

# Albourne Real Assets

NCRS Energy Review

# Albourne's Client Profile and Real Assets Group

*"We can add significant global leverage to your investment team. The quality and breadth of our client base is pivotal to this leverage."* David Harmston, Head of Client Group



Clients\* **262**

Estimated amount our clients have invested in alternative investments\*\*

over **\$350bn**

## Public Pension Plan

Teacher Retirement System of Texas  
The Missouri Education Pension Trust  
Utah Retirement Systems

## Corporate Pension

Cargill Inc. and Associated Companies Master Pension Trust (including Foundation)  
RHM Pension Trust Limited  
VCG Investment Management

## Family Office

Ferd Group  
Okabena Investment Services, Inc.  
Waycrosse Inc

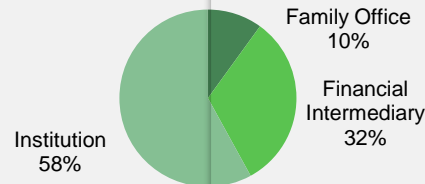
## Endowment and Foundation

Regents of the University of California  
University of Texas Investment Management Company (UTIMCO)  
Wellcome Trust

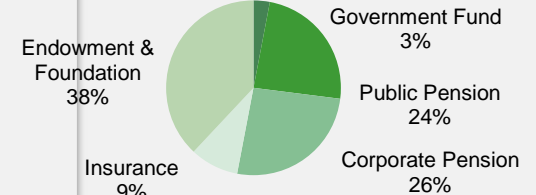
## Clients accessing research†

Hedge Funds	262 clients
Private Equity	56 clients
<b>Real Assets</b>	<b>27 clients</b>
Real Estate	23 clients
Dynamic Beta	10 clients

## Clients by Type



## Institutions by Type



\*This is the aggregate number of client entities for the Albourne Group worldwide. Clients may be subscribed to multiple services.

\*\*This estimated figure was calculated by aggregating the estimated investments in alternatives investments of all of the clients of the Albourne Group entities worldwide, using public sources where possible.

†The table reflects the total number of Albourne Group clients who access research in each specified class by contractual agreement (i.e., via subscription, exchange of credits or purchasing a report)

The client list is a partial sampling of Albourne's client universe. In accordance with the SEC's requirement for an objective methodology for partial client lists, these clients are the three largest in each category, using what Albourne believes to be their AUM in hedge funds as the criterion and omitting only those requesting anonymity. It is not known whether the listed clients approve or disapprove of the services provided by Albourne.

All figures are as of 1 Jan 2015

# NCRS Resources and Interactions

Team

Universe

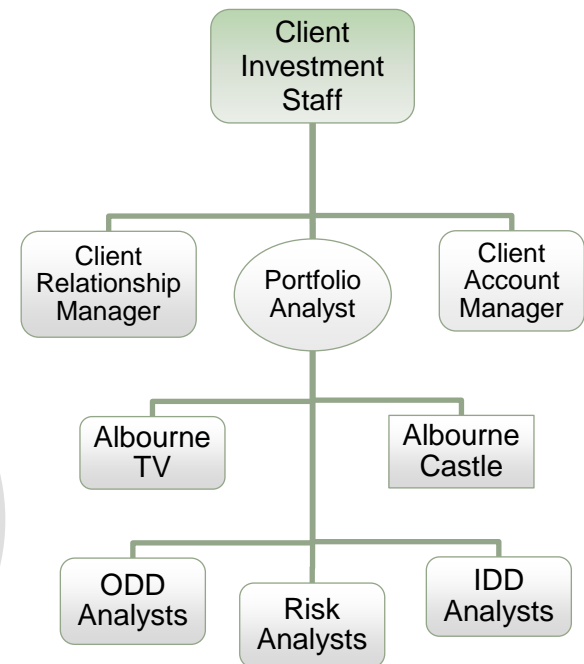
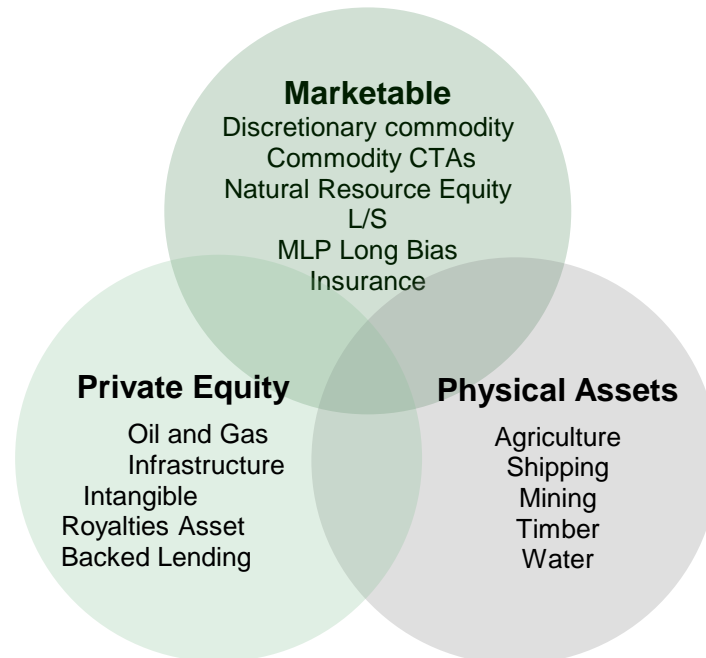
Interaction

**6 Dedicated Real Assets Analysts**

**15 Shared\* Real Asset Analysts**

**Multi-Asset Class Analysts**

51 ODD  
25 Portfolio  
33 Risk



\* This includes members of the Private Equity and Real Estate team.

# Oil Dislocation – How did we get here?

*Understanding how we got here is important to determine where we are going and what path we should take.*

## **Remember Peak Oil? – it depends on the definition**

Regional peaks - in the US estimated 1970 Global peak keeps getting moved back (2020-2025)

## **So why is oil at \$50 not \$150?**

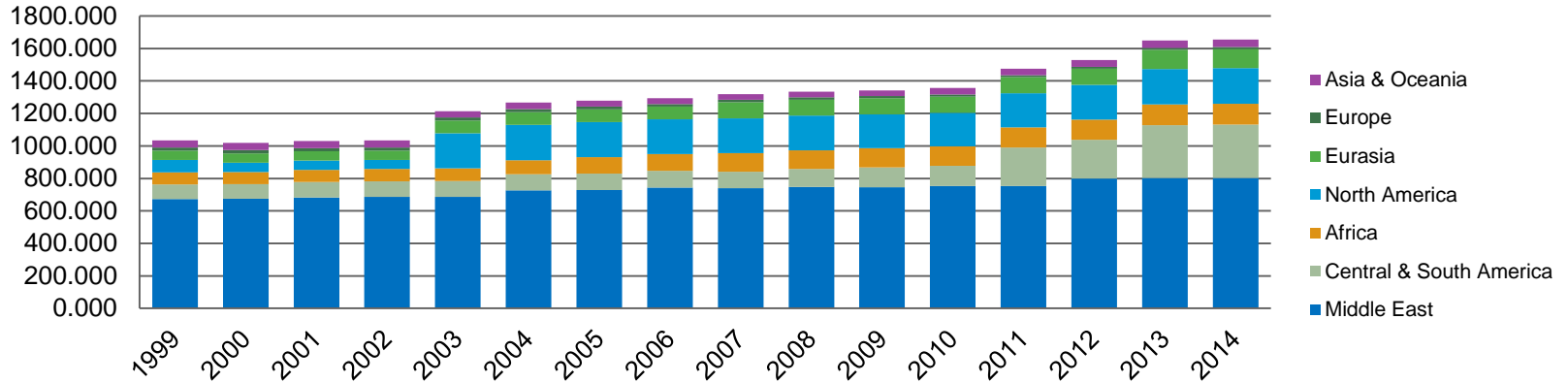
It has gotten complicated but a short answer would include “Marginal Price”, “Price Curves”, “Displacement and Substitution”, and even “Politics”.

Energy has moved through a disruptive period of development. (This will likely not be the last regime shift) so comparative metrics would be 1999 to present.

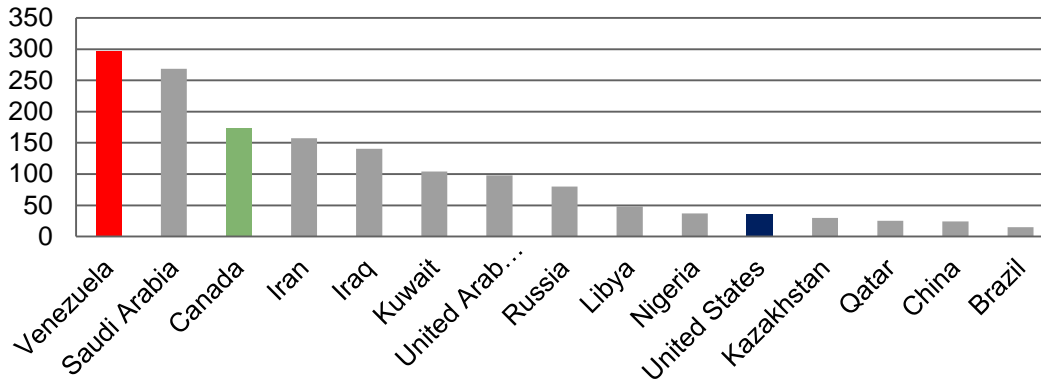
Examining **Reserves**, **Supply**, **Stocks** and **Demand** explain part of the story but marginal movements are potentially disruptive, increasing volatility in the sector.

# Global Reserves

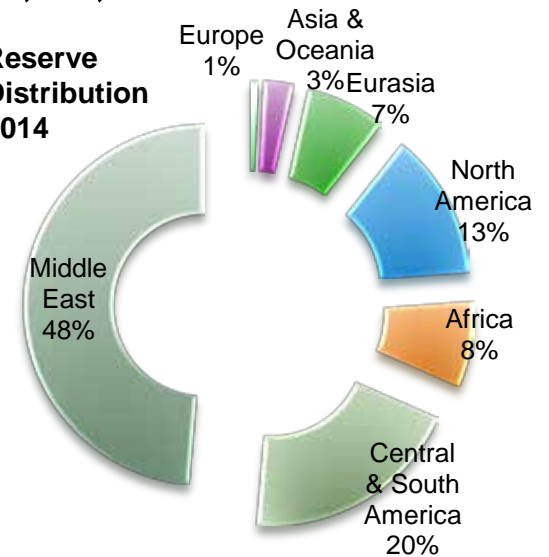
## Crude Oil Proved Reserves (Billion Barrels)



## Country Reserves 2014 (Top 15 at 92%)



## Reserve Distribution 2014



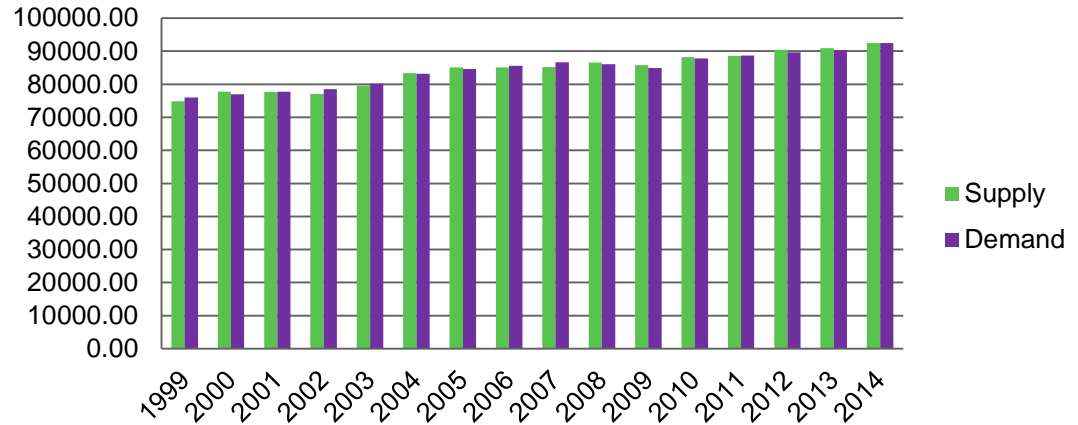
# Supply and Demand Equilibrium

Supply has grown at an average of 3.4% since 1999

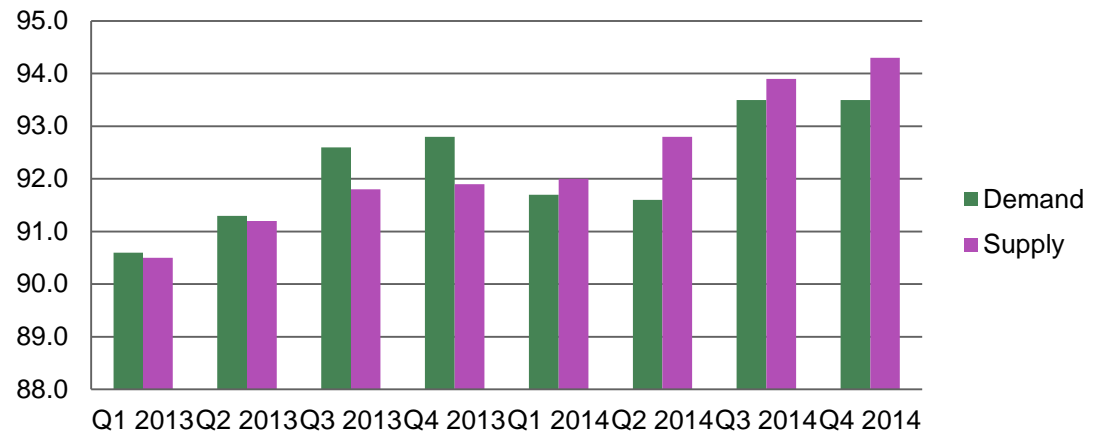
Since 1980 global consumption has increased at an average pace of 1.3%. Since 1999 it has grown at an average pace 1.32% in line with its longer run average.

The tipping point was July 28, 2014 at \$105.68 closing price. By July 31, 2014 oil closed at \$98.23 signaling the start of the decline with the current low set Jan 28, 2015

## Supply and Demand 1999-2014



## Quarterly Supply / Demand 2013-2014



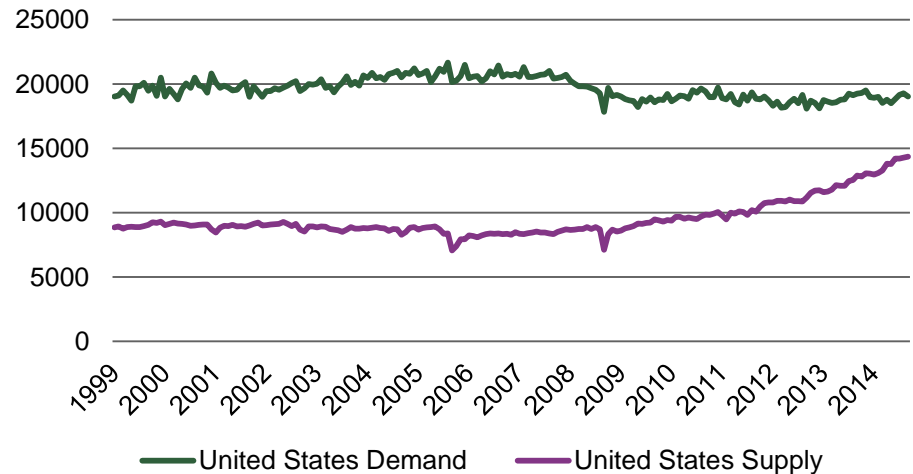
# Supply and Demand Displacement

The US has grown supply by 52% since 1999 at an average annual increase 3% with recent (Shale) increases since 2009 averaging 8.2% (it is expected to have the **ability** to grow at this rate for another decade, production was in decline from 1999 – 2008.)

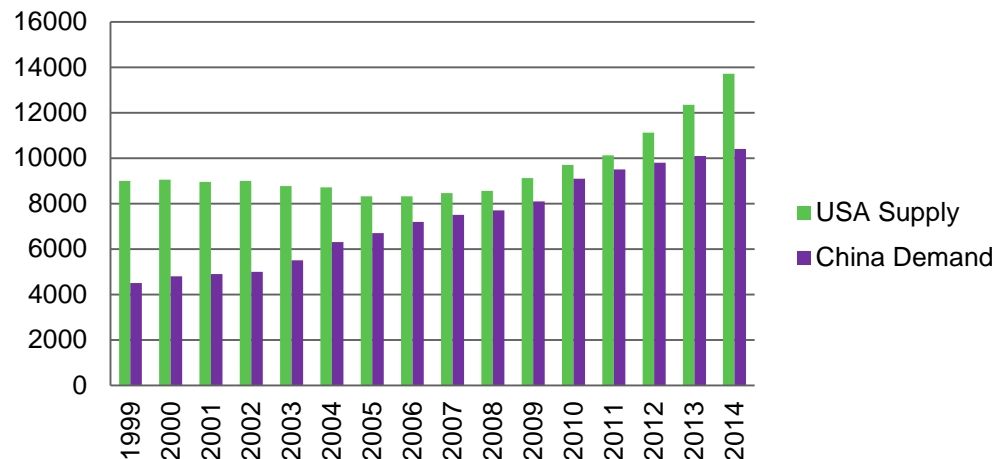
China demand has increased 5.9% on average since 1990 but slowed to 5.6% since 1999 and more recently at 3.1% BUT still only consumes 50% of that of the US

On a per barrel bases the US has exceeded its supply growth relative to China demand growth by over 1.5 mb per day on average since 2009 as its own consumption has remained flat to negative (19.3mb 2009 – 19.1mb 2014) (**displacement**)

## US Supply and Demand



## US Supply to China Demand



# The Shape of the Recovery

## Economics meets Politics

**U** – Implies a return to the historic price path

**W** – Implies adjustment before a return to the historic price path

**L** – Implies an adjustment and new price path

Social breakeven has been debated by many market commentators with a wide range of figures and perceived implications. It is an estimate of the revenue (price) needed to fund social programs in nations dependent on oil revenue.

Marginal Production Cost <sup>*1</sup>			Social Breakeven <sup>*2</sup>
Russia	Arctic	120	<b>98</b>
	Onshore	18	
Europe	Biodiesel	110	
	Ethanol	103	
Canada	Sand	90	
Brazil	Ethanol	66	
	Offshore	80	
United States	Deep-water	57	
	Shale	73	
Angola	Offshore	40	
Ecuador	Total	20	
Venezuela	Total	20	<b>117</b>
Kazakhstan	Total	16	
Nigeria	Deep-water	30	<b>122</b>
	Onshore	15	
Oman	Total	15	
Qatar	Total	15	<b>60</b>
Iran	Total	15	<b>130</b>
Algeria	Total	15	<b>131</b>
United Arab Emirates	Total	7	<b>77</b>
Iraq	Total	6	<b>100</b>
Saudi Arabia	Onshore	3	<b>106</b>

DATA Sources:

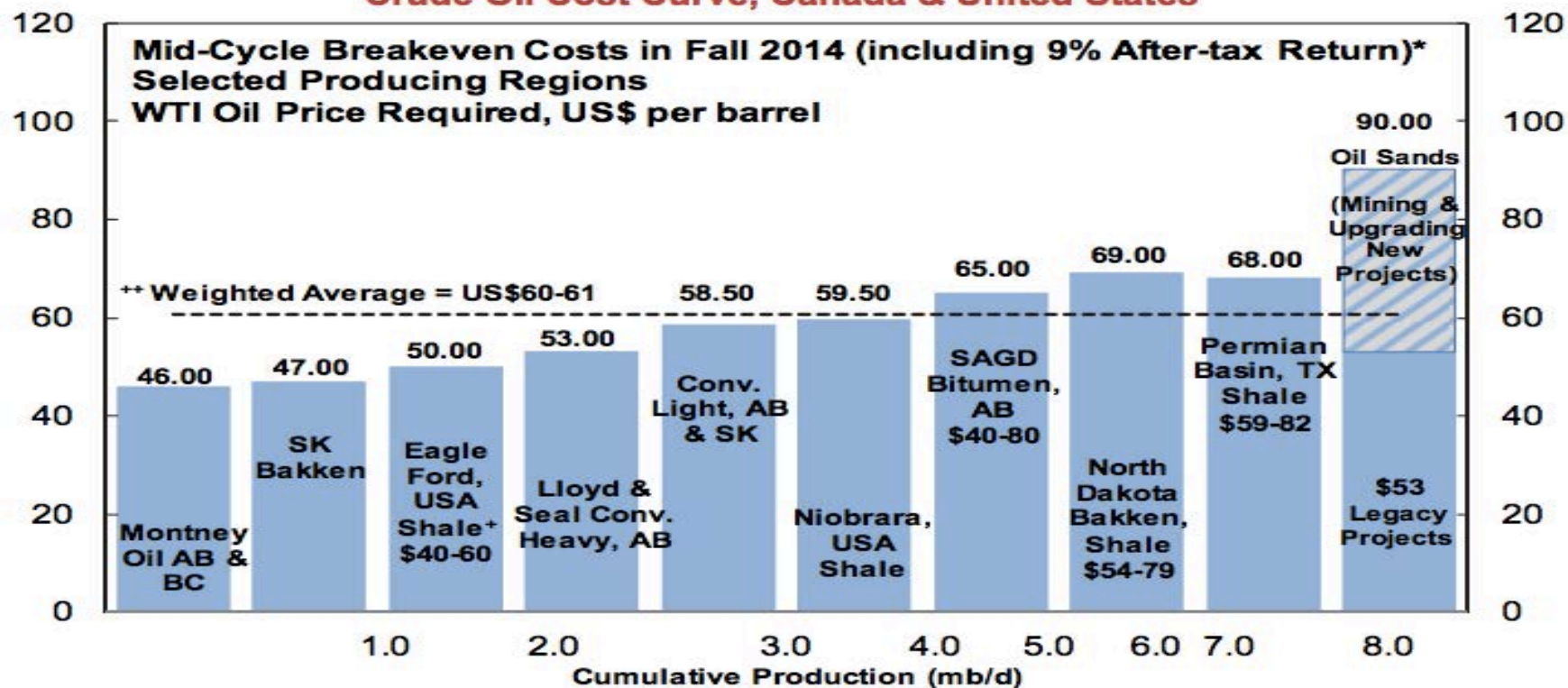
1 - US Energy Information Administration

2 - CNBC Online Interview



# North America as a Swing Producer

## Crude Oil Cost Curve, Canada & United States



\* Excludes 'up-front' costs (initial land acquisition, seismic and infrastructure costs): treats 'up-front' costs as 'sunk'. Rough estimate of 'up-front' costs = US\$5-10 per barrel, though wide regional differences exist. Includes royalties, which are more advantageous in Alberta/Saskatchewan.

+ Liquids-rich Eagle Ford plays, assuming natural gas prices of US\$3.80 per mmbtu.

++ Weighted avg. = US\$60-61 including existing Integrated Oil Sands at C\$53 per barrel.

Saudi Arabia: US\$10-25 per barrel.

Data source: Scotiabank Equity Research and Scotiabank Economics.

# Deployment is Path Dependent

U

OPEC remains on current path  
US increases contractual production – then waits  
Canada and Brazil take a capital approach – no new projects  
Conflicts have no disruptive influence  
Global growth catches up to supply

**BETA**

W

Social Breakeven plays into some OPEC production decisions  
Low prices spur global growth increasing demand  
Prices respond to mid 60s  
Shale responds to extend contractual production  
Soft recovery falters and OPEC retrenches  
Natural demand balances catch up

**Alpha**

L

OPEC remains on current path  
Forces cost adjustments in NA production  
Technology compensates in high cost production  
High social breakeven increases production to match demand growth  
Political influences prevail in SA

**Tactical**

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