

2016 SUSTAINABILITY RESEARCH SUMMARY

ANNUAL REVIEW AND REPORT INDEX

*Helping electric power companies
develop and advance sustainability
planning and implementation*



TABLE OF CONTENTS

SUSTAINABILITY BY THE NUMBERS	5	SUSTAINABLE ELECTRICITY: CASE STUDIES FROM ELECTRIC POWER COMPANIES IN NORTH AMERICA	15
2016 COLLABORATING COMPANIES	6	SUSTAINABILITY ABSTRACT INDEX	16
INTRODUCTION	7	METRICS TO BENCHMARK SUSTAINABILITY PERFORMANCE FOR THE ELECTRIC POWER INDUSTRY (3002007228)	16
IDENTIFY ISSUES	8	SUSTAINABILITY REPORTING TRENDS IN THE ELECTRIC POWER INDUSTRY (3002006996)	16
2016 ACHIEVEMENTS	8	THE ELECTRIC POWER INDUSTRY BUSINESS CASE FOR SUSTAINABILITY: LITERATURE REVIEW AND EXECUTIVE RATIONALE (3002005759)	17
A LOOK AHEAD.....	8	EVALUATION OF WATER MANAGEMENT METRICS FOR THE ELECTRIC POWER SECTOR (3002006245)	17
DETERMINE MATURITY AND GOALS	9	SUSTAINABILITY METRIC COMPILATION FOR THE ELECTRIC POWER INDUSTRY: RESULTS OF INDUSTRY INTERVIEWS AND METRIC DATABASE DEVELOPMENT (3002004255)	18
2016 ACHIEVEMENTS	9	SUSTAINABILITY METRICS DATABASE V2014 (3002004336) ..	18
A LOOK AHEAD.....	9	EPRI JOURNAL, SUMMER 2014 (3002004171).....	18
MEASURE AND MANAGE PERFORMANCE	10	PROGRAM ON TECHNOLOGY INNOVATION: ELECTRIC POWER SUSTAINABILITY MATURITY MODEL PHASE I (3002002302)	19
2016 ACHIEVEMENTS	10	MATERIAL SUSTAINABILITY ISSUES FOR THE NORTH AMERICAN ELECTRIC POWER INDUSTRY: RESULTS OF RESEARCH WITH ELECTRIC POWER COMPANIES AND STAKEHOLDERS IN THE UNITED STATES AND CANADA (3002000920).....	19
A LOOK AHEAD.....	10		
BENCHMARK WITH PEERS	12		
2016 ACHIEVEMENTS	12		
A LOOK AHEAD.....	12		
REPORT AND ENGAGE STAKEHOLDERS	14		
2016 ACHIEVEMENTS	14		
A LOOK AHEAD.....	14		

SUSTAINABILITY MEMBERS AND STAKEHOLDERS –

Welcome to the 2016 Sustainability Research Annual Review and Report Index. This review summarizes the sustainability research results and activities in 2016 and plans for 2017, and also provides a report index for easy reference.

This past year I had the opportunity to take leadership of EPRI's Sustainability research, and I am grateful for the chance to better understand why sustainability is such a critical consideration for the electric power industry. The concept of balancing economic, social, and environmental considerations is clearly integral to the industry's core mandate to deliver electricity that is safe, reliable, affordable, and environmentally responsible.

EPRI's portfolio of sustainability research helps electric power companies develop and improve their sustainability planning and implementation through focused research projects and sharing best practices. This work focuses on identifying priority sustainability issues for the electric power industry and developing tools to help companies determine their maturity and goals, measure and manage performance, benchmark with peers, and report to and engage with stakeholders.

We work closely with electric sector sustainability advisors and subject matter experts to inform our research. We also engage regularly with sustainability professionals and industry stakeholders to ensure our research addresses key issues and priorities. EPRI's collaborative model is a natural fit for the exploration of sustainability and we relish our role supporting the sustainable electricity conversation.

This year we also made great strides on EPRI's Corporate Social Responsibility (CSR) initiative led by Jessica Fox. EPRI's first ever CSR Report ([3002009280](#)) was published in 2016, outlining our own focus on communities, employees, operations, and research within EPRI's public benefit mission.

Finally, a thank you to the team of experts we have throughout EPRI contributing to our sustainability research. Last year, Morgan Scott took over management of the Energy Sustainability Interest Group and Sustainability Benchmarking for Utilities project, as Jessica Fox moved into her new role leading the Water and Ecosystems group. We want to thank Jessica for her years of commitment and the rigor she brought to the sustainability work, and we are lucky to still have her as an expert technical resource as we move forward. We also appreciate the leadership provided by Anda Ray, EPRI's Chief Sustainability Officer and executive champion for this work.

I'm proud of all that we've accomplished this year in collaboration with so many in the electric power industry and look forward to seeing the work continue to develop in the years to come. As we think about the future of the industry as it responds to changing customer trends and technological innovations, it's critical to understand the economic, environmental and societal impacts that result. I invite you to join us on this research journey; please reach out to anyone on our sustainability team or email sustainability@epri.com to learn more about how you can get further engaged.

BILL GOULD | *Director, Strategic Analysis, Safety, and Sustainability*

FOR THE PURPOSES OF THIS RESEARCH, SUSTAINABILITY IS DEFINED AS THE MANAGEMENT AND BALANCE OF ENVIRONMENTAL, SOCIAL, AND ECONOMIC ISSUES THAT CONTRIBUTES TO THE LONG-TERM VIABILITY OF ELECTRIC POWER COMPANIES THEMSELVES AND/OR THEIR STAKEHOLDERS, TODAY AND FOR FUTURE GENERATIONS.

METRICS TO BENCHMARK SUSTAINABILITY PERFORMANCE FOR THE ELECTRIC POWER INDUSTRY ([3002007228](#)), 2016

SUSTAINABILITY BY THE NUMBERS



OUR COLLABORATORS

OUR TECHNICAL WORK

OUR ENGAGEMENT

2016 COLLABORATING COMPANIES

The following companies participate in either the Energy Sustainability Interest Group or Sustainability Benchmarking for Utilities Project:



INTRODUCTION

EPRI's sustainability research helps electric power companies develop and improve their sustainability planning and implementation through focused research projects and sharing best practices. The work focuses on identifying priority sustainability issues for the electric power industry and developing tools to help companies determine their maturity and goals, measure and manage performance, benchmark with peers, and report to and engage with stakeholders.

Two EPRI projects are helping electric power companies strengthen their sustainability efforts. The Energy Sustainability Interest Group (ESIG) was launched in 2008 and focuses on helping members develop a foundation for building and advancing their sustainability programs and implementing sustainability initiatives through technical research, best practice sharing, and facilitating stakeholder engagement. Each year, more than 40 utility members work together through workshops, webcasts and working groups. ESIG had two co-chairs in 2016: Doug Tamboer of Consumers Energy and Kerry-Jane King of the New York Power Authority.

The Sustainability Benchmarking for Utilities project complements and builds off ESIG's work. The project was formed in 2015 and has more than 30 members using EPRI's online platform to submit sustainability performance data and benchmark their performance against peers. Members collaborate through webcasts and an annual Benchmarking Forum.

“**ESIG PROVIDES THE MECHANISM NEEDED TO KEEP THE ELECTRIC POWER INDUSTRY MOVING AHEAD TOGETHER ON THE SUSTAINABILITY FRONT. EACH YEAR BRINGS NEW VALUE FOR ME PERSONALLY AND FOR MY COMPANY.**

DOUG TAMBOER

| Consumers Energy
ESIG Chair 2015 – 2016”



ESIG members convene for a Spring and Fall workshop each year. The 2016 workshops were hosted by Salt River Project in Tempe, Arizona and by Hoosier Energy in Bloomington, Indiana.

IDENTIFY ISSUES

EPRI's sustainability collaborators represent a diverse group of North American electric power companies with different business models, geographic regions, and customers. Arriving at a consensus on priority issues that affect most or all of the electric sector helps companies focus their sustainability efforts and engage with stakeholders. To facilitate these activities, a key component of EPRI's sustainability research is identifying existing and emerging priority issues for the electric power sector.

In a landmark study published in 2013 (EPRI report [3002000920](#)), 15 priority issues were identified for the electric power industry through a survey and interviews with the electric power industry and its stakeholders. The 15 issues were grouped into the sustainability pillars of Economic, Social, and Environmental and framed in the context of the overall industry goals of providing safe, reliable, and affordable electricity.

2016 ACHIEVEMENTS

- Launched new project to reexamine the original 15 priority issues to determine if they are still relevant, refine definitions, and identify any new issues.
- Completed literature review, electronic surveys of stakeholders at ESIG member companies, and telephone interviews with more than 35 industry stakeholders.

A LOOK AHEAD

The final phase of the priority issues project launches in 2017 with an electronic survey for electric power companies and their stakeholders. The feedback obtained will be analyzed and integrated into the study to arrive at a suite of priority issues and definitions. EPRI expects to publish a report detailing the results in 2017.



DETERMINE MATURITY AND GOALS

Electric power companies are at different stages in their sustainability journey. Some are just beginning to explore how sustainability fits into their business, while others have well-developed sustainability programs embedded into their corporate structures and cultures. Companies need tools to evaluate their maturity, allowing them to better understand where focus is needed and to set goals that accelerate their sustainability progress.

In 2013, EPRI began developing its Electric Power Sustainability Maturity Model (EPSMM) software tool that evaluates company sustainability progress and gain consensus around specific sustainability goals (EPRI report [3002002887](#)). The EPSMM includes four sustainability domains that align with four of the priority issues: Water Availability, Greenhouse Gases, Energy Affordability, and Energy Reliability — as well as four cross-domain threads — Strategy, Implementation, Measuring Results, and Shared Value.

2016 ACHIEVEMENTS

- Developed Air domain.
- Began development of Habitat and Biodiversity domain.

A LOOK AHEAD

The Air domain will be pilot tested with an ESIG member in 2017. The EPSMM will be further augmented in 2017 with the completion of the Habitat and Biodiversity domain and possibly additional domains.

Model Framework			GHGs	Affordability	Water Availability	Reliability
Domains						
MATURITY LEVELS	5	Achieving sustainability	<ul style="list-style-type: none"> • Strategy is continuously improved and re-imagined • Developing innovative solutions to new and future challenges • Measured progress of metrics suggests sustainability is achieved • Achieving benefits of shared value both internally and externally 			
	4	Optimizing for sustainability	<ul style="list-style-type: none"> • Strategy is implemented and optimized, as necessary • Actions and solutions now integrated across the business units • Measuring widespread results • Realizing early benefits of shared value 			
	3	Managing toward sustainability	<ul style="list-style-type: none"> • Implementation of strategy is well underway • Actions and solutions are deployed in relevant business units • Beginning to achieve measurable results • Initiating specific shared value activities 			
	2	Initiating sustainability	<ul style="list-style-type: none"> • Developing vision, strategy and setting objectives • Researching and testing possible actions or solutions • Establishing metrics for measuring progress • Planning for shared value 			
	1	Awareness of the issue	<ul style="list-style-type: none"> • Acknowledgment that there is an issue deserving a strategy • Compiling possible actions & solutions • Collecting data to understand current performance • Considering opportunities for shared value 			

Red text = Measuring results
 Green text = Shared Value
 Blue text = Strategy
 Brown text = Implementation

MEASURE AND MANAGE PERFORMANCE

As electric power companies assess their maturity and set goals, they must also develop ways to measure their performance against these goals. A key component of measuring performance is deciding what metrics to use. EPRI used the 15 priority issues identified in 2013 as the foundation of research to identify the metrics the electric power industry is using to report on sustainability performance. The research identified 448 metrics across the priority issues and culminated in the 2014 publication of *Sustainability Metric Compilation for the Electric Power Industry* (EPRI report [3002004255](#)).

In 2015, the list of 448 metrics was refined to 77 appropriate for benchmarking performance of electric power companies across 11 of the 15 priority issues. The metrics resulting from this ongoing research can be used by electric power companies as the basis of reporting on sustainability performance to various reporting organizations, shareholders, and stakeholders as well as for benchmarking against industry peers.

2016 ACHIEVEMENTS

- Published *Metrics to Benchmark Sustainability Performance for the Electric Power Industry* (EPRI report [3002007228](#)) a publicly available report that details the process for identifying, defining, and refining the metrics.
- Continued refinement of the list of 77 metrics, arriving at 97 across 11 of the 15 sustainability issues.
- Conducted research to begin identifying metrics for the Affordability priority issue.

A LOOK AHEAD

The current list of 97 metrics will be refined in early 2017 and finalized at the ESIG Spring workshop in April. Additional metrics may be developed if new priority issues are identified. EPRI also anticipates a 2017 publication to review results of the 2016 metric refinement process.

SUSTAINABILITY PILLAR	SUSTAINABILITY ISSUE	ORIGINAL METRICS IDENTIFIED	2015 METRICS FOR BENCHMARKING	2016 METRICS FOR BENCHMARKING
ENVIRONMENTAL	Greenhouse gas emissions	78	11	12
	Reductions of other air emissions	35	16	17
	Water quality	24	2	5
	Water availability	64	2	7
	Habitat protection and biodiversity	17	2	2
	Waste management	31	7	12
SOCIAL	Employee safety and health	20	7	7
	Public safety and health	24	4	4
	Job satisfaction	12		
	Community support and economic development	20	6	7
	Engagement and collaboration	10		
ECONOMIC	Energy reliability	71	4	4
	Energy affordability	2		
	Skilled workforce availability	8	14	17
	Economic viability of electric utilities	32		
ADDITIONAL METRICS	Reportable Environmental Events*	N/A	2	3
TOTAL	15	448	77	97
* Reportable Environmental Events was not identified as a sustainability issue and was therefore not evaluated in 2014 metrics research. However, during the metrics refinement effort, the need for a rolled up metric for all environmental violations and associated fines was identified and metrics created to meet that need				

BENCHMARK WITH PEERS

EPRI's Sustainability Benchmarking for Utilities project focuses on using the metrics developed through ESIG research for benchmarking sustainability performance. The Benchmarking project provides funders with the opportunity to annually submit data using an EPRI-developed benchmarking database, run customized reports that benchmark performance with all companies or a filtered peer group, and attend an annual Benchmarking Forum.

A steering committee provides oversight for the project. The committee worked closely with EPRI to develop enhancements to the benchmarking database and plan the 2016 Benchmarking Forum. Their leadership efforts were recognized by EPRI through a Technology Transfer award. Steering committee members in 2015 and/or 2016 included:

- Sandy Nessing – *American Electric Power*
- Anand Yegnan – *Dominion*
- Patricia Ireland – *DTE Energy*
- Michelle Abbott – *Duke Energy*
- Rick Johnson – *Entergy*
- Lee Matthews – *Tennessee Valley Authority*
- Al Picardi – *Exelon*

2016 ACHIEVEMENTS

- Launched Database 2.0 with enhancements that included the ability to add quartile lines to graphs, change the graphing scale, and new graphs including a Company Trend graph and Industry Trend graph. Also added were "Methods of Data Preparation" (MDPs), which allow to identify for each data point whether it is Third-Party Verified, Internally Prepared, or a Best Estimate. The benchmarking graphs are color-coded accordingly.
- Held 2016 Benchmarking Forum in October hosted by Hoosier Energy in Bloomington, IN. Highlights included panel discussions on the benchmarking process, roundtable discussions of metrics and database enhancements, a sustainable energy stakeholder panel, presentations on member best practices, and a discussion of plans for 2017.

A LOOK AHEAD

- In 2017, the Benchmarking project will focus on further enhancements to the Benchmarking database and incorporate the 2017 list of metrics once refinements have been finalized through ESIG.

“

THE STEERING COMMITTEE SEEKS TO TAKE THE ‘PULSE’ OF MEMBERS TO UNDERSTAND WHAT IS IMPORTANT TO THEM AND PROVIDE A FORUM FOR LEARNING AND SHARING.

SANDY NESSING | American Electric Power

IT’S BEEN AN HONOR TO BE ON THE STEERING COMMITTEE TO HELP GUIDE THIS PROJECT.

MICHELLE ABBOTT | Duke Energy

AS AN INDUSTRY, WE CAN EVALUATE TRENDS OVER TIME TO HELP UNDERSTAND THE INDUSTRY’S FOOTPRINT.

RICK JOHNSON | Entergy

THIS PROJECT HELPS THE INDUSTRY UNDERSTAND THE OVERALL TRENDS IN KEY SUSTAINABILITY INDICATORS AND WORK TOWARD CONTINUOUS IMPROVEMENT.

ANAND YEGNAN | Dominion

THE STEERING COMMITTEE REPRESENTS A DIVERSE SET OF PERSPECTIVES YET HAS A COMMON MISSION TO HELP OUR INDUSTRY ADVANCE SUSTAINABLE PERFORMANCE.

LEE MATTHEWS | Tennessee Valley Authority

”

REPORT AND ENGAGE STAKEHOLDERS

Facilitating stakeholder communication and engagement is one of the key benefits members derive from participating in ESIG and the Benchmarking project. EPRI research looks to identify trends related to sustainability reporting in consideration of a growing number of disclosure requests electric power companies receive from various stakeholders. Additionally, the collaborative EPRI model provides an ideal platform to elevate the dialogue related to sustainable electricity.

2016 ACHIEVEMENTS

Several efforts helped enhance reporting and engaging with stakeholders:

- Building on the results of a 2014 survey, a Sustainability Reporting Trends survey was fielded to understand the frequency and value of ESIG members' corporate sustainability reporting activities. Information collected regarding sustainability reporting included the type and frequency, drivers and considerations, efforts expended and value received, and any barriers that may affect whether and to what extent they engage in reporting.
- Held 21 ESIG member webcasts which included updates on technical work, member best practice sharing, and guest speakers.
- EPRI's ENV-VISION conference is an international electricity sector conference addressing current and future environmental challenges facing the electricity sector by identifying knowledge gaps

and defining research needed to solve those challenges. The 2016 conference included a Sustainability Track designed to share perspectives on what "Sustainable Electricity" means; create a shared vision for the 2050 Sustainable Power System; and brainstorm research and tools needed to meet the 2050 vision.

- In addition to the regular webcasts for ESIG and Sustainability Benchmarking for Utilities members, EPRI launched a series of public webcasts in 2016. Three public webcasts were held in 2016:
 1. Sustainable Electricity — What are we Really Talking About?
 2. The Reality of Realizing Change: Case Studies from Industry Leaders
 3. The Right Metrics to Benchmark Sustainability for the Electric Power Industry

Webcast recordings can be found on www.epri.com/sustainability.

A LOOK AHEAD

- EPRI will field the Sustainability Reporting Trends survey in early 2017 and will publish a report detailing results and insights gained from the survey.
- EPRI will begin compiling Sustainable Electricity Volume II in 2017, which will explore the tradeoffs electric power companies must consider and make in the journey toward sustainable electricity.
- The public webcast series will continue as a way to share emerging sustainability research with electric power industry stakeholders.

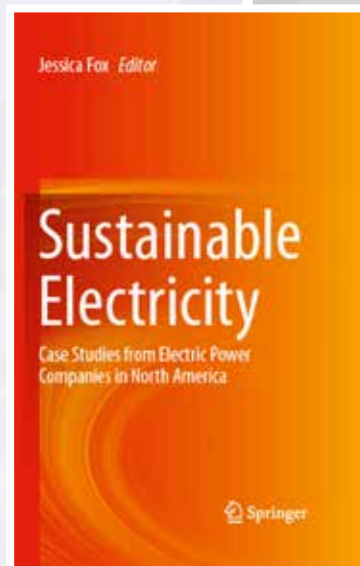
SUSTAINABLE ELECTRICITY:

CASE STUDIES FROM ELECTRIC POWER COMPANIES IN NORTH AMERICA

This book is the first-ever compilation of industry-authored case studies on how power companies are making strides towards achieving sustainable electricity. Twelve ESIG members contributed chapters. The book provides real-word examples of how electric power companies in North America are realizing their visions for sustainable electricity. Volume II of Sustainable Electricity will include perspectives from electric power companies, electric customers, non-governmental organizations, and investors.

SUSTAINABILITY ELECTRICITY AUTHORS

American Electric Power
BC Hydro
CPS Energy
ConEdison
DTE Energy
Duke Energy
Energy
Exelon
Hoosier Energy
Los Angeles Department of Water & Power
Southern California Edison
Tennessee Valley Authority



“MAKING DECISIONS THAT SATISFY REGULATORS, MEET SHAREHOLDERS’ DEMANDS, RESPOND TO COST-CONSCIOUS CUSTOMERS, AND BALANCE CONFLICTING DEMANDS FROM ENVIRONMENTAL GROUPS IS NO EASY TASK. IT IS NOT SURPRISING THAT THE NEED TO RESPOND EFFECTIVELY TO ALL THESE PERSPECTIVES HAS PARALYZED MANY COMPANIES. WHAT WILL MOVE US ALONG THEN? BOOKS LIKE THIS THAT GET TO THE HEART OF THE REAL CHALLENGES ASSOCIATED WITH SUSTAINABILITY.”

JANET RANGANATHAN

Vice President for Science
and Research, World
Resources Institute

SUSTAINABILITY ABSTRACT INDEX

Full reports are linked and can also be found at www.epri.com using the report number as the search term.

METRICS TO BENCHMARK SUSTAINABILITY PERFORMANCE FOR THE ELECTRIC POWER INDUSTRY (3002007228)

As the electric power industry continues to mature in its effort to integrate sustainability strategically into business plans and operations, the need for a way to quantify and benchmark performance is becoming more prevalent. There is also a growing expectation from stakeholders that companies disclose performance publicly, making a consistent approach to measurement that applies across this diverse industry even more critical.

Prior EPRI research identified 15 priority issues across the 3 pillars of sustainability—environmental, social, and economic—as well as 448 metrics that the electric power industry was being requested to voluntarily report. The research discussed in this report focused on refining the list of 448 metrics to a more manageable number that would be appropriate for benchmarking the sustainability performance of the electric power industry. The refinement process resulted in 77 metrics across 11 of the 15 sustainability issues and reportable environmental events.

The report provides an overview of the research goals and the metric refinement process, and summarizes the cross-cutting learnings from the metrics identification, data collection, and benchmarking efforts. These learnings highlight that the process of identifying metrics to benchmark sustainability performance for the electric power industry is one that will likely evolve.

SUSTAINABILITY REPORTING TRENDS IN THE ELECTRIC POWER INDUSTRY (3002006996)

The realm of voluntary sustainability reporting has seen significant growth over the past five years. An expanding number of organizations are requesting disclosure on environment, social, and governance (ESG) topics from the electric power industry, among many others. With the increasing interest in this area, companies may wish to strategically identify sustainability reporting venues that provide them with the highest value at the lowest cost.

EPRI's Energy Sustainability Interest Group (ESIG) identified a need to understand current and anticipated sustainability reporting activities, including the value received and effort required. EPRI developed an electronic survey for ESIG in 2014, and 40 companies responded to the survey. This report contains an overview of the survey goals and methodology, presents the survey results, and discusses implications and insights arising from the results.

To EPRI's knowledge, this is the first time that this type of information regarding current practices in sustainability reporting has been compiled for the electric power industry. Understanding the value of reporting as well as the frequency and trends of the industry's sustainability reporting activities can better inform a company looking to determine its own approach to ESG disclosure.

THE ELECTRIC POWER INDUSTRY BUSINESS CASE FOR SUSTAINABILITY: LITERATURE REVIEW AND EXECUTIVE RATIONALE (3002005759)

Electric power companies face varying degrees of external and internal demand for sustainability action. EPRI's Electric Sustainability Interest Group (ESIG) has considered the most compelling business case for sustainability for the electric power industry. This report systematically considers this question through 1) a literature review on the business case for corporate sustainability with specific call-outs related to the electric power industry, and 2) a summary to inform executive decision making regarding sustainability.

Research revealed numerous academic studies finding correlations between sustainability and cost of capital, market performance, and accounting performance. The business case for sustainability from the research can be summarized into three general opportunities: saving money, making money, and managing risk.

This report is intended to answer the following broad questions within the electric power sector:

- Is corporate sustainability linked to financial performance?
- What is the return on investment (ROI) for specific sustainability actions?
- What is the most compelling evidence for executive decision makers that sustainability is valuable?

EVALUATION OF WATER MANAGEMENT METRICS FOR THE ELECTRIC POWER SECTOR (3002006245)

Electric power companies are increasingly being asked to respond to voluntary water-use disclosure requests from investors, non-governmental organizations (NGOs), and other interested stakeholders. These requests are not typically tailored to water use in the electric power sector, and they can be challenging to address. Electric utilities can also use water metrics for internal performance-assessment and planning purposes. This research addresses the development of a set of scientifically-based water metrics that can enable electric utilities to consistently measure and report their water use and practices to a variety of audiences.

The application of water management metrics is not one-size-fits-all. It is expected that companies may find that a subset of water metrics from the set provided is applicable and useful, whereas the other metrics are not relevant to their organization or audience. Tier 1 metrics, which relate to identification of water-stress conditions and water-related risk, can be calculated for multiple facilities and aggregated through a "heatmap" analysis. The calculated value for each of the metrics can be compared against relevant thresholds, and the rankings of low, medium, and high risk can then be visualized across all facilities. Tier 2 metrics may be appropriate for providing context, for internal or external benchmarking, or for communicating with stakeholders.

SUSTAINABILITY ABSTRACT INDEX (CONT.)

SUSTAINABILITY METRIC COMPILATION FOR THE ELECTRIC POWER INDUSTRY: RESULTS OF INDUSTRY INTERVIEWS AND METRIC DATABASE DEVELOPMENT ([3002004255](#))

This report presents research results regarding sustainability-related metrics used in the electric power industry. Metrics are defined as units for measuring performance or status. Specifically, the research was directed at identifying a comprehensive set of metrics applicable to both domestic and international electric utilities. Sustainability was defined as being related to 1 of 15 issues identified as part of the Electric Power Research Institute's (EPRI's) 2013 report, *Material Sustainability Issues for the North American Electric Power Industry* ([3002000920](#)).

The research team collected information from two broad sources. First, data were collected from 29 interviews with EPRI Energy Sustainability Interest Group (ESIG) participants located in the United States and Canada. Second, metrics were identified by reviewing a wide range of third-party sources that track, assess, and report on companies' sustainability performance. This included industry benchmarking programs such as the Dow Jones Sustainability Index, the Climate Registry, the Global Reporting Initiative, and Carbon Disclosure Project (both Climate Change and Water), among others. Regulatory laws and policies such as the Clean Water Act and Endangered Species Act were not reviewed.

During the interviews, ESIG participants were asked a series of questions regarding the benefit and purpose of using metrics for tracking broader sustainability performance, and they were asked to provide feedback on any changes that should be made to the methods for compiling the aggregated list of currently used metrics. During the course of the research, 448 specific metrics were identified.

To EPRI's knowledge, this project represents the most extensive effort to date to compile this type of information for the electric power industry. The research has value for assessing sustainability metrics for the industry, whether for benchmarking, communicating with stakeholders, or setting targets.

SUSTAINABILITY METRICS DATABASE V2014 ([3002004336](#))

Database of sustainability metrics currently in use. Benefits and value:

- Comprehensive summary of sustainability metrics.
- Links metrics to uses and purposes.
- Allows users to sort metrics based on their needs.

EPRI JOURNAL, SUMMER 2014 ([3002004171](#))

The *EPRI Journal* is the flagship publication of the Electric Power Research Institute. The Summer 2014 issue includes a cover story on the smart inverters as well as features on plant health maintenance software, advancing sustainability at utilities, and changing mission profiles for power plants.

PROGRAM ON TECHNOLOGY INNOVATION: ELECTRIC POWER SUSTAINABILITY MATURITY MODEL PHASE I ([3002002302](#))

This report details the initial phase of development of the Electric Power Sustainability Maturity Model (EPSMM). This phase of development defined the structure of the model, identified methods for implementation, and built four specific domains: Water Availability, Greenhouse Gases, Affordability, and Reliability. The report details the first four domains, describes the methods used to develop the domains, and provides examples of the maturity model and dashboards that provide an “at a glance” assessment of an organization’s maturity.

MATERIAL SUSTAINABILITY ISSUES FOR THE NORTH AMERICAN ELECTRIC POWER INDUSTRY: RESULTS OF RESEARCH WITH ELECTRIC POWER COMPANIES AND STAKEHOLDERS IN THE UNITED STATES AND CANADA ([3002000920](#))

This report presents results of research regarding sustainability issues faced by the electric power industry. Specifically, the research effort was directed toward identifying which sustainability issues affecting the power companies in North America are considered to be the most relevant, or material, and gathering perspectives on those issues from the industry and its stakeholders.

The research team collected information from three sources: direct interviews with utility managers and stakeholder representatives, a literature search, and an electronic survey completed by 134 electric power company managers and 160 stakeholders at government, private sector, non-profit, environmental, and academic organizations.

Fifteen issues, identified during the interviews and literature search as being most material to sustainability, were grouped into the “three pillars” (environmental, social, and economic) of sustainability. In the electronic survey, respondents were asked a series of questions regarding the fifteen issues, as well as questions about transparency and reporting of sustainability priorities and metrics.

To EPRI’s knowledge, the project represents the most extensive effort to date to acquire this type of information, which has potential value for advancing corporate strategies regarding sustainability.

CONNECT WITH US

WEBSITE | www.epri.com/sustainability

EMAIL | sustainability@epri.com

EPRI RESEARCH STAFF

ANDA RAY | *Senior Vice President, Environment & External Relations, Chief Sustainability Officer*

BILL GOULD | *Director, Strategic Analysis, Safety and Sustainability*

MORGAN SCOTT | *Technical Leader, Sustainability*

JESSICA FOX | *Senior Program Manager, Water and Ecosystems*

ANDREW HAN | *Senior Software Developer*

SYDNEY BLOOM | *Project Operations Coordinator*

BECCA MADSEN | *Technical Leader, Water and Ecosystem Resources*

GERALD GRAY | *Program Manager, Information and Communication Technologies*

The Electric Power Research Institute, Inc.

(EPRI, www.epri.com) conducts research and development relating to the generation, delivery and use of electricity for the benefit of the public. An independent, nonprofit organization, EPRI brings together its scientists and engineers as well as experts from academia and industry to help address challenges in electricity, including reliability, efficiency, affordability, health, safety and the environment. EPRI also provides technology, policy and economic analyses to drive long-range research and development planning, and supports research in emerging technologies. EPRI members represent 90% of the electric utility revenue in the United States with international participation in 35 countries. EPRI's principal offices and laboratories are located in Palo Alto, Calif.; Charlotte, N.C.; Knoxville, Tenn.; and Lenox, Mass.

©2017 Electric Power Research Institute (EPRI), Inc. All rights reserved. Electric Power Research Institute, EPRI, and TOGETHER... SHAPING THE FUTURE OF ELECTRICITY are registered service marks of the Electric Power Research Institute.

♻️ Printed on recycled paper in the United States of America

3002009562