INVESTMENT ATLAS

TRANSPORT SECTOR

Opportunities 2020
in Ukraine

MINISTRY
OF INFRASTRUCTURE OF UKRAINE

CONTENTS

INTRODUCTION

- Ukraine is to carry out the tremendous efforts needed to reform the transportation industry. Ukraine needs the support of Western partners – political, technological, managerial, legal, and financial through different instruments including

  - Public-private partnership mechanism
  - IFIs loans
  - Loans under state guarantees

- Ukraine implements the project cycle reform, develops transport modeling, adopted Concession and PPP law, etc.

- The transport infrastructure sector is one of Ukraine's most important sectors of economy, with extensive railway and highway networks, sea and river ports (terminals), airports, and a wide network of air destinations, freight and customs terminals. The transport sector significantly contributes to Ukrainian economy – it accounts for 6.4% of the country's GDP and 7% of total employment.

- Ukraine is interested in investment development. With this in mind, we are working to improve the investment climate and improve the mechanism for implementing investment projects.

- The current Strategy of the Government of Ukraine facilitates growing demand potential and its importance for the Ukrainian commerce and economic growth.

Ukraine in international rankings

- Since 2014, simplifying bureaucratic procedures, easing tax pressure and successful political reforms have boosted Ukraine`s position in international rankings. This growth has been recognized by the World Bank, the International Monetary Fund and other reputable international financial institutions. To independently compare Ukraine's economic attractiveness with other countries, we have compiled the list of international rankings that measure the ease of doing business, human capital, and macroeconomic stability.

- Ukraine has risen seven places in the 2020 edition of the World Bank's annual Doing Business survey and now occupies 64th position in the influential survey as the progress of recent years continues.

- Ukraine advanced in six of the ten categories featured in the ranking including improvements in getting electricity, registering property, and trading across borders. This is the latest improvement in Ukraine's position following steady gains following the 2013-2014 Euromaidan Revolution.

UKRAINE – TRANSIT BRIDGE BETWEEN THE EU AND ASIA

Area

603.5 thsd km²

largest country in Europe

Population

42 million

people

Consumer Price Index (CPI)

1.041

consumer price index in 2019

Population

70 %

urban-based

Real GDP Index

1.032

in 2019

Producer Price Index (PPI)

0.926

in 2019

Workforce

20 million

people

#1 country

in the CEE by the number of engineering graduates

Nominal GDP

154 $ bln

in 2019

Trade Opportunities

- Geographical center of Europe, making Ukraine an ideal trade hub to the EU, Middle East and Asia
- Free trade agreement (DCFTA) with the EU and member of the WTO
- Free trade: EU, CIS, EFTA, Republic of the North Macedonia, Georgia, Montenegro, Israel. Ongoing negotiations with Canada and Turkey

ALREADY LAUNCHED

MARITIME CONCESSIONS
ALREADY TENDERED
Transparent competition

KHERSON SEAPORT CONCESSION

RISOIL S.A.

10.8 million USD
total investments (nominal)

0.4 million USD
fixed concession payment

0.65 million USD
local infrastructure investments

+7 %
of concessionaire's revenue annually

OLVIA SEAPORT CONCESSION

QTERMINALS

123 million USD
total investments (nominal)

3 million USD
fixed concession payment

3 million USD
local infrastructure investments

+0.75 %
of concessionaire's revenue annually

ALREADY LAUNCHED

COOPERATION WITH IFIS
ALREADY IN PROCESS

EU-Ukraine Connectivity Project Phase I ratified by the Parliament, August 2020

Kyiv – Odesa Highway Project

Northern bypass of Lviv Project

EU-Ukraine Connectivity Project involving grant support of the EU Commission ratified by the Parliament including

- Intelligent Transport Systems development and implementation - introduction of transport management and control system
- Railway TNT connection development - Technical assistance for Phase I and implementation for Phase II (Reconstruction railway line Kovel - Yahodyn - Poland Border)

ALREADY LAUNCHED

TRANSPORT CONNECTION IN UKRAINE (PHASE 1)

127.3 million USD
total cost (VAT excl.)

7
subprojects

Key Investment Highlights

- Kyiv-Chop highway is one of the most important highways of Ukraine providing connection to Europe
- Part of the 3rd European transport corridor Berlin/Dresden – Wrocław - Krakovets - Lviv - Kyiv
- Project financing will be provided by loans of the European Investment Bank and European Union

1

Introduction of transport management and control system

18.2 million USD
estimated cost (VAT ecxl.)

2

Ternopil bypass (north-eastern part of the bypass)

22.8 million USD
estimated cost (VAT ecxl.)

7.722 km
length

3

Multi-level transport interchange between M-06 Kyiv-Chop and M-19 Domanove-Terebleche highways in Rivne region

27.1 million USD
estimated cost (VAT ecxl.)

2.828 km
length

4

Multi-level transport interchange between M-06 Kyiv-Chop and M-12 Stryi-Znamianka highways in Lviv region

19.4 million USD
estimated cost (VAT ecxl.)

2.168 km
length

5

Railway overpass on M-06 Kyiv-Chop highway (546+437 km) in Lviv region

15.8 million USD

estimated cost (VAT ecxl.)

2.394 km

length

6

Road overpass on T-18-01 Rivne-Dubno highway (49+590 km) in Rivne region

16.7 million USD

estimated cost (VAT ecxl.)

2.305 km

length

7

Multi-level transport interchange between M-19 Domanove-Terebleche highway and north-eastern section of Ternopil bypass

7.3 million USD

estimated cost (VAT ecxl.)

5.135 km

length

KYIV-ODESA HIGHWAY

907 million USD
total cost (VAT excl.)

3
subprojects

Key Investment Highlights

- Project financing will be provided by IFIs' loans - European Investment Bank and European Bank for Reconstruction and Development
- FIDIC contract type
- Feasibity study to be developed according to IFIs' rules and regulations

1

Cherkasy region

221 million USD
estimated cost (VAT ecxl.)

84.19 km
length

11.700 - 16.120 cars/day

2 Kirovohrad region

110 million USD

estimated cost (VAT ecxl.)

37.33 km

length

14.205 cars/day

3 Mykolaiv and Odesa region

576 million USD

estimated cost (VAT ecxl.)

192.97 km

length

14.800 - 17.500 cars/day

NORTHERN BYPASS OF LVIV

190 million USD

total cost (VAT excl.)

23.18 km

road length

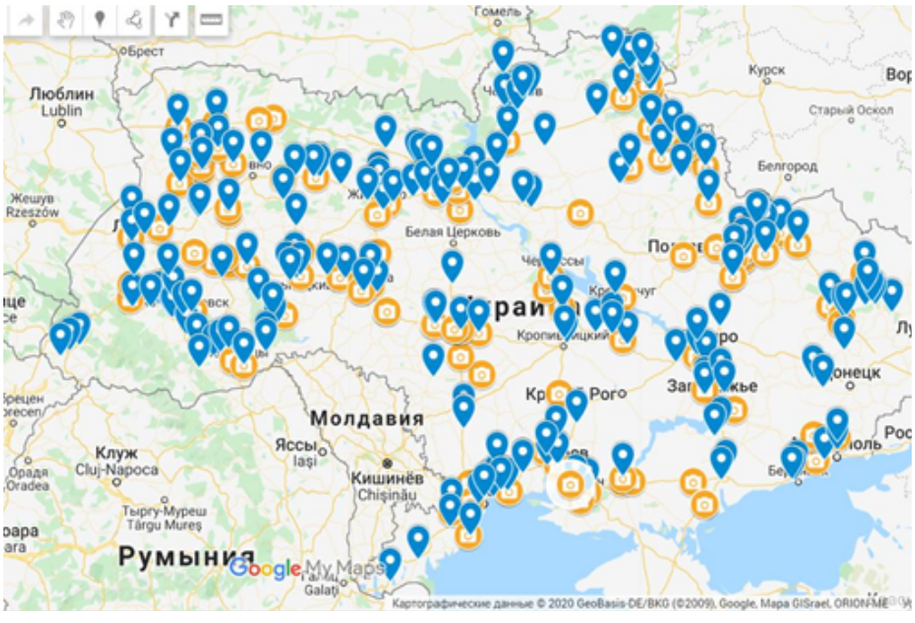
28.000-33.000 cars/day

Key Investment Highlights

- Project financing will be provided by IFIs' loans - European Investment Bank and European Bank for Reconstruction and Development
- FIDIC contract type
- Feasibility study developed
- Implementation of the project will improve road safety and ecological situation in Lviv city

Intelligent Transportation System Development

Weigh-in-Motion



150+ WIM complexes

planned by 2021

221 WIM complexes

location already available

6 WIM complexes and data center are already located

Legislation adopted:

- On Road Safety Management
- On Weigh-in-Motion Control Performing
- On the sources of the State Road Fund formation
- On middle-terms planning of common road development and maintenance

RAILWAY SECTOR DEVELOPMENT

Dolynska – Mykolaiv - Kolosivka electrification

420 million USD
estimated cost

EBRD
EIB
IFI

- Estimated timeline for project implementation until **2023**
- The Project consists of the phased construction of the railway line electrification comprising the Dolynska – Mykolaiv section and the Mykolaiv – Kolosivka section over a total length of 253 km, together with the modernization of signalling and telecommunication system in stations and on open lines.

THE BESKID TUNNEL CONSTRUCTED (2013-2018)

Fast passenger trains project

97.3 million USD
estimated cost

EBRD
EIB
IFI

- Traffic capacity has increased from 47 to 100 train-pairs per day and average speed has increased from 15-40 to 60-70 kilometres per hour.

DOLYNSKA – MYKOLAIV - KOLOSIVKA ELECTRIFICATION

Technical description:

- Improve the capacity of these existing rail lines
- Track and electrification works, including construction of railroad track
- Rearrangement of existing railroad tracks; reconstruction of track arrangement
- Electrification works
- New signalling and communication system installation on both sections

Expected outcome:

- To increase the capacity of the railway direction Dolynska - Mykolaiv - Kolosivka, which runs through the territory of Kirovohrad, Mykolaiv and Odesa regions, which in turn will solve the problem of cargo traffic in the direction of Mykolaiv and Odesa ports
- To increase the district speed of trains by 20 - 25%, which will reduce the delivery time of cargo
- Significantly reducing of operating costs associated with improving the organization of train traffic, namely to avoid a significant number of braking and acceleration of trains (when performing overtaking and crossing)
- To obtain significant savings in diesel fuel and improve the environmental situation in the region by eliminating harmful emissions (combustion products of diesel fuel) into the atmosphere with a total of 11,000 tons/year

ALREADY LAUNCHED

UKRAINE AIR NAVIGATION SYSTEM MODERNIZATION (ON-GOING)

Already in process project financing supported by EBRD and EIB

7 components

2 components

delivered

Key Investment Highlights

- Project financing for Air Navigation Upgrade for Ukraine already in process supported by EBRD and EIB
- The new air-to-ground aeronautical telecommunication delivered to the relevant divisions of UkSATSE, including in Bar, Zhytomyr, Bakhmach, and Znamianka. Further deliveries will be made this year and in the first half of next year
- The state-owned State Air Traffic Services Enterprise (UkSATSE) plans to install modern communication equipment for phase 1 at 30 air navigation facilities around Ukraine, which will improve flight safety in the airspace within Ukraine’s zone of responsibility

SEA & RIVER

Intelligent Transport Systems development

Weight in motion

>160 million tons

total amount of cargo handled by Ukrainian port operators in 2019

30 million tons/ per year

the potential inland waterway transportation capacity can be up according to Dutch and American experts

- Work with leading port investors including DP World, BUNGE and Hutchison Ports towards port development in Ukraine has begun
- A draft method of calculating port fees rates has been developed. According to the project, the rates of port fees will not exceed the basic needs to support port activities

The reform of the maritime transport industry has been launched:

- A central executive body for sea and river transport - the State Service for Marine and River Transport (Maritime Administration) was established
- The special Maritime Doctrine has been developed and adopted in order to ensure the entire fulfilment of Ukraine’s maritime potential
- The development of maritime shipping through Ukraine`s water routes remains a priority

SEA & RIVER

SEAPORTS' CONCESSIONS

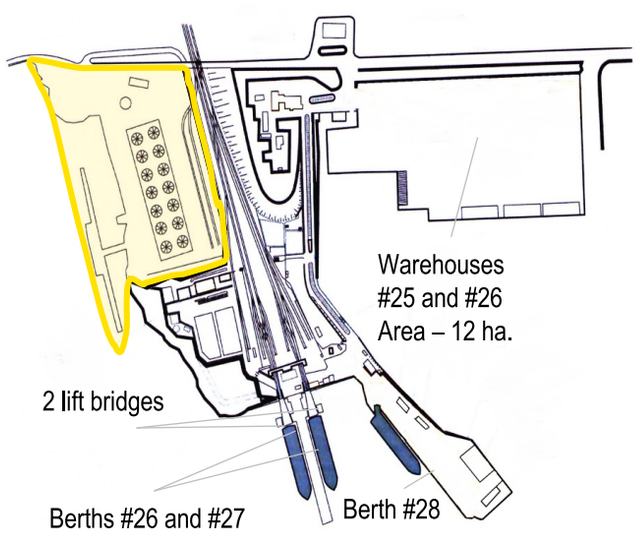
Concession of the ferry terminal in Chornomorsk seaport

5 million USD

investment amount

- Current Stage - the Pre-feasibility developed
- Expected terms **10 - 30** years.
- Financial detail (Payback period, NPV, IRR)
- Payback period - Fixed Concession fee - value of payment to the budget of Ukraine as dividends **+ 20%** of net profit

Concession of the ferry terminal in Chornomorsk



KEY INVESTMENT HIGHLIGHTS:

- **Unique facility:**
  - Serves both railway ferries and Ro-Ro vessels
  - It is the only railway ferry terminal in Ukraine and one of the largest ferry terminals in the Black Sea region
- **Favorable location:**
  - Located in the Sea Commercial Port of Chornomorsk, which is one of the biggest ports in Ukraine located in Sukhoy estuary, 12 miles to the south-west of Odesa
  - Located at the intersection of major transport corridors between Europe and Asia, industrialized areas and key sea routes
  - It is the operating base for two ferry lines on the Black Sea
- **Niche market position:**
  - Domestic market share in handling trucks is 71%, new vehicles – 95% and full market of handling wagons
  - Non-specialized terminal, diversified cargo flow mostly represented by perishable food products, wood, building materials and other cargo in small batches
- **Fully functional highly marginal business:**
  - Revenue ranged from $3.3 to $5.6 mln in the last 3 years
  - EBITDA margin averaged at 44% in the last 3 years
  - It has excess capacity for cargo growth
  - Significant opportunities for operating efficiency improvement and introduction of complementary services
  - Does not require significant CAPEX (up to $5 mln) according to estimates

KEY FACTS:

3 Berths	**690** Quay Length (m)	**9.6** Max Depth (m)
1.8 Cargo Turnover (mln tons, 2016)	**3.7** Revenue ($mln, 2016)	**41%** EBITDA Margin (2016)

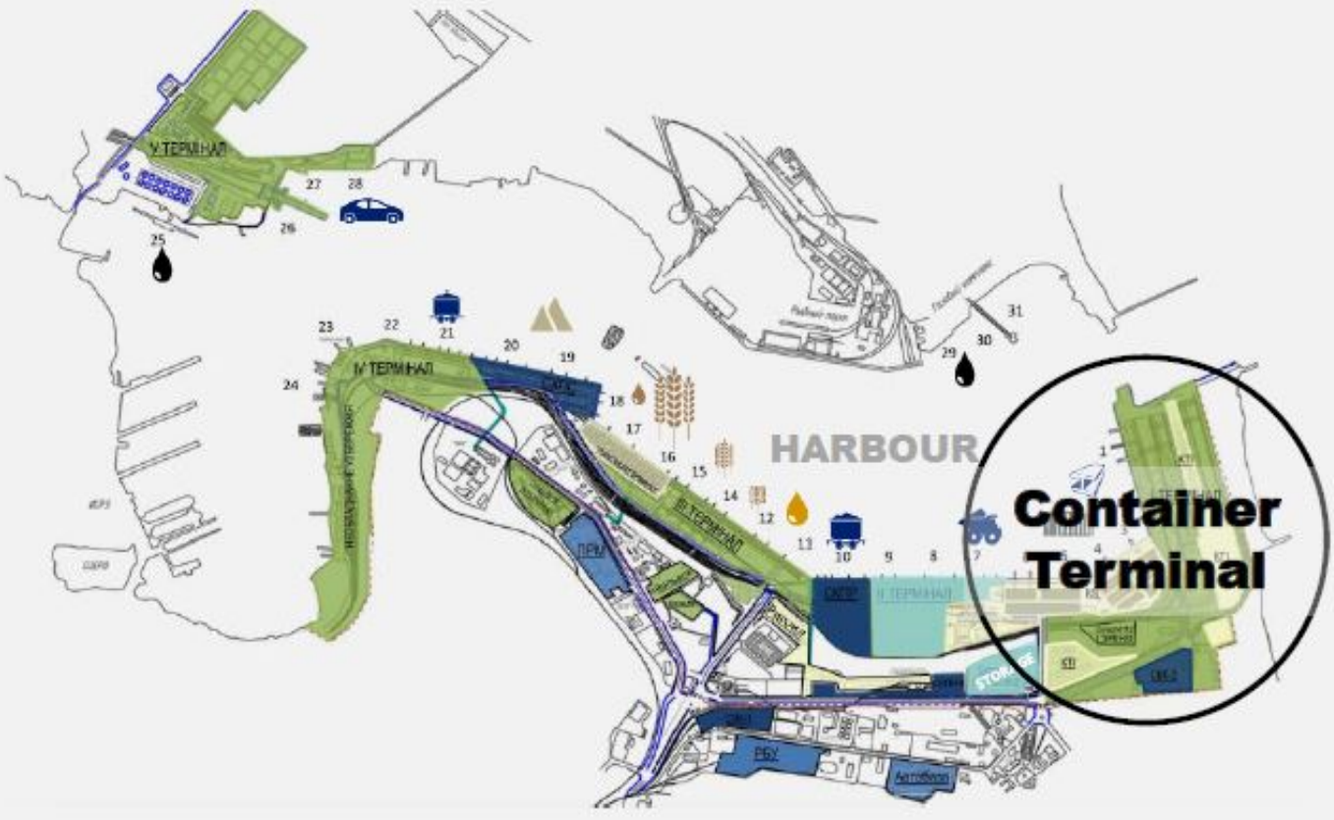
ANNUAL CAPACITY

4.5 mln tons of cargo in railway wagons	**150 000** heavy duty trucks	**250 000** units of vehicles

SEA & RIVER

SEAPORTS' CONCESSIONS

Container terminal opportunity
in the biggest seaport of Ukraine



75 ha
terminal area

1+ mTEU
container capacity

4+ mTEU
existing bulk operations

6
existing berths

13-15 m
available depth

- One of the few remaining opportunities for container business development in Chornomorsk Seaport
- Currently used for bulk cargo handling but suitable for container handling operations
- **6 berths** with **11-15 m** depth
- All critical infrastructure is available

SEA & RIVER

SEAPORTS' CONCESSIONS

Odesa sea port passenger complex concession

8 km
distance to the airport

3 km
distance to the railway station

1 km
distance to the center of the city

Total exhibition area:

v 30 thousand sq.m
open

v 10.5 thousand sq.m
covered

1.370 m
length of the berths

Passenger terminal of Odessa Sea Port is located in the city center, near the main city landmarks – the Potemkin Stairs and the monument to the Duke de Richelieu, Deribasovskaya Street and the Opera and Ballet Theater

from 9.5 to 11.5
length of the berths

Key Investment Highlights

The complex includes:

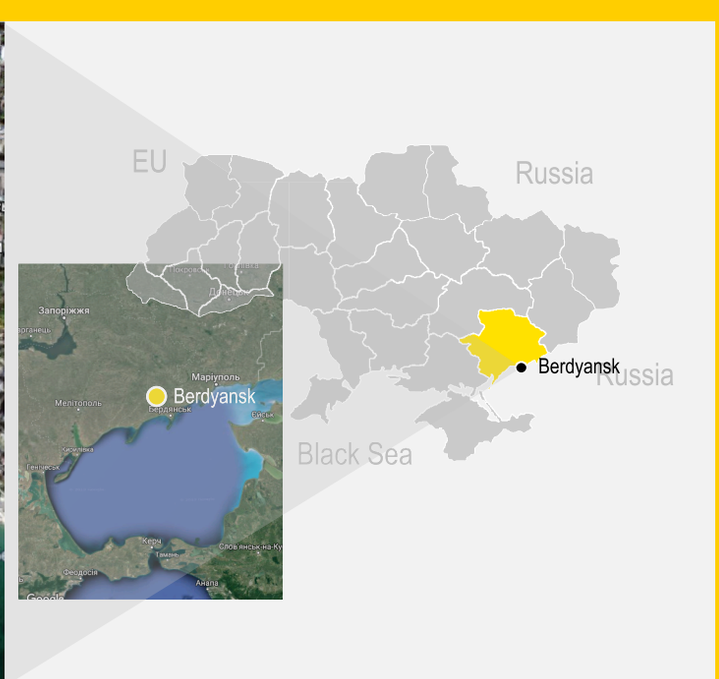
- 1000-seat Concert and Exhibition Hall with total covered area of **4.970 sq.m** and open
- Area of **4.000 sq.m**
- Maritime Art Terminal with annual capacity of **1 million** passengers and **23.600 sq.m** area
- Hotel of **30.735 sq.m** area and **158 rooms**
- Yacht Complex with **15.500 sq.m** total area and **86** yachts capacity
- 5 berths of **1.370 m** total length and **9.5-11.5 m** depth
- 8 km distance from Odesa International Airport

SEA & RIVER

SEAPORTS' CONCESSIONS

Berdyansk seaport concession

Concession at Berdyansk Seaport



Key Investment Highlights

- **9 berths** mooring line of a total length of **1,7 km**
- The berths can accommodate ships with a draft of **7,9 m** and a length of **220 m**
- The port fleet has a capacity for oil-spil response
- The cargo area consists of handling equipment, warehousing, an internal railroad station linked to Berdyansk

The handling equipment include:

- 35 gantry cranes with a capacity of **5-40 tons**
- 2 gantry crane, respectively, **32** and **50 tons**
- Crawler and truck cranes **6.3-50 tones**
- 16-ton floating crane for handling bulk cargoes under option “board-on-board”
- Trucks with capacity from **1.5 to 22 tons**
- Rail and truck scales
- Silos for unloading hopper cars (grain, mineral wagons)
- Railway ramps for loading/unloading boxcars and platforms

The port processes

- General cargo - metal, boxes, equipment
- Bulk cargo - ore, coal, chemical and min-building materials, coke, grain, food
- Liquid cargo - light oil products

SEA & RIVER

SEAPORTS' CONCESSIONS

Concession Project in Mariupol seaport

- **Development of congestion of grain and oil cargoes by construction of agro-industrial cluster on piers 2-4, including with attraction of investors.**
  - Construction of a terminal for transshipment of general and container cargoes in the 3rd cargo area with expansion of warehouse capacities; increasing unloading fronts using rail cars; safe technology of loading and unloading processes (term of implementation 2021-2022).
  - Development of covered storage of metal goods by construction of covered warehouses (2020-2021).
  - Preparation of design solutions for attracting investors for the reconstruction of warehouses of the 2nd cargo area at the site of the coal reloading complex with their re-profiling for overloading of container and some bulk cargoes (2020-2021).
  - Traditional implementation of energy efficiency programs with the introduction of modern hot water technologies with the commissioning of the second stage of the central boiler room solar (2020-2021), the transition to plastic pipelines (2019-2024), geological exploration with the possibility of providing technical water supply (2020) -2021 years) and more.
  - Implementation of modern safe equipment during the modernization of handling equipment.
  - Constant updating of the lifting and other machinery involved in the port.

CERTIFICATION: CERTIFICATES OF MANAGEMENT SYSTEMS

- The leading countries of the world community are rapidly implementing standards for management systems in various fields of activity. SE Mariupol Commercial Seaport has implemented and operates the following systems: quality management in accordance with DSTU ISO 9001: 2015 (ISO 9001: 2015, IDT), environmental management in accordance with ISO 14001: 2015, hygiene and safety management at OHSAS 18001: 2007 and Food Safety Management conformance to ISO 22000: 2005, as evidenced by relevant applicable certificates.

KEY FACTS:

68	3900	18	500+	4+	60,000+	5.3
Total area of the port (ha)	Length of the mooring line (m)	Number of berths (pcs)	Ships per year	Kilometers of maritime berth	Freight wagons per year	mln tons of cargo crossed the marinas in 2018

CONCESSION PROJECT IN RENI SEAPORT

- Reni seaport is located on the river Danube (town of Reni of Odessa region) at the junction of Ukrainian, Romanian and Moldavian borders and international transport corridors
- The Reni seaport territory includes part of the fenced coastal strip (on the left bank of Danube river, starting from **123.6 km** up to **128.3 km** of the river Danube
- Connection with the Black Sea is carried out through the main ship's passage of the "Bystre" estuary and the Sulinsky channel

3.6 km

(30 berths) seaport berth line

7.5 m

maximum depths

- The total length of railroad access tracks located on the seaport territory is **21.4 km** adjacent to and serviced by the Reni station railways making part to the regional branch of "Odessa Railways" of PJSC "Ukrzaliznytsia"
- The seaport's cargo turnover in 2019 made **1.3 million tons**. Seaport terminals capacity reaches **8.0 million tons per year**

CONCESSION PROJECT IN IZMAIL SEAPORT

- Izmail seaport is located on the left bank of the Kilian mouth between **84** and **94 km** of the Danube River (town of Izmail, Odessa region)
- Vessels passage to the port is carried out through the Sulyn Canal or through the deep-water navigable channel

8 meters
depth of operating water area

8 m
port's depth

2.6 km
mooring line

24
berths

Key Investment Highlights

- The seaport mooring line is **2.6 km** (24 berths and 5 bank protections) with maximum depth of up to **8 m**
- The seaport is serviced by one railway station with three railway entrances. The port is linked to automobile roads
- The cargo turnover of the seaport in 2019 was **4.3 million tons**. Seaport terminal capacity totals **9.3 million tons**. The passenger's complex capacity is **0.15 mln passengers per year**
- Depth at the berths - **8 m**

SEA & RIVER

SEAPORTS' PRIVATIZATION

Belgorod-Dnistrovskyi state stevedoring company privatisation

Key Highlights

- The port is located on the west bank of the Dniester estuary to the northwest of the Dniester-Constantinople estuary
- Vessels approach the port via the **2.22 km** long sea canal and the **14.5 km** long Liman canal.
- Depth of the approach channel - **4.5 m**
- Port's depths - **3.5 m**
- The capacity of the railway section to Izmail is **7-8 million tons per year**
- **9 cargo berths** with a depth of operating water area - **5 meters**
- **9** working berthing cranes
- Sufficient capacity of berths / cargo equipment for the expected cargo traffic of **1.5 million tons per year**
- In addition to cranes for handling cargo from shore to ship, suitable for handling timber, large containers and general cargo, the port has two facilities for loading grain - **berths 2 and 5**
- The distance from Odessa is **117 km**

SEA & RIVER

SEAPORTS' PRIVATIZATION

Ust-Dunaisk state
stevedoring company privatisation

0.15 km

the berth line of the seaport

1

berth

6 m

depth of up

- The seaport of Ust-Dunaisk is located on the southern shore of Zhebriyanovskaya Bay in the Danube Delta (Vilkovo,Odessa region) on an artificial territory. The port includes the port of Kiliya and the port of Vilkovo

Key Highlights

- The Ust-Dunaisk port performs transshipment and freight forwarding services for transit, foreign trade and cabotage cargoes, warehousing operations. It can provide reception, safe parking and handling of lighters, barges, their accumulation for further transportation
- The basis of the port's cargo turnover consists of bulk and bulk cargo: ore, ore concentrates, grain. Cargo is delivered by ships, non-self-propelled barges and lighters
- The cargo turnover of the seaport in 2019 amounted to 0.071 thousand tons. The capacity of the port terminals reaches 5.0 million tons. The existing passenger complex is capable of serving up to 0.01 million passengers per year

SEA & RIVER

SEAPORTS' PRIVATIZATION

Skadovsk state stevedoring company privatization

- Specialization - **Bulk Cargo**
- Length - **107.8 m**
- Constructive width - **22.8 m**
- Project depth from the “0” port - **3.5 m**

- The water area is **16.5 sq. km**, including:
  - internal water area - **0.05 sq. km**
  - external raid (anchor place number 371) – **4.0 sq. km**
- The outer raid depth is from **4.0 m** to **8.2 m**
- Depth at berths from **5.0 m** to **6.0 m**
- The total length of the mooring front - **912 m** (**536 m** operated)

- Year of construction – **1970**
- Rear sites: storage areas of the SE Skadovsk Commercial Sea Port
- With a total area of **7,300 sq.m** are included in the listof potential rental objects
- Technical condition and work to be done: satisfactory, requires major repairs

- **5** berths
- Storage area - **7,416 sq. m**
- Port Khorly
- Berth for boats & yachts
- Approach channel
- Backwater
- Barrage Dam
- Parking ground (import) **12 sq. km**
- Parking ground (export) **13 sq. km**
- Internal port routes
- **6** lighting towers
- Administrative building

SEA & RIVER

SEAPORTS' PRIVATIZATION

Inland water transport financing

Inland Water Transport strategic infrastructure IFIs financing

Technical assistance for increased throughput of the Inland Water Way's

- The cargo volume growth of the inland waterways' transportation causes the necessity to involve technical assistance financing for the modernization of Inland Water Way's to increase their throughput in such areas:

- Structural / physical constraints to the transport infrastructure (e.g. poor condition of locks, lack of navigational aids, and limited service fleet)
- Maintenance and operation requirements to operate the waterway

Area	Priority costs	Additional costs	Total
Upper Dnipro	-	48.00	48.00
Middle Dnipro	37.09	6.80	43.89
Lower Dnipro	18.97	17.90	36.87
Total	56.06	72.70	128.76

* mln USD
* according to ROYAL HASKONINGDHV

- The current Strategy of the Government of Ukraine for the Dnipro River seeks to address the financing of modernization of the Inland Water Ways due to growing demand potential of Inland Water Transport and its importance for the Ukrainian commerce and economic growth

AVIATION

19

key operating airports

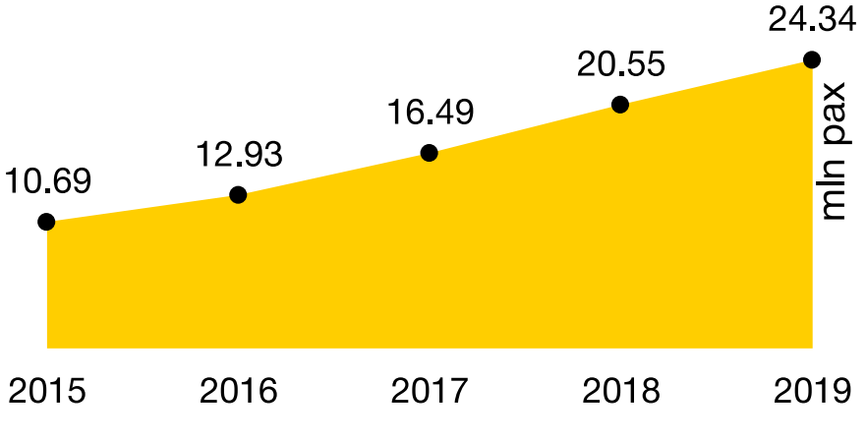
24.3 mln

total passenger traffic 2019

+18.5%

passengers compared to 2018

Passenger traffic of Ukrainian airports has doubled for the last 4 years



BORYSPIL INTERNATIONAL AIRPORT -
is the largest airport in Ukraine serving **59%** of Ukraine's passenger traffic

+21%
passenger flow growth in 2019

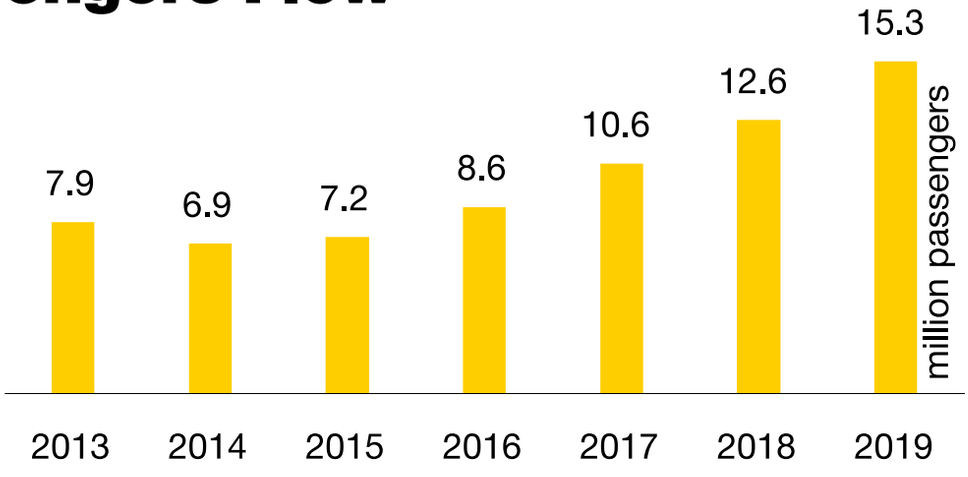
167 million USD
revenue

50%
EBITDA margin

15.3 million
passengers

- The airport is located 19 km east from Kyiv city at the intersection of many air routes running from Asia to Europe and America

Passengers Flow



Key Investment Highlights

- One of the top **5 airports** in Eastern Europe
- **2 runways, 3 passenger terminals** with total capacity of **over 5000 passengers per hour**
- Facilities are used by **40 airlines**, which provide **80 scheduled flights**

Reconstruction of Flight Zone №2

350 million USD

estimated investment

2019-2026

implementation period

New Cargo Terminal

16 million USD

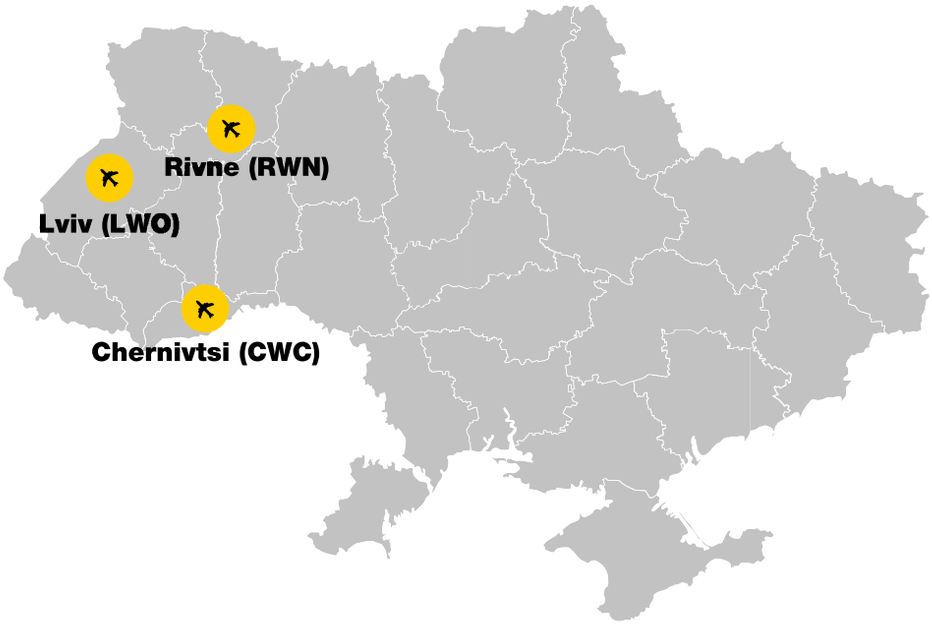
estimated investment

2019-2021

implementation period

AVIATION

DEVELOPMENT OF REGIONAL AIRPORTS



430 million USD

estimated CAPEX for 30 years concession

2.3 mln PAX

total passenger traffic in 2019

> 22 %

estimated equity internal rate of return (IRR)

- Unique opportunity to develop airport facilities on a fast-developing Ukrainian market
- Ministry of Infrastructure is preparing the concession of a cluster of 3 bundled airports in Ukraine

*traffic forecast does not include COVID-19 implications

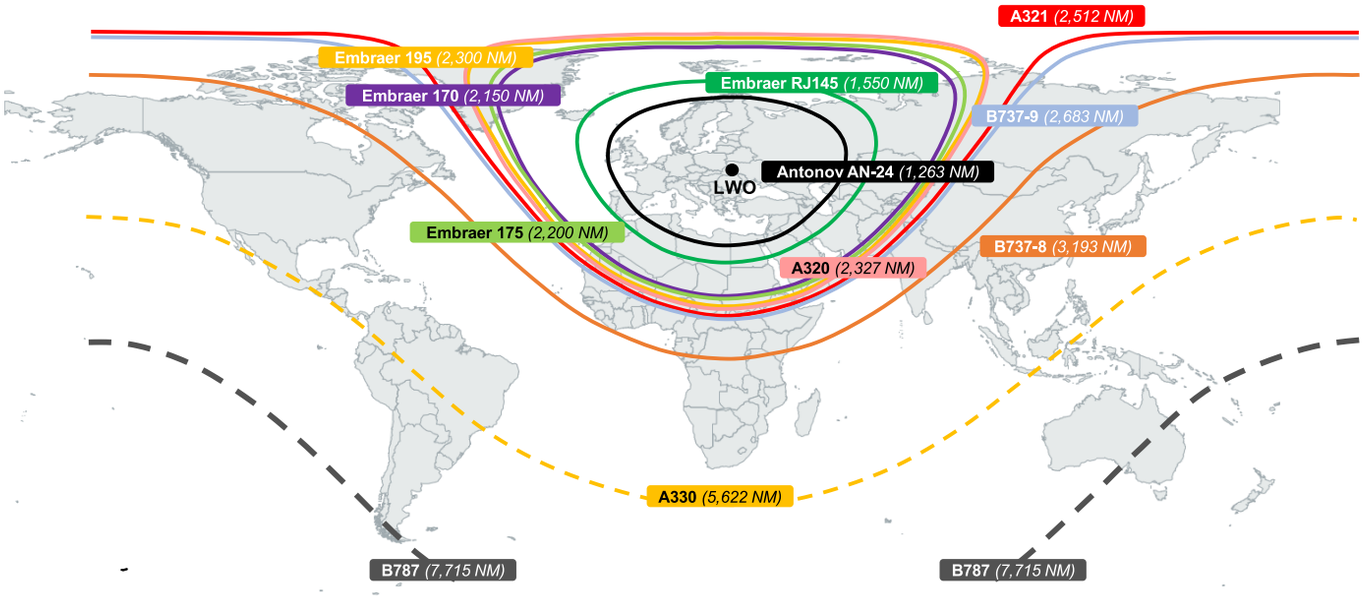
LVIV INTERNATIONAL AIRPORT -
the biggest airport in Western Ukraine with close proximity to the EU

3305 x 45 m
runway

47233 + 1907 sq.m
terminals

2217 thousands PAX
2019 traffic

22 %
traffic CAGR `10-`19



- Completely renovated facilities before Euro-2012
- Favorable location close to the EU border (70 km from Polish border)

- Short-term investments
- Construction of cargo terminal
  - Investment volume **2.3M USD**
- Construction of hangars for aircraft maintenance
  - Investment volume **1.15M USD**
- Reconstruction of terminal 1 for VIP passengers
  - Investment volume **1.53M USD**
- Future developments may need projects related to ICAO compliance including renovation of ILS CAT II and existing runway width extension up to 60 m, car parking expansion, construction of full parallel taxiway, expansion of handling vehicle fleet

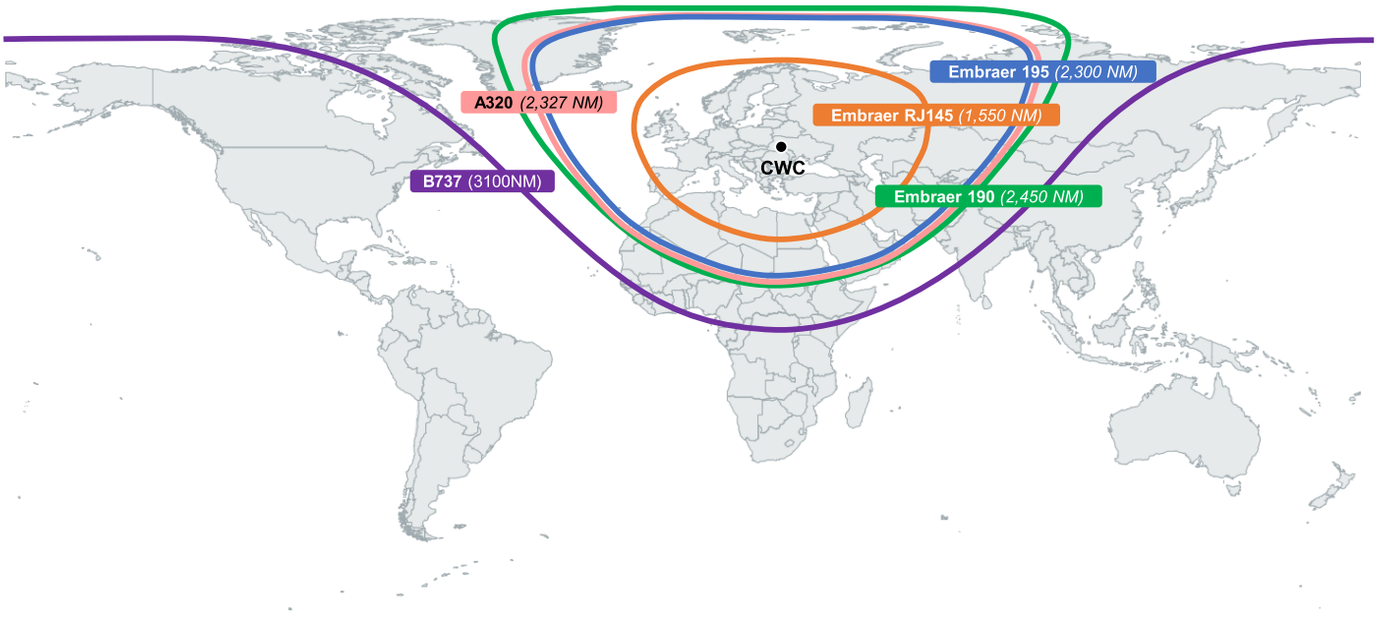
CHERNIVTSI INTERNATIONAL AIRPORT -
great opportunity to catch up the growing demand in the region

2216 x 42 m
runway

1700 sq.m
terminal

77 thousands PAX
2019 traffic

16 %
traffic CAGR `12-`19



- The current runway length at the Chernivtsi Airport has potential to reach main European destinations with the current aircraft mix
- ICAO compliances projects related to the runway should be implemented: insufficient runway strip width and runway width
- RWY capacity at CWC is currently estimated at 10 flight movements per hour and it will not be a constraint
- Full reconstruction and extension of runway for the operations of larger aircraft is required
- Current terminal prevents the promotion of traffic development without restrictions, so new terminal construction is needed

RIVNE INTERNATIONAL AIRPORT - promising airport with significant traffic growth potential

2626 x 42 m

runway

3610 sq.m

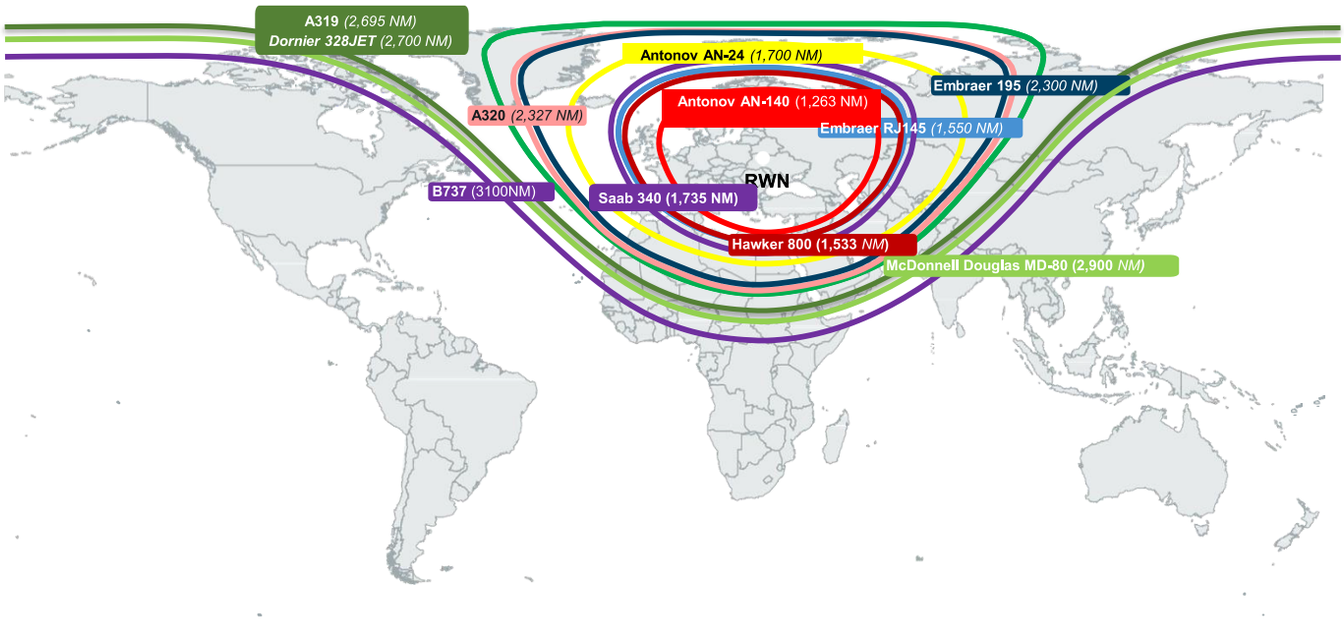
terminal

11 thousands PAX

2019 traffic

20 %

traffic CAGR `10-`19



- Rivne airport has a favorable location on the key routes from Kyiv and Eastern Ukraine to the EU
- The current runway length has potential to reach main European destinations
- Runway lighting system is outdated and should be replaced
- Terminal capacity is estimated at **451 thousand passengers per year** and **125 passengers per peak hour** (PHPs), so it will not be a constraint
- Short-term development may need projects related to ICAO compliance, runway PCN improvement, taxiway and apron reconstruction, existing terminal renovation, car parking expansion

KHERSON INTERNATIONAL AIRPORT - promising airport with significant traffic growth potential

72 million USD
for 30 years concession

2500 m
runway

5550 sq.m
terminal

154 thousands PAX
2019 traffic

- Ministry of Infrastructure is preparing the concession of **4 airports** in Ukraine
- Airport is estimated to reach **~1.1 M PAX** by 2050
- Major investment in runway and terminal is required in the short term
- Lighting and NavAids need to be replaced
- Fleet renovation is needed including critical assets such as fire trucks, ambulance, etc.

UKRAINIAN STATE AIR TRAFFIC SERVICE ENTERPRISE (UKSATSE) - main air navigation service provider of Ukraine

44.3 million USD

implementation of the modernised ATM infrastructure

4.4 million USD

implementation of Automatic Dependent Surveillance Broadcast System (ADS-B)

11 million USD

implementation of Remote Digital Control Towers

335407

total flights number in 2019

30790

domestic flights in 2019

141680

transit flights in 2019

ROADS

2 %

category 1 corridors (motorways)

169000 km

47000 km

state roads

122000 km

local roads

- The State Road Fund was established, and began operations on January 1, 2018 providing dedicated source of revenues for road repair and construction
- More than **120 000 km** of local public roads were transferred to the local governments with appropriate funding. A transparent budget and effective project planning process has been provided
- An open infrastructure data portal has been developed, which contained about 400 road repair/reconstruction projects, monitored according to CoST standards
- The pilot projects of Weigh-in-Motion control on roads was launched and is in process
- The objectives of Strategy for the electric transport market in Ukraine include: production of full cycle of electric vehicles in Ukraine, and providing Ukrainians with the opportunity to purchase affordable electric cars
- Ukraine included among the TOP 5 countries in increasing the number of electric cars

PUBLIC - PRIVATE PARTNERSHIP

THE WORLD BANK CONCESSION PROGRAM IN UKRAINE

	Phase 1 PPP Projects	Length (km)	CAPEX (USD mln)
1	Boryspil - Poltava (M-03)	291	180 - 300
2	Kyiv - Zhytomyr - Rivne (M-06)	308	290 - 480
3	Dnipro - Kriviy Rih - Mykolaiv (M-04, H-11)	312	130 - 220
4	Yagodyn[1] - Kovel - Lutsk (M-07, M-19)	146	140 - 230
5	Kharkiv - Dnipro - Zaporizhzhya (M-29, M-04, M-18)	306	300 - 490
		1,363	**1,040 - 1,720**
6	Kherson - Mykolaiv (M-14)	68	190 - 320
7	Dnipro - Reshetylivka (H-31)	153	20 - 40
8	Rivne - Brody (M-06)	114	310 - 520
	Phase 2 PPP Projects		
9	Stryi - Ivano-Frankivsk - Chernivtsi (H-10)	223	130 - 220
10	Lviv to Polish border (M-09, M-10, M-11)	202	220 - 370
11	Kyiv - Kropivnytskiy - Mykolaiv (H-01, H-14)	467	120 - 200
12	Ustulug - Lutsk - Rivne (H-22)	156	130 - 220
13	Kyiv Ring Road (between M-05 and M-06)	35	330 - 560
		1,083	**930 - 1,570**

[1] All projects are brownfield except for Kyiv Ring Road

KYIV RING ROAD CONSTRUCTION

5.600 million USD

estimated cost

150.8 km

road length

15-85 thousands

cars / day

Key Investment Highlights

- Connection of three international and four national transport corridors
- Construction of 85.7 km of new road and upgrade of **65.1 km** of existing road to category 1-A
- Project is expected to unload Kyiv from freight transit transport (**40%** of all transport going through Kyiv)
- Feasibility study is **90%** ready, however needs updates and corrections
- Implementation of the project will improve road security and ecological situation in Kyiv (40-50% less emissions)

LVIV - KRAKOVETS HIGHWAY

630 million USD

estimated cost (VAT excl.)

62 km

road length

16-27 thousands

cars / day

Key Investment Highlights

- One of the most important highways of Ukraine providing connection to Europe
- Part of the 3rd European transport corridor Berlin/Dresden - Wrocław - Krakovets - Lviv - Kyiv
- Construction of a new section of the highway (57 km) and reconstruction of the existing section (5 km) with upgrade to category 1B
- Construction of 2 two-level transport interchanges
- Construction of 3 bridges and 17 overpasses
- Implementation of the project will positively affect Ukraine’s export capacity to Europe

ODESA - RENI HIGHWAY

1.350 million USD

estimated cost (VAT excl.)

295.2 km

road length

25-40 thousands

cars / day

Key Investment Highlights

- Part of international transport corridor “Black Sea Economic Cooperation”
- Connection to international transport corridor TRACECA
- 1st stage: Odesa - Ovidiopol - Bilhorod-Dnistrovskyi - Monashi (81 km) including bridge crossing via Dnister estuary (5.7 km)
- 2nd stage: Monashi - Reni (214.2 km)
- Implementation of the project will improve connection to southern districts of Odesa region, as well as to the Southern Europe and the Middle East

INTERNATIONAL FINANCIAL INSTITUTIONS FINANCING AND OPPORTUNITIES FOR THE PRIVATE SECTOR INVOLVEMENT

BYPASS OF KREMENCHUK
with the bridge over Dnipro river

720 million USD
estimated cost (VAT excl.)

35.15 km
road length

27.680
cars / day

Key Investment Highlights

- Part of M-22 Poltava - Oleksandria highway
- Feasibility study at final stage of development
- Road category 1B
- The length of the bridge over Dnipro River - **1.520 km**
- Implementation of the project will make transit transport bypass Kremenchuk city, improve ecological situation in the city and increase transportation over the Dnipro river

ODESA - MYKOLAIV - KHERSON HIGHWAY
(construction)

1.375 million USD

estimated cost (VAT excl.)

242 km

road length

31.394

cars / day

Key Investment Highlights

- Part of Odesa - Melitopol - Novoazovsk international highway
- Feasibility study to be developed in 2020-2024
- Road category 1B
- Implementation of the project will provide better connection to the largest Black Sea ports and will enhance export capacity and tourist attractiveness of the region

TERNOPIL – LVIV HIGHWAY
(construction)

450 million USD

estimated cost (VAT excl.)

112 km

road length

35.000

cars / day

Key Investment Highlights

- Section of Ternopil – Lviv – Rava Ruska highway which is a part of a larger transport corridor between the Black and Baltic Seas
- Road category 1B
- Construction of 3 bridges and 8 overpasses
- Construction of 5 two-level transport interchanges
- Implemenation of the project will enhance connection of Ternopil region with Ukraine-EU border

BRIDGE OVER THE SOUTHERN BUH RIVER
(construction)

315 million USD

estimated cost (VAT excl.)

14.6 km

road length

18364

cars / day

Key Investment Highlights

- Part of Odesa - Melitopol - Novoazovsk international highway
- Road category 1B
- 2 transport interchanges
- The length of the bridge over Southern Buh River - 2.1 km
- Implementation of the project will make transit transport bypass Mykolaiv city, improve ecological situation in the city and increase transportation over the Southern Buh river

BYPASS OF BEREHOVE
(construction)

40 million USD

estimated cost (VAT excl.)

14.1 km

road length

8.190-9.550

cars / day

Key Investment Highlights

- Road category 2
- 2 overpasses
- 2 bridges
- 8 intersections
- Implementation of the project will positively affect Ukraine’s export capacity to Europe, as well as increase tourist attractiveness of Zakarpattia region

KOVEL-YAHODYN HIGHWAY
(construction)

250 million USD

estimated cost (VAT excl.)

3.800 - 6.200

cars / day

Key Investment Highlights

- Part of Kyiv-Kovel-Yahodyn highway
- Yahodyn is one of the busiest EU-Ukraine border checkpoints
- Road category 1
- Construction of 6 overpasses
- Implementation of the project will positively affect Ukraine's export capacity to Europe

BYPASS OF VALKY
(construction)

145 million USD

estimated cost (VAT excl.)

51 km

road length

30.580

cars / day

Key Investment Highlights

- Part of Kyiv - Kharkiv - Dovzhansky Highway
- Feasibity study is developed, but requires correction
- Road category 1B
- Project financing will be provided by IFIs (FIDIC contract type)

RIVNE - LVIV HIGHWAY
(construction)

975 million USD

estimated cost (VAT excl.)

282 km

road length

16-26 thousands

cars / day

Key Investment Highlights

- Section of M-06 Kyiv – Chop highway which is part of a larger 3rd European transport corridor
- Road category 1B
- Project financing will be provided by IFIs (FIDIC contract type)
- Implementation of the project will positively affect Ukraine's export capacity to Europe

TROITSKE - SEVERODONETSK - STAROBILSK HIGHWAY
(construction)

250 million USD

estimated cost (VAT excl.)

183.2 km

road length

6.200 - 7.500

cars / day

Key Investment Highlights

- Project financing will be provided by IFIs' loans - European Investment Bank and International Bank for Reconstruction and Development
- FIDIC contract type
- Feasibility study to be developed according to IFIs' rules and regulations
- Road category 2
- Implementation of the project will improve connection to Eastern Ukraine

M14 KHERSON-MARIUPOL

EU funded Pre-feasibility study developed

971 million USD

estimated cost (VAT excl.)

427 km

road length

Key Investment Highlights

- Repaired pavement
- Bridges and structures repaired
- Road safety measures implemented

PRIVATE INVESTMENT

CREATION OF NATIONAL RESEARCH AND TESTING CENTRE FOR ADVANCED TECHNOLOGIES OF SAFE, ENVIRONMENTALLY-SOUND AND ENERGY-EFFICIENT ROAD TRANSPORT

90.5 million USD

total estimated cost (VAT excl.)

2

stages

- Stage I. Initial high-priority Laboratories and Automotive Proving Ground facilities (Estimated cost: **$38.5 mln**), including:
  - Subproject 1. Automotive Emission and Energy Efficiency Laboratory (Estimated cost: **$10.8 mln**)
  - Subproject 2. Automotive Proving Ground high-priority facilities, other laboratories and Infrastructure (Estimated cost: **$27.7 mln**)
- Stage II. Full-scale R&D Testing centre in accordance with the EU standards (Estimated cost: **$52 mln**)

Key Investment Highlights

- An essential part of the Ukraine-EU Association Agreement Implementation Plan
- Non-commercial project in terms of R&D and testing facilities operation
- Great benefits at the macroeconomic level for the state and society (road transport annual externalities total costs (including road incident losses, environment damage losses, energy dependence) are about $10-13.2 bln now and can be lowered on about $ 3-5.3 bln annually in the sum with the project key technological support and relevant state regulation)
- High policy and economy benefits for both Ukraine and the EU
- High general commercial potential through supporting innovative technologies development and transfer, and the EU standards strict implementation in Ukraine
- Commercial potential through multi-functional operation opportunities of automotive proving ground facilities and infrastructure

RAILWAY

Implementation of the EU legislation (according to the Association Agreement between Ukraine and the European Union) and National Transport Strategy of Ukraine 2030 will contribute the development and efficiency of the Ukrainian railway. The main priorities are:

- Introduction of common market rules for state and private railway companies, as a mechanism for guaranteeing equal access to railway infrastructure
- Introduction of a new model of the railway market similar to the European railways system
- Implementation of a new model of management of Ukrainian railways in order to facilitate effectiveness in maintaining, modernization and development of railway infrastructure
- Transparent, non-discriminatory and efficient tariff models for the use of railway infrastructure. Development of a balanced tariff policy based on modern European practices
- Infrastructure modernization through PPP mechanism
- A new approach to organizing public transportation of passengers by railway

RAILWAY DEVELOPMENT

149.6 millions

total passenger traffic in 2019

312.4 million tons

total cargo traffic in 2019

661.3 million USD

of the Ukrainian railways (EBITDA 2019)

114.1 million USD

net financial result (2019)

- Railway transport of Ukraine is the leading branch in the transport of the country, provides **82%** of freight and about **50%** of passenger transportations carried out by all types of transport
- The operational network of Ukrainian railways is about **19.8 thousand km** without taking into account occupied territories, network of which is currently not exploited), **47.1%** of which is electrified

- Inventory fleet of passenger cars consists of **4.32 thousand units**
- The total park of freight wagons is **85.2 thousand units**
- Inventory park of locomotives: **3.5 thousand units**, including:
  - Electric locomotives - **1.6 thousand units**
  - Diesel locomotives - **1.9 thousand units**

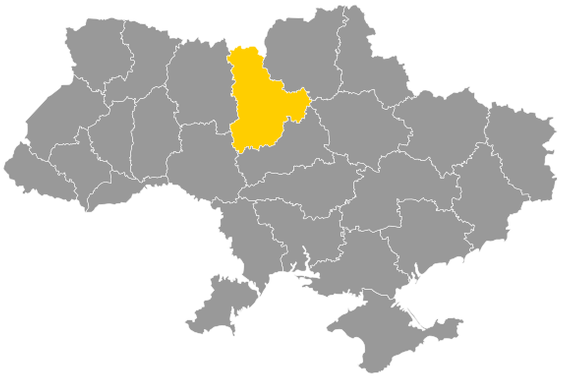
RAILWAY

PUBLIC-PRIVATE PARTNERSHIP

Passenger railway stations concession

GLOBAL INFRASTRUCTURE FACILITY, IFC AND WORLD BANK GRANTED TA FOR PRA OF PILOT RAILWAY STATIONS

Kyiv-passenger RAILWAY STATION CONCESSION



25 years
expected terms

23.5 mln passengers
annually served

55 122 sq.m
GBA (Gross Building Area)

6 769 sq.m
GLA (Gross Leasable Area)

CHOP RAILWAY STATION CONCESSION

25 years
expected terms

0.08 mln passengers
annually served

8.760 sq.m
GBA (Gross Building Area)

MYKOLAIV RAILWAY STATION CONCESSION

25 years
expected terms

1.2 mln passengers
annually served

8.182 sq.m
GBA (Gross Building Area)

6.377 sq.m
GLA (Gross Leasable Area)

VINNYTSIA RAILWAY STATION CONCESSION

25 years
expected terms

1.3 mln passengers
annually served

8.071 sq.m
GBA (Gross Building Area)

974 sq.m
GLA (Gross Leasable Area)

DNIPRO RAILWAY STATION CONCESSION

25 years
expected terms

1.2 mln passengers
annually served

11.833 sq.m
GBA (Gross Building Area)

6.835 sq.m
GLA (Gross Leasable Area)

KHARKIV RAILWAY STATION CONCESSION

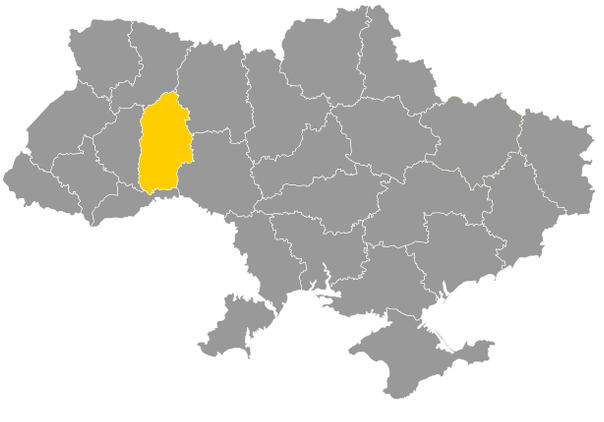
25 years
expected terms

5.7 mln passengers
annually served

34.120 sq.m
GBA (Gross Building Area)

18.252 sq.m
GLA (Gross Leasable Area)

KHMELNYTSKYI RAILWAY STATION CONCESSION



25 years
expected terms

1.6 mln passengers
annually served

9.678 sq.m
GBA (Gross Building Area)

1.573 sq.m
GLA (Gross Leasable Area)

KYIV CITY EXPRESS

298 million USD
estimate investments

2025
project duration

Transport connection between Kyiv and satellite cities

Improving communication with Troieschina

Reconstruction and construction of railway infrastructure – 145 M USD

- Acquisition of 10 modern electric trains and overhaul of 26 rolling stock units – **120M USD**
- Launch of single ticket – **1.2M USD**
- Introduction of a combined transport system (tram-rail) to Troieschina – **32.4M USD**

Performance indicators:

- Almost **50** railway and metro stations
- Income – **42M USD**
- Estimated transportation volumes- **53 million passengers**

- Attraction of investments to infrastructure
- Improving of mobility
- Reducing of travel time

INTERNATIONAL FINANCIAL INSTITUTIONS' FINANCING AND PRIVATE INVESTORS' OPPORTUNITIES

Railway infrastructure development

1435 mm

construction of railway line
MOSTYSKA – SKNYLIV

20.8 million USD

estimated cost

Estimated timeline for project implementation 2021

Expected outcome:

- Integration with EU railway network
- Access of EU railway undertakings to the rail network of Ukraine
- Estimated increase in passenger traffic Ukraine – EU – Ukraine - up to **3 trains per day**, i.e **634 thousand passengers per year**
- Improving quality of services
- Reducing customs control and waiting time for up to **4 hours**

Reconstruction of railway BRIDGE ON THE KRYVYI RIH AND KRYVYI RIH - WESTERN LINE

30.5 million USD

estimated cost

2024

approximate timeline for project implementation

Implementation of the project will enable to:

- Eliminate the bottleneck for Ukraine's key metallurgical region
- Eliminate the risk of traffic stopping in the region

1435 mm

54.2 million USD

Reconstruction of railway line KOVEL - YAHODYN - POLAND BORDER with further electrification

estimated cost

Estimated timeline for project implementation 2024

Expected outcome:

- Integration with EU railway network
- Access of EU railway undertakings to the rail network of Ukraine
- Increase in passenger traffic Ukraine – EU - Ukraine-up to 2 trains per day, i.e. 315 thousand passengers per year
- Reducing customs control and waiting time for up to **4 hours**
- Has a potential to be alternative and competitive cargo route – via redirection of cargo flow from the territory of Belarus to the territory of Ukraine
- Strengthening Ukraine's transit potential

CONSTRUCTION OF THE «DRY PORT» - LOGISTIC HUB MOSTYSKA 2 – POLISH BORDER

Estimated timeline for project implementation 2026

Implementation of the project will enable to:

- Facilitate improved logistics solutions for shippers
- Shifting freight volumes from road to more energy efficient traffic mode – rail
- Lower door-to-door freight rates
- Increase trade flow

Area: Approximately 100 ha

Benefits: Combined transport bill of lading
Containerization

LOCOMOTIVE FLEET RENEWAL

Expected outcome:

- Locomotive fleet productivity increase by **40%**
- Increase in cargo transportation
- **30%** reduction in fuel/electricity consumption

Procurement of freight electric locomotives

Taking into account the projected volumes of freight transportation, the need for new locomotives for 2020-2025 is:

- 135 AC locomotives
- 50 DC locomotives
- 20 dual-system locomotives

1.38 billion USD
estimated cost

2025
approximate timeline for project implementation

Procurement of freight electric locomotives

The project envisages procurement of 40 additional freight diesel locomotives produced by Wabtec Corporation (General Electric Transportation)

190 million USD
estimated cost

2023
approximate timeline for project implementation

RENEWAL OF PASSENGER ROLLING STOCK

300 million USD

estimated cost

2020

approximate timeline for project implementation

Purchasing of 10 high-speed electric trains

DEVELOPMENT OF TRANSPORT HUBS

Terminals

32.4 million USD

estimated cost

Construction of reloading terminals to attract transit transport:

- Infrastructure modernization
- Purchase of loading/reloading equipment
- Warehouses construction
- Sidings upgrades
- Arrangement of customs checkpoints

Setting up the network of multimodal transport terminals

- **CHOP** one of the key Western crossings that allows transportation to Slovakia and Hungary
- **KOVEL** the main alternative to the Brest-Malashevichi crossing on the border between Belarus and Poland

RECONSTRUCTION OF THE RAILWAY FACILITIES WITH ELECTRIFICATION OF THE KOVEL - IZOV - STATE BORDER DIRECTION

Expected outcome:

- Increase of gauge capacity
- Increase of train speed
- Reduction of operating costs due to switch from diesel to electric power
- Reduction of negative ecological effect from using diesel fuel

Short description of work scope

- Construction of **2** railway sub-stations on Volodymyr-Volynski and Kovel stations
- Reconstruction of **ETL 10kV**
- Line electrification with **AC 25kV**
- Installation of new signaling and communication devices

57.3 million USD

estimated cost

High priority of project implementation

2020/2024

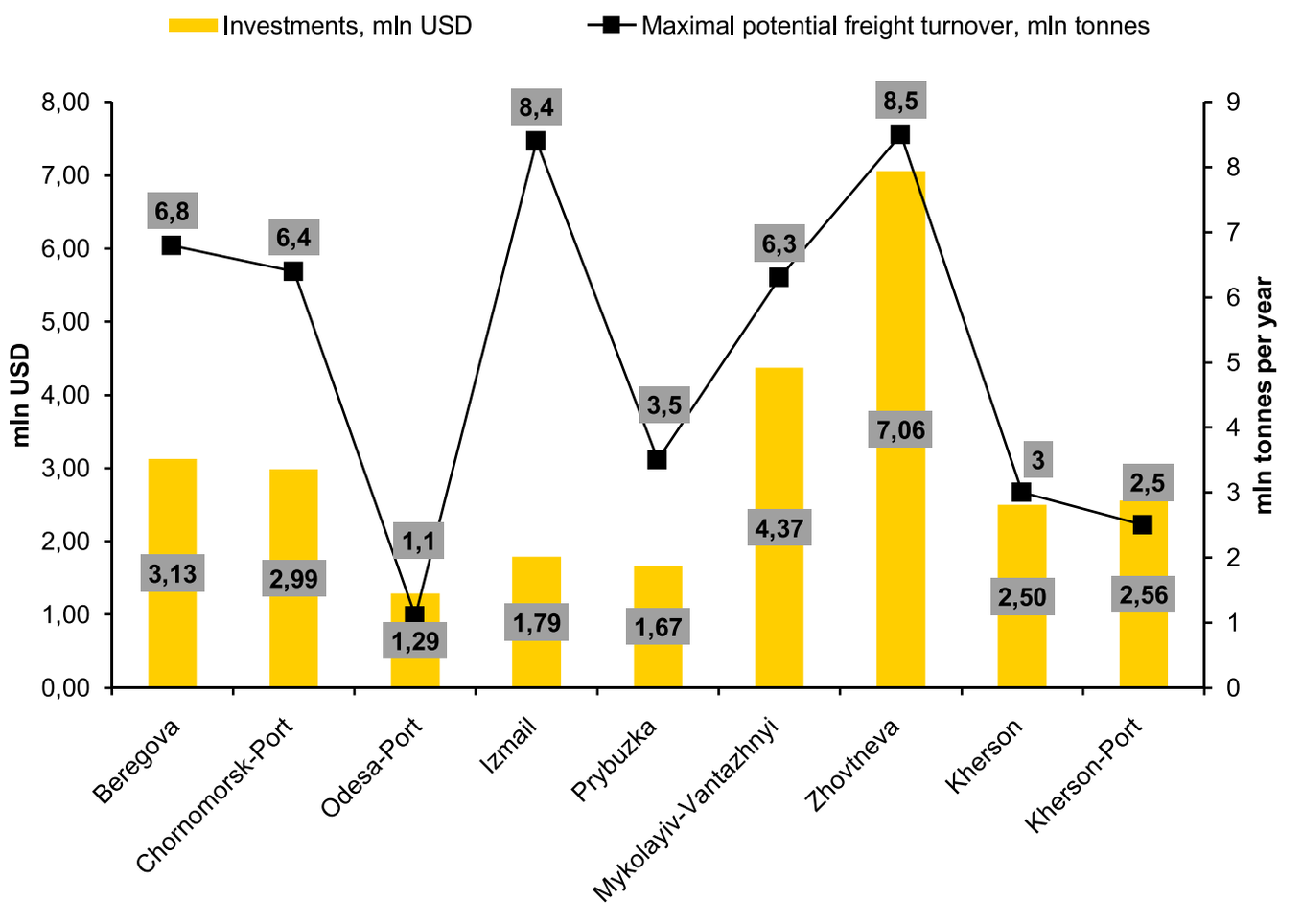
approximate timeline for project implementation

INCREASING OF THE PORT RAILWAY TERMINALS CAPACITY PROJECT

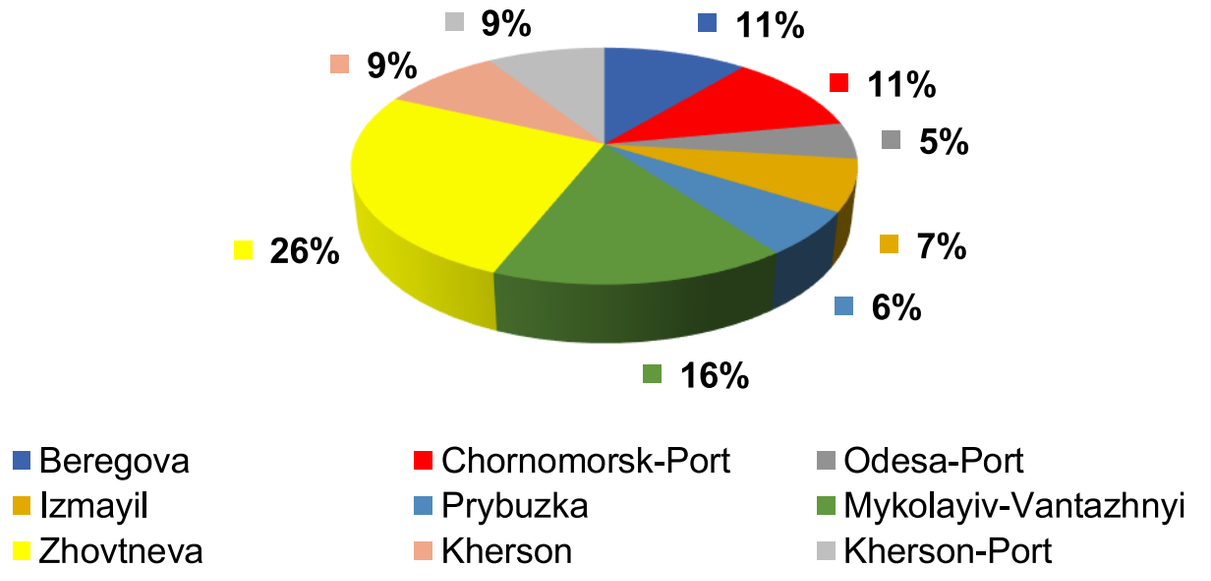
25.1 million USD

total amount

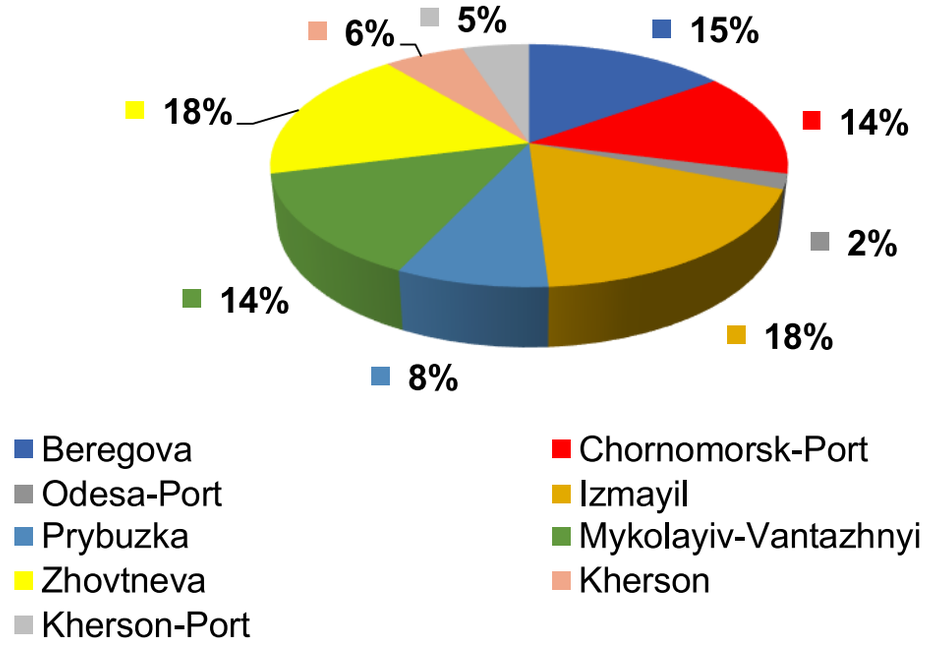
INVESTMENTS VS. POTENTIAL FREIGHT TURNOVER



INVESTMENT STRUCTURE BY STATIONS



MAXIMAL POTENTIAL FREIGHT TURNOVER STRUCTURE BY STATIONS



SUMMARY

- Ukraine is a large country with significant transport infrastructure needs and favorable investment conditions. The Ministry of Infrastructure of Ukraine, with the support of the European Union, European Bank for Reconstruction and Development, European Investment Bank International Finance Corporation the World Bank, is working to upgrade the national transport system by attracting investors and implementing private-public partnership projects
- We have successfully completed two concessions in the seaports of Olvia and Kherson
- But this is only the beginning. The National Transport Strategy of Ukraine calls for implementation of concession projects in other Ukrainian seaports
- The Parliament is currently considering a major inland waterways reform legislation that will provide for stable financing for the rehabilitation and development of river infrastructure
- Work has also begun on the implementation of public-private partnership projects in the road sector using an availability payment-based concession model
- Successfully implementing public-private partnership infrastructure projects is one of the Government's strategic priorities

PARTNERSHIP


Cargill


ArcelorMittal

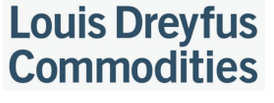

GLENCORE


中粮
COFCO


ADM


BUNGE


KERNEL


Louis Dreyfus
Commodities


DP WORLD


HUTCHISONPORTS


BOMBARDIER


General
Electric


GROUPE
soufflet

DISCLAIMER

THE FEASIBILITY STUDIES AND THE COST BENEFIT ANALYSIS PREPARED IN THE DIFFERENT TIME FRAME. ALL THE FIGURES SHOULD BE CONSIDERED WITH THE CURRENCY RATE DIFFERENCE.

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