



Strategies for refining and petrochemicals

Tufan Erginbilgic

Chief executive, Downstream

World Petroleum Conference, Istanbul, Turkey

11 July 2017





Introduction

Thank you John and good afternoon everyone.

Istanbul is a good venue for these discussions - and not just because it's my home city.

A lot is happening here that reflects the big global energy trends.

I want to spend a few minutes on those main trends first - as we see them in BP - and then I'll talk about what I think this means for refining and petrochemicals strategies.

Global trends

The main trend is that energy demand is going up - I think we all expect that.

In BP we think the most likely path will be around 30% higher demand for primary energy by 2035.

That means growth for both refined products and petrochemicals.

How to take advantage of that growth depends on how you position yourself.

Demand trends

On the demand side there are multiple trends to be aware of - in geography, in low carbon, in policy.

Geographically, almost all the increase in demand is going to come from fast-growing economies in the East - from China in particular and India as well.



We expect 2.3 billion cars and trucks on the road by 2035 - nearly double the number today.

Air traffic is doubling over the next 20 years, with demand for aviation fuel going up at 1.5% a year.

And petrochemicals demand has been growing above GDP since 2010 and we expect that to continue.

Together these trends are contributing to an extra 15 million barrels a day of liquids demand in 2035 by our forecasts, met by refined products, petchems feedstocks and bio.

That figure would be significantly higher without the damping effects of efficiency gains and the transition to lower carbon.

Engines, processes, buildings are getting more efficient.

Products are getting more fuel efficient.

The bio content in products and feedstocks is increasing.

All of which contribute to lower carbon emissions.

And a different aspect of environmental policy is emissions from ships, with new regulations coming into force reducing the sulphur content of fuel oil.

I think we can expect to see this having an impact on crude and product differentials as we get closer to the 2020 implementation deadline.

Supply trends

Those are all trends on the demand side.

On the supply side there are two big trends to mention.

The first is the location of feedstock supply growth. As we are seeing in North America we have US light tight oil and NGLs; and Canadian heavy crude all growing. This has an impact on feedstock costs in two ways

- on crude differentials for refining
- and on feedstock choices for petchems.

The second supply side trend is where manufacturing investment is being made. Most new refining capacity is being built in the Middle East and Asia, close to demand growth. While, new Petchems capacity is mixed with capacity being built in the US and Middle East close to feedstock supply; and in Asia, and specifically China, close to the demand growth.

Both of these are having an impact on trade flows, and will increasingly do so.

Technology and digitization

One further trend - and probably the biggest - is the pace at which technology and digitization is advancing, transforming production, demand, manufacturing, marketing and consumer behaviour.

Strategic considerations

So those are the main trends - what about the strategic considerations that arise from those trends?

There are three I want to mention, very briefly.

Feedstocks

The first is feedstocks.

In refining, we continue to see a feedstock advantage for North American refining runs through growth in US light tight oil and Canadian heavy, and this is enabling them to export product competitively.



In terms of new investment in refining, this is mainly concentrated east of Suez, closer to centres of demand growth - taking us to a world where over 50% of refining runs will be in the Middle East and Asia by 2030.

In the case of the Middle East, this refining capacity is close to growing crude production, and is competitive for supplying product into Europe.

In petchems, the investment options include feedstock considerations such as NGLs in the US against LPGs, naptha, coal and others in Asia - with technology advantages a part of that consideration.

We see the demand growth for final petchems products mainly in Asia.

So, you also have the integration of midstream and trading capability to consider as part of that choice to locate near to feedstocks or near to demand centres.

Low carbon transition

The second big strategic consideration we see is the low carbon transition.

In fuels and petrochemicals there is a big role to play in advancing this transition.

As well as improving energy efficiency in our operations, in BP we already have a whole range of products that are lower carbon

- either by being more fuel efficient
- or having more bio content in feedstocks or final products,
- or through offsetting, where we have over 10-years' expertise.

Our high-street example is our Ultimate fuels with ACTIVE technology, which significantly improves fuel efficiency.

And in aviation we've taken a leading position in biojet.



We were the first in putting biojet direct into the fuelling system, which we are doing at Oslo Airport. And we're investing in a biofuel start-up in the US that is turning solid waste from cities into low carbon aviation fuel.

We're also interested in biopolymers and bio polyesters, and getting more bio feedstocks into our refineries.

Reducing the sulphur content in marine fuel oil is driven by a different environmental concern, and likely to have impact on crude differentials and the relative value of products. This may offer an opportunity, if you have the capability and the agility to optimize.

Technology and digitization

The third key strategic consideration is technology and digitization, and how you use this capability.

A good technology example is our advanced PTA technology.

Compared with conventional technology, our plant in Zhuhai in China produces 65% lower greenhouse gas emissions, as well as 75% lower water discharge and 95% lower solid waste.

We use this technology to produce a low carbon PTAir brand which has environmental benefits and also gives us a cost advantage over conventional technologies.

I'm going to single-out digitization as the really transformational force in the years ahead and we are really focused on that

- For planning and monitoring the progress of maintenance and turnarounds.
- For inspections and remote monitoring, where we're already using drones
- For improving personal safety, by improving awareness of where our people are and what they are doing



- And for predictive analytics to improve reliability and anticipating issues before they become problems.

The ambition is to be a fully data-enabled business where we can access, report and develop insights faster and seamlessly without the need for manual intervention or the generation of reports.

This is an area of rapid change with much more on the way and we are only just beginning to see and realize the possibilities.

Competitiveness and growth

To sum up, the fundamentals of the downstream environment are changing faster than at any time I can recall.

That includes changes in supply and demand, in consumer preferences and the low carbon transition - and with the influence and possibilities from technology and digital.

While demand for our products is rising, the environment for both refining and petchems remains challenging - so we need to be highly competitive.

In refining, that means having top quartile net cash margin capability, which is where we are now in BP.

In petrochemicals, which is cyclical, resilience comes from reducing the cash break-even, and we are doing that. We expect our cash break-even to be 40% lower next year compared to 2014.

So I believe there are real opportunities to be successful.

But you need certain qualities:

- You have to be highly competitive - and able to maintain high performance.
- You have to have the right capabilities - in your people and in technology



- And you have to be agile, to react and adapt at speed, given the pace of change.

Put all those together in the right order to match the strengths of your business and you have a strategy for success.

Thank you