

**DOCKETED**

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<b>Project Title:</b>	Integrated Resource Plan
<b>TN #:</b>	229549
<b>Document Title:</b>	GWP IRP Distribution System
<b>Description:</b>	Supplemental Information to GWP's IRP Regarding Distribution System
<b>Filer:</b>	Chie Valdez
<b>Organization:</b>	Glendale Water and Power
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## Valdez, Chie

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**From:** Valdez, Chie  
**Sent:** Monday, August 26, 2019 5:51 PM  
**To:** 'Gill, Liz@Energy'  
**Cc:** Deaver, Paul@Energy; Young, Mark  
**Subject:** RE: Glendale IRP Distribution Section

Hi Liz,

The following supplemental information is provided in response to your email dated 8/19/2019 regarding distribution system impacts.

### Distribution System

Glendale Water and Power's (GWP's) electric distribution system is comprised of 520 miles of distribution (4 kV and 12 kV) lines, 58 miles of sub-transmission (34.5 kV and 69 kV) lines, nearly 15,000 poles, and nearly 90,000 end-user electric meters fed from 14 substations scattered across nearly 32 square miles. GWP's vision is to deliver reliable, high quality, environmentally-sensitive, and sustainable water and power services to our customers in a caring and cost-competitive manner, while creating a stimulating and rewarding work experience for our employees. GWP maintains on-going maintenance and capital improvement programs to continually reinforce and replace aging infrastructure to meet this Vision, including enhancements to its substation, transmission, and distribution infrastructure.

In parallel with the Grayson Modernization project, which aims to replace aging, inefficient generating units with a new, modern portfolio of energy resources, transmission and distribution infrastructure replacement and enhancements are planned to provide increased resiliency and reliability of energy delivery from the Grayson site. Staff are currently updating the Electric Services Master Plan, which will outline the project schedule for a series of projects that are designed to improve reliability and ensure increased capacity for the anticipated increase in peak loads due to electrification of buildings and vehicles:

- Substation upgrades (including new breakers, power transformers bus work and conductors, and system protection);
- Replacement of existing communication systems, including the JungleMUX-based communications system that provides the pathways for GWP's automated protection and control schemes;
- Transmission and distribution upgrades (including new poles, crossarms, transformers, substructure/underground work, cable and conductor replacements, insulator replacements, and distribution automation);
- Transmission and distribution conversions (including upgrading the remaining 34.5 kV sub-transmission system to a 69 kV sub-transmission system, and upgrading the remaining 4 kV feeders to 12 kV);
- Transmission and distribution additions (including the addition of new sub-transmission lines to connect existing substations and/or provide redundancy to existing paths that will enhance reliability);
- Expansion of distribution feeders and infrastructure into neighborhoods where GWP's presence is sparse;
- Conversion of inefficient streetlights to longer-lasting, more efficient LED lighting;
- Enhanced requirements for DER installations (including rooftop solar and on-premises BESS) to ensure the continued reliability of the distribution system and the safety of customers and employees against potential

hazards like backflow into offline circuits and system protection schemes that are complicated by power flowing in the opposite direction;

- Continued incentives to customers to install DER systems, beyond the state-mandated incentives;
- Implementation of a Demand Response program that will reduce GWP's peak loads, reducing heat stress on the transmission and distribution infrastructure during periods of high loads;
- Enhancements of transmission and distribution infrastructure to minimize the likelihood of wildfire ignition, including tree wires, distribution automation, use of "fuse savers" or similar (spark-free) devices, undergrounding of overhead circuits, and other advanced technologies;
- Installation of additional solar systems on City properties, including fire stations and parking garages.

The next iteration of GWP's Master Plan, scheduled for an early-2020 completion, provides guidance for these on-going and proposed projects, while additional engineering studies will be required to determine specific project scopes and requirements.

Other distribution related items in the IRP that are relevant to this discussion:

- Page 15 ~ 520 miles of distribution, 58 miles of sub-transmission, 14,788 poles, 14 substations, 88,849 meters
- Page 70 ~ Conservation Voltage Reduction Conservation voltage reduction (CVR) is a proven technology for reducing energy use and peak demand. CVR improves the efficiency of the distribution system by optimizing voltage.
- Page 76 ~ Another, more pressing concern is the impact of EV load on local distribution circuits. Currently, EVs tend to cluster in affluent neighborhoods, and the growth of EV clustering in neighborhoods may someday require distribution grid and substation upgrades.
- Page 79 ~ Electric vehicle infrastructure is an important part of the Los Angeles region's future. GWP should direct resources to planning Glendale's future EV infrastructure needs. Future planning studies should explore this topic in more depth, including understanding how to manage EV charging to avoid new peaking capacity and distribution grid upgrades.

Please feel free to reach out to me or Mark with any questions/concerns pertaining to Glendale's IRP.

Best Regards,

Chie

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**From:** Gill, Liz@Energy [mailto:Liz.Gill@energy.ca.gov]

**Sent:** Monday, August 19, 2019 8:56 AM

**To:** Valdez, Chie

**Cc:** Deaver, Paul@Energy

**Subject:** Glendale IRP Distribution Section

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Hi Chie,

As we've started to go through the IRP in more detail for the staff review paper, we've not been able to find a section describing distribution system impacts. Can you point us in the right direction? And if it's not in the IRP currently, if you have any recent studies on the distribution system or expected impacts on the distribution system, we could use that.

I have a number of meetings today, but if you'd like to talk, I'm available between 2pm and 4pm today.

Thanks,  
Liz

**Liz Gill, PhD**  
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