

Mr. David Post  
Director of Research  
Sustainability Accounting Standards Board  
1045 Sansome Street, Suite 450  
San Francisco, CA 94111

**Re: Comments on SASB's Sustainability Accounting Standard for Electric Utilities (SICS IF0101)**

Dear Mr. Post:

The Sierra Club is pleased to submit its comments on SASB's *Sustainability Accounting Standard for Electric Utilities* (SICS IF0101). These comments are based on a review of the 2017 *Proposed Changes to Provisional Standards, Exposure Drafts, Redline of Standards for Public Comment, Electric Utilities & Power Generators* (Redline Draft);<sup>1</sup> the March, 2016 *Provisional Standards* (Provisional Standards); the SASB *Conceptual Framework*; SEC Concept Paper *Business and Financial Disclosure Required by Regulation S-K*, Release No. 33-10364 and other materials referenced herein. The Sierra Club notes that three significant trends have emerged in the electric generation industry that warrant specific discussion and inclusion in the Guidance: (1) the impact of continued low natural gas prices associated with nonconventional natural gas production on the ongoing viability of a number of coal-fired electric generating units (EGUs), (2) the impact of dramatically lower costs for wind and solar generation on the viability of a number of fossil-fuel fired EGUs, and (3) ongoing technical development, cost reduction and regulatory action related to storage of electricity.

We have provided detailed comments and suggestions for language change in our markup of the Redline Draft (Markup), attached hereto. The following general comments provide context and our reasons for the changes suggested in the Markup.

**GENERAL COMMENTS**

**1. Distinction between facts and opinion, and the problem of generic disclosure.** Under the Supreme Court's definition of materiality used in the *Redline Draft*, information is material if there is "a substantial likelihood that the disclosure of the omitted *fact* would have been viewed by the reasonable investor as having significantly altered the 'total mix' of information made available." (emphasis provided). Many of the potential risks in the Electric Utility sector are susceptible to future market conditions and regulatory actions about which different evaluators may have different opinions. A company may opt to share its **opinion** about the likelihood of certain events occurring in the future, but such opinions should be separate from disclosure of the relevant **facts** that are known (or knowable) at the time of disclosure. In several instances the *Redline Draft* recommends that a registrant "discuss" certain relevant issues, such as Renewable Performance Standard (RPS) obligations.<sup>2</sup> Such a discussion may indeed be helpful in placing the relevant facts in context, but the SASB should underscore that such explanations are in addition to, not in *lieu of*, providing the relevant facts.

A number of companies now routinely disclose that a number of broad topics, including climate change, government regulations, fuel prices, weather and other factors that may materially affect their financial condition or operating performance. Such generic disclosures do not provide the kind of information that would allow investors to understand the unique ways these risks could impact an individual company, or to make a peer-to-peer comparison of companies within a

<sup>1</sup> Because the "Redline Draft" does not appear to revise the March 2016 Provisional Standard, our redline comments submitted as Attachment 1 compares both the *Redline Draft* and the *Provisional Standard*.

<sup>2</sup> See, e.g., Note to IF0101-03

particular industry. We suggest that disclosures should include sufficient **facts** to allow a reasonable investor to understand the degree of potential risk and to conduct a peer-to-peer comparison of the company and its competitors. *The Sierra Club therefore recommends that the Guidelines be revised (1) to emphasize that the purpose of the disclosure is to provide **timely and relevant facts that may be useful to investors** and (2) to provide specific examples to assist investors in assessing sustainability topics.*

**2. “Shall” versus “Should”.** The *Redline Draft* offers the following distinction: “[t]he term “shall” is used throughout this document to indicate those elements that reflect requirements of the Standard. The terms “should” and “may” are used to indicate guidance, which, although not required, provides a recommended means of disclosure.”

A number of the recommendations in the *Redline Draft* – which is itself styled as “Guidance” – fall within the “should” category.<sup>3</sup> The use of “guidance within guidance,” rather than simply setting out the requirements of the Guidance, is confusing at best, and may create unintended opportunities for “greenwashing” where a registrant meets only those items in the “shall” category and claims to have met SASB Guidelines. Throughout our comments, we have replaced “should” with “shall” where we believe the item is an essential component of the Guidelines. This does not mean that registrants must disclose each such item where disclosure would not provide additional material information.<sup>4</sup>

## TOPICS

**1. Transmission and Distribution.** Increasingly, transmission and distribution (T&D) issues have come to the fore, both in terms of cost and public interest. It is well recognized that transition to a new energy economy will necessitate substantial investment in transmission capacity. Yet the *Redline Draft* does not include a topic that clearly covers T & D issues. T& D losses degrade the efficiency of the entire system and raise both the cost of electricity and the environmental impact of providing it. The rapid growth of wind power in Texas resulted from that state’s decision to bring transmission capacity to the areas with the most robust wind resource. However, new transmission lines, especially high voltage long distance transmission lines have their own environmental and social issues. Poorly considered new transmission capacity can be disruptive and controversial.<sup>5</sup>

Events over the past year have demonstrated the potential for risk to T&D assets and shareholder value from extreme hurricanes and from wildfires.<sup>6</sup> These risks can be expected to become greater over time as a result of climate change and so, the extent to which the registrant is managing these risks is material.

For these reasons we suggest that transmission and distribution issues be specifically identified as a topic. We recommend that these issues be incorporated in the “Community Impacts” topic - and that, among other things, the intended purpose of the line (facilitating renewable energy rather than fossil fuel-fired energy) and impacts on local and migratory wildlife, be disclosed.

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<sup>3</sup> Thus, for example, a registrant would meet the GHG disclosure requirements of the *Redline Draft* simply by putting forth three numbers – (1) gross Scope 1 GHG emissions (total for all of its covered operations - in metric tons); (2) percentage covered by GHG emission limiting regulations; and (3) percentage covered by GHG emission reporting regulations. Disclosure of changes in GHG emissions over time, the reasons for such changes and the calculation methodology used to determine Scope 1 GHG emissions fall within the category of “should” and therefore need not be disclosed.

<sup>4</sup> For example, where a registrant discloses that a particular unit will be closed in the near future, information about the potential risk of closure – market forces, pollution control status, and impact on attainment with NAAQS – is superfluous and need not be separately disclosed. In such instances, however, disclosure of closure costs, bonding and worker retraining/resettlement issues should be provided.

<sup>5</sup> Such as Dominion Energy’s decision to site a new transmission line in a location that contains habitat for an endangered species and that impacts historic areas in Jamestown, Virginia.

<sup>6</sup> Including potential liability to third parties for wildfires occasioned by T&D lines.

**2. Nuclear plants.** Operational issues and market forces have led to a renewed interest by the public and investors in the risks associated with nuclear generating units. The limited availability of commercial insurance, the very large potential cost of an accidental release from a nuclear unit, and the lack of options for long term waste storage all suggest a need for fuller disclosure of nuclear power risks than the *Redline Draft* requires. We recommend that operators disclose whether they have taken the preventative actions recommended by the NRC’s task force, but not yet required by the government;<sup>7</sup> the amount of waste materials stored onsite; any violations of NRC regulations; license renewal dates and associated costs and closure and post-closure issues.

**3. Lobbying and advocacy.** Within the “*Management of the Legal and Regulatory Environment*” topic, we recommend that registrants disclose their membership and expenditures associated with advocacy groups that promote accommodating our changing energy profile, such as the American Council for an Energy Efficient Economy (ACEEE), the Center for Climate and Energy Solutions (C2ES), the American Wind Energy Association (AWEA) and the Solar Energy Industry Association (SEIA) and those entities that have staked out positions in opposition to these changes, such as the American Legislative Council (ALEC), the U.S. Chamber of Commerce and pooled legal resource groups such as the Utility Air Regulatory Group (Hunton & Williams) and the Class of ’85 Regulatory Response Group (Baker, Botts) that regularly advocate and litigate environmental issues for utility members as a group. This information will help inform investors about a key component of a registrant’s plans for managing the transformation to a new energy environment.

**4. Workforce Well Being.** We recommend that the “Workforce Health & Safety” Topic be expanded to include “Workforce Well Being” and require a registrant to disclose its programs for retraining, alternate work programs, health care and pension protection for plants that may close.

**5. Efficiency.** The Efficiency Topic in the *Redline Draft* is limited to end-use efficiency. We recommend that this topic be expanded to incorporate all efficiency improvement efforts, including in-system efforts to promote energy efficiency and conservation at registrant’s generating facilities, such as employing solar pre-heating for steam generation and/or lignite drying, minimizing operation at inefficient levels of capacity, minimizing the use of duct burners and reducing T&D losses.

## METRICS

**1. Plant-specific metrics.** The *Redline Draft* includes a number of metrics that are not particularly helpful to understanding a registrant’s performance on sustainability issues, particularly where they are set out on a company-wide basis. Reporting metrics on a company-wide basis may fail to reveal whether individual plants bear a high risk of poor financial performance or closure due to market conditions or regulatory impacts. Thus, if three of a company’s 12 units are poorly controlled for emissions purposes or failing because of market conditions, the risk of those units closing or their impact on the environment might not be apparent to an investor based on disclosure of a company-wide emission averages. Because operators in the utility sector routinely disclose plant or unit specific data to the U.S. EPA, U.S. DOE, state regulators and others, requiring plant-specific disclosures would not be unduly burdensome. To minimize any additional reporting burden we recommend that registrants disclose by providing active links to existing sources of these data. Further, to inform investors about how the registrant is responding to trends over time, we recommend disclosure of a number of facts over a 5 year period and comparison of performance with peers.

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<sup>7</sup> NRC, 2011. *Recommendations for Enhancing Nuclear Safety in the 21<sup>st</sup> Century*, available at <https://www.nrc.gov/docs/ML1118/ML111861807.pdf>

**2. Pollution and pollution control metrics.** The gross emissions of pollutants “near” an area of “dense” population is neither objective (given the lack of definition of “near”), nor particularly useful without additional information. PM<sub>2.5</sub> and ozone impacts from power plants have far more significant health impacts than, for instance, VOC emissions from these units.<sup>8</sup> Moreover, the adverse health consequences are more significant if a source is contributing to ambient loadings in nonattainment areas than otherwise. Approximately one-third of coal-fired EGUs do not have modern controls for SO<sub>2</sub> (flue gas desulfurization or FGD), and even fewer have the most effective NO<sub>x</sub> controls (selective catalytic reduction or SCR). These controls can cost upwards of \$250 million for a medium-sized plant. However, if a plant has state-of-the-art controls, regulators are unlikely to ask for more. Thus, in addition to dramatically reducing public health impacts, these devices provide a form of insurance against the risk of large capital costs being imposed to comply with the revised PM<sub>2.5</sub> National Ambient Air Quality Standards (NAAQS), New Source Review (NSR) requirements for modified units or Regional Haze requirements. Accordingly, one informative metric that is readily available is an identification of the control devices installed on each operating unit and the most recent performance test result for that unit.<sup>9</sup>

Registrants should couple this information with source apportionment modeling to identify and disclose each plant’s contribution to the ambient air quality in local and regional airsheds. This modeling is commonly performed by air pollution control agencies in the development of the State Implementation Plans (SIPs) required under the CAA. When paired with generation data, this information would better inform investors about whether a plant is at risk of closure in the coming years due to air pollution concerns.

Similarly, the more specific water and coal ash management metrics we recommend will better enable investors to gauge the risk of drought related or competing use generation curtailments, capital investment to meet environmental constraints and the cost and reputational risk associated with coal ash impoundment failure.

**3. U.S. focused metrics.** While some registrants may have foreign operations, almost all of the activities of this sector are primarily U.S.-based. For this reason, we have included references to those U.S. regulations that may pose a material risk of operation of U.S. power plants, *in lieu of* the generic international norms included in the *Redline Draft*. We also identify metrics, such as whether a coal-fired power plant is fully controlled and whether it impacts non-attainment areas, which are more likely to capture actual risks than those suggested in the *Redline Draft*.

**4. Scope 1, 2 and 3 emissions.** The *Redline Draft* limits GHG disclosures to Scope 1 emissions and does not explain why Scope 2 emissions associated with purchased power and Scope 3 emissions associated with methane emissions during production of coal and natural gas should not be disclosed.

**5. Energy Affordability.** The *Redline Draft* includes a new section styled “*Energy Affordability*.” We agree that energy affordability is a critical issue for low-income customers and that designing rate structures and bill assistance programs<sup>10</sup> are important sustainability issues. Yet the *Redline Draft* expands beyond low-income issues to imply that lowering direct electricity prices is a goal of sustainable development, even if it imposes higher societal costs. By including average retail rates for commercial and industrial companies—which have nothing to do with low-income issues—the

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<sup>8</sup> SO<sub>2</sub> and NO<sub>x</sub> contribute to the formation of PM<sub>2.5</sub>. NO<sub>x</sub> contributes to the formation of ozone.

<sup>9</sup> Since FGDs have been available for decades, some older units may be at some risk of an upgrade or the addition of a small polishing unit. Others may be at or near the end of their useful lives, a fact that should be disclosed to investors given the high cost of replacement. Mercury control costs are nominal for units with well performing FGD, SCR and PM controls.

<sup>10</sup> The *Redline Draft* does not endorse bill assistance programs but merely mentions their “potential.”

*Redline Draft* suggests that distributed generation, renewable energy and combined heat and power are should be avoided where they entail incremental costs to consumers, irrespective of carbon or other societal costs. However, historic electricity prices in the U.S. have not been shown to be a drag on economic development and have trended downward over time. We suggest that this section be limited to low-income issues.

## **SUMMARY AND CONCLUSION**

The Sierra Club appreciates the opportunity to provide comment on the SASB's Sustainability Accounting Standards. We believe this is an important project that can, if properly implemented, provide critical information to investors who are increasingly considering sustainability issues in their decision making. The disclosures we recommend are not business confidential and can be discerned by reviewing company filings with the EPA, FERC, EIA, State Corporation Commissions and other agencies and reports issued by S&P Global Intelligence, Platts and others. Registrants can and should provide a road map to this information by providing plant specific data, and/or links to such data so that investors can read summaries of key information (such as a listing of poorly controlled units) and then move to more specific and detailed data sources if they choose. The Sierra Club is willing to work with the SASB to develop and implement a workable set of Sustainability Accounting Standards. Please feel free to contact Mr. Steven Herz at [steve.herz@sierraclub.org](mailto:steve.herz@sierraclub.org) if you have any questions or wish to discuss any of the matters we recommend.

Sincerely,

Steven Herz

ATTACHMENT 1 – REDLINE MARKUP OF DRAFT REDLINE



SUSTAINABILITY ACCOUNTING STANDARD  
INFRASTRUCTURE SECTOR

# ELECTRIC UTILITIES

## Sustainability Accounting Standard

Sustainable Industry Classification System™ (SICS™) #IF0101

Prepared by the  
Sustainability Accounting Standards Board®

March 2016  
Provisional Standard

# ELECTRIC UTILITIES

## Sustainability Accounting Standard

### About SASB

The Sustainability Accounting Standards Board (SASB) provides sustainability accounting standards for use by publicly-listed corporations in the U.S. in disclosing material sustainability information for the benefit of investors and the public. SASB standards are designed for disclosure in mandatory filings to the Securities and Exchange Commission (SEC), such as the Form 10-K and 20-F. SASB is an independent 501(c)3 non-profit organization. Through 2016, SASB is developing standards for 79 industries in 10 sectors.

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## INTRODUCTION

### Purpose & Structure

This document contains the SASB Sustainability Accounting Standard (SASB Standard) for the Electric Utilities industry.

SASB Sustainability Accounting Standards are comprised of (1) disclosure guidance and (2) accounting standards on sustainability topics for use by U.S. and foreign public companies in their annual filings (Form 10-K or 20-F) with the U.S. Securities and Exchange Commission (SEC). To the extent relevant, SASB Standards may also be applicable to other periodic mandatory filings with the SEC, such as the Form 10-Q, Form S-1, and Form 8-K.

SASB Standards identify sustainability topics at an industry level, which may constitute material information—depending on a company’s specific operating context—for a company within that industry. SASB Standards are intended to provide guidance to company management, which is ultimately responsible for determining which information is material and should therefore be included in its Form 10-K or 20-F and other periodic SEC filings.

SASB Standards provide companies with standardized sustainability metrics designed to communicate performance on industry level sustainability topics. When making disclosure on sustainability topics, companies can use SASB Standards to help ensure that disclosure is standardized and therefore decision-useful, relevant, comparable, and complete.

SASB Standards are intended to constitute “suitable criteria” as defined by AT 101.23-32<sup>11</sup> and referenced in AT 701<sup>12</sup> as having the following attributes:

- *Objectivity*—Criteria should be free from bias.
- *Measurability*—Criteria should permit reasonably consistent measurements, qualitative or quantitative, of subject matter.
- *Completeness*—Criteria should be sufficiently complete so that those relevant factors that would alter a conclusion about subject matter are not omitted.
- *Relevance*—Criteria should be relevant to the subject matter.

### Industry Description

The Electric Utilities industry is made up of companies that generate electricity; build, own, and operate transmission and/or distribution (T&D) lines; and sell electricity. Utilities generate electricity from a number of different sources, commonly including coal, natural gas, nuclear energy, hydropower, and renewable energy. The industry comprises companies operating in both regulated and deregulated energy markets. Companies with a monopoly over all elements of the value chain operate in regulated markets that are highly structured. In deregulated markets, company structures can be disparate, with generation usually split from T&D, which gives customers a choice between power producers. In some markets, transmission is also deregulated, leaving

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<sup>11</sup> [http://pcaobus.org/Standards/Attestation/Pages/AT101.aspx#at\\_101\\_fn7](http://pcaobus.org/Standards/Attestation/Pages/AT101.aspx#at_101_fn7)

<sup>12</sup> <http://pcaobus.org/Standards/Attestation/Pages/AT701.aspx>

regulated<sup>1</sup> utilities to operate only distribution lines. Regulated utilities have a unique business model in which they accept oversight from their state utilities commission on their pricing mechanisms and their allowed return on equity, among other types of regulation, in exchange for their license to operate as a monopoly. Electric utilities are also required to provide universally accessible and highly reliable service while balancing the protection of human life and the environment. While U.S.-listed electric utility companies include a few large companies based outside the U.S., the majority are U.S.-based and operate mainly in U.S. markets.

Note: The SASB standard for the Electric Utilities industry covers activities related only to electricity provision and not to natural gas provision. Some utilities may operate in both electricity and natural gas markets. Utilities undertaking activities related to natural gas sourcing and distribution should also consider the separate SASB standard for the Gas Utilities industry (IF0102).

## Guidance for Disclosure of Sustainability Topics in SEC Filings

### 1. Industry-Level Sustainability Topics

For the Electric Utilities industry, SASB has identified the following sustainability disclosure topics:

- Greenhouse Gas Emissions & Energy Resource Planning
- Air Quality
- Coal Ash Management
- ~~Water Management~~
- Community Impacts of Project Siting/[Transmission and Distribution](#)
- Workforce Health & Safety
- End-Use Efficiency & Demand
- Nuclear Safety & Emergency Management
- Grid Resiliency
- Management of the Legal & Regulatory Environment

### 2. Company-Level Determination and Disclosure of Material Sustainability Topics

Sustainability disclosures are governed by the same laws and regulations that govern disclosures by securities issuers generally. According to the U.S. Supreme Court, a fact is material if, in the event such fact is omitted from a particular disclosure, there is “a substantial likelihood that the disclosure of the omitted fact would have been viewed by the reasonable investor as having significantly altered the ‘total mix’ of the information made available.”<sup>3,4</sup>

SASB has attempted to identify those sustainability topics that are reasonably likely to have a material effect on the financial condition or operating performance of companies within each SICs industry. SASB recognizes, however, that each company is ultimately responsible for determining what information should be disclosed within the context of Regulation S-K and other guidance.

<sup>3</sup> TSC Industries v. Northway, Inc., 426 U.S. 438 (1976).

<sup>4</sup> C.F.R. 229.303(item 303)(a)(3)(ii).

Regulation S-K, which sets forth certain disclosure requirements associated with Form 10-K and other SEC filings, requires companies, among other things, to describe in the Management’s Discussion and Analysis of Financial Condition and Results of Operations (MD&A) section of Form 10-K “any known trends or uncertainties that have had or that the registrant reasonably expects will have a material favorable or unfavorable impact on net sales or revenues or income from continuing operations. If the registrant knows of events that will cause a material change in the relationship between costs and revenues (such as known future increases in costs of labor or materials or price increases or inventory adjustments), the change in the relationship shall be disclosed.”

Furthermore, instructions to Item 303 state that the MD&A “shall focus specifically on material events and uncertainties known to management that would cause reported financial information not to be necessarily indicative of future operating results or of future financial condition.”<sup>2</sup>

The SEC has provided guidance for companies to use in determining whether a trend or uncertainty should be disclosed. The two-part assessment prescribed by the SEC, based on probability and magnitude, can be applied to the topics included within this standard:

- First, a company is not required to make disclosure about a known trend or uncertainty if its management determines that such trend or uncertainty is not reasonably likely to ~~occur~~ come to fruition.
- Second, if a company’s management cannot make a reasonable determination of ~~the likelihood whether a trend or uncertainty is likely to come to fruition of an event~~ or uncertainty, then disclosure is required unless management determines that a material effect on the registrant’s financial condition or results of operation is not reasonably likely to occur.

### 3. Sustainability Accounting Standard Disclosures in Form 10-K

#### a. Management’s Discussion and Analysis

For purposes of comparability and usability, companies should consider making disclosure on sustainability topics in the MD&A, in a sub-section titled “**Sustainability Accounting Standards Disclosures**.”<sup>5</sup>

#### b. Other Relevant Sections of Form 10-K

In addition to the MD&A section, it may be relevant for companies to disclose sustainability information in other sections of Form 10-K, including, but not limited to:

- **Description of business**—Item 101 of Regulation S-K requires a company to provide a description of its business and its subsidiaries. Item 101(c)(1)(xii) expressly requires disclosure regarding certain costs of complying with environmental laws:

<sup>5</sup> SEC [Release Nos. 33-8056; 34-45321; FR-61] [Commission Statement about Management’s Discussion and Analysis of Financial Condition and Results of Operations](#): “We also want to remind registrants that disclosure must be both useful and understandable. That is, management should provide the most relevant information and provide it using language and formats that investors can be expected to understand. Registrants should be aware also that investors will often find information relating to a particular matter more meaningful if it is disclosed in a single location, rather than presented in a fragmented manner throughout the filing.”

Appropriate disclosure also shall be made as to the material effects that compliance with Federal, State, and local provisions which have been enacted or adopted regulating the discharge of materials into the environment, or otherwise relating to the protection of the environment, may have upon the capital expenditures, earnings and competitive position of the registrant and its subsidiaries.

- **Legal proceedings**—Item 103 of Regulation S-K requires companies to describe briefly any material pending or contemplated legal proceedings. Instructions to Item 103 provide specific disclosure requirements for administrative or judicial proceedings arising from laws and regulations that target discharge of materials into the environment or that are primarily for the purpose of protecting the environment.
- **Risk factors**—Item 503(c) of Regulation S-K requires filing companies to provide a discussion of the most significant factors that make an investment in the registrant speculative or risky, clearly stating the risk and specifying how a particular risk affects the particular filing company.

**c. Rule 12b-20**

Securities Act Rule 408 and Exchange Act Rule 12b-20 require a registrant to disclose, in addition to the information expressly required by law or regulation, “such further material information, if any, as may be necessary to make the required statements, in light of the circumstances under which they are made, not misleading.”

More detailed guidance on disclosure of material information related to sustainability topics can be found in the **SASB Conceptual Framework**, available for download via <http://www.sasb.org/approach/conceptual-framework/>.

## Guidance on Accounting for Sustainability Topics

For each sustainability topic included in the Electric Utilities industry Sustainability Accounting Standard, SASB identifies accounting metrics.

SASB recommends that each company consider using these sustainability accounting metrics when preparing disclosures on the sustainability topics identified herein.

As appropriate—and consistent with Rule 12b-20<sup>6</sup>—when disclosing a sustainability topic identified by this Standard, companies ~~should shall~~ disclose all relevant and material facts and consider including a narrative description of any material factors necessary to ensure completeness, accuracy, and comparability of the data reported. Where not addressed by the specific accounting metrics, but relevant, the registrant ~~should shall~~ disclose and discuss the following, related to the topic:

- The registrant’s **strategic approach** to managing performance on material sustainability issues;
- The registrant’s **relative performance** with respect to its peers;
- The **degree of control** the registrant has;

<sup>6</sup> SEC Rule 12b-20: “In addition to the information expressly required to be included in a statement or report, there shall be added such further material information, if any, as may be necessary to make the required statements, in the light of the circumstances under which they are made, not misleading.”

- Any **measures the registrant has undertaken or plans to undertake** to improve performance; and
- Data for the registrant's **last three completed fiscal years** (when available).

SASB recommends that registrants use SASB Standards specific to their primary industry as identified in the [Sustainable Industry Classification System \(SICS™\)](#). If a registrant generates significant revenue from multiple industries, SASB recommends that it also consider sustainability topics that SASB has identified for those industries and disclose the associated SASB accounting metrics.

In disclosing to SASB Standards, it is expected that registrants disclose with no less than the same level of rigor, accuracy, and responsibility as they apply to all other information contained in their SEC filings. Registrants are encouraged to provide links to online materials where full disclosure involves significant amount of factual materials and/or analyses. Such materials include, where relevant, registrant or state modeling of air quality impacts from covered EGUs, analyses of EPA CPP allocations, registrant's comments on the impact of the CPP to EPA or state regulators, Integrated Resource Plans (IRPs) and state or local GHG or RPS filings.

## Users of the SASB Standards

The SASB Standards are intended to provide guidance for companies that engage in public offerings of securities registered under the Securities Act of 1933 (the Securities Act) and those that issue securities registered under the Securities Exchange Act of 1934 (the Exchange Act),<sup>7</sup> for use in SEC filings, including, without limitation, annual reports on Form 10-K (Form 20-F for foreign issuers), quarterly reports on Form 10-Q, current reports on Form 8-K, and registration statements on Forms S-1 and S-3. Disclosure with respect to the SASB Standards is not required or endorsed by the SEC or other entities governing financial reporting, such as FASB, GASB, or IASB.

## Scope of Disclosure

Unless otherwise specified, SASB recommends:

- That a registrant disclose on sustainability issues and metrics for itself and for entities that are consolidated for financial reporting purposes as defined by accounting principles generally accepted in the United States for consistency with other accompanying information within SEC filings;<sup>8</sup>
- That for consolidated entities, disclosures be made, and accounting metrics calculated, for the whole entity, regardless of the size of the minority interest; and
- That information from unconsolidated entities not be included in the computation of SASB accounting metrics. A registrant should disclose, however, information about unconsolidated entities to the extent that the registrant considers the information necessary for investors to understand the effect of sustainability topics on the company's financial condition or operating performance (typically, this disclosure would be limited to risks and opportunities associated with these entities).

<sup>7</sup> Registration under the Securities Exchange Act of 1934 is required (1) for securities to be listed on a national securities exchange such as the New York Stock Exchange, the NYSE Amex, and the NASDAQ Stock Market or (2) if (A) the securities are equity

securities and are held by more than 2,000 persons (or 500 persons who are not accredited investors) and (B) the company has more than \$10 million in assets.

<sup>8</sup>See US GAAP consolidation rules (Section 810).

## Reporting Format

### Use of Financial Data

In instances where accounting metrics, activity metrics, and technical protocols in this standard incorporate financial data (e.g., revenues, cost of sales, expenses recorded and disclosed for fines, etc.), such financial data shall be prepared in accordance with the accounting principles generally accepted in the United States of America (“US GAAP”) and be consistent with the corresponding financial data reported within the registrant’s SEC filings. Should accounting metrics, activity metrics and technical protocols in this standard incorporate disclosure of financial data that is not prepared in accordance with US GAAP, the registrant shall disclose such information in accordance with the SEC Regulation G.

### Activity Metrics and Normalization

SASB recognizes that normalizing accounting metrics is important for the analysis of SASB disclosures.

SASB recommends that a registrant disclose any basic business data that may assist in the accurate evaluation and comparability of disclosure, to the extent that they are not already disclosed in the Form 10-K (e.g., revenue, EBITDA, etc.).

Such data—termed “activity metrics”—may include high-level business data such as total number of employees, quantity of products produced or services provided, number of facilities, or number of customers. It may also include industry-specific data such as plant capacity utilization (e.g., for specialty chemical companies), number of transactions (e.g., for Internet media and services companies), hospital bed days (e.g., for health care delivery companies), or proven and probable reserves (e.g., for oil and gas exploration and production companies).

Activity metrics disclosed should:

- Convey contextual information that would not otherwise be apparent from SASB accounting metrics.
- Be deemed generally useful for an investor relying on SASB accounting metrics in performing their own calculations and creating their own ratios.
- Be explained and consistently disclosed from period to period to the extent they continue to be relevant. However, a decision to make a voluntary disclosure in one period does not obligate a continuation of that disclosure if it is no longer relevant or if a better metric becomes available.<sup>9</sup>

<sup>9</sup> *Improving Business Reporting: Insights into Enhancing Voluntary Disclosures*, FASB Business Reporting Research Project, January 29, 2001.

Where relevant, SASB recommends specific activity metrics that—at a minimum—should accompany SASB accounting metric disclosures.

ACTIVITY METRIC	CATEGORY	UNIT OF MEASURE	CODE
Number of (1) residential, (2) commercial and (3) industrial customers served <sup>10</sup>	Quantitative	Number	IF0101-A
Demand within each of these categories over the past 5 years	Quantitative	Megawatt-hours (MWh)	
Imports and Exports of electricity	Quantitative	MWh	
Length of transmission and distribution lines (by voltage) <sup>11</sup>	Quantitative	Kilometers (km)/volts(v)	IF0101-B
T&D lines added during past year; lines under development (by voltage and purpose)	Quantitative	Kilometers (km)/volts(v)	
Total electricity generated, net electricity generated, (MWh) - percentage by major energy source, and percentage by market type (regulated or competitive) and percentages in each category over the past 5 years - markets <sup>12</sup>	Quantitative	Megawatt-hours (MWh), Percentage (%)	IF0101-C
Total storage capacity (MW-h), historic and additional capacity added in the past year, by type (e.g. pumped storage, battery etc).	Quantitative	MWh	IF0101-D

**Commented [BB1]:** Standing alone, we don't see the relevance.

**Commented [BB2]:** Looking for trends.

## Units of Measure

Unless specified, disclosures should be reported in International System of Units (SI units).

## Uncertainty

SASB recognizes that there may be inherent uncertainty when disclosing certain sustainability data and information. This may be related to variables such as the reliance on data from third-party reporting systems and technologies, or the unpredictable nature of climate events. Where uncertainty around a particular disclosure exists, SASB recommends that the registrant ~~should consider discussing~~ discuss its nature and likelihood.

**Commented [BB3]:** Consistent with other statements about the treatment of uncertainty.

## Estimates

SASB recognizes that scientifically based estimates, such as the reliance on certain conversion factors or the exclusion of *de minimis* values, may occur for certain quantitative disclosures. Where appropriate, SASB does not discourage the use of such estimates. When using an estimate for a particular disclosure, SASB expects that the registrant discuss its nature and substantiate its basis.

## Timing

Unless otherwise specified, disclosure shall be for the registrant's fiscal year.

<sup>10</sup> Note to **IF0101-A**—The number of customers served for each category shall be considered as the number of meters billed for **both** residential, ~~and~~ commercial **and** industrial customers.

<sup>11</sup> Note to **IF0101-B**—The length of transmission and distribution lines shall be calculated on a circuit-kilometer basis, where a circuit-kilometer is defined as the total length of circuits, regardless of conductors used per circuit.

<sup>12</sup> Note to **IF0101-C**—Generation should be disclosed by each of the following major energy sources: coal, natural gas, nuclear, hydropower, onshore wind, solar, offshore wind, other renewables, petroleum, and other gases. Storage shall be disclosed by type and vintage. The scope includes owned and/or operated assets. Purchased power, and the emissions associated with those purchases, shall be separately disclosed.

## Limitations

There is no guarantee that SASB Standards address all sustainability impacts or opportunities associated with a sector, industry, or company, and therefore, a company must determine for itself the topics—sustainability-related or otherwise—that warrant discussion in its SEC filings.

Disclosure under SASB Standards is voluntary. It is not intended to replace any legal or regulatory requirements that may be applicable to user operations. Where such laws or regulations address legal or regulatory topics, disclosure under SASB Standards is not meant to supersede those requirements. Disclosure according to SASB Standards shall not be construed as demonstration of compliance with any law, regulation, or other requirement.

SASB Standards are intended to be aligned with the principles of materiality enforced by the SEC. However, SASB is not affiliated with or endorsed by the SEC or other entities governing financial reporting, such as FASB, GASB, or IASB.

## Forward-Looking Statements

Disclosures on sustainability topics can involve discussion of future trends and uncertainties related to the registrant's operations and financial condition, including those influenced by external variables (e.g., environmental, social, regulatory, and political). Companies making such disclosures should familiarize themselves with the safe harbor provisions of Section 27A of the Securities Act and Section 21E of the Exchange Act, which preclude civil liability for material misstatements or omissions in such statements if the registrant takes certain steps, including, among other things, identifying the disclosure as "forward-looking" and accompanying such disclosure with "meaningful cautionary statements identifying important factors that could cause actual results to differ materially from those in the forward-looking statements."

The following sections contain the disclosure guidance associated with each accounting metric such as guidance on definitions, scope, accounting, compilation, and presentation.

The term "shall" is used throughout this document to indicate those elements that reflect requirements of the Standard. The terms "should" and "may" are used to indicate guidance, which, although not required, provides a recommended means of disclosure.

**Commented [BB4]:** Unless carefully monitored and implemented, this distinction runs the risk of undercutting the Standards and facilitating "greenwashing".

Table 1. Sustainability Disclosure Topics & Accounting Metrics

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
Greenhouse Gas Emissions & Energy Resource Planning	(1) Gross <u>global Scope 1+GHG</u> emissions, (2) <u>emissions - percentage</u> covered under emissions-limiting regulations, and (3) <u>percentage emissions</u> covered under emissions-reporting regulations	Quantitative	Metric tons (t) CO <sub>2</sub> -e, Percentage (%)	IF0101-01
	<u>Description of long-term and short-term, Near-term action plan and long-term strategy or plan to manage Scope 1+GHG emissions, emission-reduction targets, and an analysis of performance against those targets</u>	Discussion and <u>Factual Analysis</u>	<u>n/a/ various</u>	IF0101-02
	<u>(1) Number of customers served in markets subject to renewable portfolio standards (RPS) and (2) percentage fulfillment of RPS target by market (1) Historic RE generation (MWh) by type (all markets), (2) RE generation in markets subject to renewable portfolio standards (RPS) and (3) comparison with RPS target by market.<sup>13</sup></u>	Quantitative	<u>Number/MWh, Percentage (%)</u>	IF0101-03
	<u>Total storage capacity (MW-h), historic and additional capacity added in the past year, by type (e.g. pumped storage, battery etc).</u>	<u>Quantitative</u>	<u>MWh</u>	IF0101-04
Air Quality	<u>Identification of installed controls and documentation of emissions performance each fossil-fuel fired EGU; estimated cost to fully control each fossil fuel-fired EGU</u>	Quantitative	Metric tons (t), <u>dollars (million)</u> , <u>Percentage (%)</u>	IF0101-05
	<u>Air-Direct emissions of the following pollutants: NO<sub>x</sub>, NO<sub>2</sub> (excluding N<sub>2</sub>O<sub>2</sub>), SO<sub>2</sub>, SO<sub>3</sub>, particulate matter (PM<sub>10</sub>), Pb, and Hg;</u>	<u>Quantitative</u>	<u>Tons</u>	IF0101-0406
	<u>Modeled contribution of direct air emissions on PM<sub>2.5</sub> and ozone concentrations within the airshed of each fossil fuel-fired EGU that is less than fully controlled percentage of each in or near areas of dense population.</u>	<u>Quantitative</u>	<u>ppm/ppb</u>	IF0101-07
	<u>Modeled adverse health impacts of emissions from each fossil fuel-fired EGU that is less than fully controlled</u>	<u>Quantitative</u>	<u>premature mortality, asthma impacts, lost work days</u>	IF0101-08
Water Management	(1) Total water withdrawn and (2) total water consumed, <u>by activity, percentage of each at plants</u> in regions with High or Extremely High Baseline Water Stress	Quantitative	Cubic Meters (m <sup>3</sup> ), Percentage (%)	IF0101-06 <del>IF0101-05</del>
	<u>Number-Disclosure</u> of incidents of non-compliance with water quality and/or quantity permits, standards, and regulations	Quantitative	Number	IF0101-07 <del>IF0101-06</del>
	Discussion of water management risks and description of strategies and practices to mitigate those risks	Discussion and Analysis	n/a	IF0101-08 <del>IF0101-07</del>
	Amount of coal combustion residuals (CCR) generated, percentage recycled	Quantitative	Metric tons (t), Percentage (%)	IF0101-09 <del>IF0101-08</del>

Coal Ash Management	Total number of coal combustion residual (CCR) impoundments, <u>quantity of materials stored in each and number</u> by EPA Hazard Potential Classification, <u>broken-down</u> and by EPA structural integrity assessment	Quantitative	Number	<del>IF0101-09</del> IF0101-10
Community Impacts of Project Siting/Transmission and Distribution (T&D)	<del>Number of</del> <u>Disclosure of projects, including T&amp;D projects to facilitate transition to a low carbon future. Disclosure of other projects. Disclosure of projects requiring voluntarily modified before formal processes commenced, disclosure of projects modified (voluntarily or otherwise) after commencement of formal processes, including the nature, cost and benefits of such modifications, environmental or social modification, percentage of modifications resulting from formal public interventions or protests<sup>14</sup></u>  <u>Disclosure of T&amp;D assets potentially impacted by extreme hurricane and/or drought events; efforts to minimize the severity of adverse impacts of such events.</u>	Quantitative	<del>Number, Percentage (%)</del> <u>Project facts</u>	IF0101-11 <del>IF0101-10</del>
	<del>Discussion</del> <u>Disclosure</u> of community engagement processes to identify and mitigate concerns regarding project environmental and community impacts	Discussion and Analysis	n/a	IF0101-12 <del>IF0101-11</del>

<sup>13</sup> Note to **IF0101-03**—The registrant shall discuss its operations in markets with RPS regulations or where regulations are emerging, including whether it is meeting its regulatory obligations, whether regulations require future increases to the registrant’s renewable energy portfolio, and strategies to maintain compliance with emerging regulations.

<sup>14</sup> Note to **IF0101-10**—The registrant shall discuss modifications that relate to significant projects such as those with large transmission or generation capacity.

Table 1. Sustainability Disclosure Topics & Accounting Metrics (cont.)

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
<b>Workforce Health &amp; Safety and Well Being</b>	(1) Total recordable injury rate (TRIR), (2) fatality rate, and (3) near miss frequency rate (NMFR)	Quantitative	Rate	IF0101-12
	<u>Discussion of management of accident and safety risks and long-term health and safety risks</u>	<u>Discussion and Analysis</u>	n/a	<u>NR0201</u> <u>EM0201-13</u>
	<u>Disclosure of programs for retraining, alternate work programs health care and pension protection for employees at plants that may close</u>	<u>Disclosure and Analysis</u>		
<b>End-Use Efficiency &amp; Demand</b>	Percentage of electric load served by smart grid technology <sup>15</sup>	Quantitative	Percentage (%) by Megawatt-Hours (MWh)	IF0101-13
	Customer electricity savings from efficiency measures by market <sup>16</sup>	Quantitative	Megawatt-Hours (MWh)	IF0101-14
<b>Nuclear Safety &amp; Emergency Management</b>	Total number of nuclear power units, broken down by Nuclear Regulatory Commission (NRC) Action Matrix Column	Quantitative	Number	IF0101-15
	Discussion of efforts to manage nuclear safety and emergency preparedness	Discussion and Analysis	n/a	IF0101-16
<b>Grid Resiliency</b>	Number of incidents of non-compliance with North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection standards	Quantitative	Number	IF0101-17
	(1) System Average Interruption Duration Index (SAIDI), (2) System Average Interruption Frequency Index (SAIFI), and (3) Customer Average Interruption Duration Index (CAIDI), inclusive of major event days <sup>17</sup>	Quantitative	Minutes, Number	IF0101-18
<b>Management of the Legal &amp; Regulatory Environment</b>	<u>Discussion of policies and processes to identify and manage potential ethical violations resulting from interactions with utility commissions</u> <u>Disclosure of regulatory and political environment related to environmental and social factors</u>	Discussion and Analysis	n/a	IF0101-19
	<u>Amount of legal and regulatory fines and settlements associated with allegations of violations resulting from interactions with utility commissions</u> <u>Disclosure of membership and financial contributions to lobbying and litigating organizations</u>	<u>Factual</u> Quantitative	<u>Membership</u> U.S. Dollars (\$)	IF0101-20
	Discussion of positions on the regulatory and political environment related to environmental and social factors and description of efforts to manage risks and opportunities presented	Discussion and Analysis	n/a	IF0101-21

<sup>15</sup> Note to **IF0101-13**—The registrant shall discuss the opportunities and challenges associated with the development and operations of a  
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smart grid.

<sup>16</sup> Note to **IF0101-14**—The registrant shall discuss customer efficiency regulations relevant to each market in which it operates.

<sup>17</sup> Note to **IF0101-18**—The registrant shall discuss notable service disruptions such as those that affected a significant number of customers or disruptions of extended duration.

<sup>18</sup> Note to **IF0101-20**—The registrant shall briefly describe the nature, context, and corrective action taken as a result of the fine and/or settlement.

# Greenhouse Gas Emissions & Energy Resource Planning

## Description

Electric utilities represent the largest source of greenhouse gas (GHG) emissions in the U.S. economy. These emissions, mainly carbon dioxide, methane, and nitrous oxide, are mostly by-products of fossil fuels combustion. The T&D segments of the Electric Utilities industry are responsible for a negligible amount of its emissions. Electric utility companies could face significant operating and capital expenditures for mitigating GHG emissions as environmental regulations become increasingly stringent. While many of these costs can be passed on to a utility's customers, some power generators, especially in deregulated markets, may not be able to recoup these costs. Companies can reduce GHG emissions from electricity generation mainly through careful planning of their infrastructure investments to ensure an energy mix capable of meeting the emissions requirements set forth by regulations and by implementing industry-leading technologies and processes. Being proactive in cost-effectively reducing GHG emissions can create a competitive advantage for companies and mitigate unanticipated regulatory compliance costs. Failure to properly estimate capital-expenditure needs and permitting costs, or other difficulties in reducing GHG emissions, could result in significant negative impacts on returns in the future in the form of asset write-downs, costs of obtaining carbon credits, or unexpected increases in operating and capital expenditures. Regulatory emphasis on this issue will likely only increase over the coming decades, as exemplified by the international emissions-reduction agreements made at the 21st session of the United Nations Conference of the Parties that took place in late 2015.

## Accounting Metrics

**IF0101-01. (1) Gross global Scope 4 emissions, (2) percentage emissions covered under emissions-limiting regulations, and (3) percentage emissions covered under emissions-reporting regulations**

.26 The registrant shall disclose gross global Scope 1, 2, and 3 greenhouse gas (GHG) emissions to the atmosphere of the seven GHGs covered under the Kyoto Protocol (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride).

~~26.22~~ Emissions of all gases shall be disclosed in metric tons of carbon dioxide equivalents (CO<sub>2</sub>-e), calculated in accordance with published 100-year time horizon global warming potential (GWP) factors. To date, the preferred source for GWP factors is the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (2013).

~~26.23~~ Gross emissions are GHGs emitted to the atmosphere before accounting for any GHG reduction activities, offsets, or other adjustments for activities in the reporting period that have reduced or compensated foremissions.

~~26.24~~ Disclosure corresponds to section CC8.2 of the Carbon Disclosure Project (CDP) Questionnaire (2015) and REQ-04 of the Climate Disclosure Standards Board (CDSB) Framework for reporting environmental information & natural capital (2015).

 The registrant shall consider the CDP Climate Change Questionnaire a normative reference, thus any updates made year-on-year shall be considered updates to this guidance.

**Commented [BB5]:** Scope 2 addresses imports of electricity, Scope 3 includes CO<sub>2</sub> emissions from T&D losses in markets where T&D are separate from generation.

.27 ~~Scope 1~~GHG emissions are defined and shall be calculated according to the methodology contained in the World Resources Institute and the World Business Council on Sustainable Development (WRI/WBCSD) in [The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard](#), Revised Edition, March 2004 (hereafter, the “GHG Protocol”).

~~27.32~~ These emissions include direct emissions of GHGs from stationary or mobile sources that include, but are not limited to, electricity generation, electricity transmission and distribution equipment (i.e., high-voltage circuit breakers, switch gear, and transformers), and transportation (i.e., marine, road, or rail). They also include GHG emissions from import of electricity or steam and GHG emissions associated with T&D losses of emissions.

~~27.33~~ Acceptable calculation methodologies include those that ~~refer to~~ employ the GHG Protocol as the basic reference but may provide additional industry or regionally specific guidance, where examples include, but are not limited to:

~~27.33~~~~27.34~~ USEPA Greenhouse Gas Reporting Program Requirements (Title 40, Code of Federal Regulations, Part 75)

~~□~~ IPIECA’s Petroleum Industry Guidelines for reporting GHG emissions, 2nd edition, 2011

~~□~~ India GHG Inventory Programme

~~□~~ ISO 14064-1

~~27.34~~~~27.35~~ The registrant ~~may choose to~~ shall disclose the methodology or methodologies used to collect and calculate ~~Scope 1~~GHG emissions.

.28 GHG emission data shall be consolidated according to the approach with which the registrant consolidates its financial reporting data, which is generally aligned with:

~~28.32~~ The Financial Control approach defined by the GHG Protocol and referenced by the [CDP Guidance for companies reporting on climate change on behalf of investors & supply chain members 2015](#) (hereafter, the “CDP Guidance”).<sup>19</sup>

~~28.33~~ The approach detailed in REQ-07, “Organizational boundary,” of the CDSB Framework (2015).<sup>20</sup>

.29 The registrant shall disclose the ~~percentage of its~~ amount of its emissions that are covered under a regulatory program that is intended to limit or reduce GHG emissions, such as [the Clean Power Plan](#), the European Union Emissions Trading Scheme (E.U. ETS), ~~Quebec Cap and Trade (Draft Bill 42 of 2009)~~ [the Western Climate Initiative](#), California Cap-and-Trade (California Global Warming Solutions Act [AB-32](#)), or other regulatory programs.

<sup>19</sup> “An organization has financial control over an operation if it has the ability to direct the financial and operating policies of the operation with a view to gaining economic benefits from its activities. Generally an organization has financial control over an operation for GHG accounting purposes if the operation is treated as a group company or subsidiary for the purposes of financial consolidation.” [Guidance for companies reporting on climate change on behalf of investors & supply chain members 2013](#), p. 95.

<sup>20</sup> This is based on the requirements of International Accounting Standards/International Financial Reporting Standards (IAS/IFRS) on consolidation and equity accounting and is consistent with how information relating to entities within a group or interest in joint ventures/associates would be included on consolidated financial statements, as per the CDSB [Climate Change Reporting Framework](#).

**Commented [BB6]:** Is there a reason or a policy advantage to citing to international protocols for calculation methodologies rather than just U.S. & Canadian protocols? Almost all electric utilities in the U.S. operate solely within US & Canada.

**Commented [BB7]:** IPIECA does not seem to be relevant for EGUs

~~29.32~~ Regulatory programs include cap-and-trade schemes, carbon tax/fee systems, and other emissions control (e.g., command-and-control approach) and permit-based mechanisms.

~~29.33~~ Disclosure shall exclude emissions covered under voluntary trading systems and reporting-based regulations (e.g., the U.S. Environmental Protection Agency (EPA) Greenhouse Gas Reporting Program).

~~29.33~~~~29.34~~ Disclosure shall include an identification of each fossil-fuel fired EGU subject to regulation under either state or national GHG emission limiting programs.

~~29.34~~~~29.35~~ Disclosure shall include the amount of purchased power and registrant's best estimate of the CO<sub>2</sub> emissions associated with the generation of that power, including supporting documentation for that estimate.

.30 The registrant shall disclose the percentage of its emissions that are covered under emissions reporting-~~only~~-based regulations (e.g., the U.S. EPA Greenhouse Gas Reporting Program)

~~30.32~~ Emissions-reporting regulations are defined as regulations that demand the disclosure of data to authorities and/or to the public, but for which there is no limit, cost, target, or controls on the amount of emissions generated.

.31 The registrant ~~should~~~~shall~~ report relevant facts and discuss the changes in its emissions ~~from the previous over the prior 5 fiscal years, and the reasons for such changes, including such as if the extent to which~~ the changes were ~~was due to~~ emissions reductions at existing units, or occasioned by unit retirements, reduced utilization of existing units, divestment, acquisition, mergers, changes in output, and/or changes in calculation methodology.

.32 In the case that current reporting of GHG emissions to the CDP or other entities (e.g., a national regulatory disclosure program) differs in terms of the methodology, calculation (e.g., different GWP factors), scope, and/or consolidation approach used, the registrant may disclose those emissions. However, primary disclosure shall be according to the guidelines described above.

.33 The registrant ~~should~~~~shall~~ disclose and discuss the calculation methodology for its emissions disclosure, such as if data are from continuous emissions monitoring systems (CEMS), engineering calculations, mass balance calculations, etc.

~~34~~ The registrant ~~should~~~~shall~~ consult the most recent version of each document referenced in this standard at the time disclosure occurs.

IF0101-01. (1) **TA11-01-01. Greenhouse gas (GHG) emissions associated with power deliveries net of power purchases and sales**

~~33.32~~~~34.32~~ The registrant shall disclose the total gross GHG emissions associated with electric power delivered to retail customers, resulting from owned power generation and purchased power.

~~34.33~~ GHG emissions are defined as emissions to the atmosphere of the seven GHGs covered under the Kyoto Protocol (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride).

□ Emissions of all gases shall be disclosed in metric tons of carbon dioxide equivalents (CO<sub>2</sub>-e), calculated in accordance with published 100-year time horizon global warming potential (GWP) factors. To date, the preferred source for GWP factors is the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (2013).

□ Gross emissions are GHGs emitted to the atmosphere before accounting for any GHG reduction activities, offsets, or other adjustments for activities in the reporting period that have reduced or compensated foremissions.

.35 GHG emissions associated with electric power delivered to retail customers are defined and shall be calculated according to the methodology established by the numerator in EPS Metric D-3 contained in the Electric Power

Sector Protocol for the Voluntary Reporting Program, June 2009, Version 1.0, provided by The Climate Registry, including 2010 Updates and Clarifications.

35.32 Emissions include those GHGs set forth in TA11-01-01.10 and shall be disclosed in CO<sub>2</sub>-e.

35.33 These emissions are generally calculated as the sum of emissions from power generation facilities that are owned by the registrant and those from power that was purchased from a third-party, subtracted by the emissions from power that was resold at the wholesale level.

35.34 The scope of GHG emissions shall include all emissions associated from power delivered to retail customers, including emissions associated with power lost in transmission and distribution.

35.35 Emissions factors for power purchased from third-parties are based on the most relevant and accurate method, which will depend on the type of power purchased. The Electric Power Sector Protocol for the Voluntary Reporting Program establishes potential methods.

35.36 The registrant shall consider the Electric Power Sector Protocol a normative reference, thus any updates made year-on-year shall be considered updates to this guidance.

34.36 Disclosure corresponds to the numerator in the metric described by the Electric Power Research Institute's "Total CO<sub>2</sub> emissions rate for power deliveries," with the exception of the scope of emissions including all seven GHGs covered under the Kyoto Protocol.

**IF0101-02. Description of long-term and Near term action plan and long-term short-term strategy or plan to manage Scope 1 GHG emissions, emission-reduction targets, and an analysis of performance against those targets**

35.37 The registrant shall discuss and provide material facts relevant to the following, where relevant:

37.32 Probable and potential impacts on fossil-fuel electric generating unit operations and remaining economic life<sup>13</sup> associated (in whole or in part) with continued low natural gas

<sup>13</sup> Separately identify relevant facts associated with each coal, gas or natural gas-fired steam electric generating unit, as well as each natural gas-fired simple cycle turbine and combined cycle turbine.

prices, including disclosure of the presently-anticipated economic life of each unit owned or operated by registrant and relevant factors that bear on the potential for retirement of each unit, including, but not limited to, the age of the unit, heat rate of the unit, anticipated trend in maintenance costs over the next 5 years, the current and recent (5 years) prior year capacity factors and number of hours of operation at a loss. This disclosure shall include the potential timeline(s) of such impacts, the book value of the stranded asset at time of retirement or impairment and the impact of the action on the company's value;

~~35.3237.33~~ Probable and potential impacts on the operation or economic useful life of each fossil-fuel fired electric generating unit associated (in whole or in part) with Federal and state regulatory programs, including, but not limited to, the Clean Power Plan<sup>14</sup> and state programs, including state CO<sub>2</sub> emission limitations, such as the Washington State Clean Air Rule (RCW 70.235.020), Emission Performance Standards (RCW 80.80.040) and Energy Independence Act (I-937), and California AB323 or similar CO<sub>2</sub>/efficiency mandates that are increasingly common in the west. Other regulatory programs that may impact the operation or economic life of fossil fuel-fired EGUs include compliance with State Implementation Plans issued to comply with National Ambient Air Quality Standards, the Regional Haze Program, Cooling Water Intake and Discharge requirements, coal ash management requirements, and water use limitations<sup>15</sup>. This disclosure shall include the potential timeline(s) of such impacts, capital investment needed for compliance at each affected unit and, if applicable, the book value of the stranded asset at time of retirement or impairment and the impact of the action on the company's value;

~~35.33~~ The scope of each relevant long-term and short-term strategy to manage GHG emissions, such as whether strategies, plans, and/or reduction targets pertain differently to different business units, geographies, or emissions sources;

~~35.3437.34~~ Whether. The extent to which strategies, plans, and/or reduction targets are related to or associated with an emissions disclosure (reporting) or reduction program (e.g., E.U. ETS, Quebec Cap and Trade (Draft Bill 42 of 2009), California Cap-and-Trade (California Global Warming Solutions Act), the Western Climate Initiative, etc.), including local, state, regional, national, international, ~~or~~ and sectoral programs; and

~~35.3537.35~~ The activities and investments that may be required to achieve the plans and any risks or limiting factors that might affect achievement of the plans and/or targets.

~~36.38~~ For emission-reduction targets or potential requirements, the registrant shall disclose:

~~36.3238.32~~ The percentage amount of emissions within the scope of the reduction plan;

~~36.3338.33~~ The percentage reduction from the base year;

<sup>14</sup> While implementation of the Clean Power Plan (Title 40, Code of Federal Regulations, Part 60, Subpart UUUU) is currently stayed pending litigation, it is a promulgated regulation under the Clean Air Act. It also provides a useful metric for evaluating state and corporate sustainability even during the pendency of the stay.

<sup>15</sup> Where an asset is subject to laws of another country, the potential unit-specific impacts of those requirements should be disclosed.

~~36.3438.34~~ The base year is the first year against which emissions are evaluated under the relevant regulatory program toward the achievement of the target.

~~36.3438.34~~ Whether the target is ~~absolute-mass-based~~ or intensity based, and the metric denominator (e.g. lb/MW-h) if it is an intensity-based target;

~~36.3538.35~~ The timelines for the reduction activity, including the start year, the target year, and the base year. ~~Disclosure shall be limited to activities that were ongoing (active) or reached completion during the fiscal year;~~ and

~~36.3638.36~~ The mechanism(s) for achieving the target, such as retiring or curtailing operation of specific existing fossil fuel-fired units, new low-carbon electricity generation, energy efficiency measures, demand-response programs, energy conservation initiatives, etc. Where necessary, the registrant shall discuss any circumstances in which the target base year emissions have been, or may be, recalculated retrospectively or the target base year has been reset.

~~37.39~~ Disclosure corresponds with:

~~37.3239.32~~ CDSB Framework REQ-01, "Management's environmental policies, strategy and targets."

~~37.3339.33~~ CDP Questionnaire (2015) CC3, "Targets and Initiatives."

~~38.40~~ Relevant initiatives to disclose and discuss ~~may shall~~ include, but are not limited to, energy efficiency efforts, demand-response programs, and development of renewable energy portfolios consistent with the relevant regulatory programs. [IPCC Fifth Assessment Report: Climate Change 2014: Working Group 16](#) III: [Mitigation of Climate Change](#).

~~39.41~~ The registrant ~~may choose shall disclose and to~~ discuss its involvement in green power markets, including the number of customers served and corresponding electricity generated, where:

~~39.3241.32~~ Green power markets are defined as an optional utility service that allows customers the opportunity to support a greater level of utility company investment in renewable energy technologies.

~~40.42~~ ~~if the registrant chooses to discuss g~~ Green power market disclosure s, it should disclose should identify those instances where the use of green power markets are permitted as a compliance method or e required by for state renewable portfolio standards or required to be offered to consumers by regulatory authorities.

**Commented [BB8]:** This seems to conflict with the prior sentence.

**Commented [BB9]:** Participation in green power markets is material to many investors interested in sustainability.

**IF0101-03. (1) Historic RE generation (MWh) by type (all markets), (2) RE generation in markets subject to Number of customers served in markets subject to renewable portfolio standards (RPS) and (23) percentage fulfillment of comparison with RPS target by market**

~~41.43~~ The registrant shall disclose all RE generation (MWh) for each of the past 5 years by type; all RE generation brought online in the past year, all RE generation under development and all RE generation not yet under construction, but for which regulatory approvals have been sought.

~~42.44~~ Green power market disclosure should identify those instances where the use of green power markets are permitted as a compliance method or for state renewable portfolio standards or required to be offered to consumers by regulatory authorities

~~43.45~~ The registrant shall disclose the RPS that it is subject to and any “voluntary” Renewable Portfolio Goals (RPG) that it has committed to comply with in order to obtain a benefit.<sup>17</sup> For each such RPS, the registrant shall disclose the portion of the relevant obligation that calls for new wind, solar, geothermal or hydropower generating capacity (MW) or generation (MW-h). Where the RPS or RPG permits compliance based on other factors, such as pre-existing renewable energy, biomass, coal waste or similar materials, or Tier II Renewable Energy Credits (REC), a separate disclosure of those obligations and achievements should be made. This disclosure shall also disclose whether the obligation is expressed as a percentage of total sales, a percentage of retail sales or other factors. In some states, a solar only (SREC) requirement may operate in parallel with a broader RPS that may or may not allow compliance based on Tier II RECs. Where this exists, the registrant shall separately disclose each obligation.

~~44~~ The registrant shall disclose the number of customers it serves located in markets subject to renewable portfolio standards (RPS), where:

~~44.32~~ An RPS is defined as a regulatory mandate to increase production of electricity from renewable resources such as wind, solar, biomass, and other alternatives to fossil and nuclear electric power generation.

~~45~~ The scope of disclosure is limited to those markets with established RPSs that regulate the registrant’s operations.

~~46~~ Relevant state RPSs include those listed through [www.dsireusa.org](http://www.dsireusa.org) the National Conference of State Legislatures ([here](#)).

Examples include, but are not limited to:

~~46.32~~ California [Public Utilities Code Section 399.11-399.32](#)

~~46.33~~ Massachusetts [General Laws Part I Title II Chapter 25A Section 11F](#)

~~46.34~~ New York [Case 03-E-0188](#)

**Commented [BB10]:** The number of customers is less relevant than the demand.

<sup>17</sup> [Some states provide financial incentives for utilities to meet RPGs.](#)

~~46.3545.32~~ Texas Utilities Code Title 2 Subtitle B Chapter 39 Subchapter z Section 39.004

~~47.46~~ The registrant shall disclose its fulfillment of each RPS target or goals as expressed in the relevant requirement and as a percentage of overall sales (in megawatt hours) ~~weighted basis~~.

~~48.47~~ The registrant shall calculate its percentage fulfillment of RPS targets for each of the markets it serves as the amount of renewable electricity sold (in megawatt hours) in markets with RPS regulations divided by the amount of renewable electricity (in megawatt hours) that would need to be sold to achieve the registrant's target compliance obligation set forth through the relevant RPS regulations, where:

~~48.3247.32~~ Markets with RPS regulations are defined as those operations that are subject to distinct public utility regulatory oversight.

~~49.48~~ The registrant should disclose the generation and number of customers it serves that are located in markets where RPSs are purely voluntary, including a disclosure of the parameters of the RPS and the percentage fulfillment of the voluntary RPSs.

**Commented [BB11]:** The oversight may be elsewhere in the state system.

Note to **IF0101-03**

~~50.49~~ The registrant shall discuss its operations in markets with RPS regulations or where regulations are emerging, including and disclose whether it is meeting its regulatory obligations, ~~whether the~~ degree to which regulations require future increases to the registrant's renewable energy portfolio, the degree to which RPS obligations will reduce utilization of registrant's fossil fuel-fired EGUs and strategies to maintain compliance with emerging regulations.

~~51.50~~ In this discussion, the registrant should ~~consider disclose relevant facts and discuss~~ the implications of ~~non-RPS other GHG~~ regulations on current and future RPS regulations, including any impacts associated with the EPA's Clean Power Plan and state programs such the Regional Greenhouse Gas Initiative (RGGI), California AB32, the Western Climate Initiative, and the Washington EPS. In addressing the potential impacts of EPA's Clean Power Plan, the registrant shall disclose potential state-wide RE obligations under potential "rate-based" and "mass-based" alternatives of the CPP for each state in which it operates under reasonable assumptions of fossil-based EGU retirements and curtailments.

~~52.51~~ Where the registrant does not meet its current RPS obligations or may be at risk of not being able to meet future RPS regulations, the registrant should include a discussion of:

- ~~The reasons for not meeting RPS regulations and barriers to the development of RE in registrant's market. Where cost is asserted as a reason, the registrant shall disclose its calculation of the cost of meeting the RPS obligation, including the source of any figures or estimates used, including cost of the renewable and the future cost of alternative sources of electricity in lieu of the RE called for by the RPS;~~
- ~~The number of customers for whom RPS standards are not met or likely not to be met; and~~
- ~~The amount of the shortfall and measures being implemented to meet RPS requirements/goals~~
- Any punitive fines or settlements stemming from failure to meet RPS regulations.

## Air Quality

### Description

Fossil fuel combustion in ~~EGU electricity generation~~ operations generates hazardous air pollutants (HAPs), criteria air pollutants (CAPs), and volatile organic compounds (VOCs). HAPs, CAPs, and VOCs have somewhat more localized, but nonetheless significant, human health and environmental impacts compared with those of GHGs. The most common and impactful pollutants are fine inhalable particulate matter (PM<sub>2.5</sub>) and ozone, including their precursors - nitrogen oxides- (excluding nitrous oxide), sulfur oxides and volatile organic compounds. Other EGU pollutants causing significant harm include respirable particulate matter (PM<sub>10</sub>), lead, and mercury, acid gases (hydrogen chloride) and toxic metals such as arsenic, beryllium, chromium and lead. ~~They~~ These pollutants are regulated by the U.S. Environmental Protection Agency under the Clean Air Act, as well as by state and local agencies, creating significant regulatory risks for electricity generators.

**Commented [BB12]:** This is not wrong, N<sub>2</sub>O is not within the group of compounds referred to as NO<sub>x</sub>. But in this context it is not useful and may mislead.

Adverse health impacts and R regulatory and legal risk is higher-highest for those utilities operating near-units that do not have the full suite of modern pollution controls, units that adversely impact areas that have unsafe air quality ("non-attainment areas"<sup>18</sup>) or units that impact pristine areas, large communities. A utility's energy-generation mix and unit location ~~is~~ are the best indicators of its relative risk related to air quality. Approximately one-third of existing coal-fired EGUs in the U.S. do not have modern controls for SO<sub>2</sub> (flue gas desulfurization or FGD), and even fewer have the most effective NOx controls (selective catalytic reduction or SCR). These controls, while cost effective; nonetheless require a significant capital investment – upwards of \$250 million for a medium-sized plant- and an upcoming obligation to reduce harmful emissions may serve as a catalyst for managers to make decisions with respect to future operation of aging facilities that may have relatively high fuel and maintenance costs.

However, if a plant has state-of-the-art controls environmental regulatory authorities cannot ask for more. Thus, in addition to dramatically reducing the adverse public health impact of ongoing fossil-fuel fired generation, these pollution controls provide a form of insurance that limits the risk that large capital costs will be imposed in the future to comply with the revised PM<sub>2.5</sub> National Ambient Air Quality Standards, NSR requirements for modified units or Regional Haze requirements. Accordingly, one informative metric that is readily available is an identification of the control devices installed on each operating unit and the most recent performance test result for that unit.

A second strong metric is the modeled impact of registrant's EGUs' emissions on the ambient air quality in the region. Source apportionment modeling is commonly performed by state or local air pollution control agencies in the development of the

<sup>18</sup> These areas do not "attain" or meet health based outdoor (ambient) air quality standards adopted by the EPA.

State Implementation Plans (SIPs) and assessment of impact on Class I (pristine) areas. See, for example, <https://www.pca.state.mn.us/air/air-modeling-and-human-health>; <https://www.pca.state.mn.us/air/aera-air-emissions-risk-analysis>. Registrants can perform such modeling (or access modeling performed by state or local air administrators) to identify and report each plant's contribution to the ambient air quality in local and regional airsheds. The results of such modeling should be considered a mandatory, material disclosure for all units that are not fully controlled as described below.

Large, poorly controlled EGUs are also at risk of being required to add pollution controls to meet Federal requirements for protection of visibility in designated Class I (pristine national parks and wilderness areas). Where relevant, registrants shall disclose material facts and discuss potential obligations under current and future state interim and final implementation rules developed pursuant to section 169A of the Clean Air Act.

~~Harmful air emissions from operations may result in regulatory penalties that affect extraordinary expenses, higher regulatory compliance costs, and new capital expenditures to install best-in-class control technology (in some cases, such expenditures can be prohibitive to the continuation of a facility).~~

~~Companies can manage air quality concerns through both internal actions to reduce emissions and effectively working with regulators to establish priorities and to comprehensively incorporate risks into short- and long-term capital planning.~~

**Commented [BB13]:** The real cost is not in the penalties assessed against stationary source operators, but in the cost of controls.

## Accounting Metrics

### **IF0101-04. Identification of installed controls and documentation of emissions performance each fossil-fuel-fired EGU; estimated cost to fully control each fossil fuel-fired EGU**

.27 For each of its oil or coal-fired EGUs registrant shall disclose the PM, SO<sub>2</sub>, NO<sub>x</sub> and Hg controls installed as of the time of its disclosure. This disclosure will include documentation of the performance levels in term of emission rate (mg/nm<sup>3</sup>, lb/MWh or similar) and in terms of control efficiency (e.g. 98%) achieved by these controls and any applicable regulatory requirements. For coal-fired EGUs that do not have an FGD with a control efficiency of 90 percent or greater, a SCR with a control efficiency of 80 percent or greater or a PM control with an efficiency of 99 percent or greater, registrant shall disclose a detailed estimate of the capital cost of installing state of the art controls (95% minimum control efficiency for FGD; 90% for SCR; 99.5% for PM).

.28 For each of its natural gas-fired EGUs greater than 25 MWe, that is not equipped with SCR with a removal efficiency of 80 percent or more, registrant shall disclose a detailed estimate of the capital cost of installing a SCR with a 90% control efficiency.

.28 For EGUs located within the United States all disclosures shall comport with the methods and procedures established by the USEPA.

**Direct Air emissions of the following pollutants: NO<sub>x</sub> (excluding N<sub>2</sub>O), SO<sub>2</sub>, SO<sub>x</sub>, particulate matter (PM<sub>10</sub>), and pollutants regulated under MATS (Pb, and Hg; percentage of each in or near areas of dense population**

**Commented [BB14]:** We talk about NO<sub>x</sub> and SO<sub>x</sub> ; but really only regulate NO<sub>2</sub> and SO<sub>2</sub>

**The registrant shall disclose its the emissions of air pollutants NO<sub>2</sub>, SO<sub>2</sub>, and PM<sub>10</sub> (in metric tons per year and in lb/MWh) that are released to the atmosphere from each fossil fuel-fired EGU it owns or operates as a result of its activities:**

**Commented [BB15]:** Since the phase out of lead in gasoline, we only have lead issues near smelters and battery crackers.

~~51.22~~ Direct air emissions from controlled emission points (stack emissions).

~~51.23~~ Any uncontrolled emissions from the EGU during upset and startup/shutdown conditions

~~51.24~~ Emissions from secondary sources – including, but not limited to fugitive emissions from the coal unloading station, coal pile, fly and bottom ash management and storage.

~~51.25~~ VOC emissions from onsite storage and use of oil or

~~52.32 Methane emissions from onsite storage and use of natural gas, stationary or mobile sources including, but not limited to, electricity generation, electricity transmission and distribution equipment (i.e., high-voltage circuit breakers, switch gear, and transformers), and transportation (i.e., marine, road, or rail).~~

**Commented [BB16]:** Small beans, or zero for this source category.

~~52.35 1.36~~

~~53 The registrant shall disclose emissions released to the atmosphere by emissions type. Substances include:~~

**Commented [BB17]:** Deleted as superfluous.

~~53.32 Oxides of nitrogen (including NO and NO<sub>2</sub> and excluding N<sub>2</sub>O), reported as NO<sub>x</sub>.~~

~~53.33 Oxides of sulfur (SO<sub>2</sub> and SO<sub>3</sub>), reported as SO<sub>x</sub>.~~

~~53.34 Particulate matter (PM<sub>10</sub>), reported as the sum of PM<sub>10</sub>, where:~~

~~PM<sub>10</sub> is defined according to 40 CFR Part 51 as particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers, including both condensable and filterable particulate matter.~~

~~53.35 Mercury and mercury compounds, reported as Hg.~~

~~53.36 Lead and lead compounds, reported as Pb.~~

#### Contribution of direct emissions of PM, SO<sub>2</sub>, NO<sub>2</sub> and VOCs from each fossil fuel-fired EGU it owns or operates on PM<sub>2.5</sub> and ozone concentrations within the airshed of such fossil fuel-fired EGU.

.30 Registrant shall disclose input parameters and model results that identify the contribution of direct emissions of PM, SO<sub>2</sub>, NO<sub>2</sub> and VOCs from each fossil-fuel fired EGU it owns or operates on PM<sub>2.5</sub> and ozone concentrations within the airshed of such fossil fuel-fired EGU and from the fleet of Registrant's EGUs collectively

.31 This modeling, including determination of vertical and horizontal domains of relevance, shall have been conducted in accordance with USEPA's most recent *Guideline on Air Quality Models*, 40 CFR Part 51, Appendix W (82FR 5182, January 17, 2017 and including *Guidance on the Use of Models for Assessing the Impacts of Emissions from Single Sources on the Secondary Formed Pollutants: Ozone and PM<sub>2.5</sub>*, USEPA, December 2016— Generally this will include EGUs that are located in or near areas of dense population, which are defined as urbanized areas according to U.S. Census Bureau definitions contained in Federal Register, Vol. 76, No. 164, (August 24, 2011).

#### Adverse health impacts of emissions from each fossil fuel-fired EGU

.32 Registrant shall disclose input parameters and model results that identify the risk associated with direct emissions of PM, SO<sub>2</sub>, NO<sub>2</sub>, VOCs, pollutants regulated under MATs and secondary PM<sub>2.5</sub> and ozone concentrations within the airshed of such fossil fuel-fired EGU and from the fleet of Registrant's EGUs collectively

.33 Multimedia modeling and risk assessment protocols shall comport with EPA recommended methods documented in the *USEPA Human Health Risk Assessment Protocol* or HHRAP (EPA 2005), including

1. Methodology for Assessing Health Risks Associated with Multiple Pathways of Exposure to Combustor Emissions (<https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=55525&CFID=62997541&CFTOKEN=75735101>);
2. Risk Assessment Guidance for Superfund: Volume I Human Health Evaluation Manual (RAGS); <https://www.epa.gov/risk/risk-assessment-guidance-superfund-rags-part>);
3. Exposure Factors Handbook (<https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=236252>) and
4. Integrated Risk Information System (IRIS, <https://www.epa.gov/iris>).

~~.1 This scope does not include CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O, which are disclosed in IF0101-01 as Scope 1 GHG emissions.~~

**Commented [BB18]:** Superfluous

.34 Air emissions data shall be consolidated according to the approach with which the registrant consolidates its

financial reporting data, which is aligned with the consolidation approach used for IF0101-01.

~~.54 The registrant shall disclose the percentage of its NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, Pb, and Hg emissions from its production facilities that are located in or near areas of dense population, which are defined as urbanized areas according to U.S. Census Bureau definitions contained in Federal Register, Vol. 76, No. 164, (August 24, 2011).~~

~~1. Generally, these include urbanized areas with populations greater than 50,000.~~

~~2.1 A list of urbanized areas based on census results from 2010 is available [here](#).~~

~~.55 The scope of disclosure includes production facilities that are located in a census tract or block considered to be in an urbanized area or within 49 kilometers of an urbanized area.<sup>21</sup>~~

.35 For production facilities located outside of the U.S., the registrant shall use available census data to determine whether the facility is located in an urbanized area as defined by the U.S. Census Bureau.

~~3.2~~ In the absence of available or accurate census data, the registrant should use international population density data available from the Columbia University/NASA Socioeconomic Data and Applications Center's (SEDAC) Gridded Population of the World (GPW), v3.

.1 The registrant ~~should~~ shall disclose and discuss the calculation methodology for its emissions disclosure, such as whether data are from continuous emissions monitoring systems (CEMS), engineering calculations, mass balance calculations, etc. Disclosure may be made by referring to the USEPA Method or Procedure employed.

**Commented [BB19]:** Superseded by reference to EPA modeling. 49 km works for most air toxics, but not for PM<sub>2.5</sub> or ozone which can impact hundreds of km downwind or for Hg.

<sup>21</sup> The 49-kilometer radius is based on the methodology set forth in the EPA's Office of Pollution Prevention and Toxics User's Manual for RSEI, Version 2.3.4., December 2015: "RSEI calculates air concentrations at hypothetical "receptors" located within a circle with a radius of 49 km surrounding each facility."

# Water Management

## Description

Electricity generation is the most water-intensive industry in the U.S., using water mainly for cooling purposes. The industry is facing increasing water-related supply and regulatory risks, creating serious potential for stranded assets. Power plants may increasingly not be able to operate at their full capacity, or at all, because of region-specific water constraints, as water supplies tighten in different regions and electricity generation, agriculture, and municipal use compete for water supplies in the coming decade. The availability of water is a key factor to consider when calculating the future value of many electricity-generating assets and for evaluating existing proposals for new generation sources. Heightened water scarcity due to factors such as increasing consumption and reduced supplies as a result of climate change, which could result in more frequent or intense droughts, ~~could have~~ prompted regulatory authorities to limit companies' ability to withdraw necessary amounts of water, especially in regions with high baseline water stress. Furthermore, companies must contend with the growing regulations related to the significant biodiversity impacts that such large withdrawals can cause. To mitigate risks, companies can both invest in more efficient water-usage systems for existing plants and place strategic priority on assessing long-term water availability, as well as water-related biodiversity risks, when siting new power plants.

In particular, in 2014 USEPA promulgated standards that established a framework for state permitting authorities to impose cooling water intake requirements at new and existing EGUs and other industrial sites (Cooling Water Intake Rule). These rules are intended to reduce entrainment and impingement mortality occasioned by the withdrawal of large quantities of water from surface waters. The rules establish a framework for studies to determine the "best available technology for minimizing adverse environmental impact" (BAT) at covered facilities and may lead to significant capital expenditures for controls at some units. Following a multi-year period for conducting the site-specific studies, state permitting authorities are required to impose BAT requirements and pretreatment standards for six waste streams at EGUs (bottom ash transport water and FGD wastewater) for existing EGUs when renewing Clean Water Act NPDES permits that expire after July 14, 2018, and no later than December 31, 2023.

In 2015, the USEPA finalized regulations for steam EGUs (Steam Electric Effluent Limitations) that established limits on the levels of toxic metals that can be discharged from EGUs. In August, 2017, the EPA Administrator announced his decision to postpone the compliance date of that portions of the regulations governing treatment and discharge of bottom ash transport water and FGD wastewater from November 1, 2018 to November 1, 2020 to permit a rulemaking to revise those limitations. This action, is subject to judicial challenge. It did not affect those parts of the rules that regulate fly ash wastewater, flue gas mercury control wastewater or gasification wastewater.

## Accounting Metrics

### IF0101-05. (1) Total water withdrawn and (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress

1. The registrant shall disclose the amount of water ~~(in thousands of cubic meters)~~ that was withdrawn ~~from all sources to serve each fossil fuel-fired or nuclear EGU it owns or operates, over the past 5 years~~ (in thousands of cubic meters/yr and in gallons/kWh) where:

- 4.3. Water sources include surface water (including water from wetlands, rivers, lakes, and oceans), groundwater, rainwater collected directly and stored by the registrant, wastewater obtained from

Commented [BB20]: Again, looking for trends.

other entities, municipal water supplies, or supply from other water utilities.

2. The registrant may choose to disclose portions of its supply by source if, for example, significant portions of withdrawals are from non-freshwater sources, where:

~~5-4.~~ Fresh water may be defined according to the local statutes and regulations where the registrant operates. Where there is no regulatory definition, fresh water shall be considered to be water that has a solids (TDS) concentration of less than 1000 mg/l per the [Water Quality Association definition](#).

~~6-5.~~ Water obtained from a water utility in compliance with U.S. [National Primary Drinking Water Regulations](#) can be assumed to meet the definition of fresh water.

3. The registrant shall disclose the amount of water (in thousands of cubic meters and in gallons/kWh) that was consumed in ~~its~~ the operations of each fossil fuel-fired or nuclear EGU it owns or operates, where water consumption is defined as:

~~7-6.~~ Water that evaporates during withdrawal, usage, and discharge;

~~8.~~ Water that is directly or indirectly incorporated into the registrant's product or service; and

**Commented [BB21]:** Not relevant for electricity.

~~9-7.~~ Water that does not otherwise return to the same catchment area from which it was withdrawn, such as water returned to another catchment area or the sea.

~~4.~~ The registrant shall calculate and disclose the Normalized Deficit Index (NDI) and Normalized Deficit Cumulated (NDC) for each county in which it operates a fossil fuel-fired or nuclear unit. See, [http://water.columbia.edu/files/2013/09/GB\\_CWC\\_whitepaper\\_climate-water-stress\\_final.pdf](http://water.columbia.edu/files/2013/09/GB_CWC_whitepaper_climate-water-stress_final.pdf).

~~4-5.~~ The registrant shall analyze all of its operations for water risks and identify activities that withdraw and consume water in locations with High (40–80%) or Extremely High (>80%) Baseline Water Stress as classified by the World Resources Institute's (WRI) Water Risk Atlas tool, Aqueduct (publicly accessible online [here](#)).

~~5-6.~~ The registrant shall disclose its water withdrawn in locations with High or Extremely High Baseline Water Stress as a percentage of the total water withdrawn.

~~7.~~ The registrant shall disclose its water consumed in locations with High or Extremely High Baseline Water Stress as a percentage of the total water consumed.

~~8.~~ The registrant shall disclose the number and extent of any generation curtailments over the past 5 years that were occasioned by a shortage of available cooling water.

~~9.~~ The registrant shall disclose competing users of potentially available cooling water, including, but not limited to competing agricultural, industrial, commercial and residential needs in the watershed.

~~10.~~ The registrant shall disclose the capital cost and any operational constraints associated with complying with EPA's cooling water intake rule at each plant.

**IF0101-06. Number of incidents of non-compliance with water quality and/or quantity permits, standards, and regulations Water Quality**

11. The registrant shall disclose a representative mean value and upper/lower values for the amount and temperature of cooling water discharged and associated impacts on the receiving body of water.
12. The registrant shall disclose the amount (in gallons per year and gallons per MWh) and specific makeup of any materials added to cooling or makeup water at each plant and the environmental fate of each additive.
13. The registrant shall disclose the amount and composition of FGD wastewater. FGD wastewater composition disclosure shall include a description of any treatment system employed and representative mean and upper/lower values of:
  - Flow rate
  - Temperature
  - pH
  - Total suspended solids
  - Sulfate
  - Chloride
  - Calcium
  - Magnesium
  - Sodium
  - Total Kjeldahl Nitrogen
  - Selenium
  - Mercury

~~6.~~14. The registrant shall disclose the total number of instances of non-compliance, including exceedances and/or violations of a technology-based standard and exceedances of a quality-based standard.

~~7.~~15. The scope of disclosure includes incidents governed by federal, state, and local statutory permits and regulations including, but not limited to, the appropriate use of aquatic impingement or entrainment related technologies, discharge of a hazardous substance, violation of pretreatment requirements (when discharging to applicable publicly owned treatment works), maximum temperature-limit exceedance, exceedance of a groundwater standard, effluent limit exceedances (such as Water Quality Based Effluent Limit), and/or water withdrawal exceedances.

~~8.~~16. An incident of non-compliance or exceedance shall be disclosed regardless of whether it resulted in an enforcement action (e.g., fine, warning letter, etc.).

~~9.~~17. An incident of non-compliance shall be disclosed regardless of the measurement methodology or frequency. These include violations ~~and exceedances~~ :

~~10.~~8. For continuous discharges, limitations, standards, and prohibitions that are generally expressed as maximum daily, weekly, and monthly averages.

~~11.~~9. For non-continuous discharges, limitations that are generally expressed in terms of total mass, maximum rate of discharge, frequency, and mass or concentration of specified

pollutants.

#### **IF0101-07. Discussion of water management risks and description of strategies and practices to mitigate those risks**

~~40.18.~~ The registrant shall discuss its risks associated with water withdrawals, water consumption, and discharge of water to the environment and describe how it manages these risks.

~~41.19.~~ The registrant shall discuss, where applicable, risks to the availability of adequate, clean water resources.

~~42.10.~~ Relevant information to provide includes, but is not limited to:

- ~~Environmental constraints, such as operating in water-stressed regions, drought, concerns of aquatic impingement or entrainment, interannual or seasonal variability, and risks due to the impact of climate change.~~
- The registrant shall disclose the relevant facts and likely and potential actions associated with compliance with USEPA's cooling water intake rules, including current impingement and entrainment data, the results of its BAT studies at each covered facility, permitting and compliance schedule, potential capital costs for compliance and whether any challenge to its recommended BAT determinations is anticipated.
- External constraints, such as volatility in water costs, stakeholder perceptions and concerns related to water withdrawals (e.g., those from local communities, non-governmental organizations, and regulatory agencies), direct competition with and impact from the actions of other users (commercial and municipal), restrictions to withdrawals due to regulations, and constraints on the registrant's ability to obtain and retain water rights or permits.
- How risks may vary by withdrawal source, including wetlands, rivers, lakes, oceans, groundwater, rainwater, municipal water supplies, or supply from other water utilities.

~~42.20.~~ The registrant shall discuss, where applicable, risks associated with its discharge of wastewater.

~~43.11.~~ Relevant information to provide includes, but is not limited to:

- ~~Environmental constraints, such as the ability to maintain compliance with regulations focused on the quality of effluent discharged to the environment, and the ability to maintain control over the temperature of water discharges.~~
- ~~External constraints, such as increased liability and/or reputational risks, restrictions to discharges and/or increased operating costs due to regulation, stakeholder perceptions and concerns related to water discharges (e.g., those from local communities, non-governmental organizations, and regulatory agencies), and the ability to obtain discharge rights or permits.~~
- The registrant shall disclose the relevant facts and likely and potential actions associated with compliance with USEPA's Steam Electric Effluent Limitations at each facility subject to those

limitations, including current representative water quality data for each covered waste stream, the permitting and compliance schedule, and potential capital costs for compliance if (a) the current rules and schedules are upheld and enforced and (b) if those rules are modified as proposed by the current management at USEPA<sup>19</sup>. The registrant shall also disclose the amount of additional toxic metals that would be discharged by each of its facilities if EPA relaxes the effluent limitations as proposed.

- How risks may vary by discharges to different sources, including wetlands, rivers, lakes, oceans, groundwater, rainwater, municipal water supplies, or other water utilities.

~~13.21.~~ The registrant shall disclose any evidence of environmental degradation potentially associated with its discharges of water. Such evidence of environmental degradation may include fish kills, dead zones with depleted oxygen levels and aquatic vegetation stress.

~~14.22.~~ The registrant ~~should~~ shall include disclosure and a discussion of the potential impacts that ~~these water related~~ risks may have on its operations and the timeline over which such risks are expected to manifest.

~~14.12.~~ Impacts may include, but are not limited to, those associated with costs, revenues, liabilities, continuity of operations, and reputation.

~~15.23.~~ The registrant shall provide a description of its short-term and long-term strategy or plan to manage these risks, including the following, where relevant:

~~15.13.~~ Any water management targets it has set, and an analysis of performance against those targets.

- Water management targets can include water management goals that the registrant prioritizes to manage its risks and opportunities associated with water withdrawal, consumption, or discharge.
- Targets can include, but are not limited to, those associated with reducing aquatic impingements, reducing water withdrawals, reducing water consumption, reducing water discharges, and improving the quality of water discharges.

~~16.14.~~ The scope of its strategy, plans, or targets, such as whether they pertain differently to different business units, geographies, or water-consuming operational processes.

~~17.15.~~ The activities and investments required to achieve the plans and targets, and any risks or limiting factors that might affect achievement of the plans and/or targets.

~~16.24.~~ For water management targets, the registrant shall additionally disclose:

~~18.16.~~ The percentage reduction or improvement from the base year, where:

- The base year is the first year against which water management targets are evaluated toward the achievement of the target.

~~19.17.~~ Whether the target is absolute or intensity based, and the metric denominator if it is an intensity-

<sup>19</sup> This assumes that USEPA issues a proposed rule prior to the close of registrant's reporting period.

based target.

~~20-18.~~ The timelines for the water management plans, including the start year, the target year, and the base year.

~~21-19.~~ The mechanism(s) for achieving the target, including:

- Efficiency efforts, such as the use of water recycling and/or closed-loop systems;
- Product innovations such as redesigning products or services to require less water;
- Process and equipment innovations, such as those that enable the reduction of aquatic impingements or entrainments;
- Use of tools and technologies (e.g., the [World Wildlife Fund Water Risk Filter](#), [WRI/WBCSD Global Water Tool](#), and [Water Footprint Network Footprint Assessment Tool](#)) to analyze water use, risk, and opportunities; and
- Collaborations or programs in place with the community or other organizations.

~~17-25.~~ Disclosure of strategies, plans, and targets shall be limited to activities that were ongoing (active) or reached completion during the fiscal year.

~~18-26.~~ The registrant shall discuss whether its water management practices result in any additional lifecycle impacts or tradeoffs in its organization, including tradeoffs in land use, energy production, and greenhouse gas (GHG) emissions, and why the registrant chose these practices despite lifecycle tradeoffs.

#### Additional Resources

GRI-Global Reporting Initiative (GRI G4)  
CDP 2015 Water Questionnaire  
CEO Water Mandate  
Global Water Footprint Assessment Standard

# Coal Ash Management

## Description

Electricity generators must safely dispose of the hazardous by-products of their operations. Coal ash is a major source of waste that can have a significant effect on company value in the power-generation segment. This issue will affect companies differently, depending on the extent to which they generate electricity from coal. Coal ash is one of the largest industrial waste streams in the U.S. It contains heavy metal contaminants that have been associated with different cancers and other serious diseases, especially when they leach into groundwater. Coal ash can have beneficial uses when recycled or reused, such as in the creation of fly ash concrete or wallboard, creating revenue opportunities for electric utilities. Safe handling of coal ash, location of coal ash impoundments in areas where their potential to cause harm to human life or the environment is limited, strong monitoring and containment of coal ash, and the sale for beneficial uses of coal ash are important strategies to reduce regulatory compliance costs as well as penalties for non-compliance. There can be significant litigation and/or remediation costs if the coal ash leaches into the surrounding environment.

## Accounting Metrics

### IF0101-08. Amount of coal combustion residuals (CCR), percentage recycled

~~19-27.~~ The amount of coal combustion residuals (CCR) from operations in each of the last 5 years at each coal fired plant owned or operated by registrant shall be ~~calculated~~ reported in metric tons (1) generated, (2) recycled, (3) stored onsite or (4) stored at offsite locations that registrant is responsible, where:

~~22-20.~~ CCRs are defined according to the [Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities](#) as that material generated from the combustion of coal, including solid fuels classified as anthracite, bituminous, subbituminous, and lignite, for the purpose of generating steam in order to power a generator to produce electricity or electricity and other thermal energy by electric utilities and independent power producers.

~~23-21.~~ CCR includes fly ash, bottom ash, boiler slag, and flue gas desulfurization materials.

~~20-28.~~ The percentage recycled shall be calculated as the weight (in metric tons) of CCR that was reused or reclaimed, plus the weight recycled (through treatment or processing) by the registrant, plus the amount sent externally for further recycling, divided by the total weight of CCR generated from operations, where:

~~24-22.~~ CCR material is recycled if it meets the definition of beneficial use set forth in the [EPA's Disposal of Coal Combustion Residuals from Electric Utilities Final Rule](#), where beneficial use includes:

- The CCR material used must provide a functional benefit (e.g., CCR in concrete increases the durability of concrete and CCR as a soil amendment adjusts the pH of soil to promote plant growth).
- The CCR substitutes for the use of a virgin material, conserving natural resources that would otherwise need to be obtained through practices, such as extraction (e.g., CCR used in road bed

replaces quarried aggregate or other industrial materials).

- The CCR materials meet product and regulatory specifications and are not being used in excess quantities of product or regulatory specifications (e.g., the field applications of CCR materials do not exceed the scientifically supported quantities required for enhancing soil properties and/or crop yields).

**IF0101-09. Total number of coal combustion residual (CCR) impoundments and number by EPA Hazard Potential Classification, broken down by EPA structural integrity assessment**

~~21-29.~~ The registrant shall disclose ~~the total number of each~~ coal combustion residual (CCR) impoundments ~~and any associated conveyances~~, where:

~~25-23.~~ CCR impoundments are defined as those surface impoundments containing residuals of coal combustion, ~~including FGD residuals~~, where:

- A surface impoundment is defined, according to 40 CFR 257.2, as a facility or part of a facility that is a natural topographic depression, human-made excavation, or diked area formed primarily of earthen materials (although it may be lined with human-made materials) that is designed to hold an accumulation of liquid wastes or wastes containing free liquids and that is not an injection well.

~~24.~~ The scope of disclosure includes those CCR impoundments that the registrant currently owns and/or operates and those CCR impoundments that are inactive and/or closed, but for which the registrant retains oversight and/or financial responsibility.

~~25.~~ The disclosure shall identify any CCR impoundments (and associated conveyances) at its EGUs that may pose a risk of discharge to a water body if there is a failure of the impoundment or conveyance.

~~30.~~ This disclosure includes the nature (including chemical composition) and volume of materials in the impoundment, the length and type of conveyance (e.g. 8 inch diameter stainless steel pipe), distance from the water body, whether the impoundment is lined, and secondary containment measures.

~~31.~~ This disclosure includes reporting of each accidental discharge and of permitted discharges from the impoundment over the past 5 years.

~~22-32.~~ This disclosure shall also include reporting of anticipated impoundment closure and post-closure management costs for all CCR impoundments under state and Federal requirements and how registrant intends to manage and fund such closure requirements, including the extent that such obligations are self-bonded.

~~23-33.~~ The registrant shall disclose the number of impoundments for each Hazard Potential Classification, broken down by structural integrity assessment rating, where:

26. The EPA Hazard Potential Classifications, consistent with the [Federal Emergency Management Agency's \(FEMA\) Hazard Potential Classification System for Dams](#), define the potential for loss of life or damage resulting from a dam failure, where classifications include High Hazard Potential, Significant Hazard Potential, Low Hazard Potential, and Less Than Low Hazard Potential.

- High Hazard Potential includes dams where failure or misoperation will probably cause loss of human life. A listing of High Hazard Potential units can be found [here](#).
- Significant Hazard Potential includes dams where failure or misoperation would not result in probable loss of human life, but could cause economic loss, environmental damage, disruption of lifeline facilities, or impact

other concerns.

- Low Hazard Potential includes dams where failure or misoperation would not result in probable loss of human life and economic and/or environmental losses would be of low magnitude.
  - Less Than Low Hazard Potential includes dams that do not pose high, significant, or low hazard potential.
27. The EPA structural integrity rating defines the expected performance of dams under applicable loading circumstances (static, hydraulic, and seismic), where ratings include Satisfactory, Fair, Poor, and Unsatisfactory.
- Satisfactory is defined as those dams where acceptable performance is expected under all required loading circumstances and no existing or potential safety deficiencies are recognized.
  - Fair is defined as those dams where acceptable performance is expected under all required loading circumstances, yet minor deficiencies may exist that require remedial action and/or secondary studies or investigations.
  - Poor is defined as those dams where a safety deficiency is recognized for a required loading circumstance, remedial action is required, and further critical studies or investigations may be needed.
  - Unsatisfactory is defined as those dams, considered unsafe, where a deficiency is recognized that requires immediate or emergency remedial action.

~~24-34.~~ Where state, local, or internal assessments determine the hazard potential and/or structural integrity to be at higher risk of impact and/or failure than that determined by the EPA, the registrant shall disclose the more conservative (i.e., higher risk) classification and/or rating.

~~25-35.~~ Where EPA regulations are not enforced, the registrant shall disclose a breakdown of CCR impoundments by hazard potential and structural integrity according to local regulations or internally developed assessments.

~~26-36.~~ The registrant should summarize and disclose CCR impoundments in the following table format:

	Less Than Low Hazard Potential	Low Hazard Potential	Significant Hazard Potential	High Hazard Potential
Satisfactory				
Fair				
Poor				
Unsatisfactory				

### **Additional References**

For guidance on the “legitimate recycling” of hazardous waste, see 40 CFR 260.43. [Coal](#)

[Combustion Residuals Impoundment Assessment Reports](#)

## Energy Affordability

The de facto objective of regulated electric utilities is to provide reliable, affordable, and sustainable electricity. Companies in the industry are tasked with managing these potentially competing priorities to maintain favorable relations with customers and regulators—and ultimately to earn appropriate returns for shareholders. The affordability of energy is particularly challenging for companies to balance, as it often conflicts with other core objectives. Utility energy bills are widely perceived to be increasingly unaffordable for low-income customers (affordability is determined by both the net cost of energy bills and the underlying customer economics). Ensuring that utility bills are affordable is crucial for utilities working to build trust (intangible asset value) with regulators and customers. Quality of regulatory relations is a key value driver for utilities, and one of the more closely analyzed issues by investment analysts. The willingness of regulators to grant rate requests, rate structure modifications, cost recovery, and allowed returns is a primary determinant of financial performance and investment risk. Effectively managing affordability may enable utilities to invest more capital, favorably revise rate structures, and increase allowed returns. Furthermore, utilities that do not effectively manage affordability are increasingly exposed to customers defecting from the grid (or at a minimum, reducing reliance on the grid) by implementing distributed energy resources or pursuing other alternative energy sources (e.g., industrial customers' use of combined heat and power). Managing affordability involves operating an efficient business with a well-thought-out, long-term perspective and strategy, as well as working closely with regulators and public policymakers on rate structures and, potentially, bill-assistance programs. While the precise nature of financial impacts of affordability are largely determined by utilities' business models and rate structures, affordability is a critical business issue for utilities to manage in terms of maintaining (and growing) customer bases, building intangible asset value, creating investment and return opportunities, and ultimately delivering shareholder returns.

**Commented [BB22]:** This section is added in the redline. It should be deleted. As written, it implies a preference for the cheapest electricity (considering direct costs only), irrespective of externalized social and environmental costs. (i.e., the opposite of a sustainability approach).

## Accounting Metrics

### TA11-04-01. Average retail electric rate for (1) residential, (2) commercial, and (3) industrial customers

.62 The registrant shall disclose its average retail electric rate (in U.S. dollars) per kilowatt hour (kWh) of electricity delivered to retail customers.

□ The registrant shall calculate its average retail electric rate as the total revenue directly resulting from electricity delivered to retail customers (in U.S. dollars) divided by the amount of corresponding electricity delivered (in kWh).

.63 The registrant shall disclose its average retail electric rate separately for each type of customer, where customers are classified as residential, commercial, and industrial.

• The scope of each customer type shall be consistent with the registrant's financial reporting.

□ Each customer type shall be disclosed as an aggregate for all customers within that respective customer type.

□ If the registrant's financial reporting combines commercial and industrial customers into one category, then the registrant may combine the commercial and industrial customer types.

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The registrant may choose to disclose sub-classifications of customer types. For example, in addition to the average retail electric rate for commercial customers, the registrant may provide further disclosures by small commercial customers and large commercial customers.

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.64 The registrant may choose to disclose additional customer types if such customer types exist that do not fall within the scope of the customer types described above. For example, the registrant may choose to additionally disclose average electric rate for agricultural customers and/or public street lighting.

**TA11-04-02. Typical monthly electric bill for residential customers for 1) 500 kWh and 2) 1,000 kWh of electricity delivered per month**

.65 The registrant shall disclose the typical monthly electric bill (in U.S. dollars) for the first 500 kilowatt hours (kWh), and separately the first 1,000 kWh, of electricity delivered to its residential customers per month.

.66 The registrant shall calculate the typical monthly electric bill for residential customers as the sum of revenue (in U.S. dollars) directly resulting from the first 500 kWh, and separately the first 1,000 kWh, of electricity delivered to residential customers each month over the course of the reporting period (based on seasonal rates), divided by the number of months in the reporting period, divided by the weighted average number of residential customers during the reporting period.

.67 The registrant may choose to discuss any variance in disclosure with those figures reported in the Edison Electric Institute's "Typical Bills and Average Rates Report," including any differences in calculation methodology.

.68 The registrant may choose to disclose additional customer types and/or sub-classifications of customer types. For example, the registrant may choose to additionally disclose typical monthly electric bill for commercial customers.

**TA11-04-03. Low Income Assistance Programs, Number of residential customer electric disconnections for non-payment, percentage reconnected within 30 days**

.69 The registrant shall disclose the total number of customers supported by low income assistance programs, electricity disconnections among residential customers during the reporting period that resulted from non-payment, where:

1. A disconnection is defined as the registrant, or its service provider, intentionally turning off a customer's access to electricity.
2. Disconnections occurring for multiple reasons shall be included if non-payment (or under-payment) is a contributing cause of the disconnection.

.63 The registrant shall disclose the percentage of disconnections that are reconnected within 30 days.

1. The percentage shall be calculated as the number of residential customers previously disconnected, that were reconnected within 30 days of the date of the disconnection, divided by the total number of residential customer disconnections during the reporting period that resulted from non-payment.
2. A reconnection is defined as the registrant, or its service provider, intentionally turning on a customer's access to electricity, which was previously disconnected.

Reconnections may occur for reasons including, but not limited to, bill payment, the establishment of a bill payment plan, and/or the use of a bill assistance program.

- The scope of disclosure may include reconnections that occur after the end of the reporting period, but the registrant shall not double-count reconnections across multiple discrete reporting periods.

**Note to TA11-04-03**

.64 The registrant shall discuss how policies, programs, and regulations impact the number and duration of residential customer disconnections.

- Policies include company-level policies that govern the conditions under which the registrant may disconnect (or may not disconnect) residential customers.
- Programs include those administered at the federal, state, local, utility commission, or company-level that are designed to improve the affordability of electricity among residential customers, and/or reduce the number and/or duration of residential customer disconnections (e.g., Low Income Home Energy Assistance Program).
- Regulations include those occurring at the federal, state, local, utility commission, or company-level that are designed to improve the affordability of electricity among residential customers, and/or reduce the number and/or duration of residential customer disconnections.

## Community Impacts of Project Siting / Transmission and Distribution

### Description

New power-generation plants and the expansion of existing ones can have significant land requirements. New transmission lines, especially those necessitated by the relatively remote locations of solar and wind farms, also require significant land rights. Placement decisions and effective engagement with stakeholders in the project area can have a significant impact on the amount of time it takes to bring a project to fruition. New transmission lines will be needed to effectuate a change to a low carbon society, but, in recent years a number of proposed new transmission projects have engendered significant public opposition.

A utility's choice of energy generation can have a significant effect on the amount of community pushback it receives—the negligible air pollution of renewables can make certain communities more amenable to such plants than to higher-polluting coal plants; conversely, certain stakeholders may be concerned about the aesthetics or impact on property values of a wind farm or transmission line in their community.

Similarly, transmission lines intended to facilitate development of renewable energy may engender less opposition than lines intended to increase use of fossil fuels. Many projects require environmental and social impact assessments as part of the regulatory approval process. The more effectively a company can present the benefits of

**Commented [BB25]:** While the redline draft deletes this entire section, we believe it should be retained.

the project to relevant stakeholders and address potential community concerns, the faster projects are likely to be initiated and the company can start earning revenue. Uncertainty surrounding a company's ability to gain and maintain land-use permits, ~~and resorting to the use of~~ eminent domain rights (which allow utilities to take private property for public use) ~~and short-sighted route planning~~<sup>20</sup> can increase a company's reputational risk profile and ~~subsequently, its capital costs lead to costly and time-consuming litigation.~~

Events over the past year have demonstrated the potential for risk to T&D assets and shareholder value from extreme hurricanes and from wildfires and the potential that information concerning the impact of siting, maintenance, management and insurance practices to minimize the impact of such events is material.

## Accounting Metrics

### IF0101-10. Number Disclosure of RE projects, including T&D modifications to facilitate transition to a low carbon future

.65 The registrant shall disclose each RE project over the past 5 years, including transmission and distribution system modifications whose principal purpose was to support RE development, any significant siting issues or local community objections that arose and the resolution of those issues.

### .66 IF0101-11. Disclosure of other projects, including new fossil fuel-fired generation, T&D to support new fossil fuel-fired generation and generic T&D upgrades

.67 The registrant shall disclose each fossil fuel-generation project and each transmission and distribution system project whose principal purpose was to either fossil fuel-fired generation or general transmission needs over the past 5 years, any significant siting issues or local community objections that arose and the resolution of those issues.

### IF0101-11, Disclosure of each projects requiring significantly modified by registrant on a voluntary basis because of environmental or social modification, issues percentage of or modifications resulting from formal public interventions or protests prior to commencement of administrative process.

.68 The registrant shall ~~disclose the number of each projects requiring that was substantially~~ modified because of modifications associated with environmental or social impacts (hereafter "modifications") before commencement of formal administrative, regulatory or adjudicatory process, where:

- a. ~~Projects are defined as the siting, development, and/or expansion of new and/or existing transmission, distribution, and generation assets.~~

**Commented [BB26]:** The thought here is that it is a good thing when a company substantially modifies a project because of later-identified environmental or social issues or because a community objects.

### IF0101-11, Disclosure of each projects significantly modified by registrant because of environmental or social issues or from public interventions or protests after commencement of administrative process

.69 The registrant shall ~~each project that was substantially modified because of environmental or social impacts (hereafter "modifications") after commencement of formal administrative,~~

<sup>20</sup> Such as Dominion Energy's decision to site a new transmission line in a location that contains habitat for an endangered species and that impacts historic areas in Jamestown, Virginia.

regulatory or adjudicatory process, where:

- Projects are defined as the siting, development, and/or expansion of new and/or existing transmission, distribution, and generation assets

.70 A permit and/or license shall be considered modified when the issuing agency requires modification to or mitigation of the proposed project in order to grant approval of the permit or license. Projects shall be considered “modified after commencement of formal process” where an administrative body requires, or registrant consents to a modification sought by a regulatory agency or third party participating in the proceeding. Examples of modifications associated with environmental or social impacts include, but are not limited to:

- Mitigated Action Plans (MAP) prepared by the U.S. Department of Energy (DOE) (a listing is available [here](#)) and modifications required by environmental impact statements or environmental impact assessments in accordance with the National Environmental Policy Act (NEPA);
- Modifications required by state or local regulations such as Mitigated Negative Declarations (MND), established by the California Public Utilities Commission (CPUC); or
- Mitigation required by an environmental impact report as established through the California Environmental Quality Act (CEQA), New York State Environmental Quality Review Act (SEQRA), Massachusetts Environmental Policy Act (MEPA), or other relevant state regulations, ~~as appropriate.~~

~~.65.71~~ The scope of disclosure includes projects with modifications that are currently pending permit application decisions as well as permit applications that required modifications and were closed (i.e., approved or rejected) during the fiscal year, where:

~~.66.72~~ Permit applications include, but are not limited to, those associated with land use, zoning, emissions, effluents, and property interests at the federal, state, or local levels.

~~93.~~ The scope of disclosure ~~does not include applications that the registrant intends to submit but has not yet submitted.~~ includes projects where the registrant has commenced a public engagement process or has submitted an application for a required permit.

~~94.~~

~~95.~~ The registrant shall calculate the percentage of projects that require modifications resulting from formal public interventions or protests as the number of projects for which modifications were required during the fiscal year as a result of formal public interventions or protests divided by the total number of projects for which modifications were or are required.

~~96.~~ Formal public interventions or protests are defined by the relevant federal, state, or local law, but are generally considered to be instances where an administrative law judge is required to preside over an evidentiary proceeding brought forth by interested parties, where:

- ~~Parties are defined by the relevant federal, state, or local law, but are generally considered to be the applicant and those persons or organizations legally permitted to intervene or protest in an application proceeding.~~

~~97.~~ Relevant federal and state laws governing the intervention process include, but are not limited to:

**Commented [BB27]:** Intended to capture settlements.

**Commented [BB28]:** Too limited – SCC staff hearing, public hearing by DEQ??

**Commented [BB29]:** Too limited - commenters in record review

**Commented [BB30]:** There are hundreds of relevant Federal, State and Local (zoning) laws.

~~2. Florida Power Plant Siting Act~~

~~3. New York Public Service Law: Article VII~~

~~4. Massachusetts Rules for the Conduct of Adjudicatory Proceedings~~

~~5. California Public Utilities Commission General Order Number 131-D~~

~~6. United States 18 CFR 385~~

~~67.73~~ The scope of disclosure shall include those projects with open applications to which the registrant is a party, including projects overseen by the registrant directly or through joint venture, but not including project applications to which the registrant is not a party.

~~68.74~~ The registrant ~~should~~ shall disclose and discuss any modifications or abandonments of projects during the current year as required by applications closed during a prior period or through the course of the current year.

~~69.75~~ Note to **IF0101-10**

~~70.76~~ The registrant shall disclose and discuss modifications that relate to significant projects such as those with large transmission ~~or~~ generation capacity, those treated by the registrant as capital projects or those that generated substantial public opposition.

**Commented [BB31]:** "Large" is too vague. Either delete or set a number – 25MW??/ 5 miles of T??

~~71.77~~ For such projects, the registrant shall provide:

1. A description of the project and the related modifications required.
2. The total generation or transmission capacity (in megawatts) affected by modifications, including whether the initial capacity was reduced, the location and siting altered, and any other mitigation techniques and technologies required.
3. The cost to remedy modifications and/or public interventions and the benefits associated with those modifications.

#### **IF0101-11. Discussion of community engagement processes to identify and mitigate concerns regarding project environmental and community impacts**

~~78~~ The registrant shall discuss its process for engaging communities in which it operates to identify concerns regarding the environmental and social impacts associated with its existing or proposed projects, where:

~~79~~ Environmental impacts may include ecological impacts of construction, air emissions, risk of avian deaths, and other relevant land-use impacts.

~~80~~ Community impacts may include, but are not limited to, property value, visual aesthetics, rights of way, and human health and safety.

~~81~~ The registrant shall discuss the following, where relevant:

- .82 Its strategy to obtain necessary rights of way including, where necessary, its use of eminent domain and its efforts to address any associated landowner and community concerns.
- .83 Its community engagement processes for the various stages of permitting, construction, and commissioning, such as the siting and pre-permit application stage, the initial permit review stage, the subsequent review and public comment stages (e.g., public comments on environmental impact statements), the stages during construction, and throughout the operating life of its assets.
- .84 Its policy to undertake self-initiated environmental and/or social impact assessments and mitigation efforts and associated documentation.
- .85 The environmental and community impacts specifically addressed through its engagement processes.
- .86 Its efforts to avoid and/or mitigate environmental and/or community impacts either before siting and permitting, through the course of permitting, and/or during its ongoing operations, including, as appropriate, a discussion on the use of Safe Harbor Agreements, habitat protection and restoration, use of rights-of-way for multiple uses, and meetings with impacted communities.
- .87 The risks and opportunities associated with its projects, including, but not limited to, permit delays, project modifications, expanded infrastructure, and increased energy reliability.
- .88 The underlying references for its procedures, such as codes, guidelines, standards, or regulations, and whether these were developed by the registrant, an industry organization, a third-party organization (e.g., a non-governmental organization), a governmental agency, or some combination of these groups.
- .89 Its community engagement activities for the period under reporting and the projects that such activities relate to.

#### **Additional References**

Electric Power Research Institute: [Electric Transmission Rights-of-Way Uses and Risks](#)

#### **IF0101-11, Disclosure of factors impacting financial, environmental and social impacts associated with extreme weather events.**

- .90 Registrant shall disclose the amount of T&D assets where severe weather events, such as extreme hurricanes or drought, may impose a significant risk of financial, environmental or social impacts.
- .91 Registrant shall disclose its efforts to “harden” T&D assets to (1) minimize the impact of severe weather events on its T&D assets and/or (2) minimize the risk that its assets will contribute to damage or cost to the environment or the community associated with severe weather events.

.92 Such factors include, but are not limited to design practices (such as burying or hardening key transmission assets), operation practices (in advance of and during extreme weather events) and maintenance practices (including right of way maintenance).

## Workforce Health, ~~z~~ & Safety, and Well Being

### Description

Employees of electric utilities face numerous hazards in the construction and maintenance of electric distribution and transmission lines, as well as with the various means of electricity generation. Many of these employees work for extended periods at great heights and face electrocution risks. While the industry has made significant strides in safety improvements, significant risks and opportunities remain for further improvements. The nature of the industry, as both a societally granted monopoly and a necessary part of modern life, means that the actions of electric utilities receive significant public and regulatory scrutiny. Companies need to maintain a culture of safety to ensure good working conditions for their workers, ensure strong operational productivity, and manage potential risks of regulatory penalties. Workers may also be exposed to coal dust, especially when managing coal and coal ash piles, and maintaining pulverizers and other equipment. Coal dust can contain toxic metals such as selenium, arsenic and beryllium. The World Bank's International Finance Corporation's Environmental Health and Safety Guidelines list the following additional risk areas for EGUs:

- Non-ionizing radiation
- Heat
- Noise
- Confined spaces
- Fire and explosion
- Chemical hazards

Workers may also be exposed to high levels of pollution during plume looping events and periods of equipment malfunction. Further, many thermal power plants (both fossil fuel-fired and nuclear) when built used substantial amounts of asbestos insulation and, in a number of plants, the asbestos remains. While this material is theoretically "abated" by coatings, these coatings can be disrupted during maintenance activities and lead to worker exposure. Nuclear powered plants also carry a risk of worker exposure to elevated radiation levels. Companies should monitor and report worker exposure and health indicators to ensure that these risks are understood and managed.

**Commented [BB32]:** See, <http://www.dailypress.com/news/science/dead-rise-blog/dp-asbestos-at-least-12-contractors-at-surry-nuclear-power-station-exposed-20111024-story.html>

### Accounting Metrics

**IF0101-12. (1) Total recordable injury rate (TRIR), (2) fatality rate, and (3) near miss frequency rate (NMFR)**

98.93. Registrants whose workforce is entirely U.S.-based shall disclose its the total recordable injury rate (TRIR) and fatality rate for its U.S.-based workforce and contractors as calculated and reported in the Occupational Safety and Health Administration's (OSHA) Form 300.

7.1. OSHA guidelines provide details on determining whether an event is a recordable occupational

incident and definitions for exemptions for incidents that occur in the work environment but are not occupational.

~~8-2.~~ The scope of disclosure shall include those workers involved in the development and maintenance of transmission, distribution, and generation facilities (e.g., linemen and construction workers) but shall exclude those workers in corporate and administrative positions.

~~99-94.~~ Registrants ~~whose workforce includes non-U.S.-based employees~~ shall calculate their TRIR and fatality rate for non-U.S. based workforce according to the U.S. Bureau of Labor Statistics (BLS) [guidance](#) and/or using the BLS [calculator](#).

~~100-95.~~ The registrant shall disclose its TRIR and fatality rate for all employees, including direct full-time employees, contract employees, and seasonal and migrant employees.

~~101-96.~~ The scope includes all employees, domestic and foreign.

~~102-97.~~ Rates shall be calculated as: (statistic count / total hours worked)\*200,000.

~~103-98.~~ The registrant shall disclose its near miss frequency rate (NMFR), where a near miss is defined as an incident in which no property or environmental damage or personal injury occurred, but where damage or personal injury easily could have occurred but for a slight circumstantial shift.

~~104-99.~~ The registrant should refer to organizations such as the National Safety Council (NSC) for guidance on implementing near miss reporting.

~~100.~~ The registrant should disclose its process for classifying, identifying, and reporting near miss incidents.

~~105-101.~~ Disclosure of programs for retraining, alternate work programs health care and pension protection for employees at plants that may close

## End-Use Efficiency & Demand

**Commented [BB33]:** No reason to ignore in-system efficiency

### Description

Energy efficiency is a low-lifecycle-cost method to reduce GHG emissions, as less electricity needs to be generated to provide the same end-use energy services. Utilities can partake in a wide range of activities to promote energy efficiency and conservation at their facilities - among their customers: employing solar pre-heating for steam generation, minimizing operation at inefficient levels of capacity, reducing transmission and distribution system (T&D) losses - and among their customers, offering rebates for energy-efficient appliances, weatherizing customers' homes, educating customers on energy-saving methods, offering incentives to customers to curb electricity use during times of peak demand ("demand response"), and investing in technology, such as smart meters, that allows customers to track their energy usage, among many other strategies. These efforts, which save consumers money, can also manifest in lowered operating costs for electric utilities, because they can reduce peak demand. Furthermore, depending on the sentiment of the utilities commission in a company's region, energy efficiency can be a regulatory priority before new builds are considered.

How an electric utility stands to gain or lose from this trend toward GHG mitigation is significantly predicated on its

regulatory environment. Traditional rate structures generally do not give electric utilities an incentive for energy efficiency, and further, they may economically suffer from reductions in customer demand. This is increasingly driving electric utilities, and their regulators and customers, to pursue alternative ratemaking. Such alternative rate design often “decouples” utility revenues from customer consumption, and may also build in explicit incentives for successful utility performance in terms of end-use efficiency and demand reductions. Overall, companies whose strategic plan strives to reduce their downside risks from demand fluctuations, gain adequate and timely returns on needed efficiency investments, and lower costs through efficiency initiatives are more likely to be well positioned to earn stronger risk-adjusted returns over the long term.

## Accounting Metrics

### IF0101-13. In-system efforts to improve efficiency and reduce T&D losses

- 102. Registrant shall disclose its metric for determining whether to invest in “in-system” efficiency improvements, such as improvements in boiler or turbine efficiency, maintenance procedures and operating practices (such as limiting part load operation) and actions to reduce transmission and distribution system losses.
- 103. Registrant shall disclose each significant investment at each of its EGUs and in its T&D system over the past 5 years to improve efficiency and the amount of improvement that resulted from the investment.
- 104. Registrant shall disclose each planned significant investment at each of its EGUs and in its T&D system over the next 5 years to improve efficiency and the amount of improvement that is expected to result from the investment.

### TA11-05-01. Percentage of electric utility revenues from rate structures that (1) are decoupled or (2) contain a lost revenue adjustment mechanism (LRAM)

105. The registrant shall disclose the percentage of electric utility revenues from decoupled rate structures.

- ☐ Revenue decoupled rate structures are defined, according to the National Association of Regulatory Utility Commissioners (Decoupling for Electric & Gas Utilities, September 2007), as a rate adjustment mechanism that separates the registrant’s electric utility’s fixed cost recovery from the amount of electricity sold – and the utility’s revenues are collected based on the regulatory determined revenue requirement.
- ☐ Revenue decoupled rate structures may also be referred to as, “revenue regulation” or “revenue cap regulation,” where the regulator establishes an allowed revenue requirement and adjusts collections so as to achieve that allowed, or ‘target,’ revenue irrespective of actual sales (definition adapted from, Decoupling Case Studies: Revenue Regulation Implementation in Six States, The Regulatory Assistance Project, July 2014).
- ☐ Additional guidance on the scope of revenue decoupled rate structures is contained in, Alternative Regulation for Emerging Utility Challenges: 2015 Update, Edison Electric Institute, November 11, 2015.
- ☐ The scope of decoupled rate structures shall exclude straight fixed-variable rate design and those rate structures that contain a lost revenue adjustment mechanism (LRAM).

106. The percentage shall be calculated as the total regulated electric utility revenue from revenue

**Commented [BB34]:** This section is added in the redline draft.

decoupled rate structures divided by total regulated electric utility revenue.

107. The registrant shall disclose the percentage of electric utility revenues from rate structures that contain a LRAM.

☐ Rate structures that contain a LRAM are defined as volumetric rates that contain a mechanism which allows the registrant to recover revenues lost directly resulting from energy conservation, energy efficiency, demand side management, and/or distributed generation programs that are directly managed and/or implemented by the registrant.

☐ Additional guidance on the scope of LRAMs is contained in, Alternative Regulation for Emerging Utility Challenges: 2015 Update, Edison Electric Institute, November 11, 2015.

☐ The scope includes mechanisms that allow the estimation of lost revenues based on the programs' actual impacts, but excludes lost revenues from planned or forecasted programs impacts (as described in Alternative Regulation and Ratemaking Approaches for Water Companies, The Brattle Group, September 23, 2013).

108. The percentage shall be calculated as the total regulated electric utility revenue from rate structures that contain a LRAM divided by total regulated electric utility revenue.

109. The scope of disclosure is limited to revenues directly resulting from the provision of electricity to retail customers by regulated utilities.

#### **IF0101-13. Percentage of electric load served by smart grid technology**

~~106-110.~~ The registrant shall disclose the ~~percentage amount~~ of its electric load (in megawatt hours) served by smart grid technology, where:

~~107-111.~~ An electric load is considered to be served by smart grid technology when the technology enables one or more of the distinguishing characteristics set forth in the [Energy Independence Act of 2007](#), where:

1. Examples of smart grid technologies include, but are not limited to, demand-response systems, distribution automation, smart inverters, advanced metering equipment, and other smart home and intelligent building control products.

~~108-112.~~ [According to the Energy Independence Act of 2007](#), distinguishing characteristics of the smart grid include:

2. Increased use of digital information and control technology to improve reliability, security, and efficiency of the electric grid;

3. Deployment and integration of distributed resources and generation, including renewable resources;
4. Development and incorporation of demand-response programs, demand-side resources, and energy efficiency resources;
5. Deployment of “smart” technologies for metering, communications concerning grid operations and status, and distribution automation;
6. Deployment and integration of advanced electricity storage and peak-shaving technologies, including plug-in electric and hybrid electric vehicles and thermal-storage air conditioning; and
7. Provision to consumers of timely information and control options.

~~109-113.~~ A smart grid is defined, consistent with the National Institute of Standards and Technology (NIST) [Smart Grid Interoperability Standards](#), as a modernized grid that enables bidirectional flows of energy and uses two-way communication and control capabilities that will lead to an array of new functionalities and applications.

~~110-114.~~ The percentage of load served by smart grid technology shall be calculated as the total amount of energy load (in megawatt hours) served by smart grid technology divided by the total amount of energy load (in megawatt hours), where:

~~111-115.~~ The electric load served by smart grid technology is defined as the amount of electricity delivered to the registrant’s customers that incorporates the use of smart grid technologies to meet the electricity demand of the consumer.

~~112-116.~~ The registrant may choose to discuss the type of smart grid technology through which its electric load is served, the customer types that are utilizing the technology (e.g., residential, commercial, or industrial), whether technologies are owned by the utility or the customer, and any plans for further integration of smart grid capabilities.

**Note to IF0101-13**

~~113-117.~~ The registrant shall discuss the opportunities and challenges associated with the development and operations of a smart grid, including, where relevant:

~~114-118.~~ Demand-response and end-user efficiency opportunities (e.g., smoothing of the demand curve, increased cost-effective electric generation, improved incorporation of distributed generation, and increased generation and transmission efficiency).

~~115-119.~~ Political and deployment challenges (e.g., opposition to smart grid development, disparate degrees of technology deployment, and economic dis-incentives).

#### IF0101-14. Customer electricity savings from efficiency measures by market

~~116-120.~~ The registrant shall disclose the total amount of electricity savings delivered to customers (in megawatt hours) from energy efficiency measures during the fiscal year for each of its markets, where:

~~117-121.~~ Markets are defined as those operations that are subject to distinct public utility regulatory oversight.

~~118-122.~~ Electricity savings shall be defined according to the gross savings approach as the changes in energy consumption and/or demand that results from program-related actions taken by participants in an efficiency program, regardless of why they participated.

~~119-123.~~ The registrant should list those markets where it reports electricity savings on a net electricity savings basis and thus may be different from the figures disclosed here, where:

~~120-124.~~ Net electricity savings are defined as changes in consumption that are specifically attributable to an energy efficiency program and that would not have happened in the absence of the program.

~~121-125.~~ Electricity savings shall be calculated on a gross basis but consistent with the methodology set forth in state or local evaluation, measurement, and verification (EM&V) regulations where such savings occur, where examples of state regulations include, but are not limited to:

~~122-126.~~ California Public Utility Commission (CPUC) [Decision 09-09-047](#)

~~123-127.~~ New York [Case 07-M-0458](#)

~~124-128.~~ Public Utility Commission of Texas (PUCT) [Substantive Rule 25.181](#)

~~125-129.~~ Where state or local regulations do not exist, the registrant shall calculate energy savings consistent with the measurement and verification methods outlined by the Department of Energy's (DOE) Federal Energy Management Program (FEMP) [M&V Guidelines: Measurement and Verification for Federal Energy Projects, Version 4.0](#).

~~126-130.~~ The registrant shall consider the FEMP M&V Guidelines and state regulations as normative references, thus any updates made year-on-year shall be considered updates to this guidance.

~~127-131.~~ The scope of electricity savings from efficiency measures includes savings delivered directly by the registrant and, where regulations provide, savings substantiated through purchases of efficiency savings credits.

~~128-132.~~ For any savings from efficiency measures delivered directly by the registrant, any efficiency savings credits must be retained (i.e., not sold) and retired on behalf of the registrant in order for the registrant to claim them delivered electricity savings.

~~129-133.~~ For efficiency savings credits purchased, the agreement must explicitly include and convey that credits be retained and retired on behalf of the registrant in order for the registrant to claim them.

~~130-134.~~ Relevant regulations governing efficiency savings credits include:

~~131-135.~~ Nevada [Regulation of Public Utilities Chapter 704](#)

~~132-136.~~ Connecticut [House Bill 7432](#)

~~133-137.~~ Pennsylvania [Act 129](#)

Note to **IF0101-14**

~~134-138.~~ The registrant shall discuss regulations related to customer efficiency measures for each of its relevant markets, including:

~~135-139.~~ The amount or percentage of electricity savings from efficiency measures required by regulations for each market.

~~136-140.~~ Instances of non-compliance with electricity savings obligations.

~~137-141.~~ In such instances, the registrant shall disclose the difference between the energy savings delivered and the amount required by the regulation.

~~138-142.~~ Electricity savings delivered that exceed those required by regulations and that resulted in the registrant receiving energy efficiency performance incentives, including the U.S. dollar value of any such incentives.

~~139-143.~~ Relevant energy-efficiency regulations include, but are not limited to:

~~140-144.~~ Massachusetts Department of Public Utilities [Three Year Energy Efficiency Plan 15-160 to 15-169](#)

~~141-145.~~ CPUC [Decision 14-10-046](#)

~~142-146.~~ Texas [Senate Bill 1125](#)

~~143-147.~~ Illinois [Power Agency Act 220 ILCS 5/8-103](#)

~~144-148.~~ The registrant shall discuss the forms of policy by each market that allow for or incentivize energy efficiency, including a discussion of the benefits, challenges, and financial impacts associated with such regulations.

~~145-149.~~ Relevant policy mechanisms to discuss include, but are not limited to:

~~146-150.~~ Deferral decoupling

~~147-151.~~ Current period decoupling

~~148-152.~~ Single fixed variable rates

~~149-153.~~ Lost revenue adjustments

~~150-154.~~ Energy efficiency feebates

~~151-155.~~ For markets lacking regulations that allow for or incentivize energy efficiency, the registrant shall discuss its stance on and efforts to manage risks and opportunities relating to such regulation.

~~152-156.~~ The registrant should discuss any efforts to meet regulations through incentives it has developed for its customers that promote end-use efficiency, including, but not limited to, dynamic pricing, energy efficiency rebates, and other measures to subsidize customer energy efficiency.

#### **Additional References**

[Massachusetts Technical Reference Manual for Estimating Savings from Energy Efficiency Measures](#)

[Energy Division & Program Administrator Energy Efficiency Evaluation, Measurement and Verification Plan Version 5](#)

[New York Standard Approach for Estimating Energy Savings from Energy Efficiency Programs](#)

[Texas Deemed Savings, Installation & Efficiency Standards](#)

Further information regarding state regulations on energy efficiency measures can be found through the American Council for an Energy-Efficient Economy's [State Scorecard Rank](#).

# Nuclear Safety & Emergency Management

## Description

Nuclear incidents, while exceedingly rare, can have significant human and environmental consequences. Owners of nuclear power plants in the U.S. have operated for decades without a major public safety incident. They carry private insurance and enjoy significantly limited liability, as part of the Price-Anderson Act, if an incident were to occur. However, owners of nuclear energy generation plants still face related risks—even if the probability is small, the outcome of a nuclear accident would be serious and is difficult to predict. Utilities could face a loss of their license to operate, either entirely or in the operation of nuclear plants. The latter would hurt a company's competitive position and make it more difficult to meet GHG emission standards. Furthermore, failure to comply with the Nuclear Regulatory Commission's safety rules can be extremely expensive to nuclear power operators; in extreme circumstances it can make the continued operation of the plant uneconomical. As a result of significant financial repercussions both from ongoing safety compliance as well as the materialization of tail risk incidents, utilities that own or operate nuclear plants need to be vigilant in the safety upgrades of their facilities. They also need to maintain robust emergency preparedness training for their staff and a strong safety culture. These measures can reduce the probability that accidents will occur and enable a company to detect and respond to such incidents effectively.

## Accounting Metrics

### IF0101-15. ~~Total number of Disclosure of~~ nuclear power units, broken down by Nuclear Regulatory Commission (NRC) Action Matrix Column

~~153-157.~~ The registrant shall disclose ~~the total number of each~~ nuclear power units that it owns and/or operates, where:

~~154-158.~~ A nuclear power unit is defined, consistent with 10 CFR 50, as a nuclear reactor and associated equipment necessary for electric power generation, including those structures, systems, and components required to provide reasonable assurance that the facility can be operated without undue risk to the health and safety of the public.

~~155-159.~~ The registrant shall provide a breakdown of nuclear power units that it owns and/or operates by [Nuclear Regulatory Commission \(NRC\) Action Matrix Column](#).

~~156-160.~~ Relevant Action Matrix Columns include, in order of increasing significance:

~~157-161.~~ Licensee Response Column

~~158-162.~~ Regulatory Response Column

~~159-163.~~ Degraded Cornerstone Column

2. Multiple/Repetitive Degraded Cornerstone Column

~~160-164.~~ Unacceptable Performance Column

**IF0101-16. Discussion ~~Disclosure~~ of ~~programefforts~~ to manage nuclear safety and emergency preparedness**

~~164-165.~~ The registrant shall ~~discuss-disclose~~ its efforts to manage nuclear safety and emergency preparedness, including its efforts to identify, report, and assess initiating events and event sequences relating to nuclear safety and emergency preparedness, where:

1. Initiating events are defined, consistent with 10 CFR 63, as natural or human-induced events that cause an event sequence.
2. An event sequence is defined as a series of actions and/or occurrences within the natural and engineered components of a geologic repository operations area that could potentially lead to exposure of individuals to radiation. An event sequence includes one or more initiating events and associated combinations of repository system component failures, including those produced by the action or inaction of operating personnel.
3. Disclosure may focus broadly on nuclear safety and emergency management systems, but shall specifically address the systems in place to avoid and manage initiating events, accidents, emergencies, and incidents that could have catastrophic impacts on human health, the local community, and the environment.

~~.153~~ Registrant shall disclose its specific response plans for a core melt accident at each nuclear plant that it owns or operates, including planning with local authorities for an evacuation plan and drill schedules.

~~.154~~ Registrant shall disclose the amount of nuclear waste (spent fuel) stored onsite, the amount of such waste in dry cask form and the amount in liquid form,

~~.155~~ Registrant shall disclose whether its nuclear operations are currently in full compliance with the industry's voluntary guidelines for "beyond design basis" events and, if not, areas of non-compliance and the capital cost required to achieve full compliance

~~.153.156~~ Registrant shall disclose whether each of the nuclear units it owns or operates has been retrofitted with hardened and filtered containment vents to permit depressurization of containment vessels without releasing substantial radiation into the surrounding area.

157. The registrant shall discuss how it manages nuclear safety and emergency preparedness, such as through training, rules and guidelines (and their enforcement), implementation of emergency plans (consistent with those developed in accordance with 10 CFR 50.47), and use of technology.
158. The registrant shall discuss its efforts to create and maintain a culture of nuclear safety and emergency preparedness, including its alignment with the [Nuclear Regulatory Commission's \(NRC\) Safety Culture Policy Statement](#) and efforts to institute the traits of a positive safety culture, where the traits of a positive safety culture include:
  159. Leadership safety values and actions
  160. Problem identification and resolution
  161. Personal accountability

- 162. Work process
- 163. Continuous learning
- 164. Environment for raising concerns
- 165. Effective safety communications
- 166. Respectful work environment
- 167. Questioning attitude

168. The registrant may choose to discuss implementation of the [Institute of Nuclear Power Operations \(INPO\) Principles for a Strong Nuclear Safety Culture](#) and/or the [International Atomic Energy Agency's \(IAEA\) Best Practices in the Utilization and Dissemination of Operating Experience at Nuclear Power Plants](#).

#### **IF0101-17. Disclosure of post-Fukushima regulatory impacts**

169. Registrant shall disclose the impact of Post-Fukushima requirements on the operations, expenses and future economic viability of each nuclear powered unit that it operates

170. This includes the capital cost, schedule and impact on future economic viability of its nuclear units resulting from NRC current and potential requirements for

- containment venting systems
- seismic reevaluations, including, where applicable, seismic probabilistic risk assessments
- flooding reevaluations, and
- mitigation beyond design program.

#### **IF0101-18. Disclosure of violations of NRC regulations, technical specifications, license conditions and Orders**

171. Registrant shall disclose each notice of violation (NOV) issued by the NRC in the past 5 years concerning any nuclear unit that it owns or operates, where the severity level (SL) assigned to the matter by the NRC was SLI, SL II, or SL III<sup>21</sup>, including a summary of the asserted facts related in the notice and the (SL) assigned to the matter by the NRC.

172. Registrant shall disclose the disposition of each such notice of violation including any fine or penalty assessed, and any corrective action required. For open matters, registrant shall disclose the nature of the alleged violation, the penalty, if any, and the corrective action sought by the NRC.

173. Registrant shall provide a full and detailed disclosure of the NRC allegations and the registrant's response for any SLI or SLII NOVs received.

174. Registrant shall disclose each "red" or "yellow" <sup>22</sup>ROP inspection finding under NRC "Operating Reactor Assessment Program" and "Power Reactor Inspection Reports" (for operating units) and cROP inspection findings under "Periodic Assessment of Construction Inspection Program Results" and "Power Reactor Construction Inspection Reports" (for units under construction) received over the past 5 years.

175. Registrant shall disclose the disposition of each such red or yellow inspection finding, including any fine or penalty assessed, and any corrective action required. For open matters, registrant shall provide a full and detailed disclosure the nature of the NRC finding, the penalty, if any, and the corrective action sought by the NRC.

176. Registrant shall disclose each NOV received over the past 5 years for an alleged violation of NRC's regulations governing export and import of nuclear material, 10 CFR Part 110.

177. Registrant shall disclose the disposition of each such notice of violation including any fine or penalty assessed, and any corrective action required. For open matters, registrant shall disclose the nature of the alleged violation, the penalty, if any, and the corrective action sought by the NRC.

<sup>21</sup> This excludes "minor violations" and violations that did not pose a present safety or security concern, but did create a potential safety or security concern.

<sup>22</sup> These include inspection findings with "substantial" or "high" safety or security significance.

**IF0101-19. Disclosure of licensing issues, remaining economic useful life, closure**

178. Registrant shall disclose the date of termination of the operating license for each unit that it owns or operates, whether it intends to seek extension or reissuance of each such operating license and the amount of capital expenditure it believes will need to be spent to obtain such extension.
179. Registrant shall disclose any communication to or from the NRC or state authorities, including state legislators or ratemaking authorities, which is material and relevant to whether a license extension will be sought.
180. Registrant shall disclose the closure date, if known, of each nuclear unit that it intends to close prior to termination of the operating license of that unit.
181. The registrant shall discuss and provide material facts relevant to the probable and potential impacts on nuclear electric generating unit operations and remaining economic life<sup>23</sup> associated (in whole or in part) with continued low natural gas prices, including disclosure of the presently-anticipated economic life of each unit owned or operated by registrant and relevant factors that bear on the potential for retirement of each unit, including, but not limited to, the age of the unit, heat rate of the unit, anticipated trend in maintenance costs over the next 5 years, the current and recent (5 years) prior year capacity factors and number of hours of operation at a loss. This disclosure shall include the potential timeline(s) of such impacts, the book value of the stranded asset at time of retirement or impairment and the impact of the action on the company's value.
182. The registrant shall disclose any efforts to extend the useful economic life any of its nuclear units by means of appeals to state or Federal regulatory agencies or lobbying efforts in state or Federal legislatures, including any efforts aimed at specific, individual units or plants.
183. The registrant shall disclose the closure costs associated with the potential closure of each of its nuclear units and the extent to which sufficient funds have been set aside to cover those costs. Where those costs are guaranteed by a self-bonding program, the nature and extent of registrant's bonding program shall be disclosed.

<sup>23</sup> Separately identify relevant facts associated with each nuclear electric generating unit.

# Grid Resiliency

## Description

Electricity is critical for the continued function of most elements of modern life, from medicine to finance, creating a high societal expectation of continuous service. There are potentially high societal costs from major disruptions to the electricity infrastructure. Disruptions can be caused by extreme weather events, natural disasters, and cyber-attacks. As the frequency and severity of extreme weather events associated with climate change continues to increase, all segments of electric utilities companies, and especially major T&D operations, will face increasing physical threats to their infrastructure. This could result in frequent or significant service disruptions, outages, and the need to upgrade or repair damaged or compromised equipment. The increased usage of smart grid technology has several benefits, including strengthening the resiliency of the grid to extreme weather events. However, this technology can make the grid more vulnerable to cyber-attacks, as it provides hackers more entryways into infrastructure systems. Agents in foreign governments are already known to have infiltrated the cybersecurity of the grid, causing concern and heightened scrutiny from the highest levels of the U.S. government. Companies need to implement strategies that minimize the probability and magnitude of impacts from extreme weather events and cyber-attacks. They can remain competitive in the face of increasing external competition by actively submitting compelling rate cases to improve the reliability, resilience, and quality of their infrastructure.

## Accounting Metrics

### **IF0101-17 Number of incidents of non-compliance with North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection standards**

~~169-184.~~ The registrant shall disclose the total number of instances of non-compliance with the North American Electric Reliability Corporation (NERC) Critical Infrastructure (CIP) standards.

~~169-185.~~ The scope of disclosure includes the following nine NERC CIP standards as mandated by Section 215 of the Federal Power Act:

~~170-186.~~ CIP-001: Covers sabotage reporting;

~~171-187.~~ CIP-002: Requires the identification and documentation of the Critical Cyber Assets associated with the Critical Assets that support the reliable operation of the Bulk Electric System;

~~172-188.~~ CIP-003: Requires that responsible entities have minimum security management controls in place to protect Critical Cyber Assets;

~~173-189.~~ CIP-004: Requires that personnel with authorized cyber or unescorted physical access to Critical Cyber Assets, including contractors and service vendors, have an appropriate level of personnel risk assessment, training, and security awareness;

~~174-190.~~ CIP-005: Requires the identification and protection of the Electronic Security Perimeters inside which all Critical Cyber Assets reside, as well as all access points on the perimeter;

~~175-191~~. CIP-006: Addresses implementation of a physical security program for the protection of Critical Cyber Assets;

~~176-192~~. CIP-007: Requires responsible entities to define methods, processes, and procedures for securing those systems determined to be Critical Cyber Assets, as well as the other (non-critical) Cyber Assets within the Electronic Security Perimeters;

~~177-193~~. CIP-008: Ensures the identification, classification, response, and reporting of cybersecurity incidents related to Critical Cyber Assets; and

~~178-194~~. CIP-009: Ensures that recovery plans are put in place for Critical Cyber Assets and that these plans follow established business continuity and disaster recovery techniques and practices.

~~179-195~~. A database of NERC CIP non-compliances can be found [here](#).

**IF0101-18. (1) System Average Interruption Duration Index (SAIDI), (2) System Average Interruption Frequency Index (SAIFI), and (3) Customer Average Interruption Duration Index (CAIDI), inclusive of major event days**

~~180-196~~. The registrant shall disclose its System Average Interruption Duration Index (SAIDI) in minutes, where:

~~181-197~~. The SAIDI is defined as the total duration of an interruption for the average customer during the period under reporting.

~~182-198~~. The registrant shall calculate its SAIDI as the total number of customers interrupted multiplied by the duration of interruptions (i.e., restoration time) divided by the total number of customers served, written as  $\Sigma(n * N_i) / N_T$ , where:

~~183-199~~.  $\Sigma$  = Summation function

~~184-200~~.  $r_i$  = Restoration time, in minutes

~~185-201~~.  $N_i$  = Total number of customers interrupted

~~186-202~~.  $N_T$  = Total number of customers served

~~187-203~~. The registrant shall disclose its System Average Interruption Frequency Index (SAIFI), where:

~~188-204~~. SAIFI is defined as the average number of times that a system customer experiences an outage during the period under reporting.

~~189-205~~. The registrant shall calculate its SAIFI as the total number of customers interrupted divided by the total number of customers served, written as  $\Sigma(N_i) / N_T$ , where:

~~190-206~~.  $\Sigma$  = Summation function

~~162-166~~.  $N_i$  = Total number of customers interrupted

~~191-207~~.  $N_T$  = Total number of customers served

~~192-208.~~ The registrant shall disclose its Customer Average Interruption Duration Index (CAIDI), where:

~~193-209.~~ The CAIDI is defined as the average amount of time required to restore service once an outage has occurred.

~~194-210.~~ The registrant shall calculate its CAIDI as the total number of customers interrupted multiplied by the duration of interruptions (i.e., restoration time) divided by the sum of the number of customers interrupted, written as  $\Sigma(r_i * N_i) / \Sigma(N_i)$ , where:

~~195-211.~~  $\Sigma$  = Summation function

~~196-212.~~  $r_i$  = Restoration time, in minutes

~~197-213.~~  $N_i$  = Total number of customers interrupted

~~198-214.~~ The registrant shall disclose its SAIDI, SAIFI, and CAIDI inclusive of major event days, where:

~~199-215.~~ Major event days are defined, according to IEEE Std 1366, as days in which the daily SAIDI exceeds a threshold value,  $T_{MED}$ , where  $T_{MED}$  is calculated as follows:

1. The registrant should collect values of daily SAIDI for five sequential years, ending on the last day of the last complete reporting period. If fewer than five years of historical data are available, use all of the available historical data.
2. If any day in the data set has a value of zero for SAIDI, replace it with the lowest non-zero SAIDI value in the data set. (This permits taking the logarithm of every day.)
3. Take the natural logarithm ( $\ln$ ) of each daily SAIDI value in the data set.
4. Find  $\alpha$  (Alpha), the average of the logarithms (also known as the logaverage) of the data set.
5. Find  $\beta$  (Beta), the standard deviation of the logarithms (also known as the log-standard deviation) of the data set.
6. Compute the major event day threshold,  $T_{MED}$ , using the equation:  $T_{MED} = e^{(\alpha+2.5\beta)}$ .
7. Any day with daily SAIDI greater than the threshold value  $T_{MED}$  that occurs during the subsequent reporting period is a major event day.

Note to **IF0101-18**

~~200-216.~~ The registrant shall discuss notable service disruptions such as those that affected a significant number of customers or disruptions of extended duration.

~~201-217.~~ For such disruptions, the registrant should provide:

~~202-218.~~ Description and cause of the service disruption;

~~203-219.~~ The total generation or transmission capacity (in megawatts) and population affected by the disruption;

~~204-220.~~ The costs (in U.S. dollars) associated with the service disruption;

~~205-221.~~ Actions taken to mitigate the potential for future service interruptions, including the capital cost and schedule for such actions, anticipated reduction in future service interruptions; and

~~206-222.~~ Any other significant outcomes (e.g., legal proceedings or related fatalities).

# Management of the Legal & Regulatory Environment

**Commented [BB35]:** The redline draft does not include this section. No reason is provided.

## Description

Utilities regularly engage with their regulators through rate cases, and though they do not have total control over policy outcomes, they do have a significant voice in federal and state energy policies. While the electric utility business model is designed to provide predictable returns, the traditional business model may benefit from evolving beyond its traditional role in the market to continue to meet these investor expectations. Perceived risks to the traditional business model, including distributed generation and the evolving policy environment around GHG emissions (which incentivizes or puts pressure on companies to invest in renewable and alternative energy generation and energy efficiency), incentivizes action by all types of stakeholders, including utilities themselves, to evolve into a structure more precisely designed for the 21st century. In some jurisdictions, the role of utilities in the economy's energy infrastructure and the very nature of their regulation are being reframed. Under this evolving policy environment, utilities in each jurisdiction will have to engage with regulators and policymakers to ensure that regulation rewards actions that are in the long-term best interest of society as well as companies' shareholders. A company's policy stance on renewable energy, distributed generation, energy efficiency, and other key emerging trends can influence the achievement of economy-wide GHG emissions reduction, improved health outcomes, and the affordability and reliability of electricity service for consumers. In the short term, policy outcomes that favor financial returns for utilities at the expense of societal benefits might prevail in some areas. However, examples from other industries and markets indicate that over time, policy corrections to achieve societal benefits could result in unanticipated costs and limitations on companies that might be detrimental to their long-term financial performance.

There is a substantial variation among utilities across the country in attitudes toward a new energy economy, with some companies planning for and embracing the changes that are occurring in the generation and distribution of electricity while other companies are more resistant to those changes. Where a given utility sits in this spectrum is material to investors, whether they themselves are in the former or latter camps in terms of policy outlook. One metric to assist investors in evaluating whether a utility "gets it" is the amount of expenditures for lobbying and litigation efforts designed to accommodate change, such as contributions to the American Council for an Energy Efficient Economy (ACEEE), AWEA, SEIA and the amount of funding provided to those entities that have staked out positions in opposition to these changes, such as the U.S. Chamber of Commerce and pooled legal resource groups such as the Utility Air Regulatory Group (Hunton & Williams) and the Class of '85 Regulatory Response Group (Baker Botts) that regularly advocate for and litigate environmental issues for utilities as a group. Accordingly, these guidelines set out metrics for disclosures to advocacy groups.

Furthermore, in their close relationships with regulators, electric utility companies need to have strong internal controls and governance procedures to ensure that they do not violate legal requirements around the nature of these interactions.

## Accounting Metrics

**IF0101-21. Discussion Disclosure of positions on the regulatory and political environment related to environmental and social factors and description of efforts to manage risks and opportunities**

**Commented [BB36]:** This section is deleted in the redline draft. No reason is given. This seems to include material disclosures relating to sustainability issues, though some of it is repetitive of disclosure discussed above.

presented

~~207-223.~~ The registrant shall identify risks and opportunities it faces related to legislation, regulation, rulemaking, actions of individual politicians, and the overall political environment (hereafter referred to collectively as “regulatory and political environment”) related to environmental and social factors.

~~208-224.~~ The scope shall include existing, emerging, and known future risks and opportunities.

~~209-225.~~ The scope shall include risks and opportunities that may exist within the U.S. at the local, state, and federal level.

~~210-226.~~ The registrant may discuss risks and opportunities in international markets.

~~211-227.~~ The regulatory and political environment related to environmental and social factors include, but is not limited to, those related to non-greenhouse gas emissions, greenhouse gas emissions, distributed generation, cyber security, and grid infrastructure development.

~~212-228.~~ Relevant risks include, but are not limited to, risk of increased compliance costs, risk of policy reversal (e.g., risks associated with changes to Clean Air Act), risk of loss of financial incentives (e.g., reduction or elimination of energy efficiency performance incentives), risk to reputation due to registrant’s stance and actions related to the regulatory and political environment, risk that the regulatory and political environment may not be aligned with long-term strategy, and risk of misalignment with the expectations of customers, investors, and other stakeholders.

~~213-229.~~ Relevant opportunities include, but are not limited to, improved financial conditions (e.g., through approval of infrastructure enhancement, etc.), improved community relations due to the registrant’s stance and actions related to the regulatory and political environment, and other benefits due to alignment of the regulatory and political environment with the registrant’s long-term strategy.

~~214-230.~~ For each risk and opportunity associated with the regulatory and political environment the registrant has identified, it shall disclose:

~~215-231.~~ For specific pieces of legislation, regulation, or candidates, whether its position is of support or opposition.

~~216-232.~~ For general environmental and social topics such as clean air and water, energy/nuclear, and other topics associated with the general lobbying issue [codes defined by the Lobbying Disclosure Act of 1995](#), a description of the type of regulation or legislation that it supports or opposes.

~~217-233.~~ The registrant shall discuss its efforts to manage risks and opportunities associated with each aspect of the regulatory and political environment it has identified in IF0101-18.117-.120 where relevant efforts to discuss include the use of each of the following:

~~218-234.~~ Direct lobbying, defined according to the [Internal Revenue Service](#) (IRS) as the attempt to influence a legislative body through communication with a member or employee of a legislative body, or with a government official who participates in formulating legislation.

~~219-235.~~ Grass roots lobbying, defined according to the [IRS](#) as the attempt to influence legislation by

attempting to affect the opinion of the public with respect to the legislation and encouraging the audience to take action with respect to the legislation.

~~220-236.~~ Direct or indirect contributions or expenditures in support of, or opposition to, a candidate for public office or a ballot measure.

~~221-237.~~ Any payments made to trade associations or tax-exempt entities that may be used (where permitted) for lobbying, to make campaign contributions, or to otherwise exert influence on a political campaign or ballot measure.

8. The scope includes political organizations, classified under Section 527 of the Internal Revenue Code, that seek to influence the “selection, nomination, election, or appointment of any individual to Federal, State, or local public office or office in a political organization, or the election of Presidential electors.”
9. The scope includes advocacy organizations, commonly classified as social welfare organizations under Section 501(c)(4) of the Internal Revenue Code.

~~222-238.~~ Other interactions with regulators and regulatory agencies, such as through legislative testimony or employment of former members of Congress or regulatory agencies and other public servants.

~~223-239.~~ Any direct or indirect political expenditure (one-time or recurring) that must be reported to the Federal Election Commission (FEC), the Internal Revenue Service (IRS), or a state disclosure agency.

~~224-240.~~ In addition to its efforts to influence the regulatory and political environment, the registrant shall discuss its overall strategy to manage risks and opportunities associated with each aspect of the regulatory and political environment it has identified.

~~225-241.~~ With respect to the emerging or potential future regulatory and political environment, the registrant shall discuss its view of:

~~226-242.~~ Which outcome is most likely to come to fruition;

~~227-243.~~ The likelihood the outcome will occur (i.e., a qualitative assessment of certainty or uncertainty);

~~228-244.~~ The time horizon over which it expects the outcome to occur; and

~~229-245.~~ The expected magnitude of the impact (e.g., a one-time, acute impact on costs, an ongoing moderate impact on rate structure, etc.).

~~230-246.~~ The registrant should describe whether its stance may align with or differ from its peers, other companies, and the official stance of its industry organization(s) and discuss any relevant reasons for alignment or divergence.

~~231-247.~~ The registrant shall disclose the total amount of political spending and a list of the recipients, which includes:

~~232-248.~~ Any direct or indirect contributions or expenditures in support of, or opposition to, a candidate

for public office or a ballot measure.

~~233-249.~~ Any payments made to trade associations or tax-exempt entities that are used to influence a political campaign (including advocacy organizations, commonly classified as social welfare organizations under Section 501(c)(4) of the Internal Revenue Code, or business leagues, chambers of commerce, boards of trade, and similar organizations classified under Section 501(c)(6) of the Internal Revenue Code).

~~234-250.~~ Any direct or indirect political expenditure (one-time or recurring) that must be reported to the FEC, the IRS, or a state disclosure agency.

~~235-251.~~ Any direct or indirect contributions to registered lobbyists or lobbying organizations, including contributions made to trade organizations that contribute to political lobbying or joint litigation efforts. This includes associations, such as the Utility Air Regulatory Group and the Class of '85 Regulatory Reform Group that routinely comment on and/or litigate public policy issues related to sustainability in this sector. Disclosure shall include the amounts for general dues or assessments and any special assessments for specific projects, such as contributions in support of or in opposition to a lawsuit challenging a particular regulation or legislative lobbying effort.

~~236.—IF0101-19. Discussion of policies and processes to identify and manage potential ethical violations resulting from interactions with utility commissions~~

~~237.— The registrant shall discuss the policies and processes it has established to identify and prevent potential ethical violations resulting from interactions with utility commissions where:~~

~~238.— Ethical violations are considered those instances where the registrant or the registrant's employee(s) are found to be out of compliance with codes of conduct and ethics as promulgated through regulations or through the registrant's internal framework.~~

~~239.— Relevant policies to discuss include, but are not limited to, board oversight of interactions with regulators (including oversight of political contributions), linking executive compensation to regulatory compliance, and programs to protect whistleblowers.~~

~~240.— Relevant processes include, but are not limited to, training programs for employees that interact with utility commission representatives, audits of interactions with utility commission representatives, and engagement with the public throughout the regulatory decision-making process.~~

~~241. The registrant shall describe any corrective actions it has implemented as a result of incidents arising from ethical violations with a utility commission. This may include, but is not limited to, specific changes to the utility's oversight of employee utility commission engagement, efforts to preemptively identify potential ethical dilemmas, and educational programs for employees.~~

**IF0101-20. Amount of legal and regulatory fines and settlements associated with allegations of violations resulting from interactions with utility commissions**

~~242. The registrant shall disclose the amount (excluding legal fees) of all fines and settlements associated with allegations of violations resulting from interactions with utility commissions such as those related to enforcement of U.S. laws and regulations on ex parte communications, utility rate-making, overcharging, and crediting customers, including violations of the U.S. Federal Power Act and relevant state level utility commission acts, among others.~~

~~243. Disclosure shall include administrative judge decisions (e.g., bench decisions, recommended decisions, final decisions, etc.), civil actions (e.g., civil judgment, settlements, or regulatory penalties), and criminal actions (e.g., criminal judgment, penalties, or restitutions) taken by any entity (government, businesses, or individuals).~~

~~244. The scope of disclosure is limited to those instances brought forth by customers and/or regulators alleging that the registrant violated U.S. federal regulations and/or relevant state level utility commission acts in its course of business.~~

**Note to IF0101-20**

~~245. The registrant shall briefly describe the nature (e.g., guilty plea, deferred agreement, or non-prosecution agreement) and context (e.g., overcharging due to improper rate case formulation, ex parte communications, rate commitments, etc.) of fines and settlements.~~

~~246. The registrant shall estimate and disclose any additional or other financial impacts associated with the allegations, including settlements that resulted in rate reductions, denied revenue increases, customer credits, or other financial impacts.~~

~~247. The registrant shall describe any corrective actions it has implemented as a result of each incident. This may include, but is not limited to, specific changes in billing processes, rate-making, or public communications and commitments.~~

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