

3rd IEF-KAPSARC THOUGHT LEADERS' ROUNDTABLE

**Post Paris Agreement: A World of Peak Oil
Demand**

Strategies for Negotiating the Transition

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February 16th, 2017

A World of Peak Oil Demand?

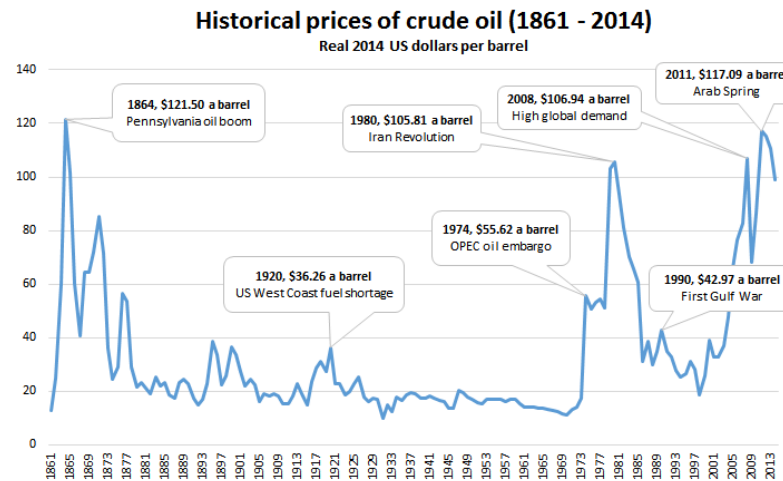
CONVENTIONAL WISDOM SUGGESTS A SMOOTH TRANSITION!

Established economic theory suggests that the ‘scarcity rent’ of exhaustible natural resources, price minus marginal cost, will increase at the rate of interest until the price rises so high that substitutes become attractive alternatives. The owner of the resource, oil company, or government, will be indifferent between extracting the last marginal unit now, or at some point in the future.

Source: Hotelling, H., “The Economics of Exhaustible Resources”, Journal of Political Economy, 39(2):137-75. (Hotelling, 1939)

HISTORY SUGGESTS BOOM AND BUST...

In fact, crude oil prices would appear to follow a boom and bust trajectory, and frequent periods of volatility, with prices rising and falling according to the dictates of supply and demand.



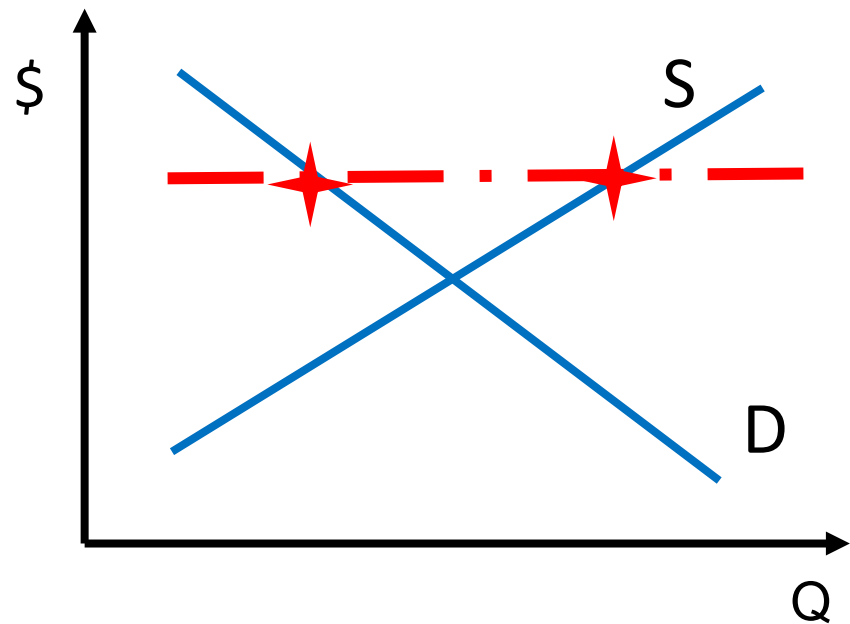
Source: Global Petrol Prices, 2015

Source: BP Statistical Review of World Energy 2015

Meeting Our Paris Obligations

What would it take to implement a reduction in crude oil demand sufficient to meet Nationally Determined Conditions and 2⁰ C reduction target?

Given an elasticity of crude oil demand in the range of 0.2 to 0.3
–a 10% increase in price will reduce demand by 2-3 percent in 20 years.

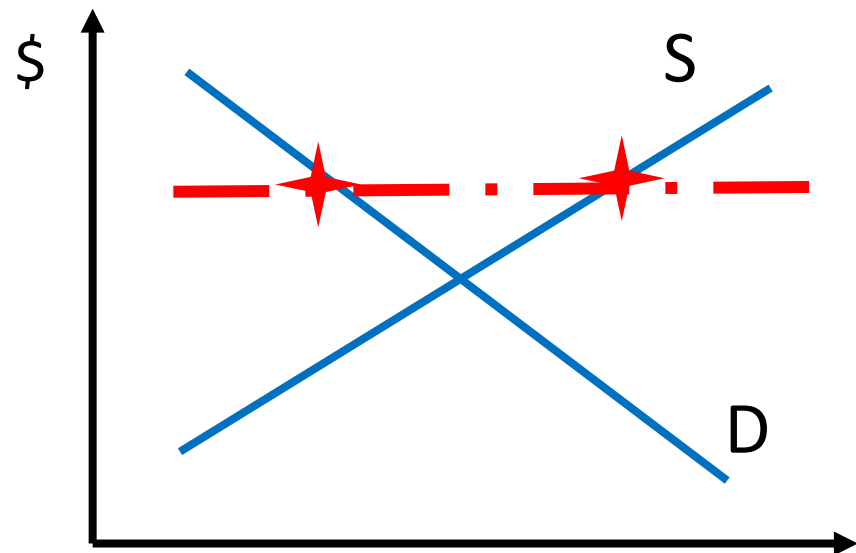


Source: James D. Hamilton, *Understanding Crude Oil Prices*, Department of Economics, University of California, May 22, 2008.


Meeting Our Paris Obligations

OOPS Forgot About Supply!

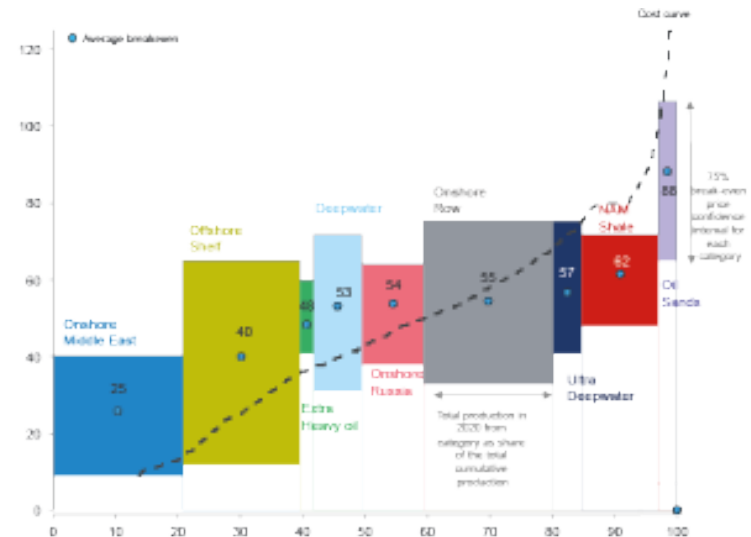
As oil prices rise to reduce demand,
so do crude oil supplies.



Meeting Our Paris Obligations

What would it take to implement a reduction in crude oil supply sufficient to meet Nationally Determined Conditions and 2⁰ C reduction target? 

Given the world marginal cost curve for crude oil- a 10 percent reduction in price will reduce crude oil supplies significantly.



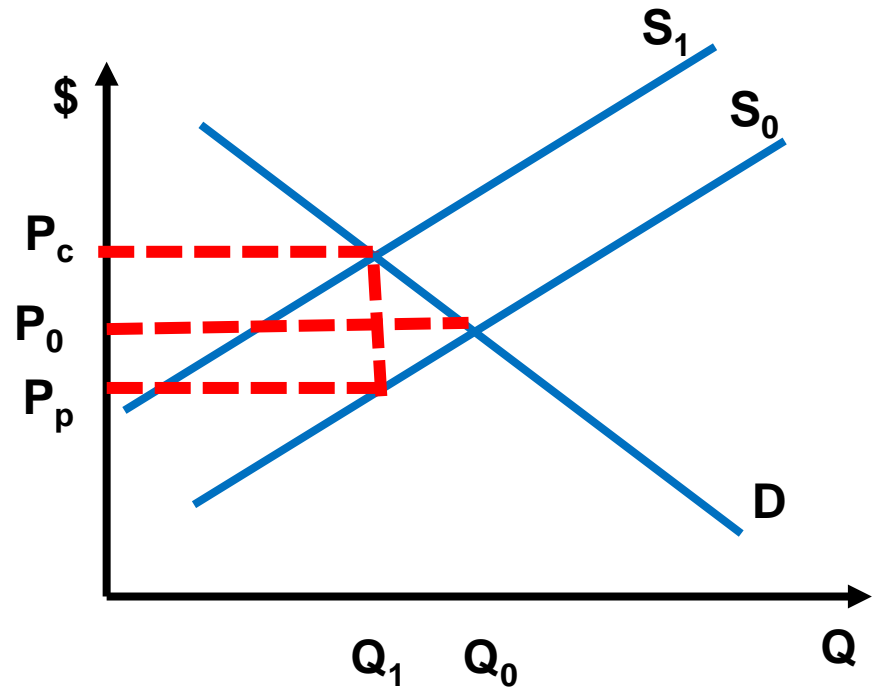
BUT IT WILL ALSO INCREASE DEMAND!

Source: <http://www.voxeu.org/article/2014-oil-price-slump-seven-key-questions>, Rystad Energy research and analysis

Meeting Our Paris Obligations

To balance markets, it will be necessary to implement some kind of policy—such as a tax on the production of crude oil supplies, or subsidy for renewable energy.

After imposing the tax the supply Curve shifts up and to the left.
Consumers pay P_c , producers get P_p .



Strategies for Negotiating the Transition: A Rocky Road to Transformation

- 1. Option #1 Cartel—Suppliers get together to reduce supply**
 - Hard to negotiate, not practical in the LT
 - Illegal in some countries.
- 2. Option #2 Domestic Subsidies--Subsidize industry in producing nations**
 - Ban exports, tax imports and provide cheap energy to domestic companies.
 - Bubble economies, distortions, and consequent tensions in global trade.
 - Faced with this options countries might be persuaded to take off carbon taxes, and other policies effectively giving up on climate change.

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3. Option #3 Impose Border Adjustments and Protectionist Policies

- **Reduce world trade resulting in a great recession.**
- **Falling asset prices and risk of financial fallout**
- **Falling demand for crude oil supplies, and further reductions in crude oil prices**

The Allocation of Rents: Who are the Winners and Losers?

The range of outcomes of this energy transformation is as wide as it is uncertain.

1. Will Canada see its crude continue to be exported to the US—or will the carbon tax effectively lock it out of world markets?
2. Will Sovereign wealth funds reduce their holdings of certain financial assets—laying the framework for financial and economic crisis?
3. Will the Rise of Protectionist policies, and nationalist politicians result in a reduction in freight and maritime demand for crude oil and petroleum products?

Where to Now?

The world of tomorrow will be the sum the multiple pathways and policy choices taken by societies and governments.

Over the next 6 months KAPSARC will be running a series of Workshops designed to investigate a range of outcomes for this energy transition. The purpose of these workshop will be to run a number of experiments, or games, to simulate actual conditions on world oil markets.

Workshops will be held in The Netherlands, Dubai, the UK and Saudi Arabia, with a joint study to be released in 2017.

Thank You!

We would like to thank the IEF for hosting and arranging the 3rd Annual IEF-KAPSARC THOUGHT LEADERS' ROUNDTABLE

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