

# 2020 JISEA Virtual Meeting Presenters Profile



**Travis Lowder** has over a decade of experience in renewable energy, encompassing finance, policy, regulations, analysis, and project development.



**Jeffrey Logan** has 30 years of experience in clean energy policy analysis, low-carbon market design, strategic planning and project management.



# JISEA

Joint Institute for  
Strategic Energy Analysis

## Innovative Utility Offerings

Travis Lowder and Jeffrey Logan

JISEA Virtual Meeting

April 9, 2020

# Innovative Utility Offerings Report

Available at:

<https://www.nrel.gov/docs/fy19osti/73800.pdf>



## **Innovative Utility Offerings at the Distribution Edge: Case Studies from Around the Globe**

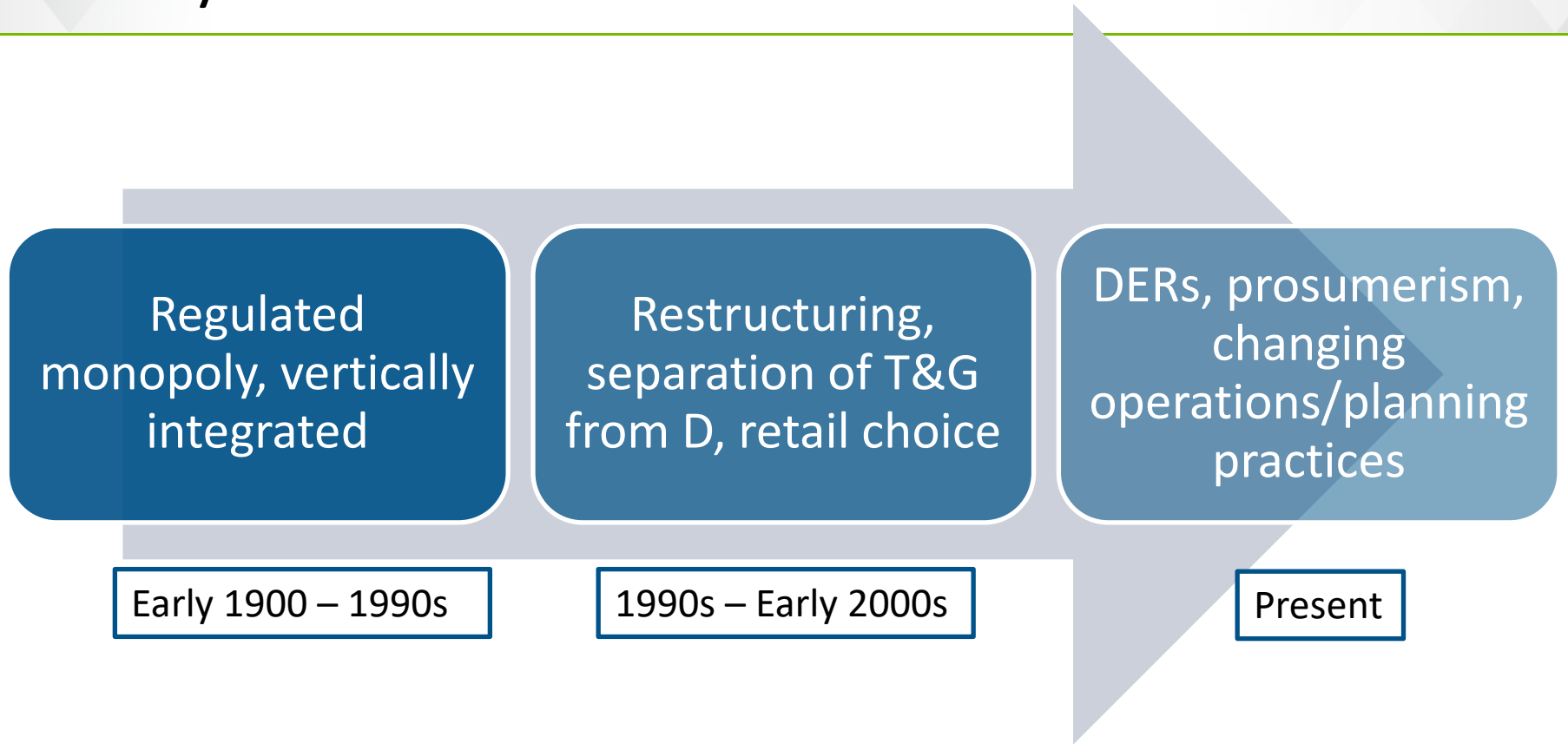
Travis Lowder, Jeffrey Logan, and Emily Chen

*National Renewable Energy Laboratory*

**Technical Report**  
NREL/TP-7A40-73800  
May 2019

Contract No. DE-AC36-08GO28308

# Utility Business Model is in Flux



# Utility Innovation Goals

- Empowering customers to make informed energy decisions and to contribute to distribution system-wide goals
- Addressing the unique conditions of their market
  - Demographic change
  - Energy access
  - System needs
- Reducing emissions
- Prospecting new products/revenue streams in new markets

# Utility Innovations in a Global Context

	Asia			North America		South America	Europe	Africa	Oceania
	Japan	China	India	Canada	U.S.	Peru	Portugal	Cote d'Ivoire	New Zealand
Energy Supply					Puget Sound Energy				
Energy Efficiency			BRLP	Hydro-Québec					
Lighting				ATCO					
Transport		State Grid				Enel X/ Hydro-Québec			
Data	TEPCO						EDP		
Heating and Cooling									Vector
Rural/Off-Grid								CIE	

Note: ATCO is a utility in Alberta, Canada; BRLP=BSES Rajdhani Power Limited in India; TEPCO=Tokyo Electric Power Company; EDP=Energias de Portugal; CIE=Compagnie Ivoirienne d'Electricité

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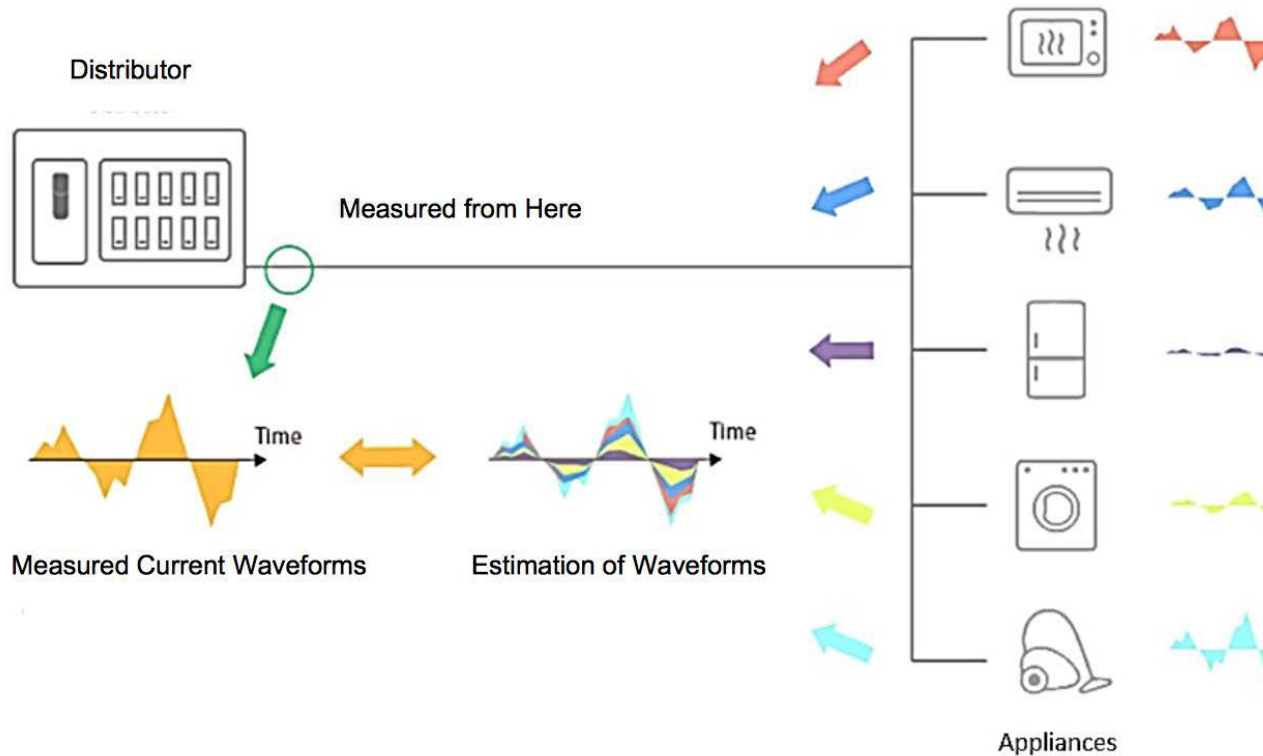
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# TEPCO “Elderly Care Plan”

- Designed to empower families with elderly relatives who want to ensure their retirees are leading healthy lifestyle
  - Over 25% of Japan’s population is over 65, so program taps into cultural and demographic demand
- Disaggregation technology parses load signals from a single meter into appliance-specific data
  - No special advanced metering required
- Usage data can also provide a backdoor for understanding how to design EE measures



# TEPCO “Elderly Care Plan”



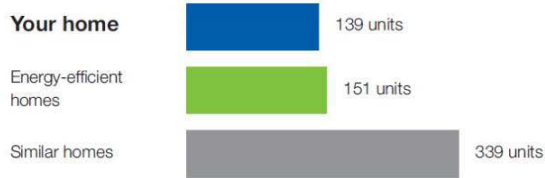
Source: TEPCO

# BSES Rajdhani Power's Home Energy Report Program

- First behavioral energy efficiency program in India
- Home energy report (HER) compares customer energy usage with that of a control group
- Partnership with Oracle's OPower
- Pilot had 200,000 enrolled customers at time of writing and slated to last 18 months
- BSES Rajdhani interested in how results of pilot can be used to inform decisions about system expansion/upgrades

# BSES Rajdhani Power's Home Energy Report Program

## Here's how you're doing in comparison



27 Dec, 2018 - 29 Jan, 2019

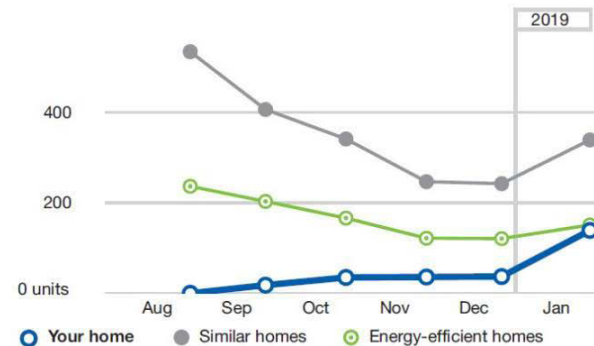
This is based on 80 homes like yours. Energy-efficient homes are the 20% who use the least amount of electricity. See back for details.



**8% less electricity**  
than energy-efficient homes

Source: BSES Rajdhani Power Ltd.

## Electricity comparison over time



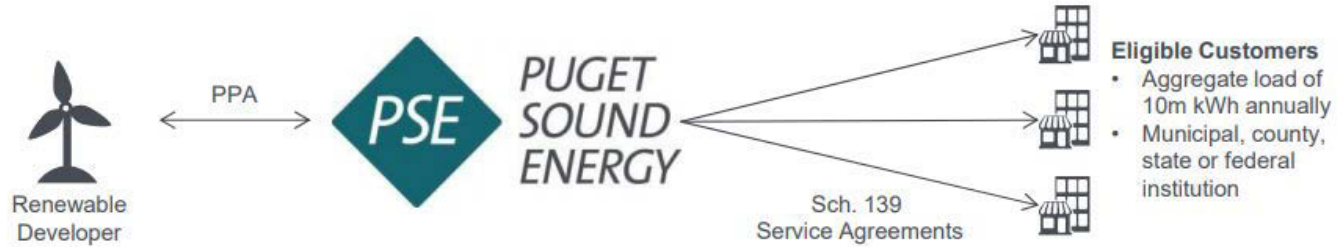
In the last 6 months, you used less than energy-efficient homes in your locality.

**₹ 2,203** saved on energy charges

# Puget Sound Energy's Green Direct Program

- Combines aspects of community renewables with green tariff program
- Projects are “additional” and leverage economies of scale
- Offers fixed, long-term contract and energy credit savings
- First utility tariff to allow for customer aggregation as well as meet Renewable Energy Buyers Alliance Principles

# Puget Sound Energy's Green Direct Program



## Credits

*Updated during GRC, power-cost only rate cases, and other power-related filings*

### Standard Energy-Related Power Costs

#### Not Included:

Demand-Related Power Costs  
Transmission & Distribution  
Billing, Meters, Meter Reading, Customer Accounting and Services

## Charges

*Tariff includes price strips for 10, 15, and 18 year service agreements*

### Cost of Renewable Energy (with RECs)

Losses and Taxes  
Billing system updates  
Annual reporting of renewable energy certificates, etc

Source: Puget Sound Energy

# ATCO

- Alberta, Canada-based electric and gas utility
- Intelligent, wireless street lighting pilot in Lloydminster
- Replaces 250-watt high-pressure sodium lamps with 161-watt LEDs connected to smart network – light on demand for traffic and pedestrians
- Cuts lighting energy use by 80%; maintenance cost by 50%
- Establishes “internet of things” for mobility
- Won 2018 Award of Excellence for Energy & Environmental Lighting Design by Illuminating Engineering Society

# ATCO Smart Lighting Pilot Ushers in Internet of Mobility



# Thank you!

NREL/PR-6A50-76545

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