



Engineering Sustainable Practices for Increased Sales

WASMER OSo
On . Site Optimization



| Are you playing in the right sandbox.

- <https://youtube.com/shorts/ilMh9q7-tKk?si=gGwCNunol1UUiuJZ>

| Sustainability is the Currency of the Future.

Fortune 500

Greenhouse Gas Protocols

Climate
Neutral

Automotive

Product Carbon
Footprints



Net-Zero
World

DOD

Environmentally Preferable Products

Sustainable Procurement Program

| PWC CEO Survey Results.



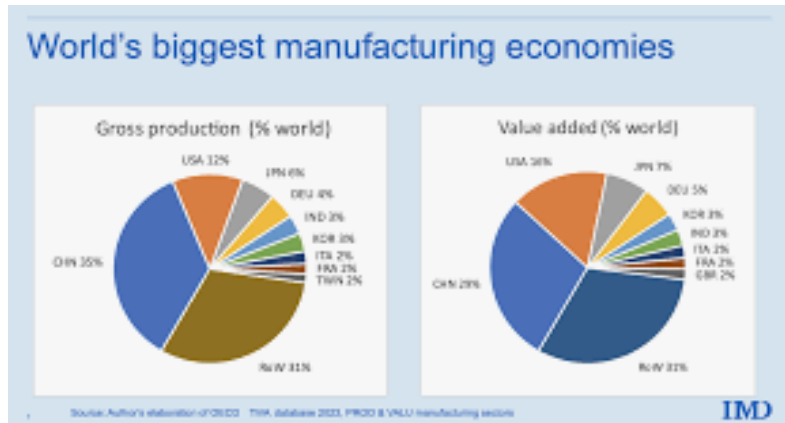
4 in 10
CEOs are including climate impact in their investment decision-making

nearly
70%
of those considering lowering their investment hurdle rates by **2.1%** or more

47%
are “underway” in tackling physical risk to assets and workforce

44%
are already implementing initiatives to upskill or reskill the employee base

| You have a leg up, on global competition because you manufacture here.



| Support Education + Embrace Sustainability Sample Text.

14.1 Usage of green electricity: According to attachment (CO2e Reduction_V4 & Reduction requirements CO2e_EOSMR_Vers._04 & Agreement on the use and proof of electricity from renewable energy sources (Apr.22)) [supplier signature needed]

14.5 Sustainability strategy and CO2e reduction targets: According to "ZF Bid Conditions Decarbonization V-01 Apr.22"

14.7 N-Tier manufacturing process description: "ZF_Bid_Conditions_Decarbonization_V-01_Apr.22" & Agreement on the use and proof of electricity from renewable energy sources (Apr.22)

4 Environment, Health and Safety (EHS)

4.1 Does your company have a responsible person for EHS?

No

Yes, name:*

4.2 Does your location have a formal policy in place regarding EHS? Please choose as much as possible answers!

No

Yes, containing rules & regulations on following topics:

Energy consumption

Water usage

Air emissions

Waste management

Restricted substances and chemicals handling

We have a ISO14001 certification.(Environment)

We have a ISO50001 certification. (Energy)

We have a OHSAS18001 / ISO45001 certification. (Health & Safety)

1 CO2 Footprint

1.1 Do you participate in Carbon Disclosure Project (CDP)?

No, then please answer question 1.2 - 1.8.

Yes, score for CDP, chapter climate change, is:

1.9 Do you track and actively expand the usage of recycled material in your production and your supply chain? (Multiple choice, please tick all true statements)

No, no specific actions on recycled materials.

No, but we plan to assess the share of recycled material within the next 2 years.

Yes, we can quantify the overall amount of recycled material within our production.

In the previous business year, the share of recycled material within our total consumption of materials was %.

We can quantify the amount of recycled material within the single products we sell to ZF.

| A Facility-Wide View Is Essential.



| Reducing Your Operational Spend Leads to More Orders.



Increase
productivity



Minimize the use
of planetary resources



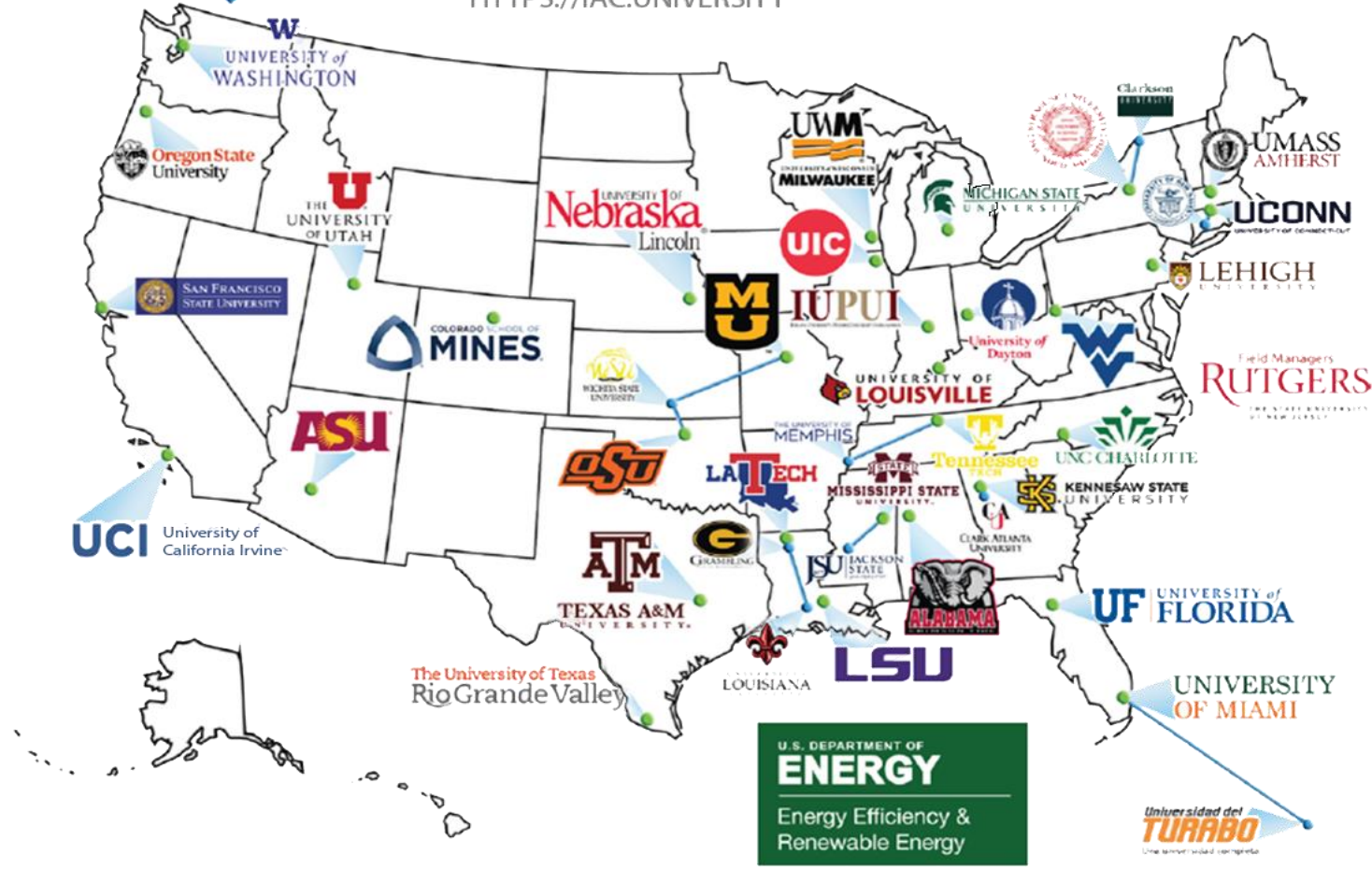
Reduce
operational costs



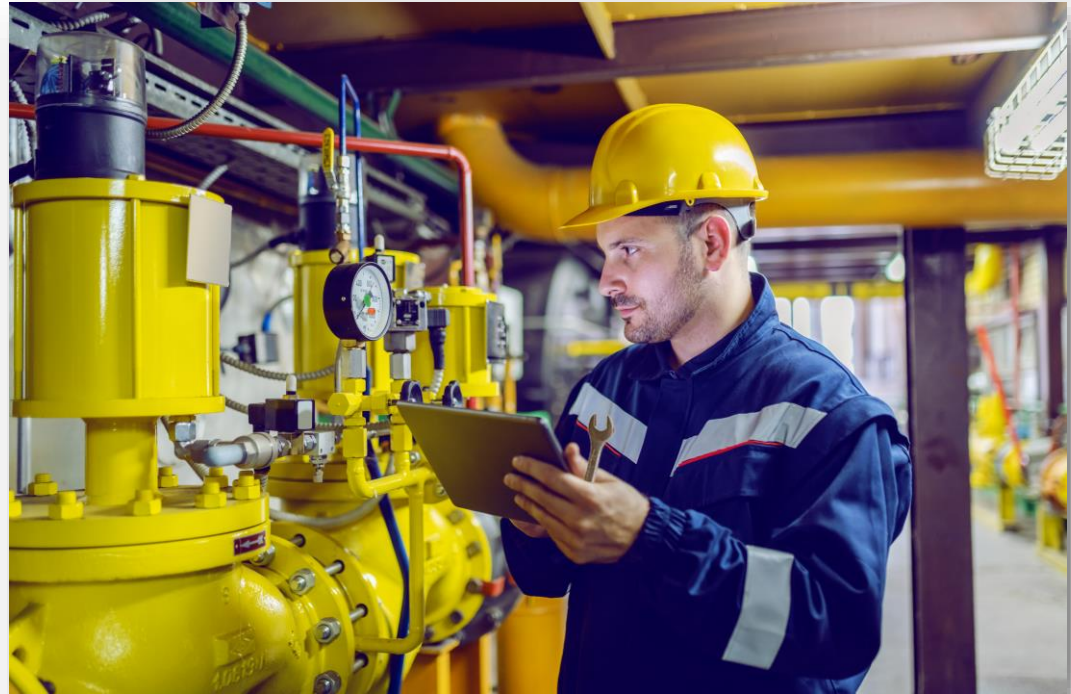
Enhance human
and product safety

Utilize Nationwide Expertise as Needed.

Industrial Assessment Centers 2022-2026 [HTTPS://IAC.UNIVERSITY](https://iac.university)



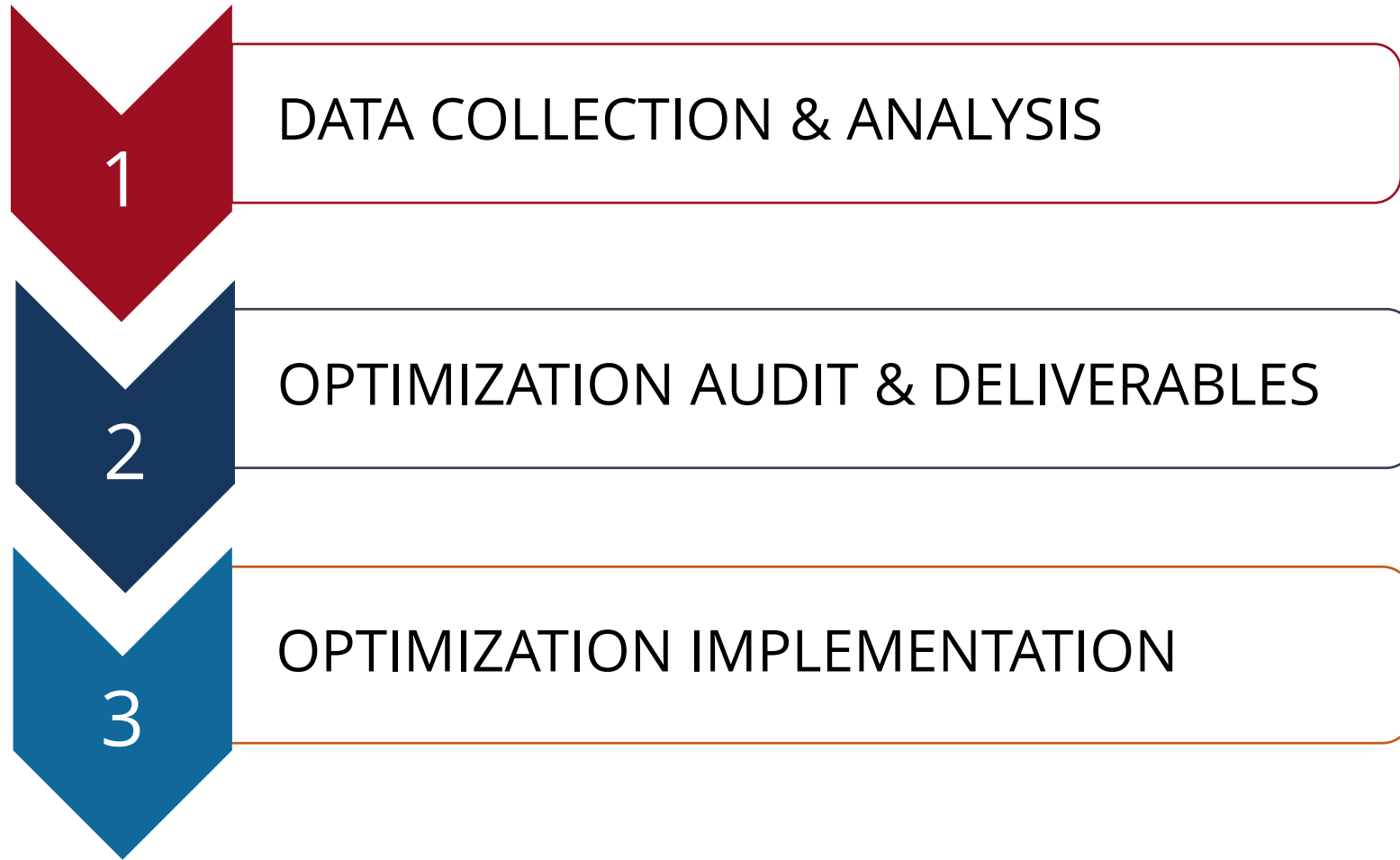
| The Foundation of It All Is Hands-on Data Gathering.



| Use the Right Toolbox.



| OSo Process.



1

Gather, Analyze & Share Data.



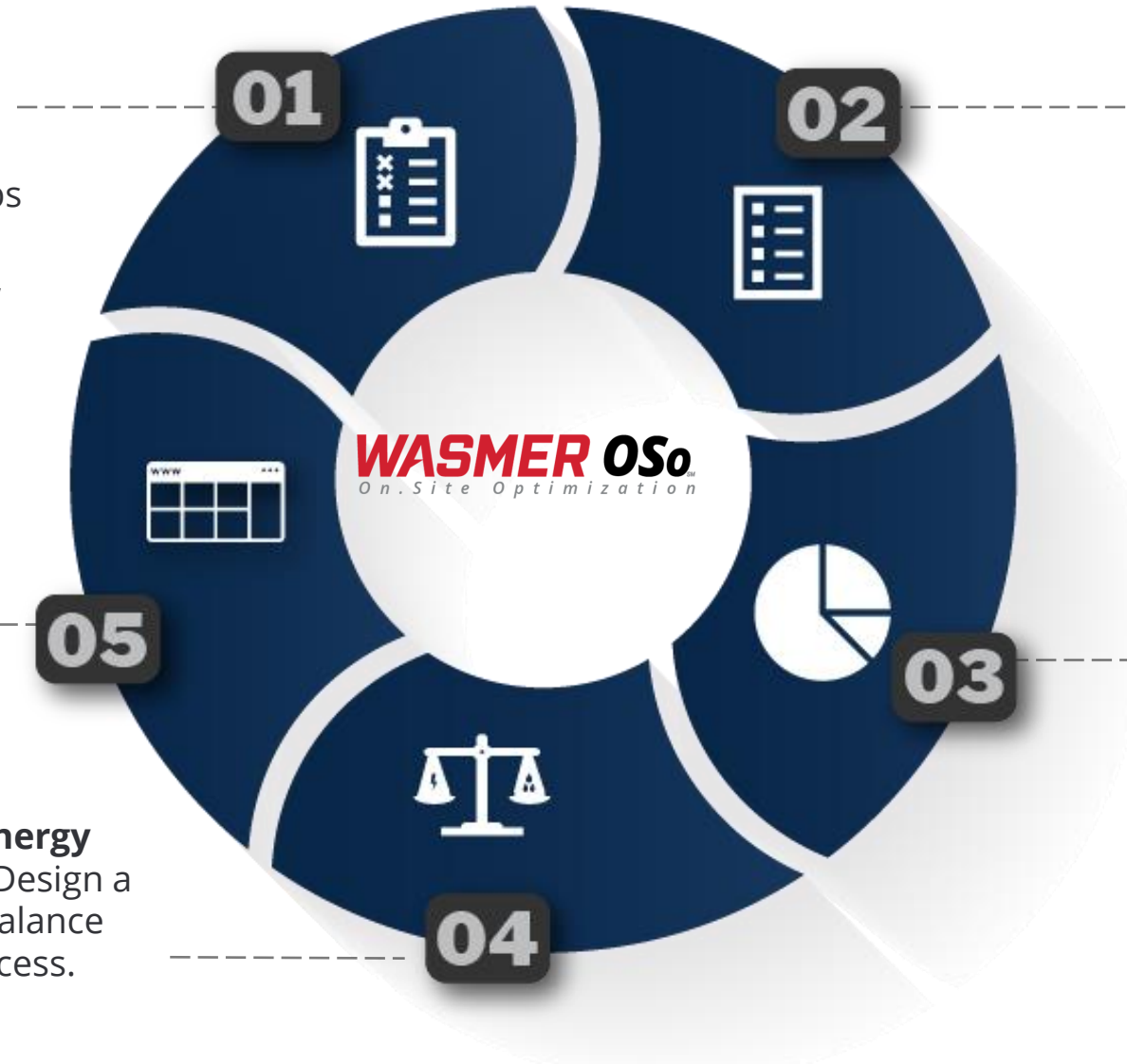
Optimization Audit & Deliverables.

01. Facility Assessment.

Includes: production equipment, compressed air, motors, lighting, pumps & piping, boilers, HVAC/mechanical, chillers, hot water systems, etc.

05. Create virtual wall: an up-to-date dashboard that includes data and deliverables.

04. Assess current energy and water balance. Design a new energy + water balance for section of line process.



02. Tag, photograph, and record data. Create master document with resource-consuming hard-wired and hard-piped assets.

03. Create Energy + Water Map. This details how different resources are feeding into each section.

3

Optimization Implementation.

01. Project Decision Matrix *WORKSHOP*

02. Conduct a treasure hunt using the spreadsheet of assets to identify & prioritize opportunities to improve operations

03. Create proposals for client to approve. Present concept, then detailed proposals that will align with established goals and objectives.

04. Implement Projects: 1. Design solutions, 2. Manage equipment, vendors and installation, 3. Provide ongoing project updates

05. Deliver Optimization Outcome Reports which include measuring resource and financial savings as well as, impact on objectives

07. Forecast of recommended capital expense projects

06. Update virtual wall energy + water wallets showing savings for all completed projects



| The First 90 Days.

Identify Assets that consume Water, Natural Gas, and Electricity and tag them to go into *The Wasmer Company, LLC App* – a database is created to include but not limited to:

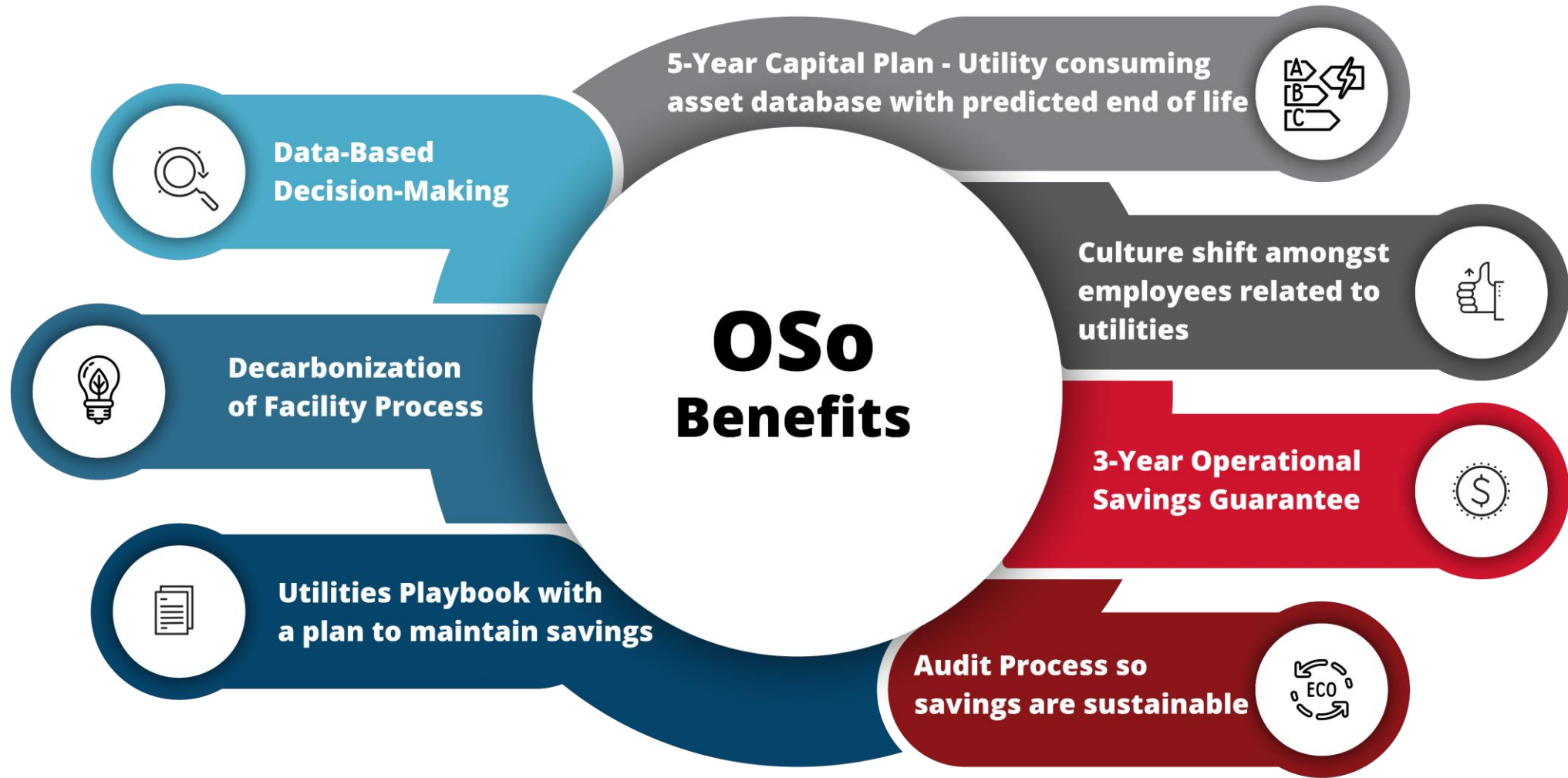
- Picture of the Asset
- Model number
- Serial number
- Consumption depending application
 - Voltage
 - Wattage
 - Btu
 - Gallons
 - Pressure
- Date put into service (if identifiable)
- Rating of general condition
- Estimated useful life
- Business unit allocation
- Identify if the operational cost is fixed or variable



| Establish Good Practices.

- 1** Move fixed assets to variable
- 2** Reduce demand charges
- 3** Improve power factor
- 4** Improve throughput
- 5** Reduce scrap
- 6** Reduce Rework
- 7** Improve OEE
- 8** Reduce Energy consumption per widget made
- 9** Reduce fixed and variable expenses

| Benefits For Your Company.



| Kirsh Foundry.

Process Power | Process Engineering | Facility Layout & Design | Equipment Management | Natural Resource Use Management

- Installed nitrogen generator – expensive SQFT
- Fixed problem of compressed air with 3 loops
- Moved air tanks to improve safety/provide easier access
- Annealing oven - process



| ACI Advanced Coatings, Inc.

IAQ (Indoor Air Quality) Improvement | Process Engineering

- Heavy employee turnover
- Reduced ambient temperature from +40 degrees to +10 degrees
- Pressurized front offices to reduce paint fumes



ACI
ADVANCED
COATINGS INC



WASMER OSo
On-Site Optimization

| Southeastern Container.

Process Engineering | Process Controls

- Separated supply from demand
– 640 PSI down to 480 PSI
- Converted air tanks to storage tanks
- Reduced phantom starts by installing control with PID – 14 to 7 Reciprocating air compressors
- Electrical interlocks



| Accuride - Gunnite.

Process Engineering | Process Controls

- Converted independently running compressors to one smart controller
- Reduced number of required compressors from 9 to 5
- 2 wheel welders – running different speeds



| Georgia Pacific.

Lighting Design & Installation

- 6 phases over 10 years
- SPG
- PM – lighting swap out



| If Sustainability is important to you – we know if transfers to your employees homes!

Do you perform sustainability tasks as part of your job?

Answer	Respondents	Average Score
Yes	46	20.88
No	31	17.06
Unsure	4	19.15

Do you think the implementation of energy efficiency and sustainability initiatives has changed (or would change) your behavior away from work?

Answer	Respondents	Average Score
Yes, I engage in more sustainable behaviors	17	21.09
Yes, I am more aware of sustainability/efficiency	36	19.98
No, I haven't changed anything	28	17.43

| Sustainability Checklist Handout is Printed & Available!

Steps to increasing sales through Sustainability

1. Identify the correct individual – typical a Certified Energy Manager with an Engineering Degree – the amount of Math is overwhelming to someone without the experience
2. Inform the Sales and Marketing group of the Sustainability – Energy Management Program
 - a. Offer to assist with Supply Chain questionnaires
 - b. Inform Sales and Marketing to target clients with a sustainability goals
 - c. Sales and Marketing to review existing and target customers websites and interview customers of what is important of their supply chain with regards to sustainability
3. Meet with finance to properly track expenses, purchase orders, goals, credits from incentives and grants to measure success
4. Meet with production leadership to establish a GREAT repour to work on projects that will not negatively impact manufacturing KPI's and need to know production data during the business justification stage – Step 23
5. Invite in Focus on Energy – to apply for the below incentives
 - a. Annual Planning Incentive
 - b. Project Assessment Incentives
 - c. Staffing Grant
 - d. Strategic Energy Management Program
6. Invite in Department of Energy – Industrial Assessment Center for capital project audit of facility
7. Create database of everything consuming Electricity, Natural Gas, and Water – tag each item with a asset tag with unique numbers tied to the database
8. Download past 36 months of utility bills including electricity 15 minute data
 - a. If you have multiple utilities per building – create a CAD drawing showing where each utility starts and stops within the facility
9. Create Heat Map of utility bills
10. Download a copy of the rate structure of your utility bill and determine if you are on the correct rate structure
11. Analyze your utility bill to understand what you are being charged for (e.g. demand charges, peak demand, on peak, off peak, etc)
12. Create Monthly metrics (below are examples)
 - a. kWh per sqft
 - b. kWh per widget made
 - c. peak KW demand day
 - d. peak KW demand time of day
 - e. btu per sqft
 - f. btu per widget made
13. Buy measuring tools
 - a. Data loggers – 4 channel (multiple inputs)
 - b. Current Transducers
 - c. PSI sensors
 - d. CFM Flow sensor
 - e. Anemometer
 - f. Thermal Imaging camera
 - g. Occupancy data loggers
 - h. Temperature & RH data loggers

es the most energy and what you can have the
ility, etc

on Investment (payback less than 6 months), no
of impact but they add up quickly
are sustainability wins – less resources in each

Investment (payback less than 12 months),
nd its usually making the equipment you have

ayback less than 36 months), but largest amount
ap out.

re eager to help you with CAPITAL projects, NO
her an internal program or hiring a firm that

tain progress and keep all stakeholders informed
consumption and determine how the change will

or, product manufacturers) for your top 3 potential

er opportunity

Rural America Grants

portunity that is deemed a good project
Its and compare to results to determine actual

roduction, Maintenance and Finance
increased throughput and lowered operational

er to your customers
investment and the impact to the customer – ie
variability, reduced natural resources
r point presentations

es
ess can be presented to existing and future talent
il would be 5% reduction – normalized to

| Put the OSo Process to Work for You.



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