The current oil infrastructure in the Energy Community

8th Oil Forum

28/29 September 2016, Belgrade

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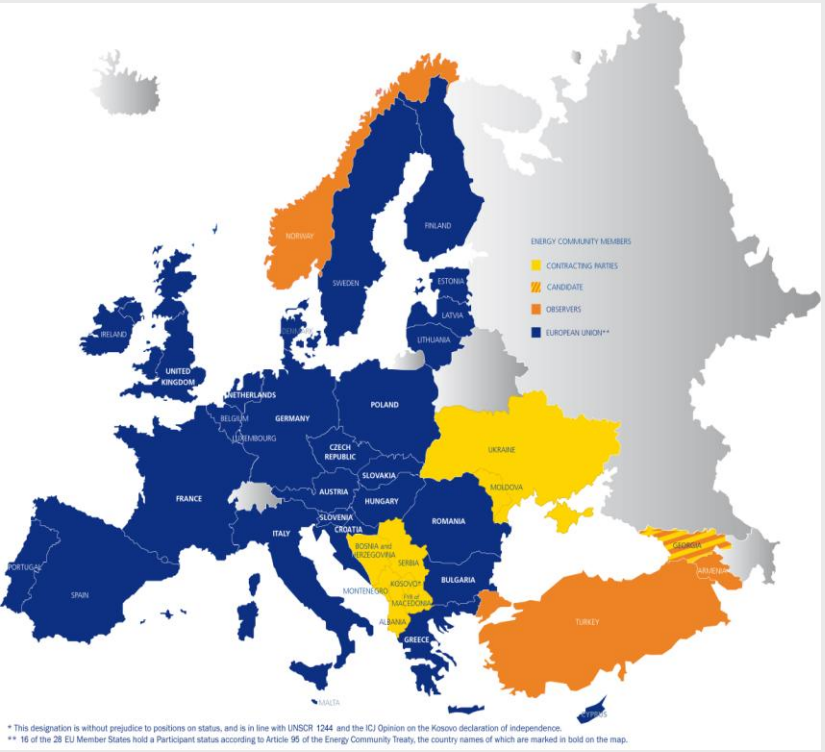
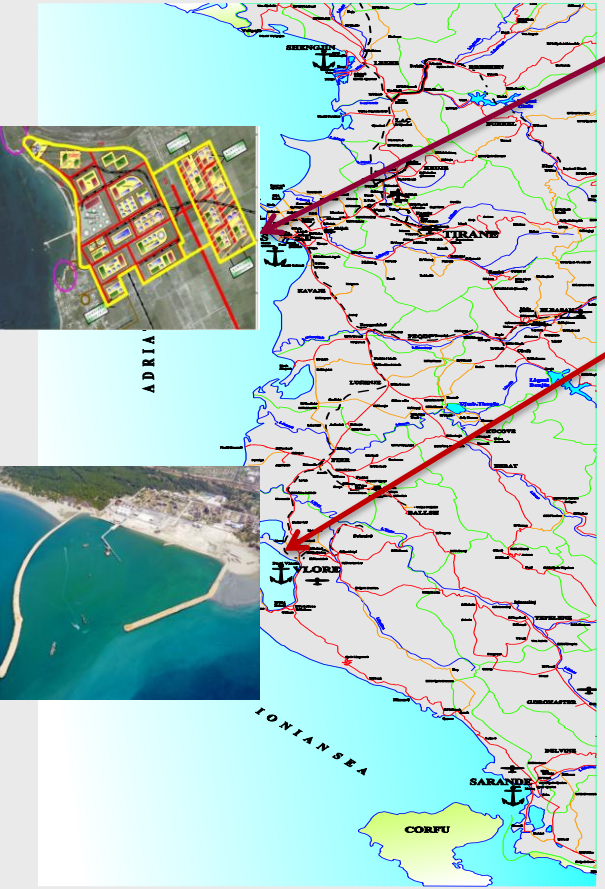


- *Contracting Parties Oil Infrastructure*
- *Regional Oil Infrastructure*
- *Planned Oil Infrastructure*
- *Next steps*

Albania



Romano Port - built 6.5 km north of the city of Durres:

- Oil cargo ships with capacity of 20.000 t
- Discharge capacity of the equipment is: 9.000 t gasoline in 24 /hrs
- Water depth – 11,7m

Petrolifera Terminal - built 3.5 km north of the city of Vlore:

- Storage capacities: 72,000 m^3 for crude and Products
- Marine infrastructure: 600 m long jetty;
- Water depth about 8,5 m

Available Storage Capacities:

- Around 800 thousand m^3(including 300 thousand m^3 at the two main ports)
- Required storage capacity at 90 days of net imports by end-2022:
  65 thousand m^3 of crude storage
  225 thousand m^3 for refined products

Bosnia and Herzegovina

Oil infrastructure is currently not in good condition

Storage capacities are theoretically available but most of them are not fit for purpose

On the Federation, there are 8 terminals -175,000 m^3

Not in in good conditions - first terminal will be fully reconstructed in 2016/2017

The Federation controls the oil terminal (81,000 m^3) in the Port of Ploče

In the Brod oil refinery (285,000 m^3), but the refinery is not reachable by railway or product pipeline and therefore can only store its own finished products

Kosovo*

Kosovo does not possess a pipeline for crude oil nor for oil products

Oil products are imported 75% by road transportation and 25% by railroad

Currently there are 15 storage facilities that are licensed for fuel wholesale with approximately 80,000 m^3 and for retail approximately 50,000 m^3

There are additional 50,000 m3 of storage capacities that are not being used and are not licensed for fuel storage

FYR of Macedonia

Up to 2013, the main avenue of oil supply was the crude oil pipeline, which connected Thessaloniki refinery in Greece with the OKTA refinery

At present, oil imports are solely effected through the use of tank trucks, which transport oil products mainly from Greece and Bulgaria

Usage of P. Product is divided approximately between the transport (60%), industrial (30%), and residential and commercial (10%) sectors

Most of the oil storage capability is located at the OKTA refinery - 470 thousand m^3. Makpetrol can store a further 75 thousand m^3. This would correspond to a total storage capacity of around 485 thousand tonnes

Moldova

Giurgiulesti International Free Port

Detailed data on oil or petroleum products storage capacities are not available. However, it is estimated at some 150 thousand tones, including State and industry facilities

99% of petroleum products are imported. Consumption of the petroleum products: transport (36%); industry (30%) residential sector (18% and agriculture (16%)

GIFP – Oil Product Terminal:

- One jetty on the river Danube with minimum water depth of 7 m
- 8 tanks – total capacity of 63.600 m^3
- Accessible by both river barges and maritime vessels
- P. Products Imported last year - 280 thousand tonnes

40 km crude oil pipeline in Basin Petroleum Văleni
Mini Refinery - SA „Arnaut-Petrol" – 50 thousand TPA

MONTENEGRO

There are no pipelines or refineries in Montenegro

Montenegro's stockholding obligation: 72,000 tons of crude oil equivalent.

Total existing storage capacity in Montenegro amounts to around 205.000 m^3, with these capacities concentrated within 6 terminals:

Bar – 124.800 m^3; Bijelo Polje – 26.500 m^3; Lipci – 22.400 m^3; Cerovo – 21.000 m^3; Tivat – 8.000 m^3; Podgorica – 2.000 m^3

Currently operational amounts to around 87,000 m^3

Terminals in Bar: for gasoline, diesel/gasoil and jet-fuel and Tivat: only for jet-fuel

Serbia

Emergency Oil Stocks Obligations:

495,000 tcoe using 61 days of average domestic consumption

Storage capacity requirement amounts to around 620,000 m^3 (594,000 m^3 for petroleum products and 26,000 m^3 for crude oil)

		Commodity Reserves	Transnafta	Total capacity
Oil products	Unleaded motor gasoline	30 000 m3		30.000 m3
	Euro diesel	80.000 m3	25.000 m3	105.000 m3
	Jet fuel	10.000 m3		10.000 m3
	Fuel oil	10.000 m3		10.000 m3
		Total oil products		155.000 m3
Crude oil			20.000 m3	20.000 m3

120.000 m^3 might be offered by the private companies for products 90,000 m^3 for crude oil

Serbia

Petroleum Products Pipeline System – Serbia

Total length of approx. 402 km and capacity:
4,3 Mt/y (2.6 Mt/y – diesel and 1.7 Mt/y – Gasoline)

Envisaged in three phases:

I.Construction of the products pipeline connecting Oil Refinery in Pancevo with the existing storage tanks in Smederevo and Novi Sad

II.Construction of new storage tanks in Pancevo and Smederevo and providing conditions for further transport

III.Preparation of the Performing Design and Design for Building permit for Pancevo-Smederevo sections started in 2015. After that, the building permit should be obtained and the construction of the facility should begin

This pipeline that is planned for commissioning in 2020 will ensure the safest and the most cost-effective transport of petroleum products to consumer centers, reduced losses and reduced leakage possibility

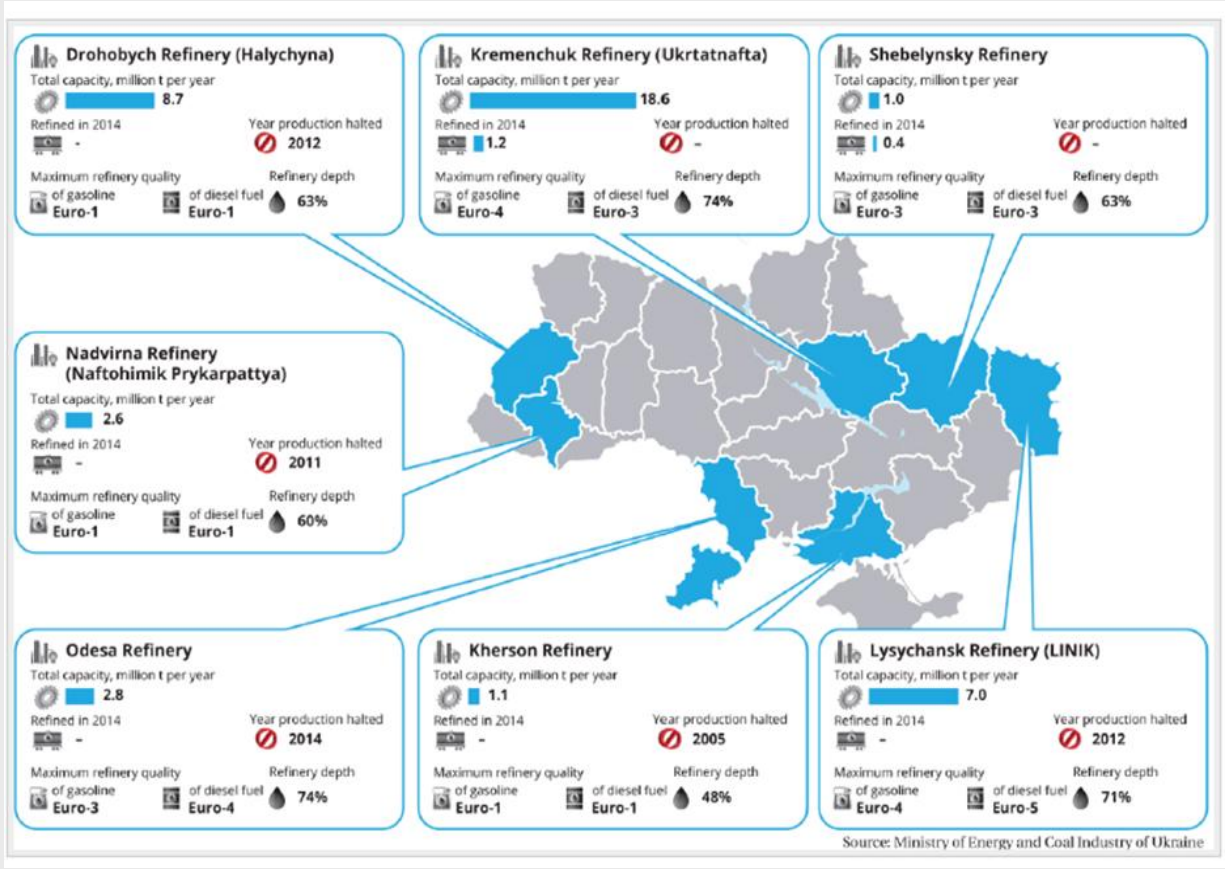
Ukraine

Required		Quantity (metric tons)	Density	Required nominal capacity
Petroleum products	Unleaded motor gasoline	460,000	755 kg/m³	670,000 m³
	Diesel/gasoil	930,000	845 kg/m³	1,210,000 m³
	Total products:	**1,390,000**		**1,880,000** m³
Crude oil		**580,000**	850 kg/m³	**750,000** m³
Total emergency oil stocks:		**1,970,000**		**2,630,000** m³

Available		Immediately available for use	Needing refurbishment	Total capacity (metric tons)
Petroleum products	Unleaded motor gasoline	30,000	170,000	200,000
	Diesel/gasoil	140,000	510,000	650,000
	Jet kerosene	7,000	83,000	90,000
Total petroleum products		**177,000**	**763,000**	**940,000**
Crude oil		120,000		120,000

Refineries in Ukraine

Kremenchuk Refinery



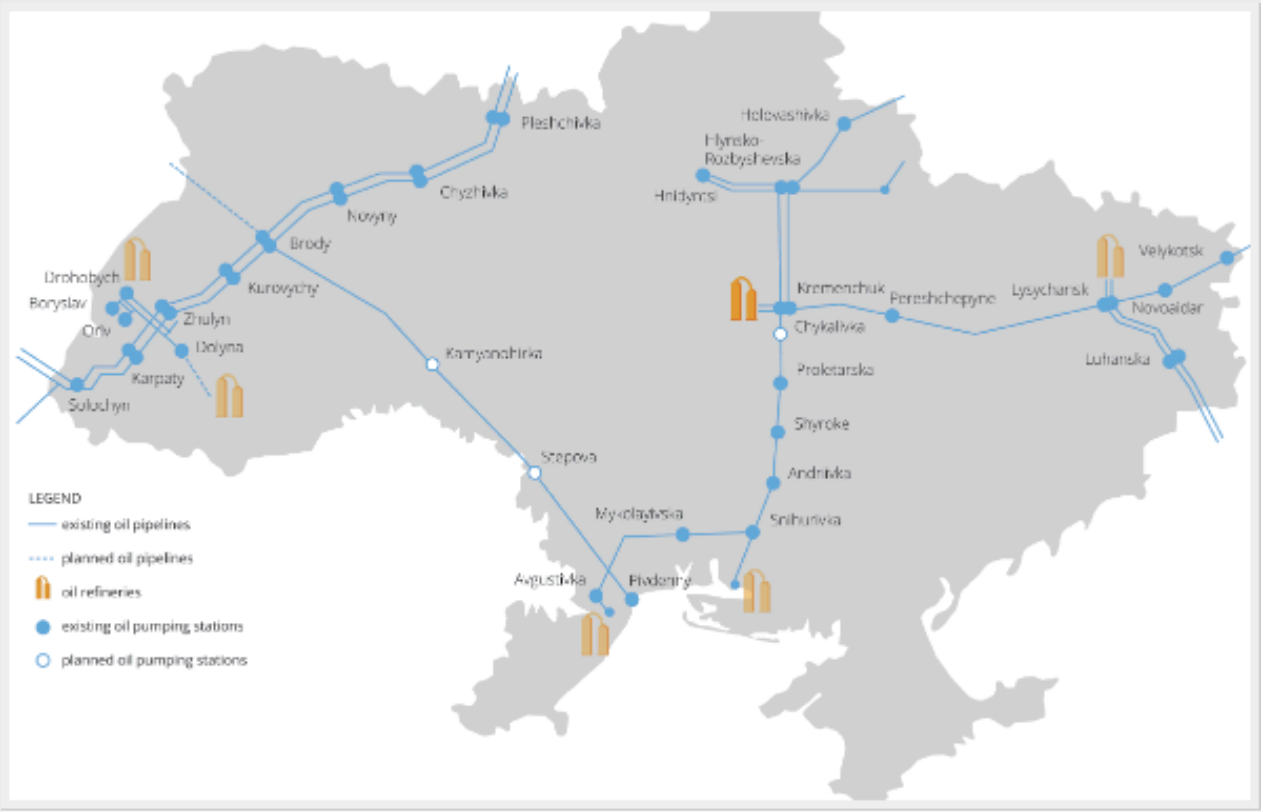
Ukraine Oil Pipelines Connections

Ukraine's main oil transportation system consists of:

- **4.767 km of pipelines with a diameter of up to 1,22 m**
- **51 pump stations**
- **11 tank farms with a cumulative rated capacity of about 1 mill m3**

The throughput capacity:
Inlet - 114 Mt/year;
Outlet – 56,3 Mt/year

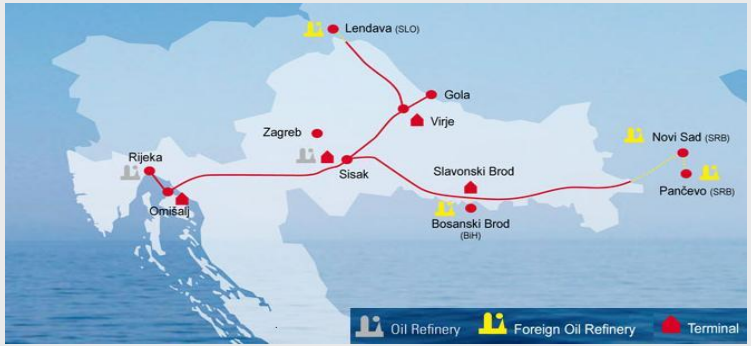
In addition, there are about:
4.625 km of smaller oil product pipelines - mostly privately owned



The volume of oil transported through the Ukrainian system decreased from almost 40 mt to nearly 17 mt, including the oil transit, which decreased from 29 to 15 mt over this period 2009 -2015

EXISTING OIL PIPELINES (1)

Project name	Route and countries crossed	Length (km)	Capacity (Mt/y)	Construction cost (EUR M)	Completed year
ADRIATIC PIPELINE (ADRIA)	Croatia, Slovenia, B&H, Serbia, Hungary and possibility of oil transport to Slovakia	759	34/20	Estimated 1,200	Designed and built in the period from 1974 to 1979
Thessaloniki Skopje	Greece – FYR Macedonia	200	2.5	85	2001



Oil PCI projects

Adamowo-Brody pipeline: pipeline connecting the JSC Uktransnafta's Handling Site in Brody (Ukraine) and Adamowo Tank Farm (Poland)

JANAF-Adria pipelines: reconstruction, upgrading, maintenance and capacity increase of the existing JANAF and Adria pipelines linking the Croatian Omisalj seaport to the Southern Druzhba (Croatia, Hungary, Slovak Republic); (Works on the Hungarian-Slovak section have already been completed.)

PECI OIL PROJECTS

The selection of priority infrastructure projects is done in line with the EU Regulation 347/2013, as adapted for the Energy Community:

1. 1st call for project proposals ended on 25th February 2016
2. 2nd call for project proposals ended on 2nd June 2016
3. Categories: energy infrastructure concerning electricity, gas and oil, as well as 1 thematic area covering smart grids

Preliminary list of PECI Oil Projects	
Project ID	**Name**
Oil_01	**Oil_01 Ukraine (Brody) - Poland (Adamowo) oil pipeline**

UKR-POL-AZE -GRE-LIT	Construction of the Brody - Adamowo oil pipeline	587.40	396.3	Existing storage: 815,000 m³ planned new: 460,000 m³ 1st stage: 153,300 m³ pipeline capacity: 30 MTA	2019	MPR Sarmatia Sp z.o.o

CRUDE OIL PIPELINE

Latest development

PROJECT NAME	Route and countries crossed	Length (km)	Capacity (Mt/y)	Construction cost (estimated: EUR M)	Earliest completion date
Pan-European Oil Pipeline (PEOP)	Romania (Constanta) – Serbia – Croatia – Slovenia – Italy (Trieste)	1 320 (total, some use of existing lines)	40	1,800-2,600	Dismantled 
AMBO	Bulgaria (Bourgas) – FYR Macedonia – Albania (Vlore)	870	30	1,750 – 2,000	uncertain
Bourgas - Alexandroupolis Pipeline (BAP)	Bulgaria (Bourgas) – Greece (Alexandropoulos)	280	35 - 50	1,000	uncertain Suspended

AMBO LLC is a U.S. company supported to date by private investors and continuing its contacts with shippers and investors despite of keeping things low-key at this time

Thank you
for your attention!

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