



We power what's next

## WASHINGTON

3211 Martin Luther King Jr Way S  
Seattle, WA 98144  
(206) 707-9937

## OREGON

1887 SE Milport  
Milwaukie, OR 97222  
(503) 420-8680



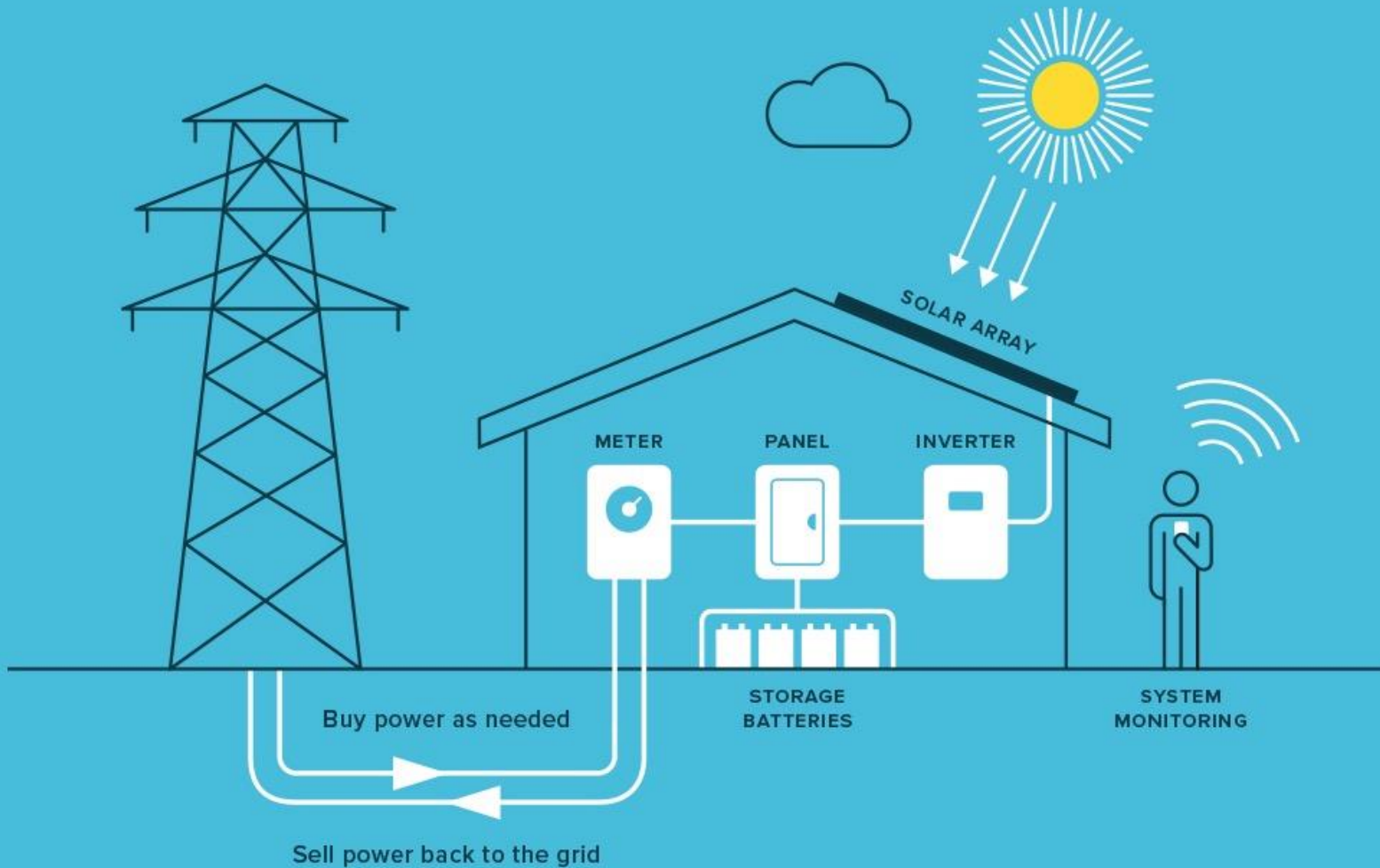
# Agenda

- Overview
  - Video
- Technical Specs
  - Electrical
  - Mechanical
- Financial Specs
  - Cost
  - Pro forma
  - RECS
  - Incentives
- Performance
  - Production (annual and daily)
- Trends
  - Efficiency
  - Inverters
- Storage



# Kingston Community Solar 74.96kW

# Solar Basics





# Technical specs

## SYSTEM OVERVIEW

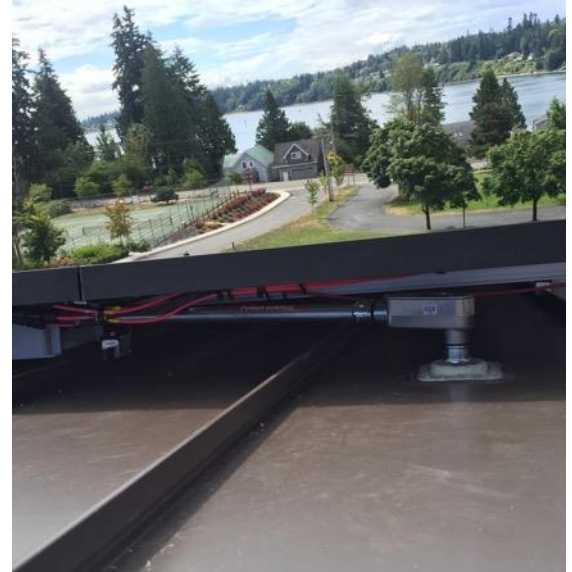
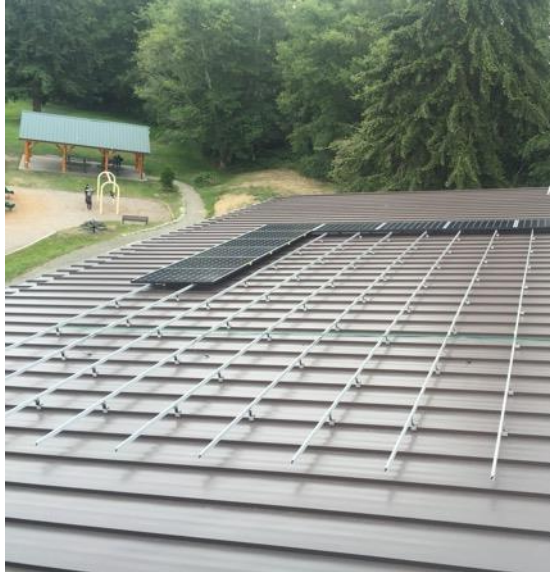
- 74.96kWDC
- (263) 285W Itek Modules (Made in Bellingham)
- (9) Solectria 6600 Inverters
- 240V Balanced Across 120/208V
- 126% DC to AC Ratio

## DESIGN CONSIDERATIONS

- Electrical (Energy and Power) Performance
- Financial



# Technical - Mechanical





# Technical - Electrical

July 9, 2016

Photovoltaic Array

Single Line Drawing

## 74.955 kW SOLAR PHOTOVOLTAIC SYSTEM (PSE)

### GENERATOR

Solar PV Array  
Module: Itek ITE 285  
Power Output: 285 Watts (DC)  
Qty: 263 Modules  
Total Max Output: 74.955kW DC  
Location: Roof top

6 conductors (TYP)  
#10 THHN in 3/4" EMT

### CENTRAL INVERTERS

(9) Solecrista PVI 6600TL\*  
Max Output: 6600 W AC  
Output Voltage: 208VAC  
Max Output Current: 31.7A  
Location: Attic  
\*Made in WA by Itek

3 conductors (TYP)  
#8 THHN

6# GEC (TYP)

		Size AMP/3P	Size (Phase)
1	Solecrista 6600	40/2	A
2	Solecrista 6600	40/2	B
3	Solecrista 6600	40/2	A
4	Solecrista 6600	40/2	B
5	Solecrista 6600	40/2	A
6	Solecrista 6600	40/2	B
7	Solecrista 6600	40/2	A
8	Solecrista 6600	40/2	B
9	Solecrista 6600	40/2	A

### AC COMBINER PANEL

Rating: 200A  
voltage: 120/208V, 3 PH, 4W  
Solar OCPD: (9) 2p40A Breakers  
Load Balanced  
Max AC Output Current: 164.7A  
Location: Attic Space

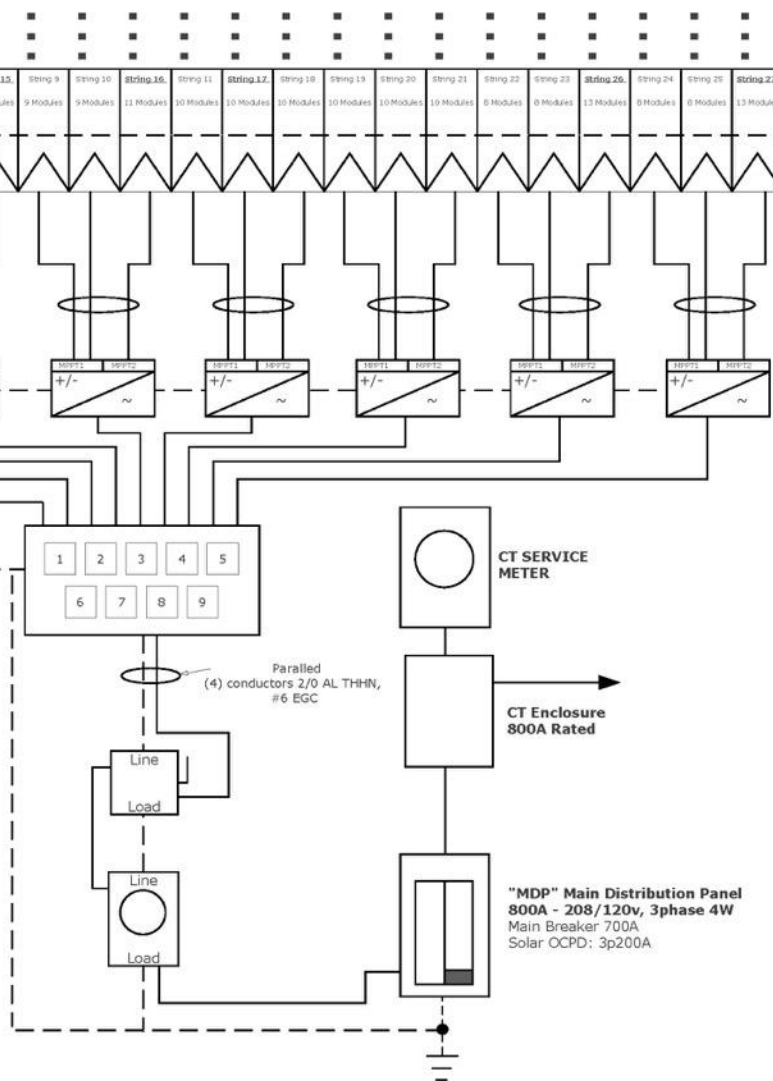
### LOCKABLE AC DISCONNECT

Service Rated / 2-Way Interlocking  
Rating: 200A / 120/208V AC, 3 phase  
Type: Knife Switch  
Fused: 200A  
Location: Co-Located with Service Meter

### PRODUCTION METER

Rating: 200 A / 600 V AC 3 Phase  
Location: co-located with Service Meter

Total System Voltage Drop: 2.18%

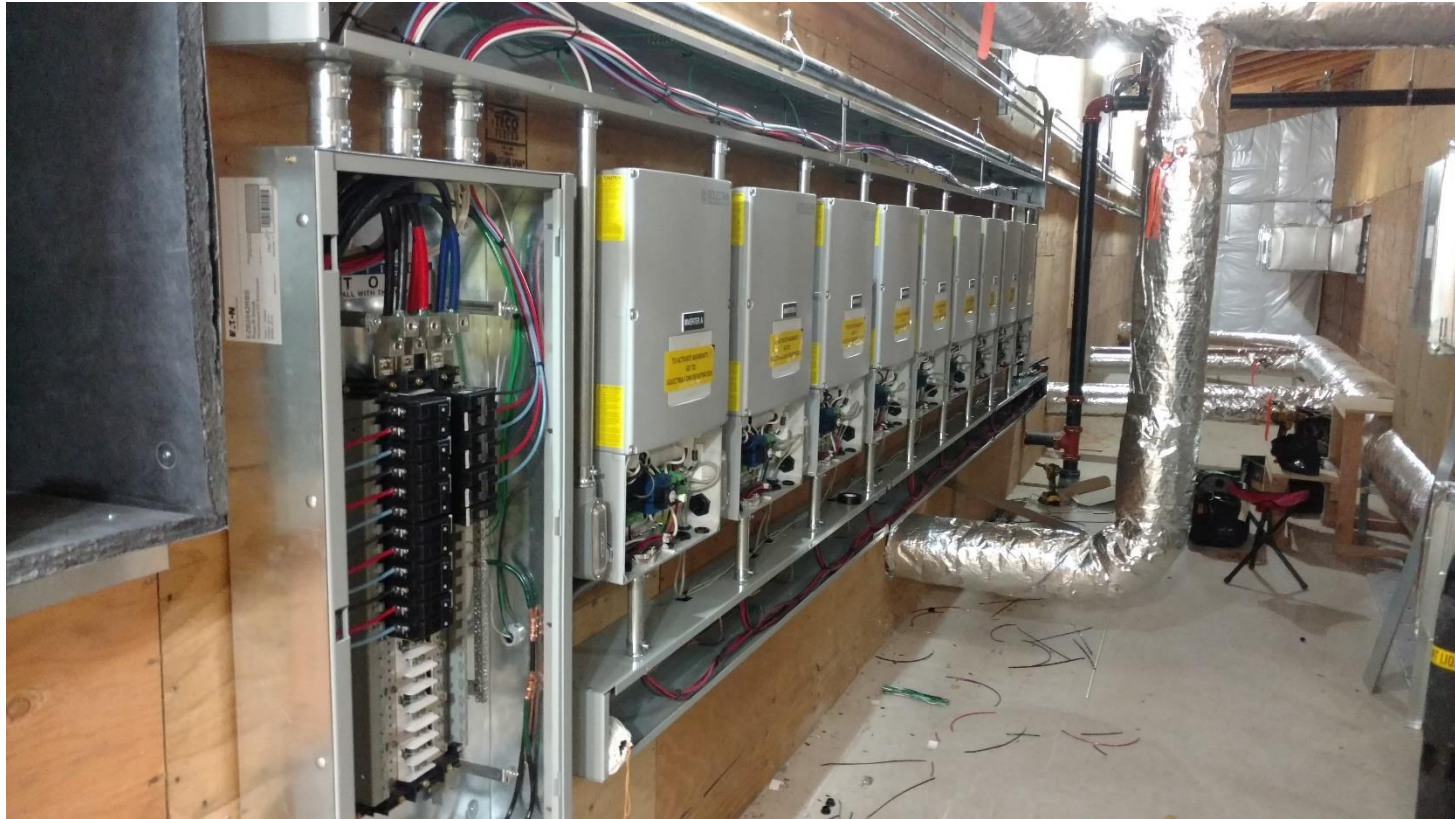


Customer:	Village Green Community Center
Address:	12850 Dulay Rd NE Kingston, WA 98346
Phone Number:	(360) 710-6688
Project Mgr:	Andy Yatteau
Phone:	(425) 941-6272

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# Technical - Electrical





# Trends

## TRENDS IN SOLAR

- Module Efficiency
- Inverters
  - Stringing
  - “Smart” – Rule 21
  - Anti-islanding
  - Broader operating conditions
  - Dynamic volt/var operations - dynamic reactive power compensation
  - Advanced communications
  - Power controls
  - Remote disconnect
- Storage



# Incentives for Businesses

## ► Washington Production Incentive

Receive up to \$25,000 per year for eight years  
or up to 50% of the total system cost

## ► Net Metering

Your meter spins backwards; the credit is applied to  
reduce your bill.

## ► Federal Income Tax Credit

30% of the full system price  
(extended through 2019)

## ► MACRS Business Depreciation

Reduction in tax liability for registered businesses

## Washington Production Incentive Guide\*

\*Systems above 12kW

Install and have your system inspected  
before →



Base rate/kWh

\$0.06

\$0.04

\$0.02

\$0.02

Made in Washington bonus rate  
kWh

\$0.05

\$0.04

\$0.03

\$0.02

Maximum possible rate/kWh

\$0.11

\$0.08

\$0.05

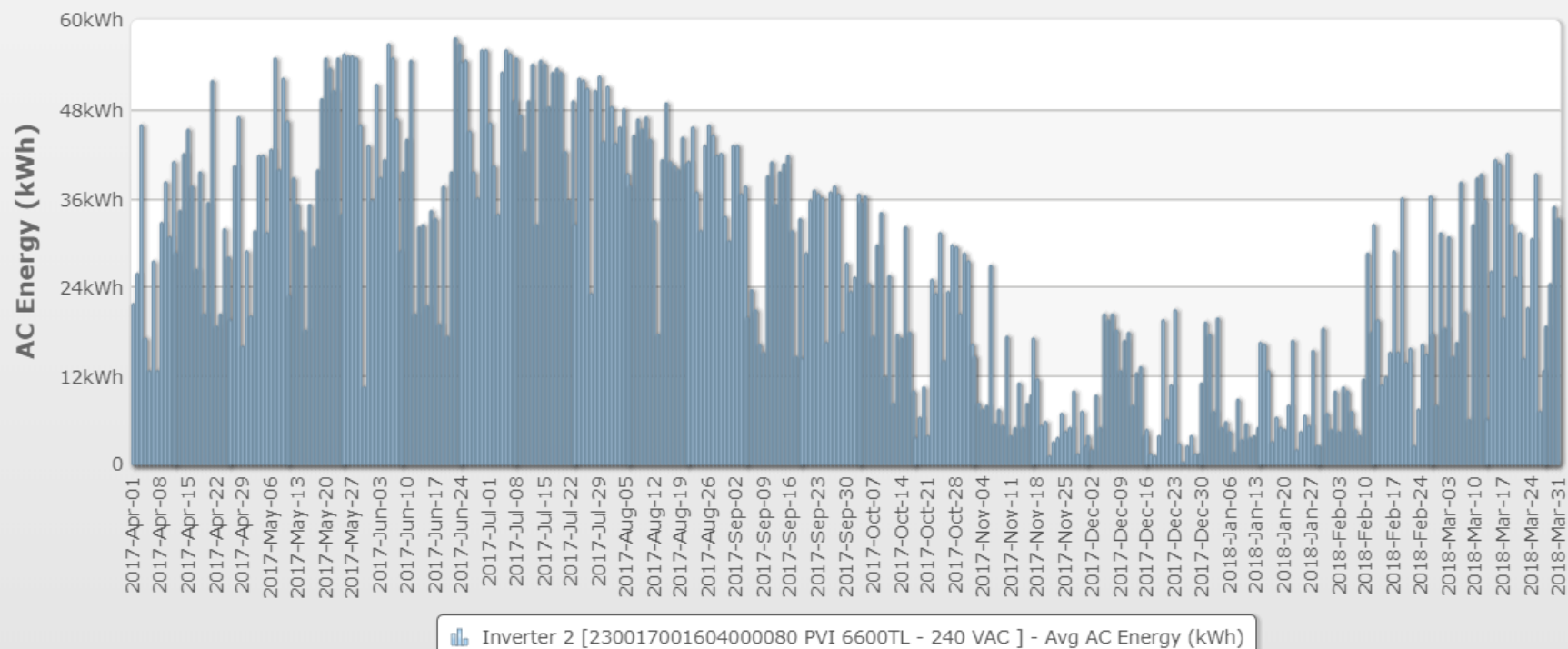
\$0.04



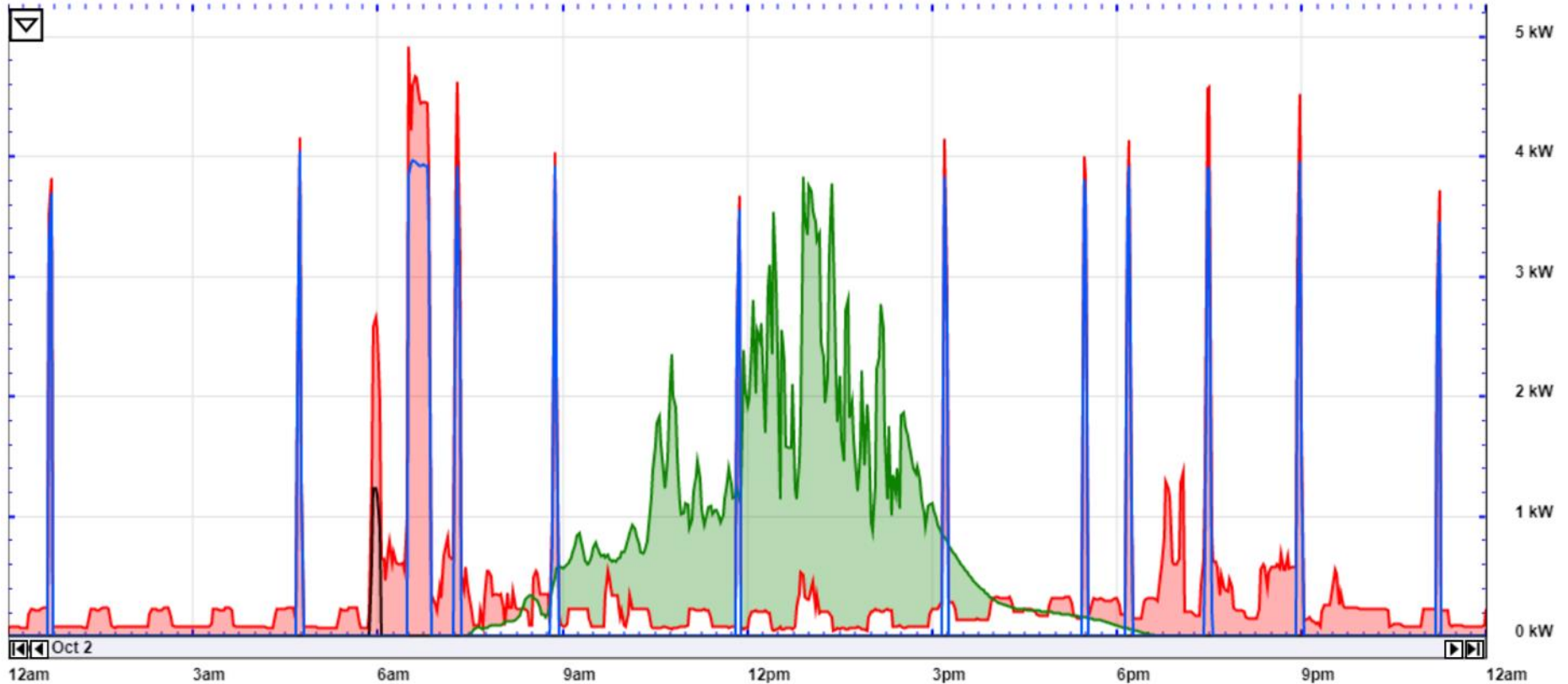
# Performance Annual Production

Analytics [2017-04-01 - 2018-03-31]

Total Energy generated by Inverter 2 [230017001604000080 PVI 6600TL - 240 VAC ] = 9.72 MWh

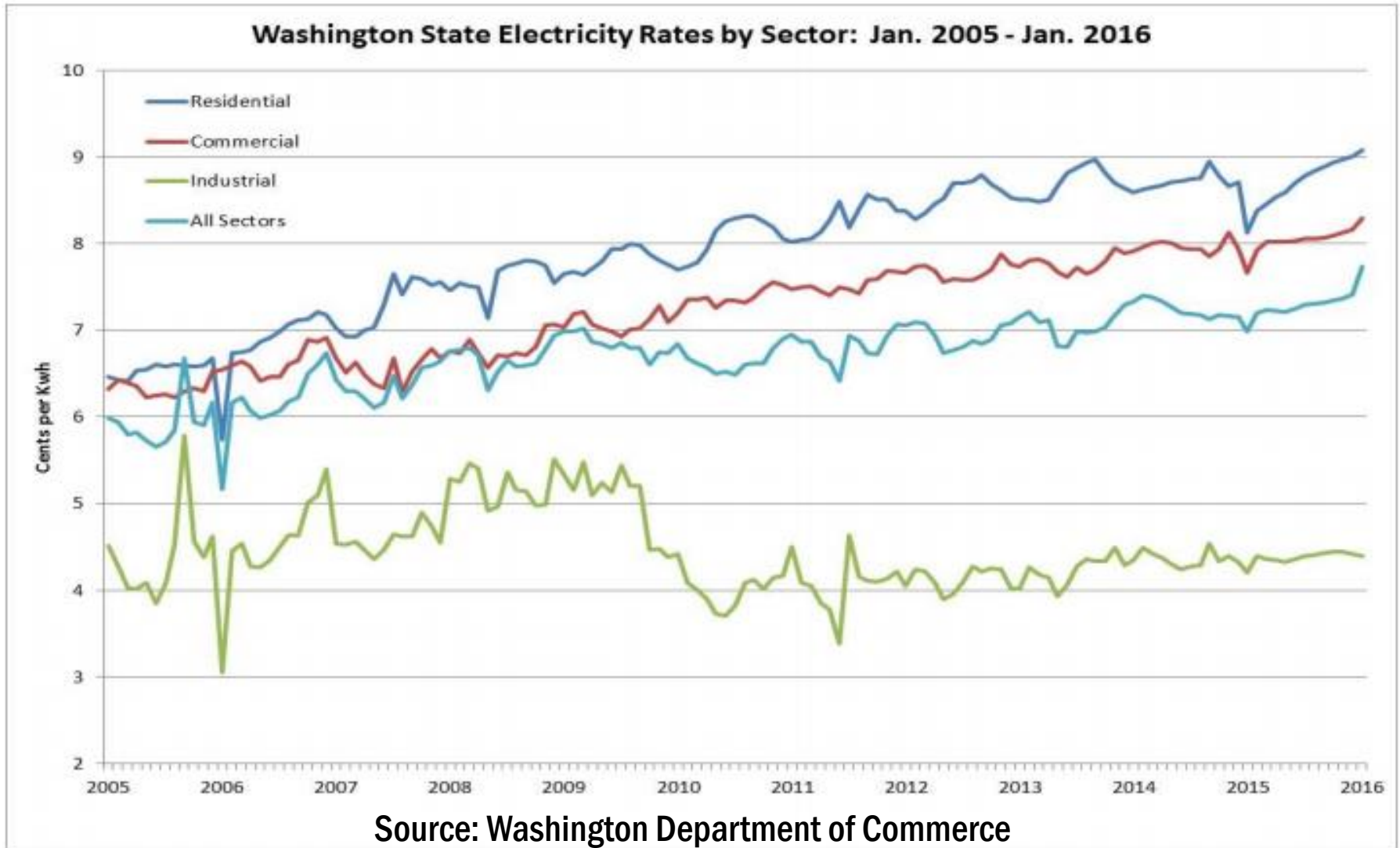


# Performance Daily





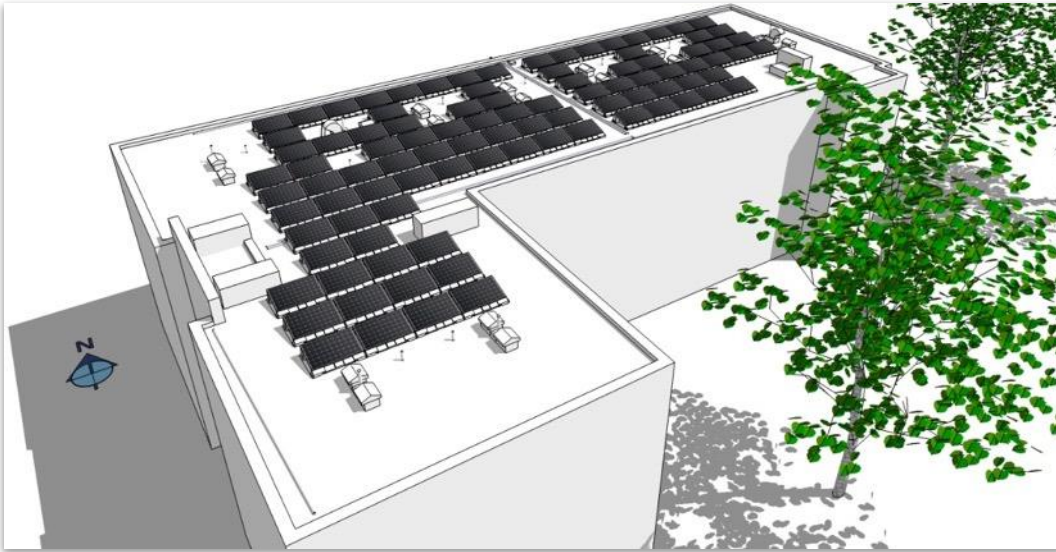
# State Electricity Prices







# Mounting and Racking: Ballasted





# Mounting and Racking: TPO





# Mounting and Racking: Torchdown

