

Green Logistics

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Strategic Goals of PhosAgro in Logistics



Economic Efficiency



Industrial Safety



Eco-Efficiency

Key Green Initiatives in Logistics

1. Cars of Higher Capacity

Cars of a higher load capacity allow to reduce the amount of rolling stock within the networks of Russian Railways.

Within the period from 2017 to 2021 an adverse environmental impact caused by sulfur transportation of more than **4 mln tons** of solid sulfur was prevented from with cisterns mindfully chosen when transporting it.

2. Heavy Trains

Delivery by heavy trains with the weight of up to 9,000 tons via energy-saving schedule routes enables saving of 10-15%.

3. Electric Locomotives instead of Diesel Locomotives and Motor Cars

Reduction of CO2 emission into the environment.

4. Use of modern terminals instead of obsolete ones to comply with all of up-to-date environmental requirements.



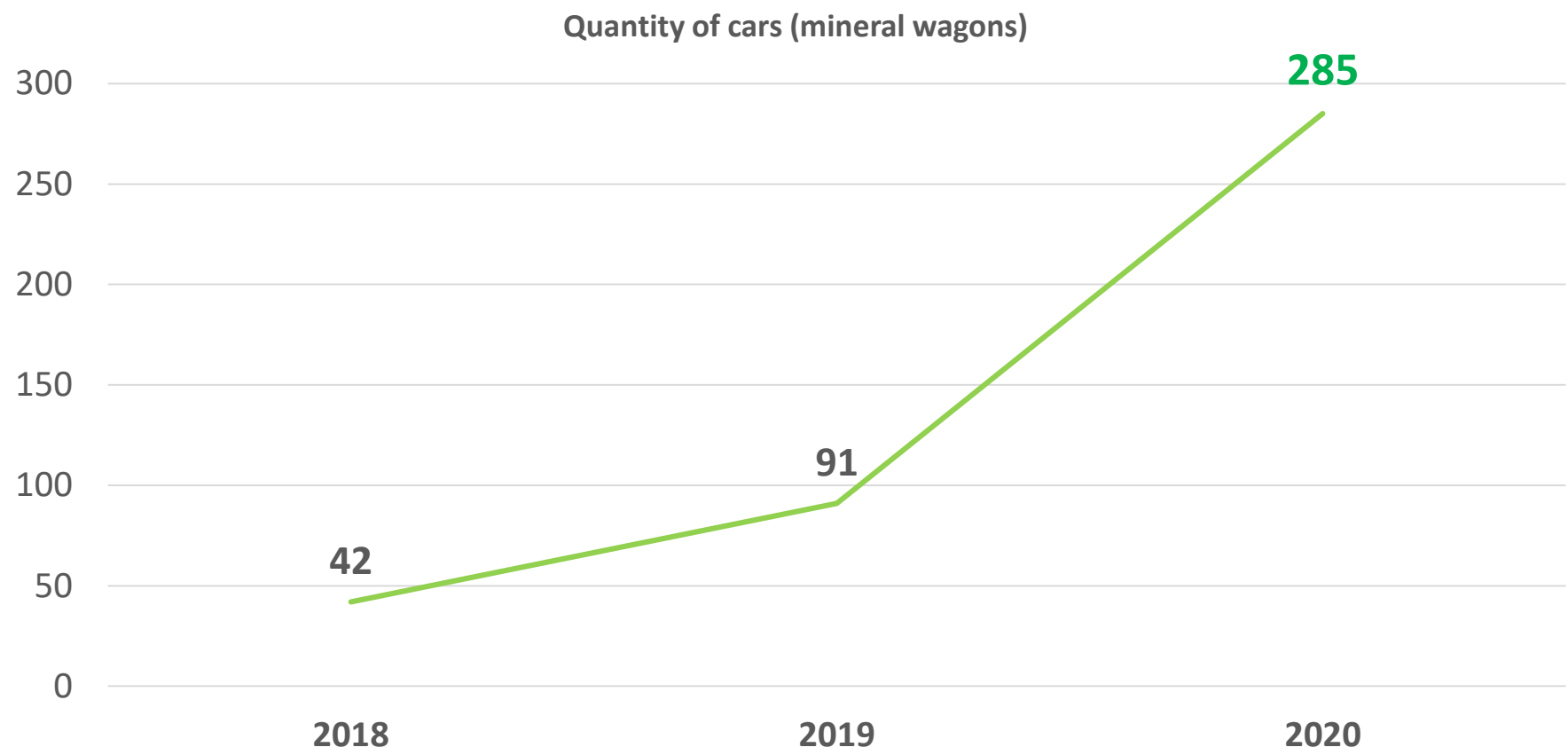
Cars of Higher Capacity, 1/3: Change of the rolling stock system in favor of own innovative cars

Year	Putting of innovative cars into operation, pcs.			
	Liquid sulfur, cisterns	Liquid complex fertilizers, cisterns	Mineral wagons	Total
2017	232	0	440	672
2018	176	0	160	336
2019	112	87	1,500	1,699
Grand total	520	87	2,100	2,707

Reduction of adverse environmental impact per 1 ton of cargo transported



Cars of Higher Capacity, 2/3: The innovative mineral wagons procurement program (76.5 t/hopper) in 2020 it was vacated 285 standard mineral wagons (about four 70-car trains, 70 t/hopper)



Reduction of adverse environmental impact per 1 ton of cargo transported



Economic Efficiency



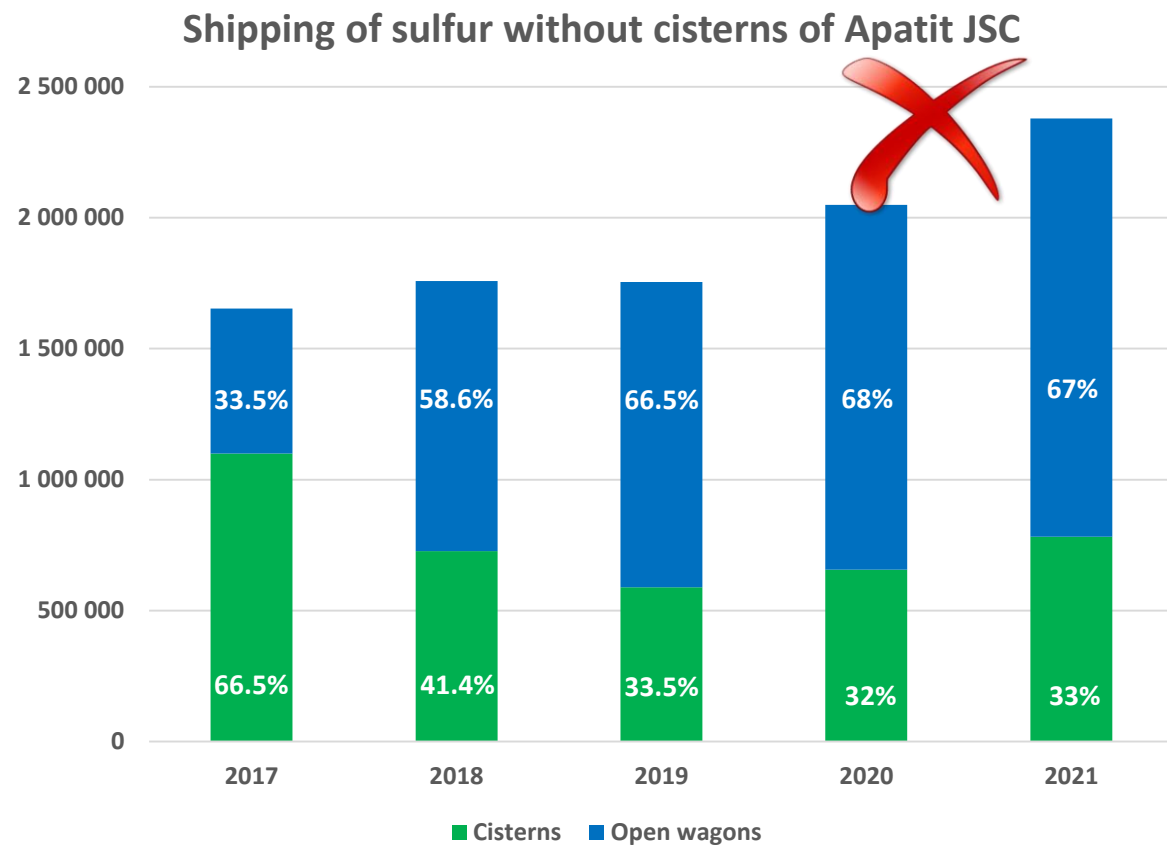
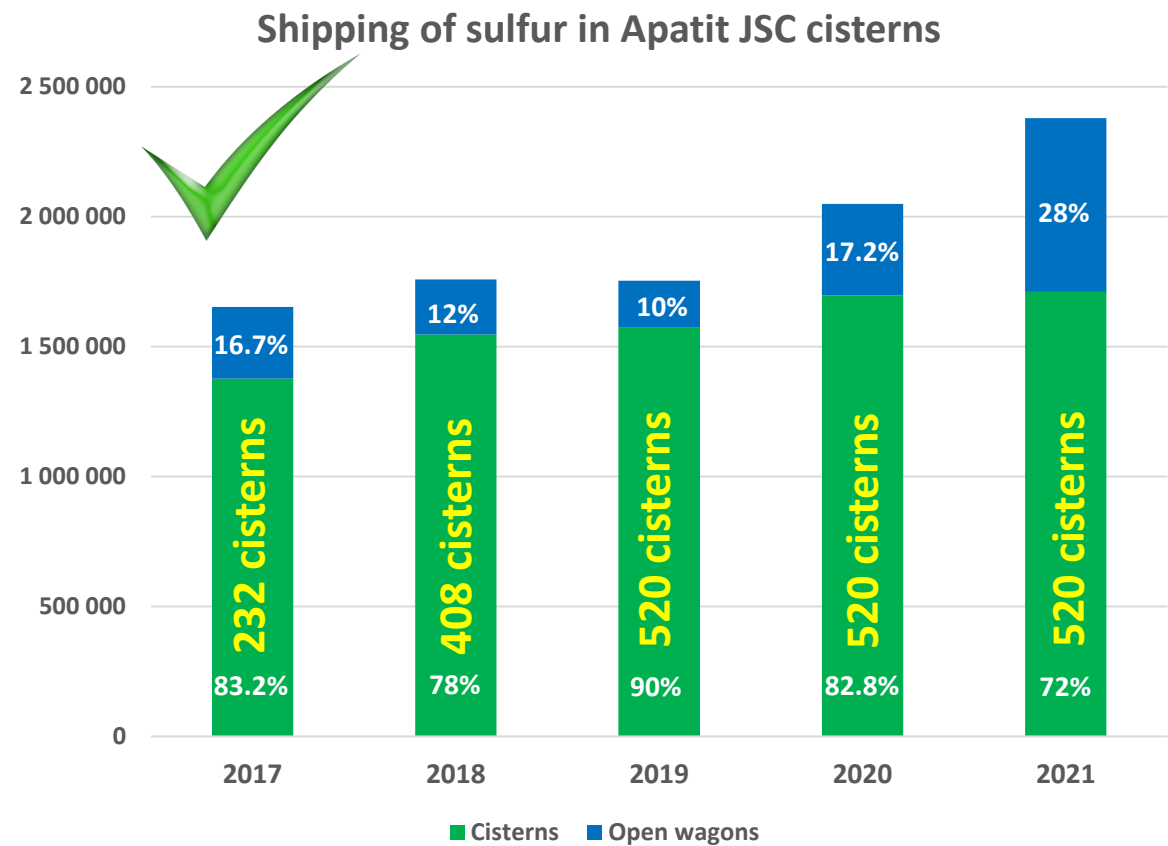
Industrial Safety



Eco-Efficiency

Cars of Higher Capacity, 3/3: Well-considered choice of cisterns, rolling stock restructuring

Cistern transportations are the most **environment friendly** versus other types of transportations, since leakages, dust generation, flammability or other environmental hazards are totally excluded

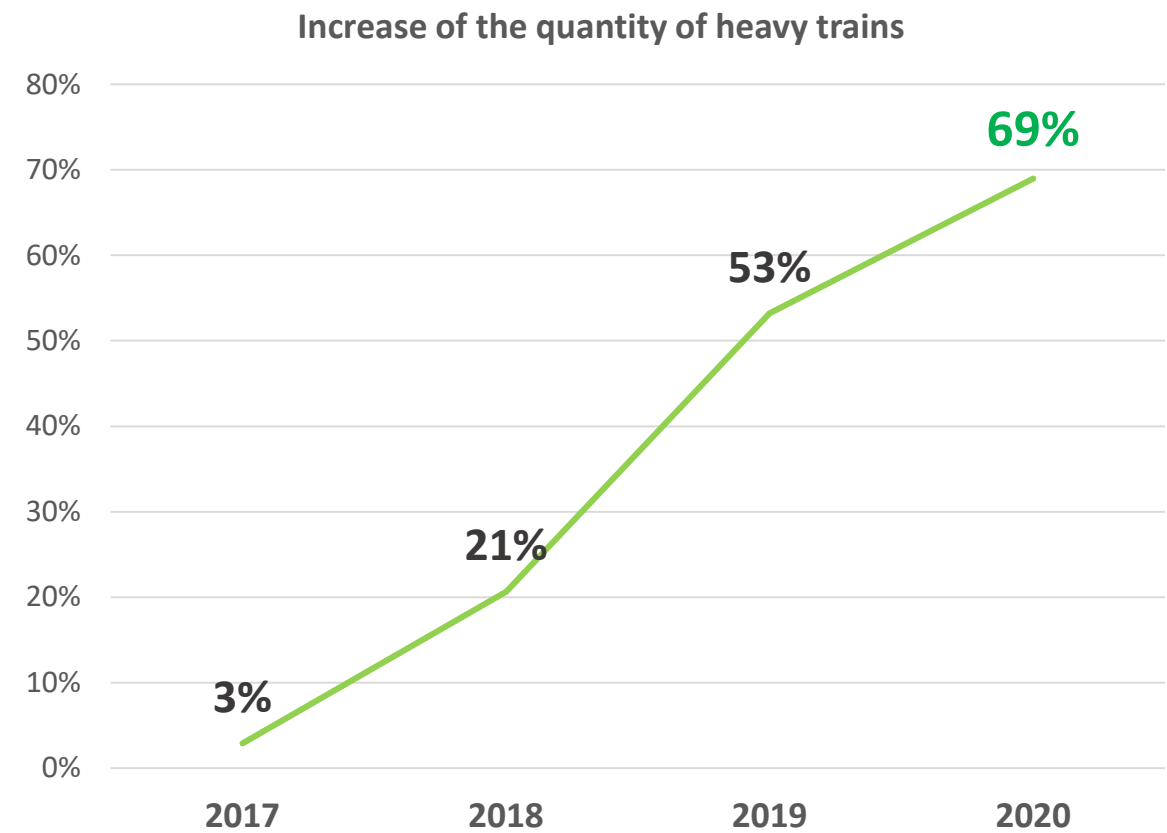


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Heavy Trains, 1/2: A percentage of heavy trains (56+ cars per train) in all directions has increased from 3% in 2017 to 69% in 2020



Effect from adverse environmental impact reduction per 1 ton of cargo

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Heavy Trains, 2/2: Future prospects: preference for heavy trains (100 cars)

Expansion of infrastructure, further traffic speed-up and reduction of adverse environmental impacts

2020

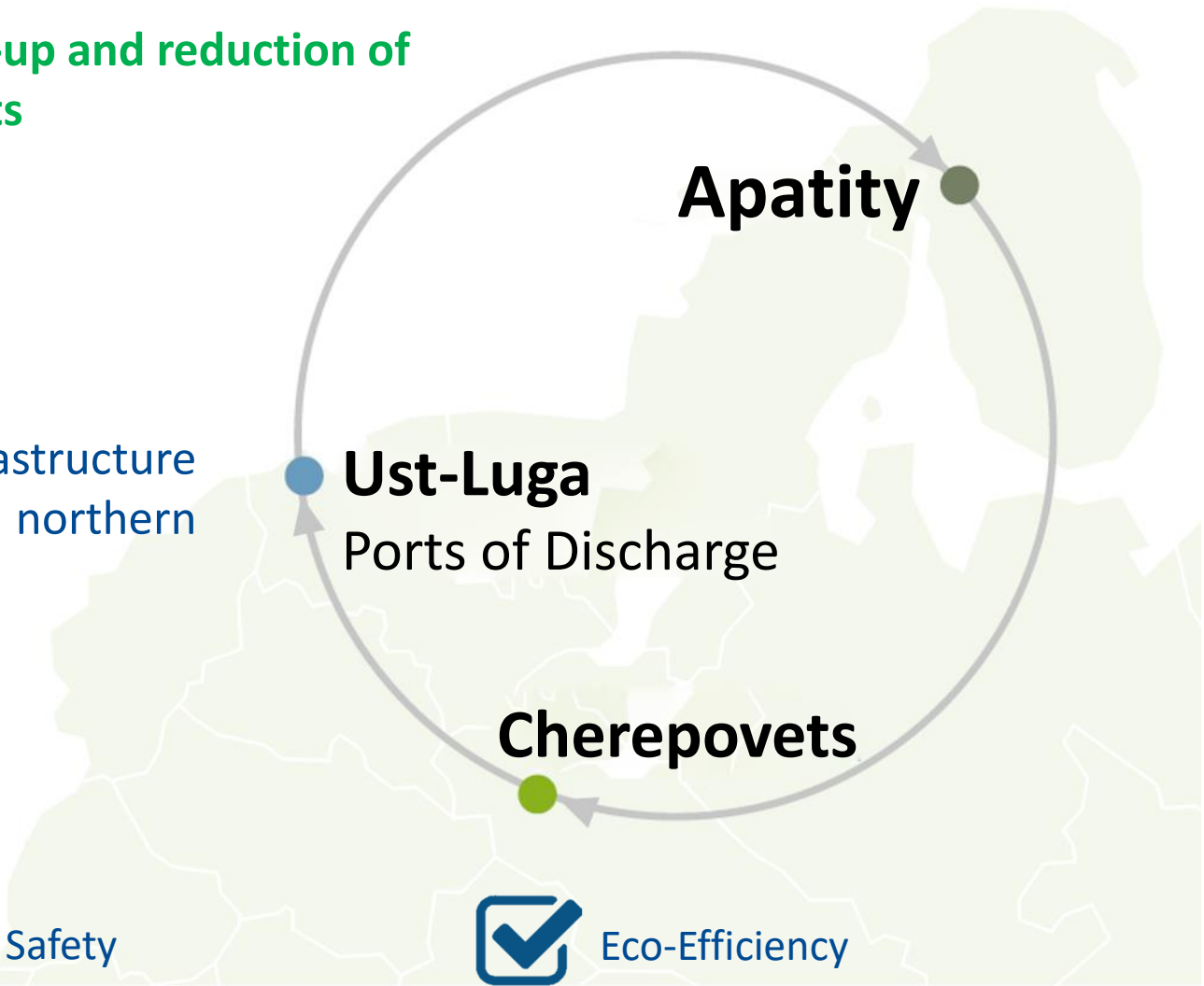
Opening of Kriolit railway station
(Apatit JSC, Cherepovets)

2022

Optimization of Vistino port infrastructure
through commissioning of the northern
terminals (2nd stage) (Ust-Luga)

2023

Renovation of Aykuven railway station
(Kirovsk Branch of Apatit JSC, Kirovsk)



Economic Efficiency

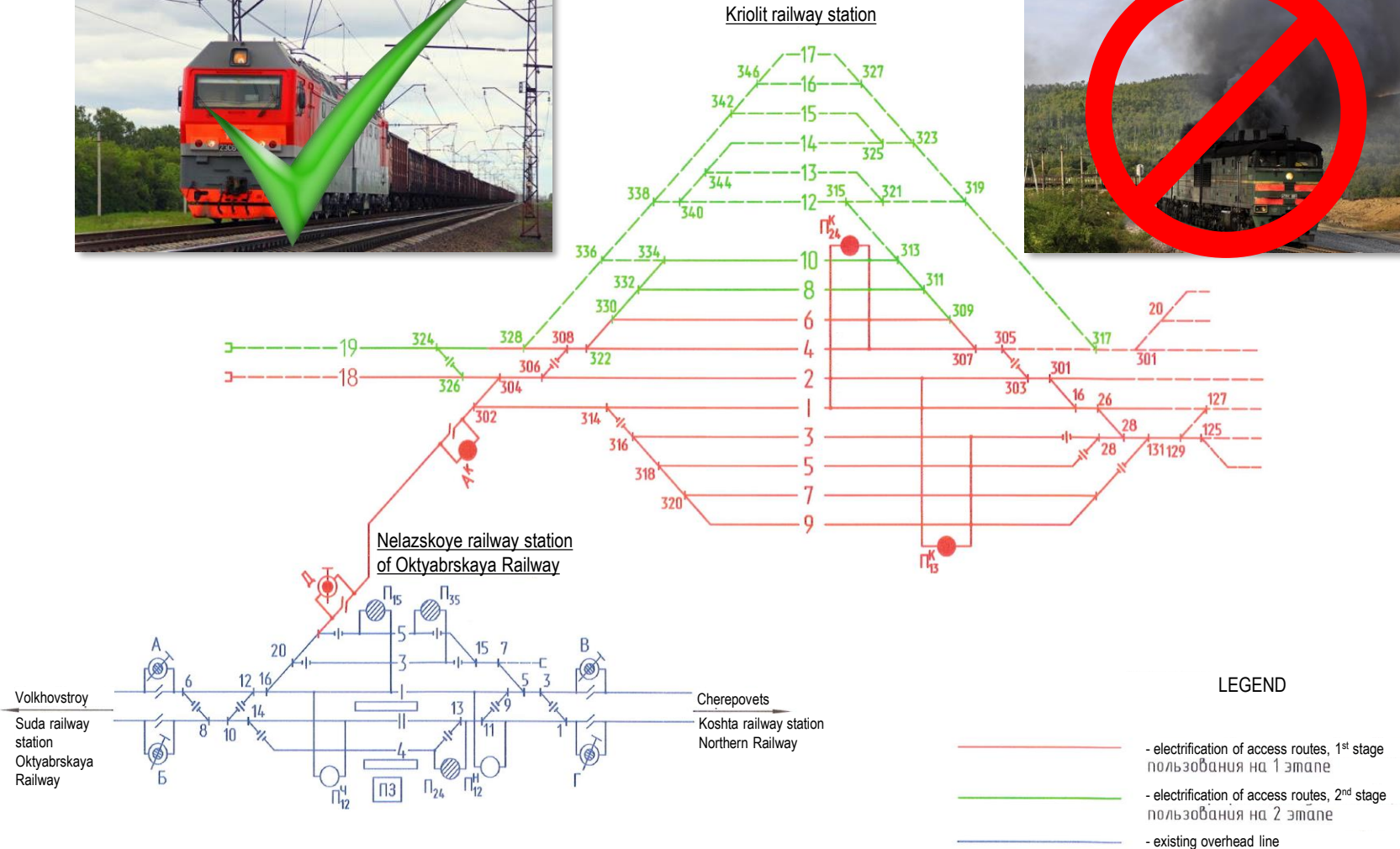


Industrial Safety

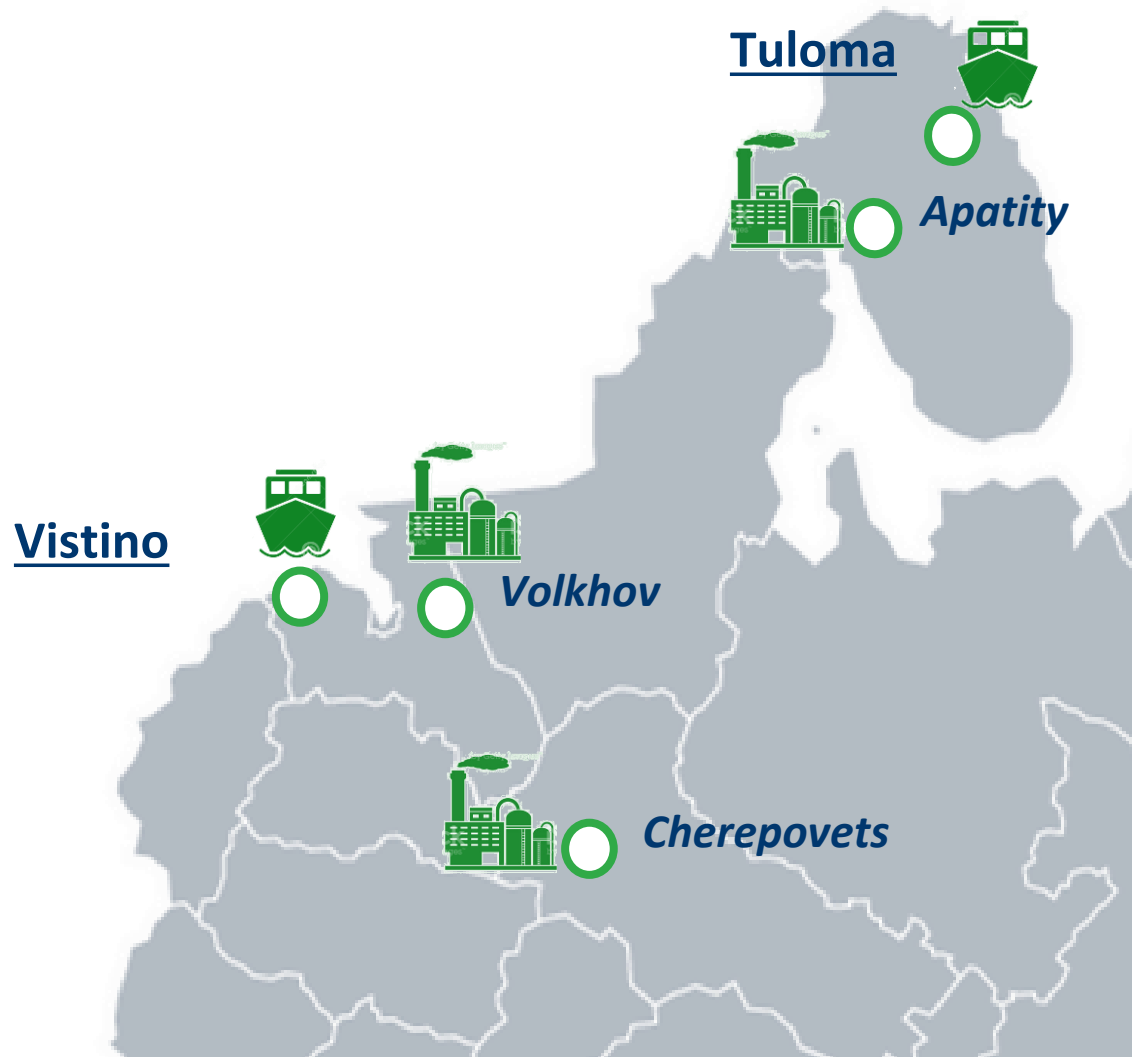


Eco-Efficiency

Electric Locomotives instead of Diesel Locomotives and Motor Cars: Electrification of Kriolit railway station Exclusion of two diesel locomotives. Commissioning of the heavy trains route Apatity – Cherepovets – Ust-Luga – Apatity



PhosAgro's Choice – modern terminals to comply with all of up-to-date environmental requirements instead of obsolete facilities



Construction subject to all of up-to-date environmental requirements



Layout by keeping the 500 m protective area of water bodies

2021



Start of transshipment through Ultramar Terminal

2022



2023

Start of transshipment through Tuloma Marine Terminal LLC