ORIGINAL

Commissioner	Yes	No	Not Participating
Huston	√		
Freeman	√		
Krevda	√		
Ober	√		
Ziegner	√		

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

VERIFIED PETITION OF DUKE ENERGY INDIANA, LLC FOR: (1) APPROVAL OF PETITIONER'S 6-YEAR PLAN FOR ELIGIBLE TRANSMISSION, DISTRIBUTION AND STORAGE SYSTEM IMPROVEMENTS, PURSUANT TO IND. CODE § 8-1-39-10; (2) APPROVAL OF A TRANSMISSION AND DISTRIBUTION INFRASTRUCTURE IMPROVEMENT COST RATE ADJUSTMENT AND DEFERRALS, PURSUANT TO IND. CODE §§ 8-1-2-10, 8-1-2-12, 8-1-2-14, AND 8-1-39-1 *ET SEQ*; AND (3) APPROVAL OF A TARGETED ECONOMIC DEVELOPMENT PROJECT AND RECOVERY OF COSTS ASSOCIATED WITH THE PROJECT, PURSUANT TO IND. CODE §§ 8-1-39-10 AND 8-1-39-11	)	**CAUSE NO. 45647** **APPROVED: JUN 15 2022**

ORDER OF THE COMMISSION

Presiding Officers:
David L. Ober, Commissioner
Carol Sparks Drake, Senior Administrative Law Judge

On November 23, 2021, Duke Energy Indiana, LLC ("Duke Energy Indiana" or "Petitioner") filed a Verified Petition requesting approval of its six-year plan for eligible transmission, distribution, and storage system improvements pursuant to Ind. Code § 8-1-39-10, including specific targeted economic development ("TED") projects pursuant to Ind. Code §§ 8-1-39-10 and 8-1-39-11 ("TDSIC 2.0 Plan" or "TDSIC 2.0"), and for transmission and distribution infrastructure improvement cost rate adjustment and deferrals under Ind. Code § 8-1-39-9. Duke Energy Indiana concurrently prefiled its case-in-chief, including the direct testimony of the following witnesses:

- Stan C. Pinegar, President, Duke Energy Indiana
- Jeremy K. Lewis, Director of Customer Delivery Project Management, Duke Energy Business Services, LLC ("DEBS")
- Martin D. Dickey, Vice President, Transmission Construction and Maintenance, DEBS
- James W. Shields, Principal Consultant, Black & Veatch Management Consulting LLC ("B&V")
- Erin Schneider, Director of Economic Development, Duke Energy Indiana and
- Maria T. Diaz, Director, Rates and Regulatory Planning,Duke Energy Indiana.

Petitioner also filed a motion for protection of confidential and proprietary information on November 23, 2022, that was preliminarily granted on December 1, 2021. Duke Energy Indiana filed revised testimony for Mr. Lewis on December 14, 2021.

Nucor Steel-Indiana, a division of Nucor Corporation ("Nucor"), Duke Industrial Group ("Industrial Group"),[1] Citizens Action Coalition of Indiana, Inc. ("CAC"), Hoosier Energy Rural Electric Cooperative, Inc. ("Hoosier Energy"), Wabash Valley Power Association, Inc. d/b/a Wabash Valley Power Alliance ("Wabash Valley"), and Steel Dynamics, Inc. ("SDI") each filed petitions to intervene, all of which were granted.

On December 2, 2021, a docket entry was issued creating a subdocket (Cause No. 45647 S1) for purposes of reviewing the proposed River Ridge Commerce Center Project in Clark County, Indiana, as a TED project.

On February 18, 2022, the Indiana Office of Utility Consumer Counselor ("OUCC") prefiled the direct testimony of Casey A. Shull, Ph.D., Senior Utility Analyst and Kaleb G. Lantrip, Utility Analyst in the OUCC's Electric Division. On February 21, 2021, Hoosier Energy prefiled the direct testimony of its employee Matt Mabrey, Vice President of Operations.

On February 25, 2022, Petitioner filed a second motion for protection of confidential and proprietary information that was preliminarily granted on March 3, 2022.

On March 4, 2022, Duke Energy Indiana prefiled the rebuttal testimony of Jeremy K. Lewis, Martin D. Dickey, and Maria T. Diaz.

An evidentiary hearing was held in this Cause commencing at 9:30 a.m. on March 24, 2022, in Hearing Room 222 of the PNC Center, 101 West Washington Street, Indianapolis, Indiana. At the hearing, the prefiled evidence of Duke Energy Indiana, the OUCC, and Hoosier Energy was admitted and related cross examination conducted.

Based upon applicable law and the evidence presented, the Commission finds:

1. <u>Notice and Jurisdiction</u>. Notice of the hearing in this Cause was given and published as required by law. Duke Energy Indiana is a public utility as defined in Ind. Code §§ 8-1-2-1(a) and 8-1-39-4. Under Ind. Code ch. 8-1-39 ("TDSIC Statutes"), the Commission has jurisdiction over a public utility's plan for eligible transmission, distribution, and storage system improvement charges ("TDSIC"), including TED projects. The Commission, therefore, has jurisdiction over Petitioner and the subject matter of this proceeding.

2. <u>Petitioner's Characteristics</u>. Duke Energy Indiana is a public utility and wholly-owned subsidiary of Duke Energy Indiana Holdco, LLC, with its principal office located in

[1] For purposes of this proceeding, the Industrial Group includes Elanco, Evonik, General Motors, LLC, International Paper Company, Subaru of Indiana Automotive, Inc., Tate & Lyle Ingredients Americas, Inc., and USG Corporation.

Plainfield, Indiana. Petitioner is engaged in the business of rendering retail electric utility service and owns, operates, manages, and controls, among other things, plant, property, and equipment within Indiana used for the production, transmission, distribution, and furnishing of such service. Duke Energy Indiana provides electric service to approximately 860,000 customers in 69 Indiana counties, and Petitioner sells electric energy for resale to municipal utilities, Wabash Valley, Indiana Municipal Power Agency, and other electric utilities.

3. Petitioner's Requested Relief. Duke Energy Indiana requests approval in this Cause of its TDSIC 2.0 Plan, including the following:

(a) a finding that the projects in the TDSIC 2.0 Plan are "eligible transmission, distribution, and storage system improvements" under Ind. Code § 8-1-39-2;

(b) a finding upon the best estimate of the cost of the eligible improvements included in the TDSIC 2.0 Plan;

(c) a determination that the public convenience and necessity require or will require the eligible improvements included in TDSIC 2.0;

(d) a determination that the estimated costs of the eligible improvements included in TDSIC 2.0 are justified by the incremental benefits attributable to the TDSIC 2.0 Plan;

(e) a determination that the TDSIC 2.0 Plan is reasonable and should be approved, designating the eligible transmission, distribution, and storage system improvements included in TDSIC 2.0 as eligible for TDSIC treatment in accordance with Ind. Code § 8-1-39-9;

(f) authority to recovery 80% of the TDSIC 2.0 costs via Standard Contract Rider No. 65 ("TDSIC Rider") and deferral with carrying costs of 20% of the TDSIC 2.0 costs for subsequent recovery in Petitioner's next general retail electric base rate case; and

(g) approval of Petitioner's proposed process for updating the TDSIC 2.0 Plan annually.

4. Duke Energy Indiana's Case-In-Chief.

A. Mr. Pinegar. Mr. Pinegar testified Duke Energy Indiana's initial TDSIC plan (Cause No. 44720) targeted the replacement of aging infrastructure, but the priority of TDSIC 2.0 is to provide reliability benefits for customers, such as reducing the frequency and duration of interruptions, hardening and resiliency of the grid, and modernizing the grid to manage growing renewable distributed generation on Petitioner's system. He testified Petitioner's commitment to customer value is evident in the rigorous cost to benefit analysis Duke Energy Indiana utilized to ensure the projects selected for TDSIC 2.0 provide optimal value for customers and improve the reliability, flexibility, and capacity of the grid to meet customer expectations, demands, and needs. Mr. Pinegar described today's customer expectations, stating power quality and reliability are the top drivers, followed closely by price. Although all the investments identified in TDSIC 2.0 need

to be undertaken, he testified Petitioner is limiting the overall average annual rate impact of the TDSIC 2.0 Plan to approximately one percent.

Mr. Pinegar testified TDSIC 2.0 addresses Petitioner's commercial and industrial customers' changing service expectations. After visiting with over 40 of Petitioner's largest customers, Mr. Pinegar stated they advised reliability and power quality are key factors to their success. Accordingly, the TDSIC 2.0 Plan includes technology that improves reliability, increases power quality, and minimizes momentary outages. He noted adequate capacity and reliable service are attractive to companies considering locating and expanding in Indiana; therefore, the TED projects that may be executed during TDSIC 2.0 will also provide capacity and reliable service to attract companies and/or expansions. Additionally, to improving service reliability, the proposed TDSIC 2.0 investments will facilitate the expansion of renewable and distributed generation for all customers.

Mr. Pinegar testified the objectives of the TDSIC 2.0 Plan are to improve reliability for Petitioner's customers, advance grid hardening and resiliency, enable expansion of renewable and distributed generation, and facilitate economic development growth. With much of Duke Energy Indiana's system over 40 years old and the expansion of distributed energy resources ("DER") and electrification trends, he stated TDSIC 2.0 will ensure reliability and prepare the grid for the future. Measured investments will avoid future customer interruptions ("CI") and customer minutes interrupted ("CMI"). Mr. Pinegar testified Petitioner expects to show measurable improvement to reliability over the six-year plan by measuring CI and CMI avoided, which after the implementation of TDSIC 2.0, will produce a minimum 19% improvement to System Average Interruption Duration Index ("SAIDI") and a minimum 17% improvement to System Average Interruption Frequency Index ("SAIFI"). To improve reliability, TDSIC 2.0 includes investments to advance hardening and resiliency of the transmission and distribution grid. He explained that hardening physically changes the infrastructure to make it less susceptible to damage, while resiliency makes the grid smarter and better able to recover from events more quickly. Proposed TDSIC 2.0 hardening programs include line rebuilds, pole upgrades and replacements, installation of intermediate dead-end structures, targeted underground, transformer replacements, and uprating 4kV lines to 12kV. Proposed TDSIC 2.0 resiliency programs include self optimizing grid and automated lateral device investments, as well as installing Supervisory Control and Data Acquisition ("SCADA") at transmission switches and substations.

Mr. Pinegar testified TDSIC 2.0 will facilitate increased distributed and renewable energy investments in Indiana by advancing a two-way smart-thinking grid that is networked to intelligently detect, rapidly react, and proactively adapt to usage changes. It will also enable customers to become active participants in the grid system by installing assets like rooftop solar and premise level storage.

Mr. Pinegar stated Petitioner worked with the Indiana University Business Research Center ("IBRC') to perform an Economic Impact Study on the transmission and distribution projects within TDSIC 2.0, excluding the targeted economic impact projects. TDSIC 2.0, excluding these projects, is projected to economically benefit Indiana by creating or supporting about 1,270 jobs

each year of the six-year TDSIC 2.0 Plan, with an expected average pay range of $135,000. The TDSIC 2.0 investments are also estimated to produce about $4.3 million in additional state and local tax revenue and $215 million in gross domestic product annually over the six-year period.

Mr. Pinegar testified the public convenience and necessity require, or will require, the improvements included in TDSIC 2.0. With respect to this plan, he stated Duke Energy Indiana has provided its best estimate of the costs of TDSIC 2.0 and demonstrated these estimated costs are justified by the incremental benefits attributable to TDSIC 2.0. Mr. Pinegar advised TDSIC 2.0 is reasonable and provides substantial customer benefits while limiting investments to those needed to maintain a reasonable level of reliability, modernize the grid responsibly, and minimize rate impacts. Per Mr. Pinegar, hardening and resiliency improvements will "absolutely" improve Petitioner's reliability. Transcript A-31, Lines 18-21. He stated flexibility is also a component of a reliable system. Transcript A-32. Mr. Pinegar reiterated that the projects in TDSIC 2.0 were chosen based on the best opportunity "to provide reliability at the best value for all customers." Transcript A-35, Lines 3-4. To this end, the goal was to achieve a TDSIC plan that brings value to Petitioner's customers with no more than a one percent overall average annual rate increase, notwithstanding the latitude Ind. Code § 8-1-39-14 affords to increase rates at an average of two percent, and Petitioner is achieving this goal. Mr. Pinegar testified TDSIC 2.0 is reasonable and in the public interest.

B. <u>Mr. Lewis</u>. Mr. Lewis testified TDSIC 2.0 is a six-year, $2.0 billion plan including an estimated $158 million of TED investments. Capital transmission investments within this plan total approximately $815 million, while distribution investments total $1 billion over the six years. TDSIC 2.0 is designed to achieve cost-effective improvements in grid reliability, safety, grid modernization, and economic development. He testified greater than 80% of the proposed TDSIC 2.0 programs will influence reliability through proactively reducing the frequency and duration of outages. Looking retroactively at Duke Energy Indiana's past five-year average, if the proposed TDSIC 2.0 investments were in place, he estimated approximately 23% of CI and 28% of CMI would have been avoided. He testified TDSIC 2.0 programs will transform Petitioner's system to a dynamic smart-thinking and self-healing grid that will quickly locate faults, reroute power around faults, and restore customers' power more quickly, avoiding CI and CMI on Major Event Days ("MED") and non-MED. Mr. Lewis noted variables outside TDSIC projects, such as major storms, vegetation management, cellular advancement, and vehicle accidents, impact reliability measurements and project performance metrics, so it is important to measure the success of TDSIC 2.0 following full execution of this plan.

Mr. Lewis testified grid hardening physically improves the durability and stability of the energy infrastructure making the asset or grid stronger, while resiliency makes the grid smarter and better able to react to events. Although resiliency measures do not prevent damage, he explained that they enable grid systems to continue operating despite damage and/or promote a more rapid return to normal operations when damages or outages occur. Mr. Lewis testified 24 of the 35 sub-programs in TDSIC 2.0 contribute to resiliency and hardening of the grid. These sub-programs will help eliminate outdated grid architectures, target vulnerable assets with a high consequence of failure, solve asset conditions that contribute to extending outages, and maintain

or improve customer safety. Inspection-based programs will proactively replace grid hardware and equipment based on age, condition, and historical failure rates. He stated TDSIC 2.0 is also designed to facilitate the expansion of renewables and distributed generation through building a self-optimizing grid, Integrated Volt-Var Control ("IVVC"), SCADA communication, substation relay replacements, circuit visibility and control, and circuit rebuilds. Mr. Lewis clarified on cross examination that the TDSIC 2.0 Plan focus is reliability, with DER installation being an ancillary benefit. Transcript B-30. The expansion of renewables and DER-related enablements are secondary benefits of Duke Energy Indiana's planned TDSIC investments.

Mr. Lewis testified TDSIC 2.0 utilizes a targeted set of programs that advance the distribution system allowing the grid to adjust the power flow to self-heal when an event occurs, avoiding CI and CMI. These programs include Self Optimizing Grid ("SOG") that will isolate faults on the backbones of circuits from approximately 1,000 customers per segment to 400 customers per segment, allowing service to be restored to other portions of the circuit; Targeted Underground ("TUG") that places strategic infrastructure underground to eliminate the source of overhead outages; and Automated Lateral Device ("ALD") that is targeted to the lateral lines of distribution systems to reclose on temporary faults and isolate those temporary faults to eliminate customer outages. These programs will improve the experience of Duke Energy Indiana's commercial and industrial customers with enhanced troubleshooting efficiencies to improve restoration times, fewer interruptions, and reduced outage durations. After the completion of TDSIC 2.0, Mr. Lewis stated Petitioner estimates the number of customers served by automated circuits will increase from 11% to over 65%. Mr. Lewis testified TDSIC 2.0 also includes installing additional technology with near real-time two-way data communication, data collection, and remote operations capability to pinpoint and isolate system trouble to restore service more quickly.

Mr. Lewis provided a TDSIC 2.0 Workplan summarizing the distribution projects, with cost details. He testified the projects were selected based on engineering analyses and asset data aligning with TDSIC 2.0 objectives and focus on improving system integrity, reliability, and customer benefits. Mr. Lewis explained a Class 5 estimate was assigned to each potential project, and the initial list of investments was provided to B&V to run through the Investment Plan Analysis and scored by substation through a cost to benefit ratio. He testified the investment in TDSIC 2.0 will be executed by substation and circuit to gain labor resource efficiencies. Per Mr. Lewis, the Investment Plan Analysis is the accumulation of Duke Energy Indiana, B&V, and Copperleaf value models, risk models, and optimization efforts together. He stated Duke Energy Indiana identified projects to address known conditions and performance issues on its system. These were then evaluated for consequence and likelihood of failure. Opportunities to improve these conditions and enhance functionality through proven automated technologies were also assimilated to put through the Investment Plan Analysis. Mr. Lewis testified that leveraging system knowledge with the rigorous risk and value studies led to the selection of projects that provide the most benefit for the cost. In selecting the TDSIC 2.0 investments, approximately $1.7 billion of potential distribution investments were analyzed through the Investment Plan Analysis, which returned $775 million of select distribution investments. The Investment Plan Analysis used two funding mechanisms: "optimized" and a small amount of "reserved," meaning the subject matter experts held a portion of the funding specifically for necessary sub-projects within Inspection

Based, 4kV Conversion, Underground Cable Rehab, and Capacitor Automation. Funding levels for these projects were selected using historical analysis of performance, value, and necessity. All other projects were optimized in the model.

Mr. Lewis described the five distribution program categories within TDSIC 2.0 as follows:

(1) Circuit Backbone Uplift. This includes eight sub-programs targeting circuit enhancements to support circuit modernization, including automation, segmentation, and controlling circuit operations to enable self-optimization. These investments reduce outage impacts with respect to their occurrence frequency, grid impact footprint, recovery time, and cost, with the added value of improving capability to better integrate DER on the grid.

(2) Overhead Lateral Uplift. This includes four sub-programs aimed at improving the lateral grid's reliability and resiliency. These projects add segmentation and automation of the circuit laterals to reduce the number of outages and customers impacted as well as reducing the duration of the outages.

(3) Underground System Uplift. This targets cable rehabilitation for improved reliability.

(4) 4kV Conversions. This consists of the conversion of risk-prone, legacy standard, and dated architecture of lower operating voltage lines to a 12kV system to address all three plan objectives.

(5) Inspection Based Programs. This includes four sub-programs and is a condition-based program geared towards proactively replacing grid hardware and equipment based on effective age and historical failure rates.

Mr. Lewis provided an overview of the TDSIC 2.0 sub-programs. These are detailed in Petitioner's Exhibit 4-A (JWS) and include programs contributing to expanding solar and renewables. Collectively, he testified TDSIC 2.0 distribution capital investments leverage grid automation, data management and automated grid sensors, and communication and response capability to integrate a greater proportion of renewable and DER across the distribution network while improving reliability, economic performance, and customer choice. He testified TDSIC 2.0 distribution programs benefit all customers by improving grid hardening, resiliency, and reliability throughout Duke Energy Indiana's service territory.

Mr. Lewis provided a detailed cost estimate for every project in the TDSIC 2.0 Investment Plan derived utilizing either engineered work, built up estimates, or parametric modeling, using the Association for the Advancement of Cost Engineering International ("AACE") standards and Duke Energy's Project Management Center of Excellence guidelines. Each TDSIC 2.0 project cost was estimated based on asset or compatible unit using historical values and subject matter expertise

and reviewed by B&V. He testified the majority of the projects in years one and two achieved Class 2 status, with the outer years at Class 3 or 4. A projected contingency amount of 15% was calculated using a Monte Carlo simulation and added to the base cost estimate to cover estimate uncertainty and risk over the six-year TDSIC 2.0 Plan. Since projects will go into service each year, contingency was broken out for each year, but if less contingency is needed than expected in a year, the remaining amount will extend to future years to account for ongoing risk. Mr. Lewis testified any direct project O&M expenses related to distribution capital projects, as well as vegetation removal that is necessary to perform the capital project construction, are included in the cost estimate and provided for in the TDSIC Statutes.

Mr. Lewis stated B&V was brought in as a third party to evaluate and validate the transmission and distribution project selections, estimates, and economic impact. He testified B&V evaluated Petitioner's estimating strategy by reviewing cost estimates and verifying these estimates align with AACE standards, with Mr. Shields providing the details of B&V's review. Per Mr. Lewis, B&V concluded the TDSIC 2.0 Plan cost estimating process Duke Energy Indiana used was reasonable and within the typical band of uncertainty seen across the industry for capital planning and cost forecasting.

Mr. Lewis testified the TDSIC 2.0 Plan is expected to provide secondary benefits for Indiana by generating additional economic activity, as assessed by the IBRC at Indiana University. The IBRC concluded the TDSIC 2.0 Plan, excluding TED and contingency, will contribute an estimated $1.04 billion in compensation in Indiana and approximately $1.29 billion in gross domestic product.

Mr. Lewis testified that Duke Energy Indiana proposes to update its TDSIC 2.0 Plan annually in the fall, with cost recovery filings in the spring. He explained units in a project may be susceptible to change, especially in the outer years. To provide flexibility and mitigate the likelihood of change, similar to Petitioner's TDSIC 1.0 Plan, Duke Energy Indiana requests the Commission designate the alternate list of projects Petitioner identified as eligible projects so in future TDSIC 2.0 Rider filings, Duke Energy Indiana has the option of moving projects on to and off of the alternate list as necessary to achieve the greatest benefit to Petitioner's system and customers. He testified the overall costs of TDSIC 2.0 will not substantially change by substituting these alternates. If the overall investment plan is tracking under its expected cost, Mr. Lewis opined it is prudent and beneficial to customers to insert projects from the alternate list into the active TDSIC 2.0 Plan to create additional customer value while staying under the overall cost estimate and within the annual one percent rate increase.

Mr. Lewis testified Duke Energy Indiana is quantifying reliability performance through avoided CI and CMI and estimates an 80% probability of avoiding between 22 and 45 million CMI and between 149,000 and 249,000 CI upon the conclusion of the TDSIC 2.0 investments. Based on a historical five-year average, this is expected to produce a minimum 19% improvement to SAIDI and 17% improvement to SAIFI. The 80% probability factor is based on variables outside of TDSIC 2.0. He testified regarding Duke Energy Indiana's commitment to tracking the self-optimizing grid's CI/CMI based on its automation savings and contribution to SAIDI/SAIFI and

proposed tracking progress by reviewing total savings annually for minimum and maximum CI/CMI, inclusive of the target and the impact of MEDs and non-MEDs. To develop the quantitative customer benefits, the most recent complete five-year historical reliability data, in conjunction with the TDSIC 2.0 program scope, was checked against similar work in other jurisdictions. The effects were then calculated on the expected future reliability performance of the Indiana system. He testified the Value of Lost Load that B&V calculated utilizing the Department of Energy Interruption Cost Estimator ("ICE") is an additional TDSIC 2.0 Plan benefit.

Mr. Lewis testified Duke Energy Indiana has a multitude of annual transmission and distribution projects that are not included in TDSIC 2.0. The approach for identifying replacement assets in the TDSIC 2.0 Plan is the result of the rigorous Investment Plan Analysis, particularly the new methodology of evaluating projects methodically via the benefit to cost ratio. He testified there are no duplicative items in the TDSIC 2.0 Plan. Per Mr. Lewis, Petitioner has provided the best estimate of the costs of the eligible improvements within TDSIC 2.0, and public convenience and necessity require each component. He stated the TDSIC 2.0 Plan is reasonable, necessary, and justified by significant reliability, hardening and resiliency, and modernization benefits.

In confirming the benefit to Duke Energy Indiana's customers of the proposed distribution capital investments, Mr. Lewis noted Petitioner's distribution system serves over 860,000 customers through approximately 22,000 miles of distribution lines, including 16,000 miles of overhead lines, 600,000 distribution poles, and 240,000 distribution transformers. Mr. Lewis explained that nearly half of Petitioner's system assets such as poles, conductor, and transformers were constructed before 1980. This infrastructure is approaching its life extectancy, and to sustain Petitioner's reliability, a portion of this infrastructure will be replaced or rebuilt through the TDSIC 2.0 Plan. Mr. Lewis testified that in TDSIC 2.0, Duke Energy Indiana chose investments that focus on value to its customers by replacing aging assets and expanding technology. He stated it is Petitioner's experience that technology upgrades increase system reliability.

Mr. Lewis characterized TDSIC 2.0 as "a good plan to help benefit our customers," Transcript B-31, Line 19, with the overall benefit being improved reliability and the secondary benefit of having DERs installed on Petitioner's system. Mr. Lewis agreed on cross examination that in implementing Duke Energy Indiana's inspection based programs, Petitioner will be replacing circuits and assets before their expected life expires because inspection based programs enable proactive identification of hazards and failures before the device causes an outage. Transcript B-33. He acknowledged it is not possible to prevent all outages, but in developing TDSIC 2.0, the benefits outweigh the cost for these particular projects.

C. <u>Mr. Dickey</u>. Mr. Dickey described the two main categories of transmission programs in TDSIC 2.0, Line Hardening and Resiliency and Substation Hardening and Resiliency. These focus on hardening the grid by preventing events from adversely affecting system operation and enhancing system resiliency through technology designed to isolate faults, including automated remote devices that reconfigure the system to reduce and shorten customer outages. He testified the benefits from the distribution investments are complemented by the benefits received

from the transmission portion of TDSIC 2.0, with an overall benefit to cost ratio of 3.5 and overall program value of $2.8 billion for the $800 million core transmission project planned investment. Mr. Dickey stated this means for every dollar spent on the TDSIC 2.0 Plan, Indiana customers should receive a payback of $3.50 in primary benefits. Implementation of these projects will result in risk reduction, avoided customer outages, avoided loss of system redundancy, and power quality improvements.

Mr. Dickey provided examples of the TDSIC 2.0 sub-programs designed to improve the hardening of the grid, including wood to non-wood structure replacements, wood cross arm replacements, transmission line rebuilds, installation of intermediate dead-end structures to mitigate cascading events, and replacing deteriorated and obsolete equipment prone to catastrophic failures. Examples of TDSIC 2.0 sub-programs designed to improve grid resiliency include looping short radials through existing substations, adding SCADA functionality to substations, adding SCADA to switches, and transmission relay upgrades at substations. The SCADA switch sub-program will increase the number of remote-controlled switches to support faster isolation of trouble spots on the transmission system and more rapid restoration following line faults. Mr. Dickey testified the TDSIC 2.0 upgrades to the 69kV transmission system will increase continuity of service and improve power quality and reliability for many industrial and wholesale customers. The hardening and resiliency of the Bulk Electric System ("BES") 100kV and above assets is a critical component to reliable service. Although the BES does not directly impact CI/CMI avoided, BES links generation facilities to the 69kV system and distribution system serving customers' homes and businesses. He testified that while BES is redundant in design, increased age, deterioration, and obsolescence of equipment require increased investment to avoid disruption to power flows and customer interruptions. Mr. Dickey noted power quality issues, such as momentary interruptions and voltage sags, can result in loss of revenue and productivity for industrial customers. The Transmission Line and Substation Hardening and Resiliency programs will reduce the risk of momentary and sustained outages during an in-service failure, yielding productivity and financial gains for Petitioner's industrial customers. He testified there are TDSIC 2.0 substation projects that support IVVC and will increase the ability of the distribution system operators to remotely monitor and control the voltage level that substations supply to the distribution circuits. Upgrades to control capability and added voltage regulation equipment are included in TDSIC 2.0.

Mr. Dickey testified the transmission team evaluated $2.5 billion of candidate projects before ultimately selecting $800 million in projects that provide the most customer benefit. He described the included projects as critical to maintaining Petitioner's transmission system.

Mr. Dickey provided cost estimates for each transmission line and substation project in TDSIC 2.0 and explained how the estimates were developed. He testified that using site reviews Duke Energy Indiana and Burns & McDonell conducted, an asset-specific project scope was developed to calculate AACE Class 4 estimates. The Class 4 estimates were created by using averages of recently bid capital projects and then applying those averages and unit costs to the TDSIC 2.0 project work scopes. He testified that as projects approach their targeted in-service year, typically two years prior to construction, an AACE Class 3 estimate will be prepared. In the

case of TDSIC 2.0 transmission projects, however, no Class 3 estimates were utilized. To provide the best estimate, Class 2 estimates were prepared for projects up to three years prior to construction and for the first two years of the transmission program (2023 and 2024). Mr. Dickey testified the capital project cost estimates include project-related O&M incurred during construction. In addition, per AACE guidelines, contingency was added to the base cost estimates to cover estimate uncertainty and risk.

Mr. Dickey testified the Commission can be assured that Petitioner's estimates are "best estimates" because Petitioner's engineering team has decades of experience developing cost estimates and constructing the assets included in the substation and transmission line plans. Additionally, Petitioner engaged B&V to review its cost estimates and cost estimating methodology, and Duke Energy Indiana's process was found reasonable and its cost estimates accurate, as Mr. Shields explains.

D. <u>Mr. Shields</u>. Mr. Shields testified Duke Energy Indiana engaged B&V to identify transmission and distribution ("T&D") system improvements and asset replacements that produce the greatest benefits to Petitioner's customers. For its investment plan analysis, B&V combined Copperleaf's decision analytics tool that provides a framework for quantifying benefits and optimizing investments with a Risk Adjusted Project Prioritization ("RAPP") modeling tool that identifies high risk assets. Although Duke Energy Indiana determined the TDSIC 2.0 Plan objectives, collaboration with B&V identified the programs to support those objectives. Mr. Shields explained how the benefit categories were identified and mapped to a value model within Copperleaf to calculate each project's net benefits. Optimizing the investments helped ensure high value projects were located in the areas on the system that produced the greatest value. Constraints were then applied at the sub-program level to determine the projects TDSIC 2.0 will include.

Mr. Shields described Copperleaf as a decision analytics software tool used to quantify benefits associated with critical infrastructure investments in the electric, natural gas, water, wastewater, oil, and gas industries. Value models were developed for each investment type with specific value measures quantifying the benefits of the investments. He stated once the cost of each investment was paired with the benefits, the Copperleaf tool ran various investment scenarios to produce an optimized investment plan that aligns with the objectives of TDSIC 2.0. He testified the RAPP model is similar to risk models used in other Indiana TDSIC filings B&V has helped develop and, in this instance, was used to complement Copperleaf by identifying high risk assets. The RAPP model calculated risk scores for assets included in the asset risk register, with risk defined as the product of Probability of Failure ("PoF") multiplied by the Consequence of Failure ("CoF"). An asset's actual age was adjusted to an effective age using survivor curves and asset health data, from which a PoF was then calculated. CoF was calculated from a criterion of consequences and scored based on the criticality of the consequence. The RAPP model identified high risk assets that were input into Copperleaf to compete for funding with other projects identified in developing the TDSIC 2.0 Plan.

Mr. Shields also described the value model, advising this combines all the benefits a project produces and calculates the value measures (financial and non-financial benefits produced) to

quantify the project's net benefits. The value measures used in developing TDSIC 2.0 were risk mitigation, benefits, and cost. For the risk mitigation value measure, used to capture the value of avoiding undesirable outcomes, a uniform risk matrix was developed to align the mitigation of risk to a common scale. Mr. Shields provided the probability levels used in calculating risk mitigation value units, as well as how the 13 quantifiable benefit categories were mapped to sub-programs that produced the benefit. He explained that value models in Copperleaf combined all the value measures a project could produce to calculate the project's net value. From this portfolio of investments, an optimization analysis was performed to direct the funding of projects using reserved and optimized funding methods. Mr. Shields testified the optimization approach used directed funding based on highest benefits generated. Funding levels were set by Duke Energy Indiana and applied in the TDSIC 2.0 Plan development. Mr. Shields testified that, generally, the same methodology was used to evaluate transmission and distribution projects; however, benefits were assessed slightly differently due to transmission systems being designed for redundancy to minimize impacts on large numbers of customers and to transport power long distances reliably. Benefits on the transmission system focused less on the value of load loss and more on maintaining and reinforcing the system's redundancy. Distribution substation and line project benefits were valued based on reducing future outages compared to historical system performance. Mr. Shields summarized the CMI and CI distribution program improvements as a result of the TDSIC 2.0 Plan. He testified the TDSIC 2.0 Plan has a 2.8 benefit to cost ratio which shows the estimated cost of the TDSIC 2.0 Plan is justified by the incremental benefits attributable to this plan. Mr. Shields noted on cross examination that the ratios represent the benefits captured in the value models relative to the cost, but there are additional benefits that were not captured. Transcript C-40.

Mr. Shields testified B&V validated Duke Energy Indiana's cost estimates using the AACE classification system and by performing independent estimate reviews for other TDSIC filings in Indiana. The estimate sample included AACE Class 2 and Class 4 estimates used in the TDSIC 2.0 Plan. The estimates were reviewed with line item material and labor estimates including quantities needed for the specific projects. He testified Duke Energy Indiana's assumptions and the methodology Petitioner used to develop the estimates were reasonable. From his perspective, Duke Energy Indiana's cost estimates present what Petitioner perceives are the best estimates. Transcript C-60.

E. <u>Ms. Schneider</u>. Ms. Schneider testified regarding Duke Energy Indiana's request for approval of the River Ridge Project in Clark County, Indiana, as a TED project for inclusion and associated cost recovery in TDSIC 2.0. Ms. Schneider testified Duke Energy Indiana is working with more than ten industrial and commercial customers seeking sites for new facilities at River Ridge Commerce Center, a business and manufacturing park with over 6,000 acres. She stated Petitioner currently has insufficient capacity to support the estimated 500+ MW load for these project commitments and, therefore, proposes to invest additional infrastructure at the River Ridge Project site to increase its system's capacity and foster business investment. [2]

[2] General Administrative Order 2016-6 and applicable statutes, including Ind. Code § 8-1-39-10(c), encourage expediency when the Commission considers TED Projects. Accordingly, a subdocket was opened under Cause No. 45647 S1 for purposes of considering Duke Energy Indiana's proposed TED project. On March 2, 2022, in Cause No.

Ms. Schneider testified current projections estimate the River Ridge Project could create more than 8,000 jobs and bring about $3 billion in capital investment. She stated the associated wages from those jobs will positively impact the region, and the capital investment will increase the tax base and overall economy within the region and within Indiana. She testified potential investment at River Ridge will likely come in under Petitioner's existing economic development tariff (Rider 58) or a special contract with similar conditions. Per Ms. Schneider, proactively building the transmission infrastructure to increase capacity at River Ridge will attract more economic development and capital investment to the area, aligning with the Indiana Economic Development Commission's ("IEDC") mission to attract and support new business investment, create new jobs for Hoosiers, and further Indiana's legacy as one of the top states for business. It also allows Duke Energy Indiana to work with community partners to enhance the area's vibrancy by facilitating economic transactions that generate wealth and add to community prosperity.

Ms. Schneider testified the River Ridge Project includes plans to install a 138kV six-position, four-breaker ring bus to allow isolation of the substation for outage free maintenance. Petitioner proposes to loop the In/Out existing 138kV line 13857, increasing reliability by adding a substation to shorten a long circuit into two shorter circuits. She testified Duke Energy Indiana will construct the transmission side of the substation only, maintaining close proximity to the existing 138kV line, with Petitioner's estimated cost of the River Ridge Project being $44 million. An initial yard will be constructed for the substation that is sized to accommodate a variety of customer specific scenarios on the substation's distribution side. Ms. Schneider testified TED treatment of this project will allow Petitioner to provide an additional 200 MW of capacity to serve existing and additional customers. She noted Petitioner sent IEDC a letter requesting approval to treat the River Ridge Project costs as TDSIC costs in compliance with GAO 2016-6.

Ms. Schneider described the potential for additional TED projects during Petitioner's six-year TDSIC 2.0 Plan. Updated information regarding the scope, timing, and cost of any additional TED projects will be included in Petitioner's semi-annual TDSIC Rider and update filings.

F. <u>Ms. Diaz</u>. Ms. Diaz testified this proceeding was filed more than nine months after Duke Energy Indiana's last retail base rate case order in Cause No. 45253, and the proposed TDSIC 2.0 investments are not included in Petitioner's rate base. She confirmed Petitioner intends to file for a change in its basic rates and charges before TDSIC 2.0 expires.

Ms. Diaz stated Petitioner is requesting authority to recover 80% of the retail jurisdictional share of TDSIC 2.0 costs through Rider 65 under Ind. Code § 8-1-39-9(a). The recoverable TDSIC costs include depreciation, O&M, property taxes, pretax return on eligible transmission, distribution, and storage system improvements incurred while the improvements are under construction and post-in-service, and the costs associated with the economic development project. Petitioner requests authority to accrue post-in-service carrying costs until the costs related to

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45647 S1, the Commission approved the River Ridge Commerce Center Project as a TED project for inclusion in Petitioner's TDSIC 2.0 Plan.

TDSIC 2.0 are included in retail rates, with the accrual at rates equal to Petitioner's most recently approved overall weighted average cost of capital. She testified Petitioner will include expenditures for TDSIC projects that are in-service as of the annual cut-off dates. She stated post-in-service carrying costs accrued on TDSIC costs, including debt and equity financing, will be accrued on approved capital expenditures from the in-service date until such costs are included in rates under Rider 65 or in base rates.

Per Ms. Diaz, Petitioner proposes to defer the remaining 20% of the retail jurisdictional portion of TDSIC 2.0 costs until its next general retail base rate case. Consistent with Ind Code § 8-1-39-9(c), Duke Energy Indiana seeks to defer for subsequent recovery the retail jurisdictional portion of the remaining 20% of approved expenditures, allowance for funds used during construction ("AFUDC"), post-in-service carrying costs, O&M expenses, property taxes, and depreciation expense using a regulatory asset account (FERC CFR Account 182.3) until such costs are reflected in Duke Energy Indiana's retail base rates. Petitioner also requests carrying costs on the deferred costs be accrued using Duke Energy Indiana's approved overall weighted average cost of capital. Ms. Diaz testified AFUDC will be applied to project costs until such costs are included for recovery under Rider 65, in base rates, or when the projects are placed in service. She testified the deferral of TDSIC 2.0 costs will be from the in-service date until the cost is included in Petitioner's rates under Rider 65 or in base rates.

Ms. Diaz testified Petitioner will consider the FERC accounting and whether the function is a transmission or distribution service when including investments in the TDSIC Rider and will not limit the included costs to specific FERC accounts. She testified the rates used for depreciation expense are the weighted average depreciation rates approved in Petitioner's most recent base rate case, Cause No. 45253, by the transmission and distribution plant groupings. Petitioner proposes to net depreciation expense on retired plant against depreciation on new plant included in the TDSIC Rider. She testified Duke Energy Indiana has estimated and included depreciation expense reductions for retirements in this plan filing so as to not recover new and replacement project depreciation expense on both the additions and the retired asset. Petitioner will present the calculations supporting the reductions for the depreciation expense credits in its first tracker filing. Ms. Diaz testified the proposed deferred accounting treatment is in accordance with U.S. Generally Accepted Accounting Principles ("GAAP") and is appropriate from a ratemaking and an accounting perspective.

Ms. Diaz testified no changes are proposed to the existing TDSIC Rider. In the TDSIC Rider, Petitioner will recover 80% of the retail jurisdictional portion of the TDSIC 2.0 project costs, including financing costs, O&M directly associated with construction of the project, depreciation, property taxes, and other Commission approved costs. She testified the components of the revenue requirement, including TED projects, are multiplied by revenue conversion factors to establish the total revenue requirement for the TDSIC Rider. Petitioner proposes to use the 9.70% current return on common equity approved in Cause No. 45253 in developing Rider 65 for TDSIC 2.0. The capital structure will be updated each TDSIC 2.0 filing, along with the debt costs. Ms. Diaz testified the rate impact estimates for TDSIC 2.0 reflect 100% allocation to retail, with allocation of the transmission and distribution revenue requirement for Rider 65 based on the

revenue requirement by rate group approved in Cause No. 45253. Costs will be billed to individual customers within a rate group based on kWh sales, except customers served under Rate HLF will be billed based on non-coincident kW demands. Ms. Diaz testified the fuel clause return test will be adjusted with the incremental net operating income from Rider 65, and the TDSIC Rider will continue to use forecasted amounts for O&M, depreciation, and property taxes based on annual cut-off dates. Financing costs on invested capital will be on an actual basis based on annual cut-off dates used for in-service capital projects. In subsequent Rider filings, Petitioner will true-up amounts to actual levels of O&M, depreciation, and property taxes and to actual kWh sales levels.

Ms. Diaz proposed a timeline for the TDSIC 2.0 Rider 65 filings, with the first filing to occur in April 2024 with a projected effective date of approximately October 2024. In the annual April filing, Duke Energy Indiana will seek to recover capital expenditures and costs as of December 2023 and estimated O&M, property taxes, and depreciation expense for October 2024 through September 2025. Going forward, she stated Petitioner will continue filing the TDSIC Rider each April, with a reconciliation in subsequent Rider 65 filings.

Ms. Diaz testified Petitioner also proposes to recover its expenses incurred for retaining B&V, with all B&V costs amortized over three years similar to the treatment in TDSIC 1.0.

Ms. Diaz testified the total annual average retail rate impact of TDSIC 2.0 compared to prior year retail revenue is estimated to be slightly less than one percent. She testified Rider 65 filings will include the actual proposed revenue increase compared to the total retail revenues at the time. If an actual total amount exceeds the two percent annual statutory cap, Petitioner requests approval to defer recovery of the TDSIC costs above the cap under Ind. Code § 8-1-39-14(b).

5. <u>OUCC's Direct Evidence</u>.

A. <u>Casey A Shull, Ph.D</u>. Dr. Shull testified it is impossible to verify whether B&V's Copperleaf modeling logic is reasonable or accurate because of its proprietary status. B&V relied upon spreadsheet values from Petitioner as inputs into its proprietary modeling algorithms to produce outputs to categorize projects into value measures used to optimize and select projects for inclusion in TDSIC 2.0. Dr. Shull testified he identified a miscalculation in the average number of outages used as an input for Value of Lost Load ("VOLL") provided by Duke Energy Indiana to B&V, and Petitioner was unable to explain the miscalculation. He testified this calls into question the validity of the VOLL values used to produce TDSIC 2.0.

Dr. Shull testified the proposed TDSIC 2.0 Plan includes increasing redundancy through rehabilitation of electrical transmission, substations, and distribution facilities. He defined redundancy as a system's ability to have alternate methods of delivering a specific service to its customers during adverse conditions. He stated Petitioner failed to provide empirical evidence or support explaining why the public convenience and necessity require the replacement or rehabilitation of the proposed redundancy projects. Dr. Shull testified Petitioner claims its system is already highly redundant and reliable, and Duke Energy Indiana provided no support for an added layer of redundancy. Dr. Shull identified 19 transmission line projects he recommends

removing from TDSIC 2.0 because the projects do not qualify as system modernization, have not been shown to require replacement due to deterioration, and do not reduce CI or CMI or improve reliability. Dr. Shull testified the proposed TDSIC 2.0 Plan anticipates a 0.21% decrease in SAIFI; therefore, the incremental benefit these projects may provide does not justify the $800 million cost and is not for purposes of safety, reliability, or modernization.

Dr. Shull testified that adding electrical system devices in TDSIC 2.0 will not necessarily provide the capability and/or market for future DER installations. He testified Petitioner has not demonstrated a customer demand for DER, and it is prudent for Duke Energy Indiana to wait and build its system to meet customers' specific DER needs. From Dr. Shull's perspective, these projects are unnecessary, outside the scope of the TDSIC Statutes, and do not meet the obligation of protecting "affordability" identified in Ind. Code § 8-1-2-0.5.

Dr. Shull also testified Petitioner's cost-benefit assessment does not take into consideration the unstable aluminum, copper, and steel commodity prices; therefore, TDSIC 2.0 cost estimates are understated, resulting in incremental benefits being overstated.

Dr. Shull recommended Duke Energy Indiana's TDSIC 2.0 Plan be denied. He testified Petitioner has not provided all the data it used to develop TDSIC 2.0 and relies on flawed data and methodologies that cannot be replicated to determine the accuracy of the cost-benefit analysis. Dr. Shull testified Petitioner has failed to demonstrate the public convenience and necessity require upgrades for future DER or renewable projects not yet identified. Additionally, Duke Energy Indiana has not presented the "best estimate of the cost," as Petitioner does not accurately incorporate rising commodity prices. Dr. Shull also testified if TDSIC 2.0 is approved, the 19 transmission line projects identified as being conducted for redundancy, as well as all DER-related projects, should be removed, and he recommended Petitioner provide biannual reports containing Project Management Institute ("PMI") EVM metrics.

B. <u>Kaleb G. Lantrip</u>. Mr. Lantrip testified the OUCC has concerns about the affordability of TDSIC 2.0 and its impact on ratepayers. He stated cost recovery trackers outside base rates for many types of utility investments have led to electric rate increases for Duke Energy Indiana customers, but affordability should be a constant consideration. Although safe and reliable utility systems are extremely important, customers are faced with increasing utility costs while contending with hardships worsened during the COVID-19 pandemic. He testified the Commission should only approve necessary and reasonable requests from Petitioner to provide service at reasonable prices and take steps to moderate the imposition of higher rates over time.

Mr. Lantrip disagreed with Petitioner's assertion that post-in-service carrying charges ("PISCC") should be calculated at the weighted average cost of capital ("WACC") rate that includes both debt and equity in the carrying charge. He testified that traditionally, post-in-service charges on construction projects have been approved using the utility's current AFUDC rate, not the WACC. Mr. Lantrip testified Petitioner's proposal to include both debt and equity cost rates for post-in-service deferral is contrary to GAAP. Per Mr. Lantrip, GAAP does not permit the capitalization of incurred costs that are not charged to expense. The interest expense related to the

debt portion of the PISCC calculation is the only cost that will be charged to expense. The equity portion of PISCC does not get charged to expense and, therefore, is normally not included in the deferral of post-in-service AFUDC, but he testified the Commission has allowed the equity rate of a carrying charge to be deferred post-in-service in some prior cases, including TDSIC cases. Mr. Lantrip recognized the Commission has discretion to determine whether to allow equity recovery, but he testified Petitioner's proposal for deferral treatment of the equity portion allows Petitioner to recover more dollars from ratepayers than Petitioner is permitted to record on its income statement. If approved, he stated Duke Energy Indiana will book a deferred asset for the amount until it is recovered in a future rate proceeding. Mr. Lantrip testified the Commission does not have to permit the deferral of the equity portion for future recovery because it does not impact Petitioner's current financial statements. Unlike debt cost, post-in-service deferral of equity does not improve earnings erosion because GAAP does not permit its inclusion on the income statement. He testified Petitioner has not provided evidence showing it will be in financial distress without the additional deferral of equity.

Mr. Lantrip testified the OUCC agrees with Petitioner's proposal to recover TDSIC 2.0 expenditures for projects that are in-service as of the annual cut-off dates, consistent with the methodology in Petitioner's current TDSIC 1.0 Plan. Mr. Lantrip recommended the Commission deny Petitioner's request to recover TDSIC 2.0 O&M expenses as the existence of O&M costs over and above those currently being recovered through the Rider 65 and in base rates is unsubstantiated; however, if the Commission grants Petitioner's request, Mr. Lantrip recommended Petitioner demonstrate the O&M costs are not duplicative of O&M already received through Petitioner's general rate case allowance for operation costs. He testified improved and replaced assets should, if any change, spur a lower threshold requirement for ongoing O&M costs.

Mr. Lantrip testified the OUCC supports Petitioner's proposal to reconcile forecasted depreciation offsets for retired assets against actual retirements, which benefits ratepayers. Although Petitioner has agreed to recognize the reduction of depreciation expense from the retirement replacement of TDSIC investment embedded in base rates, he stated Duke Energy Indiana has not reduced the revenue requirement for embedded net book value of the replaced TDSIC investment used to calculate a return "on" those investments. As a result, Mr. Lantrip testified Duke Energy Indiana's rates are higher and less affordable than they should be. He stated reducing the revenue requirement for replaced TDSIC investments does not reduce timely recovery on the new TDSIC investments, but it will reduce the overall increase to Petitioner's customers, improving the affordability of Duke Energy Indiana's rates. Mr. Lantrip testified that although the TDSIC Statutes do not specifically prevent recognizing ratemaking treatment on replaced investments that are still included in base rates, this does not prevent the reality that an excess recovery occurs when new plant investment gets full recovery outside a base rate case without acknowledging the costs of the older plant still embedded in base rates will still be recovered after removal.

Mr. Lantrip testified, if Petitioner's TDSIC 2.0 Plan is approved, the OUCC recommends the Commission: (1) consider the overall affordability of TDSIC 2.0; (2) approve Petitioner's proposed treatment to recover investments in-service as of the cut-off date; (3) remove the equity

component from Petitioner's proposal for PISCC treatment to accrue both debt and equity financing on approved capital expenditures from the in-service date until such costs are included in Duke Energy Indiana's rates through Rider 65 or in base rates; (4) limit recovery of O&M expense to the amount justified by Petitioner as incremental expense above and beyond what was approved in its base rate case, Cause No. 45253; (5) approve Petitioner's proposal to offset to depreciation expense through a rolling five-year FERC Form 1 estimated retirement ratio and later reconciliation to actual retirements; and (6) require Petitioner to recognize an offset in its revenue requirement for the return earned on the embedded net book value of retired assets that are no longer used and useful.

6. Hoosier Energy Direct Evidence. Mr. Mabrey testified Hoosier Energy interconnects with Duke Energy Indiana's transmission lines at numerous locations throughout central and southern Indiana under interconnection agreements. Hoosier Energy presently serves approximately 51% of its member load off Duke Energy Indiana owned transmission lines and 15% from Petitioner's substations. He testified Hoosier Energy has over 350 wholesale delivery points serving its 18 distribution cooperatives. These cooperative, in turn, provide electric service to approximately 300,000 retail customers. He stated increased investment in targeted areas of the transmission system will reduce the number and duration of outages, improving overall reliability to Hoosier Energy member systems and their member consumers.

Mr. Mabrey testified Hoosier Energy has made investments in the transmission system consistent with Duke Energy Indiana's TDSIC 2.0 Plan to improve reliability, address aging infrastructure, and accommodate additional load growth. He testified Hoosier Energy has worked with Duke Energy Indiana to identify specific transmission and substation upgrades that will impact its members. Investment in reliability, grid hardening, and resiliency will greatly help Hoosier Energy and its members by providing more reliable service. Per Mr. Mabrey, it is important to the increased reliability of service to Hoosier Energy members and retail consumers that Petitioner invest in transmission system upgrades and improvements. Mr. Mabrey testified TDSIC 2.0 provides a reasonable method of providing such upgrades and improvements.

7. Duke Energy Indiana's Rebuttal Evidence. Mr. Lewis stated the purpose of his rebuttal is to respond to Dr. Shull's testimony, including allegations that Petitioner did not provide all data used to develop the TDSIC 2.0 Plan and that the proprietary Copperleaf modeling logic is unverifiable. He stated in addition to the detailed testimony, exhibits, and workpapers filed in this Cause, Duke Energy Indiana provided the inputs to the Copperleaf model and arranged two tech-to-tech meetings to answer the OUCC's questions. Although the Copperleaf model itself is proprietary, Mr. Lewis testified the important components to understanding it are the inputs Duke Energy Indiana developed, provided to B&V, and produced to the OUCC. Mr. Lewis testified the Copperleaf model was used to optimize the TDSIC 2.0 Plan and is a decision analytics software used for critical infrastructure investment planning across the industry. Mr. Lewis explained the data provided to B&V was neither flawed nor miscalculated as Dr. Shull claims. In addition, the functionality underlying the formula calculations required to interpret the data was reviewed and explained to the OUCC. Specifically, the input workbook used the vlookup formula to obtain data on related tabs.

In rebuttal, Mr. Lewis testified it is imperative Petitioner plan for a future with expanded DER presence on its sytem. Steadily increasing demand for DER is an ongoing trend in the industry. He opined that waiting and attempting to design a system around installed DER is not an effective or efficient way to plan for customers' DER needs that Petitioner already knows are coming. Per Mr. Lewis, Petitioner's annual Generation Interconnection Reports submitted to the Commission demonstrate an ongoing increase in the DER on Duke Energy Indiana's system, increasing from 43 applications in 2011 to 493 in 2021. He testified that waiting to design a system around already installed DER could delay customer installations and reduce economic development opportunities for Indiana communities. Mr. Lewis stated accommodating two-way power flow capability is needed now to manage and accept customer-generated and stored energy resources, such as wind, solar, and battery storage, from customer-owned systems. He testified Dr. Shull's approach to DER integration on Petitioner's system will potentially lead to delays for customers with DER (*i.e.* rooftop solar) being able to connect to the grid and sell their excess power since upgrades in distribution capacity and the ability to handle two-way power flow are projects that can take a long time to complete, making Dr. Shull's reactive approach unacceptable from a customer service perspective. He testified Petitioner's proposed investments related to DER benefit all Duke Energy Indiana customers by reducing outage impacts with respect to frequency, grid impact, recovery time, and cost. He again noted that improving system capability to enable DER was not an optimization criterion used in B&V's Cost Benefit Analysis; rather, these projects were selected due to their reliability benefits and value to the T&D system as a whole.

Mr. Lewis testified the TDSIC 2.0 cost estimates are not understated, as Dr. Shull suggests. Petitioner's supply chain organization, in collaboration with PowerAdvocate, evaluated historical component and commodity costs, as well as forecasts of these costs through the duration of TDSIC 2.0. The TDSIC 2.0 cost estimates were built from Class 2 estimates, using rates and estimates obtained in mid-2021. Mr. Lewis testified that using 2021 estimates as a baseline, the costs for material, labor, and indirect costs for all projects were escalated in TDSIC 2.0 at the rate of three percent per year until an individual project's in-service year is reached, through 2028 in some cases. He noted PowerAdvocate has global industry expertise and stated the three percent escalation value was derived from the collaborative mid-2021 study Duke Energy Indiana and PowerAdvocate performed. Under this study, prices increase sharply in the latter half of 2020 and continue to increase until early 2022 in response to the global pandemic and supply chain issues impacting all areas of our economy. The projection then shows a general decrease in commodity and utility component costs through 2025 and, finally, a return to a typical aggregate three percent escalation rate in 2026-2028. Mr. Lewis testified Petitioner used PowerAdvocate's forecast to develop a reasonable escalation rate for TDSIC 2.0., and although no one knows with certainty what prices will be in the future, Duke Energy Indiana reasonably assessed the possible range of commodity and component costs to provide a realistic escalation rate for TDSIC 2.0.

Mr. Lewis described the management structure for the TDSIC 2.0 Plan, stating this is the same as in Petitioner's TDSIC 1.0. Duke Energy Indiana uses AACE standards and its own Project Management Center of Excellence guidelines that are consistent with PMI's *A Guide to the Project Manager Body of Knowledge* and the Project Management Professional Certification. Mr. Lewis

testified that upon approval of TDSIC 2.0, Petitioner will provide annual plan updates similar to TDSIC 1.0. These annual updates will include updated project estimates and variances to prior plan estimates, as well as any movement of projects between years.

In his rebuttal, Mr. Dickey testified the BES is designed to be highly redundant in order to maintain reliability for all downstream customers served by those transmission lines. He stated BES is subject to the North American Electric Reliability Council's mandatory reliability standards that require sufficient redundancy. He explained the level of redundancy in the 69kV portion of the transmission system is different from the BES. Mr. Dickey testified the increased resiliency by adding redundant capabilities in TDSIC 2.0 is not referring to building additional redundancy into the BES or a large-scale redesign of the 69kV transmission system. These targeted projects within TDSIC 2.0 address specific existing single point of failure vulnerabilities. He stated several of these projects slightly change the line route to loop through the substation so there is no portion of the transmission line that will prevent restoring power to the substation. This allows the transmission line to be sectionalized by operating switches to isolate faults and restore electric supply to the substation in the event of a line outage. Mr. Dickey testified these switches can also be equipped with remote monitoring and control. He testified these targeted investments are intended to improve reliability and do not create unnecessary or wasteful redundancy. Per Mr. Dickey, the ability to sectionalize the transmission line and restore power to the substation reduces the outage duration to the time required to perform the switching. The TDSIC 2.0 transmission projects will reduce transmission line outages and retail and wholesale customer minutes interrupted ("Grid CMI").

Mr. Dickey testified the 69kV transmission projects Dr. Shull recommends removing from TDSIC 2.0 are projects to rebuild aged and deteriorated sections of circuits or replace and upgrade specific switches located within other circuit segments. He stated these circuits directly supply 25 Duke Energy Indiana substations and 11 substations owned by others. These specific circuits were selected based on a number of factors, including the longer-term history of outages, assessed age and condition of the poles and other equipment, outdated circuit design, and other prioritizing factors. These rebuild projects were, for all but one of these circuits, included in TDSIC 1.0, and the projects included in TDSIC 2.0 continue the longer-term effort to address remaining sections of these lines. Mr. Dickey testified these circuits were selected as being among the highest outage concerns, with a total of 273 outages resulting in 11.78 million Grid CMI from 2015-2021. TDSIC 2.0 will continue to reduce the number of outages on these circuits. Mr. Dickey testified Duke Energy Indiana evaluated and selected each of these transmission line rebuild projects to improve reliability by reducing the risk of outages from aged and deteriorated line equipment, and he stated performing these projects is in the best interest of Duke Energy Indiana's customers. Each of the projects included in TDSIC 2.0 was evaluated within the model and study B&V performed and showed a strong reliability improvement due to reduced quantity and duration of outages. He testified the evaluated reliability benefit justifies and validates the public convenience and necessity of these projects. In addition, these circuit rebuilds will provide a capacity increase between approximately 27% and 123% due to the larger conductor size. Mr. Dickey stated the rebuilt lines will also upgrade and modernize the line by installing optical groundwire as the static shield wire, including fiberoptic communications fibers to allow digital telecommunications from

one end of the circuit to the other. Mr. Dickey testified the transmission line rebuild projects Dr. Shull recommended be removed from TDSIC 2.0 had a condition-based recommendation for pole replacement rate that was two times higher (eight percent) than the average of Petitioner's transmission system overall. In addition, although not expressed directly as CI or CMI reduction, the B&V model used to evaluate and prioritize projects for inclusion in TDSIC 2.0 showed these projects have significant reliability benefits, averaging 4.1 times the cost of the projects. Mr. Dickey testified transmission line outages can result in more CMI than distribution outages, and TDSIC 2.0 helps mitigate CMI associated with those outages.

In rebuttal, Ms. Diaz testified the two percent rate impact limit in the TDSIC Statutes protects customers from rate impacts associated with TDSIC investments and safeguards affordability. Under the TDSIC Statutes, utilities must petition for a retail rate case before the expiration of the TDSIC plan life; therefore, a full review of Duke Energy Indiana's basic rates and charges will occur in conjunction with TDSIC 2.0. Ms. Diaz testified affordability and rate competitiveness are critical metrics for Duke Energy Indiana, noting Petitioner's overall retail average realization continues to be below national and regional averages and is the lowest among its Indiana peers.

In response to Mr. Lantrip's assertion that Ind. Code § 8-1-39-9 does not provide authority to request PISCC treatment for both debt and equity because it does not define PISCC, Ms. Diaz testified Ind. Code § 8-1-39-9 explains the deferral of the remaining 20% that includes PISCC aligns with the rest of the recovery applicable to the 80% that is included in the TDSIC Rider. In other words, the 80% includes PISCC. The weighted average cost of capital language is interspersed in the TDSIC Statutes and does not limit the calculations to debt only. In addition, she stated it is common practice for pretax returns and the WACC to include both debt and equity. Ms. Diaz testified GAAP provides that both the debt and equity return can be deferred as a regulatory asset for post-in-service capitalization. Accrual of financing costs at the WACC represents the comprehensive cost Petitioner incurred after the assets are placed in service until the collections occur. She explained the TDSIC Statutes do not prohibit applying an equity component in the PISCC calculation, and the Commission has approved the equity component in prior TDSIC cases. Ms. Diaz testified there is no requirement under Indiana law that Duke Energy Indiana make a showing of financial distress absent the additional deferral of equity, as Mr. Lantrip suggests, and the Commission should not require this showing.

Ms. Diaz testified the TDSIC Rider limits recovery to incremental O&M, and no additional supporting documentation is needed to ensure there is no duplication of O&M expenses recovered in Petitioner's most recent base rate case, Cause No. 45253. None of the TDSIC 2.0 projects were included in Cause No. 45253; therefore none of the related project O&M was included as the Commission approved O&M costs representative of the 2020 test year. She stated the TDSIC 2.0 Plan O&M begins at least three years later and is directly related to TDSIC 2.0 capital projects. Because these costs are occurring after installation of the assets, Duke Energy Indiana expenses the O&M. Ms. Diaz testified Petitioner's TDSIC 1.0 case allows the inclusion of O&M costs, and

Petitioner is not proposing any different treatment of O&M costs in TDSIC 2.0 than what was approved for TDSIC 1.0.[3] She testified Petitioner included no duplicative O&M.

Ms. Diaz testified Petitioner and Mr. Lantrip agree that implementing depreciation netting is appropriate for TDSIC 2.0. Similar to NIPSCO's approved proposal on depreciation netting, she stated Duke Energy Indiana will use an average rate of retirement percentage based on actual FERC Form 1 data as the source for the depreciation expense credits. Ms. Diaz disagreed with Mr. Lantrip's recommendation that Petitioner recognize an offset in its revenue requirement for the return on net book value of retired assets as a result of the TDSIC 2.0 Plan. She testified Petitioner is not proposing to change the treatment approved in TDSIC 1.0. In other TDSIC cases, the Commission has specifically ordered that double-recovery concerns be addressed by depreciation netting methodologies, as proposed in TDSIC 2.0. Ms. Diaz testified the Commission, likewise, has concluded reductions to returns on retired assets in rate base were not reasonable and did not conform to the TDSIC Statutes.

8. <u>Cross Examination Highlights</u>.[4] During his cross examination by the OUCC, Mr. Pinegar testified that subject to review of Merriam-Webster's definition, best is defined as excelling all others, the greatest degree of excellence, or none can be better. Transcript A-18, Lines 15-21. He noted Duke Energy Indiana began its TDSIC 2.0 project analysis in 2019 (Transcript A-19, lines 1-2), and he acknowledged being aware of rising commodity costs. Mr. Pinegar testified Petitioner took these rising costs into consideration up until filing the petition in November 2021. Transcript A-20, Lines 24-25. He was not personally aware whether Petitioner performed any new cost estimate after seeing rising costs. Transcript A-21, Lines 1-3.

Mr. Pinegar testified Duke Energy Indiana's system, as it is today, is reliable, Transcript A-31, Lines 22-24, but Petitioner believes the improvements proposed will "absolutely" improve reliability. Transcript A-31, Lines 18-24. He agreed that one way to read the CPCN requirement in the TDSIC Statutes is that Petitioner needs to show a need for the TDSIC projects. Transcript A-30, Lines 10-13. Mr. Pinegar stated his goal as Duke Energy Indiana's President was to cap the costs of TDSIC 2.0 at one percent to make the plan more affordable. Transcript A-40, Lines 2-5. Mr. Pinegar does not view the TDSIC 2.0 projects as set in stone (Transcript A-40, Line 8), and if costs continue to rise, Duke Energy Indiana will consider delaying projects. Transcript A-41, Lines 2-7. Mr. Pinegar stated Petitioner will not inch closer to the $4 billion mark, noting it will take Commission approval to add projects and inch closer to two percent or $4 billion in projects. Transcript A-41, Lines 8-14. Mr. Pinegar acknowledged that in 2020 Petitioner had a 1.25 SAIFI rating and is proposing a 17% decrease in SAIFI, meaning on average, Duke Energy Indiana's customers will still experience one interruption lasting five minutes or longer, Transcript A-55,

[3] The Commission's Order in Cause No. 44720 issued on June 29, 2016, approving TDSIC 1.0 included approval of a Settlement Agreement that resolved the issues in that proceeding. As recognized in the Order, that Settlement Agreement is not to be used or cited as precedent in another proceeding.

[4] Cross examination highlights are being included in this Order in recognition that the OUCC included such a discussion in the OUCC's exceptions to Petitioner's proposed Order filed on April 6, 2022. Some of the cross examination highlights the OUCC shared and, therefore, deemed important have, however, been revised to more closely track the transcript.

Line 12-A-56, Line 24, but he opined this does not provide a complete picture. Transcript A-56, Line 4. Mr. Pinegar testified CI and CMI will provide direct indicators of the performance and success of TDSIC 2.0. Transcript A-58, Lines 10-11.

Mr. Lewis explained on cross examination that Duke Energy Indiana met with PowerAdvocate in 2021, before filing TDSIC 2.0. PowerAdvocate provided a PowerPoint that showed Duke Energy Indiana's 100% cost estimate for material components was estimated far lower than actual or projected material component costs, and once Duke Energy Indiana had updated information from PowerAdvocate, Petitioner added a three percent cost escalation to TDSIC 2.0. He testified Petitioner felt the three percent escalation covered PowerAdvocate's material component fluctuations in price. Transcript B-55, Lines 5-18. Mr. Lewis testified that after adding the three percent escalation, Petitioner felt it had the best estimate for the TDSIC work starting in 2023. Transcript B-55, Lines 10-18. "We provided [Mr. Shields at B&V] the best cost estimates for our projects that we're seeing." Transcript B-56, Lines 1-2.

9. <u>Commission Discussion and Findings</u>.

A. <u>Statutory Requirements</u>. Ind. Code § 8-1-39-10 permits a public utility to petition the Commission for approval of the utility's plan for eligible transmission, distribution, and storage improvements, which may include approval of a TED project. The Commission's order must include the following:

> (1) A finding of the best estimate of the cost of the eligible improvements included in the plan,
>
> (2) A determination whether public convenience and necessity require or will require the eligible improvements included in the plan.
>
> (3) A determination whether the estimated costs of the eligible improvements included in the plan are justified by incremental benefits attributable to the plan.
>
> If the Commission determines that the public utility's TDSIC plan is reasonable, the commission shall approve the plan and authorize TDSIC treatment for the eligible transmission, distribution, and storage improvements included in the plan.

Ind. Code § 8-1-39-10(b).

Ind. Code § 8-1-39-2(a) defines "eligible transmission, distribution, and storage system improvements" as new or replacement electric or gas transmission, distribution, or storage utility projects that:

> (1) a public utility undertakes for purposes of safety, reliability, system modernization, or economic development, including the extension of gas service to rural areas;

(2) were not included in the public utility's rate base in its most recent general rate case; and

(3) either were:

(A) described in the public utility's TDSIC plan and approved by the commission under section 10 [Ind. Code § 8-1-39-10] of this chapter and authorized for TDSIC treatment;

(B) described in the public utility's update to the public utility's TDSIC plan under section 9 [Ind. Code § 8-1-39-9] of this chapter and authorized for TDSIC treatment by the commission; or

(C) approved as a targeted economic development project under section 11 [Ind. Code § 8-1-39-11] of this chapter.

Under Ind. Code § 8-1-39-2(b), the term "eligible transmission, distribution, and storage system improvements" includes:

(1) projects that do not include specific locations or an exact number of inspections, repairs, or replacements, including inspection based projects such as pole or pipe inspection projects, and pole or pipe replacement projects; and

(2) projects involving advanced technology investments to support the modernization of a transmission, distribution, or storage system, such as advanced metering infrastructure, information technology systems, or distributed energy resource management systems.

Ind. Code § 8-1-39-2(b). Additionally, Ind. Code § 8-1-39-7.8 requires that a TDSIC plan cover a period of at least five years and not more than seven years.

Ind. Code § 8-1-39-9(d) provides that except as provided in Ind. Code § 8-1-39-15, a public utility may not petition the Commission for approval of a utility's TDSIC plan under Ind. Code § 8-1-39-9(a) within nine months after the date of a Commission order changing the utility's basic rates and charges with respect to the same type of utility service.

B. <u>Duke Energy Indiana's TDSIC 2.0 Plan and Eligible Improvements</u>. Duke Energy Indiana's TDSIC 2.0 Plan is comprised of projects to improve reliability, advance grid hardening and resiliency, enable expansion of renewable and distributed generation, and facilitate economic development. Duke Energy Indiana's TDSIC 2.0 Plan and attached exhibits identify and describe the transmission and distribution projects, the timing of the projects, and why they are necessary and beneficial to Petitioner's customers. The evidence presented, as discussed above, demonstrates Petitioner is undertaking the proposed improvements for purposes of safety,

reliability, system modernization, or economic development. Duke Energy Indiana also showed the proposed improvements were not included in its rate base in Petitioner's most recent general rate case.

OUCC witness Shull challenged the inclusion of nineteen transmission line projects contending they are not for purposes of safety, reliability, or modernization. Through Petitioner's direct and rebuttal testimony, the Commission finds Duke Energy Indiana provided evidence showing the transmission projects Dr. Shull identified are projects to rebuild aged and deteriorated sections of circuits or replace and upgrade specific switches located within other segments of the circuits. Mr. Dickey explained that those circuits directly supply 25 Duke Energy Indiana substations and 11 substations owned by others. Those circuits were selected based on several factors, including their history of outages, assessed age, the condition of the poles and other equipment, outdated circuit design, and other prioritizing factors. Mr. Dickey testified these circuits are among the highest outage concerns, with a total of 273 outages resulting in 11.78 million Grid CMI from 2015-2021. Mr. Dickey also testified Duke Energy Indiana evaluated and selected each of these transmission line rebuild projects to improve reliability by reducing the risk of outages from aged and deteriorated line equipment, and he testified performing these projects is in the best interest of Duke Energy Indiana's customers. He stated each project included in TDSIC 2.0 was evaluated within the model and study B&V performed and showed a strong reliability improvement due to reducing the quantity and duration of outages. The Commission finds Duke Energy Indiana's evaluated reliability benefits justify and validate the public convenience and necessity of these projects. In addition, these circuit rebuilds will provide a capacity increase between approximately 27% and 123% due to the larger conductor size, and Mr. Dickey explained these projects will also upgrade and modernize the line by installing optical groundwire as the static shield wire, including fiberoptic communications to allow digital telecommunications from one end of the circuit to the other.

The Commission also heard testimony explaining that Duke Energy Indiana worked with its stakeholders to identify projects to be considered for TDSIC 2.0. Hoosier Energy witness Mabrey testified Hoosier Energy and Petitioner worked together to identify improvements that will provide benefits to Duke Energy Indiana's retail customers while also benefiting the larger grid, Hoosier Energy, its member systems, and its members' consumers. The improvements include modifications to eight substations, such as relay and breaker upgrades, bus work upgrades, transformer bank replacements, switch upgrades from manual to motor operated, and conversions from straight bus to ring bus, as well as improvements to 17 transmission lines such as switch upgrades from manual to motor operated, SCADA controls, line rebuilds, including replacing wood poles with steel poles, and static wire replacement.

Dr. Shull also challenged Duke Energy Indiana's addition of electrical system devices for future DER installations. He asserted Petitioner has not demonstrated a customer demand for DER, and prudence supports Duke Energy Indiana waiting and building its system to meet specific customers' DER needs. In rebuttal, Petitioner explained the enablement of DER is an ancillary benefit to Petitioner's proposed TDSIC 2.0 investments, with the primary benefit being reliability. Specifically, Mr. Lewis testified the proposed investments that impact DER will also benefit all

Duke Energy Indiana's customers by reducing outage impacts with respect to frequency, grid impact, recovery time, and cost. Additionally, Mr. Lewis explained that improving system capability to enable DER was not an optimization criterion used in B&V's Cost Benefit Analysis; rather, these projects, which result in two-way power flow capability, were selected due to their reliability benefits and value to the transmission and distribution system. Nonetheless, Duke Energy Indiana's annual Distributed Generation Interconnection Reports submitted to the Commission demonstrate increased demand from Petitioner's customers, increasing from 43 applications in 2011 to 493 in 2021. Per Mr. Dickey, designing a system around already installed DER is not an effective or efficient way to plan for what is known to be coming and could delay customer installations and reduce Indiana communities' economic development opportunities. He testified accommodating two-way power flow capability is needed now to manage and accept customer-generated and stored energy resources. Given the evidence, the Commission concurs that a proactive approach to DER integration, thereby potentially avoiding unacceptable delays for customers to connect to the grid, should benefit Petitioner's customers and the grid as a whole.

Based on the evidence presented, the Commission finds Duke Energy Indiana's proposed TDSIC 2.0 improvements are being undertaken for purposes of safety, reliability, system modernization, or economic development, and meet the criteria established by the TDSIC Statutes. We further find the proposed projects were shown to be eligible improvements under Ind. Code § 8-1-39-2 and were not included in Duke Energy Indiana's most recent rate case.

C. <u>Best Cost Estimate</u>. Ind. Code § 8-1-39-10(b)(1) requires the Commission's order on a TDSIC Plan to include "[a] finding of the best estimate of the cost of the eligible improvements included in the plan."

Petitioner's TDSIC 2.0 includes six years of defined investment totaling $2,140,185,171. The record demonstrates $1,144,816,889 of the total cost estimate is distribution cost; $837,552,403 is transmission cost; and potentially $157,815,879 is TED project cost. In Petitioner's Exhibit 2-A, year-by-year cost estimates and an associated summary of the TDSIC 2.0 Plan's cost by FERC account were provided.

Duke Energy Indiana developed cost estimates for the projects included in TDSIC 2.0 using the AACE Cost Classification System. Generally, Duke Energy Indiana presented Class 2 cost estimates for projects proposed for Plan Years 1 and 2, and Class 3 or Class 4 estimates were developed for the remaining projects. Duke Energy Indiana's confidential workpapers include electronic spreadsheets underlying the sortable list. Petitioner's confidential workpapers also include the detailed cost estimates for TDSIC 2.0 projects, with examples of the Class 2, 3, and 4 cost estimates provided in Petitioner's Confidential Exhibits 2-B and 3-A.

Although Dr. Shull asserted Petitioner failed to accurately account for recent increases in commodity prices and inflation rates and, thus, did not present the best estimate of the cost, the Commission finds Duke Energy Indiana's evidence showed otherwise, detailing the methodology Petitioner used to develop its cost estimates and Petitioner's recognition of rising commodity prices. Mr. Lewis explained that Duke Energy Indiana used mid-2021 estimates as baselines for

the material, labor, and indirect costs for all projects, escalating these costs at the rate of 3% per year until an individual project's in-service year is reached. He advised the escalation value of 3% was derived from the collaborative mid-2021 study Duke Energy Indiana and PowerAdvocate performed. Mr. Lewis stated Petitioner and PowerAdvocate observed prices were increasing sharply in the latter half of 2020 and are projected to continue increasing until early 2022, with the projection then showing a general decrease in commodity and utility component costs through 2025 and a return to a typical aggregate 3% escalation rate in the outer plan years of 2026 – 2028. PowerAdvocate provided a range of commodity and utility component costs over time, with high, mid, and low overall forecasted values projected by component type. Duke Energy Indiana used this forecast to develop what we find is a reasonable escalation rate for TDSIC 2.0. Mr. Pinegar also testified that Petitioner's robust procurement practices allow it to manage price uncertainty.

Mr. Lewis testified Petitioner included a 15% contingency for the entirety of TDSIC 2.0 and explained that since projects go into service each year, contingency is broken out for each year. Mr. Lewis also explained that if contingency is needed to a lesser extent than expected in a year, Petitioner is proposing the amount remaining extend to future years to account for ongoing risk in a plan of this scale.

Ind. Code § 8-1-39-10 requires the Commission order to include a "finding of the best estimate" of the cost of the proposed improvements. At this juncture, the Commission is not tasked with reviewing actual project costs. After approval of a TDSIC plan, Ind. Code § 8-1-39-9 establishes procedures for TDSIC trackers, providing that "[a]ctual capital expenditures and TDSIC costs that exceed the approved capital expenditures and TDSIC costs require specific justification by the public utility and specific approval by the commission before being authorized for recovery in customer rates." Duke Energy Indiana will be utilizing Ind. Code § 8-1-39-9 tracker update filings to provide refined Class estimates for its projects in later years of the TDSIC 2.0 Plan and, to the extent Duke Energy Indiana's cost estimates exceed those approved in this Order, they will be evaluated in such filings. Additionally, Ind. Code § 8-1-39-14 establishes a limitation on TDSIC recovery within a 12-month period.

Based on the evidence presented, the Commission finds the total estimated cost of Duke Energy Indiana's TDSIC 2.0 Plan of $2,140,185,171 rests on a sound factual and analytical foundation. Petitioner's methodology was robust, sound, and reasonable in yielding the best estimate of the cost of TDSIC 2.0. Accordingly, the Commission further finds the best estimate of the cost of the eligible improvements included in TDSIC 2.0 is the estimate Duke Energy Indiana provided, as its witnesses testified.

D. <u>Public Convenience and Necessity</u>. Ind. Code § 8-1-39-10(b)(2) requires that an order on a TDSIC plan must include "[a] determination whether public convenience and necessity require or will require the eligible improvements included in the plan."

The evidence demonstrates the Distribution System Circuit Improvements portion of TDSIC 2.0 (which accounts for $704,060,933 (direct capital) of TDSIC 2.0) is largely focused on value to the customer through replacing aging assets and expanding technology to modernize Duke

Energy Indiana's electric grid with technologies that support improved reliability. Program categories include Circuit Backbone Reliability Uplift, Overhead Lateral Reliability Uplift, Underground System Uplift, 4kV Conversion, and Inspection Based Programs. The evidence further demonstrates the Distribution System Substation Improvements portion of TDSIC 2.0 (which accounts for $176,965,506 (direct capital) of TDSIC 2.0) is primarily intended to improve reliability and resiliency, while improving capacity, though various substation hardening and resiliency sub-programs. The evidence also demonstrates the Transmission System Line Improvements portion of TDSIC 2.0 (which accounts for $494,662,048 (direct capital) of TDSIC 2.0) is intended to improve reliability and flexibility through various line hardening and resiliency sub-programs, and the Transmission System Substation Improvements portion of the of TDSIC 2.0 (which accounts for $198,038,203 (direct capital) of TDSIC 2.0) is also intended to improve reliability and resiliency, while improving capacity, though various substation hardening and resiliency sub-programs.

The Commission finds Petitioner demonstrated TDSIC 2.0 follows the requirements of the TDSIC Statutes and achieves the legislative intent of making new and replacement transmission, distribution, and storage system investments for the purpose of safety, reliability, system modernization, and economic development. The eligible investments were shown to prospectively protect the integrity, safety, and reliable operation of Petitioner's system and will also enhance the ability of Duke Energy Indiana and its customers to take advantage of rapidly developing alternative technological options such as electric vehicles and DERs. We find TDSIC 2.0 furthers the public convenience and necessity by readying Petitioner's system for these options while furthering safety, reliability, system modernization, and economic development.

The OUCC asserted some of the eligible improvements included in TDSIC 2.0 are unnecessary for Petitioner's continued safe and reliable service to customers or that the public convenience and necessity does not, or will not, require the TDSIC investments to be made. Dr. Shull, for example, noted Duke Energy Indiana claims its system is already highly redundant and reliable and asserted Petitioner provided no support for an added layer of redundancy. Mr. Dickey, however, testified the challenged projects within TDSIC 2.0 are designed to address specific "single point of failure" vulnerabilities on Petitioner's system. He explained that eight of the projects the OUCC identified as unnecessary are designed to rebuild and replace deteriorated sections of circuits.

The Commission finds Petitioner presented substantial evidence showing the projects included in Petitioner's TDSIC 2.0 Plan will serve the public convenience and necessity.

E. <u>Incremental Benefits Attributable to the TDSIC 2.0 Plan</u>. Ind. Code § 8-1-39-10(b)(3) requires that an order on a petition for approval of a TDSIC plan include "[a] determination whether the estimated costs of the eligible improvements included in the plan are justified by incremental benefits attributable to the plan."

Duke Energy Indiana, with B&V's assistance, monetized, from the customer experience perspective, the value of avoiding service outages, particularly CI and CMI. Mr. Shields explained

that B&V's Investment Plan Analysis began with detailed benefit mapping, as depicted in Tables 3 and 4 in his direct testimony. Duke Energy Indiana's analysis did not attempt to quantify all project benefits, but rather, focused on benefits that are easily quantified and tracked. For example, the record shows Petitioner's internal team identified 57 projects that were not selected through the Investment Plan Analysis but were included in TDSIC 2.0 because they impact critical customers, such as hospitals and schools, and enhance the grid with other benefits that were not quantified in the Investment Plan Analysis. Ultimately, projects that scored at or above 1.0 had quantifiable benefits that outweighed the associated costs. As Table 7 in Mr. Shield's direct testimony shows, the total portfolio, inclusive of all projects proposed in TDSIC 2.0, carries a benefit cost ratio of 2.8, well above 1.0. While Mr. Lewis acknowledged contingency was not included in B&V's Investment Plan Analysis, he explained that even with a full allocation in the Investment Plan Analysis, TDISC 2.0 continues to show a benefit to cost ratio of 2.4. Thus, TDSIC 2.0 is projected to provide a net benefit that exceeds the cost of the eligible improvements whether considered on a nominal or a present value basis.

The OUCC urged the Commission to not approve the TDSIC 2.0 Plan due to the OUCC's inability to verify the reasonableness or accuracy of B&V's Copperleaf modeling logic that optimized the projects contained in TDSIC 2.0. Dr. Shull testified it is impossible to verify whether Copperleaf's modeling logic is reasonable or the calculations are accurate. The Commission, however, finds the testimony B&V witness Shields provided explaining how the Copperleaf model optimized project investments to ensure high value projects were located in the areas on the system that produced the highest value persuasive. Additionally, we note the testimony from Mr. Lewis advising that Duke Energy Indiana's subject matter experts developed the inputs to the Copperleaf model, with these inputs shared with the OUCC. The Commission finds the overall modeling prepared for Duke Energy Indiana's proposed TDSIC 2.0 Plan, along with the testimony of Petitioner's witnesses, has provided the Commission with sufficient information from which to determine the estimated costs of the eligible improvements included in this Plan are justified by incremental benefits attributable to TDSIC 2.0. The record shows Duke Energy Indiana verified the accuracy of the inputs in question. The record also shows there are benefits in addition to those included in the modeling. The Commission, therefore, disagrees that Duke Energy Indiana's proposed TDSIC 2.0 Plan should be denied, but if Petitioner utilizes models like Copperleaf's in the future, Duke Energy Indiana is encouraged to also provide a process for its verification.

The evidence demonstrates Duke Energy Indiana's TDSIC 2.0 will provide reliability benefits to Petitioner's customers, such as reducing the frequency and duration of interruptions, hardening and resiliency of the grid, and modernizing the grid to manage growing renewables and distributed generation on Petitioner's system. In doing so, TDSIC 2.0 also provides incremental benefits to Duke Energy Indiana's retail and wholesale customers.

Accordingly, based on the evidence, the Commission finds Duke Energy Indiana has sufficiently prioritized and optimized the incremental benefits of TDSIC 2.0 and otherwise shown a sound basis for the proposed projects and associated costs; therefore, the Commission determines

the estimated costs of Duke Energy Indiana's TDSIC 2.0 projects are justified by the incremental benefits attributable to TDSIC 2.0.

F. Duke Energy Indiana's TDSIC 2.0 Plan is Reasonable. Based upon our review of the evidence and our discussions above, the Commission also finds Duke Energy Indiana's TDSIC 2.0 Plan is reasonable. As discussed above, Duke Energy Indiana's TDSIC 2.0 satisfies the applicable statutory requirements under Ind. Code § 8-1-39-10. TDSIC 2.0 is reasonably designed to incrementally maintain or improve the safety, reliability, and resiliency of Duke Energy Indiana's system and includes certain projects that will help modernize Petitioner's electric system. The Commission has found that Duke Energy Indiana provided sufficient evidence to show its cost estimates are best estimates, that the public convenience and necessity require or will require the eligible improvements in the TDSIC 2.0 Plan, and the benefits of TDSIC 2.0 justify its costs; consequently, based upon our review of the evidence and the foregoing considerations of each component of Ind. Code § 8-1-39-10, the Commission finds Duke Energy Indiana's TDSIC 2.0 Plan is reasonable, and it is, therefore, approved. In accordance with Ind. Code § 8-1-39-10(b), the Commission authorizes TDSIC treatment for the improvements described in TDSIC 2.0. Although the OUCC challenged whether plan approval will protect the affordability of utility services for Indiana's ratepayers per the policy set forth in Ind. Code. § 8-1-2-0.5, the TDSIC Statutes include a specific rate impact clause, Ind. Code § 8-1-39-14, that Duke Energy Indiana demonstrated TDSIC 2.0 will comply with and the Commission finds reflects the legislature's guidance upon the affordability of TDSIC investments. TDSIC 2.0 cost recovery will be compliant with the affordability requirements of the TDSIC Statutes and will, therefore, not contravene the general affordability policy or preclude TDSIC 2.0 from being reasonable.

G. Accounting and Ratemaking. Duke Energy Indiana requests Commission approval to recover 80% of the eligible and approved capital expenditures and TDSIC costs via its existing TDSIC Rider, using the class revenue allocation factors based on firm load developed in Petitioner's most recent base rate case in Cause No. 45253, and deferral with carrying costs of 20% of the approved TDSIC 2.0 costs for subsequent recovery in Petitioner's next general retail electric base rate case, including depreciation, O&M expenses, and taxes.

As provided in Ind. Code § 8-1-39-13(b), Petitioner also requests authority to increase its authorized net operating income for purposes of the Ind. Code § 8-1-2-42(d)(3) earnings test. Based on our review of Ind. Code § 8-1-39-13, the Commission approves such request.

i. **PISCC.** Duke Energy Indiana seeks approval for the accrual of PISCC, which includes both debt and equity financing, on approved capital expenditures, including accrual on previously computed PISCC amounts, from the in-service date until such costs are included in Petitioner's TDSIC tracker rates or in base rates. Petitioner proposes these carrying costs accrue at rates equal to Duke Energy Indiana's most recently approved WACC. AFUDC will be applied to project costs until such project costs are included for recovery under Rider 65, in base rates, or when the projects are placed in service. Ms. Diaz testified Duke Energy Indiana also seeks Commission authority to create regulatory assets to recover PISCC, O&M,

depreciation, and property taxes associated with the projects until such costs are reflected in Duke Energy Indiana's TDSIC tracker rates or retail electric rates.

OUCC witness Lantrip asserted Duke Energy Indiana should be allowed to include only the debt financing in its PISCC. He contended Petitioner's proposal is contrary to GAAP and that the equity portion does not get charged to expense and, therefore, is normally not included in the deferral. On rebuttal, Ms. Diaz testified the TDSIC Statutes do not prohibit the application of an equity component, and she testified GAAP provides for both debt and equity return deferral as a regulatory asset. Ms. Diaz also noted the Commission has approved both the equity and debt components in prior TDSIC cases, and Duke Energy Indiana is not seeking a different treatment than what has previously been approved.

Ind. Code § 8-1-39-9 does not define the PISCC rate but states:

> A public utility that recovers capital expenditures and TDSIC costs under subsection (a) shall defer the remaining twenty percent (20%) of approved capital expenditures and TDSIC costs, including depreciation, allowance for funds used during construction, and post in service carrying costs, and shall recover those capital expenditures and TDSIC costs as part of the next general rate case that the public utility files with the commission.

Ind. Code § 8-1-39-9(c). The total amount of the PISCC is approximately $297 million of the revenue requirement, of which the equity portion is about $237 million. The billed amortization of the revenue requirement is $141.7 million, of which $113.1 million is due to the equity portion. The Commission finds Ms. Diaz refuted the OUCC's assertion that GAAP only permits costs that would otherwise be expenses for post-in-service capitalization. We also concur that the TDSIC Statutes do not prohibit the application of an equity component in the PISCC calculation. The Commission has previously approved the equity component of the PISCC charge in TDSIC cases, and no adequate basis was shown for not also doing so in this proceeding.

Consistent with our previous approval of including both debt and equity components in the PISCC, the Commission approves the use of debt and equity financing for PISCC for TDSIC 2.0.

ii. **Plan Development Costs.** Duke Energy Indiana requests recovery of the expenses incurred for retaining B&V as a consultant and witness for this proceeding. B&V also performed risk analyses as part of this proceeding, with Mr. Shields providing testimony summarizing these analyses. To qualify for TDSIC rate treatment Duke Energy Indiana was required to demonstrate the public convenience and necessity requires the projects, the project benefits outweigh their costs, and the cost estimates constitute best estimates. Petitioner retained B&V to assist in showing these requirements were met, particularly the project benefits in relation to their costs, and similar project development costs have been approved in other proceedings. Based on the evidence, the Commission finds Petitioner's request is reasonable and authorizes Duke Energy Indiana to recover these expenses over a three-year amortization.

iii. **Depreciation.** Ms. Diaz explained Duke Energy Indiana's proposal regarding depreciation on TDSIC 2.0 projects and stated Duke Energy Indiana is proposing to utilize the applicable depreciation rates for transmission and distribution assets approved in its most recent rate case, Cause No. 45253. Ms. Diaz also proposed offsetting depreciation expense for retired plant using a five-year average of FERC Form 1 retirement ratios. The information Ms. Diaz provided in Exhibit 6-A demonstrates TDSIC 2.0 does not result in an average aggregate increase in Duke Energy Indiana's total retail revenues of more than two percent in a 12-month period, and this request was not challenged. The Commission, accordingly, finds Duke Energy Indiana's depreciation proposals are reasonable and are approved.

iv. **Recovery of O&M Expense.** Mr. Lantrip raised a concern about O&M, asserting Duke Energy Indiana should be limited to the amount Petitioner justified as incremental expense above and beyond what was approved in its base rate case, Cause No. 45253. Ms. Diaz testified in rebuttal that the O&M requested in this case is project specific to the TDSIC 2.0 projects and was not included in Petitioner's TDSIC 1.0 plan or in Duke Energy Indiana's most recent base rate case, Cause No. 45253.

The Commission finds the O&M associated with TDSIC 2.0 begins years after Petitioner's rate case in Cause No. 45253 and is directly related to capital projects within TDSIC 2.0. These costs will not be incurred until these assets are installed. Because the O&M expenses are associated with new capital projects, the Commission finds they are not duplicative and already recovered in Petitioner's rates. The Commission, therefore, approves the inclusion of the O&M expense in this case. In doing so it is noted that if in the future the OUCC suspects Petitioner is double-recovering O&M costs in a TDSIC cost recovery proceeding, our findings in this proceeding do not preclude the OUCC from pursuing these matters in discovery and providing the Commission with relevant information when cost recovery is considered.

v. **Retirement of Replaced Assets.** Mr. Lantrip recommended Duke Energy Indiana recognize an offset in its revenue requirement for the return earned on the embedded net book value of retired assets. On rebuttal, Ms. Diaz testified the Commission has previously rejected this recommendation and ordered double-recovery concerns to be addressed by depreciation netting methodologies, as Duke Energy is proposing.

The Commission has previously concluded that reduction to returns on retired assets in rate base are not reasonable and do not conform to the TDSIC Statutes. Specifically, we have found:

> We agree with Petitioner that the netting of depreciation expense reflected in its proposal has the effect of reducing Petitioner's pre-tax return. We recently approved IPL's netting proposal as appropriately addressing the double recovery concern raised by the OUCC and found that based on the reduction to TDSIC cost recovery, no further adjustment to the WACC was required. Indeed, we commended IPL's approach. Similarly, here we find based on the evidence that it is not reasonable to … further effectively adjust the assets that were included in rate base in Petitioner's most recent base

> rate case. The TDSIC Statute addresses TDSIC costs, not rate-based asset costs. *See* Indiana Code § 8-1-39-7. Thus, we find Petitioner's proposed depreciation netting addresses the OUCC and Industrial Group's double recovery concerns and that no further depreciation adjustment is necessary.

Order Cause No. 45330 TDSIC 1 approved December 23, 2020, p. 19. We find no distinguishing factors or convincing evidence that a change is appropriate in this proceeding. Thus, the Commission concurs no further adjustment is necessary. Petitioner's proposal aligns with previous Commission orders and addresses the double recovery concerns, with no further adjustment necessary.

10. Timing and Plan Update Process. The evidence shows Duke Energy Indiana last received an order in a base rate case on June 29, 2020. Duke Energy Indiana filed its petition in this Cause on November 23, 2021; consequently, we find this Cause was filed more than nine months after Petitioner's last general rate case in accordance with Ind. Code § 8-1-39-9(d).

Ind. Code § 8-1-39-9(b) provides a utility shall update its TDSIC plan at least annually. Petitioner proposes an annual TDSIC 2.0 update filing in the fall and cost recovery filings in the spring. The Commission finds the proposed plan update process Duke Energy Indiana outlined complies with Ind. Code § 8-1-39-9(b), is reasonable, and should be approved; therefore, Petitioner's initial filing following the issuance of this Order shall be filed under Cause No. 45647 TDSIC 1. The Commission further notes that Duke Energy Indiana's TED project at River Ridge was previously approved in Cause No. 45647 S1. As ordered in that subdocket, costs associated with that approved TED project are to be included in a cost recovery filing following this Order.

11. Confidential Information. On November 23, 2021, and February 25, 2022, Petitioner filed motions requesting protection of confidential and proprietary information along with supporting affidavits showing the documents to be submitted to the Commission contained confidential, proprietary, competitively sensitive, and/or trade secrets as defined under Ind. Code §§ 23-2-3-2 and 5-14-3-4. On December 1, 2021, and March 4, 2022, the Presiding Officers preliminarily determined trade secret information should be subject to confidential procedures, as supported by Petitioner's affidavits. The Commission finds all such information preliminarily granted confidential treatment is confidential under Ind. Code §§ 5-14-3-4 and 24-2-3-2, is exempt from public access and disclosure by Indiana law, and should be held by the Commission as confidential and protected from public access and disclosure.

IT IS THEREFORE ORDERED BY THE INDIANA UTILITY REGULATORY COMMISSION that:

1. The projects identified in Duke Energy Indiana's TDSIC 2.0 Plan constitute eligible transmission, distribution, and storage system improvements within the meaning of Ind. Code § 8-1-39-2.

2. Petitioner's proposed TDSIC 2.0 Plan is reasonable and is approved.

3. Duke Energy Indiana is authorized to defer post-in-service TDSIC 2.0 Plan costs on an interim basis until such costs are recovered for ratemaking purposes in a future TDSIC tracker pursuant to Ind. Code § 8-1-39-9 or in a future base rate case proceeding.

4. Duke Energy Indiana is authorized to recover 80% of Duke Energy Indiana's approved six-year TDSIC 2.0 Plan costs through Standard Contract Rider No. 65.

5. Duke Energy Indiana is authorized to defer 20% of eligible and approved capital expenditures and TDSIC costs, including O&M, depreciation, property taxes, AFUDC, and PISCC under Ind. Code § 8-1-39-9(c) as part of Duke Energy Indiana's next general rate case.

6. Duke Energy Indiana's request for authority to defer its B&V plan development costs for recovery via Petitioner's TDSIC tracker pursuant to Ind. Code § 8-1-39-9 over a three-year amortization period is approved.

7. Petitioner's proposed process for updating the TDSIC 2.0 Plan in future TDSIC annual adjustment proceedings and separately filing TDSIC rate updates on an annual basis as subdockets in this Cause under Cause No. 45647 TDSIC X is approved.

8. The information filed in this Cause pursuant to motions for confidential treatment, as discussed in Finding No. 11 above, is deemed confidential pursuant to Ind. Code §§ 5-14-3-4 and 24-2-3-2, exempt from public access and disclosure by Indiana law, and will be held by the Commission as confidential and protected from public access and disclosure.

9. This Order shall be effective on and after the date of its approval.

HUSTON, FREEMAN, KREVDA, OBER, AND ZIEGNER CONCUR:

APPROVED: JUN 15 2022

I hereby certify that the above is a true and correct copy of the Order as approved.

Dana Kosco

Digitally signed by Dana Kosco
Date: 2022.06.15 10:42:05 -04'00'

Dana Kosco
Secretary of the Commission