



# **Verksamhetsberättelse 2008**

Hanna Paradis  
Kristina Haraldsson  
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## **Förord**

Nätverket Olja & Gas har sedan starten 2001 arrangerat ett antal seminarium per år i syfte att skapa en plattform för utbyte och diskussioner kring frågor relaterade till de fossila bränslena. Seminarierna har varit uppskattade med många intressanta talare och givande diskussioner. Nätverket har under året fått cirka 70 stycken nya medlemmar. Det är glädjande att se att nya medlemmar kontinuerligt ansluter sig till nätverket.

NOG har under 2008 arrangerat sex stycken seminarier. Dessutom genomförde nätverket två stycken partnerträffar, en i samband med första seminariet den 31 januari och en i samband med det fjärde seminariet den andre oktober. Medverkade gjorde nätverkets näringslivspartners och medlemmarna i NOG:s programråd. I början av november anordnades en studieresa till Wien med syftet att besöka internationella organisationer som har sitt säte i staden. Lyckade besök genomfördes hos OPEC, IIASA, IAEA och det österrikiska energibolaget OMV.

På NOG:s hemsida finns referat och presentationer från de seminarier och studieresor som nätverket anordnar. Kalendarier uppdateras kontinuerligt med datum för och information om kommande seminarier och det finns dessutom information och nyheter kopplat till olja, gas, kol och andra energirelaterade ämnen.

Nätverkets huvudfinansiärer är:

Energimyndigheten  
Myndigheten för Samhällsskydd och Beredskap (MSB)  
Ångpanneföreningens forskningsstiftelse (ÅFORSK)

Partners under 2008 var:

E.ON  
Fortum  
Göteborg Energi  
Nynas  
Preem  
SAAB International  
Shell  
StatoilHydro  
Vattenfall

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## Nätverkets inriktning och syfte

### Bakgrund

De fossila bränslen och särskilt oljan har en avgörande betydelse för landets energiförsörjning trots de satsningar på alternativ för att minska importberoende och värna miljön som skett under de senaste decennierna. Oljans funktion i samhället är flerfaldig; råmaterial till petroleum- och plastindustrierna, och till drivmedel. Alternativ i form av t.ex. förnybar el i plug-in-hybrider eller biodrivmedel finns men ännu inte i någon större utsträckning i volym och utbyggd infrastruktur. Inom överskådlig tid kommer de fossila bränslen fortsätta att vara nödvändiga för Sveriges energiförsörjning.

### Nätverket har två övergripande syften

Vårt samhälle och välfärd är starkt beroende av tillgång på energi i olika former. Kunskap om alla tillgängliga energiförsörjningsalternativ är således i högsta grad en riksangelägenhet.

### Syfte 1: Underlag för en bred energipolitisk debatt

Nätverket skall bidra till att ta fram objektivt underlag för en bred energipolitisk debatt. Det är nödvändigt att oljans och gasen betydelse för viktiga samhällsfunktioner är känd och att värdefull kunskap om olja, gas och kol bevaras och utvecklas. Det gäller även i rådande situation då samhällets fokus sedan många år varit helt inriktad på förnyelsebara energikällor. De olika energislagen låter sig olika lätt substitueras. Det handlar om såväl betydande kostnader som det faktum att vissa förändringar tar betydligt längre tid än andra. De tillgängliga alternativens tekniska möjligheter och de kostnader som förknippas med dem måste bli kända. Detta gäller även hushållnings- och besparingsalternativens praktiska och ekonomiska konsekvenser. Förändringarna i teknik och infrastruktur måste bevakas.

### Syfte 2: Försörjningstrygghet och beredskap

Sårbarheten hos det moderna samhället diskuteras normalt endast sporadiskt. Störningar i elförsörjning och telekommunikationer blir varje vinter ett flitigt diskuterat ämne i samband med snöfall främst i landets sydligare delar. Däremot tas den underliggande tillgången på energi för given. Internationella kriser kan dock rubba energisystemet i grunden. Trender i energiefterfrågan liksom såväl förutsebara och oförutsebara förändringar i utbudet kan påverka oss på ett avgörande sätt. Möjligheten för att vi skall få uppleva allvarliga störningar i energisystemet kan inte uteslutas. Nätverket skall således verka för att beredskapsfrågorna inom energiområdet lyfts fram och diskuteras. Framsynthet är viktigt och kräver att en aktiv omvärldsbevakning och analys bedrivs och kommuniceras. Riskerna för energikriser bör belysas på ett ickealarmistiskt sätt så att det skapas en förståelse för behovet av beredskapsåtgärder. Energiberoendet och sårbarheten liksom även lösningarna på problemen delar vi med övriga EU-länder varför det är nödvändigt att diskutera beredskapsfrågorna ur ett EU-perspektiv.

Stockholm, januari 2009

## Seminarier under 2008

Under 2008 har sammanlagt sex stycken seminarier anordnats. Teman har valts efter de frågor som har varit aktuella under året, bland annat har konsekvenser, både ekonomiskt och politiskt, som följd av olika nivåer på energipriserna återkommit två gånger under året. Titlarna för årets seminarier har varit:

- Drivkrafter för oljepriset
- Östersjöns betydelse för regionens energiförsörjning
- Security of Energy Demand vs. Security of Energy Supply – How to Maintain a Dialogue between Producers and Consumers of Oil and Gas?
- Effekter av höga energipriser på ekonomi och politik
- Kinas energiförsörjning – idag och imorgon
- Caucasus and the Caspian Region

Nedan följer korta sammanfattningar av seminarierna. För seminariernas referat i fullängd, se Appendix A – F.

### **Drivkrafter för oljepriset**

#### **080131**

Under 2007 steg marknadens oljepris med nästan 60 procent. Oljepriset var under 2007 nära men inte över den ”magiska” nivån 100 dollar per fat. Strax efter nyår ändrades dock detta. Det finns naturligtvis inte en enda orsak till höga oljepriser utan det finns ett flertal bakomliggande faktorer som ökande efterfrågan, begränsad uppströmskapacitet och kapacitet för raffinaderier.

Vid NOG-seminariet i januari behandlades mekanismerna bakom marknadens oljepris. En översikt av drivkrafterna bakom priset liksom aktörerna på marknaden togs upp. Under de senaste åren har det tillkommit nya aktörer på marknaden och konsekvenserna av deras marknadsinträde diskuterades. Hur fungerar en oljebörs? Andra aspekter som behandlades vid seminariet är balansen mellan ”fundamentals” och terminer, prissättning och integritet vid prissättning.

### **Östersjöns betydelse för regionens energiförsörjning**

#### **080417**

Årligen transporteras ca 800 miljoner ton gods över Östersjön och omkring 60 000 fartyg trafikerar innanhavet. På Östersjön transporteras inte minst en stor del av energisektorns behov av olja och andra råvaror. Trenden för transporter på Östersjön är uppåtgående och den största tillväxten ses i Ryssland med hamnarna i St. Petersburg och Primorsk. Förutom transporter råder det även andra energirelaterade aktiviteter inom regionen, bl.a. gasprojekt och provborrningar efter olja.

NOG-seminariet den 17 april 2008 belyste Östersjöns betydelse för regionens energiförsörjning. Först presenterades regionen ur ett historiskt perspektiv, med relationer länderna sinsemellan och kulturella skillnader åskådliggjorda. Det gavs en översikt av dagens transportrörelser av fartyg över Östersjön och statistik om energisektorns transporter med typen och mängd av varor och berörda hamnar. En annan aspekt kring svensk energiförsörjning togs upp i samband med en presentation om planerade provborrningar efter olja i Östersjön. Vid seminariet presenterades även några av våra grannländers syn på transporter på Östersjön. Dessutom gavs en lägesrapport för naturgasen i Östersjöregionen och information om organisationen Baltic Gas Association och några av de gasprojekt som pågår i regionen.

## **Security of Energy Demand vs. Security of Energy Supply – How to Maintain a Dialogue between Producers and Consumers of Oil and Gas?**

**080604**

NOG-seminariet den 4 juni behandlade balansen kring försäkringen av energitillförseln och -efterfrågan samt betydelsen av en god dialog (och en förståelse för varandras situation) mellan främst oljans och gasens producenter och konsumenter. Konsumentländerna i främst Västvärlden menar att de är "i händerna" på olje- och gasproducenterna och vill göra sig mer oberoende av importerade fossila bränslen. Konsumenterna betalar dyrt för energiresurser som blir alltmer knappa. Resursfyndigheterna är ofta lokaliserade i geografiska regioner som är politiskt instabila. Detta tillsammans med den uppseglade utmaningen i form av klimatförändring är flera av incitamenten för konsumenterna att byta från fossila bränslen till förnyelsebara bränslen.

Producentländerna menar att olja och gas blir lätt diskriminerade bl.a. i mediadiskussioner om fossil och förnybar energi. Producenterna tycker också att konsumentländerna i Västvärlden skickar dubbla budskap till producenterna, nämligen att konsumentländerna vill minska sin oljekonsumtion och skynda på processen för att introducera förnybara bränslen i sina respektive länder samtidigt som konsumenterna pressar producenterna att öka oljeproduktionskapaciteten. Hur och till vilken gräns ska producenterna reagera? Finns det en tillräcklig energiefterfrågan för att investera i dyra utökningar av t.ex. oljeproduktionen?

## **Effekter av höga oljepriser på ekonomi och politik**

**081002**

NOG-seminariet den tredje oktober gav en översikt över kopplingarna mellan oljepris, ekonomi och den politiska stabiliteten med fokus på Europa och Sverige. En viss återkoppling, och vidareutveckling, till diskussionen från NOG-seminariet i januari 2008, "Drivkrafter bakom marknadens oljepris" gjordes.

Vilka är drivkrafterna bakom oljepriset? Är den prisstegring vi ser bara en "bubbla" eller är det en realistisk justering av marknadspriserna? Vilka säkerhets- och geopolitiska konsekvenser ger de ökande strömmarna av monetära medel mellan oljekonsumenter och oljeproducenter runtom i världen? På seminariet kommer de huvudsakliga drivkrafterna att diskuteras; ekonomi och politik, men bakomliggande faktorer, som klimatförändringar, naturkatastrofer och den globala matkrisen, tas också upp till diskussion. En historisk bakgrund ges för att visa på utvecklingen av och konsekvenserna för världsekonomin och den internationella säkerhetsbalansen under tidigare olje- och energikriser.

## **Kinas energiförsörjning – idag och imorgon**

**081030**

Kinas växande energikonsumtion ställer höga krav på både beslutsfattare och företag.

På NOG-seminariet diskuterades huvuddragen kring Kinas energiförsörjning utifrån ekonomiska, politiska och energimässiga frågeställningar. En historisk bakgrund gavs för att visa på den ekonomiska och politiska utvecklingen och de konsekvenser detta inneburit för den geopolitiska utvecklingen i regionen. Ett av huvuddragen i dagens politik är att det gäller att trygga tillgången på energiresurser för att kunna upprätthålla den snabba ekonomiska utvecklingen. Samtidigt ser vi en tydlig koppling mellan ekonomisk tillväxt och ökade miljöproblem i Kina.

Under seminariet besvarades även ett antal frågor om Kinas energipolitiska utveckling, bland annat hur kinesiska myndigheter och företag agerar för att säkerställa den kinesiska energiförsörjningen och vilka energiresurser som finns i landet. Andra frågor som berördes var hur fördelningen mellan de olika kraftslagen ser ut, vilket dagens importbehov är och utvecklingen för dessa samt vilka säkerhetsmässiga och geopolitiska konsekvenser som skapas av politiken mellan Kina och övriga världen när det gäller att trygga energiförsörjningen?

## **Caucasus and the Caspian region**

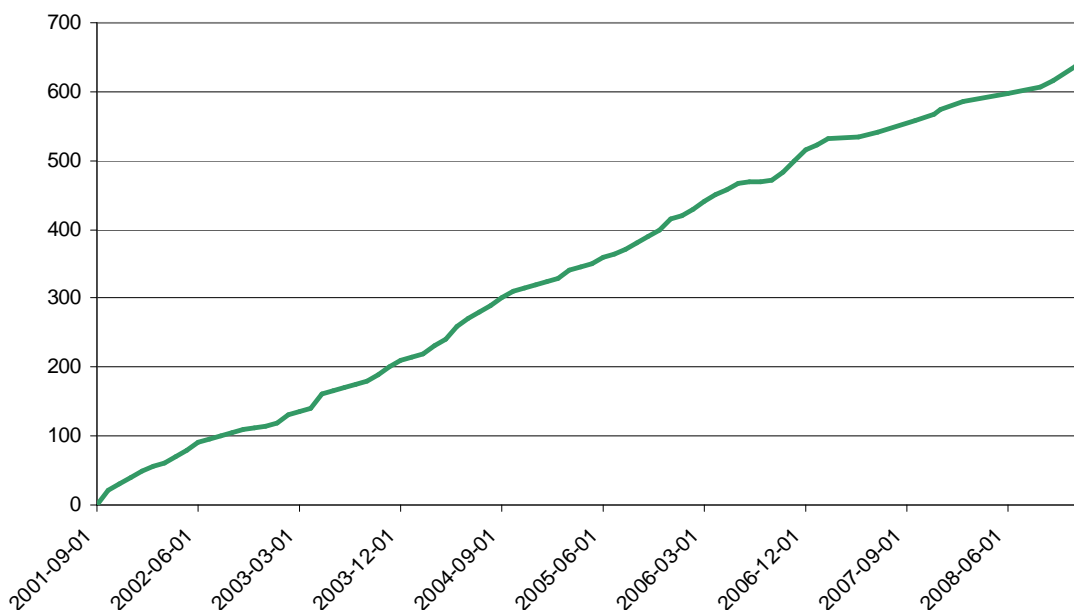
### **081203**

The NOG seminar provided an overview of Caucasus and the Caspian Region. Since the time period of Alfred Nobel and his brothers, the region has played an important role in producing oil and gas for Europe. Over the years, this “quilt” of countries, ethnic origins and languages has been the centre of internal conflicts. These conflicts are often a source for the tensions existing in the region today, most recently the conflict between Russia and Georgia in August 2008. The region is quite important with regards to the European security of supply of oil and gas, and can be seen as a potential future alternative to Russia for supply of oil and gas. For example, the Nabucco pipeline project is on its way to create a connection between the continents, starting gas deliveries in 2014.

The seminar gave a historical retrospect with the Nobel brothers’ exploration of oil in Baku, Azerbaijan, as a starting point for discussions concerning present and future development of Caucasus and the Caspian region and the region’s importance for Europe’s security of supply of oil and gas. The region’s energy map was introduced providing a basis for a discussion on the region’s importance as a hub for production and distribution of oil and gas and the consequences of the conflicts existing in the area. Aspects such as the security and geopolitical consequences of the conflicts in the region and the situation evolving in relation to the different companies that are doing business in the area was also highlighted.

## Medlemsantal

Nätverket har under 2008 fått cirka 70 stycken nya medlemmar; det totala antalet medlemmar är nu uppe i cirka 630 personer. Det har inte skett någon aktiv medlemsrekrytering under året utan nya medlemmar har ansökt om medlemskap via formuläret på nätverkets hemsida. De nya medlemmarna representerar, liksom tidigare, stora delar av energisektorn, både myndigheter, akademi och företag. Höstens seminarier med geopolitiska och säkerhetspolitiska inriktning har attraherat fler besökare från institutioner som FOI och Försvarshögskolan.



Figur 1. Utveckling av medlemsantal i NOG.

## Hemsidan [www.nog.se](http://www.nog.se)

Nätverket Olja & Gas hemsida under adressen [www.nog.se](http://www.nog.se) innehåller information om:

- NOG – hur NOG kom till.
- Seminarier – inbjudan till seminarier och referat från alla seminarier.
- Svensk beredskap – hur gör Sverige?
- Bli medlem i NOG – direktanmälan via Internet
- Medlemmar – organisationer som är representerade i NOG
- Studieresor – information om NOG:s studieresor
- Kalendarium – vad händer i världen inom olja, gas och kol.
- Fakta om olja, gas och kol – fakta, analyser, rapporter med mera.
- Nyhetsarkiv – dagsfärska nyheter från världens alla hörn.
- Länkar – länkar till myndigheter, företag, organisationer, nyhetsservice och övrigt.

Hemsidan fungerar som en informationspunkt för nätverkets medlemmar, både för kommande seminarium och andra aktiviteter samt för nyttig allmän information, nyheter och länkar. Sidan har under 2008 haft ett relativt stadigt antal besök med undantag för semester månaderna. Totalt sett har hemsidan haft över 10 000 unika besökare och cirka dubbelt så många besök.



## Partners

Nätverket Olja & Gas har ett par industriella partners som anser det viktigt att näteverket lever kvar och vidareutvecklas. Dessa partners har under 2008 varit E.ON, Fortum, GöteborgEnergi, Nynas Petroleum, Preem, SAAB International, Shell, StatoilHydro och Vattenfall. Under året har två partnerträffar anordnats, vid det första och det fjärde seminariet. Dessutom följde flera representanter för partnerföretagen med på den studieresa till Wien som anordnades i november.

## Studieresa

Den 5 – 7 november anordnades en studieresa till Wien av nätverket. Syftet med resan var att besöka de internationella organisationer som har sitt säte i Wien och;

- Få veta mer om Österrikes energisektor
- Få veta mer om:
  - Security of energy supply versus security of energy demand
  - Produktion och distribution av olja och gas (volym, reserver, infrastruktur etc.)
  - Prissättningsprinciper för olja och gas
  - Geopolitik; regionala aspekter
  - Energisystemmodellering och prognoser
  - Klimatfrågor

Studieresan bestod av en rad intressanta besök;

- OPEC; Organization of the Petroleum Exporting Countries
- IAEA; International Atomic Energy Agency
- IIASA; International Institute for Applied Systems Analysis
- OMV; Österreichischen Mineralölverwaltung Aktiengesellschaft
- UNIDO; United Nations Industrial Development Organization
- den svenska ambassaden i Wien

Studieresan var mycket lyckad och gav nätverket goda kontakter som vi hoppas skall kunna fungera som talare under det kommande årets seminarier.

## Appendix A: Drivkrafter för oljepriset

**NOG-seminarium den 31 januari 2008**  
**Kristina Haraldsson och Ellinor Grundfelt**  
**2008-05-27**

### Förord

Under 2007 steg marknadsens oljepris med nästan 60 procent. Oljepriset var under 2007 nära men inte över den ”magiska” nivån 100 dollar per fat. Strax efter nyår ändrades dock detta. Det finns naturligtvis inte en enda orsak till höga oljepriser utan det finns ett flertal bakomliggande faktorer som ökande efterfrågan, begränsad uppströmskapacitet och kapacitet för raffinaderier.

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#### Talare var:

##### **Lawrence Eagles**

Head, Oil Industry & Markets Division, International Energy Agency (IEA)

##### **Fredrik Voss**

Director Market Development, ICE Futures Europe, London

##### **Joel Hanley**

Senior Editor for Crude, Platts, London

### **Lawrence Eagles, International Energy Agency**

*Lawrence Eagles is Head of Division, Oil Industry & Markets Division, International Energy Agency (IEA). Initially joining the International Energy Agency in 2003, Lawrence Eagles took up the position of Head of the Oil Industry and Markets Division/Editor, Oil Market Report in March 2005, heading the team of analysts responsible for short-term oil market analysis.*

*Lawrence is author of the Market Overview section of the IEA's benchmark publication, the Oil Market Report as well as overseeing the production of the recently launched Medium-Term Oil Market Report. The Division also advises Member governments through the Agency's Standing Group as well as liaising closely with the trading, analytical and corporate planning departments of industry.*

*Prior to joining the IEA, Lawrence was well-known as a specialist in energy and metals at the major European brokerage, GNI. He joined the company as a graduate trainee, gaining experience across a wide range of financial and commodity markets, spending several years as a fund manager before taking over as head of research.*

### **\$100 Oil – a Turning Point?**

In help to explain some of the factors to the high oil price, Lawrence Eagles provided with a historical outlook. It started with an oil demand surge in 2004; the “world wakes up” to an accelerating demand from China but also from the Middle East and North America. Since then, the global oil production has grown from about 82 to almost 85 million barrels per day, and the forecast for year 2008 is 87 million barrels per day.

Eagles posed the question if the current oil price is caused by factors such as OPEC, low stocks, refining, spare capacity or funds, or not, and why is the oil price (in dollars) nearing US\$100? He also noted that the oil price rise is not as severe in non-dollar currencies, e.g. in Euros, and thus a weakening US\$ may factor in the oil price.

### **Complex Interaction of a Number of Factors Behind the \$100 Oil**

During the years in 2005-2007, both oil stocks and oil price rose. This is not usual behavior of the market; however, still it is not unheard of, according to Lawrence Eagles. He noted that it is not possible to predict the price more than 3-6 months ahead due to the many factors and that there is no single cause of the high oil prices. Eagles mentioned a couple of factors that could be involved in this case. For instance, a change in demand for stocks could be seen as a reaction to 2004 demand surge, or a response to a volatile geopolitical situation, or simply reflecting a low spare capacity with the producers working flat out.

### **Large Fund Inflows**

An influential factor is that fund flows create “contango” (i.e. the far future delivery price higher than a nearer future delivery). There are large flows of fund money into the market that can influence the oil price from time to time. However, the true impact of the large fund inflows is unclear. Lawrence Eagles pointed out that more data is needed as the data disaggregation is poor and the evidence on fund money moving prices is “far from conclusive”. Eagles also noted that current price models do not work well. The market is too complicated to model especially with regard to cases of speculation impacting on prices. Eagles also warned of the danger of looking too closely at market diagrams; it is easy to produce them but difficult to truly show the causality of things.

Eagles believed that there are strong fundamental causes behind the recent rally, that the market today is driven by medium-term concerns due to rapid demand growth from highly populous countries, rising costs and lagging supply.

### **Slow Supply and Strong and Inelastic Demand**

During the past few years, the world economy has grown substantially. Alongside this economic boom, the supply-side has shown poor performance with a mismatch between refining capacity and demand, and a low spare capacity with the spare largely held in one country. In addition, there is a strong and inelastic demand growth concentrated on the transportation sector. With subsidized prices, the demand is further increased in some non-OECD countries, e.g. the Middle East and China.

OPEC spare capacity is projected to fall from 2.5 to 1.5 million barrels per day, and mostly containing heavy sour grade of oil. The current refinery tightness is forecasted to continue both upstream and downstream. Eagles noted that GDP<sup>1</sup> remains the key driver since GDP slows demand down more than the price. GDP trends can have a big impact on the medium-term. Hence spare production capacity is one factor, inventory and refining flexibility are others factors in shaping the oil price.

## **Fredrik Voss, ICE Futures Europe**

*Fredrik Voss is Director of Market Development at ICE Futures Europe where he is heading the exchange's business development, product development and education units. He joined ICE in 2004 after almost 10 years at the Sweden-based OMX group where he headed up the sales & business development for the exchange division. Before joining the exchange division he was directing various business units and subsidiaries within OMX's technology division. During 2002 and 2003 Fredrik was CEO of OM London Exchange and the UK Power Exchange.*

### **Intercontinental Exchange**

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<sup>1</sup> GDP: gross domestic product.

As a starting point, Fredrik Voss showed the audience the market place of IntercontinentalExchange® (ICE) and ICE Futures Europe. ICE operates global commodity and financial products marketplaces, including the world's leading electronic energy markets and soft commodity exchange. ICE's futures and over-the-counter (OTC) markets offer access to contracts based on crude oil and refined products, natural gas, power and emissions as well as products such as cocoa, coffee, orange juice and sugar, in addition to foreign currency and equity index futures and options.

ICE conducts its energy futures markets through ICE Futures Europe, the U.K. regulated London-based subsidiary. The energy futures market daily trade 600 million barrels of crude oil, 80 million barrels of gasoil, 5 million tonnes of carbon dioxide and 5 TWh of natural gas to a nominal value of more than \$60 billion per day. The futures contracts are used as benchmarks, Voss added, and very little physical commodity is delivered against contracts. ICE Futures Europe offers the world's leading oil benchmarks, including the Brent and West Texas Intermediate (WTI) global crude benchmark contracts. It's electronic trading platform brings market access and transparency to participants in more than 50 countries.

### **Price Drivers**

There are many parameters influencing the oil price, other than oil supply and demand. Fredrik Voss gave a number of examples, including politics, exchange rates, shipping, trading strategies, stocks, weather, production shut-ins and not the least market gossip. He also noted that although the absolute price is interesting, it is not as important as the relative price. For instance, it is interesting to look at the price relative to other assets and substitutes. Voss presented a graph showing that, lately, the price of Brent front month has increased relative to other asset prices. He also commented on the fact that price relative to investment indicates the profitability of investments. High profitability, in turn, increases supply of oil.

### **Market Participants and their Reasons to Trade**

The market participants trading on an energy exchange can be divided into categories:

- Physical market participants (producers, refiners, consumers)
- Intermediaries (trading houses, banks, brokers, financiers)
- Investors (e.g. commodity funds, pension funds, hedge funds, private individuals)
- Liquidity providers (market makers, arbitrageurs)

During his presentation, Voss presented several reasons for market participants to trade crude oil, for instance:

#### *Acquire/divest*

Producers sell crude to generate a return on their investments. Refineries buy crude to produce oil products that can be sold and consumed. The general "buy low/sell high" strategy normally applies to these market participants.

#### *Investing/speculating*

The investors and speculators, who take on price risk for expected higher returns, are attracted by the unique price formation attributes displayed by oil markets. The general "buy low/sell high" strategy applies to these market participants; however, other strategies apply as well. Therefore, investor/speculator impact on price level is difficult to assess.

#### *Diversification*

Diversification (i.e. mixing a wide variety of investments within a portfolio) is a way to increase expected return on a portfolio without increasing overall portfolio risk. Because oil is poorly correlated to other asset classes (e.g. fixed income and equities), allocating parts of an investment portfolio to oil can serve as an excellent risk management technique. In these cases, however, the investors are largely indifferent to the actual price of oil.

### *Hedging*

Hedging is a way to minimize price risk in return for certainty. Future prices relative to today's prices are important to hedgers.

### *Market making*

Market makers are traders or companies that are willing to buy and sell simultaneously in order to profit from the bid/offer price differential. However, they are not willing to take on risks. Focusing on accumulating small gains into big profits, they are indifferent to the price of oil and the long-term trend.

### *Arbitraging*

In order to make profit without taking any risk, arbitrageurs seek out slight differences in price on more than one exchange and simultaneously buy at the lower price and sell at the higher price. Since the profit depends only on the price differential, the arbitrageur is indifferent to the actual price of oil.

### *Intermediating*

Intermediaries route customer orders to the exchange electronically or via phone. They too, are indifferent to the price of oil.

Finally, Voss pointed out the complexity of the market and the difficulty to assess the impact on oil price of the market participants. While some market participants want the oil price to go up, some want it to go down and other still may be indifferent to the price. Many trading strategies affect the oil price even though the success of the strategy is not dependent upon the outright oil price.

## **Joel Hanley, Platts**

*Joel Hanley is managing editor of EMEA Crude Oil at Platts in London and has ten years of energy market experience. He has worked at Platts for nearly five years, covering the crude markets of the North Sea, West Africa, Russia and the Middle East. Joel has previously worked for Risk Waters Group as a writer on Energy Risk magazine, covering risk management in the deregulating energy markets. Joel also launched Oil & Gas Technology magazine for the Chinese market. Joel holds a degree in Russian & Information Technology from Exeter University.*

### **Introducing Platts**

Joel Hanley started his presentation by introducing the organisation Platts. Platts is neither a broker nor an exchange, he said. Platts is a specialist energy publisher, founded by Warren Platt nearly 100 years ago, with customers across the world. Every day, Platts publishes more than 100 key benchmarks covering oil, gas, coal, emissions, power, shipping and metal markets.

### **Crude Benchmarks and how they Change**

Because there are so many different varieties and grades of crude, benchmarks are used when pricing crude oil. Hanley mentioned the primary benchmarks, e.g. Brent Blend from the North Sea, West Texas Intermediate (WTI) from the USA and Dubai crude from United Arab Emirates. Hanley explained how "Dated Brent" connects the world as sellers around the world price their oil compared to the Brent benchmark. Despite its small size, the North Sea area is influencing a big part of the world. This is a bit remarkable, Hanley added, especially as production levels have fallen from already low levels in comparison to other crude oils.

To address the problem of declining production of benchmark crudes, Platts has added new grades for delivery into the Brent contract. In 2002, the BFO (Brent-Forties-Oseberg) assessment methodology was introduced and later, in 2007, the BFOE (Brent-Forties-Oseberg-Ekofisk). This way, the dated Brent price reflects the most competitive in value of four similar grades (all North Sea crude), which means that larger volumes of oil are available for spot trading tied to the benchmark. Hence, as Hanley

noted, with these four grades the BFOE is less vulnerable to potential distortion in case someone wants to squeeze the market.

During his presentation, Hanley also talked about the responsibilities of the publishers. He argued that publishers must be accurate and use precise and robust methodology systems. Producers, consumers, traders, regulators and other market participants expect full convergence between market values and published values. They also expect full transparency and responsible behaviour from the publisher. Finally, Hanley mentioned some aspects of Market on Close (MOC), the price movements during MOC and the importance of strict standards to ensure order and equality.

## Appendix B: Östersjöns betydelse för regionens energiförsörjning

**NOG-seminarium den 17:e april 2008**  
**Kristina Haraldsson och Ellenor Grundfelt**  
**2008-07-04**

### Förord

Årligen transporteras ca 800 miljoner ton gods över Östersjön och omkring 60 000 fartyg trafikerar innanhavet. På Östersjön transporteras inte minst en stor del av energisektorns behov av olja och andra råvaror. Trenden för transporter på Östersjön är uppåtgående och den största tillväxten ses i Ryssland med hamnarna i St. Petersburg och Primorsk. Förutom transporter råder det även andra energirelaterade aktiviteter inom regionen, bl.a. gasprojekt och provborrningar efter olja.

NOG-seminariet den 17 april 2008 belyste Östersjöns betydelse för regionens energiförsörjning. Först presenterades regionen ur ett historiskt perspektiv, med relationer länderna sinsemellan och kulturella skillnader åskådliggjorda. Det gavs en översikt av dagens transportrörelser av fartyg över Östersjön och statistik om energisektorns transporter med typen och mängd av varor och berörda hamnar. En annan aspekt kring svensk energiförsörjning togs upp i samband med en presentation om planerade provborrningar efter olja i Östersjön. Vid seminariet presenterades även några av våra grannländers syn på transporter på Östersjön. Dessutom gavs en lägesrapport för naturgasen i Östersjöregionen och information om organisationen Baltic Gas Association och några av de gasprojekt som pågår i regionen.

#### **Talare var:**

##### **Per Högselius**

Historiker

Avdelningen för teknik- och vetenskapshistoria, KTH

##### **Alf Brodin**

Projektkoordinator

Enheten för Internationellt samarbete, Sjöfartsverket, Norrköping

##### **Dr. Erik Palmlöv**

Chefsgeolog

Oljeprospektering AB (OPAB)

##### **Rolf Bäckström**

Biträdande direktör

Trafiksektionen, Sjöfartsverket, Helsingfors

##### **Harry Anton**

Vice President

Heat, Fortum Power and Heat Oy, Finland

## Per Högselius, KTH

*Per Högselius är samtidshistoriker med östersjöområdet som specialitet. Han har tidigare gett ut ett flertal böcker om östersjöländernas teknik- och vetenskapshistoria i ett kultur- och samhällsperspektiv, samt artiklar och essäer på bredare östersjötema i bl.a. Svenska Dagbladet. I höstas utkom hans mer populärhistoriska bok "Östersjövägar". Per Högselius nuvarande forskning vid KTH i Stockholm rör bl.a. naturgasens historia i Europa och kraftbolaget Vattenfalls expansion i Östersjöområdet.*

### Skilda världar i förändring

Per Högselius inledde sitt anförande med en kort beskrivning av Östersjön. Skillnaderna mellan de elva östersjöländerna är enorma, menade Högselius, samtidigt som det finns många beröringspunkter i t.ex. kultur och natur. Med åtskilliga konflikter och spänningar parallellt med många framgångsberättelser rymmer Östersjöns historia både våld och romantik.

För att belysa de skilda världarna kring Östersjön lyfte Högselius bl.a. fram det "gigantiska inkomstgapet" mellan öst och väst. Han framhöll de strukturella skillnaderna med Ryssland som råvaruekonomi, Baltikum och Polen som underleverantörer till väst och Norden och Tyskland som högkostnadsekonomier. Även politiskt är skillnaderna stora med ett semi-auktoritärt Ryssland, ett närmare kaotiskt läge i Polen och delar av Baltikum samt alla typer av demokratiska koalitioner i väst. Positivt är att utbildningsnivån är mycket hög i så gott som hela östersjöområdet, även om det satsas betydligt mer på forskning i väst än i öst. Vad gäller energianvändningen syns ingen klar delning mellan öst och väst, påpekade Högselius. Ryssland, Estland, Polen, Danmark och Tyskland är extremt fossilbaserade medan andelen fossila bränslen är mindre i Sverige, Finland, Lettland och Litauen.

De olika länderna kring Östersjön har även skiftande nationella grundinställningar till det gemensamma innanhavet. För Sverige, Finland, Estland och Lettland är Östersjön central för den nationella självförståelsen och kulturen, menar Högselius. Däremot i Tyskland, Ryssland och Polen ingår inte Östersjön i föreställningarna om nationens kärna på samma sätt, med undantag för några regioner med starka Östersjöidentiteter (Hansastäderna).

Beträffande infrastruktur i och kring Östersjön lyfte Högselius fram ett tänkvärt exempel. Järnvägen mellan St. Petersburg och Warszawa byggdes en gång i tiden som en inomrysk järnväg. Den som färdas med tåg längs sträckan idag måste dock passera inte mindre än fem politiska gränser samt åka in och ut ur EU två gånger. Det finns idag nio länder med östersjökust. För hundra år sedan fanns bara fyra. Tänkvärt är, menade Högselius, att politiska gränser ändras, men infrastrukturen består.

### Dynamiskt samarbetsklimat mot en mörk bakgrund

Under sitt anförande tog Högselius upp flera dystra händelser och perioder som präglade östersjöregionen under 1900-talet. Han nämnde bl.a. första världskriget och ryska revolutionen, andra världskriget och den judiska kulturens försvinnande, etnisk rensning, kulturförstörelse förtyck, järnridån, militarisering och miljöförstörelse... Hur kan vi etablera ett nytt dynamiskt samarbetsklimat mot en så mörk bakgrund, frågade Högselius.

I ett svenskt perspektiv gäller det bl.a. att utnyttja historiska band till Estland, Lettland och Östtyskland, påpekade Högselius. I Sverige bor t.ex. många exilbalt och polacker. På ett multilateralt plan bör energi- och miljöfrågorna betraktas som en möjlighet till ökad samverkan och integration.

## Alf Brodin, Sjöfartsverket, Norrköping

*Alf Brodin disputerade 2003 på Handelshögskolan i Göteborg på en avhandling om hamnar, sjötransporter och utrikeshandel i Baltikum och området som ingick i det forna Sovjet. Därefter har han under drygt ett år forskat, med stationering i Japan, med samma inriktning mot dagens förhållande och de transportproblem som finns mellan Ryssland och dess närmaste grannar i nordöstra Asien. Brodin arbetar sedan slutat av 2005 på Sjöfartsverkets avdelning för Sjöfart och Samhälle; enheten för Internationellt samarbete.*



## Transporter på Östersjön – idag och i framtiden

Alf Brodins presentation handlade bl.a. om hur transporter till och från Östersjöns hamnar har ökat och förväntas öka ännu mer i framtiden. Brodin berättade att ungefär 65 procent av de totala anlöpen i Sverige sker i landets södra delar. Den svenska fartygstrafiken har ökat successivt den senaste tiden. Samtidigt har godsvolymer med lastfartyg ökat. Mellan år 2003-2007 ökade den genomsnittliga godsmängden per anlop från 3 700 ton till 4 600 ton. Sett till antal anlop har det skett en förskjutning mot färjetrafiken de senaste åren. Speciellt ökad lastbilstrafik står för en stor del av den ökade färjetrafiken.

Brodin beskrev även hur Sjöfartsverket arbetar för en bättre miljö, bl.a. genom att kvalificera fartyg med låga NO<sub>x</sub>-utsläpp till lägre farledsavgift. Som ett gott exempel lyfte han fram det holländska fartyget Slingeberg som trafikerar sträckan Göteborg-Holland och inte släpper ut mer än 0,1 g NO<sub>x</sub> per kWh. Enligt de mätningar som gjorts är Slingebergs systerfartyg det fartyg som kommer närmast. På tredje plats, om än med högre utsläpp, kommer Viking Cinderella.

Volymmässigt domineras de svenska godstransporterna av importerade energiråvaror, bl.a. olja. Ryssland och Finska viken har blivit allt viktigare i det sammanhanget. Omkring en tredjedel av Sveriges importerade olja kommer idag från Ryssland och transporteras genom Östersjön. En stor del av Rysslands oljeexport går via hamnen Primorsk i Finska viken. Brodin menade att Primorsk är en välorganiserad hamn med bra vattendjup och god kapacitet varifrån en stor del av oljan går vidare till Rotterdam som är Europas största hamn. Primorsk kan ta emot fartyg upp till strax över 100 000 dwt vilket är en storlek som begränsas av djupet i Östersjön.

Genomsnittsåldern för tankfartyg som anlöper Sverige är idag ungefär 10 år. Medelåldern har ökat för de största fartygen medan de har minskat för de mindre som är fler till antalet. Liknande trend gäller för övriga länder i östersjöområdet.

Avslutningsvis berättade Brodin om den förväntade utvecklingen för transporter i Östersjön. Prognosen är att de årliga fartygsrörelserna kan komma att öka med ända upp till 80 procent till år 2020. Det innebär att till de 60 000 fartygsrörelser vi har idag kan mer än 40 000 tillkomma – en ökning som inte minst skulle innebära betydligt större säkerhetsrisker. Troligtvis kommer antalet terminaler öka i viss mån men framför allt förväntas befintliga hamnar byggas ut, främst i Ryssland där utrikeshandeln expanderar i snabb takt. Olja kommer att fortsätta dominera. Transport av biobränslen som flis, pellets och etanol kan förväntas öka snabbt, men volymerna är fortfarande små i jämförelse, menar Brodin.

## Erik Palmlov, Oljepropektering AB, OPAB

*Dr. Erik Palmlov är chefsgeolog vid OPAB, dotterbolag till Svenska Petroleum Exploration (SPE). Med mer än 20 års erfarenhet som geolog och geofysiker inom bl.a. olje- och gaspropektering jobbar han nu aktivt med OPAB:s östersjöverksamhet.*

### Dalders i nuläget

Erik Palmlov besökte NOG-seminariet för att berätta om nuläge och framtidsutsikter för projektet Dalders som avser provborrning efter olja i Östersjön. Han började med en kort introduktion av företaget OPAB som har 35 års erfarenhet av oljeletning och utvinning i Sverige. Sedan visade han på en karta hur Daldersprospektet är lokaliserat utanför Sveriges territorialgräns men inom svensk ekonomisk zon. Här har OPAB identifierat områden för provborrning. Man har genomfört en miljökonsekvensbeskrivning och samråd har hållits i Visby, Karlskrona och Stockholm. Ansökan om tillstånd för provborrning är inskickat till Näringsdepartementet och har gått ut på remiss. Enligt Palmlov har i stort sett alla remissinstanser varit positiva till projektet. Beslutet ligger nu hos

näringsminister Maud Olofsson. OPAB sitter dock inte och väntar på besked utan man har redan satt igång verksamheten med kontraktering av borrhplattformar m.m.

### **Miljöaspekter**

Palmlöv tog även upp några av de slutsatser som framkommit i miljökonsekvens-beskrivningen för projektet. Han påpekade att Östersjön generellt sett är ett känsligt område ur miljösynpunkt. Området för provborrning ligger dock inte i ett särskilt känsligt område. I Daldersområdet är bottenlivet mycket begränsat med döda bottenar och konstant låga syrenivåer. Det sydvästra hörnet av Dalders tillhör ett område utmärkt som torskleksområde. Här har dock ingen framgångsrik torsklek skett sedan 80-talet, framhöll Palmlöv. Han poängterade att hälsa, miljö och säkerhet är högsta prioritet för OPAB. Bland annat har norsk expertis konsulterats för att säkra en hög kvalitet i miljöhänsynen. Målet är att med avancerad teknik utvinna och leta efter olja utan negativ påverkan på miljön. Stor vikt läggs även på att inte hamna i konflikt med exempelvis yrkesfiskare och sjöfarten. Aktiviteter genomförs i nära samarbete med olika myndigheter.

### **Möjligheter**

Regionen i södra Östersjön är en oljeproducerande region, påpekade Palmlöv. Den del där OPAB vill provborra har dessutom stora likheter avseende geologiska förutsättningar med ett producerande fält i polsk sektor bara 60 km söder ut. Uppskattningsvis skulle det i området på svensk sida kunna finnas upp till 350 miljoner fat olja. Med en produktion på 50 000 fat/dag skulle ca 20 procent av Sveriges nuvarande förbrukning kunna täckas med olja från Dalders. Under de förutsättningarna skulle fältets livslängd bli omkring 20 år. Projektet skulle kunna medföra skatteintäkter till svenska staten på 20-50 miljarder SEK. Därtill kommer många arbetstillfällen både i prospekteringsfasen och under eventuell utbyggnad och produktion. Planen är att genomföra provborrningen under hösten 2008, varpå en eventuell utbyggnadsfas skulle ta vid år 2009 och så småningom utmynna i produktion av olja omkring år 2013.

## **Rolf Bäckström, Sjöfartsverket, Helsingfors**

*Rolf Bäckström är biträdande direktör och chef för telematikgruppen vid finska Sjöfartsverket. Där arbetar han bl.a. med planering, projektering och uppbyggnad av ett flertal informations- och trafikövervakningssystem, bl.a. DECCA-systemet, DGPS-systemet, AIS-systemet och PortNet. Han är även aktiv i IALA:s radionavigations- och eNavigations-kommittéer och IMO.*

### **Finlands sjöburna trafik**

Rolf Bäckström talade om prognoser för sjötrafiken på Östersjön och Finska viken, hotbilder och risker med anledning av den ökande sjötrafiken (speciellt oljetransporterna) samt skyddsåtgärder som planeras eller redan har vidtagits. Inledningsvis visade han statistik över Finlands sjöburna trafik. Bäckström konstaterade att ungefär 85 procent av Finlands lastvolym är sjöburen. Det innebär mer än 74 000 fartygsrörelser per år eller drygt 200 fartygsrörelser per dag. Ungefär 40 procent av Finlands totala lastvolym på 95 miljoner ton transporteras på Östersjön under vintermånaderna. Det är en utmaning, menade Bäckström.

### **Fartygsolyckor i Östersjön**

Antalet tankerolyckor i Östersjöområdet har varierat mellan 11 och 22 under år 2000-2006. De dominerande olyckstyperna är grundstötning (främst p.g.a. låga vatten och svårnavigerade områden) och kollisioner som tillsammans stod för 77 procent av olyckorna under de aktuella åren. De flesta tankerolyckor sker i området kring Danmark och den svenska sydkusten. Olyckorna har inte orsakat några stora oljeutsläpp men har inneburit risk för mer omfattande utsläpp. Bäckström konstaterade att den mänskliga faktorn är den klart vanligaste bakomliggande orsaken till fartygsolyckor generellt i Östersjöområdet.

### **Hotbild och skyddsåtgärder**

Under åren 2001-2006 ökade fartygstrafiken på Finska viken med nästan 20 procent. Idag går ca 140 miljoner ton olja genom Finska viken varje år. År 2015 förväntas oljevolymer ha stigit till 250 miljoner ton. Detta är en viktig hotbild att ta hänsyn till, framhöll Bäckström.

Genom att övervaka trafiken kan farliga situationer undvikas. VTS-verksamheten (Vessel Traffic Service) i Finland omfattar hela havskusten och delvis även insjöarna. VTS-stationerna är avancerat uppbyggda och sammankopplade och verksamheten är koncentrerad till ett fåtal centra. Trafikinformationssystemet grundar sig på radarsystem med ca 100 radarstationer, ett AIS-system (Automatic Identification System) och fjärrstyrt VHF-system (Very High Frequency). Situationsbilden från VTS-verksamheten delas med flottan och gränsbevakningen. Bäckström berättade även om GOFREP, ett obligatoriskt rapporteringssystem för fartyg på Finska viken. Systemet infördes den 1 juli 2004 och är resultatet av ett samarbete mellan Finland, Estland och Ryssland. Det främsta syftet med rapporteringssystemet är att minska risken för sammanstötningar. Information från fartygen samlas in av de tre länderna och utbyts via en gemensam databas. Mot bakgrund av att den östvästgående trafiken i Finska viken hela tiden ökar är GOFREP en viktig samarbetsform, menade Bäckström.

Slutligen berättade Bäckström om några planerade skyddsåtgärder. Han nämnde bl.a. att det är på förslag att genomföra FSA (Formal Safety Assessment) gällande Östersjön. I en sådan metodisk säkerhetsanalys skulle alla viktiga åtgärder definieras genom att kombinera alla Östersjöländers kunskaper och utreda hotbild och risker, riskavvärjningsmöjligheterna, vilka åtgärder som är kostnadseffektiva och vilka som borde förverkligas. Ett annat exempel på planerade åtgärder är projektet EU Interreg EfficienSea, inom vilket ett automatiskt verktyg ska tas fram för VTS, som hjälper operatören att fokusera på situationer som hotar att utveckla sig i en farlig riktning. Detta är ett måste, menade Bäckström, eftersom trafiken hela tiden ökar.

## Appendix C: Security of Energy Demand vs. Security of Energy Supply

**NOG-seminarium den 4 juni 2008**  
**Helena Sjögren och Ellenor Grundfelt**  
**2008-07-04**

### Förord

NOG-seminariet den 4 juni behandlade balansen kring försäkringen av energitillförseln och -efterfrågan samt betydelsen av en god dialog (och en förståelse för varandras situation) mellan främst oljans och gasens producenter och konsumenter. Konsumentländerna i främst Västvärlden menar att de är "i händerna" på olje- och gasproducenterna och vill göra sig mer oberoende av importerade fossila bränslen. Konsumenterna betalar dyrt för energiresurser som blir alltmer knappa. Resursfyndigheterna är ofta lokaliserade i geografiska regioner som är politiskt instabila. Detta tillsammans med den uppseglade utmaningen i form av klimatförändring är flera av incitamenten för konsumenterna att byta från fossila bränslen till förnyelsebara bränslen.

Producentländerna menar att olja och gas blir lätt diskriminerade bl.a. i media-diskussioner om fossil och förnybar energi. Producenterna tycker också att konsumentländerna i Västvärlden skickar dubbla budskap till producenterna, nämligen att konsumentländerna vill minska sin oljekonsumtion och skynda på processen för att introducera förnybara bränslen i sina respektive länder samtidigt som konsumenterna pressar producenterna att öka oljeproduktionskapaciteten. Hur och till vilken gräns ska producenterna reagera? Finns det en tillräcklig energiefterfrågan för att investera i dyra utökningar av t.ex. oljeproduktionen?

#### Talare var:

**Christopher Allsopp**

Oxford Institute for Energy Studies

**Ioannis Samouilidis**

Security of Energy Supply, DGTREN, EU

**Arne Walther**

Utrikesdepartementet, Oslo

f.d. generalsekreterare för International Energy Forum (IEF)

### Christopher Allsopp, Oxford Institute for Energy Studies

*Christopher Allsopp is a Fellow of New College and Reader in Economic Policy at the University of Oxford. He is a former Member of the Monetary Policy Committee (2000-2003) and of the Court of Directors of the Bank of England (1997-2000). He is Editor of the Oxford Review of Economic Policy and a Director of Oxford Economic Forecasting. Previous activities include working at HM Treasury, the OECD and the Bank of England (where he was Adviser from 1980-1983) as well as extensive involvement with domestic and international policy issues as consultant to international institutions and private sector organisations. His involvement in the economics of oil and other energy issues goes back to the shocks of the 1970s. He has been involved with the work of the Oxford Institute for Energy Studies since its inception.*

#### Some Key Issues of Oil Price and the World Economy

Christopher Allsopp held an interesting and comprehensive presentation about key issues of oil price and the world economy, here summarized in some main points. For instance, Allsopp talked about

how the world economy has survived a major rise in oil prices with, so far, little effect on growth or inflation. He made a short historical outlook on the two previous oil crises. In fact, compared to other price shocks, *this* 'oil crisis' has had very little effect on world economy, he pointed out. Allsopp presented what he called "a puzzle, a paradox and a nasty fact":

- The puzzle is why high oil and commodity prices have had and are having so little effect on the world economy
- The paradox is that it is because high oil prices are having so little effect that concerns over energy security and climate change are rising so fast up the international policy agenda. The same lack of response accounts for expected high (and volatile) energy prices.
- The nasty fact is that high oil and gas prices together with security concerns favour coal – disastrous for the environment.

Allsopp also talked about the role of monetary policy, highlighting some main points:

- Monetary policy maintains growth near potential if inflation under control
- Until recently, interest rate rises reflected rapid world growth
- Oil prices secondary
- Deflationary effects of oil price rises will be offset if inflation does not come through
- Monetary policy reacts to the total situation – not just oil
- If the credit crunch intensifies, monetary policy will ease – unless inflation is a serious worry

In the end of his presentation, Allsopp concluded that:

- Continuing high prices are quite likely
- Fundamentals are not very sensitive to oil prices
- But: response to date has depended on offsetting impacts, and, effectively, on offsetting monetary policies.
- The new situation involves inflation risks as well as worries about world recession, the credit crunch and imbalances
- Policy should be offsetting
  - o But, inflation may trigger recession
  - o Key is response of wages and expectations
  - o Central banks are worried about low interest rates and asset prices further out?

## **Ioannis S. Samouilidis, Security of Energy Supply, DGTREN, EU**

*Ioannis S. Samouilidis works for the Energy Policy and Security of energy supply unit in charge of the Producers – Consumers dialogue with OPEC, GCC and Norway. He has been working for the European Commission since 1990 and among other tasks been in charge of the Strategy-Promotion-Dissemination of energy technologies in the sectors of oil and gas, solid fuels and the environment. Mr. Samouilidis was born in Athens, Greece in 1946. He holds a bachelor and Ph.D. in Organic Chemistry, Athens University and a Masters degree in Petroleum engineering.*

### **Oil and Gas Security of Supply and Demand**

Over the past years the energy strategy has radically changed. Consumers are now more dependent of energy than ever. Both the countries within the EU and the industry are working hard with the energy issues. The European target of 20 % reduction of carbon dioxide emissions, 20 % increase of energy efficiency and 20 % increase of renewable energy until the year 2020 is a clear statement. This target was the 1<sup>st</sup> Strategic Energy Review. The 2<sup>nd</sup> Energy Review should focus on security of supply and external energy relations. But it will not be adopted by the Commission until late October in 2008. There will be a study on Gas Storage in the EU. There might be a common approach on gas stocks. Oil is on a global market, but gas is mainly within the EU. And gas has a grand affect on security of supply. Unfortunately the soil in Europe is not very suitable for storage of gas.

#### Actions within Europe:

- Energy efficiency
  - Efficiency is the main object since it affects all three targets
- Promotion of renewable and local production
  - In order to achieve sustainability
- Improvement of information on investments, trends
  - Energy observatory, third IEM package
- Development of European energy networks
  - Wider scope, cross border interconnections, storage
- Implementation and updating of Security of Supply Directives
  - That is for electricity and gas
- Addressing remaining investment obstacles
- New technology development

#### External energy relations:

- Cooperation on efficiency, alternatives, technologies
  - Working with efficiency is crucial
- Cooperation with neighbours
- Mutual dependence with producer countries
- Speaking with one voice
  - That is a tool which makes us stronger

Green Paper on European Energy Networks is a European strategy for sustainable, competitive and secure energy. They are contributing with various studies. They find it important to include oil and CO<sub>2</sub> infrastructures. Pipelines for both oil and CO<sub>2</sub> are needed in the view of CCS (Carbon Capture and Storage).

Mr Samouilidis introduced the audience to the EU-OPEC Energy Dialogue. Through this dialogue they want to make things easier and understand each other. EU wants OPEC to know more about their policies. And OPEC wants to understand the European way. The target is to work together. Security of demand is as important as security of supply. He referred to the latest joint activities:

- A study on the impact of the refining sector on oil price and volatility.
- A round table and study on the impact of financial markets on oil price volatility.
- A seminar on Carbon Capture and Storage.
- A seminar on energy policies and their impact on oil supply and demand.

These issues are examined by joint working groups, reporting to the annual Energy Dialogue meeting taking place alternatively in Brussels and Vienna between the two parties (Presidency, incoming Presidency, OPEC Secretary General and EU Energy Commissioner)

He ended his presentation by overviewing the major gas transportation routes and the issues related with these, in particular transit problems.

### **Arne Walther, Utrikesdepartementet, Oslo**

Ambassador Arne Walther, a Norwegian career diplomat, served as the first Secretary General of the International Energy Forum, the venue of a global dialogue on energy among Ministers of energy producing and consuming countries, from 2003 through 2007. Currently a Senior Adviser on international energy affairs in the Ministry of Foreign Affairs in Oslo, his previous positions include Ambassador to Austria and the UN Offices in Vienna, Director General and Head of the Department for Trade Policy, Natural Resources and Environment in the Ministry of Foreign Affairs, Oslo and

Ambassador to India. He has been Chairman of the Governing Board of the International Energy Agency and served as Special Adviser on International Affairs to Prime Minister Brundtland.

### **Dialogue: the Tao of Global Energy Security**

Ambassador Walther began his presentation by referring to the title of the seminar. Security of energy supply and security of energy demand are two sides of the same energy security coin. Or, as Walther expressed it, the “yin-yang” of energy security. There has to be a balance between the demand and supply – it is a shared responsibility. To accomplish this is a challenge for the leadership. Dialogue is important. Walther continued; Fostering greater awareness of our common, long-term global interests through dialogue is, indeed, the “Tao” of global energy security in today’s multi-polar energy world of increasing interdependencies.

### **New Energy Era**

The ambassador did not see a significant change in the energy mix of the world primary energy demand in the next 20 years. He said that our day is one of heightened energy and environmental consciousness heralding a new energy era, where fossil fuels will remain paramount for quite some time underscoring the need for cleaner fossil fuel technologies, such as carbon capture and storage. Increasing attention will be paid to the development of renewable alternatives, such as solar, wind, tide and bio-fuels. Moreover, increasing energy demand increases the need to conserve and improve energy efficiency and to develop more cost-efficient technology. We will see increasing energy trade due to the geographical mismatch between centres of oil and gas production and centres of consumption. Furthermore, the challenges of energy security and climate change are interlinked. Measures to meet the climate change challenge should not jeopardize energy security. And policies and measures for energy security should not exacerbate climate change. In addition, energy poverty must be dealt with. A quarter of the world’s population lacks access to modern commercial energy.

The policy tuning of one country to meet new challenges and to reduce its particular energy uncertainties can in itself exacerbate existing uncertainties or create new ones for others. Dialogue is needed both to avoid misunderstandings that lead to conflict and to better seize win-win co-operative opportunity.

### **Energy Security and interdependence**

Energy interdependence can be both good and bad. For it to be good and sustainable, it has to be mutually beneficial, argued Walther. Producers and consumers are interdependent (“Yin-yang”). In their discussions in the IEF, Ministers of some energy-importing countries are requesting a “road map” from energy-exporting countries on future supply. And Ministers of some energy-exporting countries are likewise requesting a “road map” on future demand from the energy-importing countries. As we know from other issues of international political concern, road maps are not always easy to make, and even when made can sometimes prove difficult to follow. Through dialogue realistic road maps for energy security could be charted giving additional useful guidance for the investment decisions needed to secure adequate energy supplies.

### **Global Energy Policy Interrelationship**

Energy security in its more holistic, global and long-term perspective was the focus theme of the UN Commission on Sustainable Development in 2006 and 2007 underscoring the importance of energy in meeting the Millennium Development Goals. But the efforts of Ministers to finalize a consensus document failed, testifying to the political, economic and environmental complexity of energy issues and variety of interests involved. As global focus now is being put on issues of energy security, bilateral, regional and inter-regional energy co-operation are also being strengthened in a multi-polar energy world. Regional and inter-regional co-operation can provide stepping-stones to global approaches and co-operation.

## Mixed signals

Gulf Ministers hear directly the external call of oil-importing countries for more Gulf production to bring prices down. But they also listen carefully to what Ministers of industrialized oil-importing countries are telling their domestic constituencies:

- to diversify sources of oil supply away from what is seen as a politically unstable Gulf region and
- to diversify their national energy mix away from oil in favour of alternative, environmentally more benign sources of energy.

Add to that industrialized countries subsidizing the development of bio-fuels that would weaken the market for Gulf oil. And some industrialized countries more than others advocating a human rights agenda calling for political reform in those very countries that they would want to see increase production and maintain comfortable cushions of spare capacity to contribute to lower prices and the energy security of energy supply to consumers.

Looking East in Asia, Gulf countries see more than a rising Sun, said Walther. They would also see high and sustained economic growth, especially in China and India, fuelled by increasing imports of oil and natural gas from the Gulf, as a guarantee as good as any for their long-term security of demand, their stated prerequisite for making the investments necessary to increase production levels. They probably appreciate that oil and gas importing countries to the East are far less prone than those to the West to raise the embarrassing internal political question or to give unsolicited advice on how Gulf leaders should run their shop.

## Some messages

To sum up, Walther left the audience with some messages:

- Energy should concern us because it is crucial for sustainable economic and social development and our efforts to meet the UN Millennium Goals.
- Energy security is a shared producer-consumer responsibility. Security of energy supply and security of energy demand are the “yin-yang” of energy security that should be in balance in a multi-polar energy world of increasing interdependencies.

With dialogue as the “Tao” of global energy security, building confidence as we proceed, promoting greater awareness of long-term common interests, we can hope for wiser national energy decision-making and deepened co-operation that will also have wider economic and political spill-over along the way.



## Appendix D: Effekter av höga oljepriser på ekonomi och politik

**NOG-seminarium den 2 oktober 2008**

**Hanna Paradis**

**2008-10-02**

### Förord

NOG-seminariet den tredje oktober gav en översikt över kopplingarna mellan oljepris, ekonomi och den politiska stabiliteten med fokus på Europa och Sverige. En viss återkoppling, och vidareutveckling, till diskussionen från NOG-seminariet i januari 2008, "Drivkrafter bakom marknadens oljepris" gjordes.

Vilka är drivkrafterna bakom oljepriset? Är den prisstegring vi ser bara en "bubbla" eller är det en realistisk justering av marknadspriserna? Vilka säkerhets- och geopolitiska konsekvenser ger de ökande strömmarna av monetära medel mellan oljekonsumenter och oljeproducenter runtom i världen? På seminariet kommer de huvudsakliga drivkrafterna att diskuteras; ekonomi och politik, men bakomliggande faktorer, som klimatförändringar, naturkatastrofer och den globala matkrisen, tas också upp till diskussion. En historisk bakgrund ges för att visa på utvecklingen av och konsekvenserna för världsekonomin och den internationella säkerhetsbalansen under tidigare olje- och energikriser.

**Talare var:**

**Odissefs Panopoulos**

Directorate General Research, EU

**Oscar Kjellberg**

JAK Medlemsbank, ASPO Sweden

**Ingolf Kiesow**

Ambassdor (Rtd.) and Senior Research Fellow at the Institute for Security and Development Policy (ISDP)

### Odissefs Panopoulos, DG Research EU

*Mr. Odissefs Panopoulos studied Nuclear Engineering at Queen Mary College, Nuclear Fuel Technology at Imperial College and Information Systems Engineering at the City University in London. After working as a safety systems engineer at Combustion Engineering, he worked as a nuclear security inspector for Euratom and finally at the European Commission in the Directorate General for Energy and Transport in several areas including economics of the nuclear industry, deregulation of the power sector, radioprotection, relations with the IEA and NEA and environmental externalities. He is currently working in the Directorate General for Research of the EC in the area of energy policy and strategy and is in charge of socioeconomic research projects.*

Mr. Panopoulos had today been asked to express his own private opinions, not the opinion of the European Union, of today's energy situation with respect to oil prices, international relations, drivers for prices, inflation, complexity etc. He chose to name his presentation Overshoot from a book by W Catton Jr. (1980). The definition of carrying capacity, as a biological term, is "The maximum

population that can be supported indefinitely by an ecosystem”. Overshoot is the growth of the population beyond the carrying capacity of the ecosystem.

## Overshoot

Some of the policy catch-words ”à la mode” today is sustainability, sustainable development, sustainable growth and energy security of supply. Why are these words so popular today and not 20 or 50 years ago? Because now we live in a time of “overshoot”. The important thing to understand is that there is going to be an Oil peak, it is not as important when it happens. The denial of this knowledge has been huge and is still ongoing within the economic sectors. Economics are mostly ideas and philosophy. We have failed to agree on a meaningful definition of the word sustainability; current definitions are open for free interpretation and set no boundaries. The discussion today is dominated by economics; i.e. growth and development. Development is, in origin, a biological term that means “maturity”. In economics this term is translated to limitless growth. Applying historic “With a quick view of the situation doubling times” in of the world, there would be at the end of the century, with Business as Usual, a growth of ; 4 x Population, 6 x Energy and 16 x Wealthy. It is evident that the resources to sustain such growth will not exist.

Fossil fuels, starting with fire, gave us the opportunity to expand beyond the carrying capacity of the earth. From the beginning we only used renewable resources and we had no exponential growth. About three (really, did the exponential change start that far back???) centuries ago, you can see a change towards exponential population growth. With the help from technology and engineers this has been possible to do.

Two denial walls are raised by today’s economists about the peak;

- There will be no peak, or the peak is very far away in the future
- Over optimistic views (blind hopes) on the potential of alternatives

The denials about the peak are based on economic dogmas, such as “economic growth measurements make sense”, “externalities should be internalised” and “there is separability between actions and results”.

When measuring the GDP over time from different years, you get a series of data representative sample of the economy suggesting that the economy grows. Everything measured in prices or money has a relative value, so how could you decide who was the richest, Bill Gates or the Roman emperors?

A long time goal has been to internalise externalities in the energy market prices. That means that you have to set a price for the damage that the production and use of a certain amount of energy causes. It is nonsensical that this is possible to do, the costs are is not quantifiable without generalisations to a great extent.

It is a mistake that you believe that you can calculate the results of you’re actions. The total image is too complex.

We need to ask the good questions about the continued evolvement with limitless growth, technical fixes and new investments past the oil peak. Can we continue in this direction to do this with alternative energies? When will it stop? Why should we continue this path?

## Alternative energy sources

There are several alternatives for the future concerning both traditional and alternative energy resources. Most of them are “blind hopes” that will not be able to fill the energy gap after the Oil peak. The tap is too small for non-conventional fossil alternatives as tar sands; gas hydrates are maybe dangerous, there are few good sites for geothermal energy. Hydropower has a challenge in local environmental impact and there is not enough uranium to sustain a large development of nuclear fission. Fusion research has a 50-year long failure behind them, the technical challenges are formidable and the solution always another 50 years away.

Hydrogen is not an energy source and what are the externalities of a new “hydrogen economy”? Clean coal with CCS requires about 20 percent of extra system energy and coal will also peak sometime in the future. h

Wind has a very large potential but is often very optimistically quoted. Wind is a good idea, although it is not a liquid fuel, and energy wise, we need large quantities to replace oil. The problems with grid stability can hopefully be solved with smart grid solutions. Biomass may also have a future, on a limited scale.

## Conclusions

It is impossible to find anything today that is completely independent of oil. When the oil price rises, the prices of everything dependent of oil will also rise. We should be reasonable and realise that we live in a time created by decisions taken in another time under different circumstances. We should create a global depletion capital and accept the fact that we need to reduce consumption. There will be less benefit from economic policies aiming for limitless growth.

## Oscar Kjellberg, JAK Medlemsbank

*Oscar Kjellberg is an economist graduated from the Swedish University of Agricultural Sciences with a background working with farming. The last sixteen years he has worked as a managing director and chief economist at JAK Mmembers' bank in Sweden, a bank which promotes loans and savings without interest. Oscar's current work with the bank is focused on business development and risk and compliance management.*

## Structural transformation after Oil peak

During the last century the access of cheap oil has formed our structural system and it has evolved into a society less intense in labour, but more so in energy. The Oil peak, when it arrives, will change the structural system and we no longer will have access to the cheap energy that our society is built upon. Geophysicist King Hubbert (1903-1989) predicted that a peak in discoveries will be followed by a peak in production. Following Hubbert's peak theory, what will the descent from the Oil peak be like?

The descent could possibly mean a transformation of the structural system, changing from global to local solutions and possibly degrowth with following financial monitoring problems. Two arguments for this are:

Changing factor prices after Oil peak will give the structural transformation a new direction  
Our debt based monetary system (with it's growth imperative) will be adopted to the post peak world

Production factors are a concept from classical economy. Land, Labour and Capital can be used for measuring the relations between price performance of energy and labour. Often this is a better measuring tool than money that has a relative value. The cost of oil production has soared since we began to shift to an oil based technology. A Swedish worker paid only one tenth during the last decades for energy, compared to what he paid in 1920. This doesn't mean that the price of oil today is high. Even though the dollar price for oil has increased during the last years but the labour price for oil is still historically low.

In 1850 work done in the US by machines was less than 20 %. With the oil economy this has gradually shifted towards a system with nearly zero work (measured as horsepower) done by humans or domesticated animals. The effect on society has been enormous. The farming sector was mechanised and the farm sizes were scaled up, people left this sector for industry, construction and service sectors. Production moved to countries with low costs for labour.

What will happen when the labour cost of energy increases?

- The production mix will change: high tech, less energy and more labour
- Our transportation will change: from air to roads to rail to sea
- The production will be reorganised: downscaling and local solutions.
- People will adapt by moving: from cities to smaller villages

The descent from the Oil peak can be divided into different stages. Now, we have reached the Oil peak. Slowly, more labour is needed to pay for oil, but few have realised the new situation. This evolves to a crisis situation where nobody knows what factor mix or new technology will win and be the one used in the future. In the third phase, our confidence grows and plausible winners have turned up. We have gradually turned to new sustainable technologies, high tech, but low energy and the oil based technologies have been replaced. There is no way of setting a time frame on these different stages of evolution.

### **Our monetary system after Oil peak**

King Hubbert also had ideas about the monetary system and the oil dependent growth of the economy. "For various reasons, it is impossible for the matter-energy system to sustain exponential growth for more than a few tens of doublings. The monetary system has no such constraints."

Money is nowadays created as coins, notes and payment facilities like bank cards, credit cards and other forms of easy access to credit. The latter type of money, which makes up for 95 % of our money, is debt based and that implies two things:

- Money as debt has to be repaid with interest
- The monetary base today is not sufficient for the payment of both the loan capital and the interest, hence it has to grow. This will be hard when oil has peaked.

### **Ingolf Kiesow, ISDP**

*Ambassador Ingolf Kiesow has served most of his life as a diplomat in countries in Asia, inter alia New Delhi, Pyongyang, Tokyo and Vientiane. He has also been Consul General in Hong Kong 1997-2000. His many years as an active diplomat in Asia and the Middle East has provided him with in-depth knowledge regarding conflict issues and conflict resolution mechanisms at the very highest political and military levels.*

*Ambassador Kiesow has also been Head Instructor on Security Policy at the National Defence College and a Researcher at the National Defence Research Agency in Stockholm, Sweden, where he conducted research at the department of defence analysis. His extensive publications concern conflict areas in South Asia, the Middle East and the Western Pacific, Korean, Taiwanese and Chinese domestic and foreign policy, Sino-US relations as well as non-proliferation issues and issues related to energy in Asia.*

*Ambassador Kiesow is also a member of the Royal War Science Academy of Sweden and he served as the Head of Chancery of the Stockholm Conference on European Security and Confidence Building Measures in 1983-84.*

Ingolf Kiesow began by noting that Asia can't continue to expand without a continued and increasing import of oil and gas. The import will be 83 percent of total consumption in 2030. The rising oil prices affect the international political scenery in a strong way, especially so in Asia.

### **The Energy Charter Treaty (ECT)**

The ECT is a multilateral treaty over the energy sector, which establishes legal rights and obligations to facilitate trade with energy. It helped EU members to establish a reasonably free flow of energy between them but also with Russia. China and USA are observers of the treaty. The discussions with India are not encouraging; they follow a very protectionist line concerning energy.

### **Europe**

Energy security is a pressing issue in energy policy because of the European Union's increasing import dependence and the high energy prices. The new Energy Overview from the EC caused a great

deal of discussion and the next two presidencies of the EU, of whereas the second one is Swedish, will be demanding concerning the energy issue.

Compared to the rest of the world, Europe has had a rather calm development in the field of energy. Europe first and foremost has import relations with central Asia, trying to get less dependent of Russian energy deliveries. Therefore, European reactions to the Ukrainian-Russian war in August were strong.

### **Russia**

Russia greatest market is Europe. Russia has been criticised for using energy as a tool in negotiations relating to politics. The Russian policy is somehow understandable if you look at their future energy situation with unsecure future production and huge environmental problems. There is a need for the “new” Russia to define their new energy policies. Maybe they have to secure their own production before exporting to other countries. Russia is also very unwilling to lose control over Central Asian oil and gas. This was not the main reason for the Ukrainian-Russian war in August, but it might have been a part of the picture.

### **USA**

America is still thinking in the terms of the cold war thinking regarding the energy issue. They are also in a challenging energy situation with sources of oil and gas drying out and increasing import needs.

In Kuwait and in Iraq, the first task was not to get hold of the oil itself within the countries, but to secure continued deliveries to the Asian economies. Shortage of oil in the Asian economies would have had a great indirect effect on USA.

If US forces withdraw from Afghanistan, there will probably be a radicalisation of the Sunni population in both Afghanistan and Pakistan. US decisions are likely to affect the whole region as well as the safety in the Indian Ocean and the supply of oil and gas to Asia from the Gulf. Pakistan is by far the most problematic country in the region with galloping inflation, risks of disintegration and that and radical Muslim elements risking could get their hands on nuclear weapons. If USA fails in Afghanistan, there is a risk that this country they could follow a similar the same route.

### **China**

China was the second most energy consuming country in the world in 2006. China’s oil security has worsened remarkably. China tries to buy oilfields to whatever cost and to avoid transportation risks, they aim to transport over 50 percent on Chinese keels. Japan and China also have territorial disputes over gas fields on the bottom of the sea between the two countries. Energy is discussed between the two and the prime ministers have decided to form energy as a CBM between China and Japan.

Russia is not welcoming China’s growing influence on the market and their quest for energy, first and foremost gas to help pollution reduction. China is also buying oilfields wherever they can get a hold of them to secure future internal energy needs. This leads to internalisation of the international supplies market and less and less will be left on the international market in a shortage situation. Several countries, among them India, is adapting the same policies as China. This policy have been strongly criticised for protectionism – the power game on is about energy.

### **India**

India’s oil industry is almost entirely state owned. The energy system is not well maintained and there are serious shortages of electricity and increasing problems with air pollution. The situation gets worse with the continuing population growth.

India is desperate for energy and has adopted a rather protectionist energy policy. They have acquired exploration blocks in Myanmar, Sudan and Iraq among others.

India continues to enhance its relations with Iran; USA on the other hand wants to isolate Iran as much as possible. There is also a contradictory behaviour; USA and India have cooperation projects, e.g. in civil nuclear power, and work together to play a policing role in the Indian Ocean. There is some uneasiness from the Indian side towards the US efforts to get closer to Pakistan.

## Japan

Japan has had a relatively calm development since they have been successful in saving energy. Today though, Japan is gliding away from treaty principles, joining the power game for energy. Security of the sea lanes is a matter of concern. The new Japanese strategy focuses on supplying state risk money for overseas exploration by Japanese oil companies.

The regional versus the global context

The oil producing countries and China and India are confronted with the following problems:

- Is owning oil and gas when loaded a wise policy?
- Does it make sense to spend enormous sums of money to minimise transportation risks?
- Is it realistic to pursue a policy of establishing partnerships with producers of an exclusive character?
- How to react when energy supply becomes involved in strategic gameplaying?
- Should developing countries be given a special handicap in the race for energy raw materials?

## Conclusions

Securing energy resources has become a strategic objective for China and India. Can it be avoided that other governments become directly involved in the race for oil and gas? NOC's (National Oil Companies) are likely to take over the roles of IOC's (International Oil companies). USA, EU and Japan have until now followed the rules of the ECT regarding open international markets. The question is if they will continue to do that in the future?

## Appendix E: Kinas energiförsörjning – idag och imorgon

**NOG-seminarium den 30 oktober 2008**  
**Eva-Maria Fasth, Stefan Grönkvist och Kristina Haraldsson**  
**2008-12-10**

### Förord

Kinas växande energikonsumtion ställer höga krav på både beslutsfattare och företag. På NOG-seminariet diskuterades huvuddragen kring Kinas energiförsörjning utifrån ekonomiska, politiska och energimässiga frågeställningar. En historisk bakgrund gavs för att visa på den ekonomiska och politiska utvecklingen och de konsekvenser detta inneburit för den geopolitiska utvecklingen i regionen. Ett av huvuddragen i dagens politik är att det gäller att trygga tillgången på energiresurser för att kunna upprätthålla den snabba ekonomiska utvecklingen. Samtidigt ser vi en tydlig koppling mellan ekonomisk tillväxt och ökade miljöproblem i Kina. Under seminariet besvarades även ett antal frågor om Kinas energipolitiska utveckling, bland annat hur kinesiska myndigheter och företag agerar för att säkerställa den kinesiska energiförsörjningen och vilka energiresurser som finns i landet. Andra frågor som berördes var hur fördelningen mellan de olika kraftslagen ser ut, vilket dagens importbehov är och utvecklingen för dessa samt vilka säkerhetsmässiga och geopolitiska konsekvenser som skapas av politiken mellan Kina och övriga världen när det gäller att trygga energiförsörjningen?

#### Talare var:

**Dr Tomas Kåberger**  
Generaldirektör, Energimyndigheten

**His Excellency Mr Chen Ming Ming**  
Ambassadör, Kinas ambassad

**Dr Bates Gill**  
Direktör, Stockholm International Peace Research Institute (SIPRI)

**Dr Øystein Tunsjø**  
Seniorforskarare, Norwegian Institute for Defence Studies (IFS), Oslo

### Tomas Kåberger, Energimyndigheten

*Dr Tomas Kåberger tillträdde tjänsten som generaldirektör i mars 2008. Han har tidigare haft ett flertal tjänster, bland annat som adjungerad professor i hållbara internationella energisystem vid Internationella Miljöinstitutet i Lund, ordförande för Svebio och vice vd och utvecklingschef vid Talloil AB. Han har även arbetat vid Svenska Naturskyddsföreningen och Chalmers tekniska högskola.*

### China – also Solving our Problems?

Tomas Kåberger started his presentation by pointing out some insights about Chinese policies that he has received through his membership in China Council for Local Economy. One viewpoint that is characteristic for the policies is that China as a nation rather looks upon solutions rather than problems. This viewpoint was also a starting point for Dr Kåberger's presentation.

Dr Kåberger pointed out that there are some rather interesting positive trends in the development of China. It is not only a large growing Chinese economy increasing the demand for oil and driving up oil prices. It is not only dramatic increase in coal power capacity increasing the greenhouse effect beyond control. There are also some interesting and positive trends in the field of renewable energy and electrical vehicles.

### **Wind Power Competition**

One of the areas where the development is proceeding rapidly is the development wind power in China. When you look at the way this positive development is distributed between different countries, we have had a process where some small, pioneering countries like Denmark were early movers, Germany came as the major global driver of wind industries and in the last few years United States have retaken the leadership in development. However, during recent years, China's development has been the most dramatic with the fastest acceleration in new installations.

If you look at wind power installations in 2006, China was number five. If you look at the installations in 2007 China was, according to the Wind Energy Trade Organization, number three and according to Danish consultants China was number two. This year it is an interesting competition between China and the United States being number one.

### **Solar Technology – a Growing Industry**

Another interesting field of development according to Dr Kåberger is the development of solar power. Wind power has an impressive growth, but the production of solar photovoltaic cells last year increased by 70 percent. In 2006 China was number three in the world. In 2007 China was number one and China will most likely stay number one for a few years or, according to other projections, forever. The development among Chinese manufacturers of solar photovoltaic cells is not only impressive in quantitative terms, the manufacturers are also reducing costs and making some quite spectacular projections of how this decrease will continue in the future.

### **Solar Water Heaters**

It is relevant to see that the Chinese installation of solar water heaters per capita is far higher than the European average and is comparable to the situation in Germany, where the frequency of solar heaters is among the highest in Europa. Only Cyprus, Greece and Austria have higher numbers. During a visit at the World Solar Conference in Beijing, Dr Kåberger recognized a Chinese industrialist that he had previously met as a Ph.D. student at Chalmers Institute of Technology in Sweden. This industrialist now owned one of the largest producers of solar water heater panels in China, using a technology that did not receive any grants from the Swedish Energy Agency, since it was considered too complicated to become competitive.

### **Electric Vehicles**

Another field that has developed faster in China than in other parts of the world is electric vehicles. This is not well known in other parts of the world, but Dr Kåberger was astounded by the number of the scooters that were electric when he visited the University of Nanjing where two thirds of the scooters were electric. During visit in Shanghai later on he realized that all of the 50 two-wheelers he watched when passing by an intersection were electric. The number of two-wheeled and four-wheeled electrical vehicles in China is almost more than the total amount of electric vehicles in Sweden.

### **Conclusions**

There are some very significant areas where Chinese industry is developing very quickly with some of the solutions that are widely discussed, but not rapidly put into operation in Europe and other parts of the industrialized world. China is in some fields getting far ahead of the industrialized countries in Europe and North America and when we talk about the Chinese problems we shouldn't forget that some Chinese solutions are also being developed.



## Ambassador Chen Mingming, The Republic of China

*His Excellency Ambassador Chen Mingming was appointed China's Ambassador to Sweden in May 2008.*

*Previous to this, he has held a number of positions:*

- *Director General of Department of Translation and Interpretation, Ministry of Foreign Affairs (2005-2008)*
- *China's Ambassador to New Zealand and the Cook Islands (2001-2005)*
- *Deputy Director and Director American Office and Deputy Director General of the American and Oceania Department (1990-2001)*
- *Second Secretary, First Secretary and Assistant to the Ambassador at China's Embassy in Washington (1987-1990)*
- *Third Secretary, Second Secretary and Deputy Director of English Office, Department of Translation and Interpretation (1980-1987).*

### An Overview of China's Energy Supply

In the beginning of his presentation Ambassador Chen Mingming said that the information presented are from three main sources:

- Chinese Government, Chinese Energy Bureau and national statistics.
- Chinese Industry,
- Chinese researchers, projections and forecasts.

Ambassador Chen Mingming continued by laying out facts about the Chinese resources of primary energy. China's proven hydro power reserve is the largest in the world. China has the third largest coal reserve in the world, next to United States and Russia. China is also quite rich in hydro and coal resources. On the other hand, China's per capita share of arable land in the world is just 29 percent of the global per capita average. One implication of this is that China's potential for developing bio-energy is limited. Difficult terrain, particularly in the deserts and mountains in the northwest and long distances between production bases and major consumption areas make cost of energy development high. Some experts estimate that it is much more costly to develop oil in Northwest of China than to buy oil from Saudi Arabia.

### China's Energy Production and Consumption

China is the world's second largest producer of primary energy. China's total energy output last year was 2.37 billion tons standard coal equivalent. One noteworthy feature, when comparing the composition of China's energy supply in 2000 with the energy output in 2007, is that while the share of coal went up, that of oil dropped. The overall trend is that the share of coal goes up.

During the period from 2000 to 2007, China's output of steel, cement and cars went up and so did the energy needs. China's energy consumption accounts for 16.8 percent of world total, ranking second in the world. However, the capita share is not very high: 1.87 tons of coal equivalents, which is 62 percent of the world average and 25 percent of that of the developed countries. The major energy consumers in China are the industry and the building sectors, with 70 and 17.5 percent of the total consumption, respectively.

There is a great room for improvements in building technology and Ambassador Chen Mingming pointed out that Swedish energy-saving technologies may play a great role in helping China to reduce building-based energy consumption. Another possibility for improvements lies in the industrial sector as the main reason for China's high energy intensity is the lack of energy effectiveness in energy intensive industry.

### Oil Import and Consumption

China was an oil exporting country until 1993 when it became a net importer of oil. Since then, China's oil import has increased rapidly to about 150 million tons last year. China's oil import accounts for 6 percent of world trade in oil.

This year on June 19 the Chinese government raised the gasoline price by 1 000 yuan per tonne to curb demand. Approximately 45 percent of China's oil import is from the Middle East, while around 30 percent is from Africa. In view of the potential instability of these two regions, Ambassador Chen Mingming noted that China needs to diversify its sources of oil import.

Currently, China meets 90 percent of its energy supply domestically. The remaining 10 percent of the energy supply is met by import of oil. The forecast of China's economic growth in for the two years to come was 9 percent, but that was before the global finance crisis. At present, it seems more likely that China's economic growth may drop to 8 percent due to the impact of the global finance crisis. Projections of the growth rate during 2008-2010 has indicated that the annual increase in primary energy consumption in China will be 4 percent. One problem with this is that the production of primary energy in China is only projected to grow by 3.5 percent, leaving a gap between energy production and consumption that according to Ambassador Chen Mingming has to be met by import.

### **Forecast of Major Energy Supply and Demand in 2010**

Forecasts of the demand for primary energy indicate that the domestic production not will meet the demand for any of the primary energy resources coal, oil or natural gas. The gas is most significant for oil where only 200 of the forecasted demand of 380 million tons is forecasted to be produced domestically.

In 2007, the total electricity production in China was 3 300 TWh, which can be compared with the projected production in 2010, 4 500 TWh. The goal is to reduce the share of coal from 77.6 percent last year to 70.6 percent in 2010. The hydro power production is projected to increase from 20.4 percent to 22.6 percent during the same period. The share of electricity from nuclear power, wind, natural gas, and biomass is low but is projected to increase in 2010.

### **Energy Savings – a Top Priority for China**

An energy conservation law was passed in 1998 and several steps have been taken to reduce the domestic energy intensity. According to Ambassador Chen Mingming, the policy has been successful since China's annual economic growth 1980 - 2006 was 9.8 percent while the growth of annual energy consumption during the same period was 5.6 percent. He continued by presenting two pressing challenges for China's future energy system: the conservation of energy and the mitigation of the pollution caused by the burning of coal. One third of China's land area is exposed to acid rain, and 100 million people lack fresh air.

China's per capita carbon emission is low, 3.85 tons in 2007 which is 87 percent of world average. But total carbon emission is high, reaching 5 billion tonnes in 2007. China is now the largest emitter of carbon in the world and linked to this is the previously noted need for energy efficiency, which Ambassador Chen Mingming regarded as one of the major problems. China is still far behind developed countries in energy efficiency. By contrast Sweden has maintained a remarkable economic growth while reducing carbon emission. China has much to benefit from Swedish experiences. The government of China has put of some overall goals for energy conservation, in which domestic energy intensities should be decreased by 20 percent by 2010 in comparison with 2005. The goal for the major pollutant during the same period is a net decrease of 10 percent. Ambassador Chen Mingming continued by expressing that these are very ambitious goals and that it will not be easy to reach them. The planned way to reach them is to decrease the share of coal and increase the shares of natural gas, nuclear power and renewable power generations. Currently four nuclear power generation units are under construction and the construction of seven more nuclear power plants are planned.

Nevertheless, there are uncertainties about the development of China's energy system. China's economic growth has dropped for five quarters, from 10.5 percent down to 9 percent and there are several causes for this drop. One cause is a drop in demand for export and another significant factor is the weak real estate market. The global financial crisis will weaken China's export and an implication of this is that is a reduced demand for energy.

In summary, China's per capita share of energy resources is low and the cost of domestic energy development will remain high. China's energy demand will grow as China's economy grows, but could drop if economy slows down. A large part of China's economic development will continue to be based on coal consumption, which poses a huge environmental challenge for China. Another challenge is that the demand for imported oil will increase. There are also plans for huge investments in renewable energy and energy efficiency in China, which will bring about opportunities for overseas companies. Considering this context, Sweden can be a good partner of China in raising energy efficiency. Several government agreements on energy efficiency have been signed and Ambassador Chen Mingming concluded that bilateral cooperation in this field should be vigorously pursued.

## Dr. Bates Gill, SIPRI

*Dr Gill is the Director of Stockholm International Peace Research Institute (SIPRI) since September 2007. Bates Gill's previous position was at China Studies at the Center for Strategic and International Studies in Washington DC. Dr Gill previously held the Freeman Chair in China Studies at the Center for Strategic and International Studies in Washington, DC, and he has also held positions at the Brookings Institution, where he was the inaugural Director of the Center for Northeast Asian Policy Studies and at the Center for Nonproliferation Studies of the Monterey Institute of International Studies. He is a member of the Council on Foreign Relations and the International Institute for Strategic Studies, and has consulted for a number of multinational corporations and government agencies. Dr Gill has lived more than two years in China and Taiwan and his recent book, published in February 2007, is entitled *Rising Star: China's New Security Diplomacy*.*

### **The Geopolitics of China's Energy Needs: Foreign and Security Policy Drivers**

Dr Gill's presentation included aspects on

- China's new geopolitics and diplomacy
- What are the drivers?
- What the implications are for the energy policy?

He started his presentation by remarking that we can see a dramatically more proactive and productive diplomacy since the mid-1990s. In fact, it is strategically rooted in a Chinese world view which we can date back even to the early 1980s. China has significantly improved relationships with almost all of its neighbours. Policies and practice on regional and global security matters – including counterterrorism, peacekeeping, non-proliferation, arms control and regional security mechanisms – converge with international norms. Dr Gill noted that China take a lead on issues of importance in international affairs. That is very positive and he did not see this as a tactical aberration, but rather something that is fundamentally rooted in how the Chinese leaders understand China's role in the world. Where does this come from?

### **New Geopolitics: What is it?**

Rooted in the Chinese leader Deng Xiaoping's vision from 1982 was peace and development, to keep a world war remote, and a stable environment in which to pursue development. This allowed China a window of opportunity of relative stability in which China could pursue its number one and most important priority – the domestic development. In fact Deng Xiaoping was predicting the end of the cold war and also recognizing the world's move in a more stable and positive direction.

Today, China is talking about a new security concept in which China is pursuing to be a responsible great power and that China's rise will remain peaceful. China is going to be pursuing a far more cooperative, productive and constructive international relationship. This is cohered around the Chinese policy "ti fa", which means "new security concept", "responsible great power", "peaceful rise", "peaceful development", and most currently "harmonious world".

Why has China taken this turn? What seems to be the principal drivers? Dr Gill meant that you can read between the lines of policy and determine what would be some of the principal drivers and motivations behind China's new approach to geopolitics that we have seen the past 5 or 10 years. The

number one priority in China is to smoothly pass through what has to be one of the most remarkable political, social, and economic transformations in all history.

The Chinese leadership pursues three principal goals: to maintain a stable external environment to defuse and deflect challenges so to address domestic economic, political and social reforms, to marshal growing wealth and power to assure development and extend influence, but in a way which reassures partners, and to seek a more “multi-polar world” by countering, co-opting or circumventing American “hegemony” and influence around the Chinese periphery, while avoiding overt confrontation with the United States or other major powers.

## Implications

Dr Gill summarized some of the practical implications of the contemporary Chinese policy:

China needs to maintain growth, increase urbanization and opportunities for a growing middle class. China must address environmental, demographic, and employment challenges as well as improving relations with neighbouring countries. China has proactively established the SCO, the Shanghai Cooperation Organization, which is a partnership between China, Russia, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan. There are several reasons for the establishment of the SCO, but the primary reasons are linked to aspects of energy development with China’s Central Asian neighbours.

The choice that China made in recent years to put aside territorial disputes with its neighbours in the South China Sea. China has strived to reach agreements and to resolve differences in opinions peacefully and also has sought to join ongoing explorations and exploitations of energy resources in the South China Sea. Most remarkably, Dr Gill noted, is the Chinese-Japanese relationship. China has also sought partnerships with foreign government and private partners around the world to address the growth/energy demand challenge.

China is balancing between energy needs and diplomatic interests and is making business with countries which European countries and the United States don’t deal with, for example, Iran, Sudan, and Burma. This requires an extremely delicate balancing act on China’s part, and the results of this diplomatic dance are not always encouraging. Recently a number of Chinese oil workers were kidnapped and killed in Sudan. For China, there is also a dramatic increase in the importance of energy and environmental diplomacy with Europe, the United States, and other advanced economies.

In summary: China is balancing the demands for a smooth domestic social, political and economic transformation versus different forms of economic, environmental and security cooperations abroad.

## Dr. Øystein Tunsjø, Norwegian Institute for Defence Studies

*Dr Øystein Tunsjø is a Senior Research Fellow at the Department of International security policy at the Norwegian Institute for Defence Studies in Oslo, Norway. Dr Tunsjø received his Ph.D at the University of Wales Aberystwyth in 2006 and describes his fields of interest as:*

- *US Taiwan policy, US-China relations and International history since 1945*
- *East Asia and China’s energy policy*
- *International relations theory*
- *Constructivism, Discourse analysis and Risk*

## China Hedges its Energy Security Bets

Dr Tunsjø starts his presentation by addressing some facts about China and energy. China is the world’s second-largest net importer of oil and accounted for almost half of the growth in world energy consumption in 2000 – 2005. IEA projects that China will import 13.1 mb/d in 2030, with share of imports forecasted to rise from 50 to 80 percent. According to the IEA, China will, with over four times as many people, overtake the United States position as the world’s largest energy consumer soon after 2010. Accordingly, the Chinese leaders will be more concerned about the security of their energy supplies.

Energy security is frequently defined as the “availability of energy at all times in various forms, in sufficient quantities and at affordable prices”. But Dr Øystein Tunsjø asks rhetorically: what is sufficient and what is affordable? Energy security among states differs in many cases according to stages of development and between importing and exporting countries. Dr Tunsjø also noted that the definition is also vague in explaining how and under what circumstances energy becomes a security issue. Is it because shortage of energy leads to competition and disturbance in availability of energy? Or is it because rising prices and recession may lead to social instability?

Adequate supplies of oil do not represent a threat to China at present. Rather the threat is based on a future scenario where the United States or other major powers might be able to disrupt China’s energy supplies during a crisis or a conflict. As a response to this, China’s current policy for energy security deals with risk that potentially can become a threat.

Risks can never be eliminated, determined and definitively solved and major risks need to be managed. Energy security in practice is best seen as a problem of risk management, i.e. reducing the risks and consequences of disruption and adverse long term market trends to an acceptable level. Dr Tunsjø emphasized that the key question in examining energy security is: how is risk managed?

### **Traditional Approaches to Energy Security**

Two major perspectives may commonly be observed when discussing China’s energy security policy: the strategic approach and the market approach. The strategic approach is characterized as a “Zero sum-thinking” or “Relative gains-thinking”. Energy is seen as a source of conflicts between states. One state’s gain is another state’s loss. The market approach, on the other hand, emphasizes absolute gains and maintains that energy resources are a source of potential international cooperation. Most states, including China, mix strategic and market strategies to secure energy supplies; this is commonly referred to as a comprehensive approach.

Dr Tunsjø argued that this traditional framework is insufficient to account for China’s behavior. Instead, he introduced the concept of hedging and the theory of risk management in order to provide a new perspective that broadens our understanding of the state’s behavior when it comes to securing energy supplies. It also offers a better explanation of China’s energy security policy in particular. In this context, hedging just means insurance. Hedging in the energy security realm may be seen as a strategy for dealing with risks in order to prevent threats. The key issue is to find the hedge ratio or delta. China hedges both against adverse consequences of a market and a strategic approach. There are risks in both a market and strategic approach that need to be hedged and managed.

### **The China Communist Party and the Chinese Oil Companies**

The Chinese “Go out”-strategy in the 1990s did have strategic considerations but coincided with general opening of the Chinese economy. There were some conflicts between corporate interests and national interests, including issues, such as, ineffective institutions and powerful firms. Now there is a shift toward commercial interests and profit rather than strategic goals. The Chinese Communist Party, CCP, is not willing to let corporate interest undermine broader foreign policy goals. China will increasingly depend upon the international oil market and this means that Chinese oil companies will go through a similar learning curve as western companies. Energy security risks can be managed and cooperation promoted.

### **Implications**

Clearly, China and western countries have both complementary and conflicting interests in the Middle East region. The relations in the U.S. – China – Middle East triangle are very important and many should follow them more closely. Most projections say that both the US and China will be much more dependent on oil from the Middle East, so the Chinese and the Americans have to find ways to deal with the Middle East together.

Dr Tunsjø noted that there has been a shift in the Chinese energy security policy. The key is the Chinese naval ambitions that include China’s aim to increase its state owned tanker fleet to 50 percent.

The West needs to develop a clear position on the Chinese criteria's of membership in the IEA. The benefits of integrating China in multilateral institutions could provide a more solid bridge between major Eastern powers and the West.

## Appendix F: Caucasus and the Caspian Region

**NOG-seminarium den 3 december**  
**Hanna Paradis och Johan Viksten**  
**2008-12-03**

### Foreword

The NOG seminar provided an overview of Caucasus and the Caspian Region. Since the time period of Alfred Nobel and his brothers, the region has played an important role in producing oil and gas for Europe. Over the years, this “quilt” of countries, ethnic origins and languages has been the centre of internal conflicts. These conflicts are often a source for the tensions existing in the region today, most recently the conflict between Russia and Georgia in August 2008. The region is quite important with regards to the European security of supply of oil and gas, and can be seen as a potential future alternative to Russia for supply of oil and gas. For example, the Nabucco pipeline project is on its way to create a connection between the continents, starting gas deliveries in 2014.

The seminar gave a historical retrospect with the Nobel brothers’ exploration of oil in Baku, Azerbaijan, as a starting point for discussions concerning present and future development of Caucasus and the Caspian region and the region’s importance for Europe’s security of supply of oil and gas. The region’s energy map was introduced providing a basis for a discussion on the region’s importance as a hub for production and distribution of oil and gas and the consequences of the conflicts existing in the area. Aspects such as the security and geopolitical consequences of the conflicts in the region and the situation evolving in relation to the different companies that are doing business in the area was also highlighted.

#### Speakers:

##### **Svante Cornell**

Research Director  
Central Asia-Caucasus Institute  
Silk Road Studies Program

##### **Baiba Anda Rudesa**

GPA manager  
Statoil Hydro in Baku, Azerbaijan

##### **Brita Åsbrink**

Journalist and author of the book  
“Ludvig Nobel: Petroleum har en lysande framtid”

### Urban Bergström, Energimyndigheten

#### Resereportage

Dagens moderator, Urban Bergström, hälsade deltagarna välkomna till NOG och inledde med en kort reseberättelse från Folk och Försvars resa till Georgien och Azerbajdzjan hösten 2008. Syftet med resan var att studera det säkerhets- och energipolitiska läget i regionen med fokus på frågor kring ländernas ”utbrytarstater”; Abchazien, Sydosetsien och Nagorno-Karabach. Flera hundra tusen flyktingar lever i Azerbajdzjan och Georgien under svåra förhållanden efter konflikterna. Resan omfattade möten med ambassadörer samt lokala representanter från såväl sittande regeringar som opposition.

## Beskrivningar Georgien och Azerbadzjan

Urban gav vidare en presentation av de båda länderna vad gäller statskicks, religion, ekonomi och demokrati. Georgien är ett transitland för olja och gas. Deras största exportprodukter är mineralvatten och vin. Ryssland åsamkade Georgien stor ekonomisk skada genom att sluta importera dessa produkter från Georgien efter kriget. Tillväxten har de senaste åren varit mycket kraftig även om den nu stannar av precis som resten av världen. Utåt så är Georgien en demokrati men i realiteten så har presidenten all makt.

Georgien är en nationalstat i en region där gränser flyter över etniska, religiösa och språkliga identiteter. Strävandet att skapa en modern, västorienterad demokrati ovanpå månghundraåriga strukturer skapar synliga och osynliga motsättningar. Ambitionerna att närma sig EU och framför allt Nato har retat Moskva. Det korta kriget i augusti 2008 var Rysslands varning till Georgien (och andra länder i regionen) att inte söka sig ut ur den ryska intressesfären. Men även internt finns spänningar som kommer till ytan när nya idéer ska omsättas i praktiken.

I Azerbadzjan har man vetat om att det fanns olja sedan 700BC. 1994 släpptes utländska och ryska bolag in i landet. Landet har 0,6 % av världens oljereserver och producerade 2007 1,1 % av världens oljeutvinning. Det största fältet är Azeri-Chirac-Gunashi som BP opererar, det innehåller minst 5,4 miljarder fat olja. BP opererar även den för Europa strategiska oljeledningen Baku-Tbilisi-Ceyhan på 1,768 km med en kapacitet på 1,2 miljoner fat per dag. För Europas del är även gasfältet Shah Deniz av intresse. Azerbajdzjan har 0,7 % av världens gasreserver och utvinnet 0,3 % av världens totala utvinning. Oljeutvinningen har under åren gett stora miljöproblem i regionen.

Etniska motsättningar i dagens Azerbajdzjan står huvudsakligen mellan de muslimska azererna och de kristna armenierna. Som följd av detta har svåra flyktingkatastrofer präglat landet. Den långvariga konflikten har lett till att den etniskt huvudsakligen armeniska enklaven Nagorno-Karabach, liksom omgivande provinser, har ockuperats av Armenien. Förhållandet till Ryssland som stödjer Armenien är en svår balansgång för

Azerbajdzjan som vill ha goda relationer med såväl Ryssland som Georgien och Turkiet.

## Brita Åsbrink, journalist och författare

*Brita Åsbrink har varit frilansande skribent sedan 1992 efter att ha arbetat på Sida i 15 år. Hon har skrivit tre böcker och arbetar på den fjärde. Under 1997 var Brita Åsbrink delegat för Internationella Federationen Röda Korset/Röda Halvmånen, Reporting Delegate i södra Kaukasus. Intresset för Bröderna Nobels oljebolag växte och resulterade i en bok: "Ludvig Nobel: Petroleum har en lysande framtid! En historia om eldfängd olja och revolution i Baku" gavs ut i november 2001 på W&W. Den gavs ut på ryska i Moskva våren 2003.*

*Hon tog även initiativ till och gjorde research till dokumentärfilmen "Röd sol över Nobels oljefält" som visades den 28 november 2001 på TV2. Filmen och boken var en del i firandet av Nobelpriset 100 år. Filmen visas i december igen på SVT. Sedan två år samarbetar hon med Centrum för näringslivshistoria, släktföreningen Nobel och UD för att digitalisera Bröderna Nobels kvarlämnade dokument i Baku, från 1876 – 1920. Man söker svensk finansiering i detta svensk-azerbajdzjanska samarbetsprojekt.*

## Mötet med Nobel

Brita kom julen 1996 till Baku som delegat för Internationella Federationen Röda Korset – Röda Halvmånen. Hon hade då hört talas om att Bröderna Nobel varit verksamma i Baku. I Baku var kopplingen mellan Sverige och Nobel naturlig. Brita insåg hur stort och viktigt bolaget varit och att det hade varit en ära att arbeta för Nobels som ett av de få goda bolagen verksamma som oljepionjärer, med en renhårig ledning. Bolaget tog väl hand om sin personal och deras familjer. Nu hoppas man kunna fortsätta arbetet med bröderna Nobels historia genom att digitalisera det material som finns på Historiska arkivet i Baku.



## Nobels oljeimperium

I slutet av 1800-talet byggde bröderna Nobel upp ett oljeimperium i Ryssland, jämförbart med Rockefeller i USA. Alltihop startade när de tre bröderna i sin ungdom bodde i Ryssland. I S:t Petersburg var familjen Nobel väl etablerad som en industrifamilj. Man tillverkade rör, vagnshjul och vapen till den militära industrin. Robert Nobel reste till Baku i affärer 1874, samtidigt som ryska staten släppt marken fri för privat exploatering av oljan, som hittills använts lokalt vid matlagning och uppvärmning och oljan, eller framförallt elden, hade en stor och viktig plats i den lokala mytologin. Eddyrkartemplet blir en del av brödernas företagsemlen och Nobel är hela tiden mycket noga med att använda lokala namn och lokal kultur i sitt arbete och sitt företag.

År 1864 skriver Ludvig från till sin bror Robert: "I Ryssland har man börjat sälja bergolja, men priset är ännu för högt. Tillgången är dock lika stor som i Amerika. Framtiden för petroleum är i alla avseenden lysande." Robert lockas av tanken på egna affärer, hans båda bröder är redan mycket framgångsrika; Ludvig äger en mekanisk verkstad i Sankt Petersburg och Alfred bygger sitt sprängmedelsimperium i Paris. 1875 har Robert köpt ett par små oljeraffinaderier och bygger upp en egen infrastruktur med rörledningar till hamnen. Ludvig och även hans son Emanuel engagerar sig i företaget. År 1879 tvingar Alfred bröderna att bilda aktiebolag, vilket lägger grunden till att "Branobel" blir störst i oljebranschen i Ryssland. Brita har använt dagböcker, brev och unika fotografier för att berätta historien om deras imperium. Fotografierna visar bland annat Villa Petrolea, Nobels residens i Baku, idag restaurerat till ett museum. Se även [www.bakunobel.org](http://www.bakunobel.org).

Alltihop tar slut 1918. Revolutionen har då tvingat fram en nationalisering av hela Nobels oljeimperium i Ryssland och Nobelfamiljen måste förklädd fly till Sverige. Man trodde då att oroligheterna skulle bli kortvariga och att man skulle kunna återvända, men som historien visar så var imperiet för evigt förlorat. Emanuel Nobel köpte Alfreds aktier vid dennes död, ca 10 – 15 procent ingår i den nybildade Nobelstiftelsen.

## Baiba Anda Rubesa, Statoil Hydro in Azerbadjan

*Baiba Anda Rubesa is since may 2008 Statoil Hydro's GPA manager (government affairs, CSR, HSE etc) in Baku, Azerbaijan, after having spent the last years as StatoilHydro's country manager in Latvia. Before, she has worked for Volkswagen with communication and branding.*

### Oil and Gas Business in the Region

Baiba chooses to focus on Statoil's upstream activities in the region for today's presentation. The reason why international companies are making huge investments in the area are the abundant resources that are there. But the situation is complex; three reasons for this is that she put in centre for the presentation are listed below:

Resource countries and their view of the world; Azerbaijan, Turkmenistan, Kazakhstan, Iran, Georgia, Turkey, Iraq and Russia

Russia & Gazprom; increasingly lagging in their production capability

Turkey; about to play an increasingly important geopolitical role as transit country to Europe?

Oil is all about politics and gas is all about geopolitics. For Europe to be a part of this „Gas game” we need to understand the process and authority of desitionmaking in the region. Presidents want to meet presidents and all the decisions will be taken at "the top" or not at all.

Baiba continues with describing Azerbaijan and Georgia through a political, economical, environmental and human relations perspective. In Azerbaijan the conflict concerning Nagorno-Karabach is just as present as the conflicts in Georgia with South Ossetia and Abkhazia.

The Caspian Sea region proven oil reserves are estimated to be between 17 and 44 billion barrels, comparable to Qatar on the low end and the United States on the high end. The Caspian Sea Region's

proven natural gas reserves are estimated at 232 trillion cubic feet, comparable to Saudi Arabia. Statoil Hydro's activities in Azerbaijan focuses on the two fields Azeri, Chirag and Gunashli, (ACG) (oil) and Shah Deniz (gas). Right now Statoil Hydro is working on the second phase of Shah Deniz with planned production start in 2014. Statoil Hydro also are big committers to sustainable development in the region, both in the environmental, economical and human rights sense of the expression. In Statoil Hydro's portfolio, Azerbaijan is the second largest after Angola.

The export line for oil from Baku is a pipeline via Tbilisi to Ceyhan in Turkey. To have the pipeline pass Armenia instead would have been a much better and cheaper solution, but because of political reasons this was not possible. Now, the pipeline is drawn through 2000 meter mountain passes. There is an alternative route via Russia.

## The Great Gas Game

The importance of the gas game that is being played around the Caspian Sea in 2008 is hard to comprehend for Northern Europe. Azerbaijani gas can be a gate opener for a broader, long term, gas corridor to the region's real centre, Turkmenistan, as well as from Central Asia and the Middle East towards Europe, but we have a long way to go. Turkmenistan's resources are huge. They have a strategic position in the region being in the epicentre, equally distanced to China, India, Iran, Russia and Europe. For the future, the gas in this region is Europe's to lose if we do not step up to the challenge and involve ourselves in the region. The key for Europe is to find a transit plan, the fourth gas corridor to the west. There are today several alternatives to connect from Baku:

- Nabucco; has many costumers but not that many resources
- White stream; very expensive project
- South stream; maybe the most likely alternative

From there it actually is not that far, neither mentally nor physically to Turkmenistan, just a pipeline across the Caspian Sea. The key transit country is Turkey, if this fails the alternative route from the Caspian is Russia. Europe needs to reflect on the picture of the gas game. After half a year in the Caspian region Baiba tells us that there has been a shift both in her geopolitical focus and her points of reference.

## Svante Cornell, ISDP

*Svante E. Cornell is the Research Director of the Central Asia-Caucasus Institute & Silk Road Studies Program, and a co-founder of the Institute for Security and Development Policy, Stockholm. His main areas of expertise are security issues, state-building, and transnational crime in Southwest and Central Asia, with a specific focus on the Caucasus. He also has expertise in Turkish and Pakistani politics and foreign policy. He is the Editor of the [Central Asia-Caucasus Analyst](#), the Joint Center's bi-weekly publication, and of the Joint Center's [Silk Road Papers](#) series of occasional papers. Cornell is the author of four books, including [Small Nations and Great Powers](#), the first comprehensive study of the post-Soviet conflicts in the Caucasus. His articles have appeared in numerous leading academic and journals such as *World Politics*, *the Washington Quarterly*, *Current History*, *Journal of Democracy*, *Europe-Asia Studies*, etc. His commentaries and op-eds appear occasionally in the U.S., Swedish, Turkish and Pakistani press. Cornell is Associate Professor (Docent) in Government at Uppsala University and Assistant Research Professor at Johns Hopkins University's Paul H. Nitze School of Advanced International Studies. Cornell holds a Ph.D. in Peace and Conflict Studies from Uppsala University, a B.Sc. with High Honor in International Relations from the Middle East Technical University in Ankara, Turkey, and an honorary doctoral degree from the Behmenyar Institute of Law and Philosophy of the National Academy of Sciences of Azerbaijan. He is a member of the Swedish Royal Academy of Military Science.*

## Return of prominence

Mr. Svante Cornell's task was to speak about the security situation reflected to energy, and to make a reflection on the recent war in the region. He started by putting the region in context by describing its great importance for Europe's future energy supply and its strategic localization as transit region and corridor for trade of oil and gas. Today Europe has only become to understand the strategic localization of the region.

We now see a return of prominence of a region that has been locked up inside Russia for a long time, which now is open to the world. There is a great potential to build functional democratic countries in the region and some of them has had a tremendous economic development during the last ten years. The question is what could kill this vision?

Firstly, a return to the control of one single power and Russia's outspoken will to regime control. It's therefore in western interest to help this opening to continue, not only from a material point of view, but also to defend our values as democratic countries.

### **The August war**

Mr. Cornell then brought the attention towards describing the Caucasus before the war in August 2008. The media reports from this part of the world were often reports of bad things happening, although the last decade has been very promising, both concerning economic growth and democratic development. In the case of Georgia the political development has changed from a situation where the country were unable to build a functional state, to a clear ambition to make firstly; a functional and secondly; a democratic state during the last five years. The earlier problems with corruption and bribes is now almost gone. The Georgian progress was intended and on the road towards the Western countries. The thought of a functioning infrastructure (pipelines and transportation network), to connect Europe to the Caspian countries is no longer abstract. The mental map has changed, both from Europe's point of view, but also from the Caspian's. There is now not only Russia and China, but also Europe.

The region has problems with security issues mainly from unresolved territorial conflicts with Russia, starting out in the early nineties. The conflicts have since then gradually grown; Georgia turning to the west and Russia tightening the pressure, something eventually had to break. During the last years Russia has pushed the boundaries of what could be tolerated or possible to get away with in the global community over and over again. By doing so repeatedly, and not get any negative response from the rest of the world, Russia has increased its pressure, taking military action against Georgia at several times before the war in August 2008. Their aim has been, according to themselves, to protect Russian citizens living in these areas. There are reports that claim that Russian passports belonging to already dead people were planted in the region, with the purpose to show the rest of the world that they were right to take military action in order to protect Russian citizens' wellbeing.

### **Why war?**

The question is why war? The overall purpose is that Kreml wants to change the leadership in Georgia and replace it with a more Kreml friendly regime. Secondly, a friendly regime would help Russia to secure the assets of energy in the region that they desperately need.

What will the future look like? The region is dependent of American and European support to stay independent. During next year the western countries have to reestablish their confidence in the region to be able to secure the energy corridor. The EU has to face the fact that the region is of great importance for the European energy supply; if not, the energy will go to Russia and China. For Europe the game isn't lost yet, but we have to show that we are willing to contribute and make effort in the region.