



Safely Providing Quality Services

Control Your Industrial Energy Consumption.



With energy consumption rising year after year, EMW Industrial utilizes the best-in-class manufacturers, latest technology and follows industry best-practices to drive down costs.

Through our **TURNKEY** Solution; **Consult, Deliver and Maintain**, we increase energy efficiencies, optimize performance and improve productivity for our industrial clients.

EMW INDUSTRIAL SERVICES

Top Quality & Safety
Standards

Full Service Repairs &
Maintenance

Comprehensive, Periodic
Inspections & Audits

Feasibility & Energy
Analysis Studies

Electrical Installation &
Commissioning Services

LED Lighting

Process Design &
Improvement Process

High Voltage Connections

Power Factor Correction
Banks

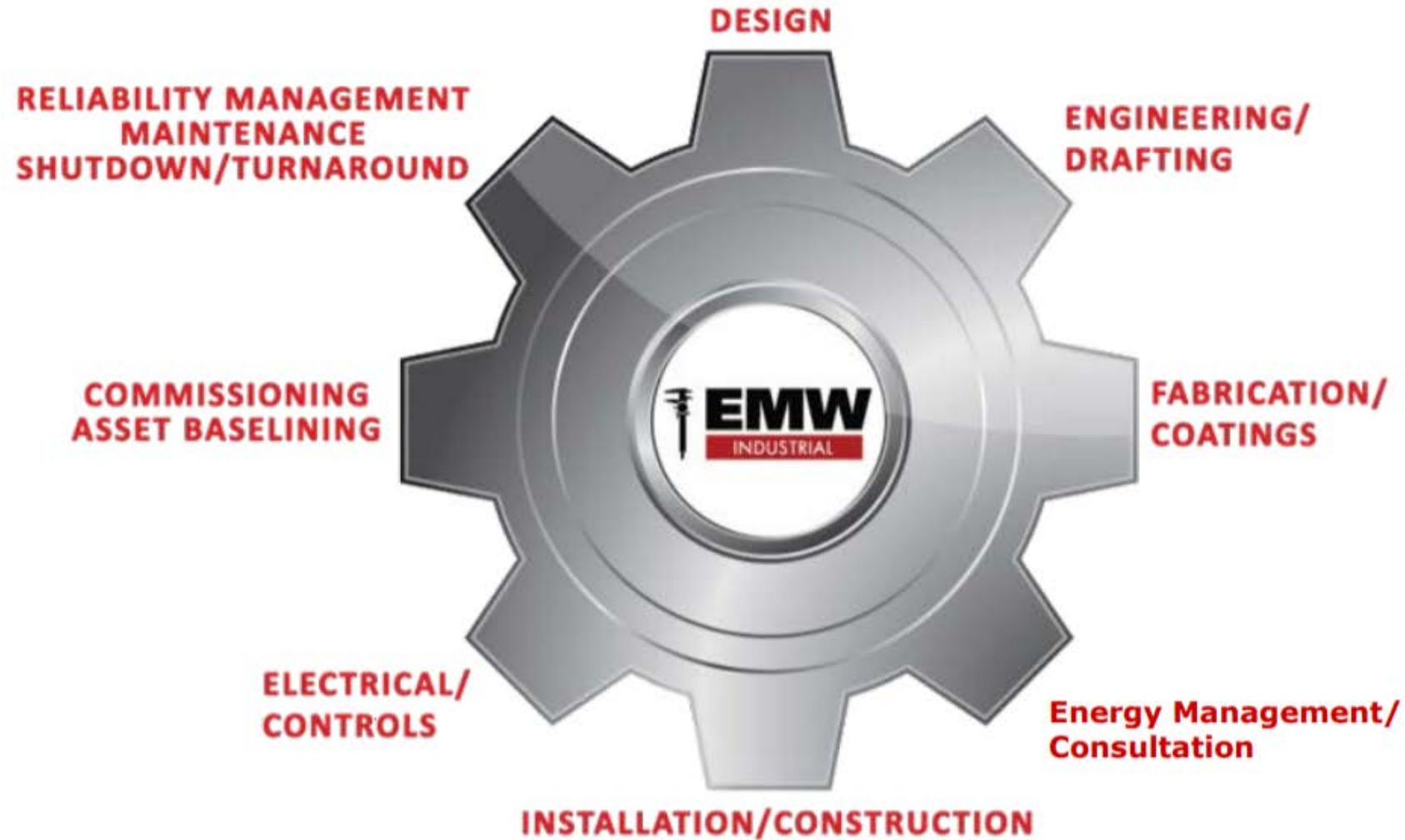
Involved. Committed. Results Driven.

Lorne Neault, EMW Electrical Division Manager
Phone: (306) 744-2675 Email: Lorne.Neault@emw.ca

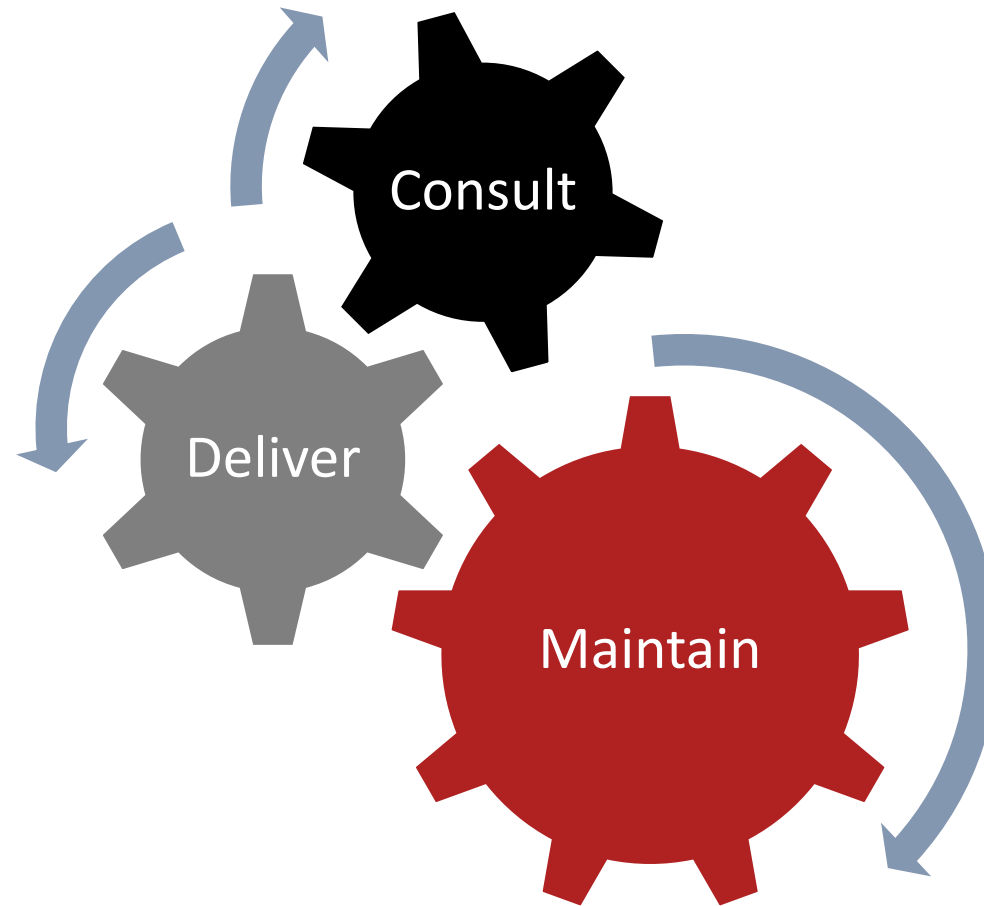


EMW
INDUSTRIAL

A Solution-Oriented Company



Areas of Expertise



Ability to Service Our Customers



In addition to our physical office locations, EMW has regional coverage across British Columbia, Alberta, Saskatchewan, Manitoba and Ontario, so that our teams can provide fast locally based services to customers.



Our Skilled Labour Force

Apprenticeships: *under the SK, MB, AB apprenticeship board*

- Electrical
 - ❖ Journey Persons
 - ❖ Apprentices
- Welding
 - ❖ Journey Persons
 - ❖ Apprentices
- Millwright
 - ❖ Journey Persons
 - ❖ Apprentices
- Iron Worker
 - ❖ Journey Persons
- Machinist
 - ❖ Journey Persons
- Steam/Pipe Fitters
 - ❖ Journey Persons
 - ❖ Apprentices
- Metal (formally 'Steel') Fabricator
 - ❖ Journey Persons
- Class 'A' Boom Truck Operator
 - ❖ Proficiency 4
 - Sub-trade of Crane Operator



Our Skilled Labour Force... Cont'd

Apprenticeships: *under the SK, MB, AB apprenticeship board*

- Parts Person
 - ❖ Journey Persons
- Auto Mechanics/Automotive Service Technicians
 - ❖ Journey Persons
- Carpenter
 - ❖ Journey Persons
 - ❖ Apprentices
- Predictive Maintenance Technicians

EMW currently employs approximately 280 individuals and focuses on hiring locally in the communities in which we conduct business.

Our Commitment to Safety

We aim to inspire a collective belief to maintain safe behaviours and endeavour to provide a safe and healthy workplace that is free from harm.

We actively seek all our staff to embrace this commitment to ensure all our work is undertaken in accordance with our *Safety Manual* and in support of **Mission Zero** – *zero lost time, zero accidents and zero incidents*.



YEAR	HOURS	LOST TIME INJURIES	LOST DAYS
2014	455,321	0	0
2015	486,034	1	2
2016	648,285	1	45
2017	701,831	0	0



*EMW is ISNetworld Registered – Account #400-152899 (Dashboard A Rating)

Memberships



EMW Industrial Ltd. Energy Management Program



How we see the world

Energy management can give you a competitive advantage

- ✓ Save on energy costs
(Overall Operational Cost)
- ✓ Improve site resilience by minimizing
downtime and ensuring productivity
- ✓ Improve your environmental impact and
get recognized as a “Green Company”



Our Energy Management Team



EMW & Centrica Business Solutions portfolio of energy efficiency solutions

We can manage both sides of the energy equation

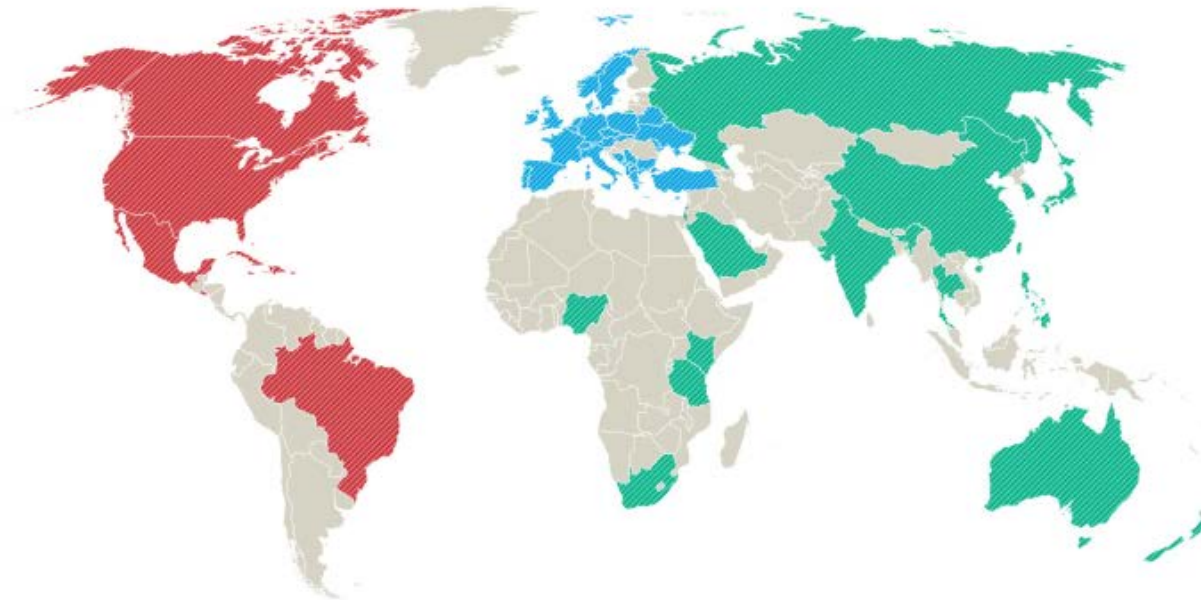


EMW
INDUSTRIAL

centrica
Business Solutions



We have a strong presence globally supporting customers
across 34 countries



Number of customer sites

Americas
2,500

Europe
2,250

ROW
380

INVESTMENT

£700m

in distributed energy by 2020

REVENUE

£28bn

Centrica revenue in 2017

RESOURCES

12,000

engineers across Centrica

ENVIRONMENT

31m

cubic tonnes of CO2 saved



How we work with you

Working with you

Our tried and tested three-stage approach to engaging with our customers

Explore

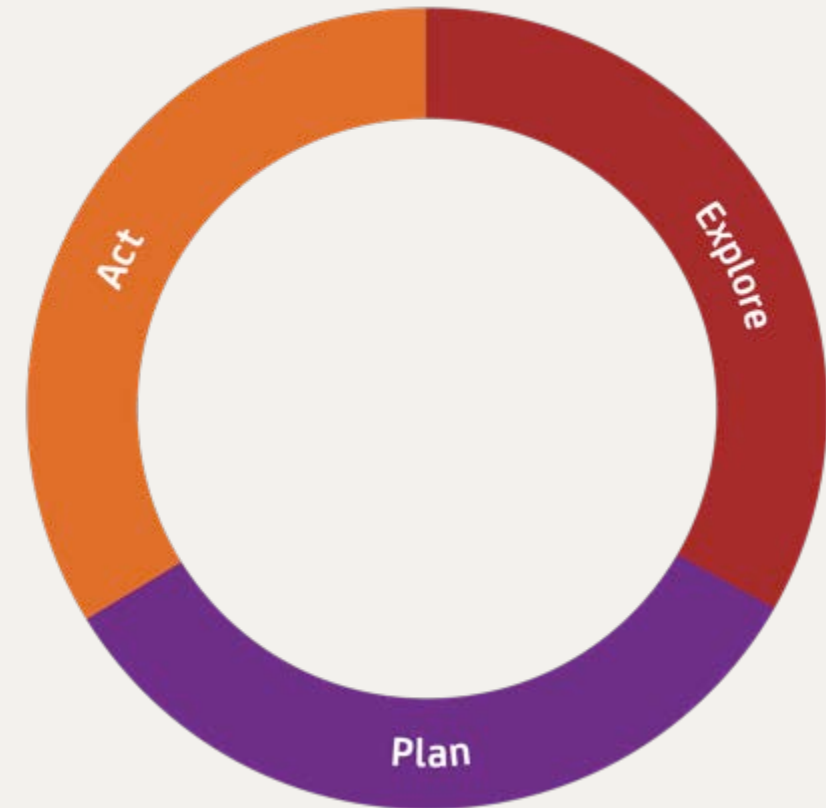
We'll get to understand your business and your objectives, map your sites and analyse the performance, efficiency and resilience of your existing energy systems.

Plan

We'll work with you to identify options to help improve your existing energy system and meet your business objectives, develop an action plan based on the whole life-cycle, including build, maintenance, measurement and financial planning.

Act

We'll partner with you to implement the solution, helping you with every aspect of the build, from permitting to commissioning as well as financing and training.





Product Highlight:

Panoramic Power

Unique sensor technology: “set and forget”

Tiny

Wireless

Self-powered

No service required



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Our Solution & Technology

Quick and effective state of the art technology for device-level monitoring

1 Snap



- Non-Invasive
- Self-Powered
- Wireless
- No Disruption
- No Maintenance

2 Connect



- Plug & Play
- Cellular or Wi-Fi
- Up to 250 sensors

3 Set Up



- Role Definition
- Executive Reports and alerts
- Set Goals
- Measure Benchmarks

4 Start Saving



- Management By Exception
- Scheduled Reports
- Real-Time Alerts
- Online Analytics
- Manage Chain-wide

Data >> Insight >> Actionable Results

Full Portfolio Of
Sensors & Meters

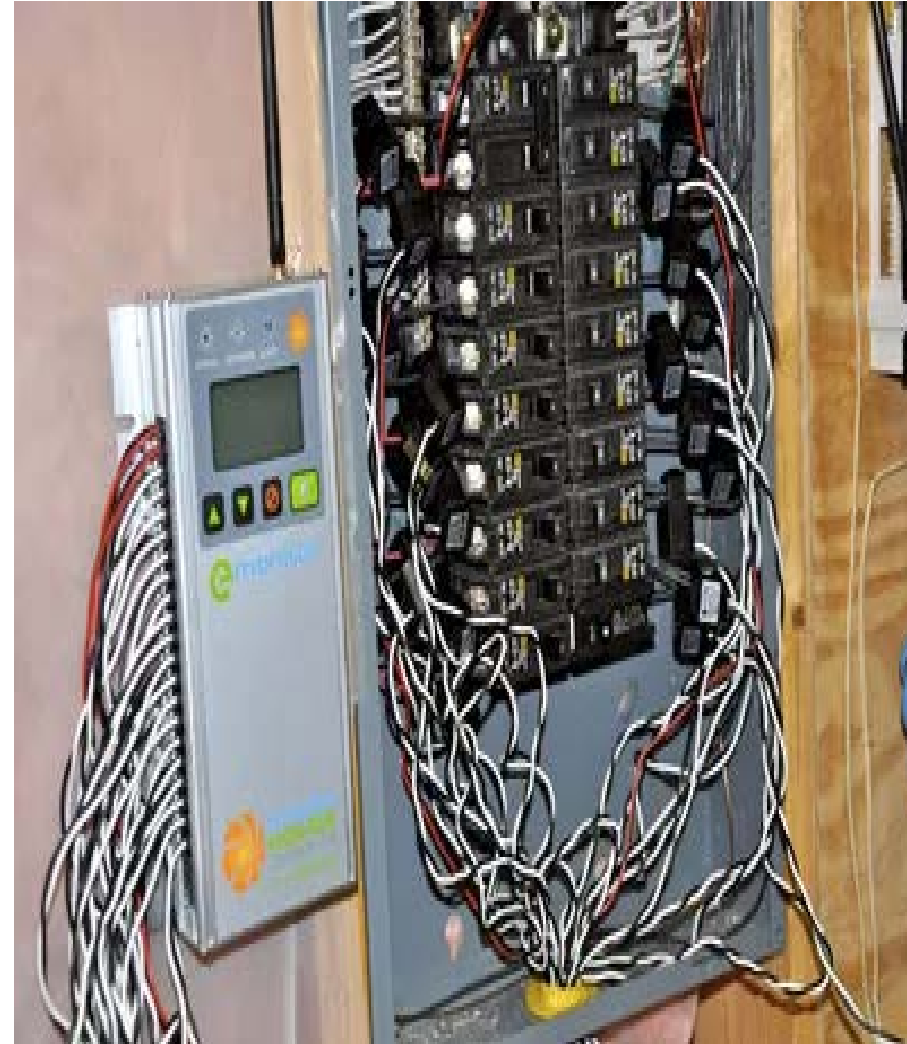


Easy to deploy in a couple of hours

Panoramic Power



Wired Solution



Online Dashboard Portal

Dashboard

Energy

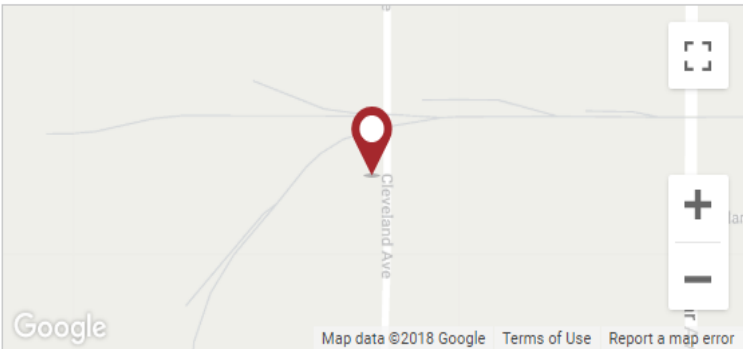
Operations



Grain Processing Facility



13°C



Sensors
65



Bridges
3



Meters
0

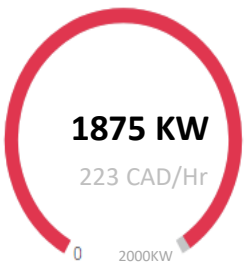


Alerts
7



Real Time Consumption

By Category



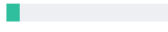
Machinery



1126



Lighting



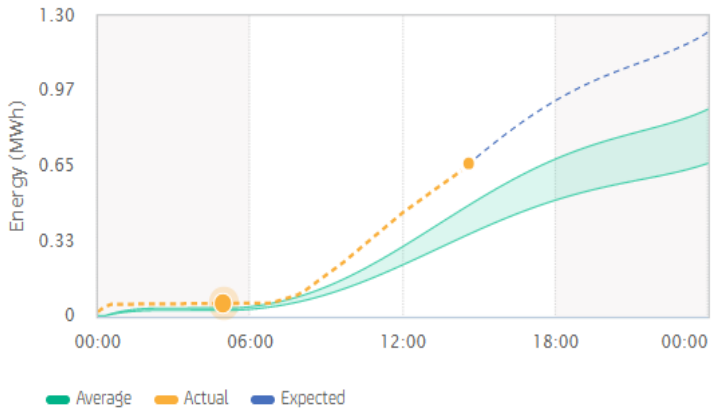
500

kW



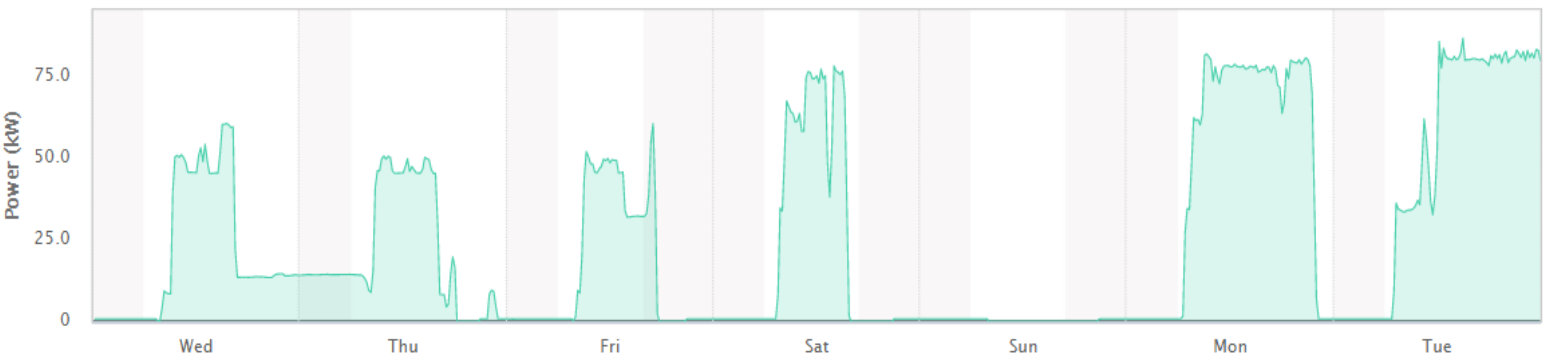
Actual vs. Average

General Info



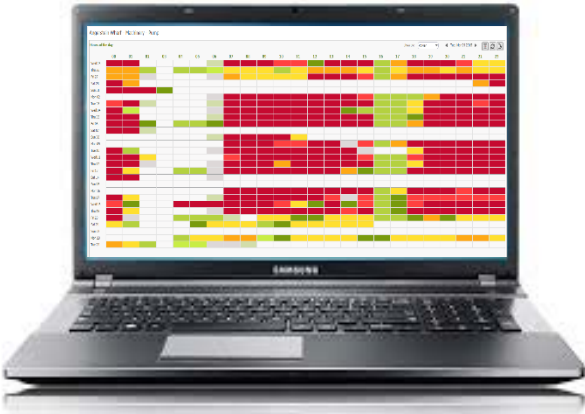
Last 7 days Power Consumption

By Site Total





Intelligence at your Fingertips



Energy and operational efficiency report

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2 Panoramic Power Monthly Energy Efficiency Report



Case Studies

Distributed energy: insight-led approach



Example site

- Distribution center and cold storage
- **Challenge:** No visibility to energy data, limited backup power for critical loads
- **Solution:** Panoramic Power + LED lighting and on-site generation that provides backup power and shave peak demand

Stepped Approach

- Execute long-term resilience plan
- Add generation & storage
- Next-level OPEX reduction

(3)

(2)

- Deploy EE measures
- Execute quick-wins
- Immediate OPEX reductions

(1)

- Energy insights ➡ business case
- ID & Quantify DER measures
- Simulate DER performance

Contact Information

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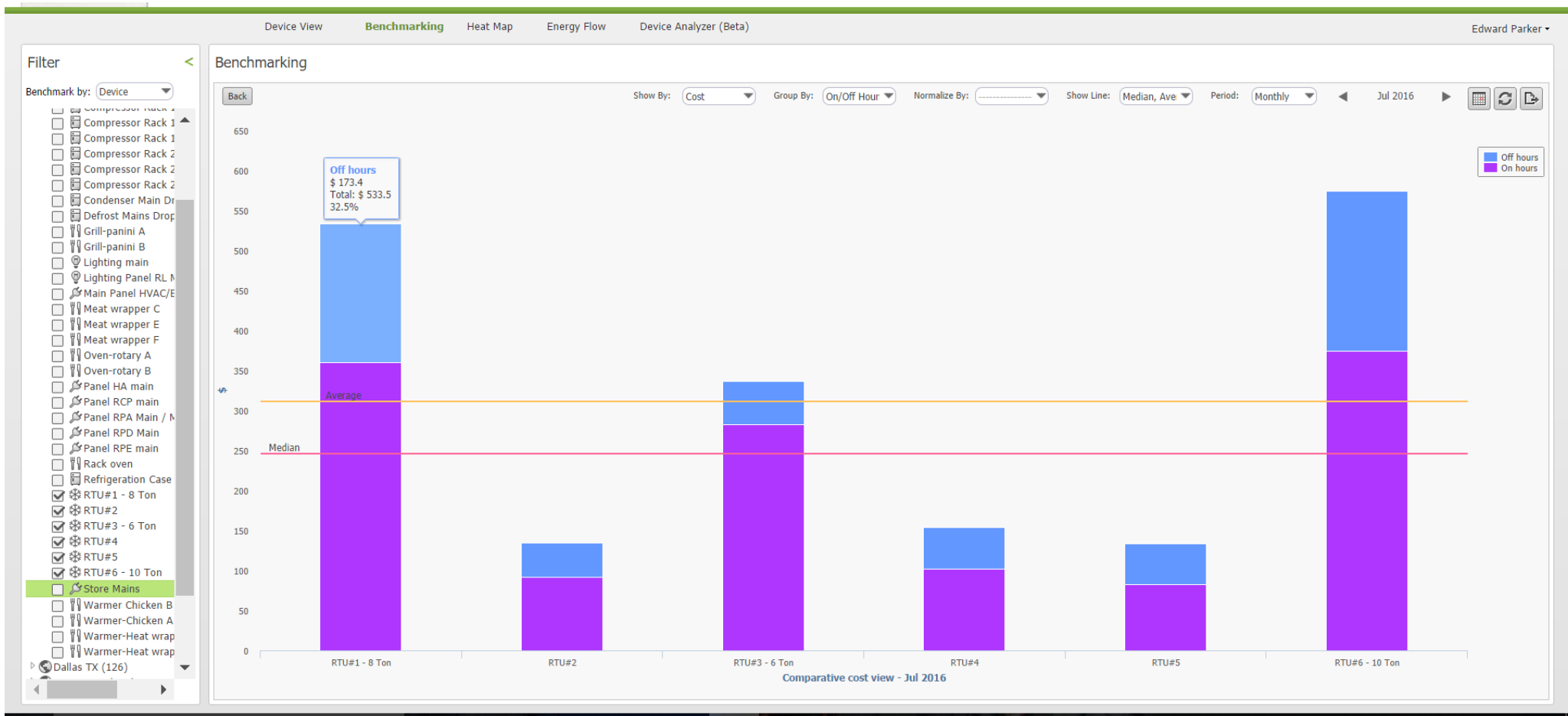
Mobile: (306) 621-7163



APPENDIX

Value: Benchmark to start the process - HVAC

Distribution of power consumption, %





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\$40bn
Group revenue
\$15.5bn
North America
revenue

27m
Customer
accounts

36k
Employees
worldwide

200+
Years in business

**Global
500**
Investment grade
publicly listed

We are a leading, international energy and services company. Everything we do is focused on satisfying the changing needs of our customers.

Through our brands- Direct Energy, Centrica Business Solutions, British Gas, and Bord Gáis- we provide energy supply, service, and solutions to homes and businesses internationally.



Direct Energy

- 0.6m business supply points
- 5,827mmth gas consumption
- 91TWh power consumption

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Business Solutions

- 543 MW under management
- Active customer sites: 3,924
- 9 regional offices

British Gas

- 0.7m business supply points
- 533mmth gas consumption
- 13TWh power consumption



**Bord Gáis
Energy**

- 41k business accounts
- 62mmth gas consumption
- 150GWh power consumption

Powering the City of Bridgeport

Sustainable, cost effective for local government

The City of Bridgeport needed a Microgrid solution to be built with 100% Grid Redundancy at no cost to the city, while saving on long-term cost and reducing environmental impact.

The Results

A Microgrid design that included Cogeneration, stand-by power generator set and electrical power designed to provide continuous power during grid failure. The Microgrid provides power to key municipal buildings, and utilizes the engine heat loss to supply heating and cooling to critical facilities such as, City Hall, Police Headquarters and the Golden Hill Senior Center

The team has estimated annual savings of approximately 85,554 MMBTu in energy, all while meeting several budget and city needs. The Microgrid was built with 100% redundancy at no cost to the city, with the potential for reducing environmental impact and long-term energy costs.



85k
MMBTu

Project annual
energy savings
37k from CHP

\$0
Cost

No cost to the
city

100%
GRID
REDUNDANCY

Delivered with
total redundancy

New Jersey hospital Combined Heat and Power (CHP)

35%
SAVINGS

Slashed total spend
on energy bills

110%
AVAILABILITY

Electricity on
standby for
emergencies

20%
REDUCTION

Reductions on
carbon footprint

New Jersey hospital saves with trigeneration

Customer objective

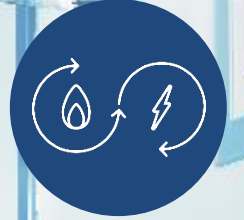
Facing frequent cost uncertainties, a New Jersey hospital decided to reduce its electricity costs in order to release additional revenue for patient care.

The solution

- Two 1,000 kW generators
- Producing 60% of the hospital's electricity on site
- Heat used to produce steam, chilled water and hot water
- Reduces utility bills by 35%
- Saving approximately \$2M per year

“Saving 35% annually on our electricity costs directly impacts our mission to deliver high-quality, safe, affordable patient care.”

Director
Construction and Facilities Management



Partnerships are a central component of our growth strategy and we are looking for partners who can help us originate and deliver new projects

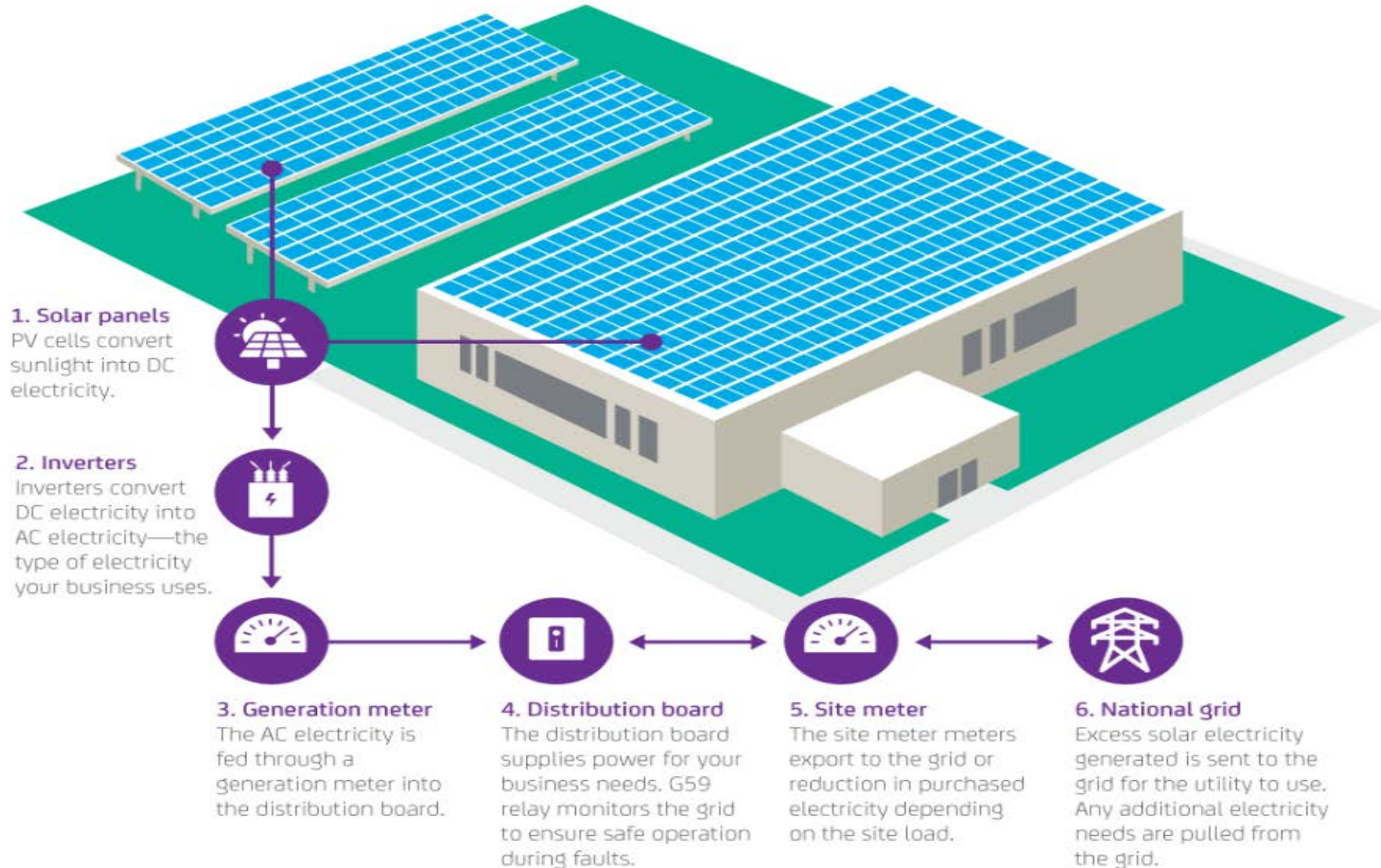
- Your strategy & growth ambitions?
- Opportunities to work together?
- Motivation for partnerships – scale, customers, complex projects, co-creation
- Fast tracking progress

How does Solar work?



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Fuelling Resiliency through Cogeneration

Presented by Howard Rosen
Head of Sales, North America ENER-G Combined
Heat & Power

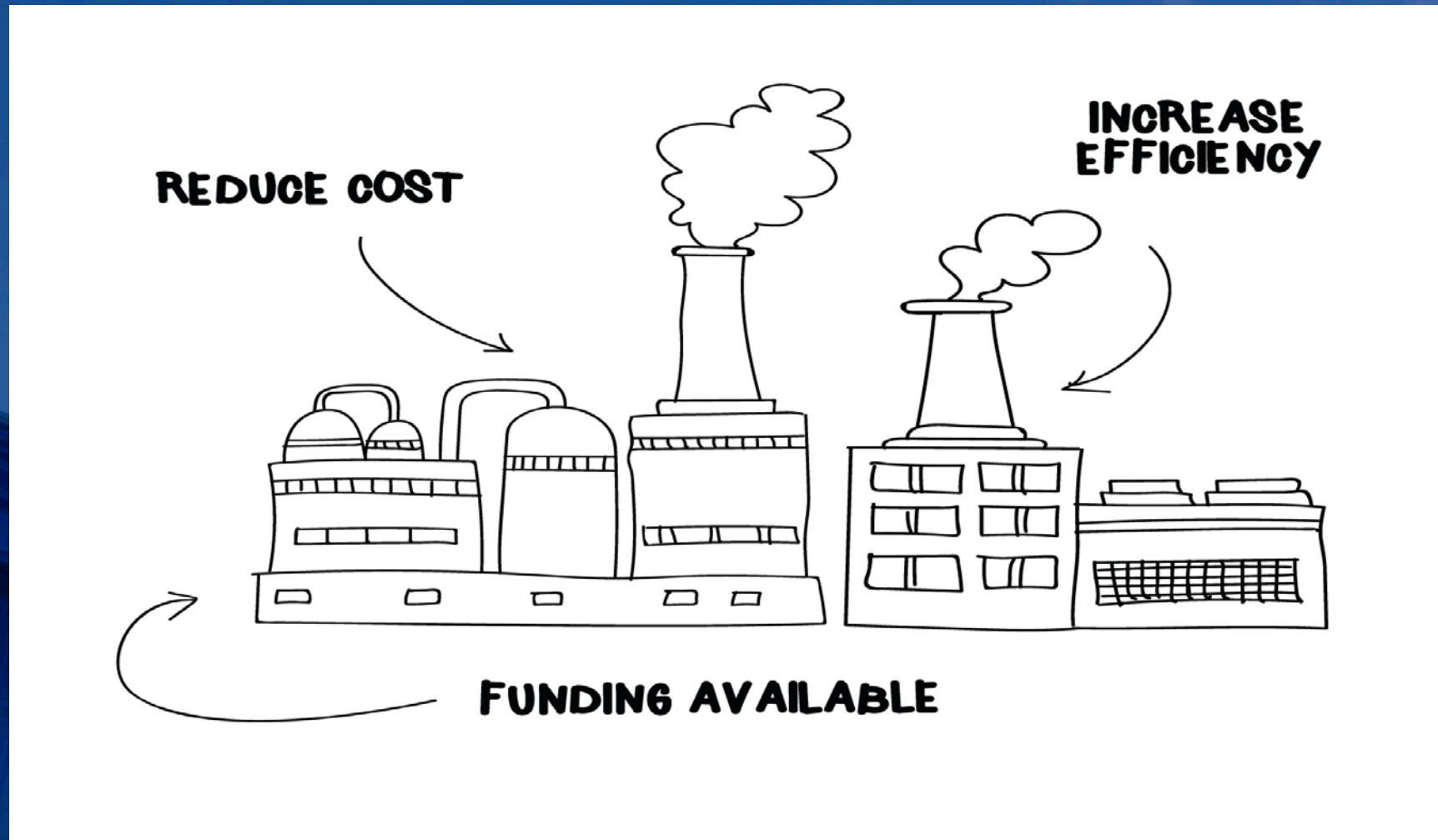


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A little knowledge can be very helpful!!





EPA/CHP Definition

Combined heat and power (CHP), also known as cogeneration, is the simultaneous production of electricity and heat from a single fuel source, such as: natural gas, biomass, biogas, coal, waste heat, or oil.



What is CHP (Cogeneration)

- Cogeneration uses a piece of equipment that makes electricity.
- Fuel Cell, Reciprocating Engine, Microturbine, Steam Turbine, or Gas Turbine.
- During this process, a tremendous amount of heat is created. It is this heat that is captured and used for space heating, hot water heating, process loads, and indirect fired cooling.
- In all cases, a cogeneration system can be used as back-up to the electric utility. (where allowed)

Benefits of CHP

- **Efficiency Benefits**

CHP requires less fuel to produce a given energy output, and avoids transmission and distribution losses that occur when electricity travels over power line.

- **Reliability Benefits**

CHP can be designed to provide high-quality and thermal energy to a site regardless of what might occur on the power grid, decreasing the impact of outages and improving power quality for sensitive equipment.

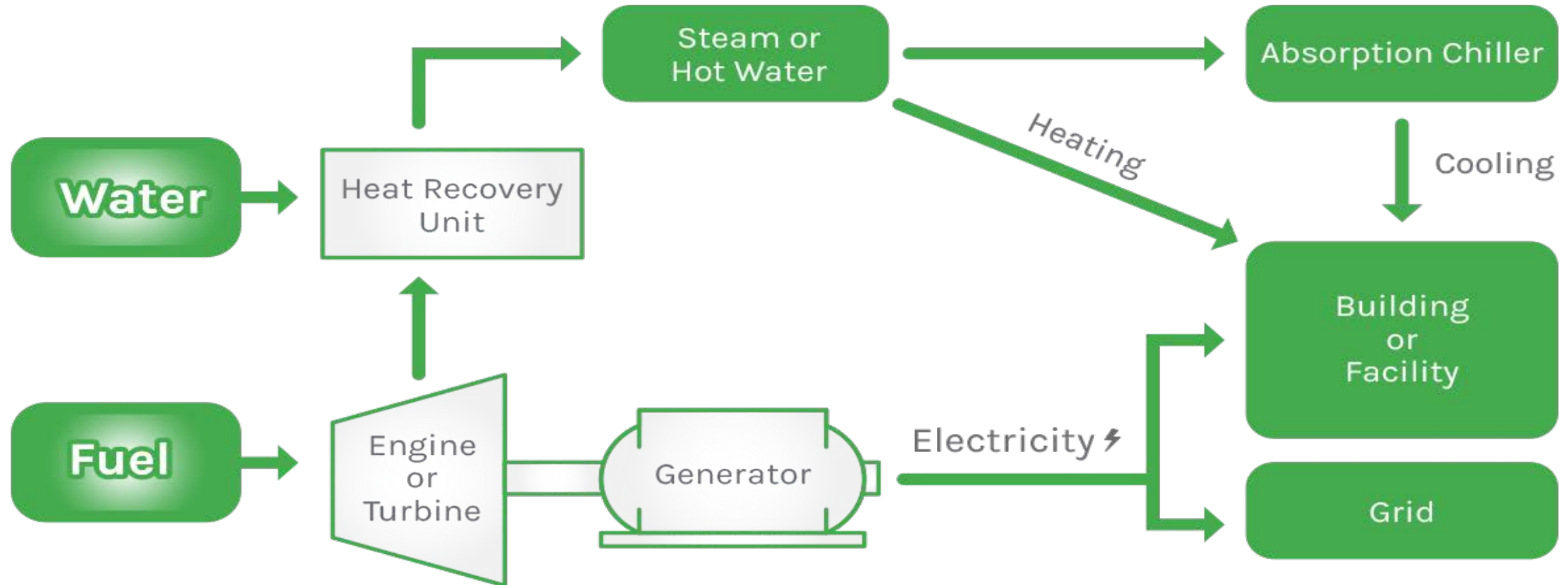
- **Environmental Benefits**

Because less fuel is burned to produce each unit of energy output, CHP reduces air pollution and greenhouse gas emissions.

- **Economic Benefits**

CHP can save facilities considerable money on their energy bills due to its high efficiency and can provide a hedge against unstable energy costs.

CHP Flow Chart



CHP Industry Terms

Cogeneration will NOT be applicable if three metrics aren't met:

Spark Spread – Potential customers all in electric costs must be GREATER than all in natural gas costs.

Heat Utilization – Potential customers must be able to use the waste heat AT LEAST 70% of the year.

Base load – Minimum level of demand (can be as low as 35kW)

A Look at Direct Energy Business

In collaboration with our sister company, Direct Energy Business, we offer a full suite of next-generation energy solutions for businesses.





✓ Supplies **24 U.S. markets** and **4** Canadian provinces

✓ More than **97 TWh** and more than **590 Bcf** supplied

A top supplier of energy and related services to **small and large businesses** across North America.

Serves more than **240,000 businesses** across North America.

• Serves  **78%** of the Fortune 100® companies

• Serves  **60%** of the Fortune 500® companies

#1



in natural gas supply
to commercial customers
in the Eastern U.S.

#2



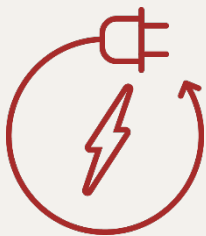
in power supply
to commercial customers
in the U.S. and Canada

**\$10
Billion**



in revenues

Implementation stages



Working with EMW & Centrica Business Solutions

A simple process to rapidly move from the initial idea to onsite generation in 5 steps.





Value: Health Check for BMS settings

