



Laying the Foundation: Broadband, 5G Deployment, and Ensuring Rural Equity

Walter White, Vice President, State and Local Government, Verizon
Wireless



SMARTER STATES, SMARTER COMMUNITIES

NGA LEARNING LAB

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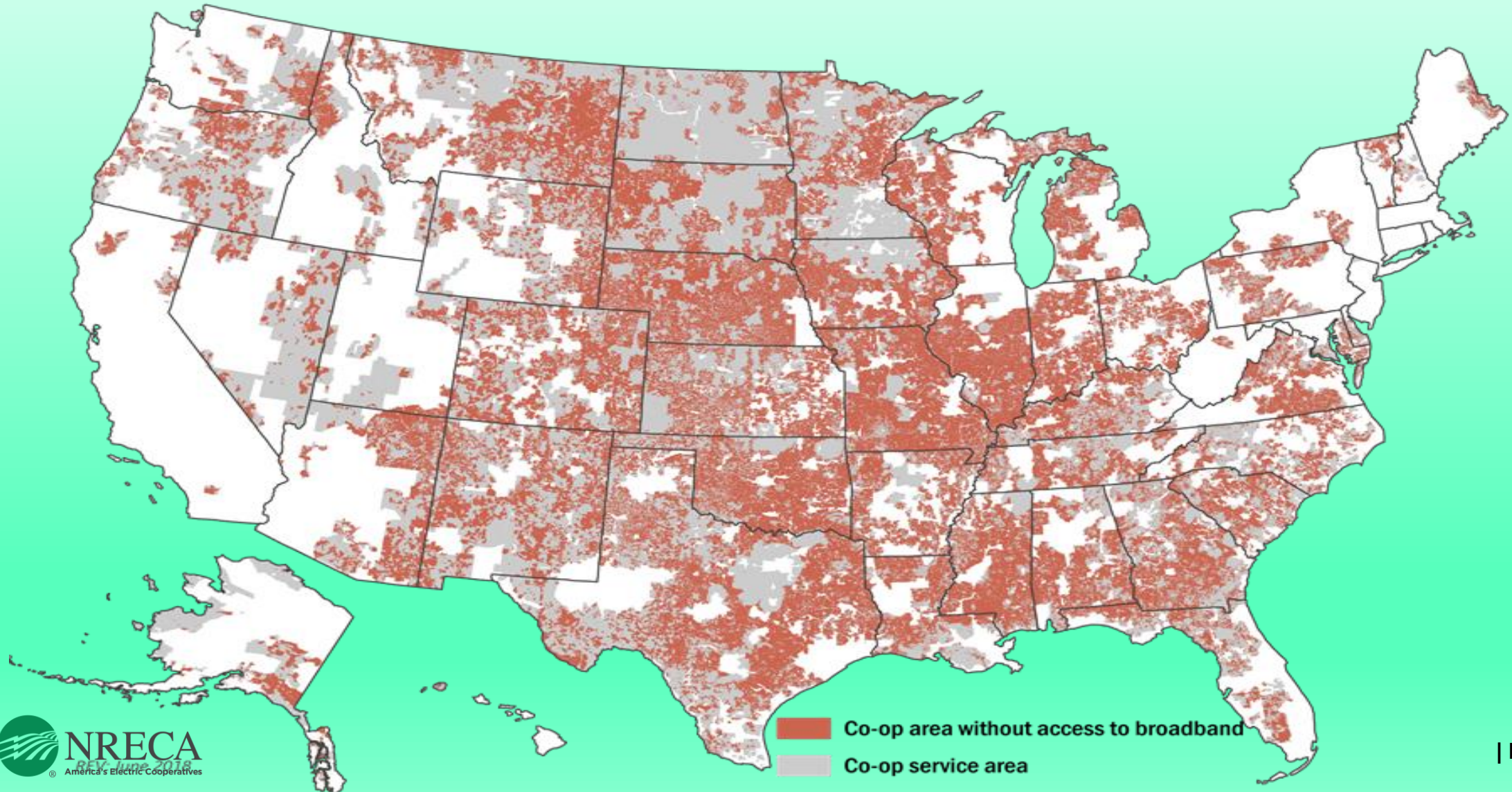
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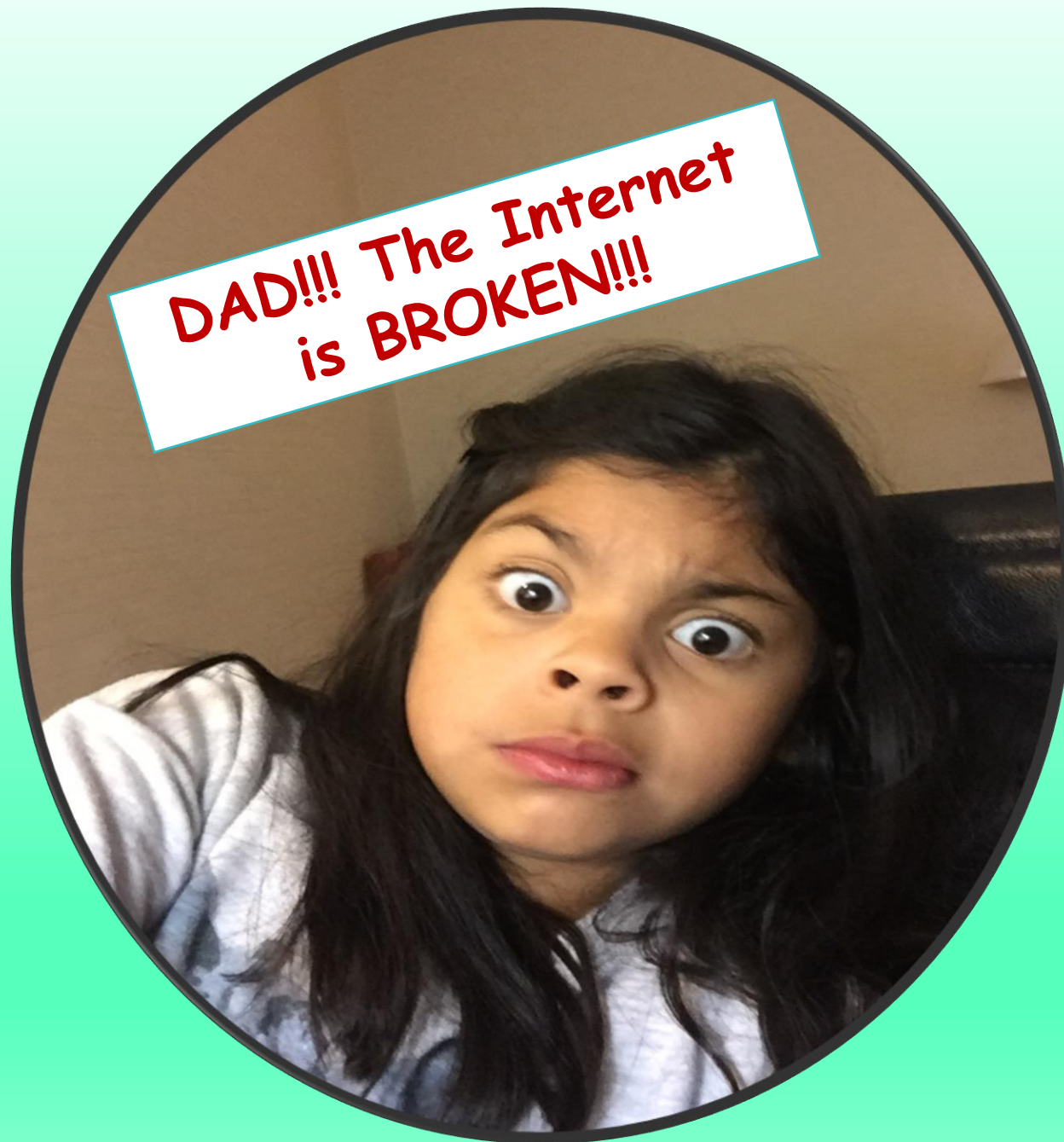
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National Rural Electric Cooperative Association**



There are 6.3 Million Electric Co-op Households WITHOUT HIGH SPEED





LIFE WITHOUT INTERNET



Broadband Access Provides Value \$1,950/Household Annually

Lost Value to Electric Co-op Households: **\$68** Billion (over 20 years)

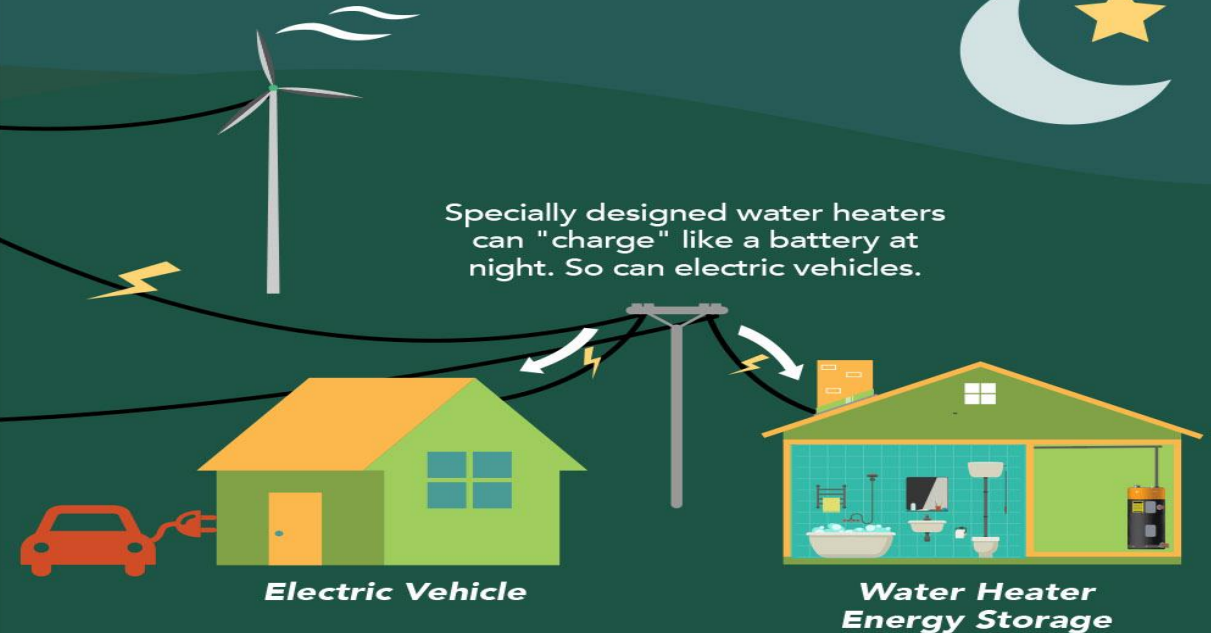
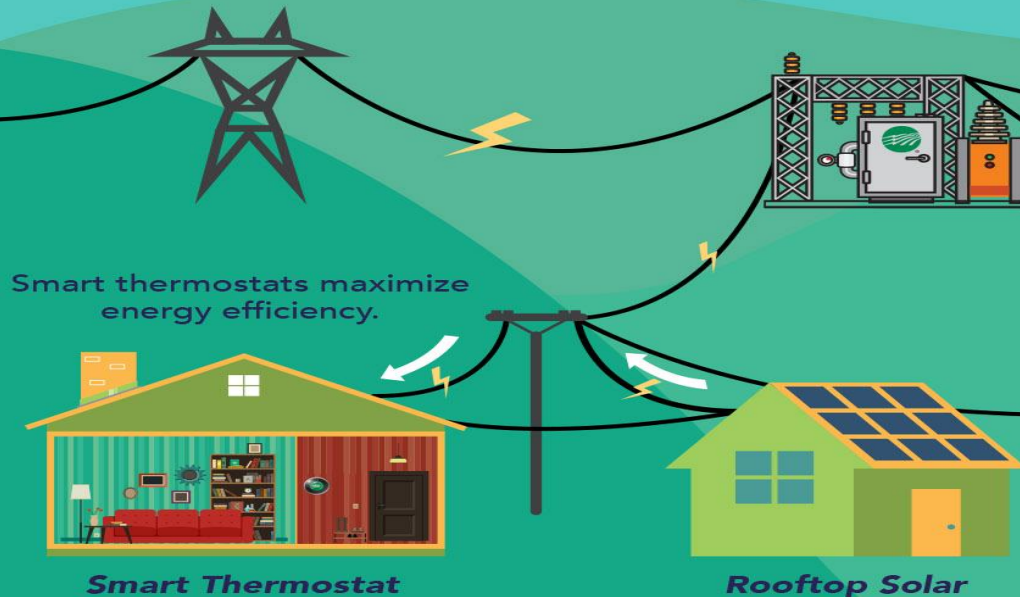


The Future IS the Networked Grid

Broadband Backbone → **Broadband-To-The-Home**

THE NETWORKED GRID

Historically, the electric grid has been a one-way street with energy flowing from large power plants to utilities, to consumers at the end of the line.



10/1 Mbps Is Not Sufficient for Advanced Telecommunications Capability

Applications	10 Mbps/1 Mbps	25 Mbps/5 Mbps	50 Mbps/10 Mbps
Web browsing	✓✓	✓✓	✓✓
Download 100 pg text doc with graphics	✓✓ 2 sec	✓✓ 1 sec	✓✓ 1 sec
Multi-point video-conferencing streaming at 768 Kbps for group 5-6	✓✓	✓✓	✓✓
VoIP (10 external lines)	✓	✓✓	✓✓
Upload videos, presentations (1 GB)	✗	✓ 27 min	✓✓ 14 min
Download high-def video (2 GB)	✗	✓ 11 min	✓✓ 6 min
Telecommuting	✗	✓	✓✓
Distance learning	✗	✓	✓✓
Telemedicine (radiological images, 160 MB)	✗	✓ 52 sec	✓✓ 26 sec



Source: CTC Technology & Energy, 2010

Legend

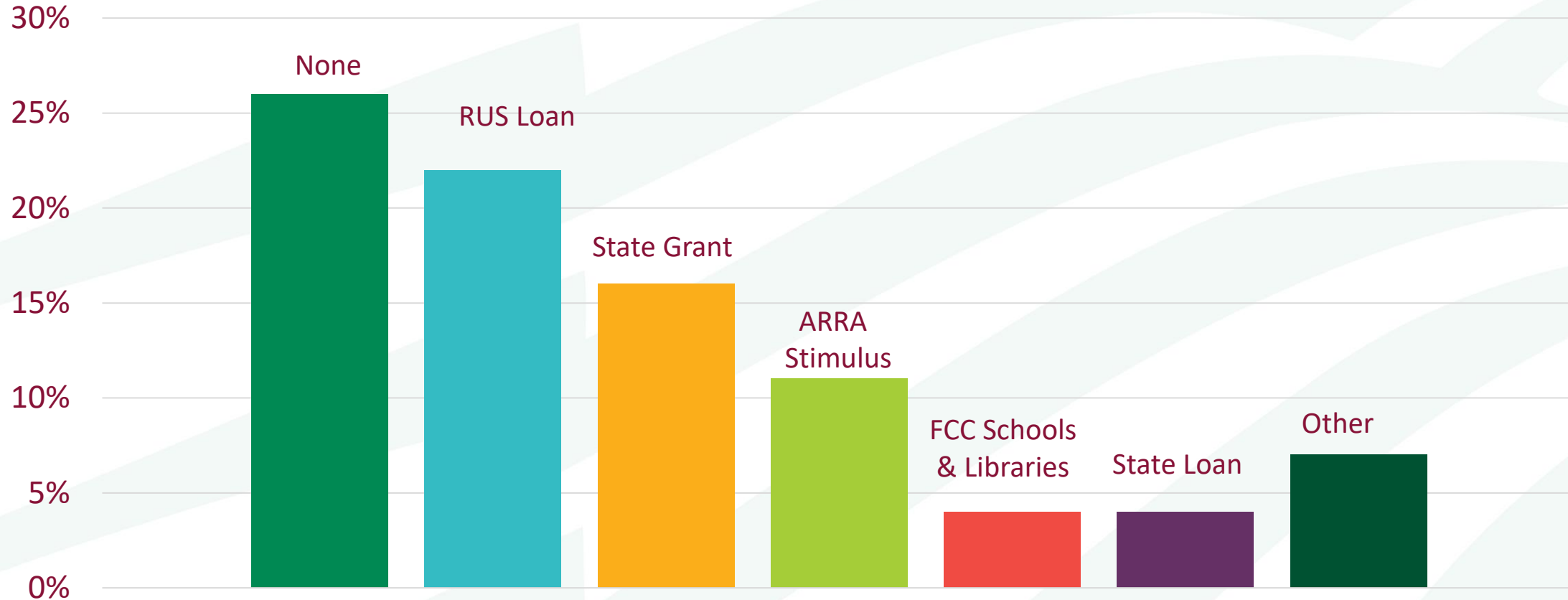


Broadband Enables Electric Distribution Optimization

Digital Applications Enhance Controllability of Costs

Application	Annual Valuation per Meter (2018)
Distribution Automation	\$20-\$30
Substation Automation	\$1-\$3
Advanced Metering Infrastructure (AMI)	\$12-\$18
Volt/Var Optimization	\$14-\$29
Demand Management	\$88-\$140
Outage Reduction	\$1-\$3
Asset Management	\$45-\$85
Distributed Energy Resources (DER)	\$1-\$3

Financing Support for Electric Co-op Retail Internet



SOME LESSONS LEARNED FROM CO-OP CASE STUDIES

- Build it & they will come isn't necessarily right approach**
- Technology is the easy part**
- Gain Understanding & Appreciation for market**
- Research will take you places**
- Develop & Communicate right message**
- Ensure staff are trained & prepared**
- Community events & social media is where the action happens**
- Execute, Execute, Execute**

Strategic Questions I Ask My Members

- **What will it take to exceed consumer-member expectations in a digital world?**
- **How can the need for improvements to the communication infrastructure also contribute to meeting the needs of the members and communities?**
- **What role is appropriate for co-ops to take on while they maintain their focus on delivering electric service?**

Thank you!

Call Me Anytime with Questions

MY MOBILE NUMBER

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