Global Efficiency Intelligence

Energy-Efficiency and GHG Emissions Reduction Potential in Industrial Motor Systems in the 30 States in the U.S.

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About Global Efficiency Intelligence, LLC

Global Efficiency Intelligence, LLC is an energy and environmental consulting and market research firm located in San Francisco, CA. We provide global market-based solutions and in-depth technology, systems, industry, business, and policy analyses. We work with experts in government, industry, non-profits, utilities, academia, and other entities worldwide to conduct our analyses and develop impactful and practical solutions. We use systems thinking, integrative modeling, and data analytics to turn data into actionable information and to provide scientific-engineering solutions. We offer Modeling and Analysis, Policy Design and Evaluation, Technology and Industry Roadmapping, Market Research, and Training and Capacity Building services in the following areas: Energy Efficiency; GHG Emissions Reduction; Water-Energy-Climate Nexus; Manufacturing Resources Efficiency; Demand Response; Smart Manufacturing & Industrial IOT; Emerging Technologies; Deep Electrification and Decarbonization; Supply Chain Energy and Carbon Footprint.

U.S. and Global Industrial Motor Systems Efficiency Initiative

Global Efficiency Intelligence, LLC has been working on a global initiative to study industrial motor systems efficiency in more than 50 countries from all continents worldwide and 30 individual U.S. states. We work with public and private stakeholders, focusing on industrial pumps, fans, and compressed-air systems, which together account for more than 70% of electricity used in industrial motor systems. We conduct country-level analyses, including energy use by motor system type and system size and by manufacturing subsector (e.g., chemical, food, textile, steel, machinery, pulp and paper, etc.) and energy-saving potentials and cost by technology and system size for each country/state. We analyze barriers to and drivers of energy efficiency and system optimization in industrial motor systems in each country/state, including policy making and market implications.

To find more, please visit our website at www.globalefficiencyintel.com

Introduction

Industrial electric motors account for over 70% of electricity consumption in manufacturing in the U.S. Motors are used to drive pumps, fans, compressed air systems, material handling, processing systems and more. Industrial motor systems represent a largely untapped cost-effective source for energy savings that could be realized with existing commercialized technologies. Compressed air systems are widely used throughout manufacturing industries. In many industrial facilities, air compressors are among the highest electricity consuming equipment. Inefficiencies in compressed air systems are common.

One of the major barriers to effective policy making and increased action by states and utilities to improve energy efficiency in industrial compressed air systems is the lack of information and data on the magnitude and cost-effectiveness of the energy savings potential in industrial compressed air systems in each state. This lack of information creates an obstacle to developing a comprehensive and effective strategy, roadmap, and programs for improving compressed air systems efficiency cost-effectively. It is far easier to quantify the incremental energy savings of substituting an energy-efficient motor for a standard motor than it is to quantify the energy savings of applying other energy efficiency and system optimization practices to an existing compressed air system.

Global Efficiency Intelligence, LLC. conducted a large initiative to study industrial motor systems in 30 states from different U.S. regions. This includes the top 20 U.S. states in terms of industrial energy consumption. We focused on industrial pumps, fans, and compressed-air systems which together account for over 70% of electricity use in U.S. industrial motor systems. Overall, we have published 21 reports covering 30 U.S. states and these three motor system types.

Key analyses and results included in the reports:

- Electricity use by manufacturing subsector (NAICS code 31-33) in each state studied
- Electricity use for motor systems and compressed air systems by manufacturing subsector (NAICS code 31-33) in each state studied
- Electricity use by industrial compressed air system by size in each state studied
- Market barriers to energy efficiency in industrial motor and compressed air systems
- Energy Efficiency Cost Curves for industrial compressed air systems for each state using ten major energy efficiency measures
- Energy saving potential and cost of conserved energy (US$/MWh-saved) for each efficiency measures in each state studied

- The cost-effective and total technical energy efficiency potential in industrial compressed air systems in each state studied
- Energy saving potential for each energy efficiency measure by system size
- GHG emissions reduction potential for each efficiency measure in each state
- Sensitivity of the results with respect to changes in electricity prices and discount rates
- Implications for markets, utilities, and policy makers

Who should read these reports?

- Utilities
- Government energy and environmental agencies
- State regulators and policy makers
- Energy Service Companies (ESCOs)
- Demand Response (DR) service and technology providers
- Energy management service and technology providers
- Motor, compressor, and compressed air systems service and technology providers
- Energy efficiency equipment vendors
- Climate and environmental NGOs and think tanks
- Investor community

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U.S. Industrial Motor Systems Energy Efficiency Reports Covering 30 States:

- Energy-Efficiency Potential in Industrial **Compressed air systems** in the U.S. States listed below (separate report for each region)
- Energy-Efficiency Potential in Industrial **Fan** Systems in the U.S. States listed below (separate report for each region)
- Energy-Efficiency Potential in Industrial **Pump** Systems in the U.S. States listed below (separate report for each region)

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No.	Regions/ States	No.	Regions/ States
	Northeast Region		**South Atlantic Region**
1	Massachusetts	20	Florida
2	New Hampshire	21	Georgia
3	New Jersey	22	North Carolina
4	New York	23	South Carolina
	East North Central Region		Virginia
5	Illinois		**East South Central Region**
6	Indiana	24	Alabama
7	Michigan	25	Kentucky
8	Ohio	26	Tennessee
9	Wisconsin		**West South Central Region**
	West North Central Region	27	Arkansas
10	Iowa	28	Louisiana
11	Kansas	29	Oklahoma
12	Missouri	30	Texas
13	Nebraska		
14	South Dakota		
15	**West Region**		
16	Montana		
17	Arizona		
18	California		
19	Washington		

Table of Content and List of Figures and Tables for a Sample report:

Energy-Efficiency and GHG Emissions Reduction Potential in Industrial Compressed Air Systems in the Western U.S. States of Arizona, California, Montana, and Washington

Table of Contents for Sample Report Covering Western U.S. States

List of Figure for Sample Report Covering Western U.S. States

List of Tables for Sample Report Covering Western U.S. States

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