Efficiency impacts of operation of Part 4 – Stylised Example Mark II

21 October 2013

INTRODUCTION

1. This report sets out a stylised example which illustrates how the operation of Part 4 of the Commerce Act 1986 can impact on incentives to innovate (subsection 52A(1)(a)) and to improve efficiency (subsection 52A(1)(b)). For the purpose of this report incentives to improve efficiency are treated as incentives to improve efficiency and innovate.

2. The report is intended as a companion and follow-up to the earlier report "Efficiency impacts of Starting Price Adjustments – Stylised Example", 19 December 2011.

INCENTIVES TO IMPROVE EFFICIENCY UNDER THE REVISED SPA METHODOLOGY

3. The way the Commerce Commission operates Part 4 has a substantial impact on the incentives regulated suppliers have to innovate and improve efficiency.

4. The SPA Methodology implicit in the Commission's price reset decisions can be illustrated by Vector's stylised example[1] which is based on the assumptions that:

   a. the efficiency gain would be immediate;

   b. the efficiency gain would be in perpetuity;

   c. there are no upfront costs/investment required to make the efficiency gain;

   d. the time value of money is 8%;

   e. the Base Year (unless otherwise stated) is Year 4 in the preceding regulatory period.[2]

5. Consumers may be made worse off in the long-term if the Commission requires sharing too aggressively or quickly in favour of consumers, as it could result in regulated suppliers making less efficiency gains in the future and, accordingly, there would be less scope for future price reductions (sharing of efficiency gains). Expressed in colloquial terms, how the pie is shared can impact on the size of the pie.

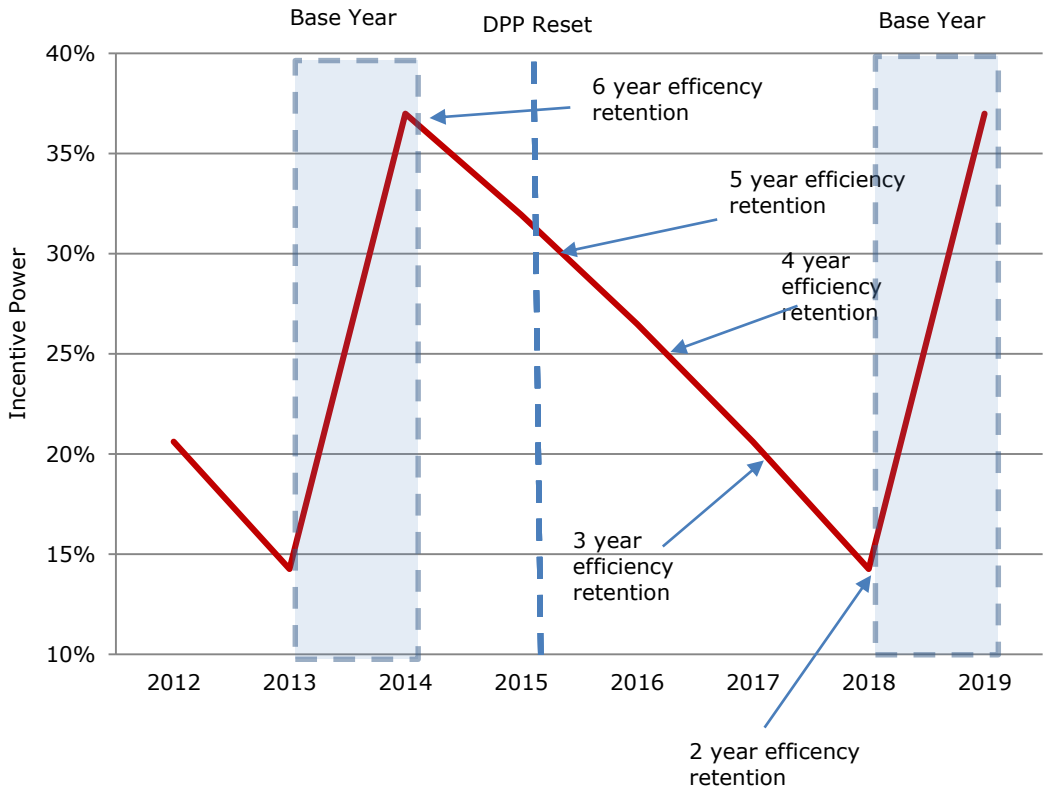
6. Figure 1 shows the share of the efficiency gain (or the "incentive power"[3]) EDBs receive under the Commission's current SPA Methodology. The incentives vary between 14.3% and 37.0% over future regulatory periods.

[1] Vector, Efficiency impacts of Starting Price Adjustments – Stylised Example, 19 December 2011.

[2] For simplicity the 2011 stylised example assumed the Base Year was year 5, and assessed the value of the efficiency gains from the start of the new regulatory period. The change in assumption increases the share of efficiency gains regulated suppliers potentially receive because it means they are able to hold on to them for up to one more year (from Year 4 of regulatory period 1 to Year 5 of regulatory period 2, rather than from Year 1 to Year 5 of each regulatory period).

[3] Frontier Economics, Appendix 5, National Audit Office Report, Pipes and Wires, 10 April 2002.

Figure 1: Incentive Power/efficiency sharing under the current SPA Methodology



7. The worst time for a regulated supplier to make efficiency gains is at the beginning of the Base Year as they will only be retained for 2 years. This is because they will be fully captured by the Commission's calculation of current and projected profitability for the next regulatory period, and consequently fully removed at the next DPP reset in 2 years' time. The best time to make the efficiency gain is immediately after the Base Year as the efficiency gains will not be captured until the Base Year in the next regulatory period, 4 years later, and then not reflected until the second subsequent DPP reset 6 years after the efficiency gain was made.

Impact of the stylised example assumptions

Stylised example assumptions	**Impact of assumptions**
a. the efficiency gain would be immediate;	This assumption results in a wider range of efficiency retention/incentive power. For example, if it was assumed that the efficiency initiative would take two years to fully realise the cost reduction then starting the initiative at the beginning of the Base Year would result in sharing of half of the cost saving with consumers at the next reset (2 years), and the other half at the following rest (6 years). In this example, it would still be profit maximising to delay the initiative until the start of year 5 as the regulated supplier would receive the benefits for 6 years (for the cost

Stylised example assumptions	Impact of assumptions
	savings made in the initial year) and 5 years (for the rest of the cost savings).
b. the efficiency gain would be in perpetuity;	This assumption has the opposite impact of the assumption that the efficiency gain would be immediate. It results in a narrower range of efficiency retention/incentive power. The impact of an efficiency gain/cost saving that is short-term or transitory depends on whether it occurs in the Base Year or not: • Under the current SPA Methodology a short-term efficiency gain/cost saving made in the Base Year would be reflected in lower forecast costs for the entire next regulatory period. The result could be that more than 100% of the efficiency gain is shared with consumers i.e. negative incentive power. • If the efficiency gain is realised outside of the Base Year then 100% of it would be retained by the regulated supplier.
c. there are no upfront costs/investment required to make the efficiency gain;	Any upfront costs/investment will reduce the share of the efficiency gain retained by the regulated supplier. This could result in consumers receiving greater than 100% of any efficiency gain/negative incentive power. If the regulated supplier bears the full cost of making the efficiency gain, but can only hold onto the efficiency gain for a maximum of 6 years, the SPA Methodology could mean the regulated suppliers incentives to improve efficiency could end up being limited to 'low-hanging fruit'.
d. The time value of money is 8%;	The higher (lower) assumed time value of money the larger (smaller) the share of the efficiency gain retained by the regulated supplier.
e. the Base Year (unless otherwise stated) is Year 4 in the preceding regulatory period.	The absence of specification of Base Year in an Input Methodology means regulated suppliers do not know what year or years will be used as the Base Year for the next regulatory period. The discussion in the section "Illustration of how the Commission can vary incentives" highlights that use of different Base Years can have substantial impacts on the extent to which regulated suppliers will retain any efficiency gain. This creates uncertainty about the extent to which regulated suppliers will retain any efficiency gain in any given year.

USE OF BASE YEAR TO ILLUSTRATE HOW THE COMMISSION CAN VARY INCENTIVES

8. Setting of the Base Year, adoption of IRIS and a staggered sharing mechanism are examples of tools the Commission can adopt to vary the level of incentives regulated suppliers have to improve efficiency.

9. We use the setting of the Base Year to illustrate how the Commission can vary incentives. (In our view, there is no limit under the Act on the "base year" the Commission can use when setting default price-quality path (DPP) prices, except to the extent the Commission is restricted from investigating costs and revenues from more than seven years prior under section 53ZD(c) of the Act.[4])

10. The Base Year is used simply because it is a simple way to illustrate how the Commission can influence efficiency incentives. Any efficiency options will have costs and benefits that need to be considered. The costs and benefits of adopting a longer/older Base Year are as follows:

Costs	Benefits
• The older the years used in the Base Year the greater the risk it will not reflect new ongoing costs. • Higher costs in producing Base Year data for more than one year.	• Helps address year on year on cost volatility to improve current and projected profitability calculation. • Flatter/higher efficiency incentives over the regulatory period • Less benefits from gaming (loading costs into the Base Year).

Note: There is an inherent tension between the use of more years in the Base Year reducing the risks of over/under-estimating current and projected profitability, by addressing cost volatility, and the use of older year data providing a less accurate basis for determining current and projected profitability.

11. Changing the period the Base Year is set for will affect the level of rewards regulated suppliers receive from making efficiency gains in any particular year.

12. For example, if the Base Year was set at Year 3 rather than Year 4, EDBs would have greater incentives to improve efficiency because they would be able to hold on to efficiency gains for longer. The greatest incentive to improve efficiency would be at the beginning of Year 4 (41.7%), with a maximum of 7 years benefit from the efficiency gain, and the least incentive would be at the beginning of Year 3 (20.6%) with a minimum of 3 years benefit.[5] This is illustrated in Figures 2 below.

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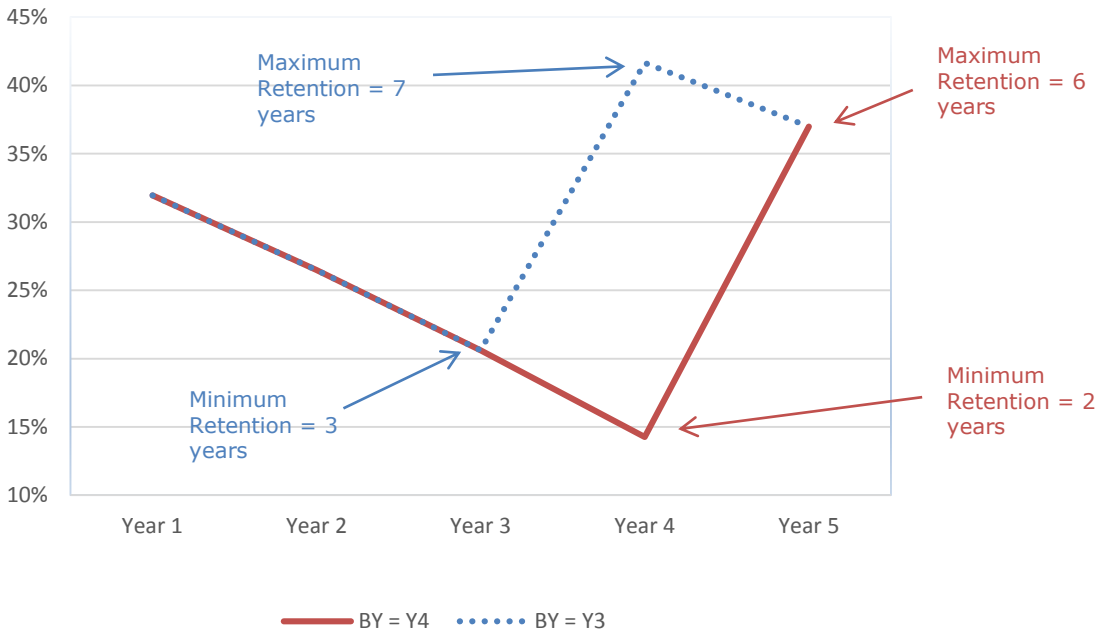
[4] In particular:

- DPP prices must be reset "based on the current and projected profitability of each supplier" (section 53P(3)(b)). While "current" has no clear legal definition, its ordinary meaning is "belonging to the present time; happening or being used or done now".[4]
- The strict definition of "current" cannot sensibly be applied in the context of the profitability assessment in section 53P(3)(b). That said, the older the data used for the base profitability calculation, the more arguable it is that prices are in fact based on historical, rather than current, levels of profitability.
- In our view, however, no clear lawfulness / unlawfulness boundary can be drawn in this context. Rather, section 53P(3)(b) requires the Commission to exercise an element of reasonable judgment and discretion, including as to relevant data sources. Accordingly, subject to (d) below, Vector should seek to persuade the Commission that its preferred base year(s) best meet the Part 4 purposes.
- Under section 53ZD(c), the Commission can examine, consider or investigate any cost or revenue that has occurred during the previous 7 years. The Commission cannot investigate costs and revenues from more than 7 years prior (even if individual suppliers, such as Vector, were prepared voluntarily to provide such information). Accordingly, the base year the Commission can use when setting DPP prices will be limited to 7 years prior.

[5] Incentive Power = 31.9% (Year 1), 26.5% (Year 2), 20.6% (Year 3), 41.7% (Year 4), and 37% (Year 5).

13. Using an older Base Year has similar affect to adoption of a longer regulatory period.

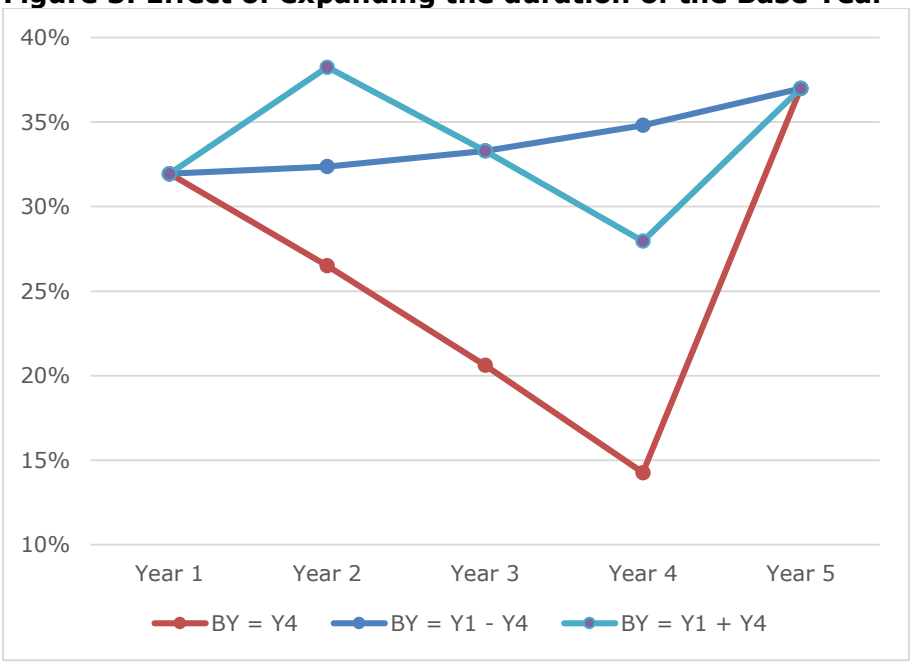
Figure 2: Effect of choice of Base Year on Incentives to improve efficiency



14. Absent an IRIS the variability of incentives over the regulatory period could be reduced by expanding the period of the Base Year.

15. Figure 3 below shows the effect of expanding the Base Year from one year (Year 4) to four years, either by adopting Year 1 & Year 4 as the Base Year or adopting Years 1, 2, 3 & 4 as the Base Year. The more years that are adopted (to set the range and within the range) the less variability in incentives to improve efficiency there will be across the regulatory period.

Figure 3: Effect of expanding the duration of the Base Year



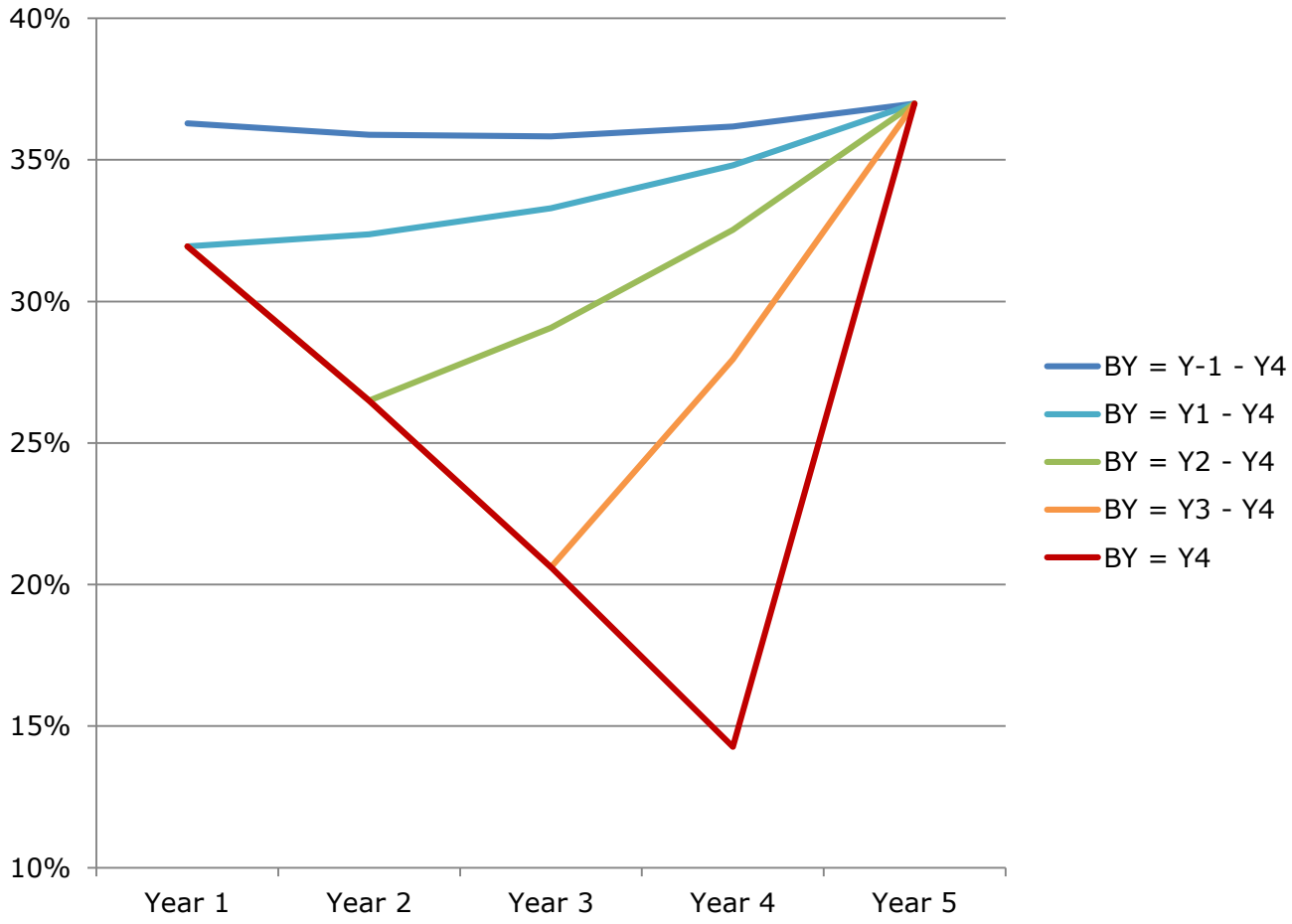
16. Figures 4 and 5 further illustrate the impact of adding additional years to the Base Year. The more years used the less the variability in incentives will be. Most of the reduction can be achieved by expanding the Base Year to 3 years.

17. As well as providing more consistent incentives to improve efficiency over the regulatory period, adoption of longer Base Years reduces the benefits to regulated suppliers from "gaming" by artificially loading costs into the Base Year.

Figure 4: Range of Incentive Powers with different duration Base Years

Base Year	Y-1[6] - Y4	Y1 - Y4	Y2 - Y4	Y3 - Y4	Y4
Variation in incentives	1.2%	5.0%	10.5%	16.4%	22.7%

Figure 5: Incentive Power under different duration base years



18. In summary:

    a. Absent an IRIS incentives to improve efficiency will vary substantially over the regulatory period;

[6] Year 5 of the previous regulatory period.

b. Adopting a Base Year that spans more than one regulatory year will dampen the variability in incentives but not fully remove it; and

c. The earlier in the regulatory period that the Base Year is set the greater the incentives will be to improve efficiency in any particular year[7] but absent an IRIS they will still be strongest immediately after the Base Year.

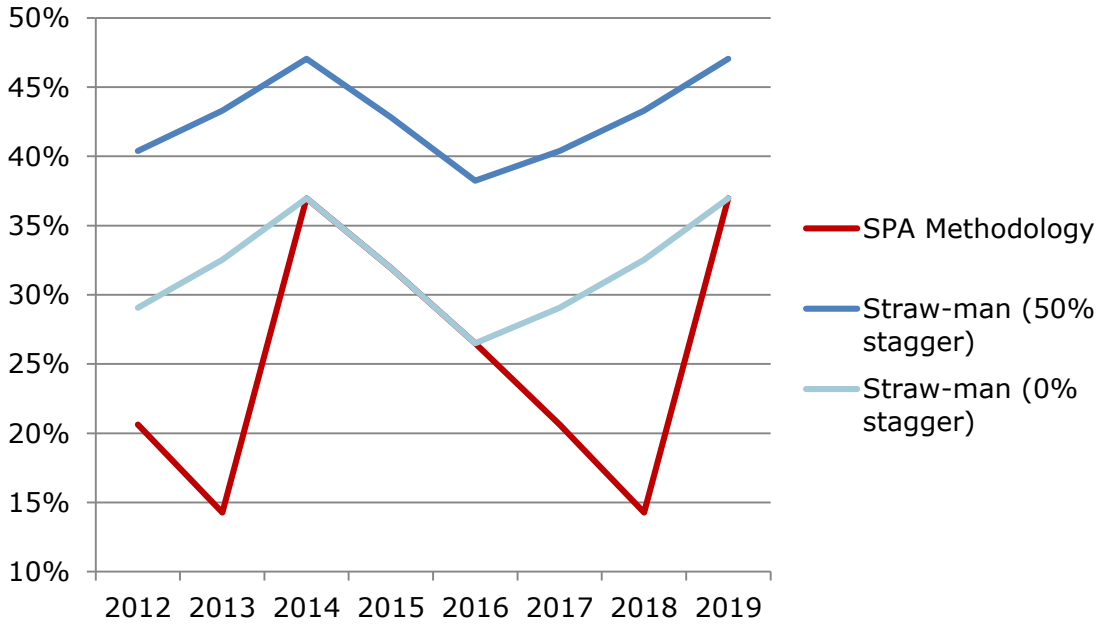
STRAW-MAN APPROACH TO GENERAL EFFICIENCY INCENTIVES

19. We provide two alternative "straw-man" SPA Methodologies to compare against the Commission's current SPA Methodology. The purpose of the straw-man options is not to say that the Commission should necessarily adopt these options. We believe the Commission should consider a package of options including setting of Base Year, Staggered starting price adjustment mechanism, IRIS (setting of base year can act as a substitute for IRIS), an S-Factor and specific s 54Q initiatives. Rather the intention of the two straw-man options is to highlight that there are a number of simple initiatives the Commission could adopt that would substantially improve efficiency incentives and reduce variability in efficiency incentives.

20. The first straw-man SPA Methodology adopts a 3 year Base Year (instead of an IRIS) with a 50% stagger. The second straw-man adopts a 3 year Base Year with no stagger.

21. Figure 6 below compares the three options.

Figure 6: SPA Methodology compared to "Straw Man"



22. The two straw-man SPA Methodologies make a number of improvements to the Commission's SPA Methodology and illustrate that there are any number of alternatives to the SPA Methodology that would better ensure regulated suppliers have incentives to invest, innovate and improve efficiency:

a. They both flatten out the incentives to improve efficiency over the regulatory period (without introducing an IRIS) – they reduce the variation in incentives from

[7] Equivalent to extending the regulatory period beyond 5 years.

22.7%[8] to 10.5% (Straw-man (0% stagger)) and 8.8% (Straw-man (50% stagger));

b. They both also reduce the incentives/reward for "gaming" the SPA Methodology by loading costs into the Base Year; and

c. The straw-man options raise the level of incentives to improve efficiency generally: average incentives increase by 5.3% with the straw-man (0% stagger) and an additional 11% with the straw-man (50% stagger).

23. Figure 6 also illustrates that the Commission could raise or lower incentive levels simply by altering the level of the stagger.

[8] Maximum of 37% - minimum of 14.3%.