, and an environmental value. The energy value is a forward market-based value that is based on the production for the next 25 years. We look at the actual time of day and of year that solar is producing. We compare that to what we think we would be buying from the market at those times, and of course solar aligns somewhat with our peak prices in the market so it's a bit higher than what you would pay on average for electricity throughout the year. Transmission is based on avoided cost that we don't have to pay or transmit power to our load zone here in Austin. And then environmental compliance value. And this is where we've been talking with stakeholders the most at recent. The third-party consultant recommended that we move to a solar renewable energy credit-based environmental

value. We have been in discussion and we are proposing to move forward with a social cost of carbon-based environmental value, so that

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would take into account more than just the market value in this case, but promote the other environmental aspects of reducing our greenhouse gas emissions and other air pollutants, for example. And we'll update this commercial value solar to reflect our commercial solar fleet, so instead of having it based on our fleet back in, I think, 2012, was the last time we updated it for residential, it'll be specifically based on our commercial fleet. So the mostmp INT part about this is that we think this will have a positive bill impact for all commercial customers, both present and future. We will have the impact value of solar number for 2018 next month, but looking at last year's rates and making the shifts to the commercial methodology we discussed, we do expect that it'll come in a little bit higher than the circumstantial volumetric rates. So all of our customers would benefit and they would also get compensated for access generation. This is something that's currently -- mostly an issue for some of our customers who have unusual use patterns that are not necessarily using all their electricity during the daytime or in the surges summer, like schools who have a lower load in the summer. They're pushing back in the summer and under current rate structures, they don't get compensation for that to this would address that they would be able to reduce their demand charges with solar and hopefully in the future, storage. That's an opportunity for them to work with the utility and we can have some customer collaboration to help them control their bills and control peak impacts on our grid. And we're proposing moving towards a value of solar that's update with our cost of service every 45 years, rather than every year as we do currently with residential. That would provide better stability for our customers and better align with our current rate-making struck. It's easier for contractors to communicate when that rate is set for several years at a time rather than having it change year every year, and that's a prissies abl

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the other benefit there is no net -- utilities avoiding costs. And what we would otherwise have paid for energy from the market if this customer wasn't producing their own solar. So we look at, again, what we have been paying for electricity, straight kilowatt hours, regulatory charges and environmental benefits to us as a city. So, again, from the utilities perspective, it doesn't matter if it's the customer producing a kilowatt hour or we're buying it from ercot and of course the more we buy from customers the more it's helping them and helping meet our solar goals. On the incentive side, it separates the incentives from the rate structure. So we are able to maintain our incentive ramp-down as currently planned. You all might be aware that our last generation plan update in 2014 we agreed to local solar goals, the 200 megawatts Debbie mentioned and we would be phasing out incentives over time in a way transparent to stakeholders so they could see exactly how much money is left in the rebate program and how much capacity and they can communicate that to customers. We'll continue that ramp-down through 2020 or whenever we hit our local solar goals, and we are watching market prices. Of course they've come down a lot in the last several years and it is becoming ever more competitive with our other sources of energy and has pretty good payback for customers at this point. As that goods better, we'll be able to phase off the incentives more so. We think we are on track to meet our 70-megawatt goal by 2020. They anticipate us meeting local solar goals in 2019 so just ahead of the 2020 schedule and we think that's realistic and with the help of our local contractor community we'll get there. That's it for me.

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>> Pool: Great. Thanks so much. Does anybody have questions? We have three people from the public, Kathy redson -- oh, there's four. Let me refresh. And mark beggert. First is Kathy redson. Welcome. You have three minutes. >> Good morning, everyone and again thank you for the opportunity to speak this morning. I have been in the solar industry since 2007. I was an instructor at ACC teaching solar classes at imagine solar, then started working in the industry in 2013 for a company here in town and 2014 at my current employer which is native. I handle all of our commercial projects, and we've had quite a bit of success in the last six or seven years in really breaking into that marketplace. I've got a couple of installations in Austin that are very happy customer. When I learned about this opportunity to structure the economic analysis that is the driving force behind solar for commercial customers, I think this is a wonderful opportunity. It fits in well with the way that commercial customers want to look at and value the impact that solar will have on their financial projections. It compliments well with the pbi in that it provides some degree of predictability for what the solar generation will be worth, as well as, you know, on top of that the production-based incentive and how that will help them looking at it from both the monthly cash flow analysis as well as a long-term payback analysis which are two of the primary metrics that are used.

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I would recommend that -- for predictability, the only concern I had was seems like there would be an opportunity to reset when that service study is done every four to five years. And business people tend to be very conservative in what they are looking at in terms of how they can plan, and right now a ten-year planning window is important to be able to see that most systems will pay back within that time frame. And so during that time frame they want to see that there would be some maybe floor employed against this value of solar so that they can know that it might adjust, but it will never go below, for example, the energy rate or something like that. So that it's predictable in that nature. There's only so many things you can control, but that would at least give them a way of knowing that it wouldn't just reset at some point. They tend to take the worst case scenario approach when looking at that so that's the only thing I would maybe add is just a floor to what that can reset to at some point in the future. Other than that, I think it's a great plan. >> Pool: Great. Thank you. Ms. White, you are next. >> Hi, on behalf of public citizen and solar Austin. We're really excited to see this commercial value of solar proposal come forth. As you know, public citizen and Sierra club advocated for this as part of the rate case and we have been talking with Austin energy staff since then about this development and we're very grateful for the time that staff has put in to this -- to the study and to developing this calculation. As you are hearing, this is really important for the development of the commercial solar sector here in Austin. We have incredible potential for adding capacity on the commercial side.

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You know, you can get systems up to a megawatt or more on a commercial installation so it takes a lot of residential homes to get to that same quantity. So this is really important for meeting our goals, you know, both our local solar goals, our climate protection goals and also for creating jobs here in the city. So I think this is a win on all fronts. And it does -- you know, I hear what Kathy is saying. I think at least locking this in for five years as Austin energy has proposed to do is a good proposal and I know there's some discussion about possibly doing the same thing with the residential value of solar and we would support that as well. But yeah, basically we're just very supportive of this and hope that it moves forward in the upcoming budget and for implementation I guess at the end of the year. >> Pool: Great. Thanks. Mr. Beulah, welcome. >> Yes, thank you very much. I'm a value of solar customer so I thought I

would share experiences even though it's in residentially think there's a lot of overlap for commercial. Our house was solar designed by an environmental architect so we didn't have to worry about solar ready stuff, it was designed that way in 1998. So when the program became available through Austin energy, we were one of the first to sign up and Leslie and I worked to try to work out all the kinks in the beginning of the program. So our house was basically designed for this purpose. We were the first house in our neighborhood, which is the jester estates neighborhood. We now have over 50 homes with solar. I write a newsletter in our local newsletter I put something in on a regular basis of people giving testimonials of the value of having a solar on the roof. Now we have people buying plug-in vehicles because they are producing surplus and they

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want to drive on sunshine. So I think citywide this would be a great opportunity, especially for affordable housing when people can reduce their transportation costs, it's a win-win for everyone. I would like to mention that the breaker box issue related to making the homes solar lady, they also should add a spot for electrical charging station because we had to add one when we added our charging station in our garage. Also there are acres of rooftop. When you fly into Austin, you can see acres and acres of rooftop and there's no need to start buying up land if we have this much and the size for these large commercial buildings would help to reduce the costs and, of course, that electricity that's generated doesn't go do you ERCOT so that's a big plus for us as well. The value of solar in the future may be really our only incentive to meet our climate protection plans. With the phase out of tax credits at the federal government possibly and the reduction of Austin rebates ongoing, I think that this value of solar needs to be robust and -- because it's great not just for the customers but it's also great for the environment. And as somebody you may know last week the United Kingdom, the entire United Kingdom had a day with zero use of coal, and no one thought that could ever happen, but they are firmly committed to the climate protection plan and the Paris agreement and I think we're on track to do the same thing. Thank you. >> Pool: I saw that day without coal. I thought that was a great step in the right direction. Mr. -- Am I saying your last name correctly? >> Beggert. >> Pool: You have three minutes. >> I've been in the solar industry since 2007. I have been largely on the commercial solar side but also residential as well. Developer financed, et cetera,

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and now I'm on the technology side. I've been with Meridian Solar, one of the first solar companies established in Austin in 1999. I want three points I want to make. One, I want to give kudos to Debbie and Danielle because I think they continue to innovate around new braunfels. I think they are talking about the pragmatic integration of solar into our energy mix and so I'm appreciative of the work that they are doing and how they are thinking about this. The second point I want to make is in support of this value of solar. I believe it makes sense to me to apply the value of solar the same way we do to the residential value of solar. That those electrons coming from clean solar are equivalent and I think the businesses large and small when they choose to go solar are going to be pleased they are being fairly compensated for the clean energy they are putting back on our local grid for others' benefit. I think it just makes sense. And then I guess finally the point I want to make is that given the innovation around solar ready, given the application of the commercial Vos, all the other things Austin Energy has done, I believe -- and looking at the solar industry at large of which I'm a -- a very sort of deliberate student, it is -- it's -- it's incredible how far prices have fallen for solar. 80% over the last six years and they are going to continue to fall in ways and areas that we can't imagine. So this opportunity for such an elegant

energy solution where we can be putting the production at the same site as the demand and the consumption

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is going to proliferate significantly over the next five to ten years. So the idea that we would meet the 70-megawatt goal by 2020 is a foregone conclusion. I think we've said 2019 we could easily be there earlier than that. 500 megawatts, a gigawatt by 2025 is very, very real. There is innovation not only in the technology on the manufacturing side and the equipment side, but what's going to be happening over the next several years is there's going to be innovation on the communication side, on the digital side that's going to allow for better integration, better communication and more efficient use. [Buzzer sounding] So thank you very much. >> Pool: Thanks so much. And yeah, when I think about the homes that we're trying to reduce the cost of utilities for folks, we will have a really concrete impact on that the more we can distribute solar on the roofs and have the unique experience of seeing the -- the wheels spinning backwards where it's paying back the residential or the commercial owners. So we can actually have some real impact on lowering utility rates throughout the city. Thanks to the four of you for coming and endorsing the work that we're doing here. It's great to hear from the community. I appreciate the work you guys are going as well. Is there anything else anybody has? Remember, no meeting in May. A number of folks will be out of town, I think it's May 24th, so you can take that off your calendars. Thanks so much. We are adjourned and it is -- looks like it's just shy of 11:45. Let's say 11:44. Thank you.