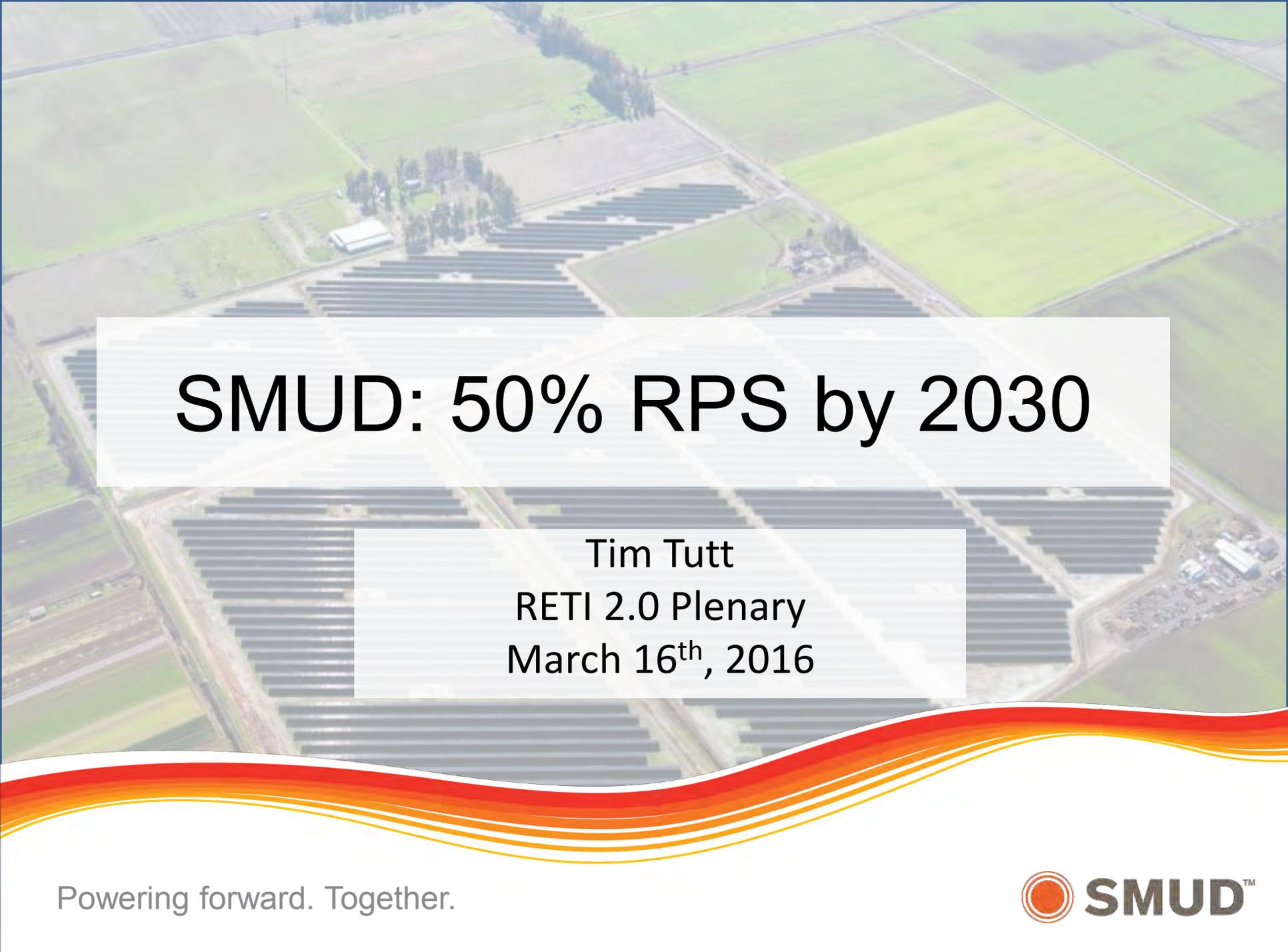


## DOCKETED

<b>Docket Number:</b>	15-RETI-02
<b>Project Title:</b>	Renewable Energy Transmission Initiative 2.0
<b>TN #:</b>	210771
<b>Document Title:</b>	Presentation SMUD: 50% RPS by 2030 - Tutt
<b>Description:</b>	N/A
<b>Filer:</b>	Patty Paul
<b>Organization:</b>	SMUD
<b>Submitter Role:</b>	Public Agency
<b>Submission Date:</b>	3/17/2016 2:51:52 PM
<b>Docketed Date:</b>	3/17/2016



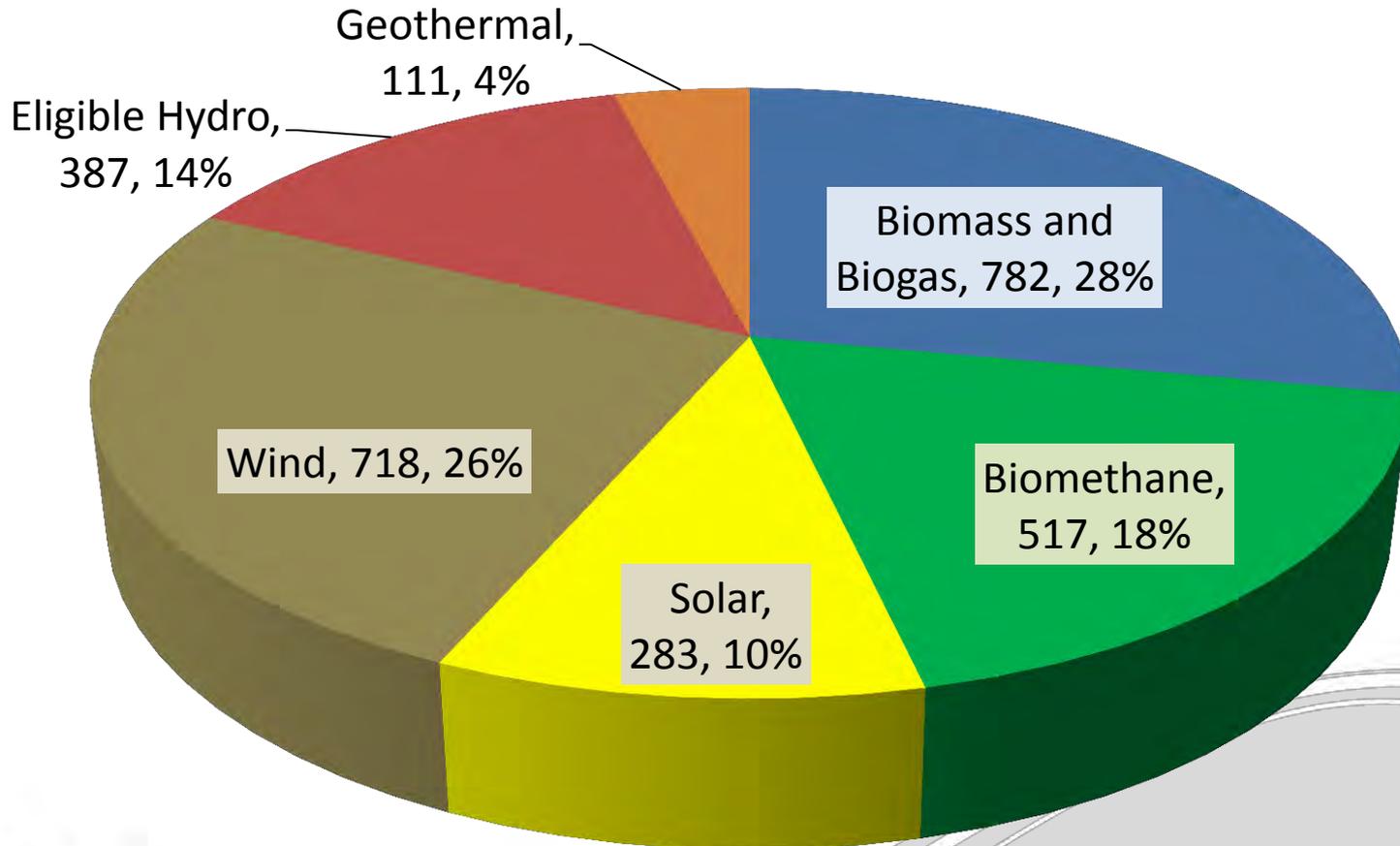
# SMUD: 50% RPS by 2030

Tim Tutt  
RETI 2.0 Plenary  
March 16<sup>th</sup>, 2016

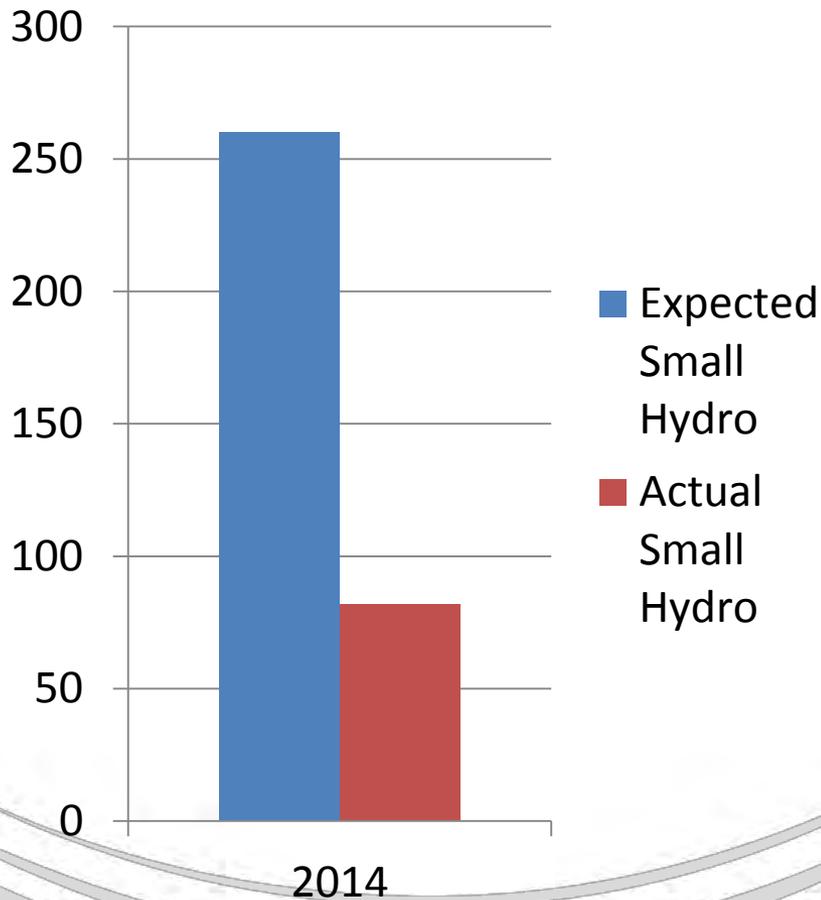


# SMUD's Renewable Portfolio: 2014

2795 GWH total, 26%



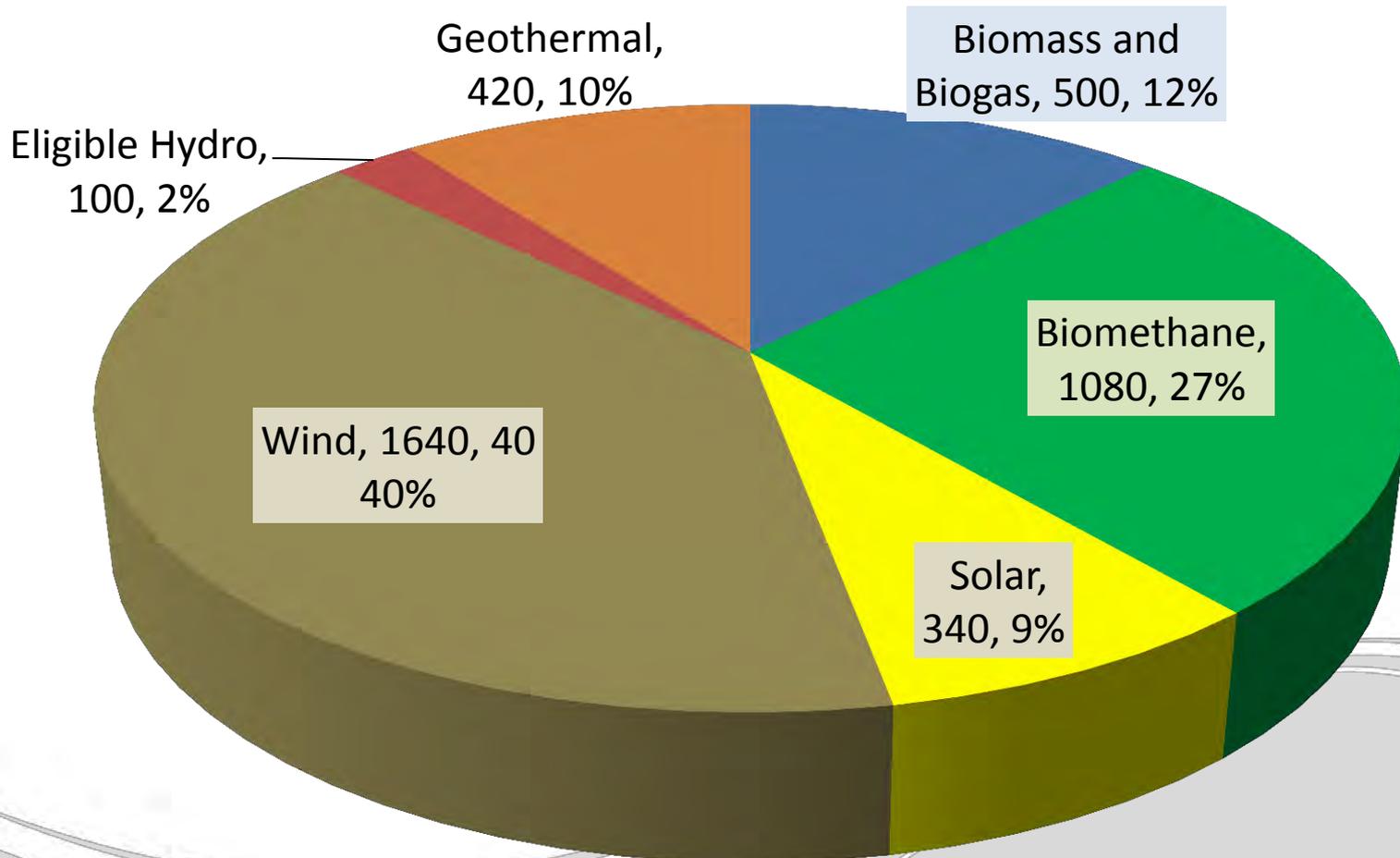
# Impact of Drought: 2014 Procurement



- Drought causes over 75% drop in small hydro procurement in 2014
- With normal hydro, SMUD would be at 28% renewables in 2014, 2% points higher than actual
- Important to recognize variability in procurement plans and violation assessment
- Important to have a portfolio of resources

# SMUD's Expected Renewable Portfolio: 2020

~ 4070 GWH total, 39%

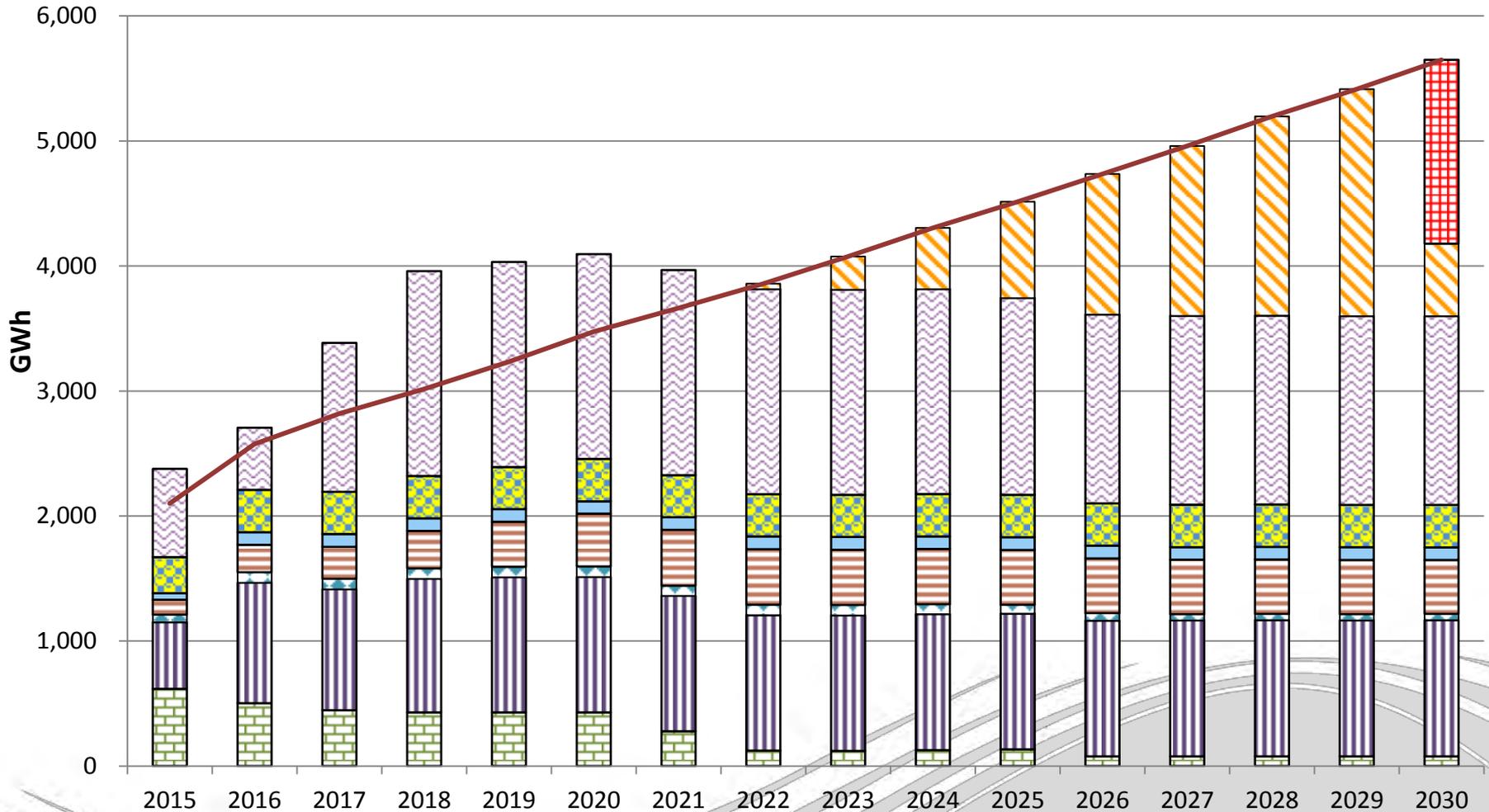


# SMUD Plans For RPS Compliance Periods 2 & 3

	2014-2016	2017-2020
Projected Retail Sales	<b>31394</b>	<b>41793</b>
RPS Requirement	<b>6794 (21.7%)</b>	<b>12541 (30%)</b>
Committed Procurement	<b>7877 (25%)</b>	<b>15471 (37%)</b>

- Recent Activity
  - Large biomass/small hydro contract ended in 2014
  - Extended contracts with local landfill, wind projects
  - Grandfathered biomethane contracts begin producing
  - New geothermal contracts
  - New local dairy digesters, solar begin producing
  - New large NM wind contract
  - Solar RFO just released
  - Considering several new options for wind, solar, geothermal, biogas

# RPS Compliance Requirements, Existing, Committed Resources (2015-2030)



- Biomass and Biowaste
- Biomethane
- Biogas
- Geothermal
- Eligible Hydro < 30MW
- Solar
- Wind
- Applied RPS Surplus
- Annual REC Shortage
- RPS Annual Target (GWh)



# CoSu Line Being Studied

## Benefits

- Increased Access to Pacific Northwest Clean Power
- Direct COTP Interconnection
- Supports GHG Reduction from SMUD Thermal Generators
  - Preserves Reliability at high load Levels
  - Increases import limits



## New transmission lines study areas

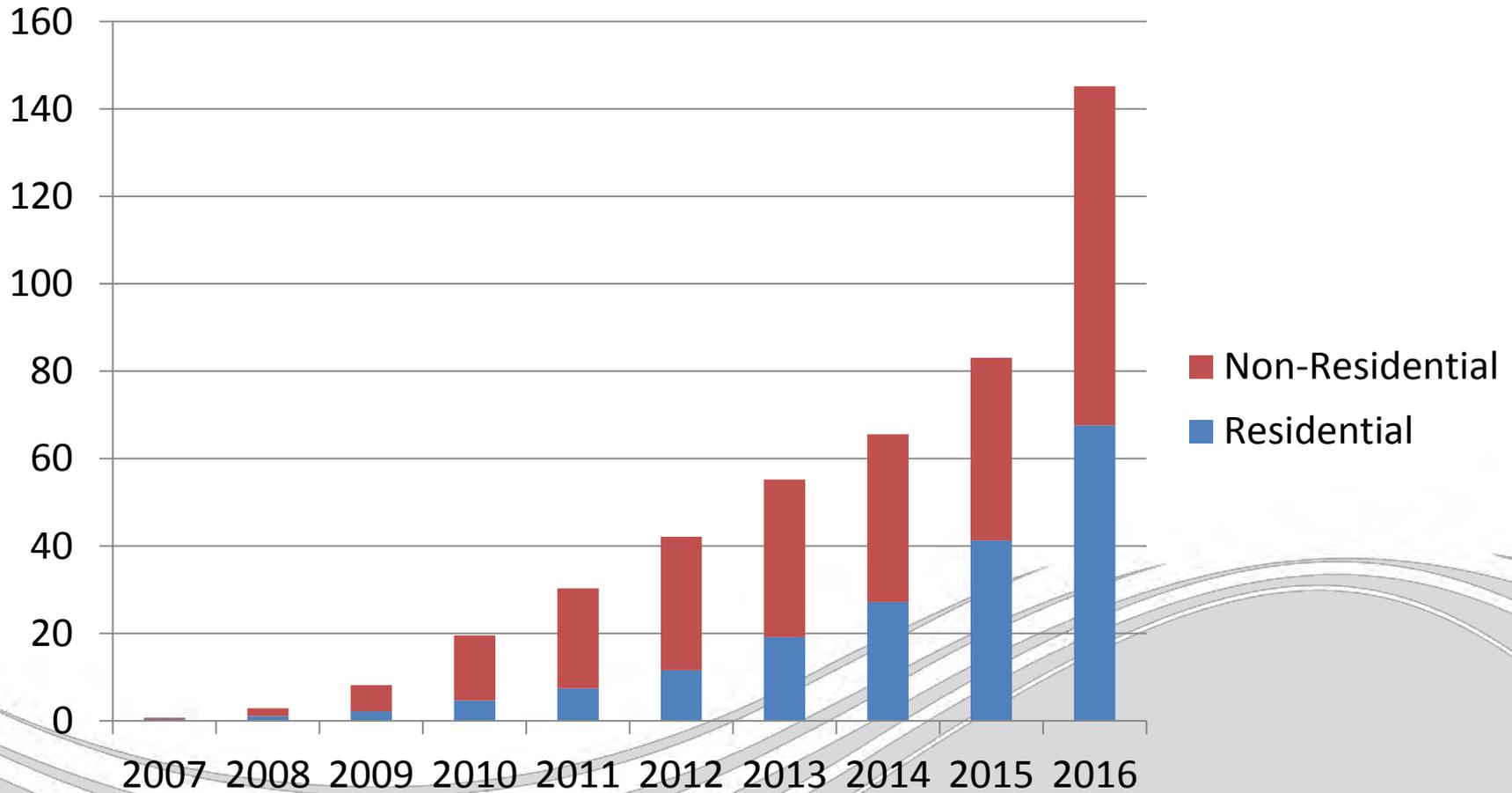
*Proposals for possible routes for transmission lines for SMUD and the Western Area Power Administration in Colusa and Sutter counties:*

- 1.** Would closely follow route of existing WAPA line
- 2.** Travels much the same route as the first proposal but would bypass the Sutter National Wildlife Refuge
- 3.** Avoids both wildlife refuges

Source: Western Area Power Administration

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# Behind The Meter PV



# DER market / policy trends



Storage: Scaling & becoming cost-effective due to cost declines, policy, solar + storage



DR: Aggregation increasing economic viability, opening new markets, emerging direct residential ISO access

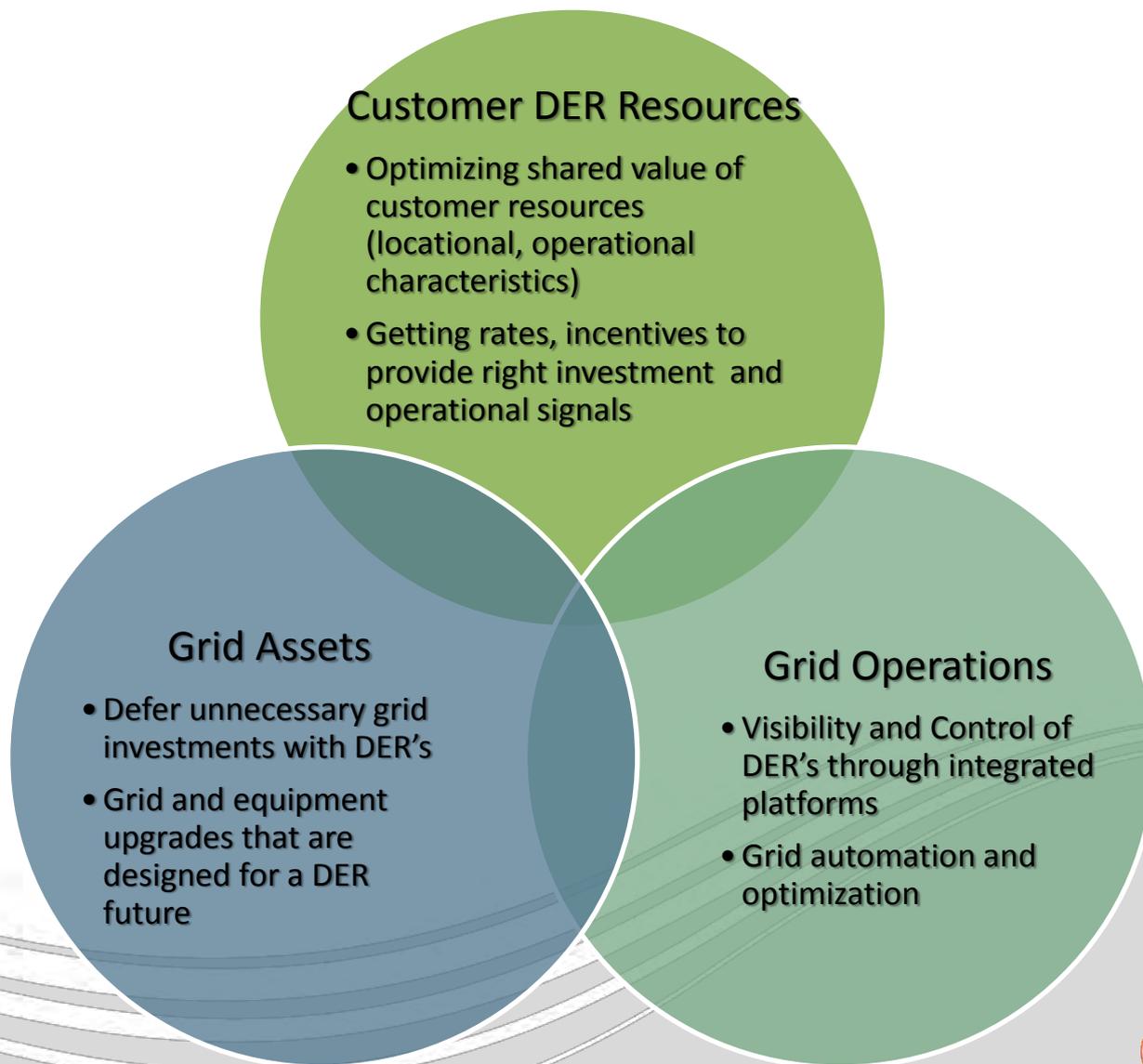


EV: State will reduce CO2 emissions in transport market, IOUs rolling out 1000s of charging stations



EE: must double in CA by 2030, real-time M&V to drive creative financing

# DER's and Grid Modernization Strategy



## EXTERNAL DRIVERS

### DATA

- Customer Expectations
- New Technology
- 3rd Party Entrants
- Big Data / Analytics
- Post-2020 Carbon

### CULTURE

## FOUNDATION

### Getting the Basics Right

- Reliable Electricity
- Safe Employees
- Fair, Affordable Pricing
- Easy, Accurate Billing
- Data Protection / Customer Privacy
- Multi-Device Customer Interface

### Operational Excellence

- Enterprise Metrics
- Verification / Transparency
- Operational Efficiencies to Lower Delivery Costs
  - Leverage Existing Technologies
  - Supply Chain Optimization
  - HR Optimization
  - O&M / System Planning / Execution

### Financial Integrity

- Meet Rating Agency Expectations
- Annual Capital Investments Funded Via Revenues
- Costs and Rates Aligned
- Accurate Budget Forecasting

# SMUD 3.0 — FUTURE READY

Robust - Nimble - Innovative



## STRATEGIC IMPERATIVE

### Value Creation

#### Community

- Community Ownership
- Align with Regional Priorities
- Economic Development
- Sustainability
- Corporate Citizenship

#### Customer

- Customer Experience Excellence
- Customer Differentiation
- Customized Solutions
- New Products and Services
- Strategic Partnerships
- Customer Loyalty

### Sustainable Energy Future

- Independence
- Carbon Goals
- IRP Projects
- Grid Modernization / Security
- Integration of Renewables
- Distributed Generation
- Storage Strategy

### Workforce for the Future

- Shift Culture
  - Customer Centric
  - Free Flow of Ideas
  - Accountability
  - Initiative
- Define Future Skills
- Grow Next Generation of Leaders
- Visible Commitment to Diversity
- Educational Partnerships

