ALTERNATIVE OIL SUPPLY INFRASTRUCTURES FOR THE CZECH REPUBLIC AND SLOVAK REPUBLIC

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LIST OF ABBREVIATIONS

a. s.	Akciová společnost (Joint-Stock Company)
AG	Aktiengesellschaft (Joint-Stock Company)
AK	Акционерная компания (Joint-Stock Company)
ASEK	Aktualizace Státní energetické koncepce (Updated Czech National Energy Concept)
AUT	Austria
AWP	Adria-Wien Pipeline
B.V.	Besloten vennootschap met beperkte aansprakelijkheid (Limited liability company)
BAP	The potential Brody-Adamowo Pipeline
bcm	Billion cubic meters
bcm/y	Billion cubic meters per year
BPS	Baltic Pipeline System
BPS-II	Baltic Pipeline System II
BSP	The potential Bratislava-Schwechat Pipeline
BY	Belarus
CTF	Central Oil Tank Farm
CZ	Czech Republic
CAPPO	Česká asociace petrolejářského průmyslu a obchodu (Czech Association of Petroleum Industry and Trade)
CBU	Český báňský úřad (Czech Mining Authority)
CGS	Česká geologická služba (Czech Geological Survey)
CPU	Česká plynárenská unie (Czech Gas Union)
CPS	Český plynárenský svaz (Czech Gas Association)
CR	Czech Republic
CSFR	Česká a Slovenská Federativní Republika (Czech and Slovak Federative Republic)
CSR	Československá Republika (Czechoslovak Republic)
CSSR	Československá Socialistická Republika (Czechoslovak Socialist Republic)
D	Germany
DME	Dimethylether
DN	Diameter nominalis (nominal diameter)
VAT	Value Added Tax

DWT	Deadweight tonnage
EAOTC	Euro-Asian Oil Transportation Corridor
EBRD	The European Bank for Reconstruction and Development
EC	European Commission
EPH	Energetický a průmyslový Holding, a. s.
ERU	Energetický regulační úřad (Energy Regulatory Office)
ESPO	East Siberia Pacific Ocean Pipeline
ETBE	Ethyl tertiary butyl ether
EU	European Union
FAME	Fatty acid methyl esters
GmbH	Gesellschaft mit beschränkter Haftung (Limited Liability Company)
GR	Greece
GDP	Gross Domestic Product
HR	Croatia
HU	Hungary
CHVO	Chráněná vodohospodářská oblast (Protected Water Area)
I	Italy
IAEA	International Agency for Atomic Energy
IEA	International Energy Agency
IKL	Ingolstadt – Kralupy – Litvínov Pipeline
IR	International Relations
JANAF	Jadranski Naftovod
JSC	Joint-Stock Company
k.p.	Group
LNG	Liquefied Natural Gas
LPG	Liquefied Petroleum Gas
LT	Lithuania
LFO	Light Fuel Oil
LV	Latvia
MEŘO	Metylesther řepkového oleje (Metylesther of Rapeseed Oil)
MK	Macedonia
MND	Moravské naftové doly (Czech company producing gas and oil)
MOL	Magyar Olaj – és Gázipari Részvénytársaság (Hungarian oil and gas group)
MPO	Ministerstvo průmyslu a obchodu (Ministry of Industry and Trade of the Czech Republic)
MTBE	Methyl tertiary butyl ether
IR	International Relations

MZV	Ministerstvo zahraničních věcí (Ministry of Foreign Affairs of the Czech Republic)
MZP	Ministerstvo životního prostředí (Ministry of the Environment of the Czech Republic)
n.p.	Národní podnik (National Enterprise)
NEK	Nezávislá Odborná Komise (Independent Expert Committee)
OAO	Открытое Акционерное Общество (Joint-Stock Company)
OBP	Oděsa-Brody-Pipeline
ODS	Občanská demokratická strana (Civic Democratic Party)
OECD	Organisation for Economic Co-operation and Development
OOO	Общество с ограниченной ответственностью (Limited Liability Company)
OPEC	Organization of the Petroleum Exporting Countries
PAT	Публічне акціонерне товариство (Public Joint-Stock Company)
PCR	Parlament České Republiky (Parliament of the Czech Republic)
PGNiG	Polskie Górnictwo Naftowe i Gazownictwo (Polish Oil and Gas Mines)
PGP	Płock-Gdansk Pipeline
PKN	Polski Koncern Naftowy (Polish Oil Company)
PL	Poland
plc	Public Limited Company
PVC	Polyvinylchloride
RAMO	Rafinérie minerálních olejů (Mineral Oil Refinery)
REB	Russian Export Blend (intermediate fuel oils imported from the Russian Federation)
RPA	Rafinérie, Petrochemie, Agrochemie (Refineries, Petrochemicals, Agrochemicals)
Rt	Részvénytársaság (Joint-Stock Company)
RU	Russian Federation
RUP	Республиканское унитарное предприятие (Exclusively State-Owned Company)
S.A.	Société Anonyme (Joint-Stock Company)
s. p.	Státní podnik (State-Owned Company)
s. r. o.;	Spol. s r.o.; Společnost s ručením omezeným (Limited Liability Company)

SA	Spółka Akcyjna (Joint-Stock Company)
SAPPO	Slovenská asociácia petrolejárskeho priemyslu a obchodu (Slovak Association of Petroleum Industry and Trade)
SBS	Státní báňská správa (The State Mining Administration of the Czech Republic)
SEI	Státní energetická inspekce (State Energy Inspection of the Czech Republic)
SEK	Státní energetická koncepce (Czech National Energy Concept)
SEP	Státní energetická politika (Czech National Energy Policy)
SK	Slovak Republic
SLP	The potential Spergau-Litvínov Pipeline
SNZ	Slovenské naftové závody (Slovak Oil Enterprise)
SR	Slovak Republic
SRB	Serbia
SSHR	Správa státních hmotných rezerv ČR (Administration of State Material Reserves – Czech Republic)
SSHR	Správa štátných hmotných rezerv SR (State Material Reserves of Slovak Republic)
SSP	Schwedt-Spergau Pipeline
USSR	The Union of Soviet Socialist Republics
SWOT	Analysis of Strengths, Weaknesses, Opportunites and Threats)
SZ	Strana zelených (Green Party)
TAL	Transalpine Ölleitung (Transalpine Pipeline)
LFO	Light Fuel Oil
ELFO	Extra Light Fuel Oil
TPES	Total primary energy supply
UA	Ukraine
US DoD	United States Department of Defense
USA	United States of America
USD	American Dollar
ZAT	Закрите акціонерне товариство (Closed Joint-Stock Company)
ZSDNP	Employers‘ Association of Mining and Oil Industry Fellowship of Miners of the Czech Republic

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EXECUTIVE SUMMARY

Neither the Czech Republic nor Slovakia has any significant domestic resources of crude oil, leaving both countries at the mercy of foreign sources for the overwhelming majority of their oil. Since 1962, the majority of crude oil has been transported to the countries via the Druzhba Pipeline, the longest pipeline on Earth. To-date, the pipeline remains the primary route for supplying oil to both Slovak and Czech refineries.

Since 2007, information has frequently surfaced that say Russia is considering closure of the Druzhba, a significant threat to the Czech Republic and Slovakia. Supplies on the Druzhba Pipeline are most susceptible to interruption on the south branch, negatively impacting the Czech Republic and Slovakia.

This book was written to assess the available infrastructural alternatives and to provide guidelines for resolving future issues. It involves a somewhat ambitious effort to create a presentation and a set of recommendations that will attract and influence not just analysts and experts, but also those active in the Czech and Slovak oil markets. The aim is to analyse the potential of pipeline infrastructure, taking into account alternative supply routes for the Czech and Slovak Republics. Because the countries are next-door neighbours, they are analysed side-by-side. Subsequently optimal and suboptimal variants of potential actions the two could take in common are discussed.

The initial focus of this book is on current baseline conditions in the oil sector in the Czech and Slovak Republics. In addition to providing baseline values that will be used further on in the text, a detailed description is offered of the oil sector

in these countries. The comprehensive, quality dataset used to do so is one output. Readers will acquaint themselves not only with oil infrastructure, but also with the use of oil, the individual components of the oil sector, its outlook, etc. Thus a comprehensive set of data will be available that allows deductions to be made about the significance of oil for the country. Baseline conditions in the Czech Republic and Slovakia will be compared with six infrastructural alternatives in the experimental section. These are the Ingolstadt-Kralupy-Litvínov Pipeline, the Adria Pipeline, the potential Bratislava-Schwechat Pipeline, the Adria-Wien Pipeline, the potential Odesa-Brody-Adamowo-Płock-Gdansk Pipeline, the potential Spergau-Litvínov Pipeline and the Lobau-Bratislava waterway.

The basic hypothesis—that because of the existing oil pipeline network infrastructure, because of the countries' varied geographical positions and given the various ways of implementing diversification, the Czech and Slovak Republics actually have little in common—was falsified.

The values for the optimum result for the Czech Republic are entirely comparable with the second result, the optimum result for the Slovak Republic. Although it is not the best variant for the CR, it has a decidedly positive effect on supply security, and collaboration between the countries on joint development of this suboptimal variant is both possible and desirable. Although the countries differ in terms of geographical position as well as interests and strategies for attaining fluent oil supplies, the potential Odessa-Brody-Adamowo-Płock-Gdańsk Pipeline, the section of Odessa-Brody-Druzhba that is already in place, has the potential to make a significant positive impact on oil supply security. It is the optimum alternative for the SR and the best suboptimal alternative for the CR to the primary supply route. Joint action by the Czech Republic and Slovakia to promote and develop this alternative is possible and suitable.

The study results show that the Czech and Slovak Republics share interests in the oil sector that can be recast into joint action for their attainment. But the suboptimal result significantly concerns Ukraine as a transit country for the Odessa-Brody Pipeline. And Ukraine is known for being an unreliable transit agent for hydrocarbons. The situation is also impacted by the current turmoil in Ukraine, which does little to promote collaboration and supply stability. Within the oil sector, both the counties should become diplomatically active to terminate the conflict and settle the situation. That is the only way to reach the positives that follow from the development of the Odessa-Brody Pipeline.

Within the oil sector, the Czech Republic and Slovakia are significantly interconnected, and changes that take place in one country influence developments in the other. This study has shown that when it comes to crude oil, both countries can function as partners and take joint steps to attain their own unilateral interests in line with their energy concepts. But in terms of oil refining and the oil trade, the countries are fierce competitors and this dichotomy may significantly influence their common diplomacy. The interests of refineries and traders in Central Europe and the relationships between them would be a suitable topic for follow-up studies.

CHAPTER 1:
INTRODUCTION

"Oil is money; natural gas is politics."

This truism about hydrocarbon energy has been repeated ever since the field first drew attention from those outside it—from the public, but particularly from figures in political and international relations circles. Since the time of Winston Churchill, who before World War I chose to wager on oil over coal to fuel the British Navy, the importance of energy for both domestic and foreign policy has surged. But a full appreciation came only with the oil shocks of the 1970s. Now, after the disintegration of the Soviet Union, after the structural changes engendered in the international system and parallel changes to policy themes, energy stands at the forefront of domestic and foreign policy.

Whoever first uttered the quotation above is lost to history, but one thing is certain: the words are still relevant. Even after 150 years of extraction and use—the first drill hole in the United States was sunk in 1859—oil remains sovereign among raw materials used for energy. This is so for many reasons. Among them is its relative simplicity of extraction, its great ease of transport, the extent to which industry relies upon it, and the fact that given this massive use, it has few substitutes.

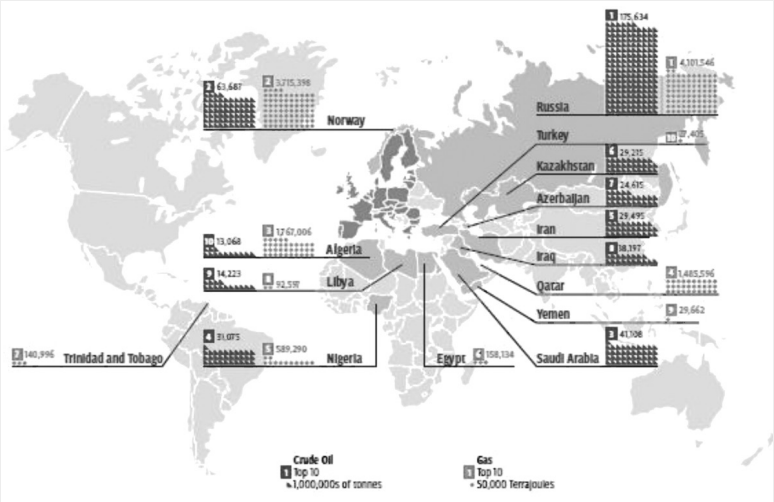
Comparing oil to that other prominent hydrocarbon, natural gas, immediately shows off its advantages. First of all, the global oil market is highly liquid, greatly reducing the negatives associated with oil dependence. Its ease of transport by means of oceangoing tankers, pipelines, and railroads, and tanker trucks is another plus. Because it is a liquid, oil is easy

to handle; its utilization hardly impacts on critical aspects of day-to-day survival. Any interruption to natural gas supplies will immediately lead to a loss of heating in homes, businesses and elsewhere, not to mention the impact on electricity production, a critical problem during the consumption-hungry winter months. Interruptions to the oil supply, by contrast, will cause outages in the production of fuels and petrochemical products, but these products may be purchased elsewhere, largely limiting the impact to the 'mere' collapse of the Czech refineries and to an extent, of the industrial sector.

There is no question that politics has deeply infiltrated the oil sector, but not in as flagrantly obvious manner as in other energy sectors. Its presence is not a given in the oil sector. Where politics does play a key role is in regions where oil pipeline infrastructure has not yet been sufficiently developed and for which there is but a single route or supplier. In those regions where the infrastructure does exist, the oil supply is governed almost exclusively by market relationships. Any disruption to supply for political reasons does significant damage to the supplier—because of the high liquidity of the global oil market, there is always an alternative source available. This is particularly true for the European Union because of the wide range of suppliers it has at hand (see Table 1.1).

The Russian Federation, by far the largest oil supplier to the European Union, has a problem, according to informed sources, in keeping its oil production growing at the same rate as world demand, particularly from Asia. It has diversified its consumer base by using new routes, including the ESPO (*Eastern Siberia Pacific Ocean Pipeline*) route, which terminates at the eastern Siberian port of Kosmino, BPS (*Baltic Pipeline System*) terminating at Primorsk—a Russian port in the Gulf of Finland on the Baltic Sea–and BPS-II (*Baltic Pipeline System II*), which leads to Ust-Luga in the Gulf of Finland. But it has become clear that the Russian Federation

Table 1.1: Oil and Natural Gas Suppliers for the European Union



The map shows the ten highest-volume suppliers of oil and natural gas; brown designates oil, green natural gas; data for oil is given in millions of tons per year, data for natural gas in multiples of 50 thousand terrajouls; commas are used as the thousands separator

Source: Henderson, 2014

is not capable of producing enough oil for all these routes, and instead appears to prefer some routes over others. These limitations place oil supplies for the West at risk, along with the growing demand for oil from consumers in the East.

It must also be borne in mind that, historically, problems supplying European consumers have not been due to unilateral policy decisions by Russia—transit countries, too, have played their part. European consumers on the Druzhba pipeline purchase oil either on the Ukraine-Slovak border at Budkovce (the southern branch), or on the Poland-Belarus border at Brest (the north branch). The supplier must pay a transportation tariff to the transit countries as well as export duties, costs which are then incorporated into the oil price. The customer pays for the raw material and the transport tariff