ONTARIO ENERGY BOARD
IN THE MATTER OF AN APPLICATION BY
HALTON HILLS HYDRO INC. ("HHHI")
2021 COST OF SERVICE APPLICATION
INTERROGATORY RESPONSES FROM HALTON HILLS HYDRO INC.

DISTRIBUTED RESOURCE COALITION INTERROGATORIES AND RESPONSES

1 - DRC IRR – 1

1–DRC–1

- **Exhibit 1**

HHHI indicates that "customers are connecting more renewable energy and backup generation and installing more electric vehicle [**EV**] charging stations, all of which require innovative thinking to integrate seamlessly with the traditional electricity grid" (p. 12).

a) Please indicate how many (and where applicable the number of MW) of each of the following types of customer connections HHHI facilitated in its service territory over the 2016 to 2020 period:
   (i) single residential unit EV charger connections;
   (ii) commercial facility EV charger connections;
   (iii) condo EV charger connections; and
   (iv) renewable energy and back up generation, including the type of facility (solar roof top, solar thermal, wind, energy storage), the customer breakdown for such facilities (residential, general service, commercial/industrial, and/or large industrial).

b) Please indicate how many of each of the following types of customer connections HHHI anticipates in its service territory over the 2021 to 2025 period:
   (i) single residential unit EV charger connections;
   (ii) commercial facility EV charger connections; and
   (iii) condo EV charger connections; and
   (iv) renewable energy and back up generation, including the type of facility (solar roof top, solar thermal, wind, energy storage), the customer breakdown for such facilities (residential, general service, commercial/industrial, and/or large industrial)

Response:

a) Historical connections
   i. Single residential unit EV charger connections - HHHI does not actively track residential EV charging connections. Therefore, we cannot say with certainty how

many residential EV chargers were installed in HHHI's service territory from 2016-2020. HHHI's.

ii. Commercial facility EV charger connections - HHHI connected one (1) commercial EV charging facility at a local shopping facility during the period of 2016-2020. The connecting transformer is rated 1MVA.

iii. Condo EV charger connections - None.

iv. Renewable energy and back up generation, including the type of facility (solar roof top, solar thermal, wind, energy storage), the customer breakdown for such facilities (residential, general service, commercial/industrial, and/or large industrial) - HHHI connected 77 renewable energy projects during the period of 2016-2020. The generation type for all connections was inverter based solar PV. The breakdown follows:

Residential: 72
Commercial: 5

b) Anticipated connections

i. HHHI has no tracking mechanism for single residential unit EV charger connections.

ii. HHHI has no tracking mechanism for commercial facility EV charger connections.

iii. HHHI has no tracking mechanism for condo EV charger connections.

iv. At present, HHHI is aware of one (1) battery energy storage (BES) project that a customer is proposing to install downstream of the revenue meter at their industrial facility. The projected size is 3.5MW and will connect to a 44kV sub-transmission feeder.

v. renewable energy and back up generation, including the type of facility (solar roof top, solar thermal, wind, energy storage), the customer breakdown for such facilities (residential, general service, commercial/industrial, and/or large industrial) –

At present, HHHI is aware of one (1) battery energy storage (BES) project that a customer is proposing to install downstream of the revenue meter at their industrial facility. The projected size is 3.5MW and will connect to a 44kV sub-transmission feeder.

Since the time HHHI filed the 2016 Cost of Service including the DSP, HHHI has received two (2) net metered applications from commercial customers in Acton. At the time of writing this response, HHHI is entering the Connection Impact Assessment stage with one applicant and is reviewing the second applicants application. We believe both projects will be connected during the 5-year forecast period. The combined capacity is 375kW. Both projects utilize inverter based solar PV generation.

1 - DRC IRR – 2

1–DRC–2

- **Exhibit 1, Appendix 1-1, p. 140**
- **Exhibit 2 (DSP), p. 143**

Preamble: HHHI is assisting the Town of Halton Hills in its roll-out of public EV charging stations and will provide "guidance on the strategic placement of charging stations within [HHHI's] distribution system" (p. 140).

a) Please provide any and all presentations, reports, working papers, studies, or other documents (in draft or final form) relating to HHHI's assistance to the Town of Halton Hills with respect to public EV charging stations.

b) Please provide any and all criteria that HHHI and the Town of Halton Hills will use to determine the strategic placement, size, and charging parameters (Level 2 or 3, DCFC (and voltage)), of public EV charging stations within HHHI's distribution system, and the estimated load forecast impact.

c) What effects, if any, have the (i) public and (ii) customer- specific EV chargers that have been installed in the HHHI service territory up to 2020 had on the HHHI distribution system?

d) Please provide any and all estimates of the total number and total voltage of (i) public and (ii) private EV chargers that HHHI anticipates will be installed in the HHHI service territory during the 2021 to 2025 rate period?

e) What effects, if any, does HHHI anticipate that the (i) public and (ii) customer- specific EV chargers that are anticipated to be installed in the HHHI service territory during the 2021 to 2025 rate period will have on the HHHI distribution system?

f) Please provide your assessment of the specific impacts of the growing consumer interest in EVs and associated increase in EV penetration in HHHI's service territory, on (i) HHHI's distribution system planning, (ii) load forecast, (iii) productivity, and (iv) OM&A costs.

Response:

a) Please see 4 – Staff IRR – 52 for a copy of HHHI's Climate Change Plan. As a progressive, forward thinking utility, HHHI has been looking at the impacts and benefits of EV charging for some time. Staff have participated in EDA EV charging sub-committees and the utility

has updated its new service connection process to gather information about any EV charging requirements.

HHHI staff attended a presentation from Hatch regarding the impacts of EV charging on distribution systems and plans to engage HATCH to conduct a study on HHHI feeders to understand the potential impacts of EV charging.

The EDA has recently released a report entitled *Connecting Devices: A bet practice guide for standardized distributed energy resource connections*. While this guide was not yet available at the time HHHI's Climate Change Plan was being developed, the concepts presented will be informative as the plan moves forward.

As an environmentally conscious business, HHHI understands the importance of preparing for climate change. HHHI is planning ahead to ensure a resilient distribution system and to facilitate customer choice.
This type of climate planning expenditure is being recognized as an imperative across the globe.

Please see Appendix DRC IRR - A from Utility Drive magazine entitled "California regulators instruct utilities to incorporate climate planning into rate cases."

b) Town Staff from Climate Change & Asset Management, Facilities, Public Works, and Transportation departments developed a list of available sites and identified a short-list of candidate sites based on the level of public access and use, as well as logistical suitability of the existing site conditions. This initial list was then reviewed with HHHI staff to ensure that appropriate infrastructure was in place and installation would be feasible. Finally, an online community survey was conducted to determine public interest in seeing EV chargers installed at the identified sites.

Key criteria evaluated throughout this process included:

- Suitability for use by the public including frequency of use by the public
- Availability of necessary electrical supply infrastructure, and cost to install necessary equipment
- Feasibility of installation given existing site conditions

c) HHHI has seen minimal impacts on its distribution system to date as the number of chargers currently installed is still fairly low and geographically dispersed. Where fast chargers were installed, HHHI worked directly with the developer to ensure appropriately sized transformation.

HHHI notes that the public charging infrastructure installed to date is seeing regular, almost daily, use. HHHI is planning now to prepare for future uptake of EV charging.

d) HHHI cannot, at this time, estimate specific numbers or total voltages of charging stations that maybe installed within the 2021-2025 period. Suffice to say, HHHI expects installations.

HHHI is aware of eight (8) potential public use charging stations to be installed as part of the Town of Halton Hills Draft EV Charging Policy. HHHI also anticipates that further charging

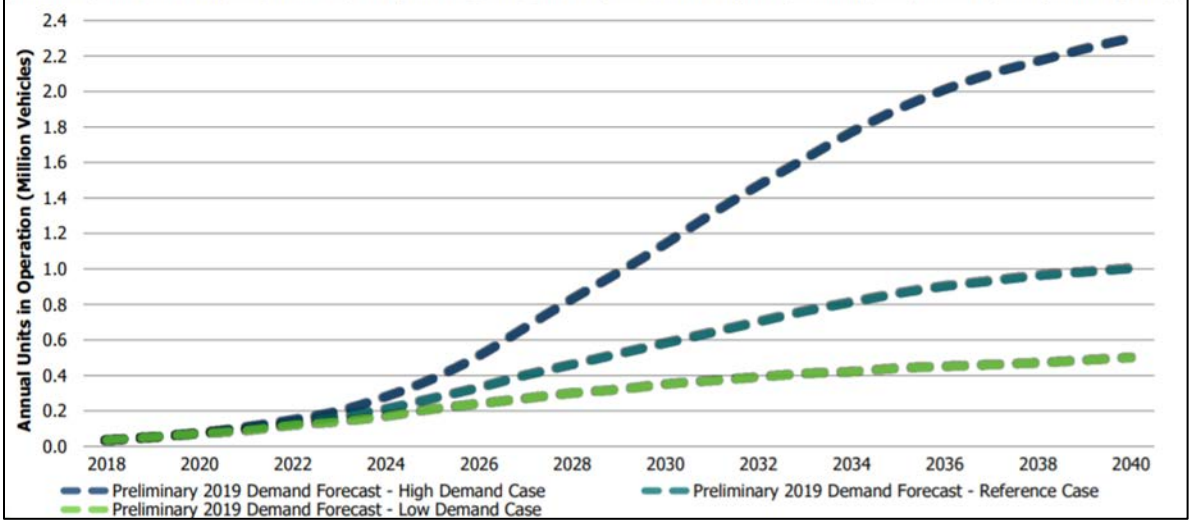
stations may be installed as part of new development, particularly in Georgetown South and the new Vision Georgetown development.

While the size of specific charging stations is not known, it is anticipated that Level 2 and Level 3 chargers will become more prolific in the coming years. The demand requirements of these chargers can be substantial. Level 3 chargers can require peak energy demands of up to 500 kW.

Table DRC IRR – 1 – Potential for EV Sales is from the IESO Preliminary Long-term Demand Forecast 2019 and reflects a potential for significant increase in EV sales over the next 20 years.

Table DRC IRR – 1 – Potential for EV Sales

Low Demand Case			Proposed Case			High Demand Case		
Years 1-5 (2020-2024)	Years 6-10 (2025-2029)	Years 11-21 (2030-2040)	Years 1-5 (2020-2024)	Years 6-10 (2025-2029)	Years 11-21 (2030-2040)	Years 1-5 (2020-2024)	Years 6-10 (2025-2029)	Years 11-21 (2030-2040)
10% annual increase in EV sales			20% annual increase in EV sales			35% annual increase in EV sales		
*170 k vehicles by 2024	320 k vehicles by 2029	500 k vehicles by 2040	210 k vehicles by 2024	520 k vehicles by 2029	1,000 k vehicles by 2040	280 k vehicles by 2024	980 k vehicles by 2029	2,300 k vehicles by 2040



Source: IESO Preliminary Long-term Demand Forecast 2019

e) At this time, HHHI anticipates the impacts to be minimal, however, HHHI is assuming that EV charging infrastructure will continue to be geographically distributed. If EV charging installations become more concentrated geographically, there could be impacts on supply or on power quality. This is why HHHI has budgeted to conduct feeder assessments to understand the power quality impacts of EV charging.

f) While HHHIs distribution system has the capacity to accommodate foreseeable EV charging requirements, HHHI is planning for future growth. In particular, HHHI understands the environmental benefits of electric vehicles and is positioning itself to facilitate customer choice

2 - DRC IRR – 3

2–DRC–3

- Exhibit 2 (DSP)
- Exhibit 2 (DSP), Appendix E

Preamble: In 2018, HHHI added an EV to its fleet. HHHI indicates that it "will consider hybrid or electric vehicles when we replace [its] engineering vehicles" (p. 1079). HHHI indicates in its DSP that fleet EV "[p]erformance is being assessed to quantify financial benefits. Through firsthand experience with electric vehicles and their charging, HHHI will gain insight into the impact of these technologies on the distribution system" (p. 145).

a) Please complete the following chart indicating the breakdown of vehicle type in HHHI's current vehicle fleet:

Vehicle Type	**Fully Electric**	**Hybrid**	**Non-EV/Hybrid**	**Total**
Heavy Duty Vehicles				
Medium Duty Vehicles				
Light Duty Vehicles				

b) What proportion of HHHI's planned fleet renewal investment will involve fully electric and/or hybrid vehicles?

c) Please indicate the estimated quantum of efficiency savings (including operations, maintenance, including fuel cost savings) that HHHI anticipates it will achieve by utilizing EVs rather than traditional internal combustion engine vehicles during the 2021 to 2025 period.

d) Please provide details of the insights gained by HHHI of the impacts of EVs and EV charging stations on HHHI's distribution system.

Response:

a) Table DRC – 2 - Breakdown of Vehicle Type in HHHI's Current Vehicle Fleet, provides the requested information.

Table DRC – 2 - Breakdown of Vehicle Type in HHHI's Current Vehicle Fleet

Vehicle Type	Fully Electric	Hybrid	Non-EV/ Hybrid	Total
Heavy Duty Vehicles	0	0	7	7
Medium Duty Vehicles	0	0	1	1
Light Duty Vehicles	1	0	10	11

b) HHHI will continue to evaluate the performance of its EV. For further fleet replacements, HHHI will evaluate the fleet needs and determine if another EV is appropriate.

c) At this time, HHHI does not have any detailed maintenance information by an individual vehicle that could be compared against maintenance for an EV. We have only had an EV in our fleet since the summer of 2018 and have not had any significant maintenance needs for it.

d) Presently, HHHI's distribution system capacity is sufficient to accommodate EV charging and we have not had to upgrade distribution assets to accommodate EV connections at existing customer facilities. HHHI will continue to monitor our distribution system and evaluate proposed EV charging stations to determine if any distribution assets or system upgrades will be required

2 - DRC IRR – 4

2–DRC–4

- **Exhibit 2 (DSP), p. 218**
- **Exhibit 2, Appendix C: REG Document, pp. 595-596**

Preamble: HHHI is not including "any capital expenditures related to renewable energy generation in its [DSP]. In addition, there are no additional OM&A costs proposed related to renewable energy generation or DER projects" (p. 596).

HHHI's Renewable Energy Generation Investment Plan (**REGIP**) "assesses the state of Halton Hills Hydro's existing distribution system, studies the current renewable-connected generation and near-term growth forecast, defines a strategy to accommodate the predicted renewable generation growth and describes Halton Hills Hydro's future Renewable Generation expenditures from 2021 through 2025. (p. 595).

HHHI notes that a recent customer trend is the installation of behind the meter (**BTM**) energy resources to supplement customer loads. In addition, HHHI notes that "[a] prevailing trend is to install battery energy storage behind the meter, charge the batteries in off-peak hours, and discharge the batteries during on-peak hours" (p. 596).

a) Please provide the expected or predicted DER uptake trends over the five-year REGIP.

b) Please provide details of the types of energy storage and load displacement projects referred to above.

c) Please outline and provide examples of the operational objectives relating to DER integration and the what HHHI expects will be required to accommodate EVs and DERs.

d) Please indicate the anticipated future customer electricity service requirements during the 2021-2025 rate period (with breakdown by customer type) and please provide any reports, studies, presentations with respect to BTM DER adoption in the HHHI service area.

e) Please explain how, if at all, HHHI has addressed the following vehicle manufacturers' announcements on phasing out internal combustion engine vehicles or introducing additional EV options, including during the 2021 to 2025 time period:
    - General Motors;
    - Ford;
    - Volkswagen;
    - BMW Group;
    - Fiat Chrysler Automobiles Group;
    - Toyota Group;

- Hyundai Motor Group;
- Volvo;
- Mercedes-Benz;
- Audi; and
- several others.

f) Please comment on how, if at all, proposed or anticipated grid modernization will assist in facilitating DER and EV readiness.

g) Please list any and all data and analytics requirements to facilitate DERs, EVs, and the anticipated system-wide efficiencies and/or savings that may ensue from implementation of systems and expenditures to facilitate DER and EV integration during (i) the 2021-2025 rate period and (ii) subsequent rate periods.

Response:

a) As stated in section 3.1 of HHHI's REGIP, HHHI is aware of two (2) DER projects totalling approximately 4.5MW of capacity. Since submitting our DSP, HHHI has received applications for three (3) additional DER connection requests, two of which are BTM Net Metered connections totalling 375kW and one BTM combined heat and power project with a capacity of 872kW.

b) Please see part a. No further details are available at this time.

c) At present, HHHI believes its distribution system has sufficient capacity to accommodate the current uptake in EV's and DER's. HHHI is not forecasting distribution system upgrades to the distribution system to accommodate these technologies.

d) HHHI does not have any information at this time.

e) HHHI has not addressed specific manufacturer announcements, however, as stated in HHHI's REGIP, the distribution system has sufficient capacity to accommodate additional EV and DER connections. Stated in section 1.3.5 of HHHI's DSP, HHHI participates in the Development Review Committee, a municipal committee that meets with and reviews applicant's development proposals prior to site plan application. This early stage of review provides HHHI an opportunity to evaluate perspective new load, identify EV chargers, and communicate to the applicant HHHI's requirements for new services. HHHI can also review system capacity if necessary to accommodate the additional load.

f) HHHI anticipates that grid modernization projects such as system automation will indirectly benefit EV and DER customers by reducing power outage times by HHHI being able to automatically communicate to and operate remote field devices.

g) Stated in HHHI's REGIP, HHHI is not forecasting the need to make capital expenditures to facilitate EVs and DERs.

Customers requesting DER connections are required to make an application to HHHI following the Guidelines for Customers Connecting Distributed Generation available

on the HHHI website. The application process in HHHI's Guidelines outlines the information HHHI requires from applicants during the application process.

Customers installing EV chargers are encouraged to contact HHHI's Engineering Department to discuss their project and check local capacity availability (ex. transformer, wire sizes).

2 - DRC IRR – 5

2–DRC–5

- **Exhibit 2 (DSP), Appendix E**

Preamble: Several of HHHI's capital project sheets in Appendix E to the DSP make reference to improvements to (i) primary conductors, (ii) capacity/ampacity, (iii) automated switches, and (iv) substation automation that HHHI anticipates will support deployment "innovative technologies such as [EVs] and power storage" (pp. 687, 757, 834, 916, 1011, 1016)
Several of HHHI's capital projects sheets also make reference to the use of smart meters with multiple registers "to capture power flow in multiple directions" (pp. 705, 778, 857, 957, 1030)

a) Please discuss how each of (i) primary conductors, (ii) capacity/ampacity, (iii) automated switches, and (iv) substation automation will assist in supporting innovative technologies such as EVs and power storage, future load growth, and renewable generation (as applicable).

b) Please provide an assessment of how these investments will impact HHHI's reliability measured as SAIFI, SAIDI, and Delivery Point Unreliability Index.

c) What impact, if any, does HHHI anticipate that these expenditures during the 2021-2025 rate period will have on customer rates and affordability (i) during the 2021-2025 rate period (ii) in subsequent rate periods.

d) Please discuss the HHHI performance metrics and/or targets that HHHI views as being affected by these investments during the 2021 through 2025 period? If no such performance metrics or targets exist, please discuss what performance metrics and/or targets HHHI believes would be appropriate.

e) If HHHI is required to make a choice as to whether to use (i) through (iv) above in a capital project, please discuss what factors influence that choice.

f) Please discuss how bidirectional smart meters will assist in supporting deployment of EVs, energy storage, and DERs.

g) If HHHI is required to make a choice as to whether to use bidirectional smart meters in a capital project, please discuss what factors influence that choice.

Response:

a) Innovative technology support

i. Primary conductors are often replaced when pole line distribution assets are replaced. In many instances, the primary conductors are replaced with a larger gauge wire to accommodate growth/ increased customer load requirements such as EV's and DER's.

ii. Capacity/ ampacity – please see part a (i).

iii. Investments made in automated switches will support expedient distribution system restoration and load switching, thereby reducing the amount of time customers are affected by outages.

Remote visibility of distribution system operating conditions at substations provides HHHI the opportunity to leverage that information in real-time to effect feeder switching, load balancing, and mitigate risks of heavily loaded feeders, thereby reducing potential feeder power interruptions or low voltages that might affect an EV charger's ability to charge or DERs ability to operate.

b) SAIDI and SAIFI are impacted by a number of variables, many of them outside of HHHI's control. Automated switches and substation automation can improve restoration times compared to manually trying to locate the source of an outage. However, at this time, exact statistical improvements have not been quantified.

c) Rate impact

i. Cost of Service rate applications set base rates based on a test year. The total capital expenditure budget is approved and it is the responsibility of HHHI to manage the budget and the individual projects accordingly. As such, the impact on rates would remain the same as capital projects are managed as a whole.

ii. It is not possible to determine any rate impacts related to these expenditures in subsequent rate periods as analysis on the uptake of these types of projects will be necessary before submitting HHHI's 2026 and future Cost of Service rate application.

d) These investments may improve SAIDI statistics by allowing for faster power restoration when outages occur, however, exact statistical improvements have not been quantified at this time.

e) When a capital project is being prepared, HHHI makes an assessment of current and future needs to ensure the project meets long-term goals. The choice between items (i) through (iv) is specific to the capital project. As an example, if HHHI is replacing overhead distribution assets and upgrading primary conductors, the secondary benefit is greater capacity/ ampacity on the primary distribution system. Alternatively, when installing automated switches, HHHI considers key locations in our distribution system to place switches. Installing an automated switch would not have the same benefits that upgrading conductor sizes have.

f) Bidirectional smart meters have multiple registers that can be used to view energy consumption and energy production at a facility/ residence. Thus, a customer installing BTM generation who wants to participate in Net Metering will have a meter from which HHHI can determine energy consumption and production to calculate the customers' NET bill.

Bidirectional meters are only used for customers who install BTM generation and are participating in the Net Metered project. Bidirectional meters would not normally be used on other capital projects.

2 - DRC IRR – 6

2–DRC–6

Reference:
- **Exhibit 2 (DSP), p. 166**

Preamble: HHHI, in part, is leveraging AMI data for "a tool to identify locations with [EV] charging stations." (p. 166)

a) Please provide details of the EV charging stations location tool and its intended use.

Response:

a) HHHI utilizes an Operational Data Store (ODS) that houses its AMI data. Hourly data for all small commercial and residential customers is housed in the ODS. The ODS vendor has developed an algorithm that analyzes the consumption patterns to identify locations that may have EV charging. This tool is still in development, though HHHI has reviewed some positive preliminary results.

2 - DRC IRR – 7

2–DRC–7

- **Exhibit 2, Appendix B**
- **Exhibit 2, Appendix C**

Preamble: HHHI conducted customer engagement by creating a website to capture customer feedback and used the online platform to provide customers with surveys, quick polls and idea forums.

As part of seeking customer feedback on grid modernization, HHHI noted that "[n]ew technologies are making it easier for homes and businesses to install smart devices such as internet connected thermostats and switches, renewable energy generation, such as solar panels, and battery backup power supply. [EVs] and their charging stations will also play an increasingly important role in [HHHI's] electricity grid." (p. 423)

a) Please provide a copy of all written instructions provided by HHHI in relation to HHHI's customer engagement for the DSP and the reports provided in Exhibit 1, Appendices B and C.

b) Please describe any and all feedback related to EVs and DERs.

c) Please provide any and all notes from the customer engagement relating to EVs/DERs that are supplementary to the reports provided in Exhibit 1, Appendices B and C.

Response:

a) All of the information provided to customers can be found on the customer engagement website:
The website contained three main sections:
   1. Why participate – provided an overview of why we were asking feedback and how to participate.
      https://haveyoursay.haltonhillshydro.com/why-participate
   2. Learning Pages – contains blogs about HHH, understanding the electricity system in general, and specific topics such as proactive equipment replacement, power outages and reliability.
      https://haveyoursay.haltonhillshydro.com/learn-about-us
   3. Help Shape Our Future – this section contains the surveys, quick polls and idea forums.
      https://haveyoursay.haltonhillshydro.com/help-shape-our-future

b) Appendix B of the DSP contains the survey results including detailed survey comments.

c) All of the feedback related to EVs/DERS is included in Appendices B and C of the DSP.

APPENDIX DRC IRR – A

Utility Drive Magazine Article

California regulators instruct utilities to incorporate climate planning into rate cases

Wikipedia

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UPDATE: Aug. 28, 2020: The California Public Utilities Commission issued a decision Thursday that creates a pathway for utilities to incorporate climate vulnerability assessments into their general rate case cycles, with a special focus on how climate change affects disadvantaged communities in their service territory. Utilities will need to file vulnerability assessments with regulators every four years, and include their exposure to climate risks and ways to manage that, as well as their exposure to risks from third-party power facilities.

Dive Brief:

- California regulators on Monday issued a proposal to have the state's investor-owned utilities incorporate climate change vulnerability assessments into their general rate case cycles, in an effort to guide infrastructure investments over the long term.
- If the proposed decision is approved, utilities would need to submit reports on their exposure to temperature, sea level, wildfire and other climate risks, as well as measures to mitigate them, to the California Public Utilities Commission (CPUC) every four years.
- The proposed decision could lead to "smarter requests" from utilities in their general rate cases, Mohit Chhabra, senior scientist with the Natural Resources Defense Council's climate and clean energy program, told Utility Dive. The assessments would ensure that utilities consider the impact of the natural environment before deciding what infrastructure to build and where.

Dive Insight:

There are three broad ways in which climate risks impact utility services, according to Chhabra: production, consumption and transmission and distribution infrastructure. Renewables are weather-dependent energy sources, so climate change could affect how energy is produced — for instance, changing rain patterns can affect hydroelectric supply — and increasing temperatures could lead to higher energy consumption for cooling needs.

Transmission and distribution infrastructure also faces its fair share of risk — hotter, drier climate increases the odds of wildfires, for instance, and coastal facilities can be vulnerable to sea level rise.

In 2018, the CPUC opened a docket to take a deeper look at how utilities should prepare for the operational risks they will face due to climate change.

"This proceeding is cutting edge in the sense that I think the CPUC is the first regulator across the country to really take the impact of climate change on utility services seriously," Chabbra said.

Under the proposed decision, utilities will file climate vulnerability assessments looking at the effects of temperature changes, sea level rises, changes in rainfall and other climate impacts. The filings will become the basis by which utilities plan infrastructure investments, and prioritize whether to strengthen, move or simply remove generation, transmission and distribution equipment that is vulnerable to climate change.

"This provides consistency across all the places where climate change needs to be considered," Chhabra said, so that utilities are considering climate needs not just when proposing certain upgrades, but also in terms of resource and load planning.

Part of this process includes considering communities that are particularly vulnerable to climate change. The CPUC is recommending that the utilities create "community

engagement plans," to outline how they will work with these communities in developing their vulnerability reports, "so the communities are not left behind the rest of the state."

The commission's proposed decision requires the filings to include three timeframes: the next 10 to 20 years, 20 to 30 years and 30 to 50 years — which is unprecedented, as it's a much longer timeframe than the 10-year integrated resource planning process that the CPUC follows, Gregg Morris, director of the Green Power Institute, told Utility Dive.

"The utilities have long-term infrastructure planning ... but we're hoping that this will influence [their] thinking about planning for new infrastructure," he said.

Morris noted that one area of climate adaptation utilities were not adequately prepared for is wildfire resilience — while California has always had wildfires, the risk has been growing and changing more recently.

"They really need to get on top of it. Infrastructure is expensive, so it's not a trivial matter to say, for example, you ought to put in covered, protected wires," he said.

The CPUC's proposed decision also requires utilities to submit safety plans for facilities that are part of power purchase agreements.

"[O]ver time, we expect the energy IOUs to move from simply identifying risks of contracted assets in their vulnerability assessments to including substantive risk assessments of third-party contracts in their vulnerability assessments," the proposed decision states.

The proposal would also change how utilities deal with climate risk internally. The IOUs would need to create "climate change teams" that work across departments and report directly to an executive, as well as make their board members take responsibility for their overall climate adaptation processes.

Pacific Gas & Electric is integrating climate data into its strategic risk planning process, company spokesperson Lynsey Paulo told Utility Dive in an emailed statement. The utility published a climate vulnerability assessment in 2016, and is currently initiating a second one.

"We appreciate the CPUC's engagement on this important topic to clarify the expectations and provide guidance on how to increase climate resilience, and are currently reviewing the Proposed Decision," she added.

Southern California Edison is still reviewing the proposed decision and declined to comment at this time.