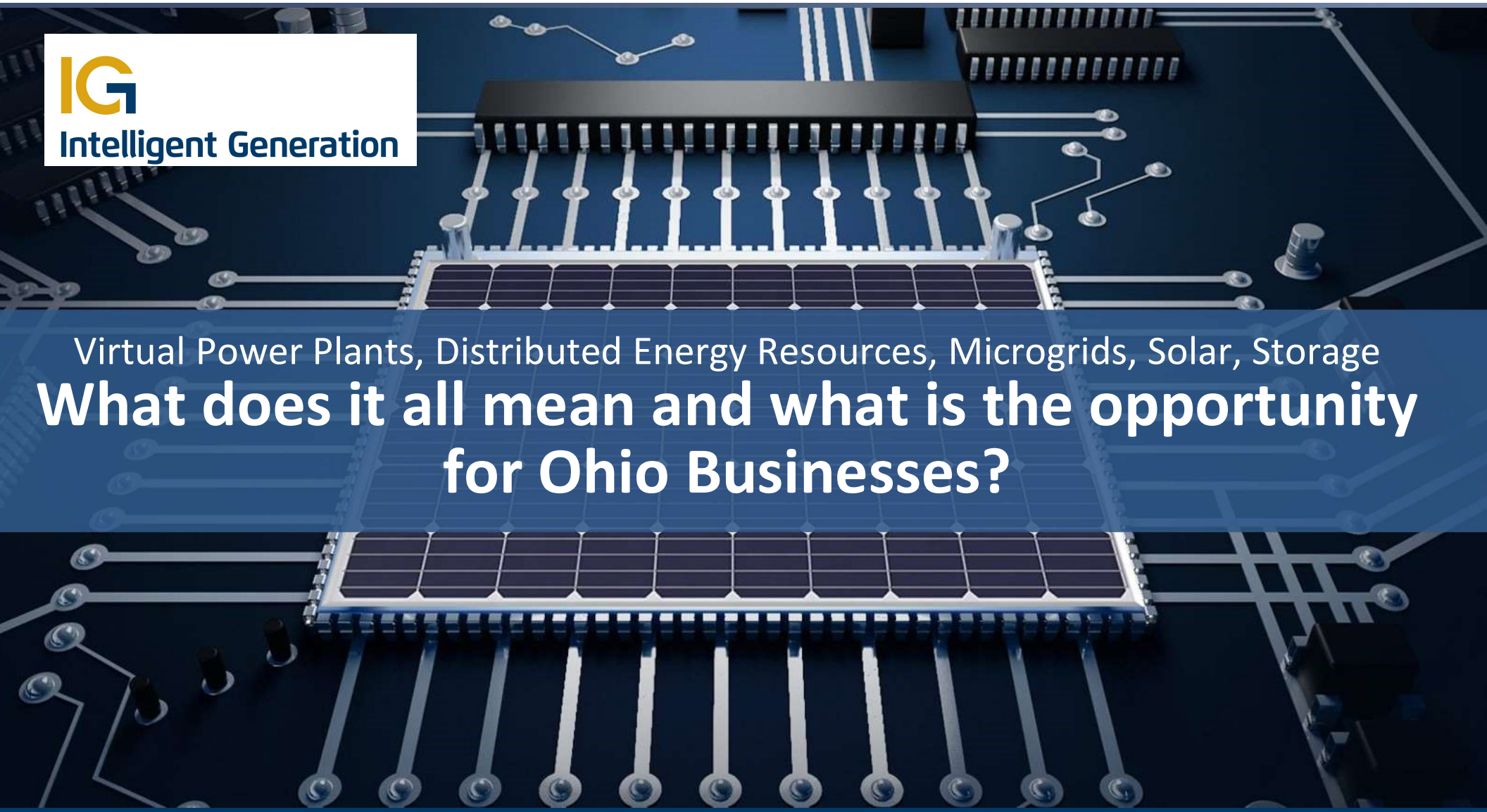
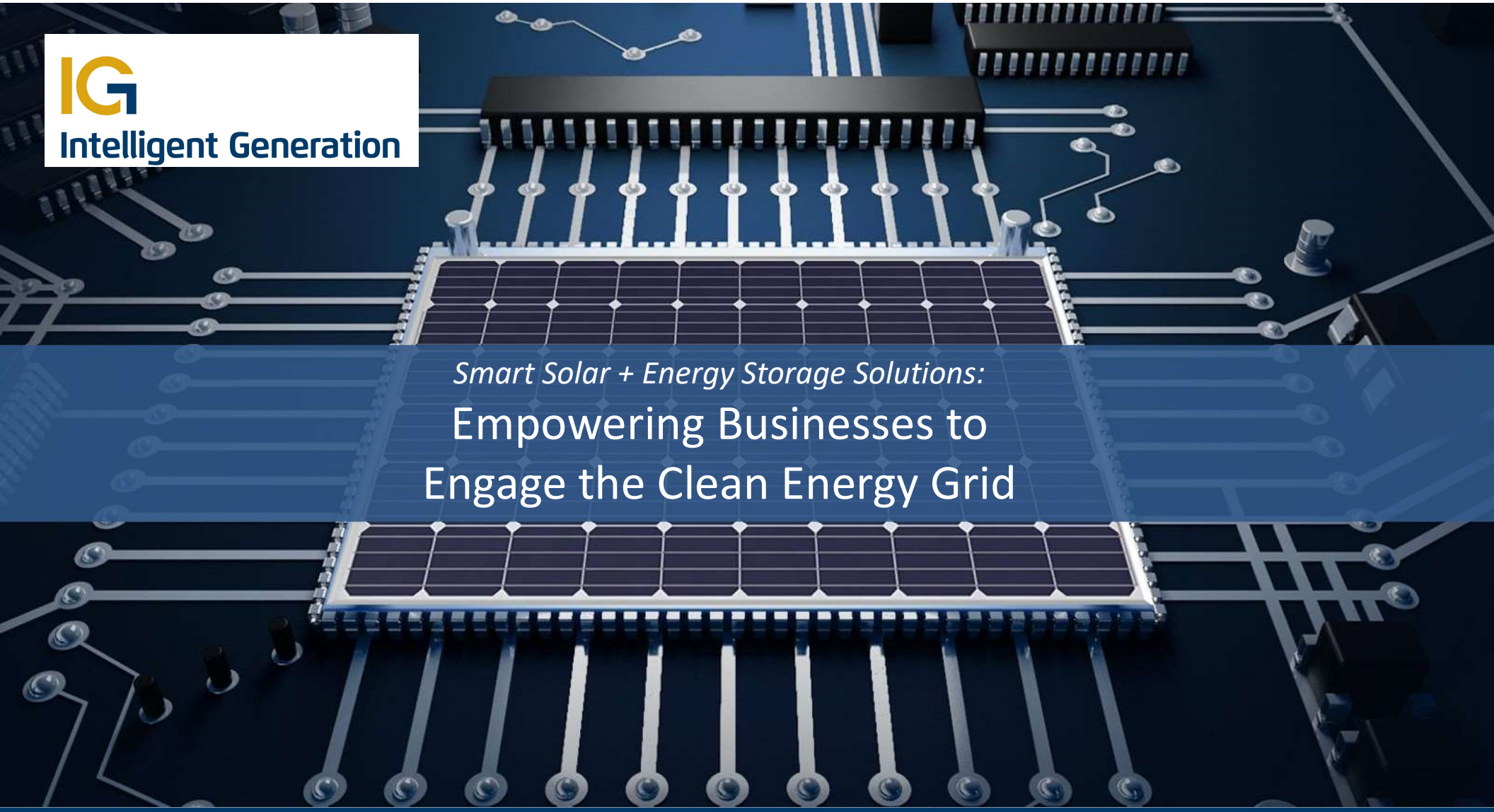


Intelligent Generation

Virtual Power Plants, Distributed Energy Resources, Microgrids, Solar, Storage

What does it all mean and what is the opportunity for Ohio Businesses?



Smart Solar + Energy Storage Solutions:

Empowering Businesses to Engage the Clean Energy Grid

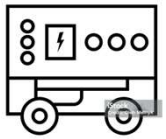
The Assets

Solar

Batteries

Wind

EV charging stations

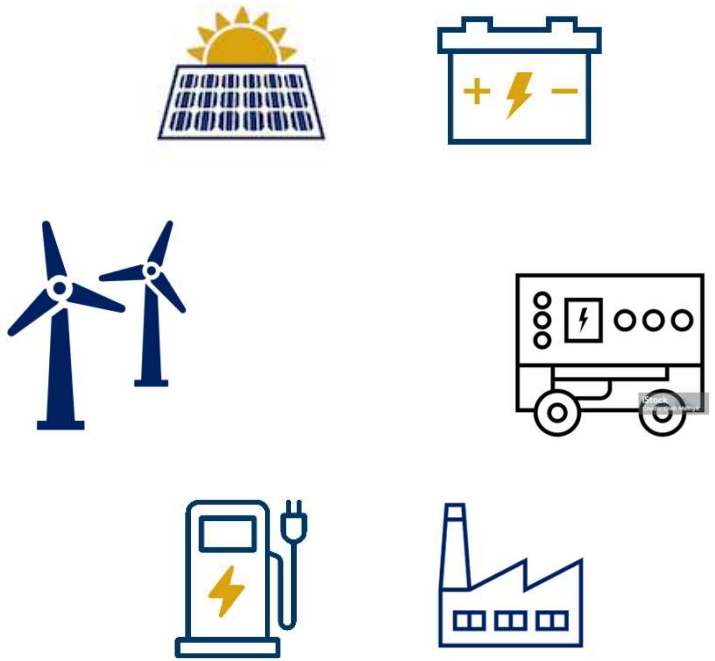


On-site generators (Diesel, NG, bio, etc.)

Load - which may be interruptible

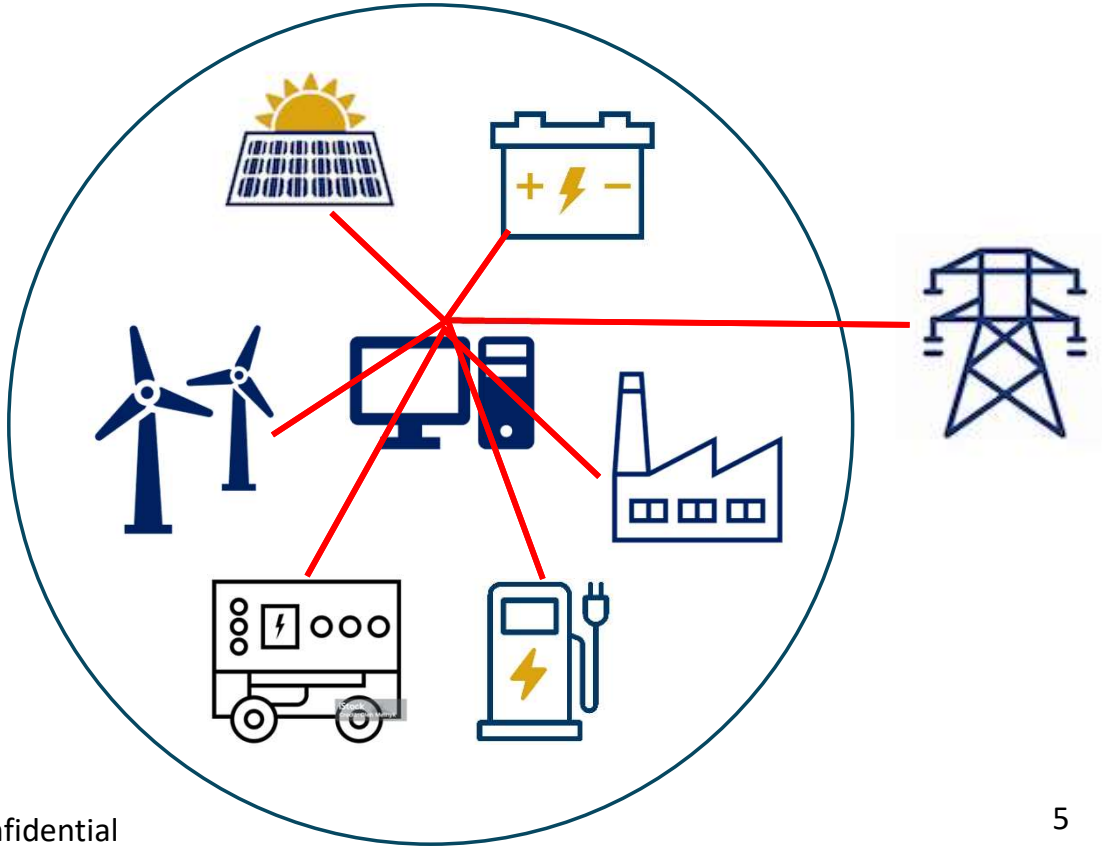
Distributed Energy Resources

Distributed energy resources are small, modular, **energy generation and storage technologies that provide electric capacity or energy** where you need it. *- NREL*



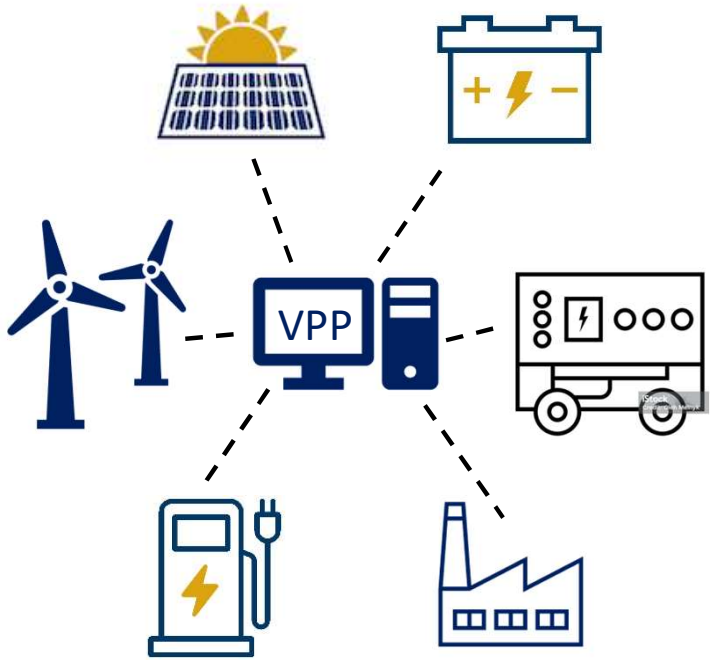
Micro-grids

A group of interconnected loads and distributed energy resources within clearly defined electrical boundaries – *Dept. of Energy*



Virtual Power Plants

A virtual power plant is a collection of small-scale energy resources that, aggregated together and coordinated with grid operations, can provide the same kind of reliability and economic value to the grid as traditional power plants.– *RMI*

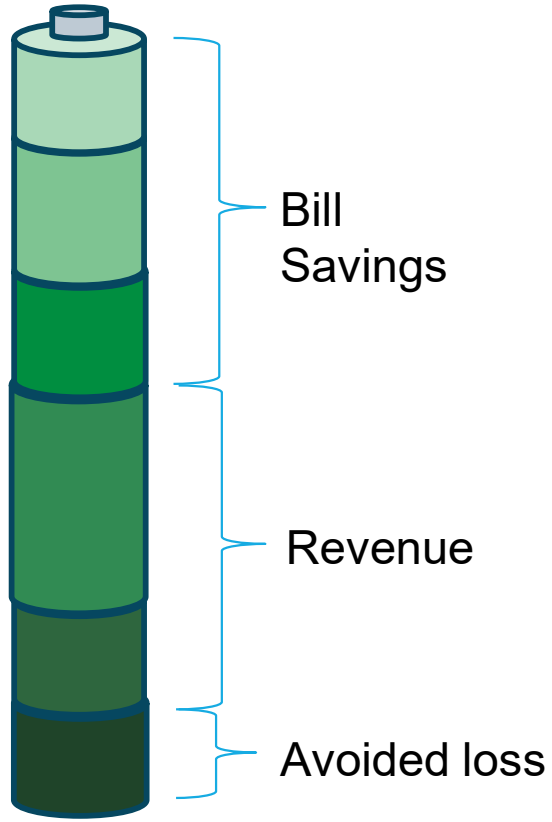


Intelligent Generation

How Do These Make or Save Money?

The battery value stack

- Energy – solar production and time shift (aka energy arbitrage)
- Capacity – provide generation capacity through PLC reduction
- Transmission – displace peak transmission requirements
- Grid balancing – provide ancillary services to the grid
- Demand Reduction/Demand Response
- Resiliency – provides back-up when the grid goes down



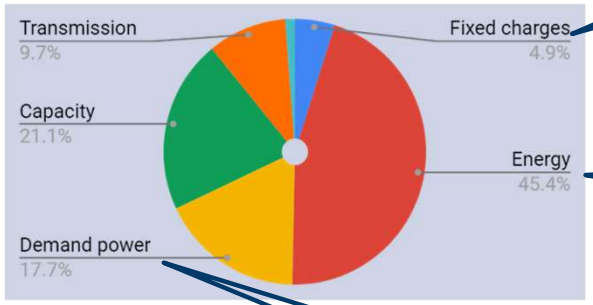
7

Strategies for bill reduction – Capacity and Transmission

4

Capacity & Transmission*

- Together often near **30% of the annual bill**
- They are also a power charge measured in kW
- Rarely explained and generally confused for some variation of Demand power that you may only reduce through Peak Shaving. **WRONG**
- Possible to lower or eliminate based on smart choices 30-40 hours per year



1

Fixed by state rules, little you can do

2

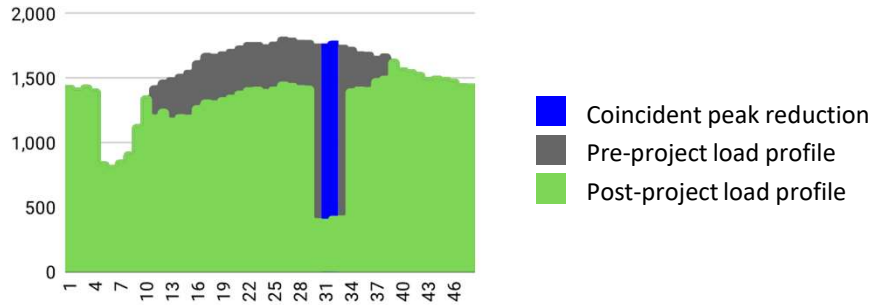
1. **Consume less** (energy efficiency – Start here, if not done yet)
2. **Negotiate** a better rate
3. **Generate your own** electricity (Solar, Wind, Generators)

3

Peak Shaving
Actively contain peak consumption during business hours.

But can you?
At what cost to your business?

Load profile pre and post comparison



* Transmission savings may not be available in Ohio under current tariffs.

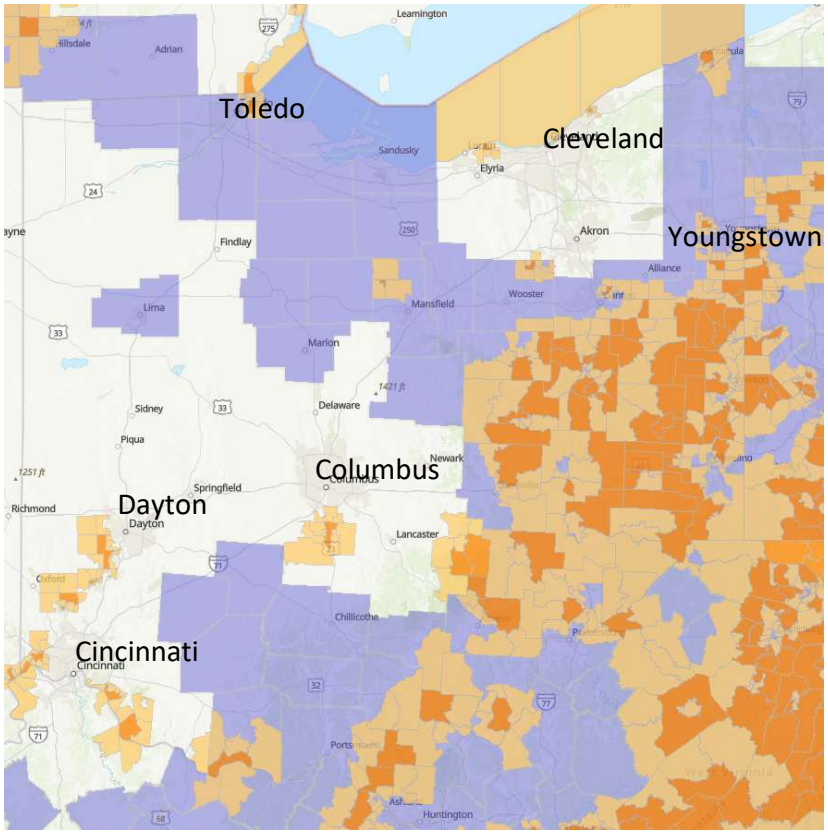
Current Federal Tax Incentives

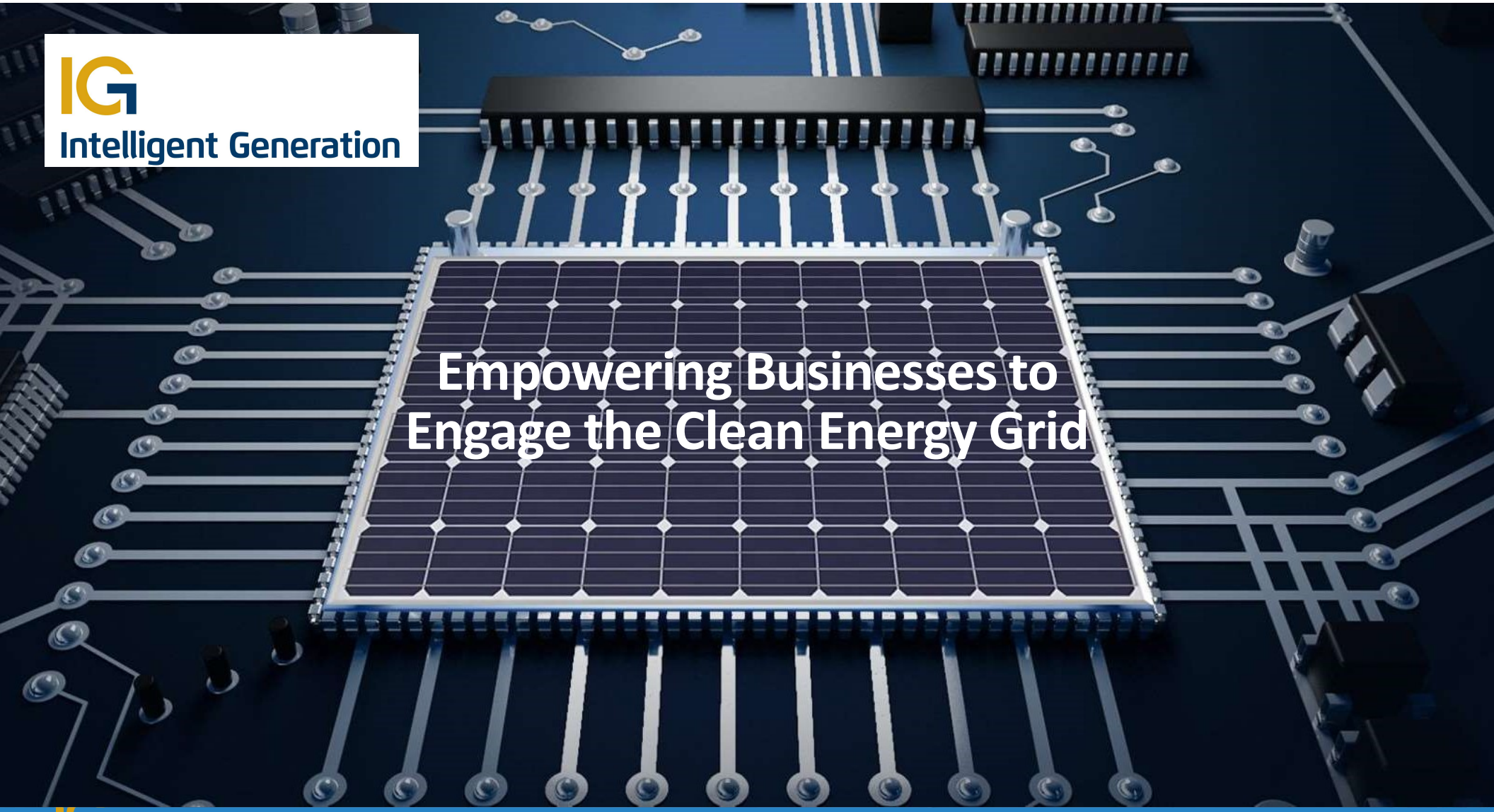
Inflation Reduction Act

- Investment Tax Credit (ITC)
  - Enhanced and extended by Inflation Reduction Act
  - 30% for solar, battery, and wind and certain emerging technologies
  - Batteries now qualify stand-alone
  - Additional 10% for Domestic Content of Equipment
  - Additional 10% for location in certain “energy communities” and low-income areas
  - Direct pay for non-taxable entities (non-profit, government, education)
- Accelerated MACRS depreciation
  - 60% bonus depreciation in 2024; decreases 20% per year
  - Congress is considering re-setting to 100% retroactive to 2022 through 2025

ITC Details Have Now Been Defined

- Prevailing wage labor and apprenticeship requirements
  - Without these, the ITC drops to only 6%
- Additional 10% ITC for equipment meeting domestic content requirements:
  - 45% of manufactured components (cells, controls, cabling, etc) have to be produced domestically to qualify
  - 100% of steel used in containers and racking
- Additional 10% for locating in low-income communities
- Additional 10% ITC for projects in "energy communities"
  - Brownfield sites
  - Metropolitan Statistical Areas with 0.17% employment or 25% local tax revenue from coal, oil, or natural gas and unemployment above the national average
  - Census tract or adjoining tract where coal mine closed since 2000 or coal-fired power plant closed since 2010
  - Blue, orange and tan areas on the adjacent map are qualifying areas
- Specific qualifications and requirements have not yet been clarified by the Treasury Dept.
- Coverage: Solar, wind, hydrogen, microgrids, controllers, interconnection costs
- https://arcgis.netl.doe.gov/portal/apps/experiencebuilder/experience/?id=a2ce47d4721a477a8701bd0e08495e1d




Intelligent Generation
Empowering Businesses to
Engage the Clean Energy Grid

Intelligent Generation

Making economic sense of distributed energy assets

EARN

Earn revenue in wholesale power markets

SAVE

Save energy and power expenses

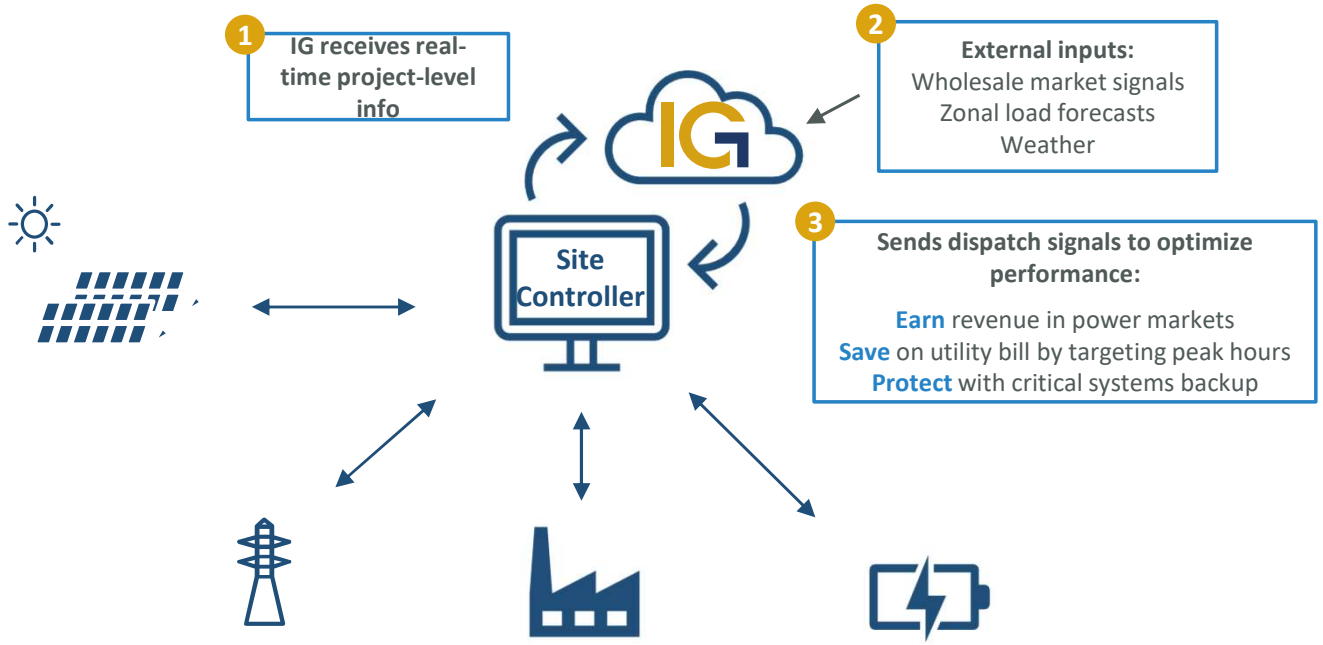
PROTECT

Protect critical systems with battery backup

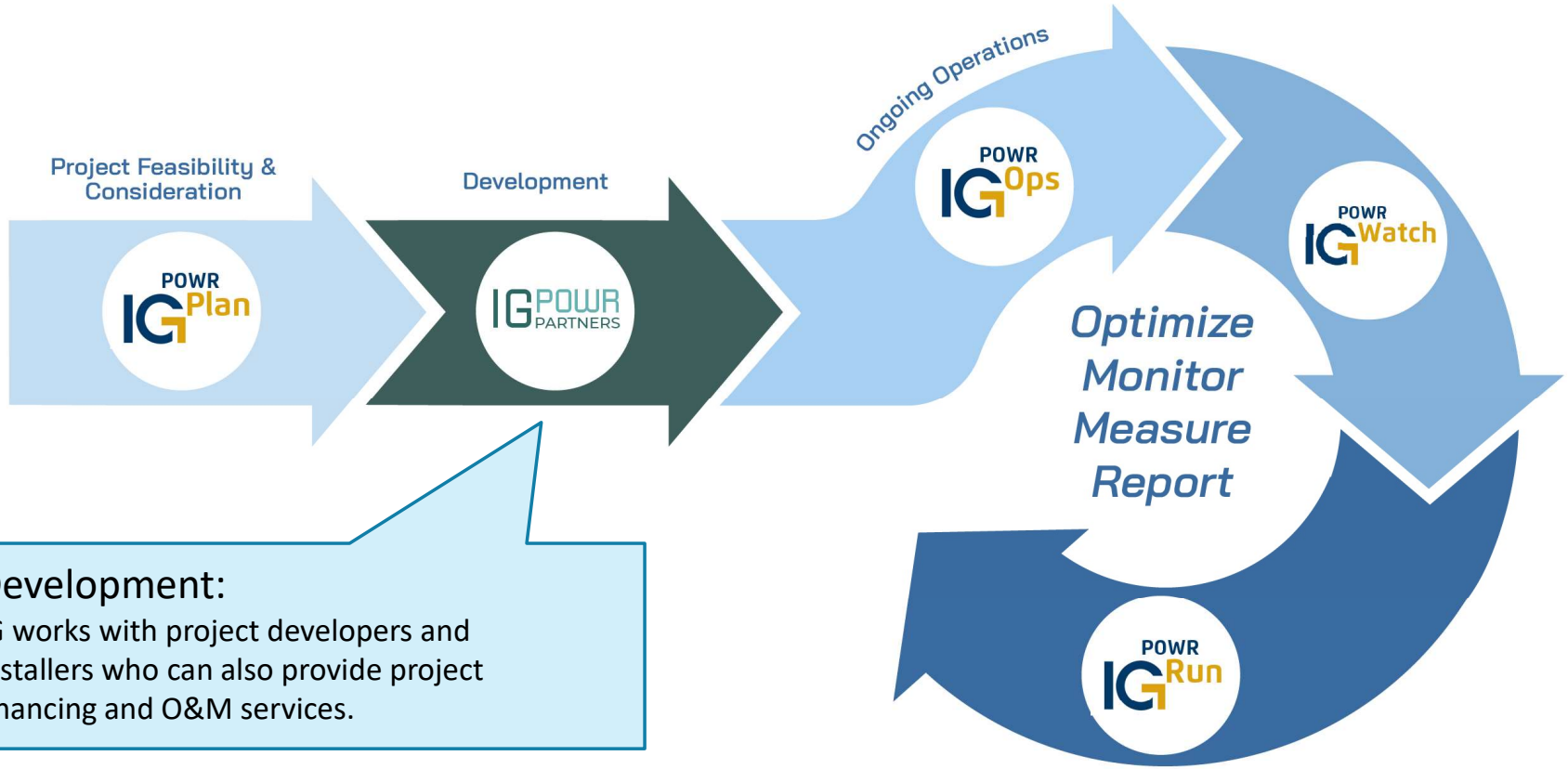
- First to implement and operate behind-the-meter batteries in PJM and MISO
- Delivering the total battery storage value stack since 2014

IG's cloud-based POWR Suite is the economic engine that delivers maximum economic benefit for a customer.

Cloud-based dispatch engine optimizes renewables project economics by deploying solar, battery storage based on site conditions and market opportunities



Solar + Storage Project Lifecycle



Development:
IG works with project developers and installers who can also provide project financing and O&M services.

Industrial Project Examples

Abt Electronics (2017)
Glenview, IL

Solar 508+1800 kW
Backup gen 1600 kW
Storage 500 kW

MAGID Glove (2020)
Romeoville, IL

Solar 3800 kW
Storage 2000 kW

Libman Co. (2020)
Arcola, IL

Solar 1850 kW
Storage 2000 kW

G&W Electric (2022)
Bolingbrook, IL

Solar 2000 kW
Flywheel 1300 kVA
Flow Storage 2000 kW
Backup gen 2000 kW
Full Microgrid setup

Case Study: ABT Electronics Microgrid

- World's largest single store appliance company. Near Chicago O'Hare. Family owned, trusted since 1936. Growth 100% organic.
- 1.5 million sq ft warehouse + office and retail
- $400M annual revenue, 2500 appliance deliveries per day, 20% of sales online
- Despite cheap grid power (7 cents), they had a clear power strategy:
  - ✓ Go green with Solar
  - ✓ Protect operations from outages
  - ✓ Guarantee power quality to back-office operations

- **The Project: double island micro-grid integrating an existing generator, 1800 kW solar PV and a 500 kW TESLA battery. Installed in 2017.**
- **Total Payback: under 5 years.**

Continental Energy Solutions

CONVERGENCE ENERGY

IG Intelligent Generation

Abt

Pleasing People…Since 1936

Case Study: G&W Electric Microgrid/Vanadium Flow Battery

- Major manufacturer of medium voltage utility power equipment, including smart grid.
- 24x7 manufacturing including plastics injection molding, ceramics, assembly, office, warehouse, and engineering/R&D.
- Power outages, sometimes only momentary, causing millions in lost production time and materials.

- **The Project: Islanding micro-grid integrating an existing generator, 2000 kW solar PV, 1300 kVA flywheel, 2000 kW nat gas generation, and a 2000 kW/8000 kWh CellCube Vanadium flow battery.**
- **Total Payback: under 4 years.**
- **Already saved millions in avoided losses in first year**

Continental Energy Solutions

CONVERGENCE ENERGY

IG Intelligent Generation

G&W Engineered to order. Built to last.

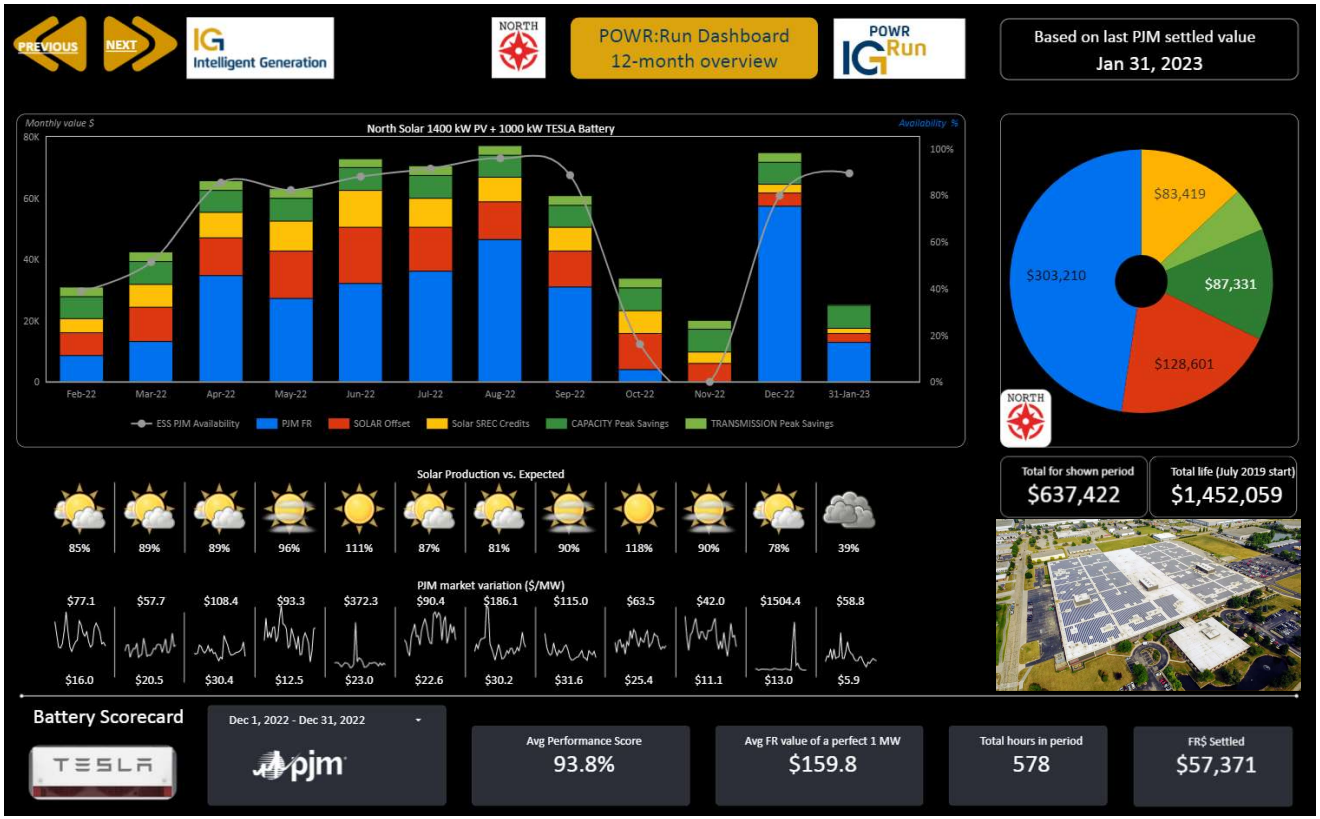
Customer financial reporting

PURPOSE

- Let customers easily see financial performance of projects

KEY FEATURES

- Financial dashboard with daily performance update
- Covers entire project and all value streams
- Granular drill down by asset by hour
- Full reconciliation to monthly RTO settlements
- Monthly Customer invoicing



Contact Information

To obtain further information, please contact:

David Braun
dbraun@intelgen.com

Visit IG's website at www.intelgen.com

BIOGRAPHICAL INFORMATION

David J. Braun
Vice President - Sales and Marketing
Intelligent Generation
dbraun@intelgen.com
630-818-7297

David has spent his 30-year career working across a broad spectrum of the energy and utilities space, particularly with large commercial and industrial customers as well as in renewables. His experiences provide him with a unique skill set to lead through the on-going energy transition. Prior to joining IG, David was president of GlidePower Power Solutions, where he was responsible for its 450 MW of wind, solar, and battery energy storage operating projects. Earlier in his career, he held executive roles in origination, marketing, and operations for Engie Resources, Direct Energy, Exelon Energy and ComEd, and also worked as a consultant focused on procurement of renewable and traditional energy for large energy users.

David holds a Master of Business Administration degree from the University of Chicago's Booth School of Management and a Bachelor of Science degree in Mechanical Engineering from Northwestern University.