

TESTIMONY OF JOHN L. STOWELL
VICE PRESIDENT
ENVIRONMENT, HEALTH AND SAFETY POLICY
ON BEHALF OF
DUKE ENERGY INDIANA, INC.
CAUSE NO. 43114 BEFORE THE
INDIANA UTILITY REGULATORY COMMISSION

EXHIBIT NO.

6-18-07

REPORTER

IURC PETITIONER'S

INTERVIEW

UR

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is John L. Stowell, and my business address is 139 East Fourth Street,
Cincinnati, Ohio 45202.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Duke Energy Shared Services, Inc., a service company subsidiary of
Duke Energy Corporation ("Duke Energy"), as Vice President, Environmental, Health
and Safety Policy.

**Q. PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND AND
BUSINESS EXPERIENCE.**

A. I have been employed by Duke Energy or its predecessor companies, Cinergy Corp. and
PSI Energy, Inc. ("Company"), since 1986 where, initially, I served as the Company's
federal governmental affairs representative in the Washington, DC office. In that
capacity, I worked on issues related to the passage of the Clean Air Amendments of 1990
("CAA") and the Energy Policy Act of 1992. I relocated to Cincinnati following the
formation of Cinergy Corp. and the merger of the Company and The Cincinnati Gas &
Electric Company to lead a combined federal and state legislative affairs department. In
2003, I was named Cinergy's Vice President for Federal Legislative Affairs,

JOHN L. STOWELL

-1-

1 Environmental Policy and Sustainability. I began serving in my current position as Duke
2 Energy's Vice President for Environmental, Health and Safety Policy in April 2006.
3 Prior to joining the Company, I worked as a reporter for the Kokomo Tribune and as a
4 staff assistant to Congressman Elwood Hillis of Indiana. I am a 1975 graduate of
5 Michigan State University with a degree in journalism.

6 **Q. PLEASE BRIEFLY DESCRIBE YOUR DUTIES AND RESPONSIBILITIES AS**
7 **VICE PRESIDENT, ENVIRONMENTAL, HEALTH AND SAFETY POLICY.**

8 A. My Department formulates and implements Duke Energy's positions on federal
9 environmental public policy issues that impact Duke Energy and the electric utility
10 industry. We interact with members of Congress and their staffs and the executive
11 branch to develop these policies. We also engage with national environmental
12 stakeholder groups, our trade associations and other utilities.

13 **Q. DO YOUR DUTIES INVOLVE TRACKING CURRENT AND FUTURE LOCAL,**
14 **STATE, AND FEDERAL ENVIRONMENTAL REQUIREMENTS APPLICABLE**
15 **TO FOSSIL FUEL GENERATION?**

16 A. Yes. My Department tracks current and future environmental requirements and works
17 with our business units to understand these requirements and their impact. We help
18 devise strategies for implementing them, and work with our key stakeholders to ensure
19 that these laws and regulations are based on sound science and provide environmental
20 benefits for our states. My Department does not track or evaluate state environmental
21 requirements, but we work closely with the Duke Energy groups with that responsibility.

22 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

1 A. My testimony will discuss: (1) the base case environmental assumptions of Duke Energy
2 Indiana, Inc.'s ("Duke Energy Indiana") 2005 Integrated Resource Plan ("IRP") process;
3 (2) the new Clean Air Interstate Rules ("CAIR") and Clean Air Mercury Rules
4 ("CAMR"), potential changes to CAIR and CAMR, and the CAIR/CAMR-plus scenario
5 of the IRP modeling; (3) environmental issues and regulatory impacts facing Duke
6 Energy Indiana, and (4) the carbon scenario of the IRP modeling.

7 **II. BASE CASE ENVIRONMENTAL ASSUMPTIONS IN IRP**

8 **Q. HOW DOES THE IRP PROCESS INCORPORATE ENVIRONMENTAL**
9 **COMPLIANCE REQUIREMENTS?**

10 A. As Ms. Jenner explains in her testimony, one of the objectives of the IRP is to provide
11 adequate, reliable and economical service to customers while meeting all environmental
12 requirements; therefore, the IRP incorporates detailed modeling for present and future
13 environmental requirements. The IRP includes base case environmental assumptions to
14 ensure compliance with current environmental regulations, and sensitivity and scenario
15 analyses that test the robustness of the plans under different assumptions.

16 **Q. WHAT ARE THE MAJOR BASE CASE ENVIRONMENTAL ASSUMPTIONS**
17 **OF DUKE ENERGY INDIANA'S 2005 IRP?**

18 A. The major base case assumptions of the IRP are as follows:

- 19 • All current environmental requirements will be met. This includes the
20 CAA requirements and the NO_x State Implementation Plan ("SIP") Call
21 requirements;
- 22 • The requirements of the recently promulgated CAIR will be met;

- The requirements of the recently promulgated CAMR will be met;
- No Global Climate Change (*i.e.*, CO₂) legislation or regulation mandates will be implemented during the planning period;
- No hazardous air pollutant controls other than mercury ("Hg") will be mandated or implemented during the planning period; and
- No renewable portfolio standard will be mandated or implemented during the planning period.

Q. WHAT ARE THE CURRENT ENVIRONMENTAL REQUIREMENTS AFFECTING DUKE ENERGY INDIANA?

A. The most significant current environmental requirements incorporated into the IRP process are the CAA, the NO_x SIP Call requirements, and the CAIR and CAMR rules.

Q. PLEASE DESCRIBE THE 1990 CAA AND DUKE ENERGY INDIANA'S COMPLIANCE EFFORTS.

A. The CAA was designed to achieve steep reductions in sulfur dioxide ("SO₂") and nitrogen oxide ("NO_x"), the precursors of acid rain. Duke Energy Indiana has reduced SO₂ emissions by over 50% and NO_x emissions by over 41% since 1990 to comply with these requirements. To achieve that end, Duke Energy Indiana implemented a comprehensive compliance plan that included the use of emissions allowances, environmental dispatch, energy efficiency and demand-side management ("DSM") programs, tailored coal-switching, the installation of a scrubber at Gibson Unit 4, continuous emissions monitoring systems, flue gas conditioning, precipitators and installation of low NO_x burners.

JOHN L. STOWELL

-4-

001295

1 **Q. PLEASE DESCRIBE THE CURRENT NO_x SIP CALL REQUIREMENTS.**

2 A. In October 1998, the U.S. Environmental Protection Agency ("EPA") finalized its ozone
3 transport rule, the NO_x SIP Call, which applies to 19 states, including Indiana. The rule
4 provided a framework for states to reduce NO_x emissions, primarily from industrial and
5 utility sources, to the level of 0.15 lb/mmbtu by May 31, 2004. Indiana developed final
6 NO_x SIP Call rules, which were approved by the EPA in 2001. The Indiana NO_x SIP
7 Call rules provide for a summertime emission allowance cap-and-trade program.

8 **Q. WHAT EFFORTS HAS DUKE ENERGY INDIANA UNDERTAKEN TO**
9 **COMPLY WITH THE NO_x SIP CALL RULES?**

10 A. The Duke Energy Indiana NO_x SIP Call Compliance Plan includes installation of
11 selective catalytic reduction controls ("SCRs"), low NO_x burners and boiler optimization
12 equipment at coal-fired power plants. The Commission approved this plan in 2002
13 (Cause Nos. 41744-S1 and 42061). Additionally, Duke Energy Indiana filed for and
14 received early reduction credits from the Indiana Department of Environmental
15 Management ("IDEM") for implementing NO_x controls prior to the May 2004 deadline.

16 **Q. PLEASE EXPLAIN THE NEW CAIR RULES.**

17 A. In 2005, the EPA issued the new CAIR rules, which permanently cap emissions of SO₂
18 and NO_x in 28 eastern states and the District of Colombia, including Indiana. The rules
19 make the deepest cuts in SO₂ and NO_x in over a decade. The rules provide for ozone
20 programs starting in 2009. The emissions reductions will be implemented through a cap-
21 and-trade program in two phases, capping SO₂ emissions at 3.9 million tons in the first
22 phase and 2.7 million tons in the second phase; NO_x emissions will be capped on an
23 annual basis at 1.6 million tons in the first phase and 1.3 million tons in the second phase.

JOHN L. STOWELL

1 The Phase I Cap for NO_x comes into place in 2009, and the Phase I cap for SO₂ comes
2 into place in 2010; the Phase II cap for NO_x and SO₂ come into place in 2015. The
3 second phase caps equate to reductions of 70% from 2002 levels for SO₂ and 65% for
4 NO_x.

5 CAIR requires emission reductions using one of two compliance options: (1) by
6 requiring power plants to participate in an EPA-administered cap-and-trade system that
7 caps emissions in two stages, or (2) meeting individual state emission allocation budget
8 through measures of the state's choosing. The cap-and-trade program is based on the
9 EPA's Acid Rain Program. The EPA has already allocated emission allowances for SO₂
10 for the Acid Rain Program, and these allowances will also be used in the CAIR model
11 SO₂ trading program. The EPA will provide NO_x allowances to each state according to
12 state budget. The states will allocate these allowances to companies, who can trade them.

13 CAIR also establishes a pool of allowances for early reduction of annual NO_x
14 emissions. This compliance supplement pool is earmarked for companies that choose to
15 operate NO_x control equipment prior to 2009 and thus generate early reduction credits.
16 Indiana has 20,155 allowances to distribute to companies that reduce annual NO_x
17 emissions during 2007 or 2008. If companies reduce NO_x emissions by more than the
18 provided 20,155 tons of early reduction credits, Indiana will distribute them on a pro-rata
19 basis. IDEM is developing rules that are nearly identical to the EPA's proposed rule
20 implementing CAIR in the state. The state's CAIR implementation rule was
21 preliminarily adopted on June 7, 2006 and should become final later this year.

22 **Q. PLEASE EXPLAIN THE NEW CAMR RULES.**

JOHN L. STOWELL

1 A. The EPA's CAMR, issued March 15, 2005, is the first ever federal rule to permanently
2 cap and reduce Hg emissions from coal-fired power plants. The rules make the United
3 States the first country in the world to begin regulating Hg emissions of coal-fired power
4 plants. The rule builds upon the CAIR in significantly reducing power plant emissions.
5 The CAMR establishes "standards of performance" that limit Hg emissions from new and
6 existing coal-fired power plants through a market based cap-and-trade program. The
7 CAMR consists of two distinct phases. Phase I places a cap of 38 tons of Hg emissions
8 in 2010, achieved through "co-benefit" reductions resulting from the SO₂ and NO_x
9 reduction measures required by CAIR. The second phase, beginning in 2018, lowers the
10 cap to 15 tons of Hg emissions upon full implementation. Coal-fired power plants built
11 after 2004 must also meet stringent new source performance standards.

12 The CAMR cap-and-trade system is also based on the EPA's Acid Rain Program.
13 Each state is assigned an emissions "budget" and must submit a State Plan revision
14 detailing how it will meet the budget. Individual states may choose to adopt and maintain
15 the model cap-and-trade program, or they may adopt regulations that are more stringent,
16 including the prohibition of allowance trading. IDEM is expected to issue its proposed
17 rule by October 2006 and a final rule by the summer of 2007.

18 **Q. WHAT IS DUKE ENERGY INDIANA'S COMPLIANCE PLAN FOR THE**
19 **CAIR/CAMR RULES?**

20 A. Duke Energy Indiana received approval for its first phase CAIR/CAMR compliance plan
21 in Cause Nos. 42622 and 42718. Duke Energy Indiana's goal was to develop a least-cost,
22 achievable, reliable, and robust plan for complying with the EPA's SO₂, NO_x and Hg
23 emission reduction requirements. The plan's primary components are: the installation of

1 flue gas desulfurization equipment or "scrubbers" on five of Duke Energy Indiana's large
2 coal-fired units at the Gibson and Cayuga Stations, upgrades to existing scrubbers at two
3 of the Gibson units, switching to high sulfur fuel at some scrubbed units and low sulfur
4 fuel at other units (e.g., Gallagher Station), installation of baghouse technology at
5 Gallagher Station, the use of emission allowances and the addition of various types of
6 emission monitoring equipment.

7 **III. ENVIRONMENTAL ISSUES AND REGULATORY IMPACTS**

8 **Q. PLEASE DESCRIBE THE MAJOR ENVIRONMENTAL ISSUES THAT DUKE**
9 **ENERGY INDIANA FACES.**

10 **A.** Duke Energy Indiana essentially assumed the status quo of environmental regulations for
11 modeling purposes in our base case scenario planning, but there are a number of potential
12 environmental issues/regulatory changes that could affect Duke Energy Indiana in the
13 future. For this reason, Duke Energy Indiana uses scenario and sensitivity analyses in our
14 planning process. Duke Energy's Environmental, Health and Safety Policy department
15 closely monitors and evaluates the possibility of these changes and participates with other
16 departments in developing Duke Energy's policy positions and planning scenarios. Some
17 key issues include individual state implementation and legal challenges to the CAIR/
18 CAMR rules, the potential for CAIR/ CAMR plus rules, and the potential for carbon
19 dioxide ("CO₂") emission reduction legislation.

20 **Q. WHAT POTENTIAL ISSUES AND REGULATORY IMPACTS ARE**
21 **ASSOCIATED WITH THE CAIR/CAMR?**

1 A. There are several legal challenges pending in the Federal Circuit Court for the District of
2 Columbia regarding CAIR, so its status is uncertain. Trading mercury emissions is a very
3 significant issue for some parties and there are many complex legal issues involved in
4 CAMR. Furthermore, the pollution control retrofits necessary to meet compliance
5 requirements for the second phase of CAIR and CAMR still need to be evaluated and
6 implemented. There are also other regulations under consideration at both the federal and
7 state levels that could impact the timing and levels of the required reductions, including
8 the uncertainty as to whether SO₂, NO_x, and mercury emissions limits will be ratcheted
9 down further, and whether these new requirements could be promulgated even before we
10 have completed the compliance plan under the current regulations.

11 **Q. WHAT IS DUKE ENERGY'S POSITION ON THE POTENTIAL FOR CARBON**
12 **REGULATIONS?**

13 A. As discussed by Mr. Rogers, Duke Energy believes that carbon regulation is probable.
14 Ms. Ruth Shaw, who at the time was Duke Energy's Group Executive for Public Policy
15 and President, Duke Nuclear, recently testified in favor of mandatory carbon regulation
16 before the U.S. Senate Committee on Energy & Natural Resources.

17 **IV. SCENARIO AND SENSITIVITY ANALYSES**

18 **Q. HOW DOES DUKE ENERGY INDIANA EVALUATE RISKS ASSOCIATED**
19 **WITH POTENTIAL CHANGES TO ENVIRONMENTAL REGULATIONS IN**
20 **ITS IRP PROCESS?**

21 A. Risks associated with potential changes to environmental regulations are addressed
22 through scenario and sensitivity analyses. Some risks are quantified through scenario

1 analysis, while others are addressed through sensitivity analysis and qualitative
2 reasoning. In order to evaluate these risks, Duke Energy Indiana examined possible
3 future situations with increased environmental regulation or rules in a CAIR/CAMR Plus
4 Scenario, and a CAIR/CAMR Plus with CO₂ Scenario.

5 **Q. HOW DID DUKE ENERGY INDIANA ACCOUNT FOR THE POSSIBILITY OF**
6 **TIGHTER EMISSION RESTRICTIONS IN THE FUTURE?**

7 A. Because uncertainty exists as to whether there will be further SO₂, NO_x, and Hg emission
8 restrictions, Duke Energy Indiana created a "CAIR/ CAMR Plus" scenario for resource
9 planning purposes, using tighter SO₂, NO_x, and Hg standards. Under this CAIR/ CAMR
10 Plus scenario, Duke Energy Indiana made the following assumptions beginning in 2014:

- 11 • SO₂ equivalent to 0.15 lb/MMBtu (rather than 0.26 lb/MMBtu beginning
12 in 2015);
- 13 • NO_x equivalent to 0.10 lb/MMBtu (rather than 0.125 lb/MMBtu
14 beginning in 2015); and
- 15 • Hg capped at 12 tons (rather than 15 tons beginning in 2018).

16 **Q. HOW DID DUKE ENERGY INDIANA ACCOUNT FOR THE POSSIBILITY OF**
17 **CO₂ EMISSION RESTRICTIONS IN THE FUTURE?**

18 While we strongly believe carbon restrictions in the future are likely, there is still quite a
19 bit of uncertainty regarding the specifics of any regulatory program. Therefore, Duke
20 Energy Indiana developed the CAIR/CAMR Plus with CO₂ Scenario. This Scenario
21 assumes the same tightened SO₂, NO_x, and Hg assumptions as in the CAIR/ CAMR Plus
22 Scenario, with the addition of an assumed level of CO₂ prices as developed by Duke
23 Energy's Environmental Department. The prices assumed were as follows:

JOHN L. STOWELL

Table 1 - Assumed CO₂ Prices (\$/ton)

	2003 \$	Nominal \$
2015	\$7.00	\$9.13
2016	\$8.15	\$10.87
2017	\$9.12	\$12.44
2018	\$10.19	\$14.21
2019	\$11.40	\$16.25
2020	\$12.75	\$18.59
2021	\$13.63	\$20.32
2022	\$14.57	\$22.21
2023	\$15.57	\$24.26
2024	\$16.64	\$26.51
2025	\$17.78	\$28.97
2026	\$19.01	\$31.67
2027	\$20.31	\$34.60
2028	\$21.71	\$37.81
2029	\$23.21	\$41.34
2030	\$24.80	\$45.16

Duke Energy Indiana started at \$7 because, in our view, the proposal that has garnered the most attention in the U.S. Senate uses this starting price level.

Q. DOES THIS CONCLUDE YOUR PREPARED TESTIMONY?

A. Yes, it does.

JOHN L. STOWELL

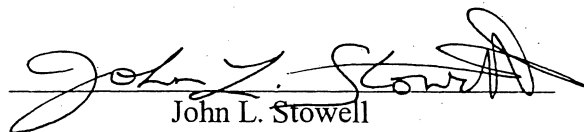
-11-

001302

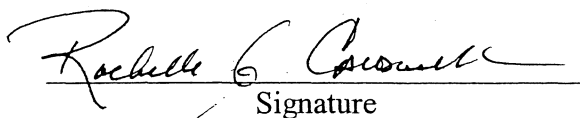
VERIFICATION

STATE OF OHIO)
) SS:
COUNTY OF HAMILTON)

The undersigned, John L. Stowell, being first duly sworn on his oath, says that he is Vice President, Environmental, Health and Safety Policy of Duke Energy Shared Services, Inc., a service company subsidiary of Duke Energy Corporation, that he has read the foregoing; and that the matters set forth therein are true and correct to the best of his knowledge, information and belief.


John L. Stowell

Subscribed and sworn to before me, a Notary Public, this 6th day of October, 2006.


Signature
RACHELLE A. CALDWELL
Printed Name

My Commission Expires: 8/17/2009

My County of Residence: STATE-AT-LARGE Kentucky

