

3rd JANAF's International Energy & Oil Conference, Energy Strategies - Challenges for Oil Companies

Zagreb, 5 December 2017

Omišalj Terminal, 6 December 2017



***OIL PIPELINE INFRASTRUCTURE FOR SECURITY OF CRUDE OIL
SUPPLY OF CENTRAL EASTERN AND SOUTH EASTERN EUROPE***

EMPHASIS ON JANAF

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CONTENT

- ❑ General framework and challenges for oil industry
- ❑ Role of oil pipelines infrastructure in energy climate policy implementation
- ❑ Position and importance of JANA pipeline and storage capacities in energy supply security of SE & Central European countries

GENERAL FRAMEWORK AND CHALLENGES FOR OIL INDUSTRY

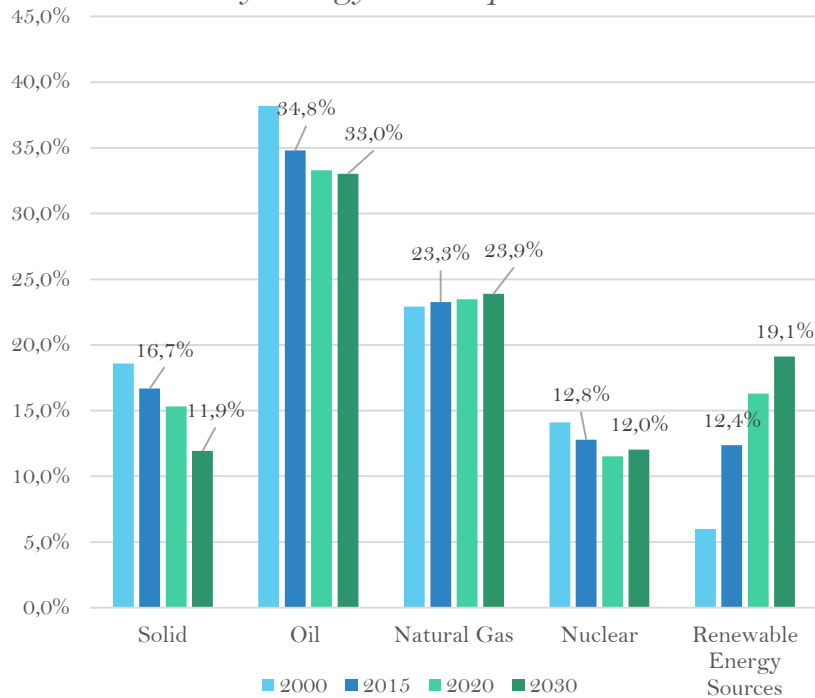
Climate policy implementation

- ❑ Paris climate conference (COP21) in December 2015
 - ❑ Legally binding global climate deal
 - ❑ Document enters into force on 4 November 2016
- ❑ Governments agreed
 - ❑ a long-term goal of keeping the increase in global average temperature to well below 2°C;
 - ❑ to aim to limit the increase to 1.5°C, since this would significantly reduce risks and the impacts of climate change
- ❑ EU's role
 - ❑ The EU has been at the forefront of international efforts towards a global climate deal

EU ENERGY STRATEGY

EU28

Primary Energy Consumption Structure



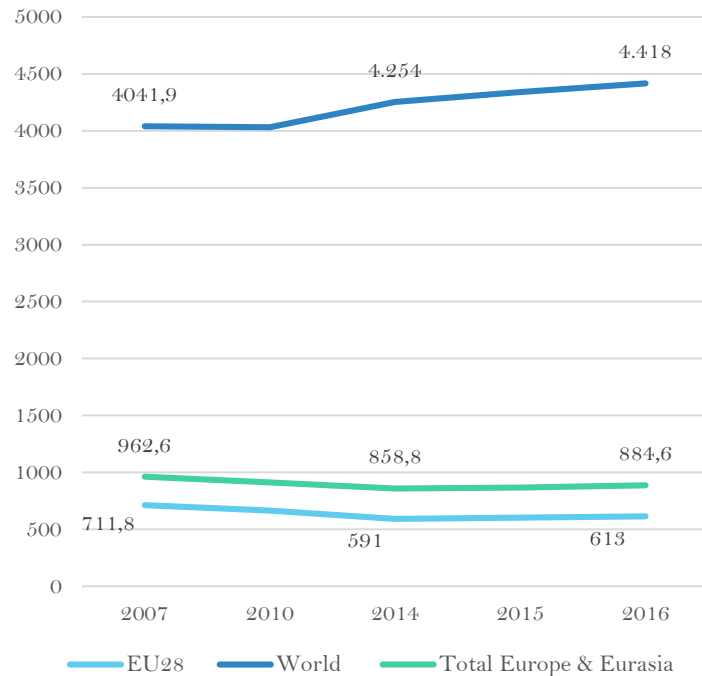
- ❑ Oil consumption 2030 - 513 mil. tons
- ❑ Petroleum products would still represent 86-87% of the EU transport sector needs by 2030 compared to 94% today
- ❑ Non-energy use of oil - petrochemical industry
- ❑ Energy efficiency

Targets for 2030

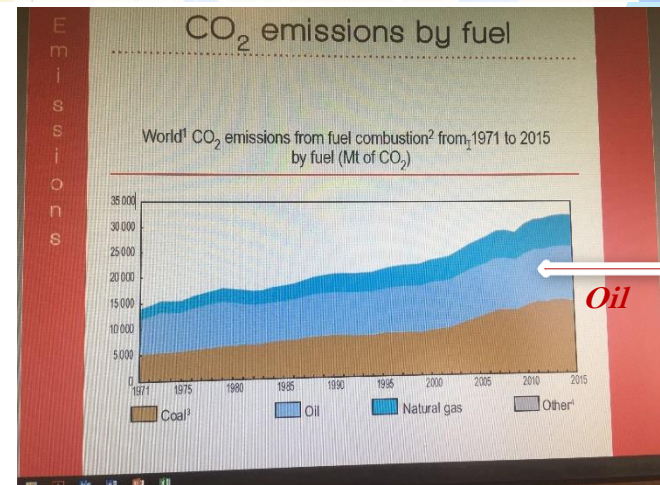
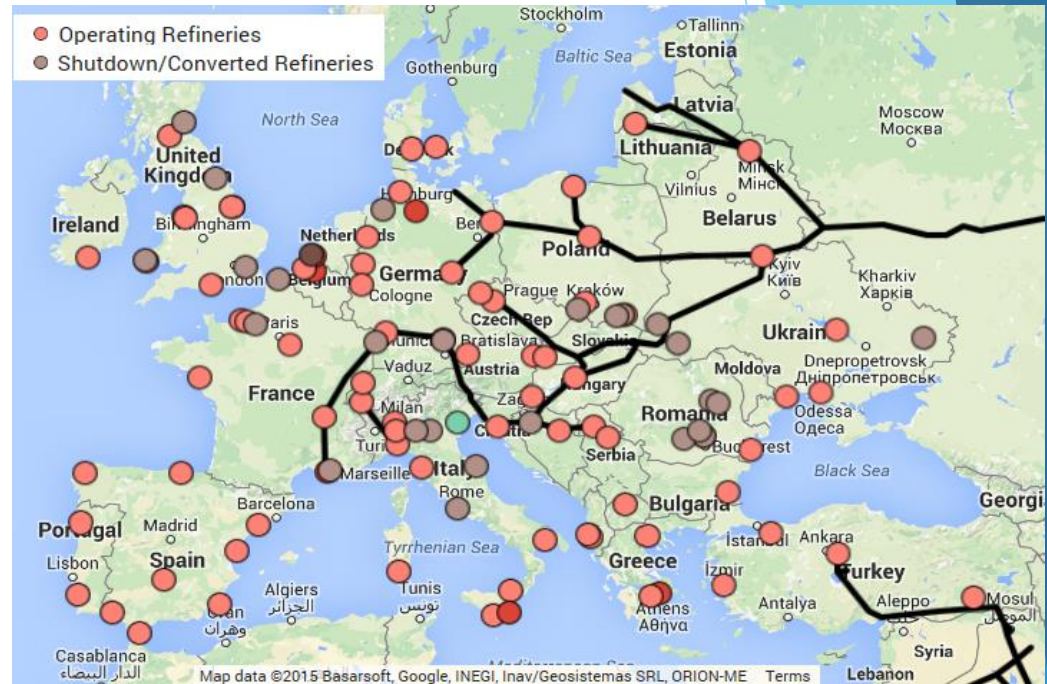
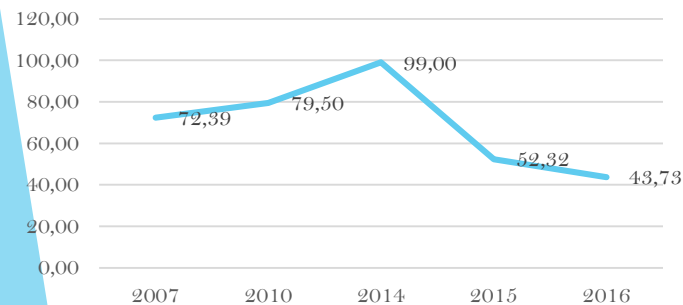
- ❑ 40% cut in greenhouse gas emissions compared to 1990 levels
- ❑ at least 27% share of renewable energy consumption
- ❑ at least 30% energy savings compared with the business-as-usual scenario

REFINERIES vs OIL CONSUMPTION, EMISSIONS, PRICES

Oil Consumption (in mil. tons)

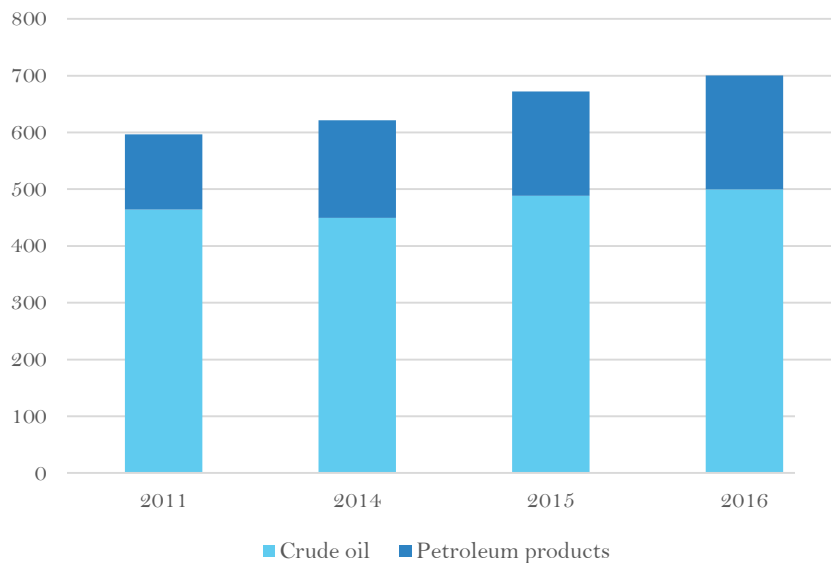


Crude oil prices (USD/bbl)

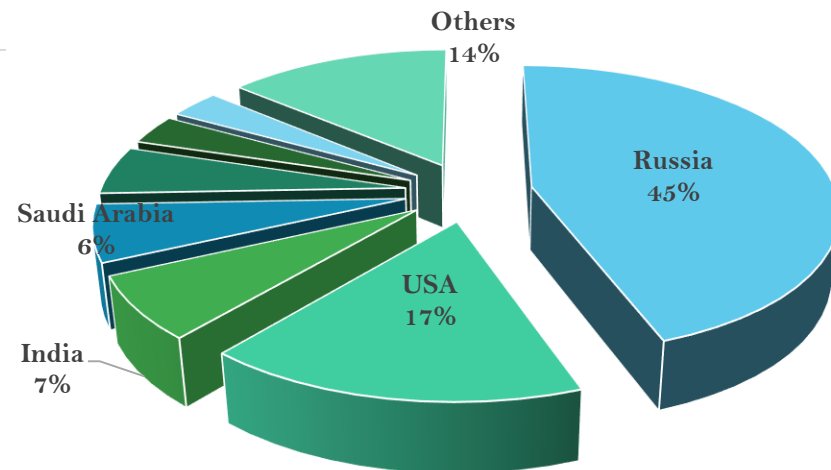


IMPORT INCREASE vs SUPPLY SECURITY

Europe: Import of crude oil & petroleum products (in mil. tons)



Petroleum products import destination to Europe



ENERGY SECURITY STRATEGY & OIL PIPELINE INFRASTRUCTURE

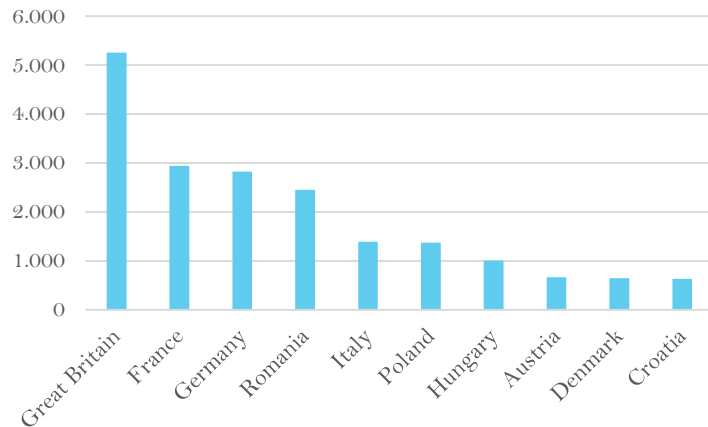
Strategic goals for 2030 relevant for oil pipeline infrastructure

- ❑ Increase of energy supply security by
 - ❑ Diversification of energy supply routes and sources
 - ❑ Strengthening interconnection capacities between countries
 - ❑ Strengthening strategic partnerships between consuming and producing countries through ownerships, common investments, etc.
- ❑ Establishment of 12 energy priority corridors and areas
 - ❑ *Oil Supply Connections in CE Europe corridor (OSC) with 6 oil pipelines PCI*
 - ❑ Croatia, Hungary, Slovakia, Czech R., Austria, Germany, Poland, Ukraine

EUROPEAN OIL PIPELINE-STORAGE INFRASTRUCTURE - KEY PILLARS OF ENERGY SECURITY

Crude oil pipeline network length:

▣ Europe – 22.500 km



▣ Russia – 80.820 km

▣ Ukraine – 4.514 km



Crude oil import/export ports: Hamburg, Rotterdam, Primorsk, Ust-Luga, Marseille, Genoa, Trieste, *Omišalj*, Odessa, Novorossiysk, Batumi, Supsa, Kulevi, Ceyhan, Sidi Kerir

Crude oil & petroleum product storage capacities

CENTRAL-EASTERN & SOUTH-EASTERN EUROPE OIL PIPELINES NETWORK

Length: 9.852



OIL SUPPLY SECURITY - DIVERSIFICATION OF ROUTES AND SOURCES – CASPIAN CRUDE OIL

- ❑ *Caspian Pipeline Consortium (CPC) - 2001*



- ❑ *Baku-Tbilisi-Ceyhan (BTC) - 2006*



DIVERSIFICATION OF ROUTES – RUSSIAN OIL

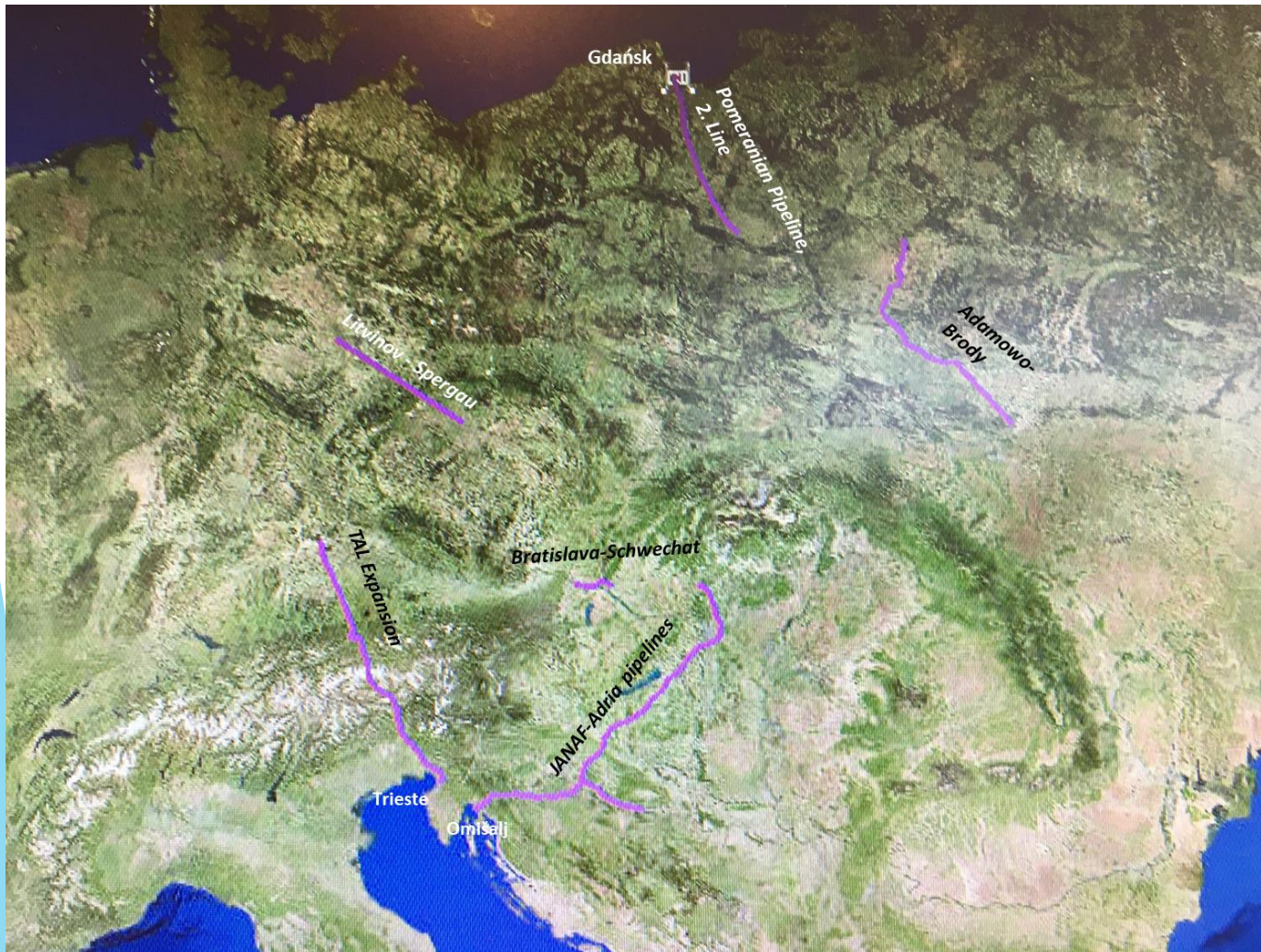
❑ Baltic Pipeline System I 2001



❑ Baltic Pipeline System II - 2012



FURTHER DIVERSIFICATION OF OIL IMPORT ROUTES AND SOURCES



- ❑ Implementation of *Oil supply connections in Central Eastern Europe energy priority corridor (OSC)*
- ❑ Planned oil pipelines projects

RECENT DIVERSIFICATION OF OIL SUPPLY

- ❑ MOL's (Hungary, Slovakia) refineries - seaborne crude imports from *Omišalj/JANAF* direction
- ❑ Unipetrol (Czech R.), PKN Orlen – *Trieste/TAL, Omišalj/JANAF* (plan)
- ❑ Plock and Mazeikiai refinery, PKN Orlen (Poland, Lithuania) - *CPC (Novorossiysk), Iran, USA*
- ❑ Gdansk refinery, Lotos (Poland) - *North Sea, Iran, Nigeria, Canada, USA*
- ❑ Mozyr refinery (Belarus) – *Iran via Odessa/rail or Baltic ports*
- ❑ Foe-sur-Mer (France) – *USA*
- ❑ ENI, Vitol – *Baltic Urals Oil to Mediterranean region*

JANAF IN EUROPEAN OIL PIPELINE NETWORK AND OIL FLOWS

- JANAF pipeline has significant role in oil supply to refineries of SE & Central Europe

Refineries:

Rijeka and Sisak (Croatia),
Pancevo and Novi Sad (Serbia),
Brod (Bosnia and Herz.),
Szazhalombatta (Hungary),
Slovnaft (Slovakia), Kralupy
and Litvinov (Czech R.)

- 1979-2017; oil transport
222 mil. tons



- Diversification in crude oil and petroleum products storage - 40% of revenues



JANAF OIL PIPELINE & STORAGE SYSTEM

- ❑ JANAF Plc. performs the activities of crude oil transport, as well as storage and reloading of crude oil and petroleum products
- ❑ Designed capacity - 34 million tons of crude oil transported annually (MTA), while the installed capacity amounts to 20 MTA
- ❑ Length of pipeline - 631 km
 - ❑ Omišalj-Urinj subsea oil pipeline linking the Omišalj Terminal and INA-Oil Refinery Rijeka
 - ❑ Subsea oil pipeline linking the Krk island and mainland
- ❑ Reversal flow on the Sisak-Croatian/Hungarian border-Sisak section
- ❑ Five terminals with 1,7 mil m³ storage capacities for crude oil and 202.000 m³ for petroleum products:
 - ❑ Crude oil: Omišalj (1,16 mil. m³), Sisak (500.000 m³), Virje (40.000 m³), Slavonski Brod (no storage tanks)
 - ❑ Petroleum products: Omišalj (60.000 m³), Žitnjak-Zagreb (142.000 m³)

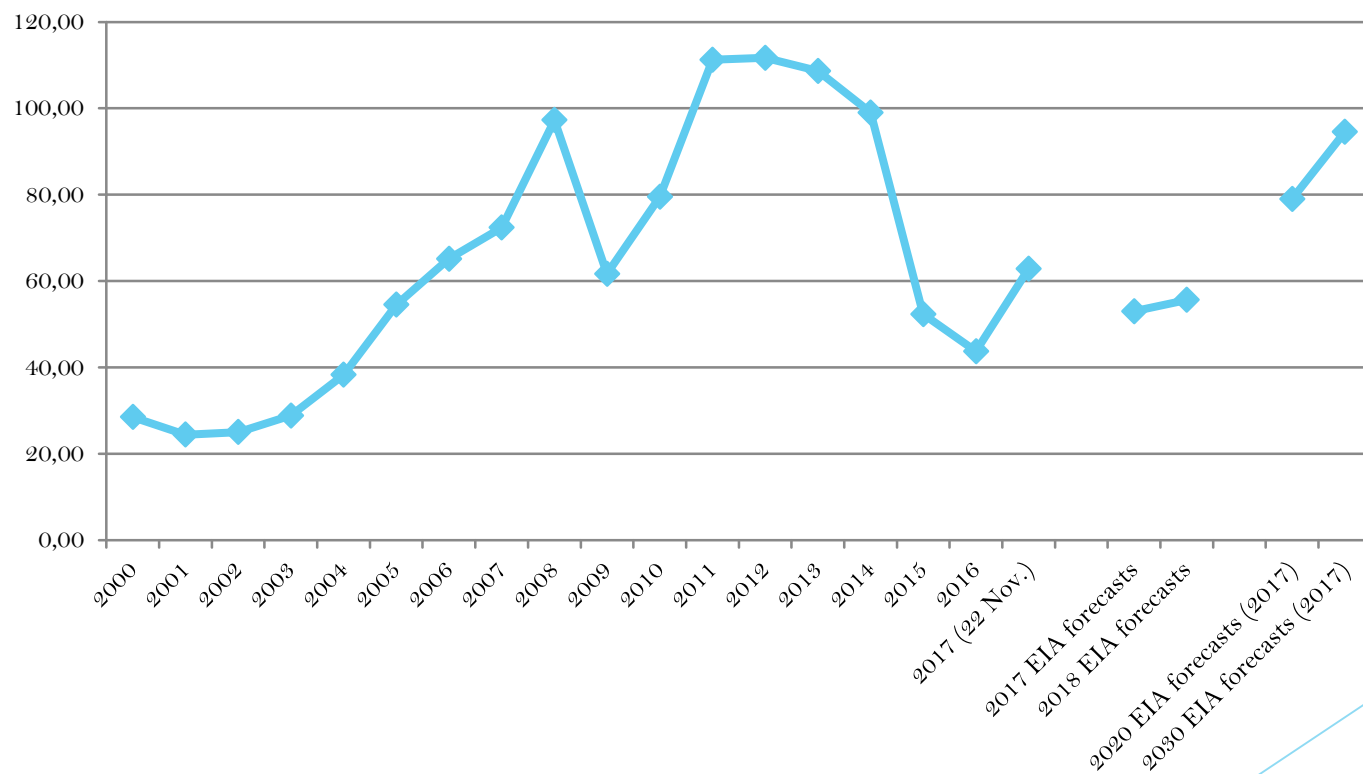
JANAF'S CONTRIBUTION TO OIL SUPPLY SECURITY



- ❑ Oil import from two directions, Omišalj and Druzhba pipeline
- ❑ Market of 6 countries with 9 refineries
- ❑ Available pipeline and storage capacities for crude oil and petroleum products
- ❑ Storage of compulsory oil and petroleum products stocks

OIL PRICES

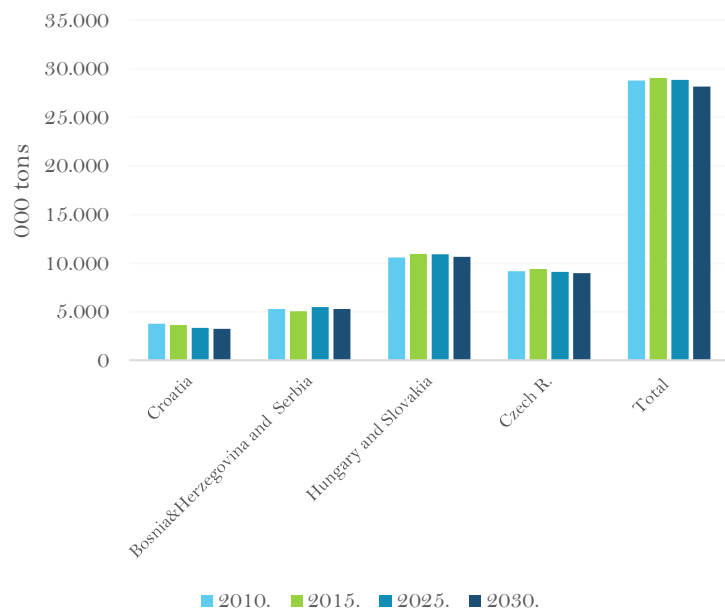
Arabian, Dubai/Fortes/Brent (\$/bbl)



CHALLENGES AND OPPORTUNITIES

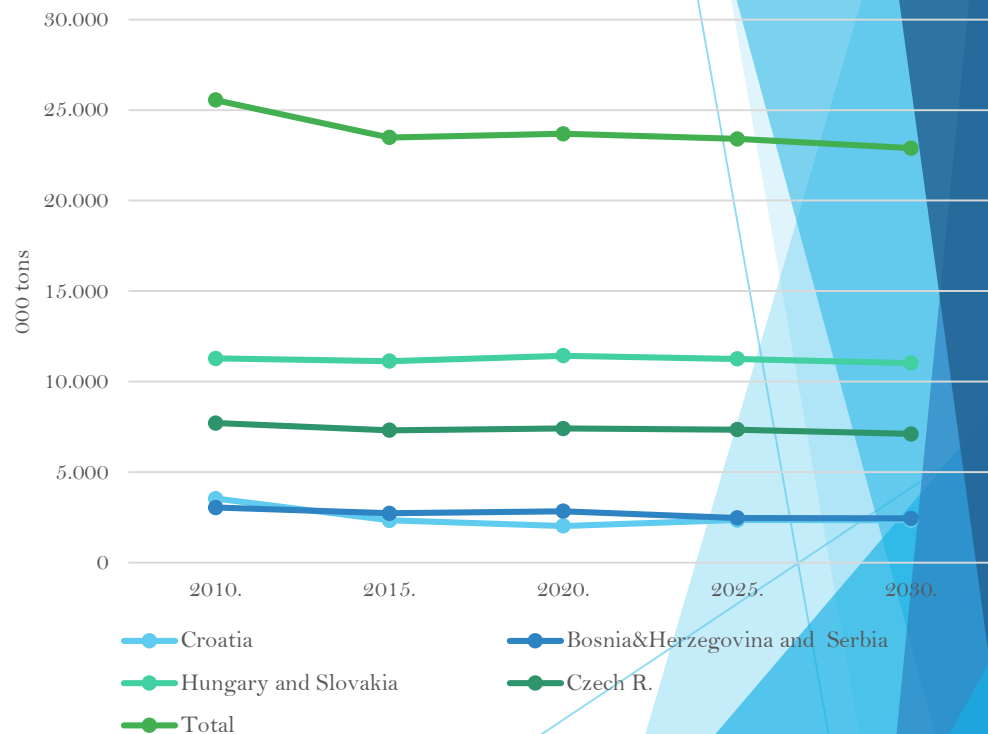
DOMESTIC AND SE & CENTRAL EUROPEAN OIL MARKET

Petroleum products consumption



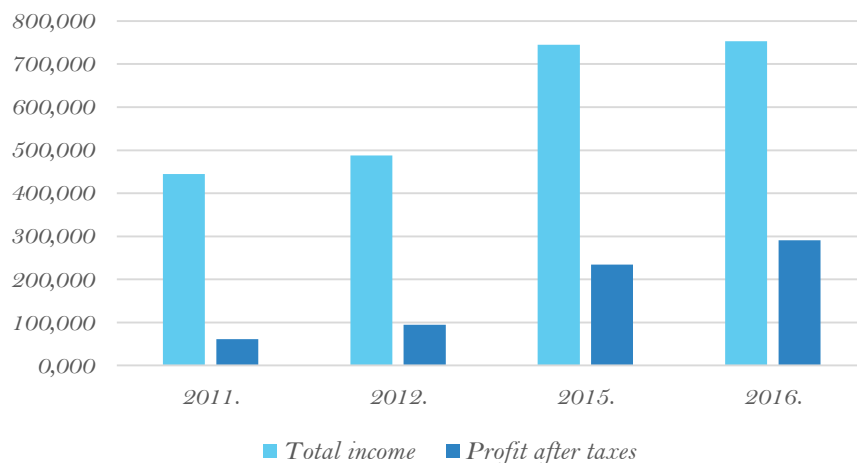
- ☐ **Croatia, Hungary, Slovakia, Czech Republic** – oil consumption decrease
- ☐ **B&H and Serbia** – oil consumption increase/decrease

Oil Import



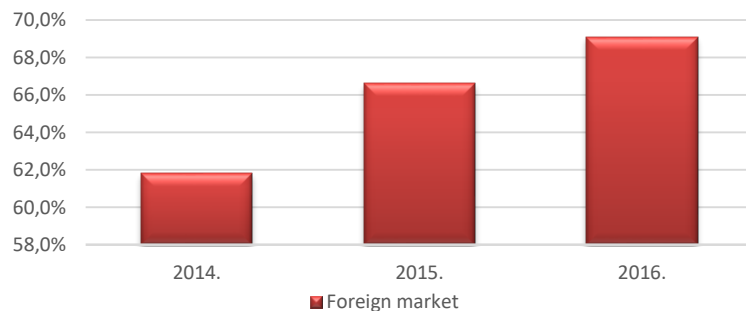
DIVERSIFICATION STRATEGY

JANAF's Total Income and Profit (in mil.HRK)

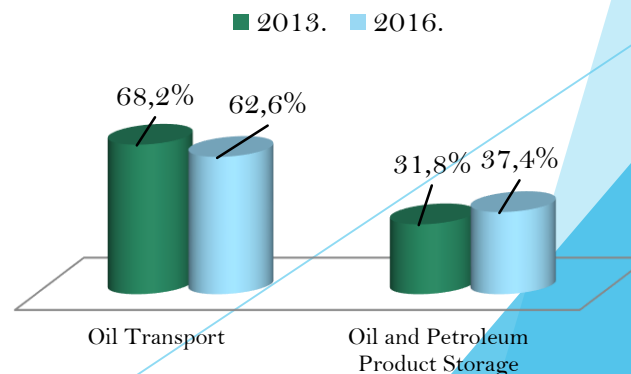


- **Diversification strategy has been developed** and agreed between all stakeholders
- Investment in storage capacities & modernization and upgrading of oil transportation and storage system
- Improvement of services and communications with customers
- Key issue: Investment and activities in protection and safety of environment, humans and equipment

Share of export in total revenues



Structure of business activities



EU PROJECTS OF COMMON INTEREST FOR ESTABLISHING OIL SUPPLY CORRIDOR IN SE EUROPE

OIL PIPELINE PROJECTS OF EU COMMON INTEREST

Naftovodni projekti od zajedničkog interesa

1. Litvinov - Spargau
2. Adamowo - Brody
3. Cluster Pomeranian pipeline, including the following PCIs:
 - o Construction of oil terminal in Gdańsk (phase II)
 - o Expansion of Pomeranian pipeline
4. JANAF - Adria
5. Bratislava - Schwechat
6. TAL Plus

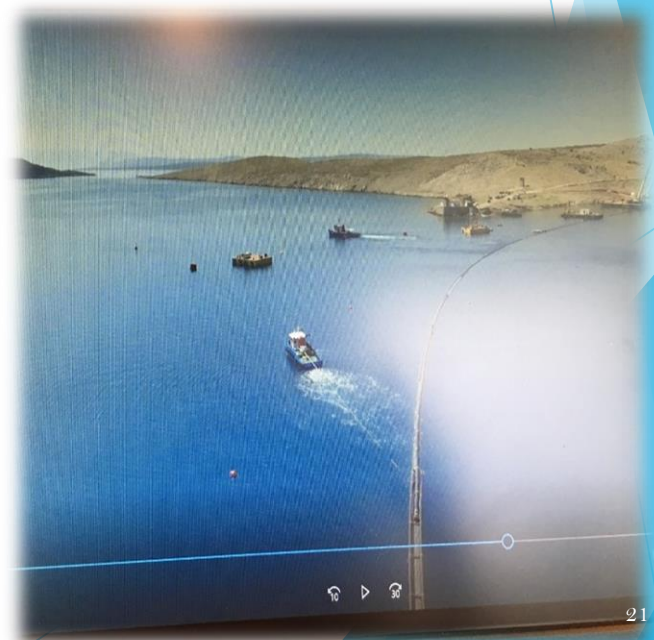


- JANAF is one of three promoters (MOL, Transpetrol) of the EU project of common interest entitled *JANAF-Adria pipelines: reconstruction, upgrade, maintenance and capacity increase of the existing JANAF and Adria oil pipelines linking Croatian Omišalj seaport to the Southern Druzhba*
- Strategic task: Increase of oil supply security of CE European countries (land locked refineries), using Omišalj import direction
- EU PCI JANAF –Adria on the 1st List (2013) & the 2nd List (2015)

JANAF ADRIA PIPELINES

Construction of two pipelines & 100% financed from companies budgets

- ❑ Százhalombatta-Šahy (Hungary-Slovakia) (February 2015)
 - ❑ Capacity - 6 MTA, flow reversal
 - ❑ Length - 128 km
 - ❑ Double increase in route capacity
 - ❑ Promoters: MOL and Transpetrol
- ❑ Subsea pipeline from Krk island to mainland (August 2017)
 - ❑ Length - 5 km, of which 730 m is under the sea, flow reversal
 - ❑ Subsea pipeline replaced crude oil transport through the Krk bridge and increased safety of transport and supply
 - ❑ Promoter: JANAF



JANAF - IMPORTANT PART OF CROATIAN & EU COMPULSORY CRUDE OIL & PETROLEUM PRODUCTS STOCKS SYSTEM



❑ Omišalj Terminal – 240.000 m³



❑ Sisak Terminal -240.000 m³



❑ Žitnjak, Zagreb Terminal -126.000 m³

JANAF'S NEW STRATEGY TOWARD FURTHER COMPANY GROWTH AND ENERGY SUPPLY SECURITY

Strategic goals

- ❑ Growth of traditional activities
- ❑ Business diversification developing **new projects aimed at obtaining new revenues**
- ❑ **Strong entrepreneurship position**
 - ❑ **Company profitability, efficiency, share values increase, employees creativeness and satisfaction**
- ❑ Contribution to **energy supply security** of Croatia, South-Eastern and Central European countries enabling oil import from different directions and sources

NEW DEVELOPMENT PROJECTS



- ❑ Protection and safety
- ❑ Modernization
- ❑ Crude oil transport & crude oil and petroleum products storage
- ❑ Potential diversification: non-oil projects
 - ❑ Renewables
 - ❑ Electric car & boats, filling stations
 - ❑ Local projects



PROTECTION AND SAFETY

- ❑ With the aim of securing and protecting, as well as prolonging the oil pipeline life service, the company conducts, among others:
 - ❑ Pipeline rehabilitation projects
 - ❑ Technical and physical protection

SYSTEM MODERNIZATION SCADA, GIS, ELECTRICITY SYSTEM

Purpose:

- ❑ to increase the operation safety and efficiency, such as pipeline leakage detection;
- ❑ to monitor and plan batches and scraper/pig runs, etc.

SCADA - Control Centres at Omišalj and
Sisak Terminals



NEW STRATEGIC DEVELOPMENT PROJECTS AT OMIŠALJ TERMINAL



- ❑ **Project of Reconstruction & Upgrade of Storage Facilities and Infrastructure**
 - ❑ Purpose of the Project is to improve terminal operations, capacity utilization & interoperability
 - ❑ Further increase of storage and oil transport is expected
 - ❑ Storage construction of petroleum products 20.000 m³ is underway
 - ❑ New storage construction: crude oil (3*80.000 m³) – underway
 - ❑ Total storage capacities in next years:
 - ❑ crude oil - 1,4 mil. m³: JANAF total 1,94 mil. m³
 - ❑ petroleum products 80.000 m³: JANAF total 222.000 m³
- ❑ **Omišalj - Adriatic oil & petroleum products storage centre**

Sisak Terminal: Potential new capacities: crude oil, depending on market demand



Virje Terminal: Oil transport northward to Central European refineries; Reversible flow



Slavonski Brod Terminal: Oil transport eastward to B&H and Serbian refineries

Žitnjak Terminal: Potential new capacities: petroleum products, depending on market demand



CONCLUSION

- ❑ Oil remains dominant source of energy consumption in next two decades with great energy and economy potentials
- ❑ Oil companies will face many challenges as well as opportunities for further development
- ❑ Oil pipelines have great importance in oil supply security
- ❑ JANAf's strategic position in energy supply security of SE & Central Europe
 - ❑ Providing oil transport from two directions, particularly Omišalj, and numerous sources, available capacities, safe and reliable transport and storage
 - ❑ Storing compulsory and 'commercial' oil & petroleum products stocks
- ❑ JANAf continues developing new projects and business diversification strategy
 - ❑ Particularly, improving security, reliability, and quality of transportation and storage services
 - ❑ Ensuring company growth and profitability
 - ❑ Contributing to positive climate changes, energy market integration and economic development of SE & CE European countries

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Thank you for your attention!