

Target market	Base Technology	Efficient Technology	Efficient Technology Definition	Annual kWh savings
Public Buildings	2 4' T12 34 watt lamps with magnetic ballast	1 4' T8 32 watt lamps with electronic ballast & reflector	1 4' T* 32 watt lamps	136.4
Public Buildings	2 8' T12 60 watt lamps with magnetic ballast	1 8' T8 59 watt lamps with electronic ballast & reflector	1 8' T* 59 watt lamps	192.3
Public Buildings	40W Incandescent	13 Watt Modular CFL	13 Watt < 800 Lumens - pin based	87.7
Public Buildings	40W Incandescent	13 Watt Integral CFL	13 Watt < 800 Lumens - screw-in	87.7
Public Buildings	60W Incandescent	13 Watt Modular CFL	13 Watt < 800 Lumens - pin based	152.8
Public Buildings	60W Incandescent	13 Watt Integral CFL	13 Watt < 800 Lumens - screw-in	152.8
Public Buildings	60W Incandescent	14 Watt Modular CFL	14 Watt - pin based	149.6
Public Buildings	60W Incandescent	14 Watt Integral CFL	14 Watt - screw-in	149.6
Public Buildings	60W Incandescent	15 Watt Modular CFL	15 Watt - pin based	146.3
Public Buildings	60W Incandescent	15 Watt Integral CFL	15 Watt - screw-in	146.3
Public Buildings	60W Incandescent	18 Watt Modular CFL	18 Watt - pin based	143.1
Public Buildings	60W Incandescent	18 Watt Integral CFL	18 Watt - screw-in	143.1
Public Buildings	60W Incandescent	18 Watt Modular CFL	18 Watt < 1,100 Lumens - pin based	136.6
Public Buildings	60W Incandescent	18 Watt Integral CFL	18 Watt < 1,100 Lumens - screw-in	136.6
Public Buildings	75W Incandescent	18 Watt Modular CFL	18 Watt >= 1,100 Lumens - pin based	185.4
Public Buildings	75W Incandescent	18 Watt Integral CFL	18 Watt >= 1,100 Lumens - screw-in	185.4
Public Buildings	75W Incandescent	19 Watt Modular CFL	19 Watt >= 1,100 Lumens - pin based	182.1
Public Buildings	75W Incandescent	19 Watt Integral CFL	19 Watt >= 1,100 Lumens - screw-in	182.1
Public Buildings	2 4' T12 34 watt lamps with magnetic ballast	2 4' Super T8 28 watt lamps with electronic ballast	2 4' Super T8 28 watt lamps	63.9

Public Buildings	2 4' T12 34 watt lamps with magnetic ballast	2 4' T8 32 watt lamps with electronic ballast	2 4' T8 32 watt lamps	49.0
Public Buildings	2 8' T12 60 watt lamps with magnetic ballast	2 8' Super T8 59 watt lamps with electronic ballast	2 8' Super T8 59 watt lamps	87.4
Public Buildings	2 8' T12 60 watt lamps with magnetic ballast	2 8' T8 59 watt lamps with electronic ballast	2 8' T8 59 watt lamps	49.0
Public Buildings	75W Incandescent	20 Watt Modular CFL	20 Watt - pin based	178.8
Public Buildings	75W Incandescent	20 Watt Integral CFL	20 Watt - screw-in	178.8
Public Buildings	100W Incandescent	23 Watt Modular CFL	23 Watt - pin based	250.3
Public Buildings	100W Incandescent	23 Watt Integral CFL	23 Watt - screw-in	250.3
Public Buildings	75W Incandescent	25 Watt Modular CFL	25 Watt <=1,600 Lumens - pin based	162.6
Public Buildings	75W Incandescent	25 Watt Integral CFL	25 Watt <=1,600 Lumens - screw-in	162.6
Public Buildings	100W Incandescent	25 Watt Modular CFL	25 Watt >=1,600 Lumens - pin based	243.9
Public Buildings	100W Incandescent	25 Watt Integral CFL	25 Watt >=1,600 Lumens - screw-in	243.9
Public Buildings	75W Incandescent	28 Watt Modular CFL	28 Watt <=1,600 Lumens - pin based	159.3
Public Buildings	75W Incandescent	28 Watt Integral CFL	28 Watt <=1,600 Lumens - screw-in	159.3
Public Buildings	100W Incandescent	28 Watt Modular CFL	28 Watt >=1,600 Lumens - pin based	240.6
Public Buildings	100W Incandescent	28 Watt Integral CFL	28 Watt >=1,600 Lumens - screw-in	240.6
Public Buildings	100W Incandescent	28 Watt Modular CFL	28 Watt - pin based	234.1
Public Buildings	100W Incandescent	28 Watt Integral CFL	28 Watt - screw-in	234.1
Public Buildings	120W Incandescent	30 Watt Modular CFL	30 Watt - pin based	292.6
Public Buildings	100W Incandescent	30 Watt Integral CFL	30 Watt - screw-in	227.8
Public Buildings	150W Incandescent	36 Watt Integral CFL	36 Watt - screw-in	370.6
Public Buildings	120W Incandescent	40 Watt Modular CFL	40 Watt - pin based	260.1
Public Buildings	150W Incandescent	40 Watt Integral CFL	40 Watt - screw-in	357.6
Public Buildings	200W Incandescent	55 Watt Modular CFL	55 Watt - pin based	471.4
Public Buildings	200W Incandescent	65 Watt Integral CFL	65 Watt - pin based	438.9

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821 Q. Does the Department's clarification to Staff data request EDiv 2.01(a),
 822 reproduced above, resolve your uncertainty with the respect to what the
 823 Department seeks to have deemed?

824 A. No.

825 Q. What uncertainty persists, in your view?

826 A. First, the "Clarification to ... EDiv 2.01(a)" suggests that DCEO seeks for
827 "realization rates" to be deemed. I would note that Mr. Jensen (from ICF International,
828 which DCEO cites as being responsible for providing these numbers) states in response
829 to another Staff data request (EDiv 3.01 to ComEd) that realization rates should not be
830 deemed, explaining:

"Realization rate" is defined in the Plan as "[t]he ratio of *ex post* program savings to *ex ante*
estimates of savings." (ComEd Ex. 1.0, at 121 (Glossary of Terms).) The realization rate is
used in the analysis of programs to account for uncertainty around *program* performance. The
rate used in the Plan is used primarily as a parameter in the uncertainty analysis. The value of
0.95 is based on a subjective assessment of the likelihood that *ex ante* savings will equal *ex post*
savings.

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...
(e) ComEd does not intend for realization rates to be deemed. Realization rates will emerge
from evaluations as the evaluator determines *ex post* net savings. ComEd likely will use that
information to inform its planning process.

833

834 Second, the "Clarification to ... EDiv 2.01(a)" suggests that it wants to have
835 deemed all the numbers for kWh savings associated with the Public Sector Prescriptive
836 Program measures that are found in Appendix B of the ComEd's plan and Appendix B of
837 the Ameren plans. ComEd's Appendix B is 70 pages; Ameren's Appendix B is 85 pages.
838 Only portions of those appendices are associated with the Public Sector Prescriptive
839 Program measures, though. Specifically, there are 140 Public Sector Prescriptive
840 Program measures for ComEd and 51 for Ameren. Some of these are measures that are
841 also included in the utilities' programs, except that the utilities are not seeking to have
842 the kWh values deemed; these include the following efficient technologies (e.g., Chiller
843 Efficiency, Packaged Unit Efficiency, and VAV). I am not certain if DCEO seeks to
844 have deemed the kWh savings of this particular subset of measures. Furthermore, these
845 Appendices list a considerable amount of information for each measure. I suspect, but
846 am not certain, that DCEO seeks just the per installation values (in the front part of these

847 tables) to be deemed, and not the projected total kWh savings (shown further down, next
848 to what looks like projected installation levels).

849 Third, while DCEO cites DCEO Exhibits 1.08 through 1.11, from the agency's
850 description, I believe it intended to refer to Exhibits 1.07 through 1.10. Furthermore,
851 these exhibits include two types of kWh savings values: (A) per installation and (B)
852 total. From my calculations, the latter are equal to (i) the per-installation values times (ii)
853 an assumed or projected number of installations times (iii) an assumed realization rate
854 times (iv) an assumed net-to-gross ratio. Thus, if DCEO seeks to have the *total* kWh
855 savings values deemed, it would essentially be asking for the deeming of all four sets of
856 numbers (i-iv). However, DCEO may only be asking for the per-installation kWh
857 savings values to be deemed. In that case, it is asking for deeming only the following
858 values:

859 From DCEO Ex. 1.7:

Energy Star Refrigerator ¹	79
6 interior FL fixtures & 2 exterior FL fixtures ¹	782
SEER 14 central air conditioner w/ programmable thermostat ¹	366
Reduce required tonnage as a result of thermal envelope improvements ²	432
Energy Star dishwasher ¹	62
Energy Star rated bathroom exhaust fan ³	89
90% AFUE furnace with efficient air handler ⁴	400

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From DCEO Ex. 1.8:

1. Energy Star Refrigerator ¹	79
2. Six interior FL fixtures & two exterior FL fixtures ¹	782
3. Energy Star rated bathroom exhaust fan ²	89
4. Energy Star dishwasher ¹	62
5. SEER 16 central air conditioner w/ programmable thermostat ³	528
6. Energy Star rated room air conditioners ⁴	176
7. Reduce required tonnage as a result of thermal envelope improvements ⁵	216
8. 90% AFUE furnace with efficient air handler ⁶	400

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From DCEO 1.9:

1. Energy Star Refrigerator ¹	79
2. ENERGY STAR Advanced Lighting Package ²	663
3. Energy Star rated bathroom exhaust fan ³	89
4. Energy Star dishwasher ¹	62
5. SEER 16 central air conditioner w/ programmable thermostat ⁴	528
6. Energy Star rated room air conditioners ^{4,5}	176
7. Reduce required tonnage as a result of thermal envelope improvements ⁶	216
8. 90% AFUE furnace with efficient air handler ⁷	400

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From DCEO 1.10:

1. Energy Star Refrigerator ¹	554
2. CFL installation ²	594
3. Energy Star rated bathroom exhaust fan ³	89
4. SEER 16 central air conditioner w/ programmable thermostat ⁴	1643
5. Energy Star rated room air conditioner ⁵	283
6. 90% AFUE furnace with efficient air handler ⁶	400

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867 **Q.** Have you had an opportunity to thoroughly examine the bases for the
868 various values that DCEO seeks to have deemed?

869 **A.** No.

870 **Q.** In general, do you recommend that, in this or any other *planning* docket, the
871 Commission "deem" values related to the computation of energy savings for
872 purposes of Sections 12-103 (i) and (j) of the Act?

873 **A.** No. I recommend against deeming in this, or any other *planning* docket; but
874 allow me to clarify this position. Under the sole rubric of "deemed values," the Company
875 and DCEO actually have raised two issues:

876 (1) the partial reliance on values derived NOT from evaluation of the Company's
877 programs, i.e., NOT by collecting data on the Company's customers and their usage of
878 energy, but from external databases and studies performed in other places and at other
879 times;

880 (2) the *pre-approval* of those values *now*, in *this* docket, as opposed to later, in

881 future proceedings, when the Commission must make findings pursuant to Sections 12-
882 103 (i) and (j) of the Act.

883 My most significant concern is with (2) rather than (1). Indeed, there are some
884 sound and practical reasons for partially relying on values derived NOT from evaluation
885 of the Company's programs (i.e., NOT by independently collecting unique data on the
886 Company's customers and their usage of energy), but from external databases and studies
887 performed in other places and at other times. Simply put, there may very well already be
888 available a wealth of useful data and sound expert analysis that can be tapped into and
889 that can help in the process of estimating energy savings in Illinois. Indeed, for the
890 planning purposes of this docket, the Company has relied upon such databases and
891 studies, and Staff has not objected to that extent.

892 But that same wealth of useful data and sound expert analysis will still exist one
893 year from now, two years from now, three years from now, etc. In fact, there may be
894 even more of such data and studies available. In addition, there will have been
895 significantly more time for Staff and interveners (in preparation of future Sections 12-103
896 (i) and (j) proceedings) to have reviewed this wealth of data and studies and to have
897 determined if some of it is *less* than useful or *less* than sound. Staff may even hire
898 additional personnel or consultants, specializing in energy efficiency program evaluation,
899 to cobble together Staff's version of the most reasonable and accurate energy efficiency
900 databases. On the other hand, while reliance on such databases *may* be reasonable and
901 even preferable for some programs, measures, and/or variables, such reliance may be
902 unreasonable in other instances. In either event, the decision to rely on such databases,
903 like the decision to use one set of values versus another, need not and should not be made

904 at this time, in this docket, or for that matter, in any planning docket.

905 **Q. ComEd witnesses Brandt, Jensen, and Hall all argue that the Commission**
906 **should deem the values in Mr. Jenson's Tables 6 through 8 in order to mitigate the**
907 **Company's risk. Is that a valid argument for the Company's proposal?**

908 **A.** No. It is true that the law establishes standards that the Company must meet and
909 penalties for failure to meet these standards. Based on the advice of counsel, it is my
910 understanding that the Commission's job is to assess whether the standards have been
911 met and, if warranted, impose the penalties. Certainly, the Commission could make that
912 job easier simply by deeming values. However, in my view, getting the numbers *right* is
913 more important than getting them right away. In my view, making a judgment now, with
914 a bare minimum of review, is not amenable to getting the numbers right.

915 Furthermore, the degree of risk to which the Company is exposed is negligible.
916 For ComEd, the monetary penalty mentioned in the Act for failure to meet the standards
917 cannot exceed a total of \$1,330,000 (\$665,000 if, after 2 years, ComEd fails to meet the
918 efficiency standard, plus another \$665,000 if, after 3 years, ComEd fails to meet the
919 efficiency standard). When compared to the Company's annual distribution rate
920 revenues (at current rates), \$665,000 would amount to a not-very-impressive penalty of
921 less than 0.04% (That is *not* 4 percent, but 4 *hundredths* of 1 percent!).¹⁰

922 **C. Basing percent savings on actual usage versus previously forecast usage**

923 **Q. Following the second and third years of the plan, Sections 12-103 (i) and (j)**
924 **of the Act seem to require determination of whether the "electric utility fails to meet**

¹⁰ Computations based on rates and quantities listed in ComEd Ex. 5.1 and 5.2.

925 the efficiency standard specified in subsection (b).” For this determination, should
926 the efficiency standard be “0.4% of [the actual quantity of] energy delivered in the
927 year commencing June 1, 2009” and “0.6% of [the actual quantity of] energy
928 delivered in the year commencing June 1, 2010” or should it be “0.4% of [the
929 previously forecast quantity of] energy delivered in the year commencing June 1,
930 2009” and “0.6% of [the previously forecast quantity of] energy delivered in the
931 year commencing June 1, 2010”?

932 A. To the extent to which this calls for a legal opinion or interpretation of the Act, I
933 offer no opinion or interpretation. However, from my own “policy” perspective, the most
934 appropriate method would depend on (1) on the make-up of the portfolio under
935 evaluation (particularly on the portfolio’s share of weather-sensitive versus non-weather
936 sensitive measures) and (2) on how energy savings are determined in these future
937 proceedings. After explaining these considerations, I will offer my policy
938 recommendation.

939 Q. What is the significance of the make-up of the portfolio under evaluation?

940 A. Notwithstanding the influence of energy efficiency programs, the difference
941 between forecast and actual levels of consumption are due largely to difference between
942 “normal” and actual weather. For instance, a hotter-than-average summer is apt to
943 induce a higher-than-average consumption of electricity as air-conditioners work
944 overtime to keep us comfortable. Similarly, a portfolio of energy efficiency measures
945 directed mostly to weather sensitive energy uses (e.g., air conditioning/cooling) will have
946 a differential impact depending on actual weather. But a portfolio of energy efficiency
947 measures directed mostly to non-weather sensitive energy uses (e.g., lighting usage is apt

948 to be relatively insensitive to weather) will produce about the same level of savings
949 regardless of weather. Thus, for weather-sensitive measures, perhaps a more meaningful
950 assessment of the utility's performance in obtaining energy savings would compare
951 savings to actual usage. But for weather insensitive measures, perhaps a more
952 meaningful assessment of performance would compare savings to a weather-normalize
953 level of usage.

954 **Q. What is the significance of how energy savings are determined?**

955 **A.** For purposes of the plan, I would anticipate that the Company would estimate
956 future energy savings from weather-sensitive efficiency measures under an assumption of
957 normal weather. Except as part of a sensitivity analysis, it would be inappropriate to
958 assume extremely cold or extremely warm conditions. However, the after-the-fact
959 energy savings from these weather-sensitive efficiency measures over any given period
960 (such as June 2009 to May 2010) could be determined either in light of the weather
961 conditions that prevailed that year (as implicitly assumed in the previous Q&A), or they
962 could again be determined under an assumption of normal weather. If after-the-fact
963 energy savings from weather-sensitive efficiency measures are determined in light of
964 prevailing weather conditions, then, as previously stated, perhaps a more meaningful
965 assessment of the utility's performance in obtaining energy savings would compare those
966 savings to actual usage. On the other hand, if after-the-fact energy savings from weather-
967 sensitive efficiency measures are determined under an assumption of normal weather,
968 then perhaps a more meaningful assessment of performance would compare those
969 weather-normalized savings to a weather-normalized level of usage.

970 **Q. What is your recommendation with regard to whether after-the-fact savings**

971 **should be based on actual or normalized weather conditions and whether the**
972 **attainment of percentage savings goals should be based on actual or previously**
973 **determined total consumption?**

974 A. If it is permissible under the Act, then I would recommend using previously
975 determined total consumption (that is, determined in this proceeding as weather-
976 normalized, expected usage), and that after-the-fact energy savings determinations be
977 adjusted if necessary to reflect an assumption of normal weather, as well.

978 **D. The ability to "bank" excess energy savings in a given Plan year, and apply that**
979 **excess to and reduce a subsequent Plan year's goal.**

980 **Q. Are you familiar with ComEd witness Brandt's testimony concerning the**
981 **"banking" of excess energy savings?**

982 A. Yes. Mr. Brandt states that the Company is seeking from the Commission
983 permission to 'bank' excess energy savings in a given Plan year, and apply that excess to
984 reduce a subsequent Plan year's goal (ComEd Ex. 2.0, p. 2), explaining further that

985 In such a circumstance, forecast costs for the subsequent year of the
986 Plan would be adjusted downward to reflect the need to achieve a
987 lower kWh reduction in that year. In such case, not only would the
988 goal be reduced in the subsequent year, but the projected costs input in
989 Rider EDA would also be reduced for the subsequent year. This is
990 explained in additional detail in Mr. Crumrine's direct testimony. (See
991 ComEd Ex. 5.0.) This "banking" concept is very important to the
992 overall management of ComEd's portfolio.

993 ComEd Ex. 2.0, p. 40.

994 **Q. Should ComEd be authorized to "bank" excess energy savings in a given**
995 **Plan year, and apply that excess to reduce a subsequent Plan year's goal?**

996 A. If it is legally permissible, then I would recommend that the Commission
997 authorize such banking. Although I will not provide a legal opinion, I do offer the

998 following "policy" consideration. In the absence of banking, in any one plan year, there
999 is little reason for the Company to pursue savings above the goals set forth in the Act (or
1000 at a rate any faster than required by the Act). In fact, achieving greater energy savings
1001 (or achieving energy savings at a faster rate) in one year, may make it more difficult to
1002 achieve the Act's goals in the following year, as the market for efficiency products and
1003 services becomes more saturated. Thus, the lack of banking privileges may actually
1004 constitute a disincentive to achieving greater energy savings (or achieving energy savings
1005 at a faster rate). Furthermore, since there some uncertainty about future participation
1006 levels and future savings cannot be forecast precisely, this disincentive to achieving
1007 greater energy savings (or achieving energy savings at a faster rate) may actually
1008 decrease the ultimate attainment of the Act's percentage savings goals.

1009 **Q. Does this conclude your prepared direct testimony?**

1010 **A. Yes.**

STATE OF ILLINOIS

ILLINOIS COMMERCE COMMISSION

Illinois Department of Commerce and)
Economic Opportunity)
Approval of its the Energy Efficiency)
Portfolio and Plan pursuant to Section)
12-103(f) of the Public Utilities Act.))

Docket No. 07-0541

AFFIDAVIT OF RICHARD J. ZURASKI

State of Illinois)
County of Sangamon)

I, Richard J. Zuraski, being first duly sworn on oath, depose and state that I am the same Richard J. Zuraski identified in the Direct Testimony; that I have caused the following Direct Testimony; the following statements are true and correct to the best of my knowledge and belief as of the date of this Affidavit.

Further affiant sayeth naught.

Richard J. Zuraski
Richard J. Zuraski

Subscribed and sworn to before me

this 14 day of December 2007

Mary Ellen Ruffner

Notary Public

