

# How TEP helps its Customers with Solar without getting burned.

Presented by **OSIsoft**



Tucson Electric Power

# ***Speaker Intro: Stan Hollowell***

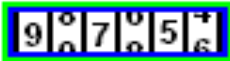
- 20+ years Electrical Utility Experience
  - Energy Services Manager
  - Operations Technology Manager: SCADA, EMS, DMS, OMS, Historian
  - Programs and Project Manager
  - NERC Critical Infrastructure Protection, Cyber Security
  - Innovation: Generation, Transmission, Distribution
- Educational Experience
  - Degree Earned: BS-Information Technology
  - Degree Earned: MBA

# Agenda

- Who is Tucson Electric Power
- Challenges to TEP and the industry
- How OSI PI helps resolve the challenges



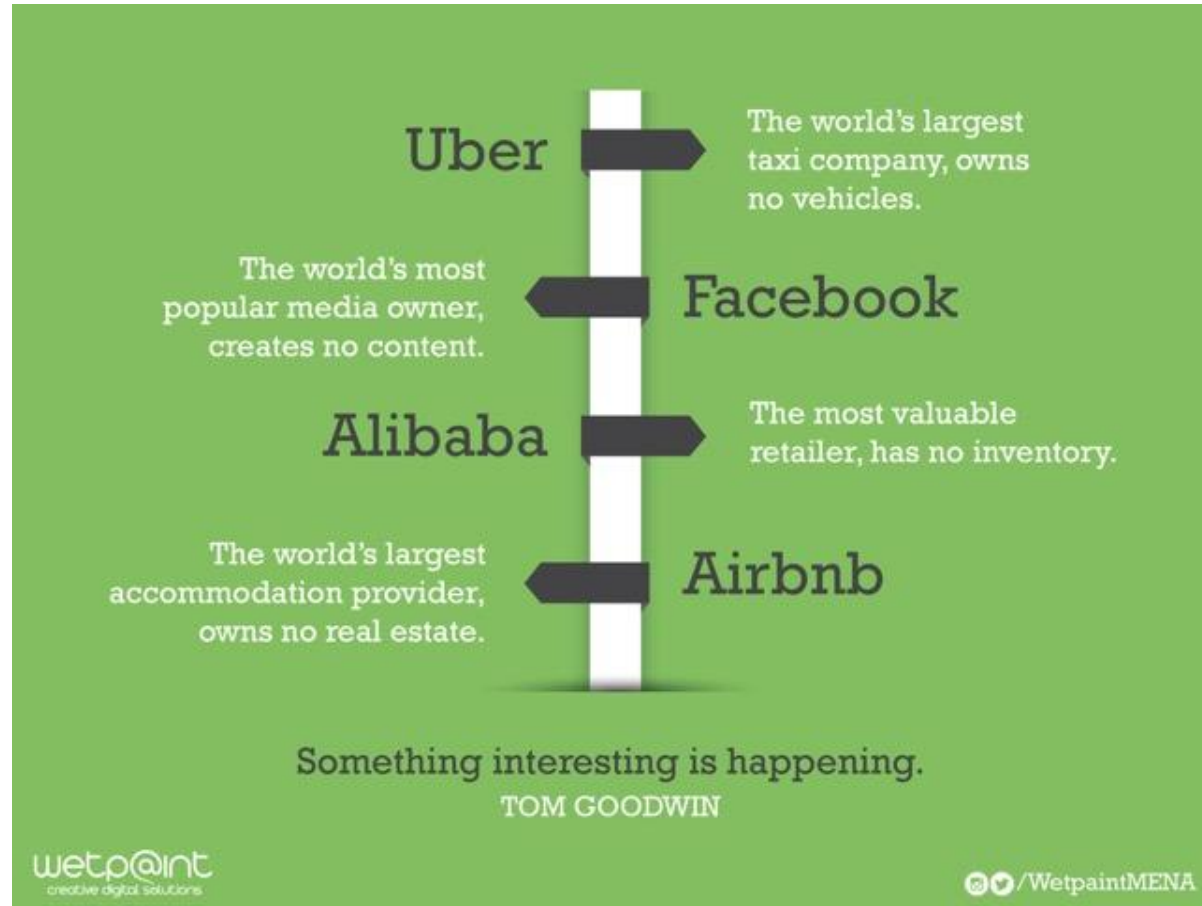
# TEP

- Over 450,000 Customers
- 3,300 MW Peak Load\*
- 2,800 MW Generation\*\*
- 300 MW Renewables\*\*\*
- Number of points 



# Challenges

- Operating Distributed Generation
- Managing a System of Systems
- Fixing the DRIP (Data Rich Information Poor)



# TEP Residential Solar Program

- Approved December 18<sup>th</sup>, 2014
- A new customer choice from TEP that offers long-term price stability and greater flexibility!



Tucson Electric Power



## Business Challenges

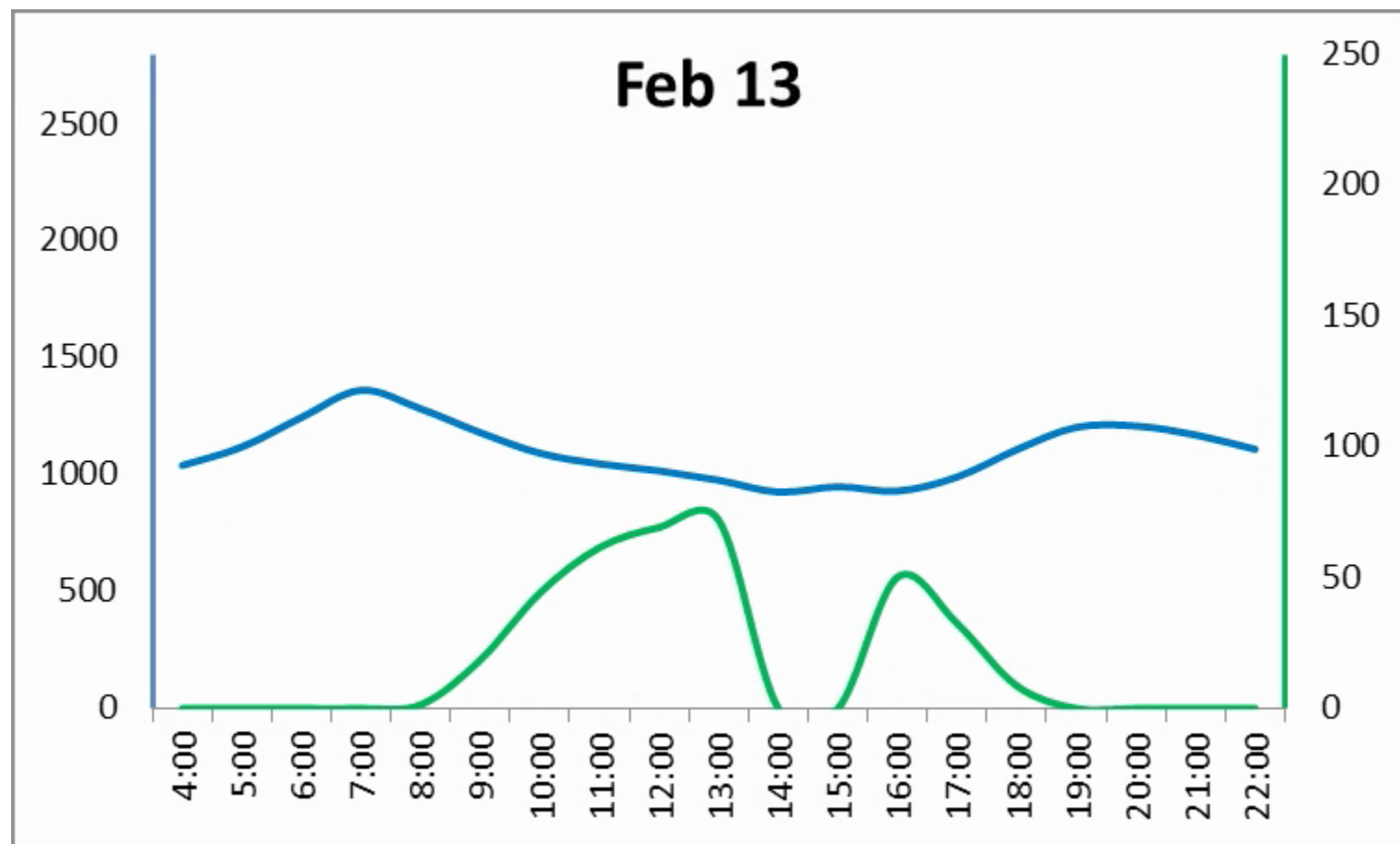
- Numerous Systems
- Silos of data storage
- No enterprise-wide view of data
- Lack of data management and governance

## Solution(s)

- Strategic enterprise view across Grid, Asset, and Customer analytics
- Develop methodology to reduce cost and time-to-market
- Leverage strategic initiatives such as Enterprise Pi & Visualization strategies

## Results and Benefits

- Redefining the operations of Distributed Energy Systems
- Incorporating Distributed Energy Resources
- Retention of customers



# Challenge – Implementing New Program

- TEP Owned Residential Solar Program
  - Approved December 18<sup>th</sup>, 2014
  - Initial Pilot - \$10 million budget, up to 600 homes
  - ~3.5MW residential solar
  - A new customer choice from TEP that offers long-term price stability and greater flexibility!



# Challenge – Managing System of Systems

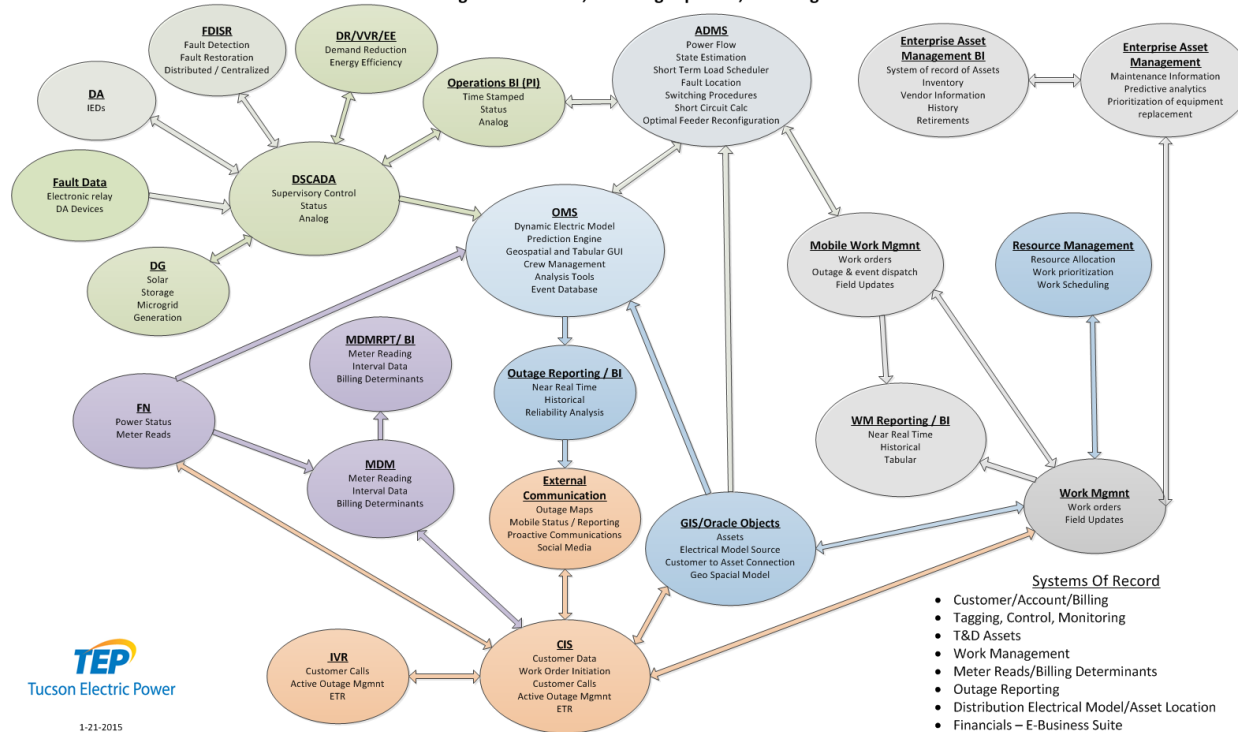
## T&D Operations Technology Application Strategy

The right information, to the right person, at the right time

SIEMENS



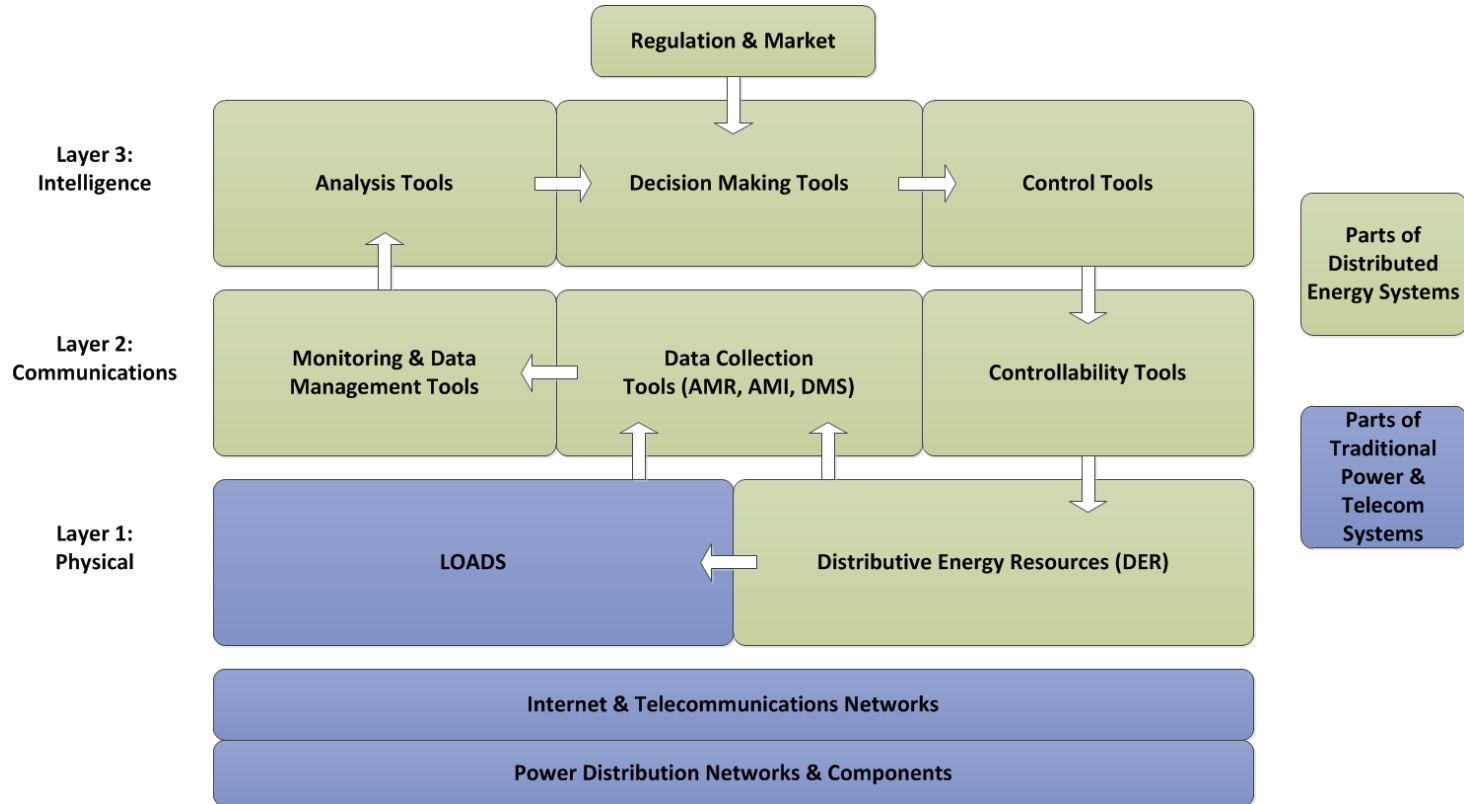
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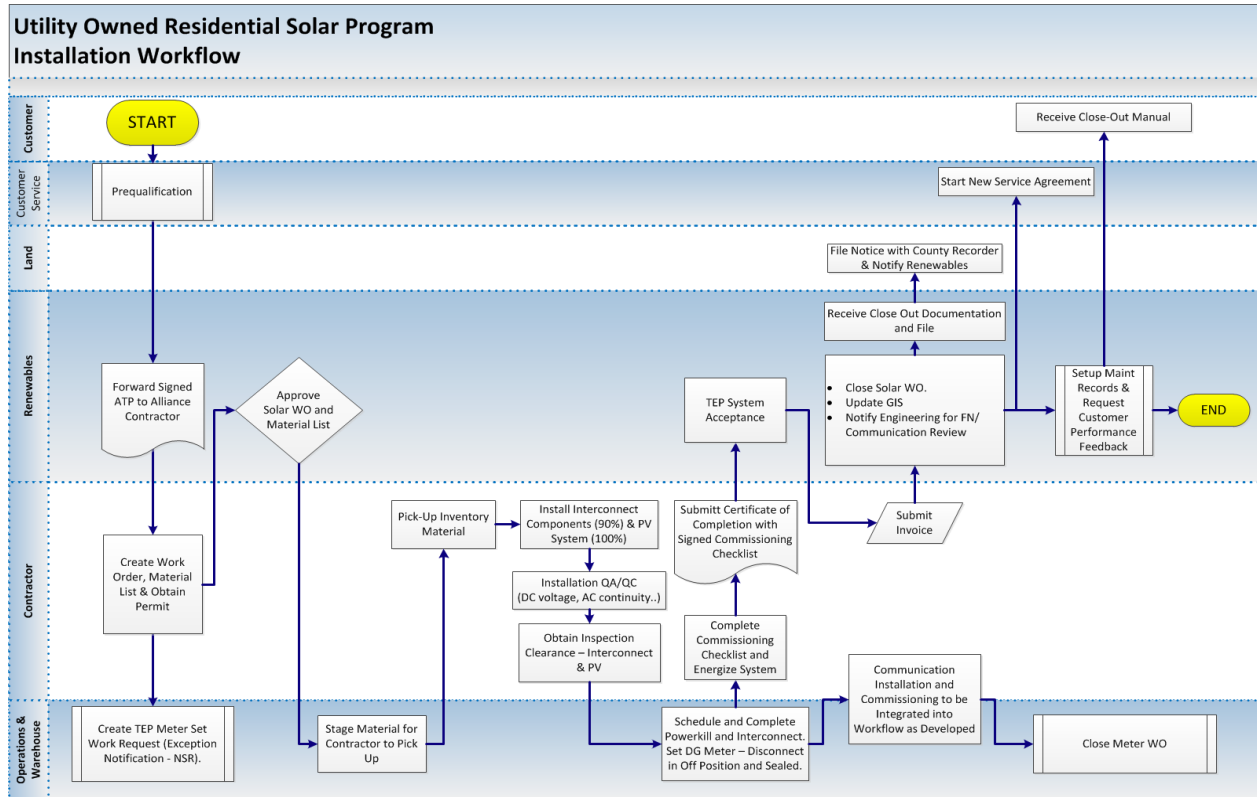
### Systems Of Record

- Customer/Account/Billing
- Tagging, Control, Monitoring
- T&D Assets
- Work Management
- Meter Reads/Billing Determinants
- Outage Reporting
- Distribution Electrical Model/Asset Location
- Financials – E-Business Suite

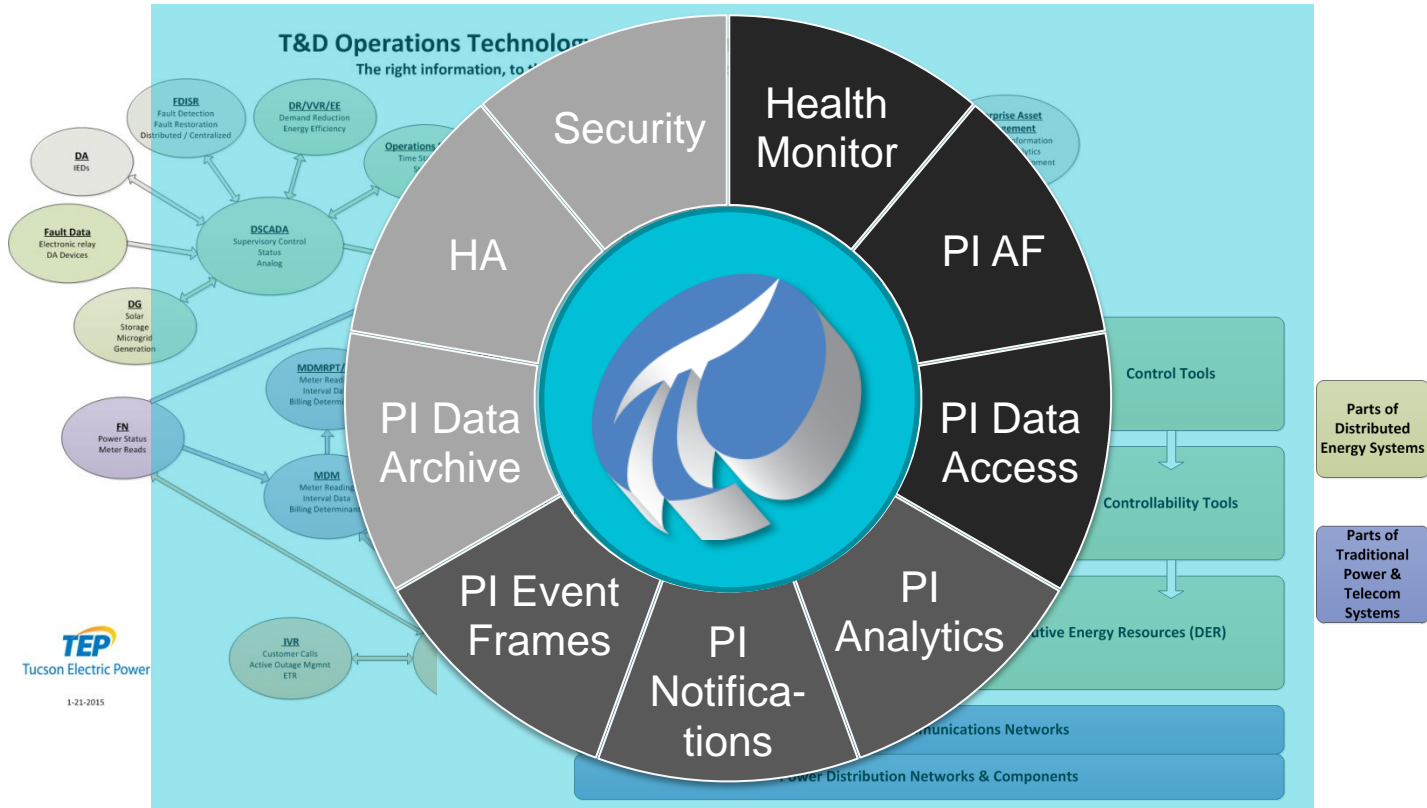
# Challenge – \$ilos of Data



# Challenge – Information Flow



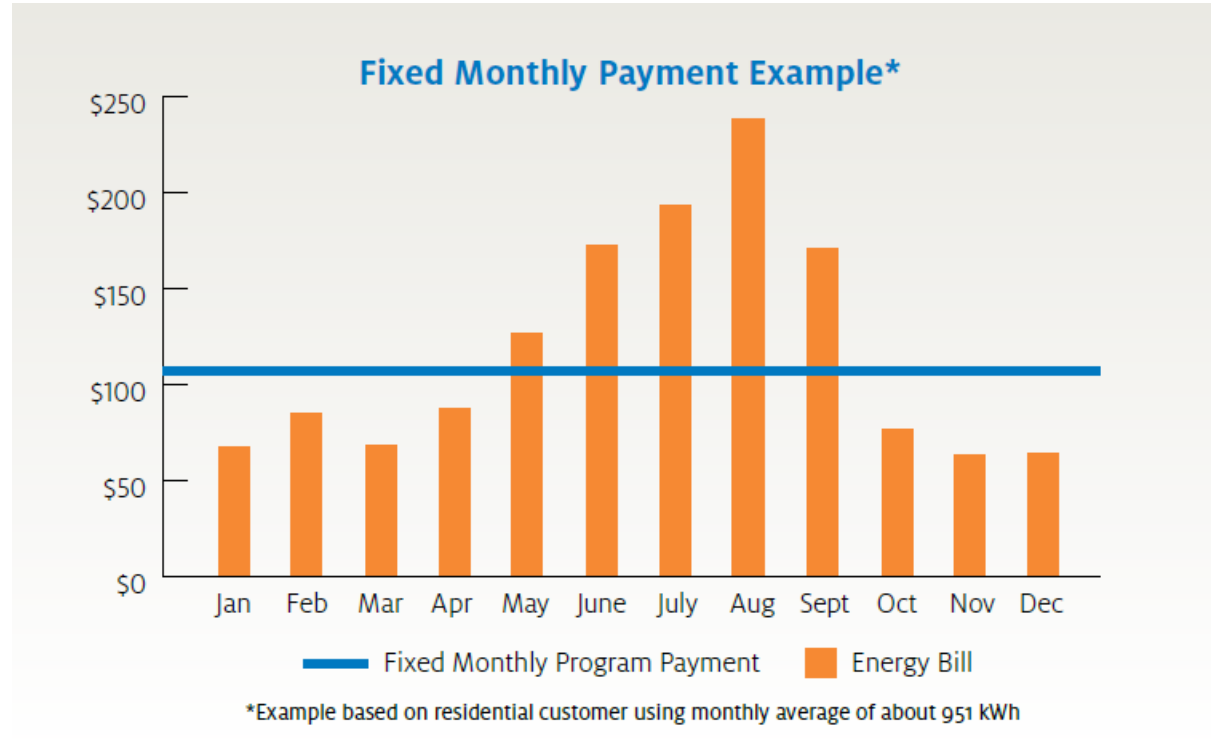
# Solution



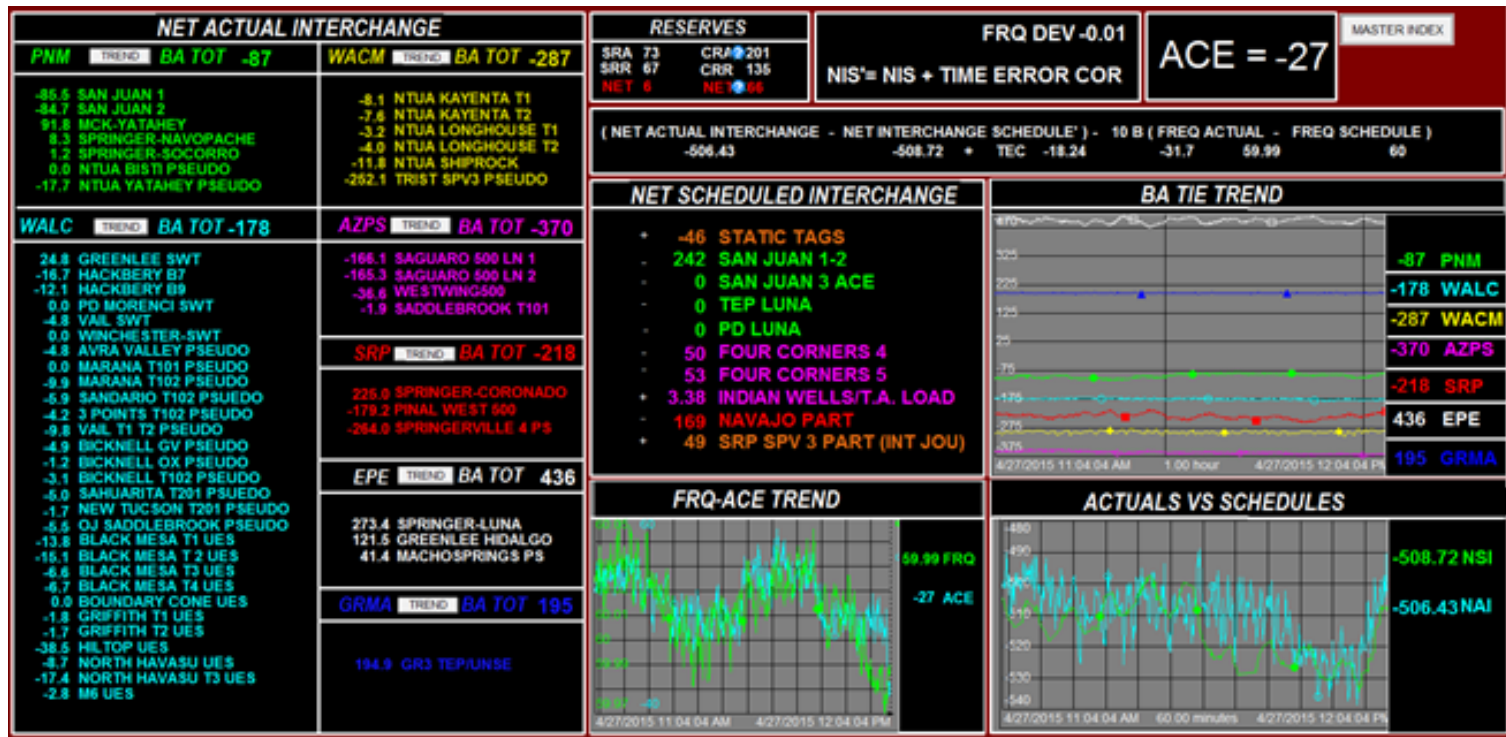


# PI DataLink – Annual usage

Solar payment will remain fixed if your annual usage remains within this +/- 15% range



# PI ProcessBook – Operations Integration

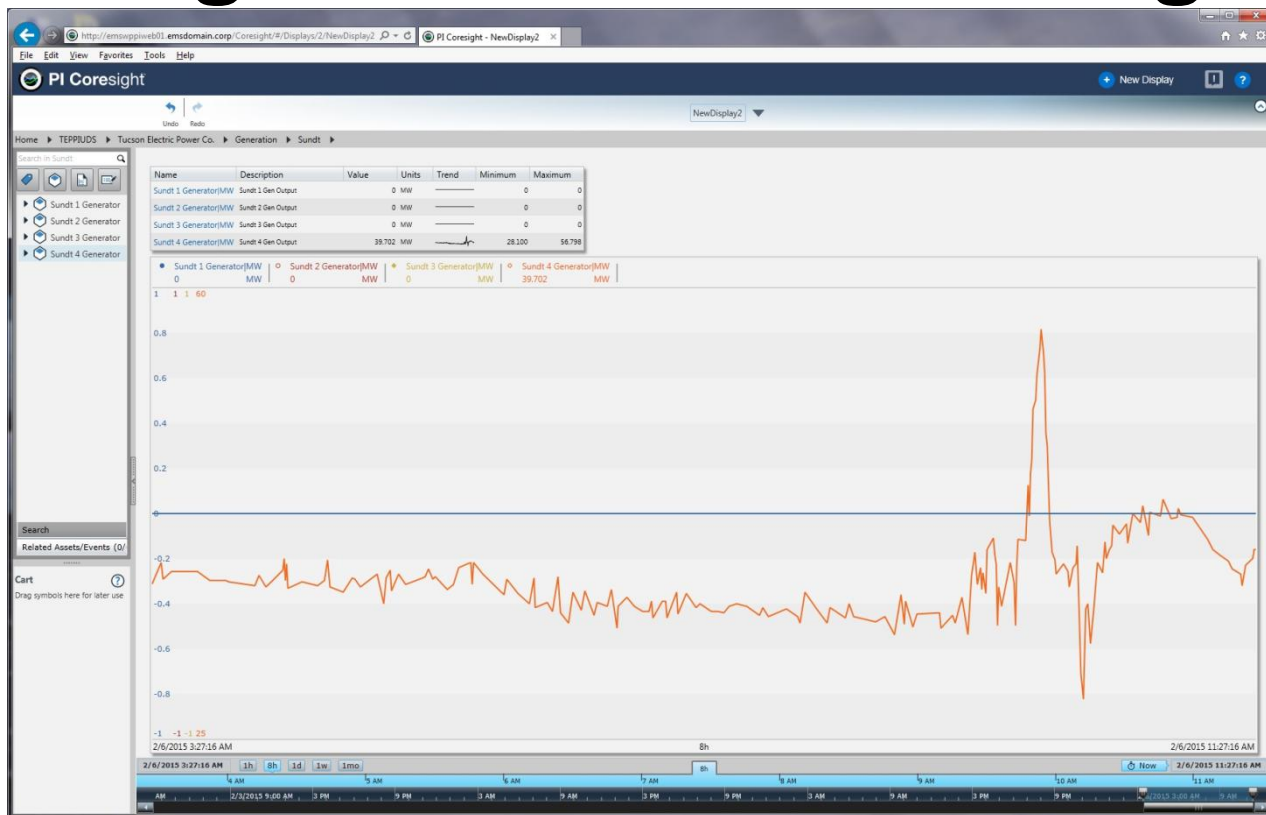


# PI ProcessBook – Operations Integrations





# PI Coresight – Generation Integration



# PI Coresight – Solar Integration



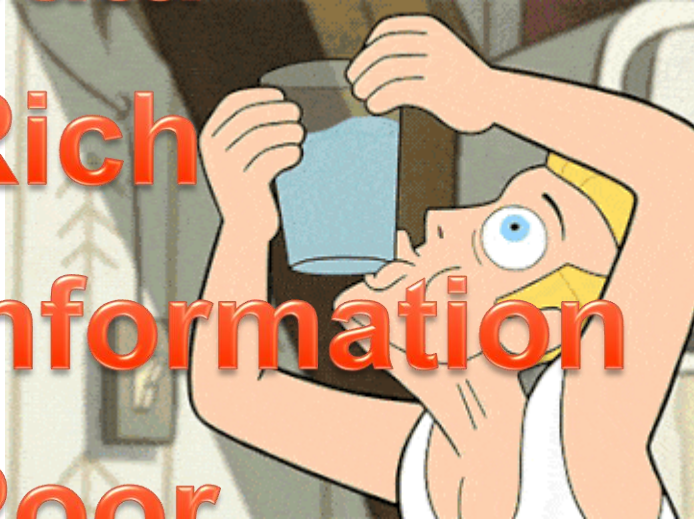
# Fixing the DRIP

**D - Data**

**R - Rich**

**I - Information**

**P - Poor**



# TEP User Group and OSI Tech Support

The TEP Local PI Users Group has formed at UNS Energy, bringing together about 30 employees who use the PI System data historian from OSIsoft, Inc.

PI will be the system of record for real-time generation, transmission, distribution, renewable and solar-forecasting operational data, helping the company turn data into useful information, said Stan Hollowell, Manager, Energy Systems.

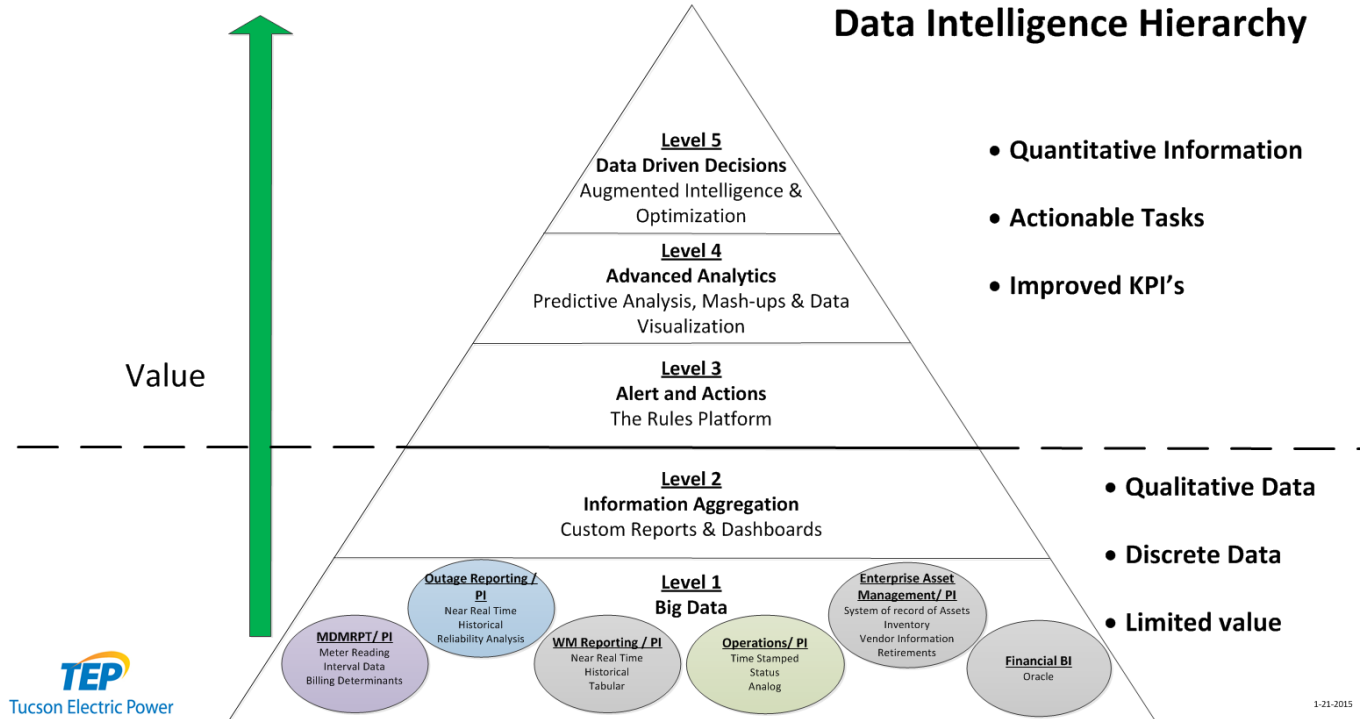
"This is part of a strategic initiative to improve operational efficiencies by fixing the DRIP – Data Rich and Information Poor," Stan said.

# TEP User group and OSI Tech Support



# Benefits - One version of the Truth

The right information, to the right person, at the right time





# Soft Benefits

- Reduce impact of cost-shift to non-solar customers
- Incorporated into distribution management system
- Retention of customers
- Transitioning from Traditional Resource Planning to Distributive Resource Planning

# Hard Benefits

- Estimated reduction of 2016 Capital Expenses - \$2,000,000
- Reduction to O&M annual expenses of 600 TEP Solar implementation - \$300,000



# THANK YOU

Brought to you by  **OSIsoft.**

# Stan Hollowell

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- Energy Services Manager
- CEO Technology Council Member
- Tucson Electric Power