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**Power Factors**

**14 November 2022**

9:00 am – 10:00 am | EST, New York City

2:00 pm – 3:00 pm | GMT, London

3:00 pm – 4:00 pm | CET, Berlin, Paris



**Blake Matich**

Editor  
pv magazine

pv magazine  
**webinars**

# How a centralized monitoring platform makes your solar asset the center of attention



**Christos Georgopoulos**

Chief Controls & Grid Integration Officer  
**Power Factors**



**Adele Ara**

Head of Global Business Operations  
**Lightsource bp**

# Welcome!



**Do you have any questions?** ? 

Send them in via the Q&A tab.  We aim to answer as many as we can today!

You can also let us know of any tech problems there.

**We are recording this webinar today.** 

We'll let you know by email where to find it and the slide deck, so you can re-watch it at your convenience.  

## Our partnership with bp

This alliance is inspired by a shared mission: to accelerate the potential of solar globally. By delivering solar and storage projects worldwide, we're addressing the need to provide more energy but with fewer emissions. By combining our industry-leading experience and solar development track record with bp's global scale, reach and relationships, we're able to enact real change on the energy landscape, and work towards securing a low-carbon future for communities across the world.

In April 2019, Lightsource bp received the Advancing Low Carbon Accreditation.

advancing low carbon 



**50:50**

Joint Venture



**Trusted**

as bp's solar partner



# Leading solar development

## Highlights today:



**5.7GW**

developed to date



**18**

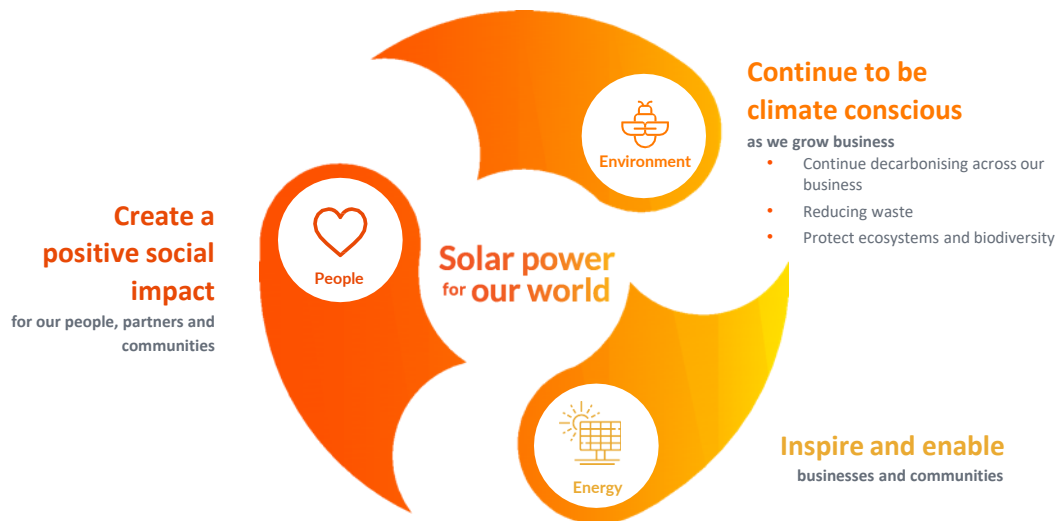
countries



**900**

team members

## Our sustainability framework:



Read our full sustainability mission statement [here](#).



# How we do business

## An end-to-end approach to solar



### Develop & Build

- Development (greenfield, co-development, late-stage, acquisitions)
- Power Purchase Agreements
- Environmental Planning
- Grid / Interconnections
- Commercial Engineering
- Construction & Project Management

### Manage / Operate

- Asset Management
- Energy Management
- Operations & Maintenance

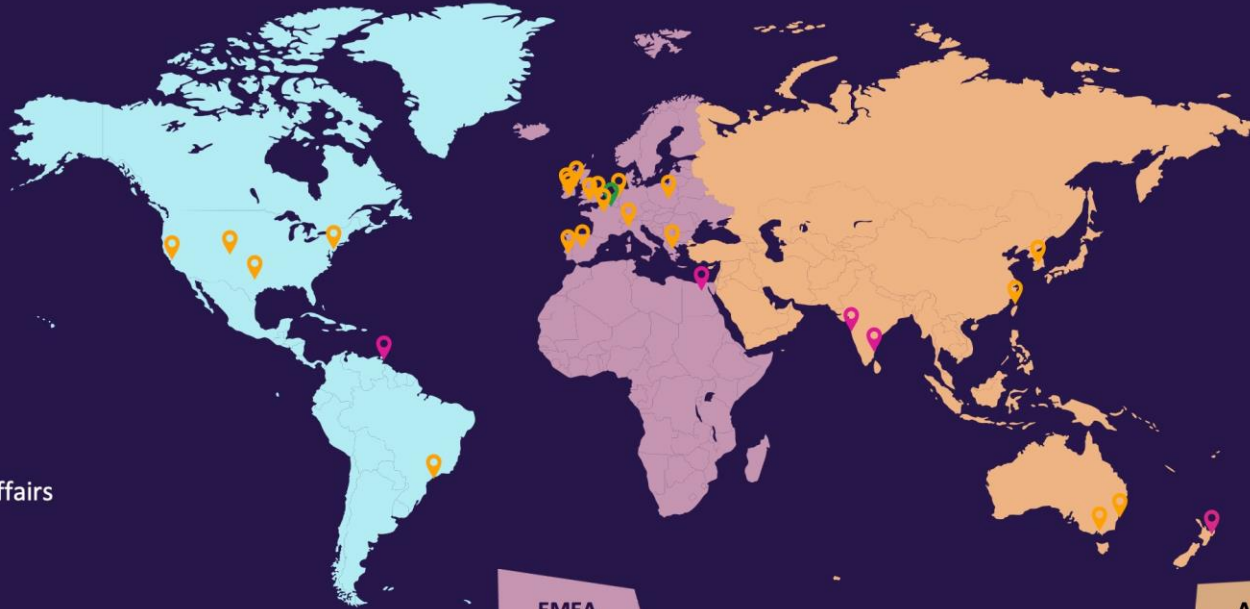
### Own /Divest

- Operation Asset Performance
- Structured Finance & Modelling
- Investment Management
- Asset Divestment

# A global platform with local impact

Our activities expand across EMEA, APAC and the Americas. These markets feature strong fundamentals to deploy solar and capital at scale.




-  18 countries
-  5 joint ventures & other businesses
-  European government affairs









## AMERICAS

## EMEA

## APAC

-  Brazil
-  United States of America
-  Trinidad & Tobago

-  Greece
-  Portugal
-  Poland
-  Netherlands
-  Italy
-  Republic of Ireland
-  France

-  Spain
-  United Kingdom
-  Belgium

-  Egypt

lightsourcebp  
Powered by Hassan Allam Utilities

-  India



-  Australia
-  Taiwan
-  South Korea
-  New Zealand





# Vendimia, Spain

## Case study

Providing power to bp via Power Purchase Agreement



**110,115**  
homes powered (equivalent)



**139,334**  
metric tons of CO2 saved per year



**600**  
local jobs created



**247MWdc**  
in commercial operation



# Impact Solar, Texas, USA

## Case study

The renewable electricity generated at Impact solar is contracted to bp through a long-term Power Purchase Agreement



**260MWdc**  
in commercial operation



**300**  
local construction jobs created



**50**  
acres of riparian woodlands conserved



**318,000**  
metric tons of CO2 saved per year





# Wellington, New South Wales, Australia

## Case study

Two sites providing 100% renewable power to local bp petrol stations  
- phase 1 (200MW) now in commercial operation



**snowyhydro**  
renewable energy Limited



**600MWdc**

total installed capacity



**800**

total local jobs created



**938,000**

total metric tons of CO2 saved per year



**170,000**

total homes powered (equivalent)



# How a Centralized Monitoring Platform Makes Your Solar Asset the Center of Attention

## Presented by :

Adele Ara, Head of Global Business Operations, Lightsource BP

Christos Georgopoulos, Chief Controls and Grid Integration Officer, Power Factors

Blake Matich, Editor, PV Magazine





# History of our Partnership

2015

Partnership began in 2015 in the UK with hundreds of then-large-scale assets

Partnership now extends across the world from Australia to N. America with large-scale PV



## KEY CONCEPTS:

# Integrated Monitoring & Control

### 1. Integrating

- Local SCADA/PPC **Control and Grid Management**
- and Central **Global Data Management and Monitoring**

### 2. Combining

- Day to Day **Operational** Management
- and longer-term **Asset Management** functions

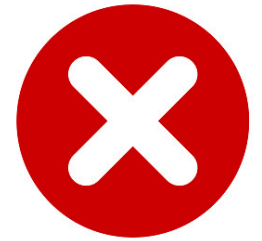
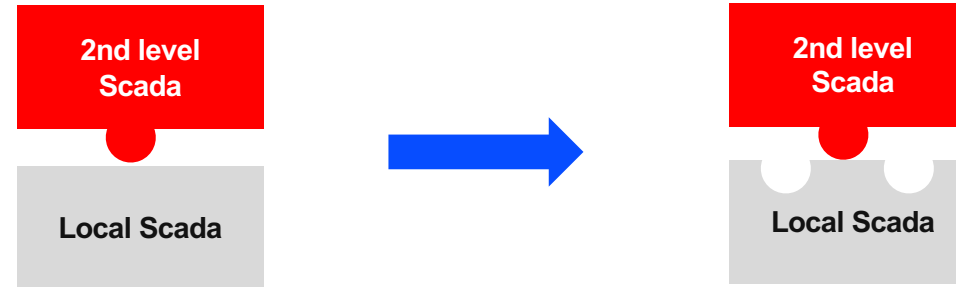
### 3. Aligning

- Local Data acquisition / signal **Transparency**
- with Central Monitoring **Coherency**

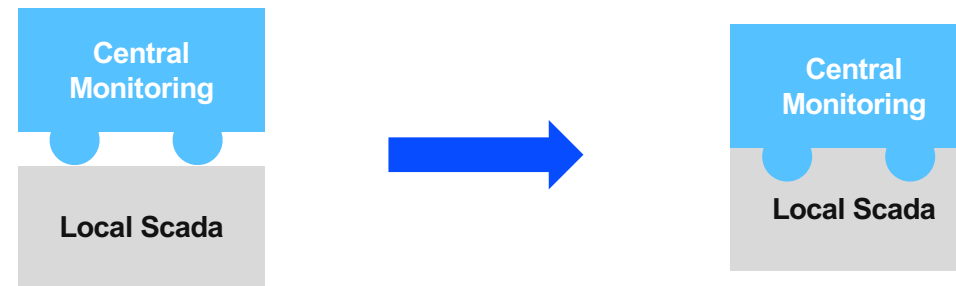
## THE PROBLEM:

# Centralizing 3<sup>rd</sup> party SCADAs does only part of the job

### Simple Centralized Model



### Integrated Model

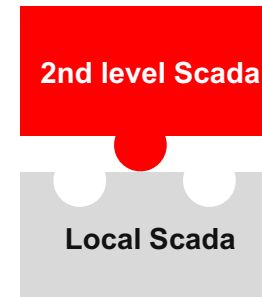
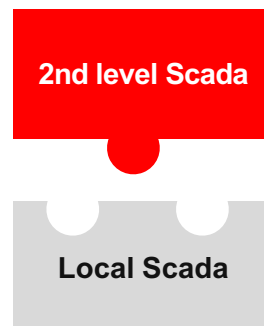




# Drawbacks of simple Centralized Model

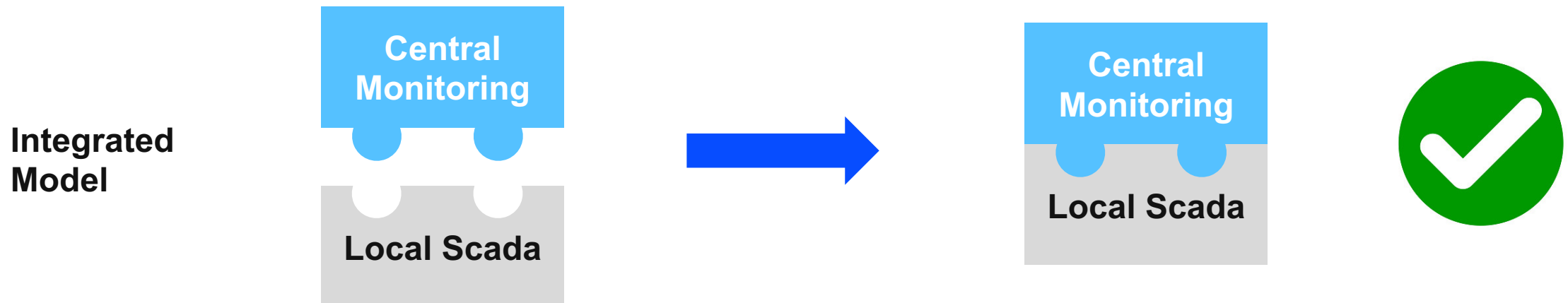
- ▶ Frequent Inconsistencies between asset elements, properties and descriptions
- ▶ Inconsistencies between KPIs, raw data granularity, timings, alert processing
- ▶ Control via “Remote connection to local SCADA” is completely different than “full control through a unified Cloud SCADA”
- ▶ Local SCADA platforms offer only on-site redundancy options, lacking cloud failover

Simple  
Centralized  
Model



# What Does Integration Mean:

- ▶ Same software running On-Site, and in the Cloud
- ▶ HW and SW, Monitoring & Control, in one package configured for maximum Security & Redundancy
- ▶ Remote control of assets (e.g., switchgear, inverters, PPC) from both Local and Central Control Rooms
- ▶ Tight Grid Integration: End-to-end co-optimization vs. Market signals

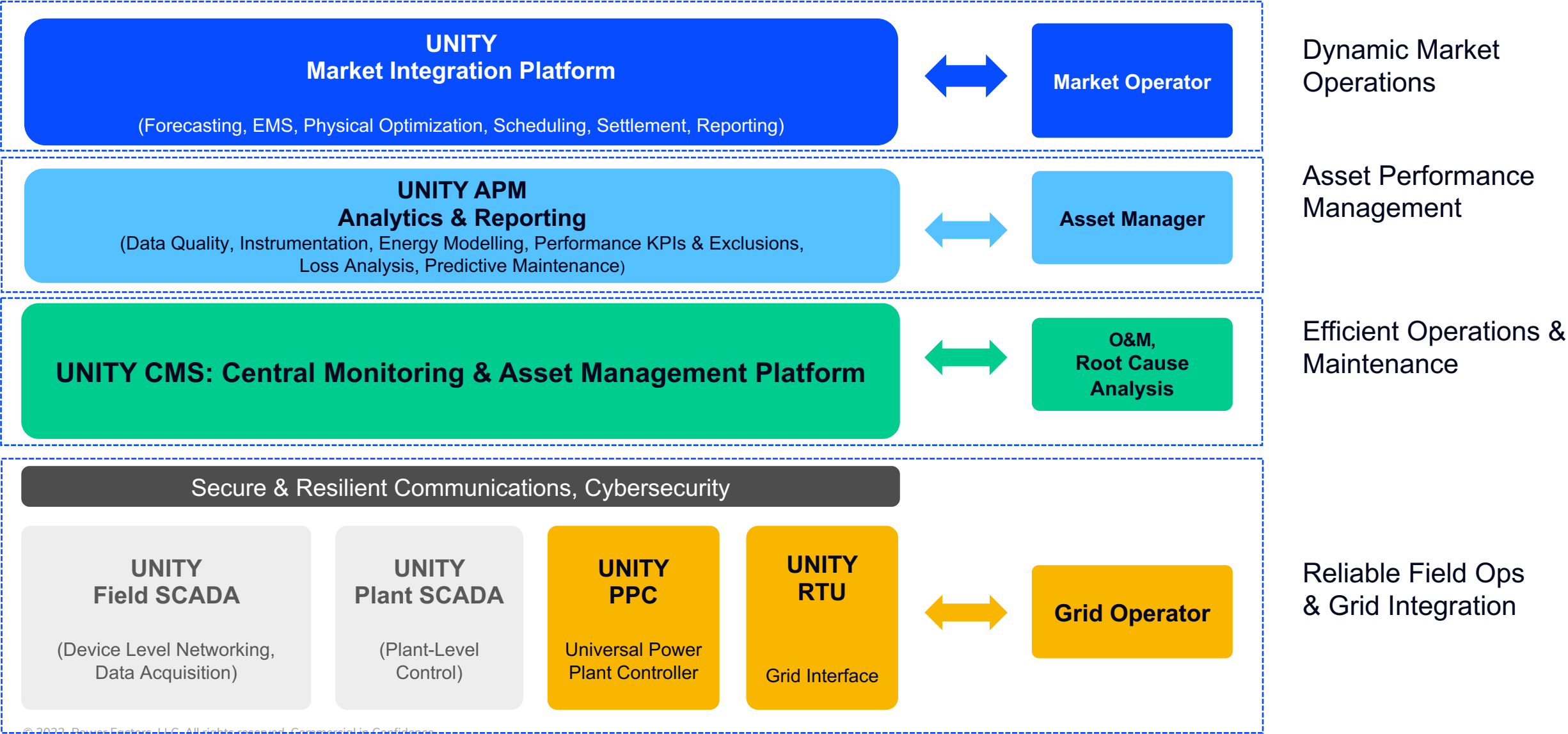


# The Benefits of Integrating

- ▶ Uniform Local/Central software solves inefficiencies:  
No more conflicts between O&M and Asset Managers regarding KPIs
- ▶ Bi-directional super-fast Control & Monitoring
- ▶ Structured Connections & Processes for Secure, NERC-CIP compliance
- ▶ Sub Second data granularity
- ▶ Flexible Fast vs Low-Cost storage options for Real-Time vs Archival Data
- ▶ Full Redundancy (Local - Local or Local/Cloud)



# The Fully Integrated Model



# Why Now?

- ▶ Plain Centralization was the only option      **[Cloud SCADAs were considered 2<sup>nd</sup> Class Citizens]**
- ▶ Standardization of data systems mandatory as portfolios grow
- ▶ Reliable data can make a big difference on the secondary market
- ▶ More stakeholders need to see (the same set of) data
- ▶ Merchant Solar is just around the corner, hence need for looking at each possible income stream
- ▶ New revenue opportunities are arising from ancillary services in the balancing markets
- ▶ Hybrid plants are becoming more common

**Integration is  
a no-brainer**



# Don't Just Centralize, Integrate!

- ▶ Call to all asset owners: Analyze and Hard-Specify your data acquisition & SCADA strategies
- ▶ Seek to integrate procurement strategies
  - Local SCADA (via your EPC)
  - Cloud SCADA (via your asset management team)
- ▶ Insist on harmonized local SCADA configurations
- ▶ Aim to partner with global SCADA providers able to support your entire pipeline

**IT IS POSSIBLE:** 1-sec from Field → directly to O&M, Asset Management, CTO, CFO

# Enterprise Integration Approach

1. Open to Enterprise Integration
  1. Data Warehouse,
  2. Data Lakes
  3. API-based applications
2. Open to 3rd party Enterprise Applications
  1. EAM
  2. CMMS
  3. ERP



# Empowering the People who Power the World.



# A Powerful Journey



**Building the World's Most Comprehensive Renewables Product Suite**

## Power Factors at-a-glance: The Global Leader for Renewables Software Solutions

**200+ GW**

Solar, Wind,  
Hydro & Storage

**500+**

Employees Globally

Trusted by

**300+**

Global Customers

**100+**

Dedicated  
Developers



**Global HQ**

San Francisco, CA


**10**

Global Offices


**N.A.**


 San Francisco, U.S.

 Burlington, U.S.

 Montréal, Canada

 Athens, Greece


 Gothenburg, Sweden

 London, England

 Munich, Germany

 Seville, Spain

 Haryana, India

 Manila, Philippines

**EMEA**

**APAC**



# Complete Product Suite

Simplify collaboration with data you can trust to empower teams to deliver bottom line results



SCADA  
SYSTEMS



MONITORING &  
CONTROLS



ANALYTICS &  
REPORTING



WORK  
ORDERS



CONTRACT  
COMPLIANCE



VPP & MARKET  
INTEGRATION

# Thank you.

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For more information visit [powerfactors.com](https://powerfactors.com)

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## Q&A



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by Marija Maisch



Most-  
read  
online!

## GameChange Solar launches mounting system for east-west oriented solar parks

by Beatriz Santos



# Coming up next...

## **Tuesday, 15 November 2022**

10:00 am – 11:00 am CET, Berlin, Madrid  
11:00 am – 12:00 pm EET, Athens

## **Wednesday, 16 November 2022**

2:00 pm – 3:00 pm EST, New York City  
8:00 pm – 9:00 pm CET, Berlin, Madrid

**Many more to come!**

**Utility market  
2022 and 2023:  
Sungrow's  
highlights,  
hydrogen  
update**

**Reduce LCOE  
and long-term  
O&M costs in  
utility-scale  
installations**

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**Blake Matich**  
Editor  
pV magazine

**Thank you for  
joining today!**