



# Green Building Update RMMA Redevelopment

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Customer Energy Solutions





# Agenda

- Green Building Requirements
  - Austin Energy Green Building
  - LEED
- Emerging Projects
- Results
- SHINES update





# AEGB Mission Statement

To lead the transformation of the building industry to a sustainable future

*Celebrating 25 years*

**Single Family**  
Production & Custom



**Multi-family**  
Residential < 7 Stories



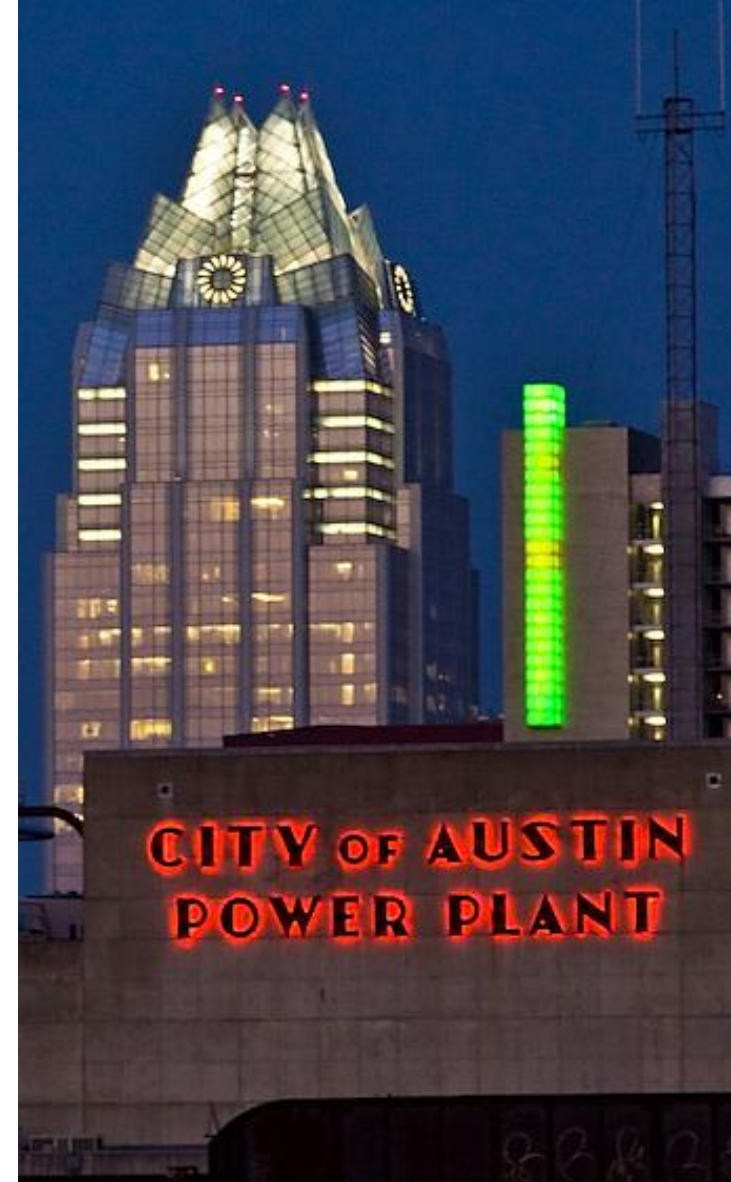
**Commercial**  
Residential 7+ Stories





## Advantages of Local Rating Systems

- Tie in with local goals and policies
- Adaptable to local climate & industry conditions
- Ability to track results
- Ability to influence and guide code development
- Opportunity to educate local professionals





# Austin Energy Green Building Goals

- Delay the need for new power plants, water treatment plants, waste water treatment plants and landfills
- Contribute to energy security & the success of local Climate Protection Plan
- Safeguard the local environment and air quality and community culture
- Make green building the industry standard in Austin
- Foster green material and job markets



## Leadership in Energy and Environmental Design

A voluntary system for certifying high-performance, sustainable buildings and neighborhoods.





# Introduction to LEED

LEED, or Leadership in Energy & Environmental Design, is a green building certification program that recognizes best-in-class building strategies and practices. To receive LEED certification, building projects satisfy prerequisites and earn points to achieve different levels of certification. Prerequisites and credits differ for each rating system, and teams choose the best fit for their project.

## 5 Rating systems

### BD+C

**BUILDING DESIGN + CONSTRUCTION**  
New Construction  
Core & Shell  
Schools  
Retail  
Healthcare  
Data Centres  
Hospitality  
Warehouses & Distribution

### ID+C

**INTERIOR DESIGN + CONSTRUCTION**  
Commercial Interiors  
Retail  
Hospitality

### O+M

**OPERATION + MAINTENANCE**  
Existing Buildings  
Data Centres  
Warehouses & Distribution  
Hospitality  
Schools  
Retail

### ND

**NEIGHBOURHOOD DEVELOPMENT**  
New land developments  
Land Redevelopment  
Residential  
Mixed Use  
Commercial  
Industrial

### HOMES

**HOUSES + UNITS**  
Single Homes  
Low Rise Multi Unit  
Mid Rise Multi Unit

## Credit Categories

Each rating system is made up of a combination of credit categories.

Within each of the credit categories, there are specific prerequisites projects must satisfy and a variety of credits projects can pursue to earn points. The number of points the project earns determines its level of LEED certification.



**INTEGRATIVE PROCESS**  
Encouraging cross discipline collaboration



**LOCATION & TRANSPORTATION**  
Access to variety of transport and/or credit for constrained sites



**MATERIALS & RESOURCES**  
Using sustainable materials & reducing waste



**WATER EFFICIENCY**  
Smart use and reuse of water



**ENERGY & ATMOSPHERE**  
Energy Performance



**SUSTAINABLE SITES**  
Minimising impact on ecosystems & water resources



**INDOOR ENVIRONMENT**  
Indoor air quality & access to natural light & views



**INNOVATION**

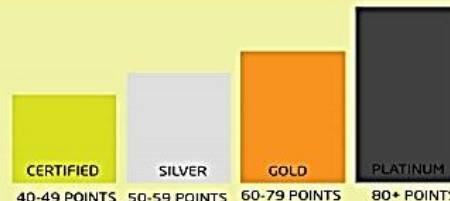


**REGIONAL PRIORITY**  
Geographic environmental priorities



LEED is administered by the US Green Building Council. For information on the scheme go to [www.usgbc.com](http://www.usgbc.com)

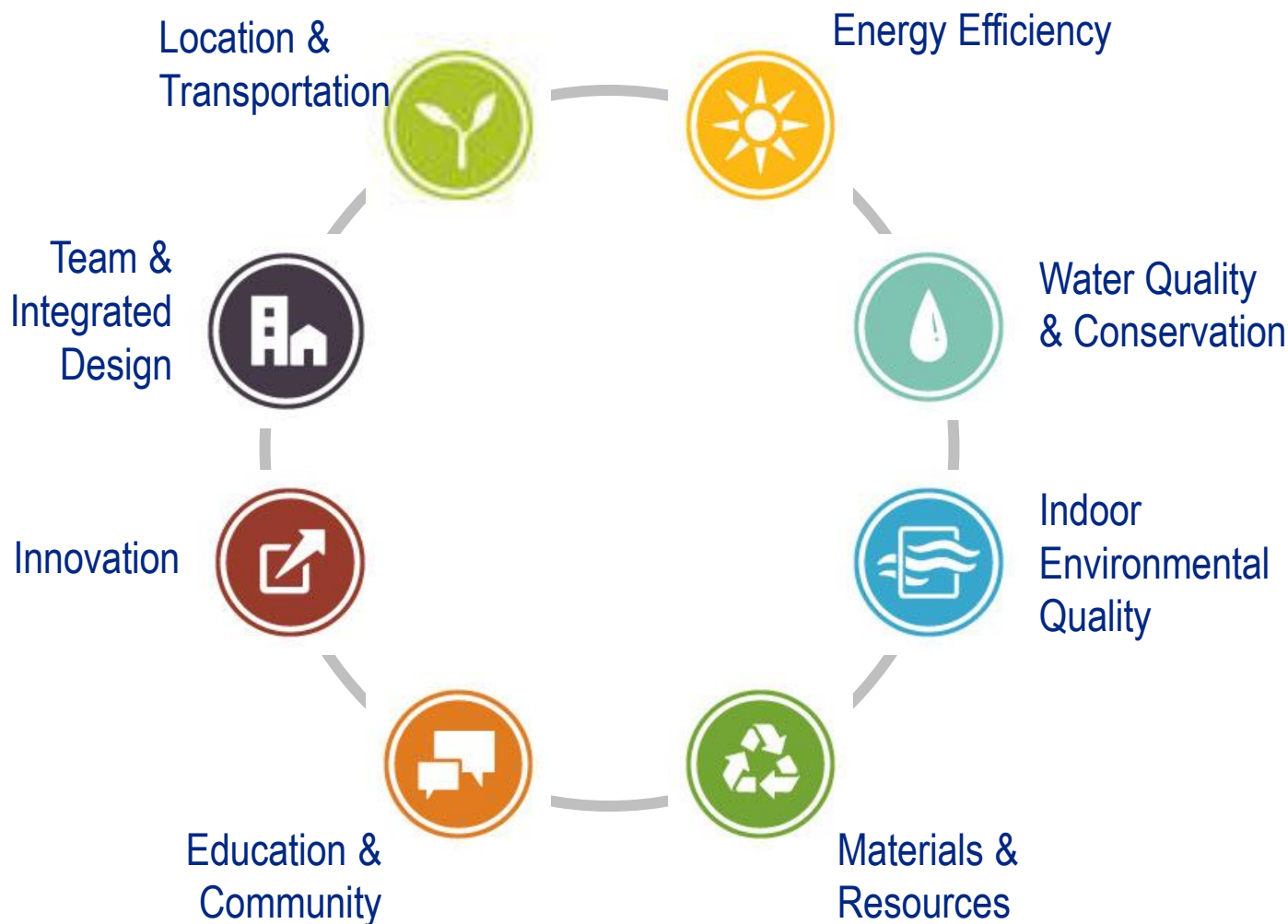
## The Ratings



[www.wtsustainability.com.au](http://www.wtsustainability.com.au)

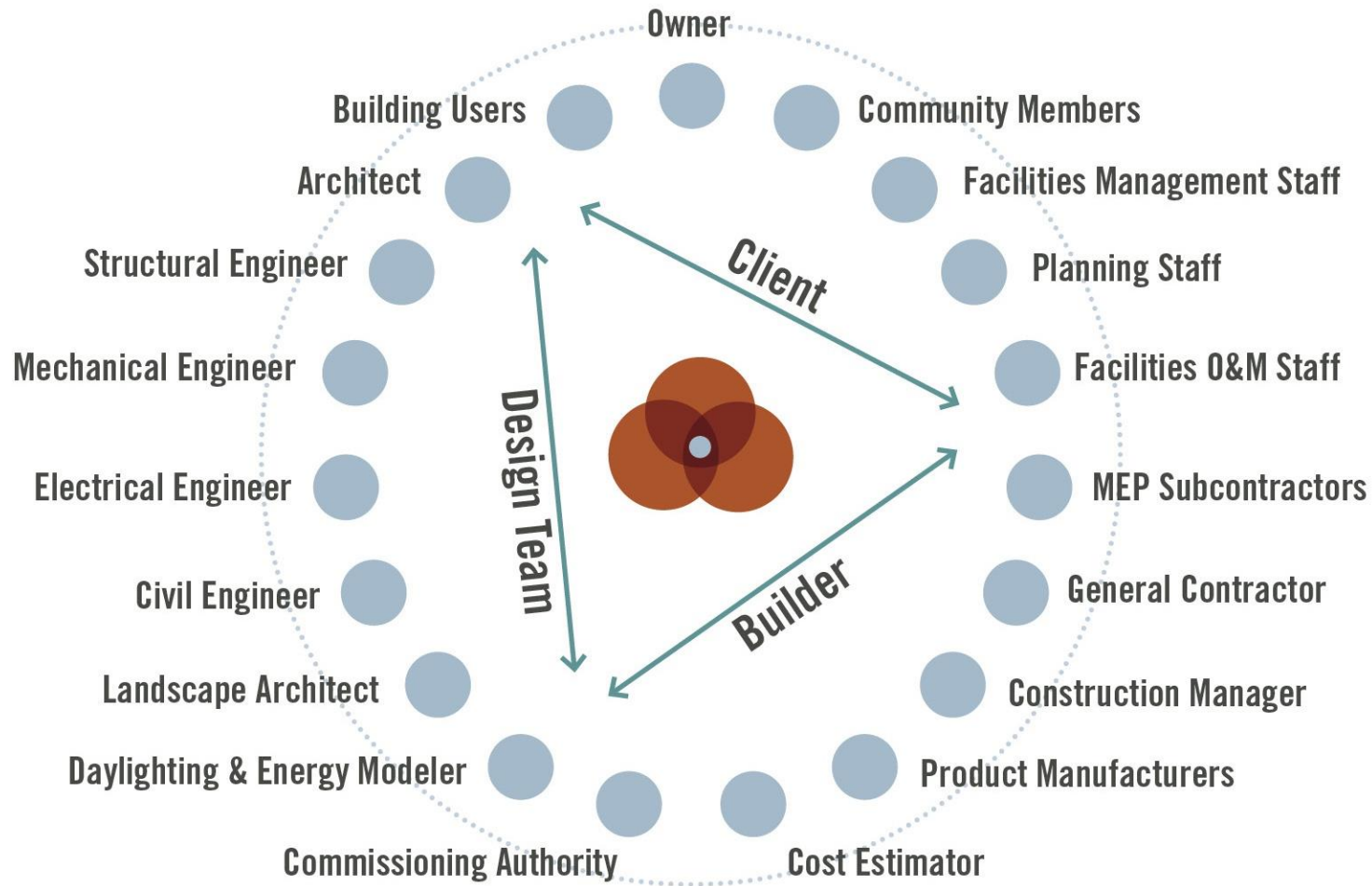
WT SUSTAINABILITY

# Organization of Rating Systems





# Integrative Approach - Key Stakeholders



Adapted from graphic by Bill Reed

## Mueller Design Guidelines

### Commercial Projects

**>25,000 sf**

- 2-Star AEGB rating and/or
- LEED Certification

### Single-Family Projects

- 3-Star AEGB rating





# Mueller by the Numbers

## According to the Plan

- Commercial ft<sup>2</sup>: 4.3 Mft<sup>2</sup>  
(13,000 employees)
  - 1,950,000 ft<sup>2</sup> institutional
  - 750,000 ft<sup>2</sup> retail
  - 1,700,000 ft<sup>2</sup> office/other commercial
- Dwelling Units: 5,900  
(13,000 new residents)
  - 3,500 apartments and condos
  - 2,400 single family homes, row houses, shop houses and Mueller houses
- 25% of homes affordable  
(1,475 units for 80% MFI)

## Results to date (rated projects)

- Commercial 2.2 Mft<sup>2</sup>  
(43% built-out)
  - 1,210,000 M ft<sup>2</sup> institutional
  - 600,000 ft<sup>2</sup> retail
  - 420,000 ft<sup>2</sup> office/other commercial
- Dwelling Units: 2,429  
(44% built-out)
  - 1,250 apartments and condos
  - 1,179 single family homes, row houses, shop houses and Mueller houses
- 25% of homes affordable  
(632 affordable homes)





# Single Family

## 1179 rated homes

- 3-star: 1,026
- 4-star: 63
- 5-star: 87

## Total Savings

- 825 kW (Demand)
- 1,650 MWh (Energy)
- 14,520 tons diverted (81%)





# Multifamily

## 1250 rated units

- Mosaic: 3-star
- Greenway Lofts: 3-star
- Wildflower Terrace: 3-star & LEED NC Silver
- Elements: 3-star
- AMLI: 1-star & LEED for Homes Platinum

## Total Savings

- 462 kW (Demand)
- 3,093 MWh (Energy)
- 5,349 Tons diverted (79%)
- 361,443 gals irrigation (100%)
- 7.8 M gals indoor (26%)





# Commercial- Page 1

	AEGB	LEED
AlSD Performing Arts Center	5-Stars	
Dell Children's Medical Center	2 @ 5-Stars	2 @ Platinum
		Gold
Ronald McDonald House		Platinum
H-E-B	4-Stars	Gold
Dell Pediatric Research Institute		Gold
Frost Bank		Gold
EMS Station #33		Silver
Satellite Dialysis	4-Stars	
Ella Wooten Park	4-Stars	
Mueller Central - Visitors Center	4-Stars	Gold
Home Depot	4-Stars	
Seton Administration Offices	4-Stars	Gold
SEDL		Gold





## Commercial- Page 2

	AEGB	LEED
Neighbors Emergency Center	3-Stars	
Mueller Retail Building 10		Silver
Starbucks	3-Stars	Silver
Strictly Pediatrics at Mueller	3-Stars	
Mueller Market District	3-Stars	Silver
The Thinkery		Silver
Residence Inn		Silver
South Regional Retail	26 @ 3-Stars	
	2 @ 2-Stars	

**50 rated projects = 2.2 million sqft**



# Commercial Savings

- 5,838 kW (Demand)
- 17,137 MWh (Energy)
- 43,647 tons diverted (88%)
- 5.38 M gals irrigation (85%)
- 6.43 M gals indoor (32%)

## Reclaimed water savings:

Irrigation: 24.7 M gals

Projects that use reclaimed water indoors: Mueller Central, Frost Bank, AISD PAC & HEB



# Emerging Projects

- Mueller Diamond
- Mueller Cinema Building
- John Gaines Park and Amenities Center







# What Do The Numbers Mean?





# What Do The Numbers Mean?

## Annual Project savings effectively

- Planted 337,500 trees or 17,000 acres of forest in Austin parks
- Removed 29,500,000 Vehicle Miles or 2,500 cars from Austin's busy roadways
- Provided electricity for 2,000 average Austin residences for a year





# LEED ND Pilot Participation- Update

Largest project to participate in the pilot

Plan- Silver Certification

Implementation- Tracking Gold

## LEED-ND: Quantifiable Sustainability Planning

LEED® for Neighborhood Development	
<hr/>	
Total Possible Points**	110*
<hr/>	
 Smart Location & Linkage	27
<hr/>	
 Neighborhood Pattern & Design	44
<hr/>	
 Green Infrastructure & Buildings	29
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<i>* Out of a possible 100 points + 10 bonus points</i>	
<i>** Certified 40+ points, Silver 50+ points, Gold 60+ points, Platinum 80+ points</i>	
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 Innovation & Design Process	6
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 Regional Priority Credit	4

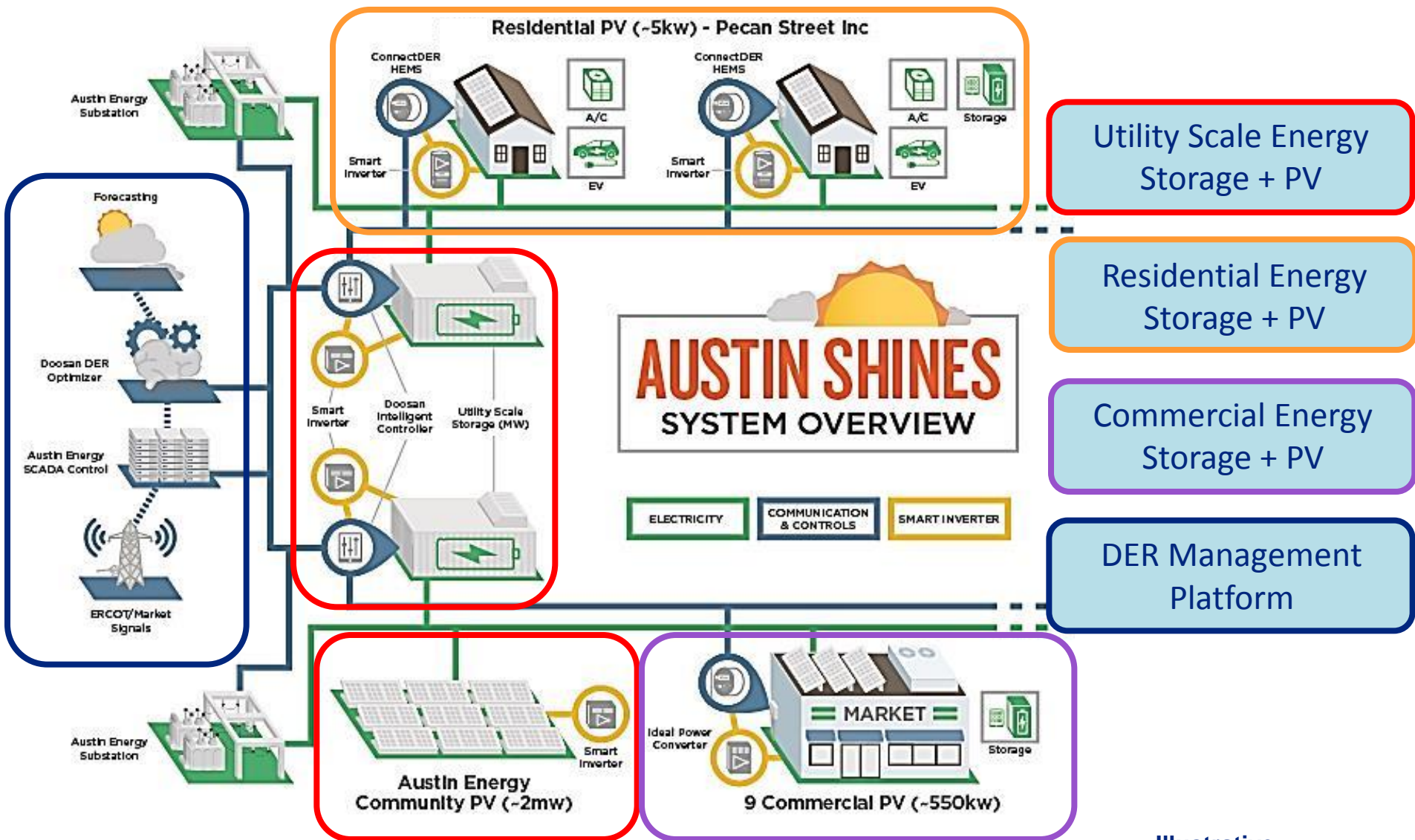




# What is SHINES?



Sustainable and Holistic IntegrationN of  
Energy Storage and Solar PV



Illustrative





# Grid vs. Neighborhood Design





# Shines Updates

## **Residential Update**

- Pecan Street to begin work on Austin SHINES project this quarter
- Goal of identifying 24 participating homes by Q2 2017
- Installations include smart meter collars, smart inverters and 6 residential energy storage systems

## **Commercial Update**

- Reviewing commercial entities in the Mueller development for match with project needs
- Goal of identifying 7-8 participating businesses by Q1 2017
- Installations include smart inverters and commercial energy storage systems; commercial entities responsible for solar PV

## **Utility-Scale Update**

- City and Catellus are finalizing selection of a 0.5 acre site for energy storage to support the entire Mueller development and beyond
- Working with community stakeholders, Mueller Design Guidelines and New Construction Council process





# Questions



# THANK YOU!

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