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Consumer-led pension strategy – overall conclusions

**Western Power
Distribution**

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Introduction

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1.1 Background and context

Over the current decade the network companies face an unprecedented challenge of securing significant investment to maintain a reliable and secure network. As the regulator, Ofgem's role is to ensure that this investment is delivered at a fair price for consumers.

To help achieve this, Ofgem developed RIIO (Revenue = Incentives + Innovation + Outputs) – A performance based model for setting the network companies' price controls, which lasts for eight years. RIIO is designed to encourage network companies to:

- Put stakeholders at the heart of their decision making process;
- Invest efficiently to ensure continued safe and reliable services;
- Innovate to reduce network costs for current and future consumers; and
- Play a full role in delivering a low carbon economy and wider environmental objectives.

It is relatively early days in the new world of enhanced consumer consultation and to date a number of areas have been excluded from the consultation process by network operators. However, Ofgem have been explicit that pension costs (due to their complex nature and significant cost/risk to consumers) must now be included and the strategies adopted by network operators for running their pension schemes need to be in line with their consumer's views on efficiency.

Western Power Distribution ('WPD') instructed us in November 2015 to support them as they developed their approach to consulting with their consumers to determine the most efficient way to fund their pension schemes. The scope of our engagement included working with WPD to design and implement a methodology to seek consumers' views on how WPD should fund its pension schemes, using a combination of quantitative, qualitative and academic research based techniques. The engagement deadline was September 2016 in order to enable the results from the research to be implemented in the 2016 actuarial valuations of WPD's pension schemes.

During the early days of the engagement, Ofgem published a consultation on 16 March 2016 titled 'Second Consultation on Ofgem's policy for funding Network Operators' Pension Scheme Established Deficits.' This set-out the requirement for network operators to consult with consumers regarding their approach to funding their pension schemes. While the consultation document did not significantly alter the methodologies developed as part of our engagement, it did provide additional validation of the approach taken.

Some relevant excerpts from the consultation document are as follows:

1.6 We also outlined a marked shift from our current approach, that envisages penalties for NWOs that are outliers in the way their Pension Scheme Established Deficits are managed or valued, to **'a new approach that looks instead to NWOs to demonstrate how they are participating in the governance of pension schemes on behalf of the consumers' (who are underwriting the risks involved).**

We believe this approach more constructively recognises the substance of relationships between NWOs and pension scheme trustees who are ultimately responsible for the schemes. Respondents also broadly supported the direction of this thinking.

1.7 The aim of our proposed reforms is two-fold: (a) to underline Ofgem's commitment to consumer funding of Pension Scheme Established Deficits, which should help to minimise the cost of financing the networks themselves to the benefit of consumers, and **(b) to encourage NWOs to pursue consumer-focused strategies for managing their commitments.**

1.10 NWOs have responsibilities towards their consumers and the strength of the employer covenant is in part underpinned by our funding commitment on behalf of consumers. **This means we can reasonably look to NWOs to represent the interests of consumers when they participate in pension scheme governance**

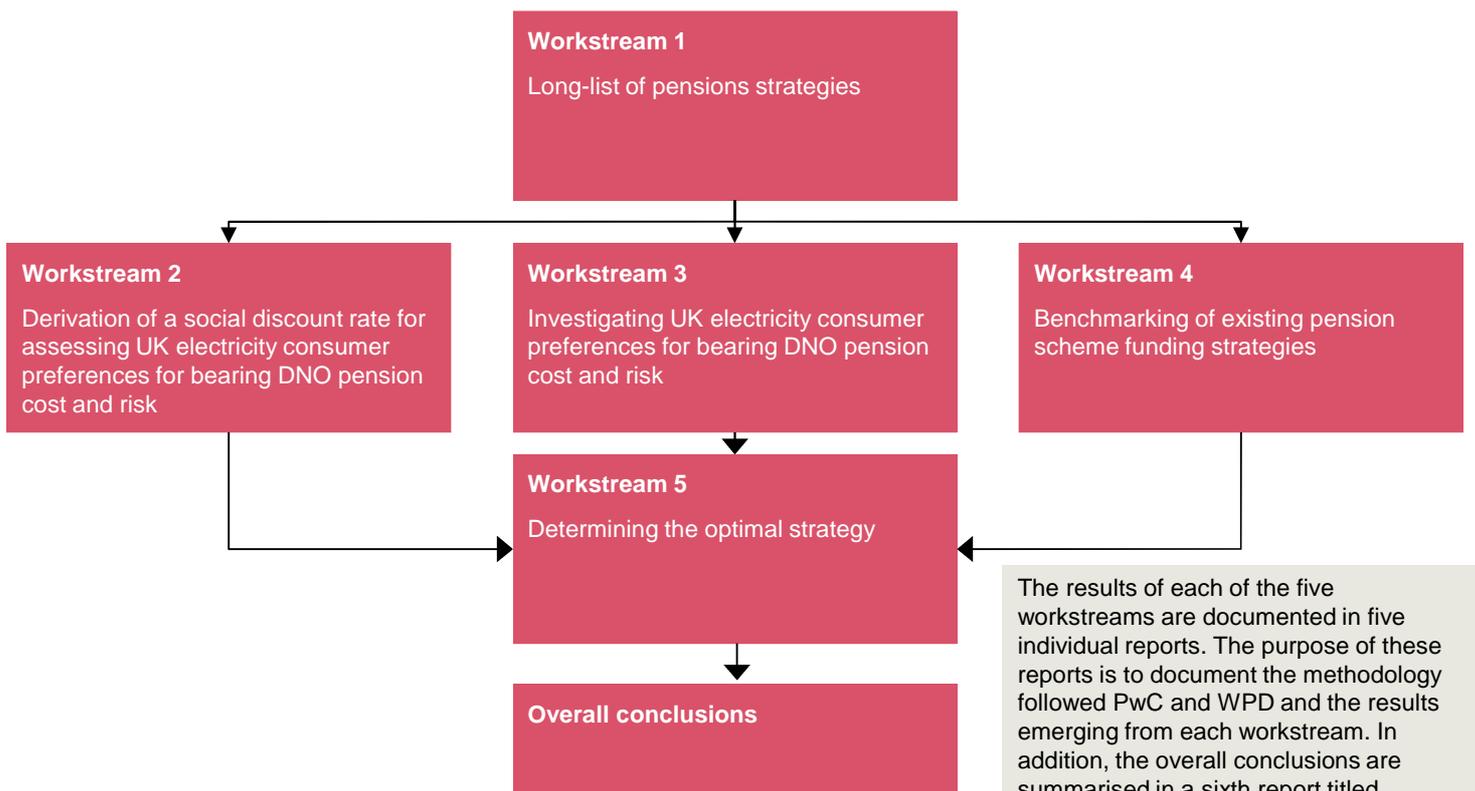
In addition the consultation document included two specific amendments to Ofgem's policy for funding network operators' pension costs (called the pension principles) as follows:

- 1 Consumers should not be expected to pay any excess costs that are avoidable by efficient management action
- 8 In light of our funding commitment, we look to employers to participate in the governance of defined benefit pension schemes with the aim of protecting the interests of the consumers who are exposed to any Established Deficit, in balance with the interest of shareholders who would be underwriting any remaining deficit. **To this end, we would look to employers to inform investment, benefit and funding strategies with objective and where possible evidence-based insights into the interests of consumers, recognising that tomorrow's consumers are as relevant as today's.** We look to employers to report transparently on their participation in the governance of these schemes.

1.2 Overview of the methodology

The methodology adopted by PwC and WPD comprised of five workstreams as follows:

Workstream	Purpose
1. Long-list of pensions strategies	<ul style="list-style-type: none"> To identify the long-list of pensions strategies which could be adopted by WPD and determine their cost and risk profile for consumers.
2. Derivation of a social discount rate for assessing UK electricity consumer preferences for bearing DNO pension cost and risk	<ul style="list-style-type: none"> To determine a discount rate using the academic research carried out to date for the purpose of comparing the relative cost (from a consumer and society perspective) of each of the pension strategies identified in Workstream 1 .
3. Investigating UK electricity consumer preferences for bearing DNO pension cost and risk	<ul style="list-style-type: none"> Use primary research techniques to: <ul style="list-style-type: none"> - Validate and inform an amendment to the social discount rate determined in Workstream 2. - Determine other relevant factors for the purpose of assessing consumers' preferred pension strategy in Workstream 1.
4. Benchmarking of existing pension scheme funding strategies	<ul style="list-style-type: none"> To provide relevant UK benchmarks for the funding of defined benefit pension schemes to provide additional validation that consumers' preferences are capable of practical implementation.
5. Determining the optimal strategy	<ul style="list-style-type: none"> To assess the long-list of pension strategies using the results of Workstreams 2, 3 and 4 in order to arrive at a pensions strategy arrived at using evidence based insights into the interests of consumers recognising that tomorrow's consumers are as relevant as today's.



The results of each of the five workstreams are documented in five individual reports. The purpose of these reports is to document the methodology followed PwC and WPD and the results emerging from each workstream. In addition, the overall conclusions are summarised in a sixth report titled "Overall conclusions."

1.3 Purpose of this report

The purpose of this report is to summarise the overall conclusions from the research and analysis conducted. Specifically, after taking into account comprehensive and transdisciplinary research into the preferences of electricity consumers, including in-depth testing of WPD's specific consumers, which strategy best represents the interests of consumers recognising that tomorrow's consumers are as relevant as today's?

This report summarises the conclusions and should be read in conjunction with the results of the five workstreams as documented in the individual reports.

Conclusions

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2.1 Overall conclusions

2.1.1 Pensions strategies which best represent the interests of electricity consumers

After comprehensive and transdisciplinary research into the preferences of UK electricity consumers, including in-depth testing of WPD's specific consumers, the pensions strategy which best represents the interests of consumers, recognising that tomorrow's consumers are as relevant as today's is Strategy 1D in the report titled "Long-list of pensions strategies."

The characteristics of this particular strategy are as follows:

- A significant exposure (c.50% of the asset portfolio) to return-seeking assets – particularly in the period of the next c.20 years.
- A long-term funding target which retains the potential for additional investment return (c.0.5% p.a.) above the risk-free rate.
- Deficit contributions calculated at each actuarial valuation which have a significant allowance for future investment returns expected to be delivered by

the asset portfolio.

- Deficit repair periods extended in scenarios where volatility in the pensions strategy results in a larger deficit than originally anticipated. The extension of the deficit repair period being sufficient to retain contributions at previous levels (unless the repair period extends beyond 15-20 years).
- Where variability in deficit contributions does emerge (after allowing for changes in deficit repair periods to minimise the variability) changes in year on year deficit contributions lower than £10 per consumer.

(For full detail of the strategy see section 3.5 of the report titled 'Long-list of pension strategies').

2.1.2 Implications for WPD's pension schemes

If this strategy was successfully implemented in WPD's pension schemes for the 2016 actuarial valuations then the contributions required to be paid would reduce from the level previously expected. The estimated impact of implementing the strategy is set-out in the following table.

	2013 actuarial valuations		Estimated 2016 actuarial valuation results	
			Using like-for-like approach with 2013 actuarial valuation	Using pensions strategy which best represents the interests of electricity consumers
Deficit¹	£1,600m		£1,850m	£1,100m
Regulated fraction²	£1,296m		£1,499m	£891m
Deficit repair allowance³	c.£125m ⁴ for 12 years		c.£125m for 12 years	c.£125m for 7½ years

2.1.3 Pensions strategies which have a lower degree of alignment with the interests of electricity consumers

From the research conducted, pensions strategies which have lower alignment with the interests of electricity consumers have the following characteristics:

- Greater levels of pension scheme de-risking. e.g. lower allocations to return-seeking assets and higher allocations to matching type assets (e.g. bonds, gilts and LDI) and greater degrees of hedging of interest rates and inflation.
- Strategies with higher levels of deficit contributions as a result of greater allocations to matching type assets (e.g. bonds, gilts and LDI) in the short-term but which retain elements of risk which under some scenarios result in increased deficit contributions. These were assessed as particularly inefficient from a consumer

interest perspective.

- Strategies which attempt to create a 100% cash flow matched asset portfolio, These were assessed as having poor alignment with consumer interests due to the potential for increased costs in the future as result of the inability to fully match the capped and collared nature of pension increases.
- The purchase of annuities. These may guarantee no variability of future costs but they align poorly with consumer interests as a result of the significant cost increase in the early years.
- Finally, any strategy which has the potential for year on year variability in excess of £10 (in today's terms) per consumer. These strategies have potential variability outside of consumers' tolerances for cost variability.

¹ Includes deficit contributions to both the Central Networks Group of the ESPS and the WPD Group of the ESPS.

² Regulatory fraction assumed to be 81%.

³ RPI-linked.

⁴ Simplified approach for illustrations purposes. Note that the first two years allowances were c.£75m as updated allowances arising from new actuarial valuations apply from two years after the valuation date.

2.2 Rationale

One of the main determinants of the degree of alignment with consumer interests of each strategy is the expected net present value of the costs to consumers (both current and future generations) of each of the strategies considered. This approach is consistent with the methodology used by public decision makers in the evaluation of long-term policy decisions such as the development of new infrastructure projects or climate change initiatives where the benefits will be enjoyed by multiple generations.

The net present value is therefore directly related to the discount rate chosen.

2.2.1 Individual discount rates

Individuals typically prefer to consume a given amount of goods and services sooner rather than later, because of the risk of not being alive in the future and the generally lower value attached to future consumption with respect to current consumption. The rate at which individuals would exchange a unit of consumption today for a unit of consumption tomorrow is represented by the individual's personal discount rate.

2.2.2 Social discount rates

The social or societal discount rate applies to a society as a whole. It therefore reflects all the individual discount rates across society. However, it also captures society's preferences for consumption of benefits obtained by future generations when used to discount long-term costs and benefits. Public decision makers use the social discount rate to discount benefits that are enjoyed by future generations, but paid for by the current generation. Social discount rates are usually lower than individual discount rates as individuals are mostly concerned with their own welfare in the short-term. In contrast, when society is measured as a whole, these short-term and risk averse considerations are less important and a longer-term perspectives can be used, which typically value longer-term benefits more highly and therefore involve using a lower discount rate.

The results of the primary research into UK consumer preferences revealed that the weighted average social discount rate is currently at a level of 2.14%. This was also

validated by the results of the findings from the review of the academic literature (lying between the Stern report's findings of 1.4% which was for climate change projects with benefits in 200 years' time and the HM Treasury Green book of 3.5% which was for public sector projects with a lifespan of 30 years

2.2.3 Adjustment to social discount rate to reflect risk premium

It is appropriate to incorporate an adjustment to the discount rate as consumers will bear pensions risk in the form of changes in the pensions element of their electricity bill as a result of the particular pensions strategy adopted.

The primary research conducted identified the risk premium for six key asset classes (ranging from equities (4.45% real) through to a portfolio of Gilts and leveraged LDI (0.78% real)). These were in line with the calculated risk premiums using economic first principles (the JMB approach and Capital Asset Pricing Model).

The social discount rate was therefore adjusted to reflect the risk premia (that apply for each future time period for each of the pensions strategies under consideration) using risk premia derived from economic first principles.

See report titled 'Derivation of a social discount rate for assessing UK electricity consumer preferences for bearing DNO pension cost and risk' for full detail.

2.2.4 Implications of the current level of the social discount rate

The level of the social discount rate was found to be relatively low (2.14% plus adjustment for risk premium) and, as expected, lower than a typical individual discount rate. The consequence of using a social discount rate (and at this level) is that future cash flows are not as heavily discounted and so the analysis achieved the desired objective of recognising the interests of both tomorrow's consumers as well as today's.

¹ The Green Book (2003) uses the SRTP method and recommends a real discount rate of 3.5% for benefits and costs occurring thirty or fewer years in the future. This rate declines to 3% for benefits and costs occurring post thirty years and to 2% for 350 years in the future. In 2003, the real risk free rate in the UK was approximately 2.5% and the guidance suggested adding a justifiable 1% risk premium to compensate for public investment projects equated to the overall 3.5% rate suggested by the Treasury. However, since 2003, there have been significant changes in the financial markets and global economic performance that has driven UK gilt yields down, to such an extent that it breached the 0% real risk free rate boundary in 2011. Against a completely different economic backdrop compared to 2003, the 3.5% social discount rate may not be appropriate based solely on the real risk-free rate and the 1% risk premium. Adjusting the green book 3.5% figure for movements in interest rates suggests a figure lower than 3.5% in current financial conditions.

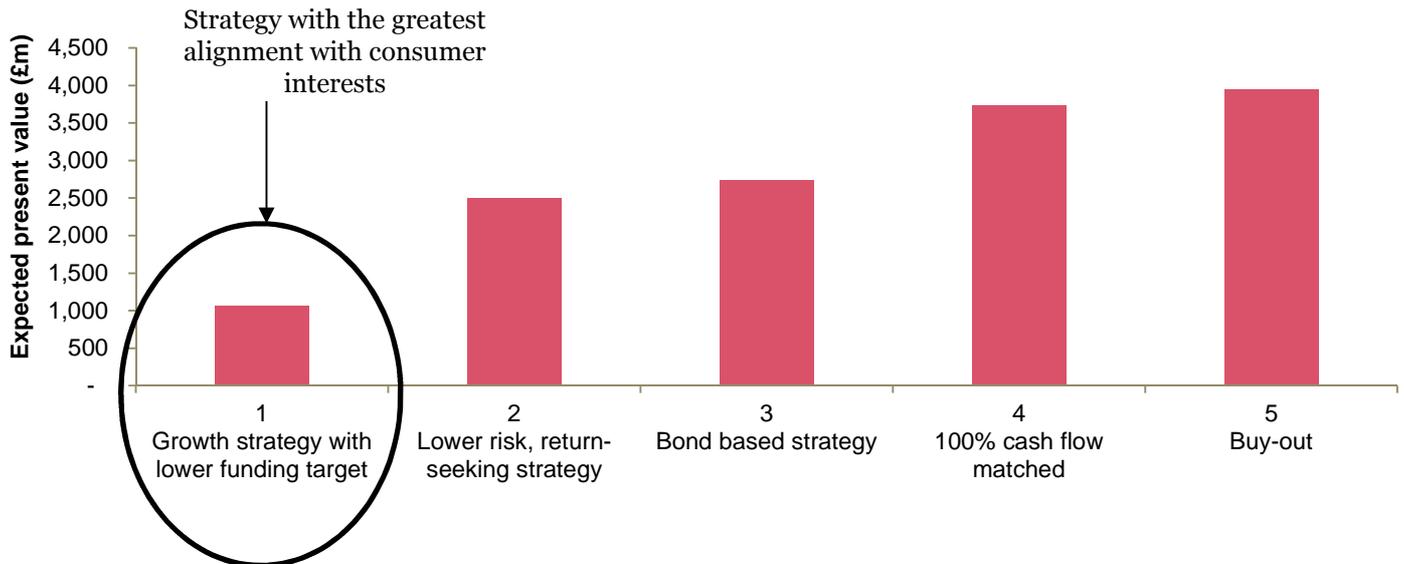
2.2 Rationale (Cont'd)

2.2.5 Expected net present value

The table below shows a sample of the results of the analysis (see report titled 'Determining the optimal strategy').

In summary, the pensions strategy which best represents the interest of electricity consumers has the lowest expected net present value after discounting using the

risk-adjusted social discount rate and allowing for the full distribution of outcomes under each of these strategies analysed.



Strategy	Description
1 Growth strategy with lower funding target	<p>First 20 years: 50% equity 30% buy and maintain corporate bond portfolio 20% Gilts and LDI <i>trending to</i></p> <p>After 20 years (funding target GY+0.5%): 70% buy and maintain corporate bond portfolio 30% Gilts and LDI</p>
2 Lower risk, return-seeking strategy	<p>First 20 years: 40% diversified growth 40% AA-rated corporate bonds 20% Gilts and LDI <i>trending to</i></p> <p>After 20 years (funding target GY+0%): 100% Gilts and LDI</p>
3 Bond based strategy	<p>First 20 years: 75% AA rated corporate bonds 25% Gilts and LD</p> <p>After 20 years (funding target GY+0%): 100% Gilts and LDI</p>
4 100% cash flow matched	100% Gilts and LDI
5 Buy-out	Buy annuities

2.2 Rationale (Cont'd)

2.2.6 Additional validation of the most efficient strategy

While the main determinant of the most efficient strategy from a consumer perspective is the strategy with the lowest overall expected present value, each of the strategies from the long-list was tested against consumer interest criteria which emerged from the primary research (see report titled “Determining the optimal strategy” for full detail). In summary, the most efficient strategy also satisfied consumer preferences around potential year on year variability (i.e. less than £10 per year for each consumer), lack of short-term cost increases (compared to a number of the other strategies) and ranked low in the test for the likelihood of a trapped surplus largely arising as a result of high contributions.

In addition, the most efficient strategy was also well within UK norms when compared to the UK population of defined benefit schemes.

2.2.7 Implications for pension scheme de-risking

The usual rationale for de-risking a pension scheme is that while there is a cost premium in the short-term there is a long-term benefit from lower contributions and lower volatility.

When multiple generations of consumers participate in pension scheme governance by taking responsibility for

pensions cost and risk, the primary research and academic evidence has shown that the results of the cost-benefit analysis can be different to that normally observed. Specifically, the various de-risking strategies analysed did not align well with consumer interests and, therefore, would need to be amended and re-tested against the consumer interest criteria in order to demonstrate an improved alignment with consumer interests.

2.2.8 WPD's consumers' preferences vs. UK consumer preferences

An important component of the research was to assess the preferences of WPD's consumers as well as those of the UK population as a whole. Given the diverse geographic spread of WPD's region it was anticipated that the preferences of WPD's consumers would be aligned with those of the UK as a whole (and if not it would be important to be able to explain the reasons why if this resulted in a pensions strategy which represented interests different to those of UK consumers as a whole).

The results of quantitative research¹ showed that WPD's region was aligned with UK consumer preferences as a whole and this was further validated by focus groups involving WPD's specific consumers.

¹ 1,006 domestic and 1,005 business electricity consumers participated in the research in April 2016. Responses achieved were statistically representative of the demographic profile of the target population across England, Scotland and Wales. The confidence interval (margin of error) is +/-4% at a 99% confidence level at the full base of 1,006 for domestic consumers and the full base of 1,005 for business customers.

2.3 The future

Through the primary research a number of themes emerged which may influence how WPD and the industry as a whole may act in the future in relation to the increasing challenge posed by increasing pensions costs.

The three themes are as follows:

- Firstly, there was a strong preference from consumers that they should not be expected to pay costs which could be avoided by efficient management action.

“ I am not willing to pay more. My parents didn't. ”

(Domestic consumer, Age 18-50,
Income <£20k, Cardiff)

“ That would be a no brainer, if they could reduce pension costs and reduce the amount we pay. ”

(Small business consumer,
<£1m revenue, Nottingham)

- Secondly the quantitative analysis confirmed a strong preference for transparency relating to elements of the electricity bill and in the focus groups both domestic and business consumers specified a strong preference for some form of breakdown of costs.

“ A simple illustration like a pie chart that is easy to consume. We don't want to read lots of text. ”

(Large business consumer,
£1m+ revenue, Birmingham)

“ It is around a fifth of your energy bill that you are actually paying to the DNO so it would be nice to know exactly where it is going. ”

(Domestic consumer, Age 35+,
Income <£40k+, Nottingham)

- Thirdly, as the research commenced and the awareness of the pensions challenges of DNOs increased there was increased acceptance of bill variability as a result of pension costs (see Section 4.5.2 of report titled 'Investigating UK electricity consumer preferences for bearing DNO pension cost and risk').

As a result of these themes both WPD and the industry as a whole will benefit from increased levels of meaningful and specific consumer engagement in the future. The results of this research have demonstrated that from a consumer interest perspective, the most efficient pensions strategy currently is one which has some exposure to the variability (and potential upside) from return-seeking assets. While this strategy may be appropriate today, the conclusions may be very different in (say) 20 years' time if for example this strategy then fell outside of UK norms. If the industry is to successfully navigate the increasing defined benefit pension challenges while continuing to meet consumer acceptability for their business plans then it will need to build on this research and demonstrate that consumers' interests are a key driver in the decision making process on pension strategy.

Notes

Notes

This document has been prepared only for Western Power Distribution and solely for the purpose and on the terms agreed with Western Power Distribution in our agreement dated 18 September 2015. We accept no liability (including for negligence) to anyone else in connection with this document.

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