

WILLDAN INDUSTRIAL ENERGY SOLUTIONS

**Industrial Energy Assessments  
& Industrial Energy Management  
Platform for GHG Reductions**



# Agenda

01

About Willdan and About Me

---

02

Energy Audit and Project Identification

---

03

What We Offer

---

04

Willdan's Industrial Energy Management Platform

---

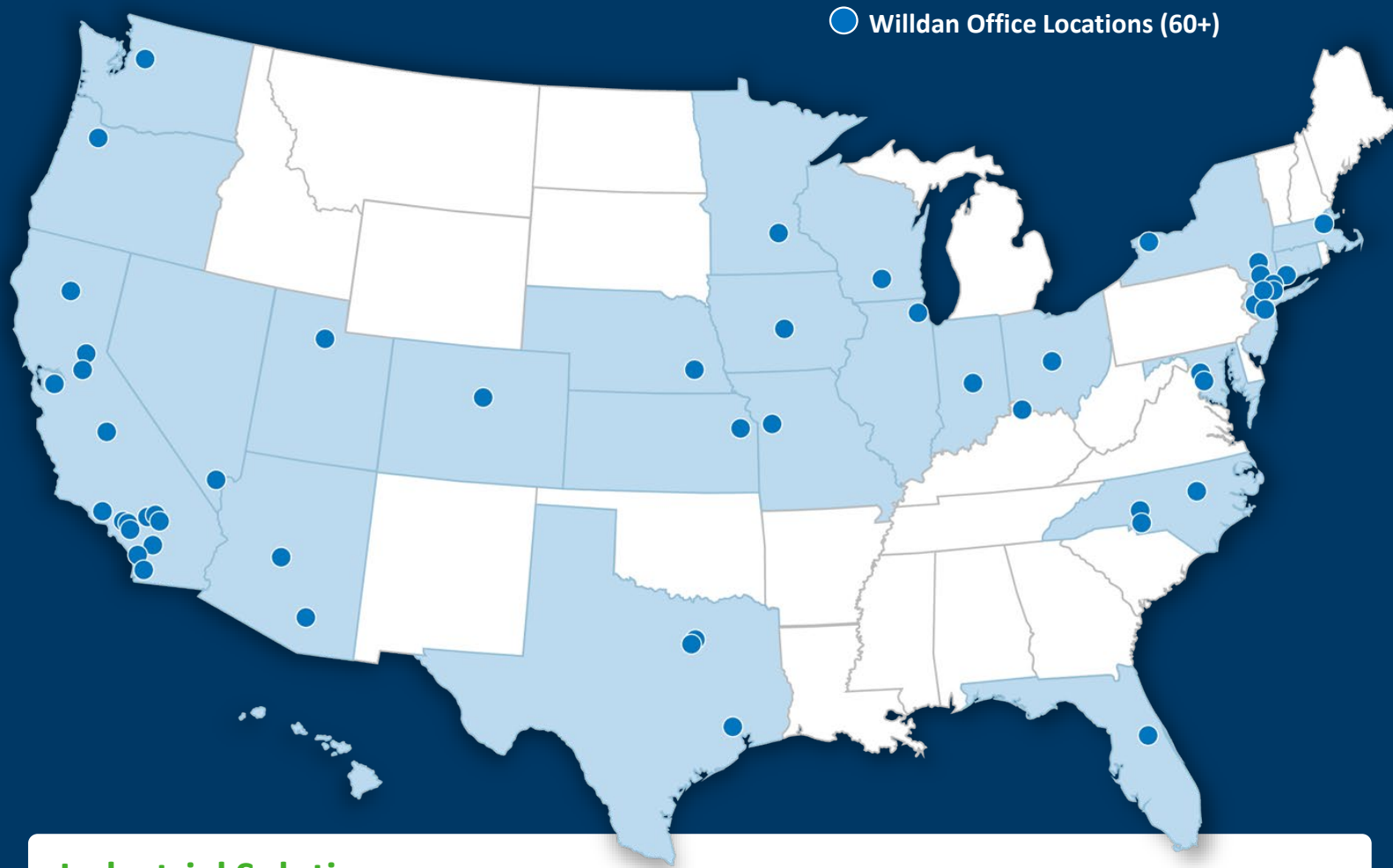


## Quick Introduction

---

Jacobo Vasquez





### Industrial Solutions:

- Cement/Minerals/Aggregates
- Paper
- Aerospace
- Large Pharma
- Printing
- Injection Molding
- Food & Beverage
- Plastics
- Metals/Machining
- Fabrication & Extrusion
- Data Centers
- Distribution Centers
- Refrigerated Warehouses
- Telcom

## Willdan's team knows the industrial sector, and we understand industrial processes

- **Founded in 1964**
- **25+ Years Energy & Industrial Experience**
- **150+ Industrial projects NAESCO Accredited**
- **Saved 1,400 MW and 6,800 GWh**
- **Saved 100M Therms**
- **5,400,000 MT GHG Avoided**
- **1,650 Staff in 60 Offices**

# Potential Opportunities

Willdan can work with your business to cost effectively reduce GHGs gaining a competitive advantage in the marketplace and increasing market share

- 1 Energy Efficiency, energy used per unit produced**  
(Total kWh and MMBTU used)
- 2 On site electric, hydrogen and oxygen production**  
Use the waste heat to produce on site electricity, use on site solar to drive oxygen and hydrogen production reducing operating cost and GHGs
- 3 Purchase biomethane and GHG offsets**  
Nemak can partner with biomethane producers, community solar, Green House Gas offset programs

The cost of renewable energy credits has tripled in the last 3 years. Electrical and fuel rates are on the rise globally making on site solutions more valuable

Willdan and its subsidiaries provide all the services Companies need to navigate the changing environmental, corporate and regulatory requirements



The background of the slide is a blue-tinted photograph of an industrial facility, likely a refinery or chemical plant. It features several tall distillation columns, storage tanks, and a complex network of pipes and structural steel. The scene is captured from an elevated perspective, showing the layout of the buildings and infrastructure.

# Energy Efficiency Audit

# How we can help

## Willdan Industrial Energy Audit

- Facility energy efficiency audit to identify and evaluate potential projects
- Review current energy contracts and associated costs
- Engage with utility providers for potential incentives, assistance and partnerships
- On site live electric, natural gas, other fuels, water and process monitoring
- Can help you get ISO 50001 approved or ITAC Grants
- Smart Energy Management System (EMS) with visibility into performance of key industrial systems

# Rain Carbon INC

## Lake Charles, LA Calciner Plant

- Rain Carbon INC is a global leader in production of raw materials.
- Energy efficiency audits to their 6 Louisiana plants.
- Plant operates two calciner's processing petroleum coke (CPC).
- Rian Carbon are members of IECA.





# Projects Identified

10 Projects – Estimated Annual measure savings of \$331,808

Proposed Project Summary Table						
Description	End-Use Category	Estimated Project Cost	Estimated Annual Energy Savings [kWh]	Estimated Annual Measure Savings [\$]	Annual Revenue Equivalent*	Estimated Incentive
#1 Interior Lighting Elec	Lighting	\$2,500	5,152	\$573	\$5,762.30	\$258
#2 Exterior Lighting Elec	Lighting	\$60,000	213,040	\$18,347	\$184,577.02	\$10,652
#3 Roll Crusher VFD Retrofit	Process	\$50,000	186,425	\$11,680	\$117,500.26	\$16,778
#4 Feed Water P7 8 VFD Retrofit	Pumps Boiler Feed	\$600,000	1,559,259	\$97,688	\$982,772.21	\$140,333
#5 C Water P12 13 VFD Retrofit	Cooling Cond Pumps	\$700,000	1,431,744	\$102,199	\$1,028,156.56	\$128,857
#6 VFD 250hp and 50hp Air Comps	Compressed Air	\$200,000	489,925	\$40,694	\$409,394.32	\$44,093
#7 Central Comp Air and Control	Compressed Air	\$80,000	202,752	\$18,702	\$188,153.05	\$18,248
#8 Dust Collector 2 4 8 9 VFD	Process Dust Coll	\$60,000	96,195	\$12,027	\$120,992.31	\$8,658
#9 2 100hp Well VFD Retrofit	Pumps Boiler Feed	\$80,000	238,624	\$14,950	\$150,400.34	\$21,476
#10 2 100hp Scrub VFD Retrofit	Process Dust Coll	\$80,000	238,624	\$14,950	\$150,400.34	\$21,476
<b>Total for Electric Projects</b>		<b>\$1,912,500</b>	<b>4,661,740</b>	<b>\$331,808</b>	<b>\$616,984.94</b>	<b>\$410,829</b>

# Financial Analysis

## Individual Project Economics

**Estimated Incentive - \$410,829**

Proposed Project Summary Table									
Description	End-Use Category	Estimated Project Cost	Annual Revenue Equivalent*	Estimated Incentive	Simple Payback Period	5 year NPV	10 year NPV	5 Year SIR	ROI %
#1 Interior Lighting Elec	Lighting	\$2,500	\$5,762.30	\$258	3.91 Years	\$50	\$1,700.42	1.02	26
#2 Exterior Lighting Elec	Lighting	\$60,000	\$184,577.02	\$10,652	2.69 Years	\$24,088	\$76,947.74	1.4	37
#3 Roll Crusher VFD Retrofit	Process	\$50,000	\$117,500.26	\$16,778	2.84 Years	\$13,527	\$47,177.12	1.27	35
#4 Feed Water P7 8 VFD Retrofit	Pumps Boiler Feed	\$600,000	\$982,772.21	\$140,333	4.71 Years	(\$68,662)	\$212,789.39	0.89	21
#5 C Water P12 13 VFD Retrofit	Cooling Cond Pumps	\$700,000	\$1,028,156.56	\$128,857	5.59 Years	(\$162,082)	\$132,367.04	0.77	18
#6 VFD 250hp and 50hp Air Comps	Compressed Air	\$200,000	\$409,394.32	\$44,093	3.83 Years	\$6,974	\$124,218.90	1.03	26
#7 Central Comp Air and Control	Compressed Air	\$80,000	\$188,153.05	\$18,248	3.3 Years	\$13,106	\$66,990.30	1.16	30
#8 Dust Collector 2 4 8 9 VFD	Process Dust Coll	\$60,000	\$120,992.31	\$8,658	4.27 Years	(\$3,205)	\$31,445.85	0.95	23
#9 2 100hp Well VFD Retrofit	Pumps Boiler Feed	\$80,000	\$150,400.34	\$21,476	3.91 Years	\$1,314	\$44,386.71	1.02	26
#10 2 100hp Scrub VFD Retrofit	Process Dust Coll	\$80,000	\$150,400.34	\$21,476	3.91 Years	\$1,314	\$44,386.71	1.02	26
<b>Total for Electric Projects</b>		<b>\$1,912,500</b>	<b>\$616,984.94</b>	<b>\$410,829</b>	<b>4.53</b>				

# Greenhouse Gas Reductions & Scope 1 & 2 Reductions

Help you stay ahead of new rules and regulations

## SRMV Emission Rates

**CO<sub>2</sub>**  
**801.0**  
(lbs/MWh)

**SO<sub>2</sub>**  
**0.602**  
(lbs/MWh)

**NO<sub>x</sub>**  
**0.492**  
(lbs/MWh)

Proposed Project Summary Table

Description	End-Use Category	Estimated Annual SO <sub>2</sub> Savings [lb]	Estimated Annual NO <sub>x</sub> Savings [lb]	Estimated Annual CO <sub>2</sub> Savings [t]	Estimated Lifetime SO <sub>2</sub> Savings [lb]	Estimated Lifetime NO <sub>x</sub> Savings [lb]	Estimated Lifetime CO <sub>2</sub> Savings [t]
#1 Interior Lighting Elec	Lighting	2	3	2	24	30	19
#2 Exterior Lighting Elec	Lighting	100	122	79	1,003	1,225	789
#3 Roll Crusher VFD Retrofit	Process	88	107	69			
#4 Feed Water P7 8 VFD Retrofit	Pumps Boiler Feed	734	897	577	11,016	13,449	8,659
#5 C Water P12 13 VFD Retrofit	Cooling Cond Pumps	674	823	530	10,115	12,349	7,950
#6 VFD 250hp and 50hp Air Comps	Compressed Air	231	282	181	3,461	4,226	2,721
#7 Central Comp Air and Control	Compressed Air	95	117	75	1,432	1,749	1,126
#8 Dust Collector 2 4 8 9 VFD	Process Dust Coll	45	55	36	906	1,106	712
#9 2 100hp Well VFD Retrofit	Pumps Boiler Feed	112	137	88	1,686	2,058	1,325
#10 2 100hp Scrub VFD Retrofit	Process Dust Coll	112	137	88	2,248	2,744	1,767
<b>Total for Electric Projects</b>		<b>2,196</b>	<b>2,681</b>	<b>1,726</b>	<b>31,893</b>	<b>38,935</b>	<b>25,067</b>

# Industrial Energy Management System (EMS) Platform

- Designed and built by industrial experts
- User-friendly dashboard
- Cloud-based
- Live & Historical Data



Powered by





# Willdan's Industrial EMS Helps Business Succeed



## Increase Profits

- Lower energy bill
- Reduce unit cost of production (increased profitability)
- Use real time reporting to validate GHG reductions



## Increase Efficiency

- Continuous monitoring
- Evaluate system performance
- Identify potential improvements
- Validate upgraded performance

# Thank you!

---

Jacobo Vasquez

954-696-3263

[Jvasquez@willdan.com](mailto:Jvasquez@willdan.com)



WILLDAN