Community Energy and Democracy:

Interesting Times for Rooftop Solar, Storage, and Net Zero Energy Buildings in Utah

Josh Craft, Utah Clean Energy

Energy Democracy Symposium

July 12, 2017

UTAH CLEAN ENERGY

STOP
ENERGY WASTE

CREATE
CLEAN ENERGY

BUILD
A SMART ENERGY FUTURE

UTAH CLEAN ENERGY

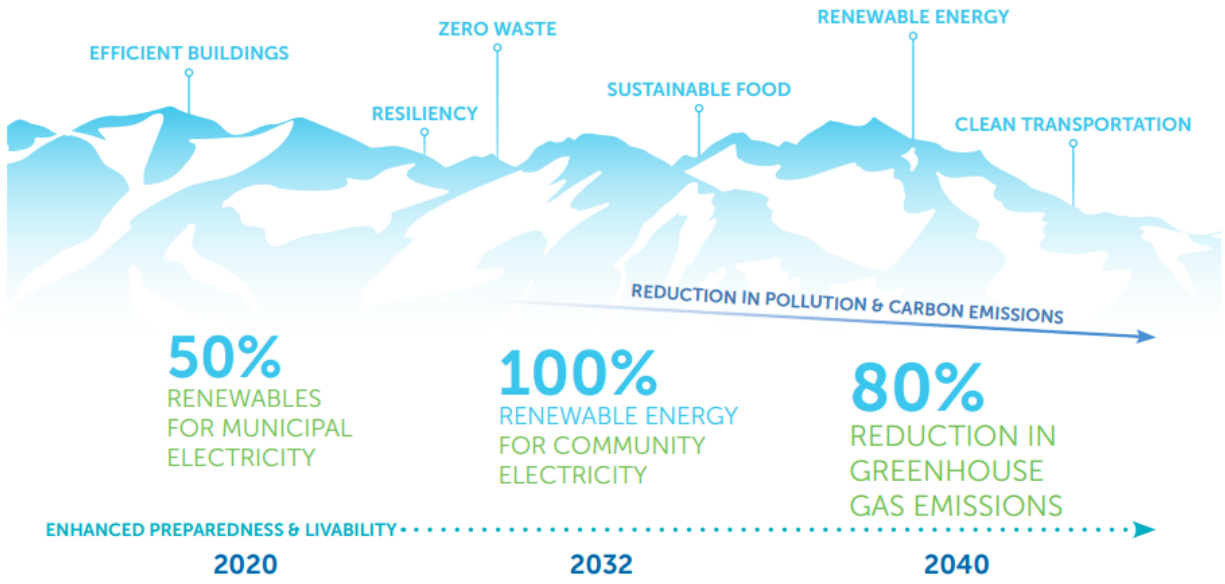
Clean Energy Business Coalition
Sustainers Circle Members

Clean Energy Business Coalition
Affiliate Circle Members

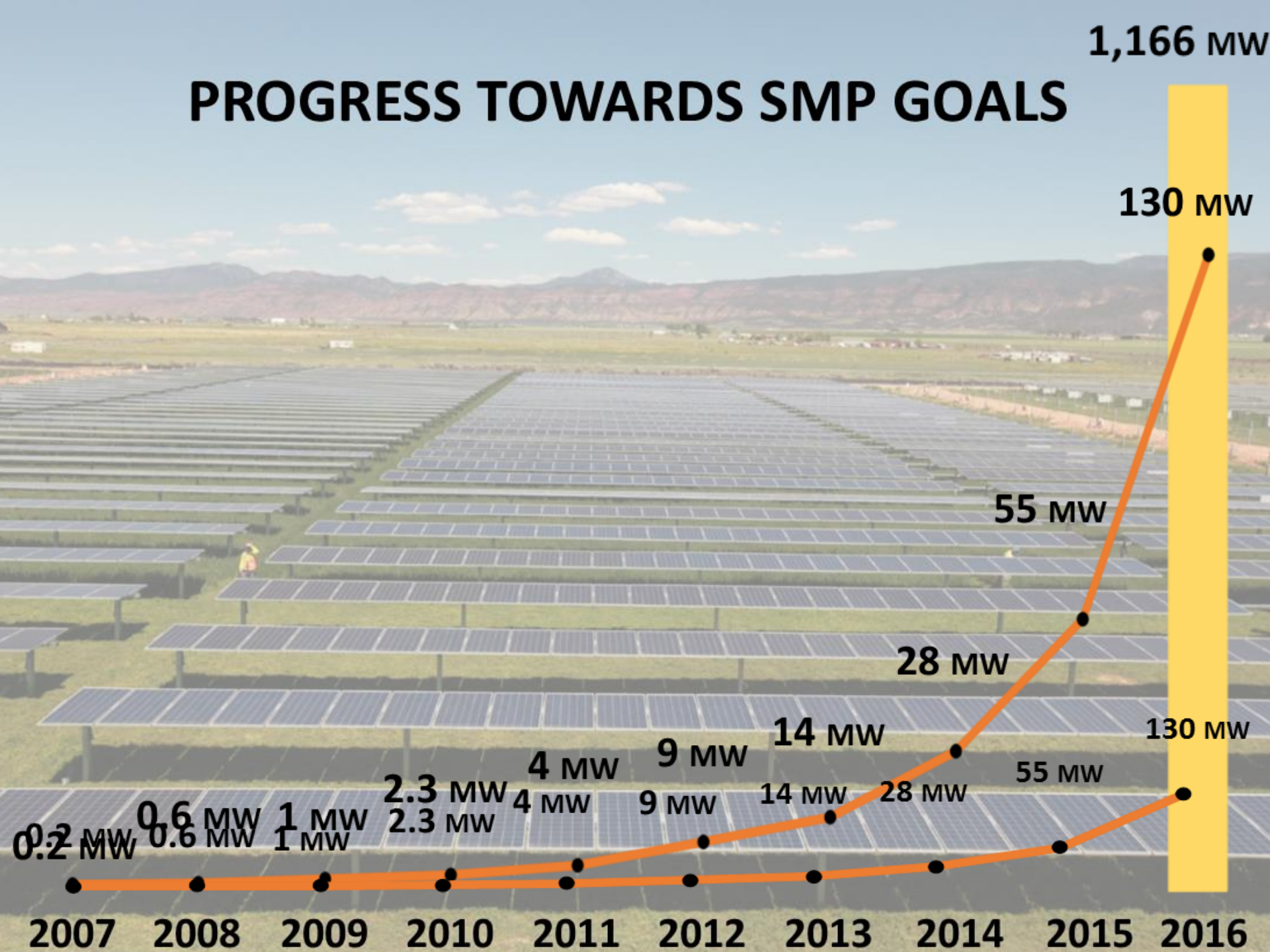
Technologies Enabling Energy Democracy

- Distributed Solar
- Battery Storage Technologies
- Net Zero Energy Buildings

SLC Clean Energy Goals



Rooftop Solar


PROGRESS TOWARDS SMP GOALS
1,166 MW
130 MW
55 MW
28 MW
14 MW
9 MW
4 MW
2.3 MW
1 MW
0.6 MW
0.2 MW
130 MW
55 MW
28 MW
14 MW
9 MW
4 MW
2.3 MW
1 MW
0.6 MW
0.2 MW
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016

TOP 10 SOLAR STATES

STATE RANKING BASED ON THE CUMULATIVE AMOUNT OF SOLAR ELECTRIC CAPACITY INSTALLED THROUGH 2016

1,489	mw cumulative capacity
292,000	homes powered equivalent
4,408	solar jobs
488	watts per person
1,241	mw capacity installed

UTAH

SEIA Solar Energy Industries Association

Get solar data from the SEIA/GTM Solar market insight report. Learn more at SEIA.org/smi

NET METERING

- Solar PV panels produce DC electricity
- Your home uses AC electricity to run appliances and lights
- Inverters are attached to the solar panels to convert the DC electricity to AC electricity
- When you're not using any energy, the excess electricity is sent back out to the grid

Battery Storage Technology

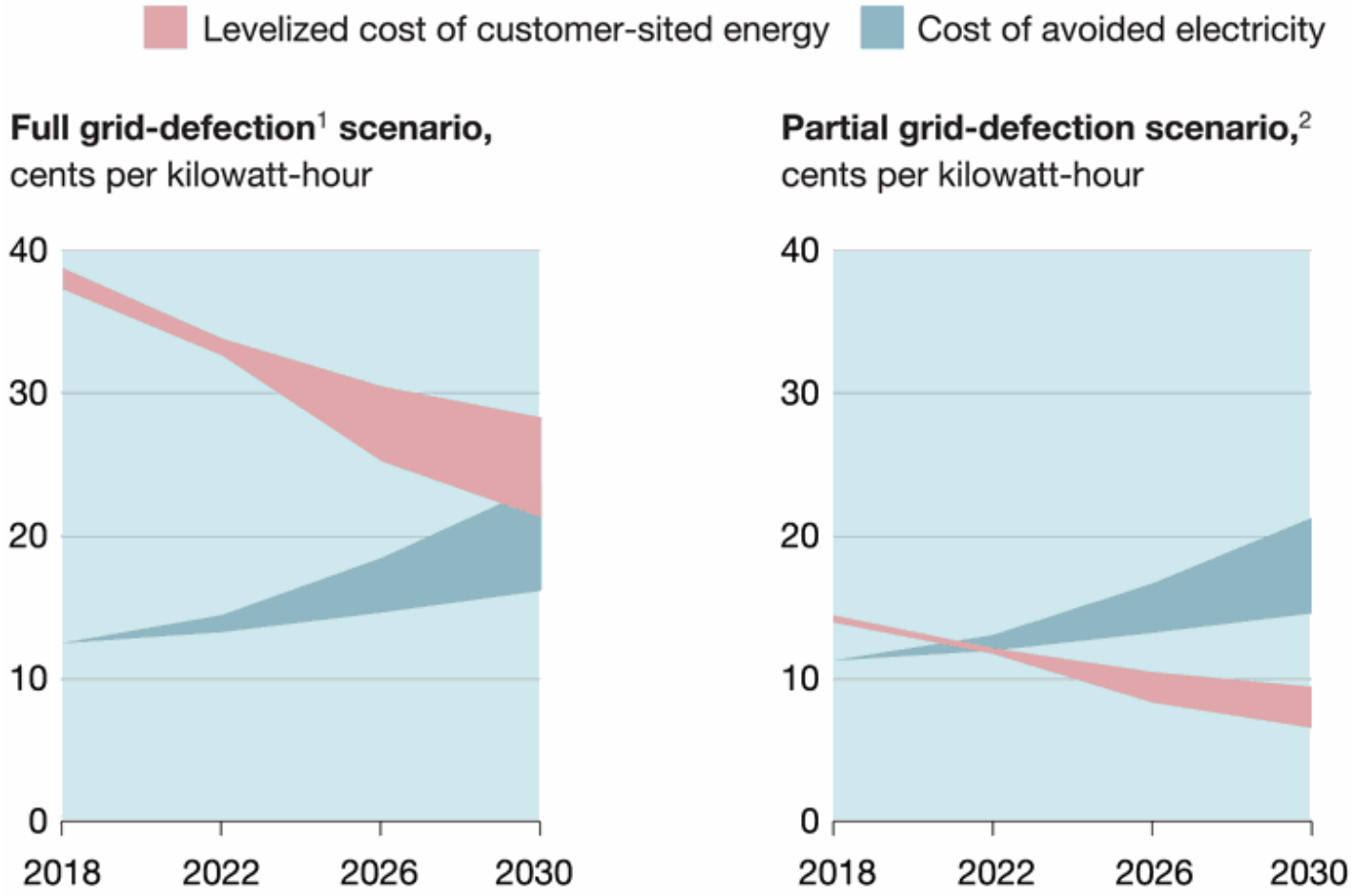
Article
June 2017

Battery storage: The next disruptive technology in the power sector

By David Frankel and Amy Wagner

Status: Battery Storage

In some cases, grid defection is beginning to make economic sense.



[1]Grid-defection-economics estimates are based on Arizona residential customer. Partial defection assumes 90% load departure with solar and storage only. Full defection includes a small generator set for backup power. Solar and storage costs are from McKinsey's cost-curve forecast.
[2]90%.

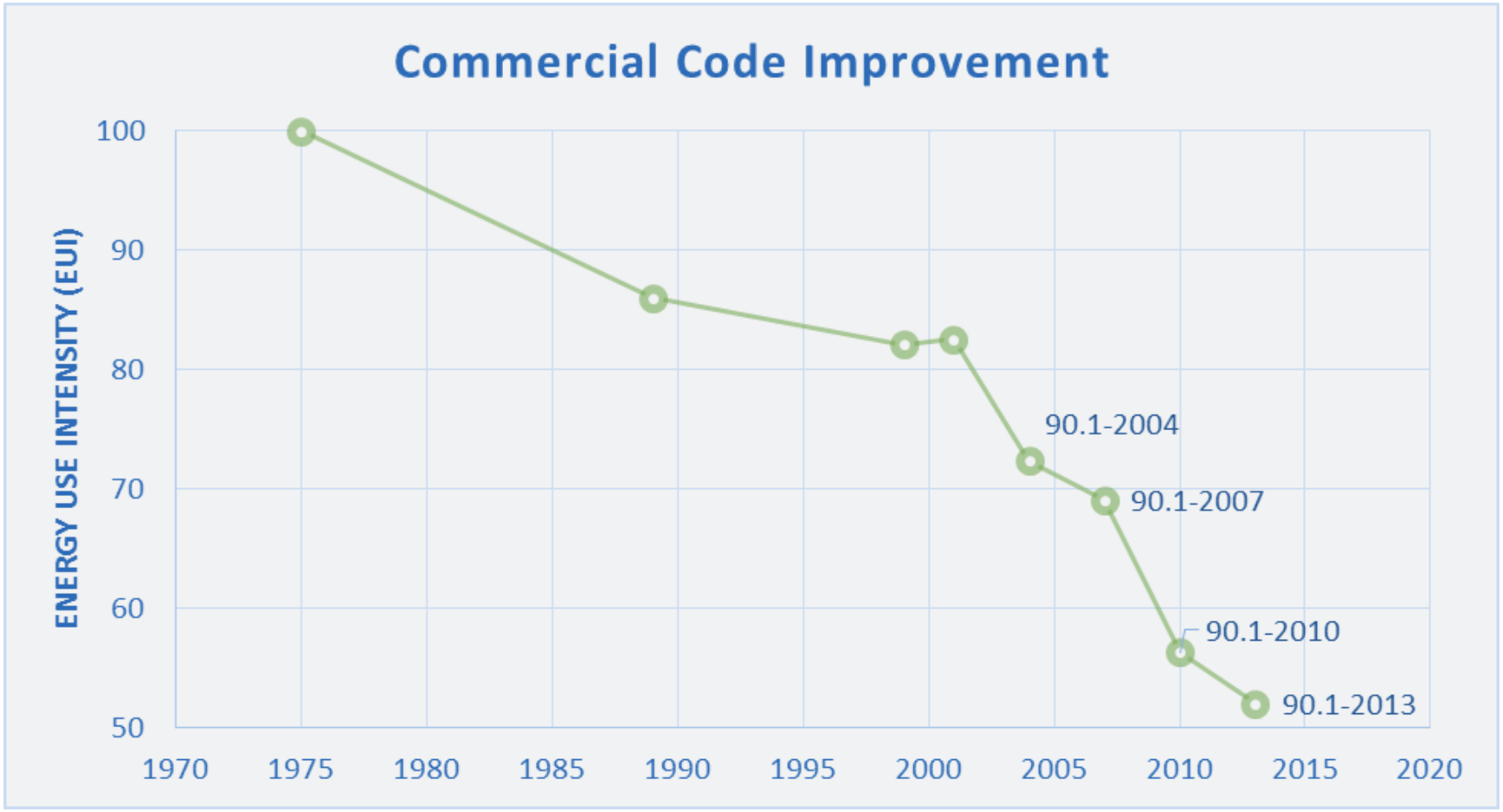
McKinsey&Company

Net Zero Energy Buildings: The Ground Level

What is a Zero Energy Building?

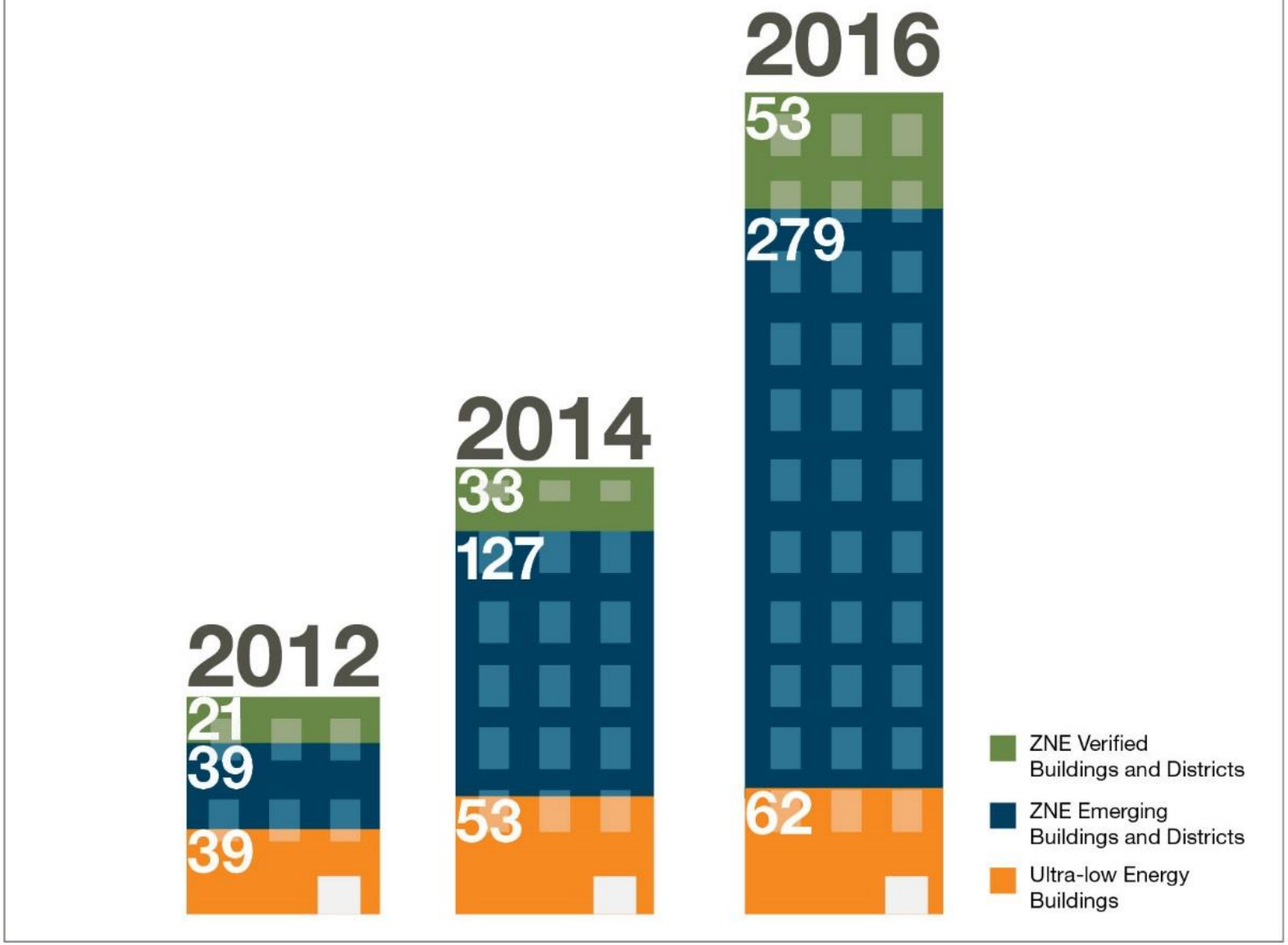
An energy-efficient building where the annual energy consumed is less than or equal to the on-site renewable energy needed to serve the building.

Energy Consumption Decline in New Commercial Buildings



Source: Building Codes Assistance Project, 2016 http://bcapcodes.org/topics/development/

Number of ZNE Projects



nbi new buildings institute

Salt Lake City Fire Station #3

Status: Net Zero Energy Buildings

- Technological solutions (state of the shelf!)
- Political
  - Building and energy codes are adopted by State Legislature – **doesn't allow "local control"**

Beware of App Stories!

- **Utility Business Model/Regulation**
- **Equity & Inclusivity**
- **Climate Change**

STATUS: Solar & Net Metering

Rocky Mountain Power proposed changes to the way solar customers are compensated

- RMP's proposal will be heard before the Public Service Commission in August
- **Public Hearing: August 9th**
- Stay tuned for more info

UTAH CLEAN ENERGY

Learn more -
www.utahcleanenergy.org

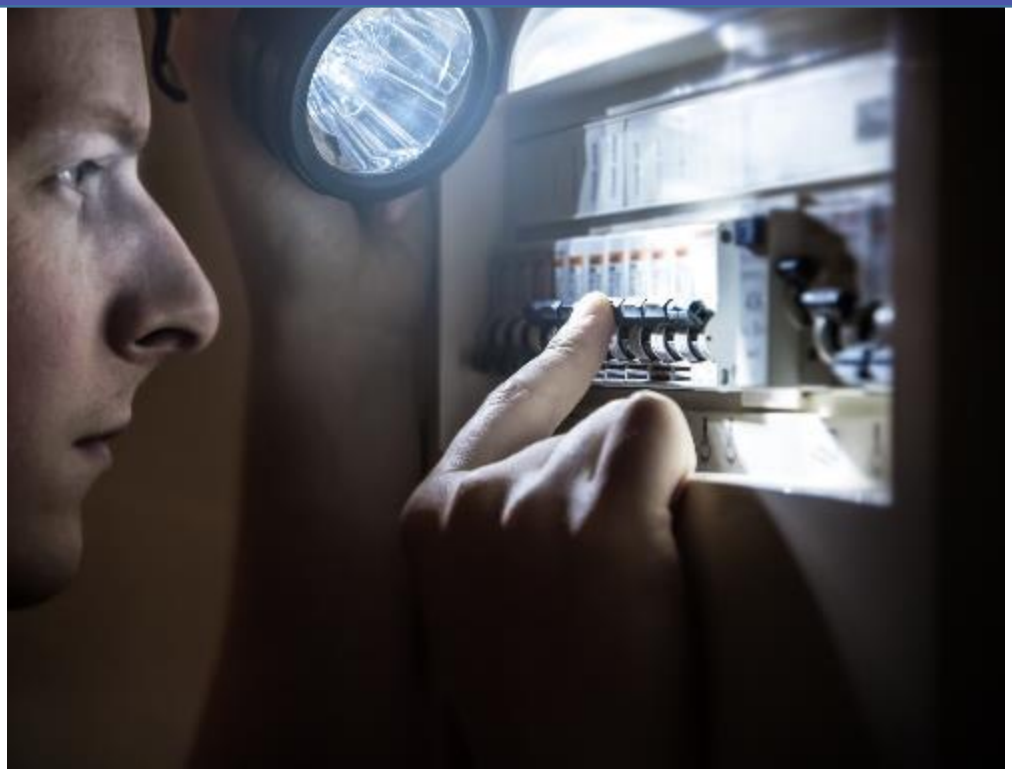
A Bright Future:
10 Year Solar Deployment Plan for Utah

UTAH CLEAN ENERGY

Powered by SunShot U.S. Department of Energy

Solar, Storage, and Resiliency

Goal: Incorporate solar and storage for resiliency and emergency preparedness



Solar, Storage, and Resiliency

- Overcome economic barriers
- Provide opportunities to learn about solar and storage
- Incorporate solar and storage into existing planning processes