

1 Q. Reference: CA-NP-100

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3 **Company evidence suggests that the actuarial assumptions for NP’s pension plan**  
4 **assumes an 8.1% expected return on equities for plan assets, which is consistent**  
5 **with current views of Canadian market expectations by finance professionals, etc.**  
6 **This 8% expectation is also consistent with the historical long-term real rate of**  
7 **return on Canadian stocks (approximately 6%), combined with current long-term**  
8 **inflation expectations of 2% (i.e., the Bank of Canada’s target rate). Can Mr. Coyne**  
9 **reconcile the huge discrepancy between his estimate of 13.5% with the more**  
10 **commonly used estimates in the 8% range that are based on the expectations of**  
11 **market professionals, and on historical observations?**

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13 A. Mr. Coyne does not accept that pension plan returns can be used to inform an estimate of  
14 the utility investors’ required equity return, and believes it is inappropriate for several  
15 reasons. Pension returns reported by actuarial companies focus on *expected* or *forecast*  
16 returns and not on the *required* return or *hurdle rate* that investors use to determine  
17 whether the investment will provide fair compensation for the risks taken. There is a  
18 crucial distinction between *expected* and *required* return; that is, the *expectation* that an  
19 asset will return a given amount is fundamentally different than the return *required* by  
20 investors to take on the risks associated with the investment. Expected returns are  
21 forecasts of future performance, whereas required returns represent an opportunity cost,  
22 and are equal to the returns investors require in order to be compensated to take on the  
23 risks of ownership. Mr. Coyne would agree with the following comments published in  
24 the Wall Street Journal, which provides a concise synopsis of this distinction.

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26 *“There are two major drivers of investors’ required returns—the*  
27 *perceived level of risk of the investment and alternative investment*  
28 *opportunities. Since most rational investors are risk averse, if there are*  
29 *two potential investments with the same expected return, but one is*  
30 *presumed to be riskier, then no one will invest in the riskier of the two. In*  
31 *order for the riskier investment to attract capital, it will have to provide a*  
32 *higher return. And the level of that return will be a spread relative to*  
33 *other investment opportunities. If the returns of other investments are*  
34 *meager, then the required return of the riskier investment will be less than*  
35 *if those other investments provided robust returns.*

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37 *So we should not talk about the expected return of stocks. We should talk*  
38 *about the required return. And, to reiterate, that required return is a*  
39 *function of the perceived risk and other investment opportunities.”<sup>1</sup>*

<sup>1</sup> *Why Investors Need to Understand ‘Required’ Returns v. ‘Expected’ Returns*, Wall Street Journal ,Gus Sauter, (November 9, 2015) <http://blogs.wsj.com/experts/2015/11/09/why-investors-need-to-understand-required-returns-vs-expected-returns/>.

1 A pension fund asset manager will match the expected returns available from various  
2 asset classes to the expected liabilities that must be funded, while an investor seeking to  
3 maximize risk-adjusted return will only invest in a security if the expected return is equal  
4 to or greater than the required return from that investment. The distinction between  
5 expected and required returns, and the time horizon of the liabilities being funded by  
6 pension assets, was noted by the Arkansas Public Service Commission (“APSC”) in  
7 Docket No. 04-121-U. In its decision, the APSC commented on the Attorney General  
8 witness’ position that expected returns disclosed in the context of pension fund  
9 assumptions could be used in determining the ROE for a regulated utility as follows:

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11 *“There are two major problems with this sort of analysis: (1) it is unclear*  
12 *how long the time horizon is; and (2) these returns are expected, not*  
13 *required. It is well-established that expected returns may be less than,*  
14 *equal to, or greater than required returns. For that reason, expected*  
15 *returns cannot be used directly as a proxy for required returns, which is*  
16 *the information sought in a general rate case.”<sup>2</sup>*

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18 Though ROE is established for a stand-alone company, the estimated return is derived  
19 from a market test of companies with comparable risks. To determine the estimated  
20 return of a utility one must look to like-risk companies, not to a portfolio of pension fund  
21 assets or to the composite equity index that share very little similarity to the utility in  
22 question. The referenced return of approximately 13.5% represents the return  
23 expectations for the TSX Composite Index, given current dividend yields and 5-year  
24 growth expectations. The composite index is comprised of companies that span the entire  
25 risk spectrum and would not be an appropriate comparator or basis upon which to  
26 estimate the required return of a regulated utility. Return expectations for a portfolio of  
27 pension fund equity assets would similarly be an inappropriate comparator, as a typical  
28 pension fund includes a mix of equity securities and would not represent the investment  
29 or risk profile of a specific utility.

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31 Another issue is that pension returns are often calculated using a geometric average,  
32 which is inappropriate when averaging independent return observations. The arithmetic  
33 average is the relevant value for purposes of estimating the next return observation. A  
34 rough estimate of the difference between the geometric average and the arithmetic  
35 average can be calculated by taking  $\frac{1}{2}$  the variance of historic returns. We can estimate  
36 that the standard deviation of historic equity returns is approximately 0.20; therefore, the  
37 variance would be 0.04. Half the variance is roughly 0.02 or 2%. We can assume that  
38 the return observations would have been roughly 2% higher, or 10.1%, had they been  
39 calculated using the arithmetic return. Lastly, the sum of the historical long-term real rate  
40 of return on Canadian stocks (of approximately 6%) and current long-term inflation  
41 expectations of 2% (i.e., the Bank of Canada’s target rate) does not reflect ‘like-risk’  
42 investments and does not provide a forward-looking view of required returns (in that  
43 these returns are historic average of a market composite).

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2 Docket No. 04-121-U, Order No. 16, APSC, September 19, 2005, at 19.