

ZAPSIBNEFTEKHIM



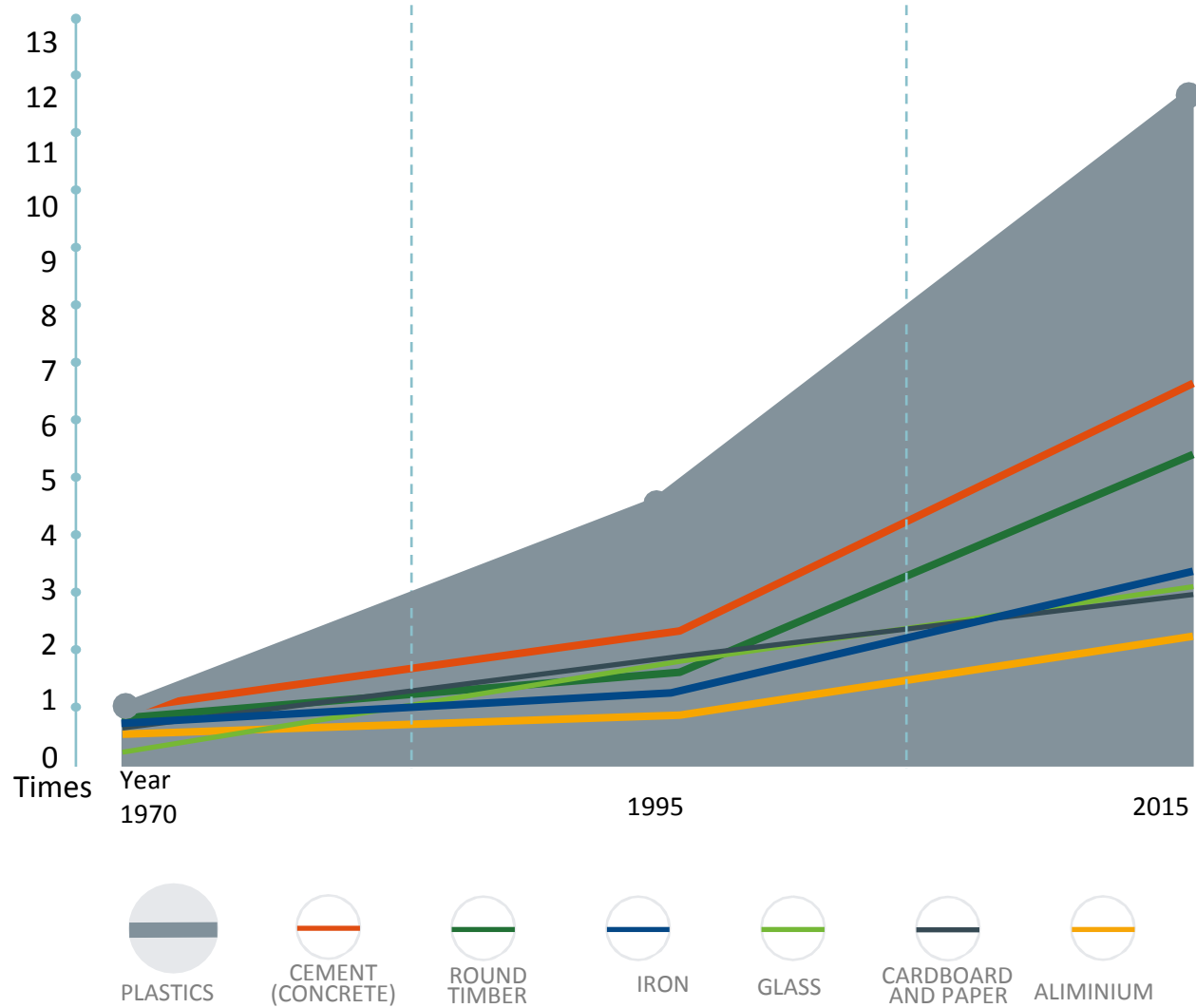


## Contents

Market background of the project	4
Feedstock for the project	6
Production chain	8
Import substitution and higher export potential	10
Key uses	11
A major petrochemical construction site globally	12
Project impact on related industries	14
Unique cutting-edge equipment	16
Exceptional logistics of oversize equipment	18
Advanced construction technology	20
New jobs	22
Environment-friendly processes	24
Similar production sites in Europe	26
SIBUR's nature path	28
Sky deck	30

Market background of the project

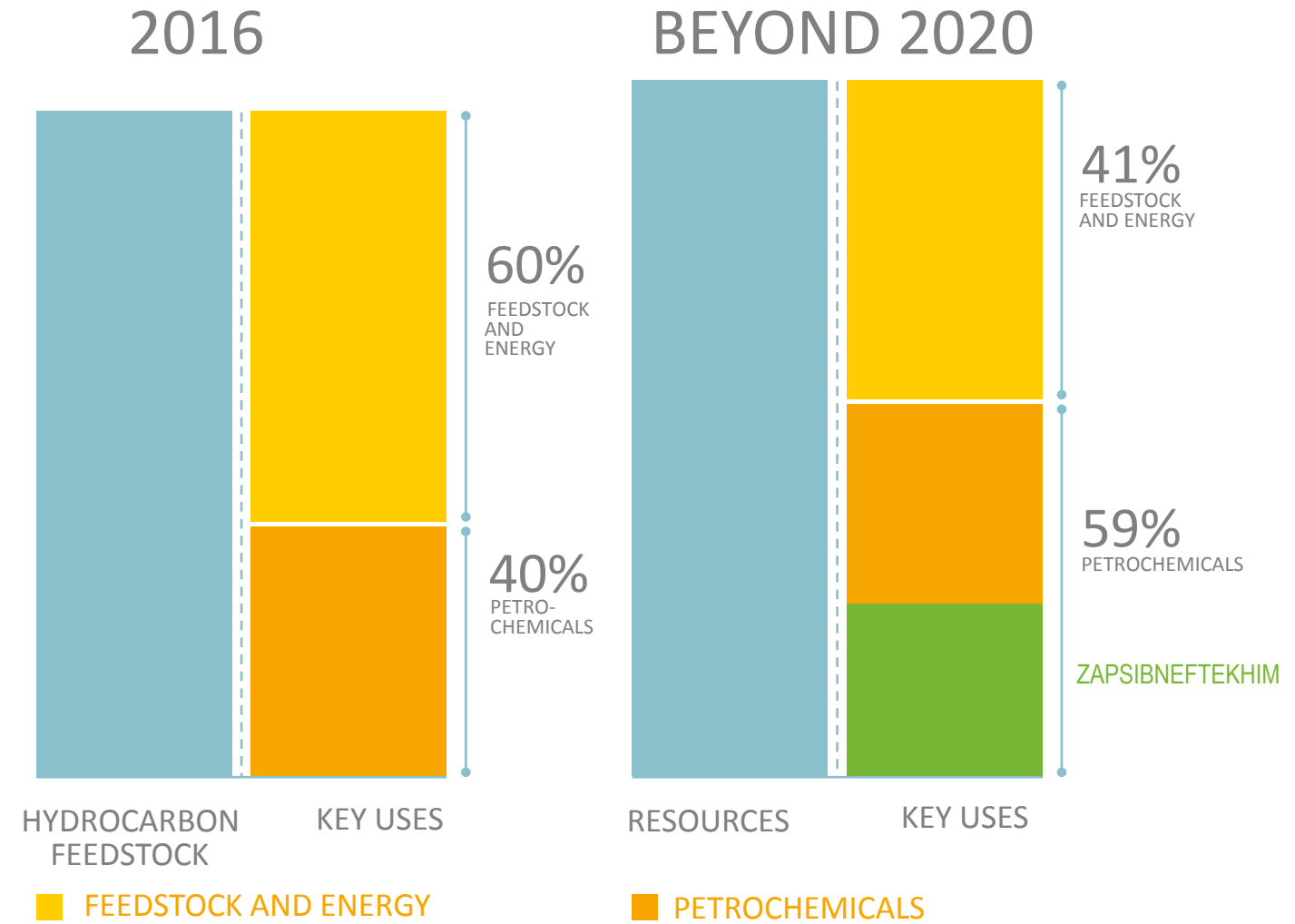
INDEX OF GLOBAL GROWTH IN BASIC MATERIALS PRODUCTION\*



4 \*USGS, FAO, BP, Rubber, The New Plastic Economy

SIBUR'S STRATEGY: MONETISING UNIQUE ACCESS TO FEEDSTOCK AND GROWTH IN DEMAND FOR PETROCHEMICALS

ZAPSIBNEFTEKHIM WILL INCREASE THE PETROCHEMICAL SEGMENT'S SHARE IN SIBUR'S BUSINESS PORTFOLIO



Feedstock for the project



2003

2016

APG PROCESSING

8 bcm > 25 bcm

C3 RECOVERY RATE

64 % > 95 %

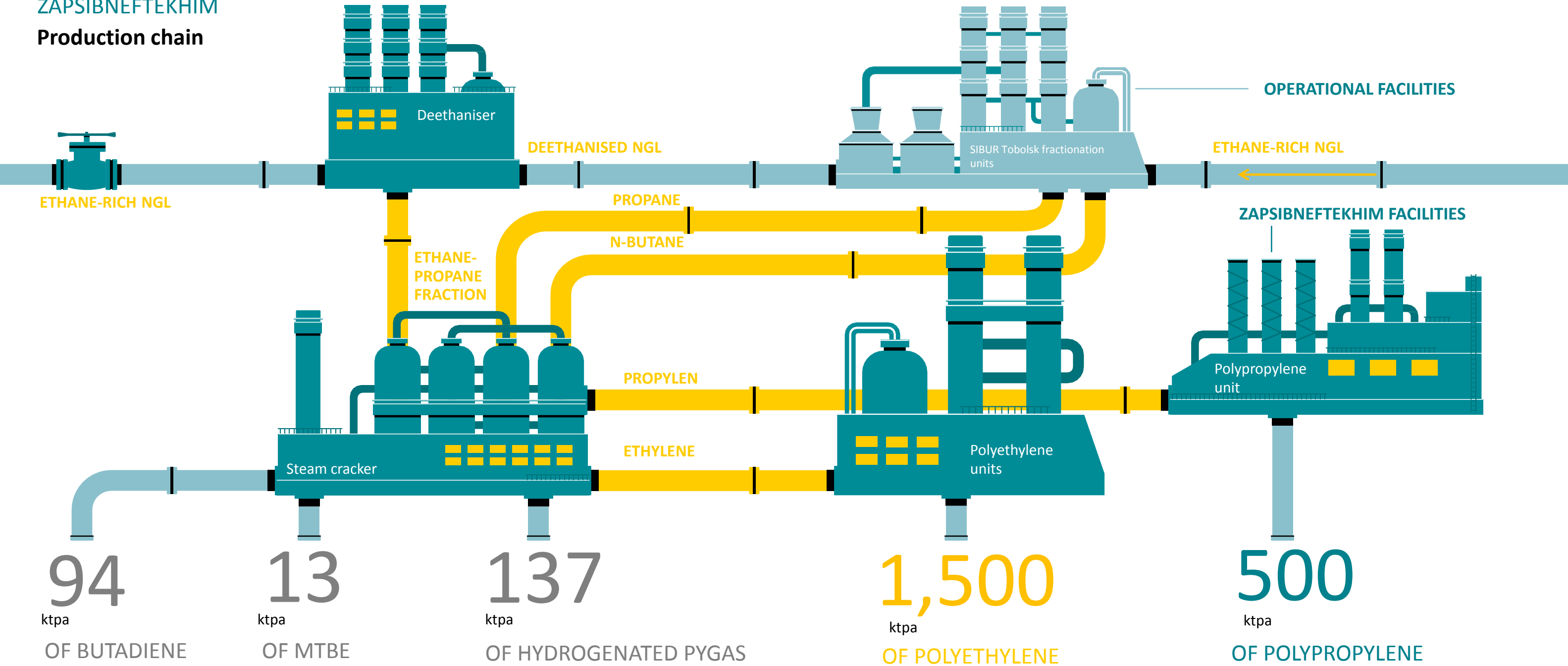
MAX PIPELINE THROUGHPUT

4.8 mt > 8 mt

NGL FRACTIONATION IN TOBOLSK

2.3 mt > 8 mt

Production chain



# ZAPSIBNEFTEKHIM

## Import substitution and higher export potential\*

Growth in domestic supplies

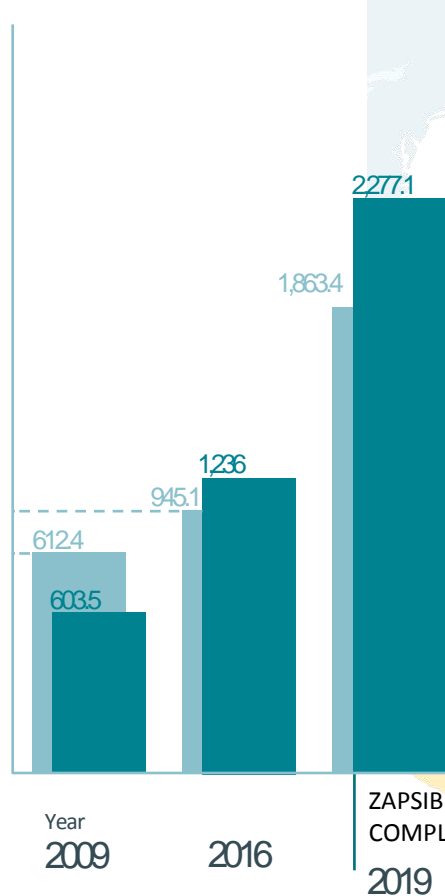
# X2

Growth in exports

# X14

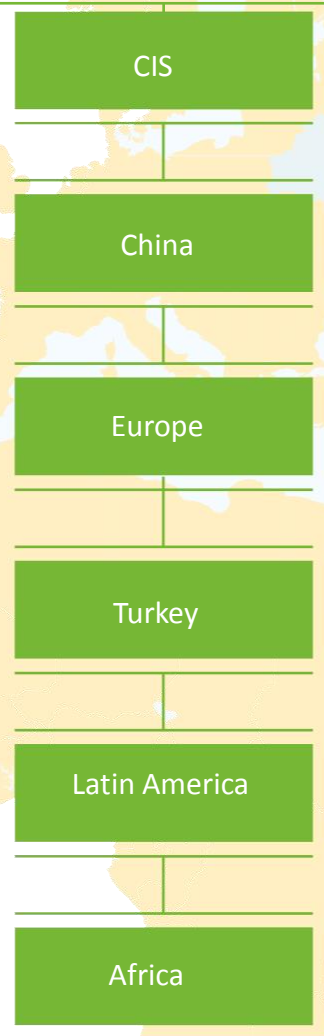
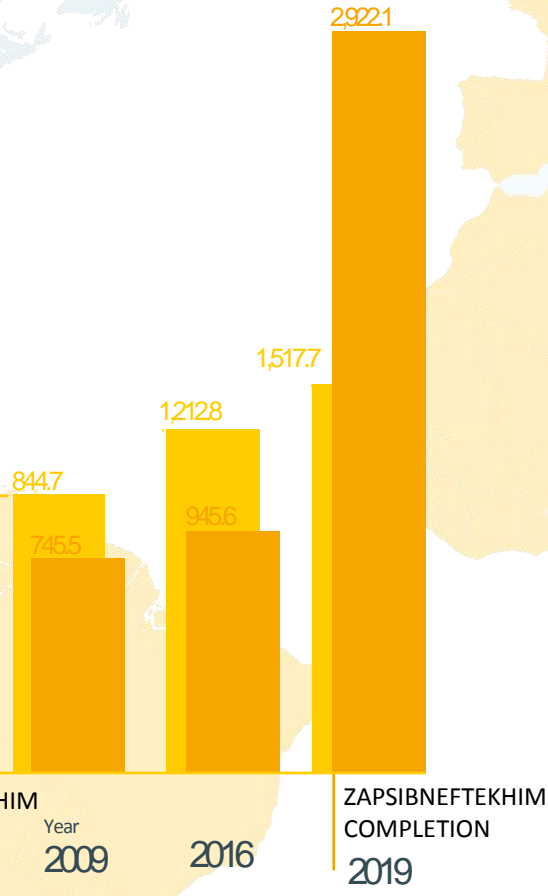
### POLYPROPYLENE

■ CONSUMPTION, kt  
■ PRODUCTION, kt



### POLYETHYLENE

■ CONSUMPTION, kt  
■ PRODUCTION, kt



### Key uses



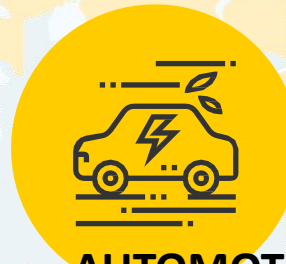
#### CONSTRUCTION MATERIALS

2,224,138 km of water supply pipes



#### MEDICAL PRODUCTS

600 billion vials



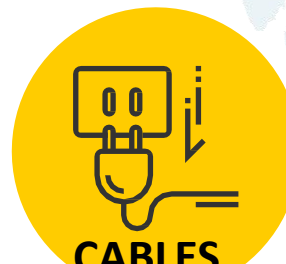
#### AUTOMOTIVE PARTS

71,428,571 car bumpers



#### PACKAGING

16,129,032 km of food wrap or stretch film



#### CABLES

35,917,820 km of fiber optics insulation



#### TEXTILE INDUSTRY

151 km<sup>2</sup> of carpeting

A major petrochemical construction site globally

12,100 km

of cable: approximate distance from Moscow to Magadan



141,800 t

of metal structures: enough to build fourteen Eiffel Towers

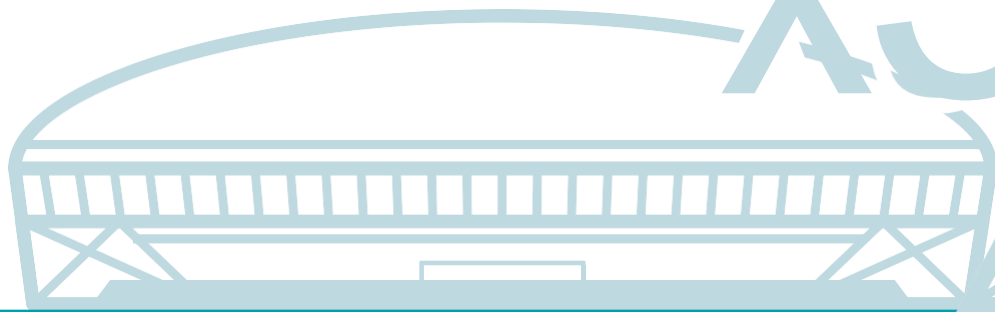
x14



418,400 m<sup>3</sup>

of concrete: enough to fill three stadiums

x3



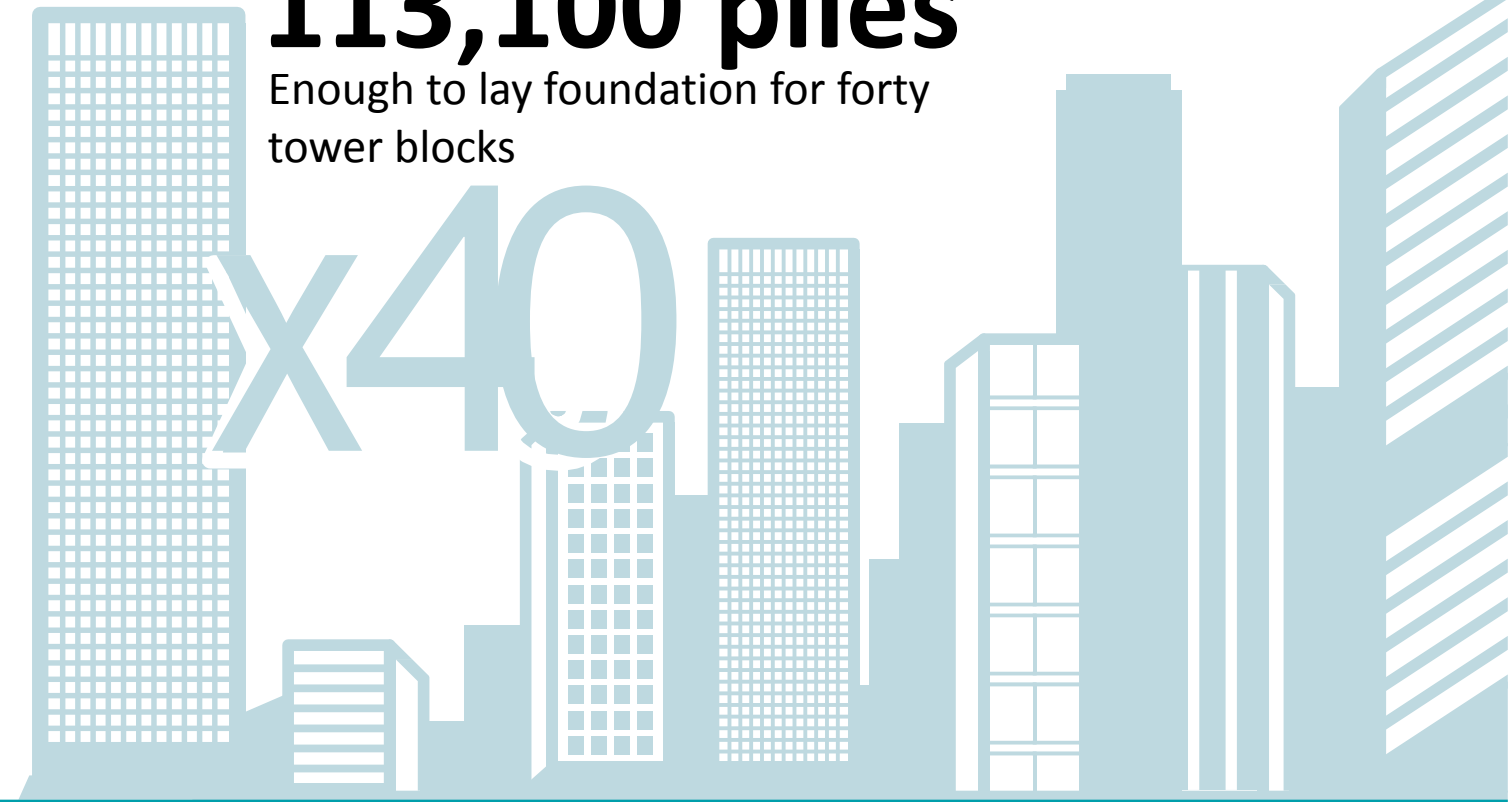
MAJOR POLYMER PRODUCTION PROJECTS\*

No.	Country	Company	Location	Greenfield/brownfield	Capacity, kt
1	Russia	SIBUR	Amur GCC**	Greenfield	Ethylene – over 1,500; PE – over 1,500
2	USA	SASOL	Lake Charles	Greenfield	Ethylene – 1,550
3	Malaysia	Petronas	Pengerang	Greenfield	Propylene – 1,750; ethylene – 1,000
4	Russia	SIBUR	ZapSibNeftekhim	Greenfield	Ethylene – 1,500; PE – 1,500; PP – 500
5	India	Reliance Industries	Jamnagar	Greenfield	Ethylene – 1,500; PE – 950

113,100 piles

Enough to lay foundation for forty tower blocks

x40



\* Source: IHS

\*\* Decision to proceed to the Execution stage is not expected until year-end 2018.

# CONTRACTS WITH RUSSIAN COMPANIES WORTH OVER RUB 200 BN

Producers and contractors

FROM **35** RUSSIAN REGIONS

**46** million man-hours of builders and engineers

OVER **0.4** mcm of concrete

OVER **110,000** PILES

**18,000** PERSONS

engaged at the peak of construction



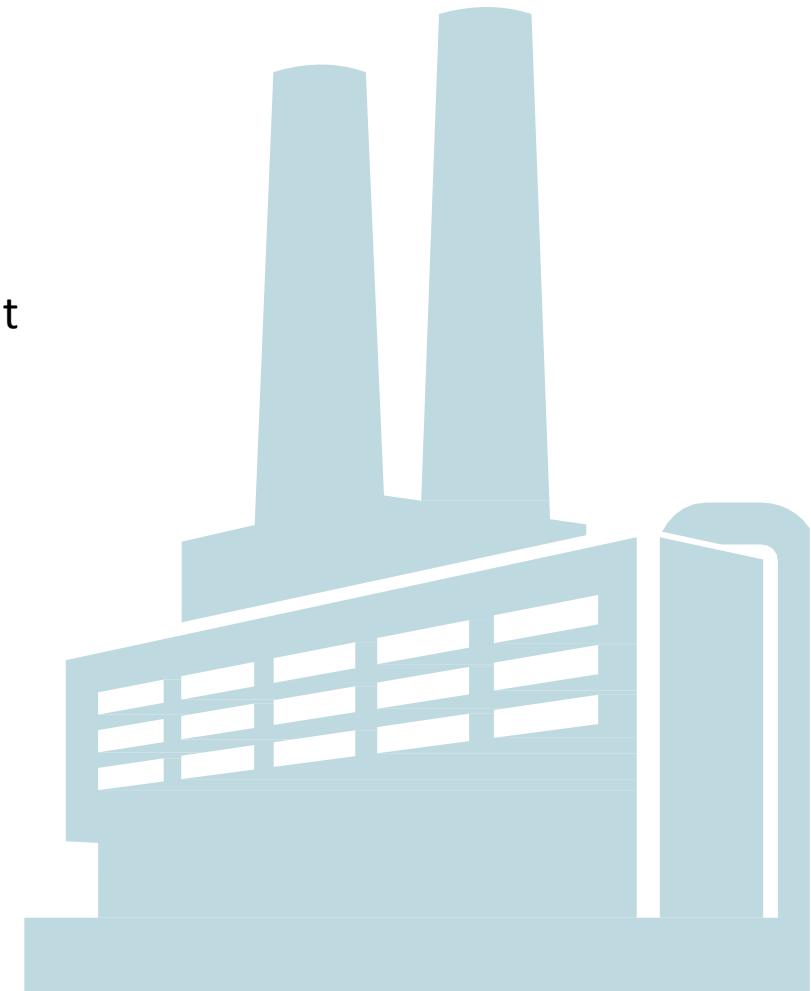
NEARLY **1,000** process equipment units

OVER **140,000** t of metal structures

NEARLY **20,000** t of pipe

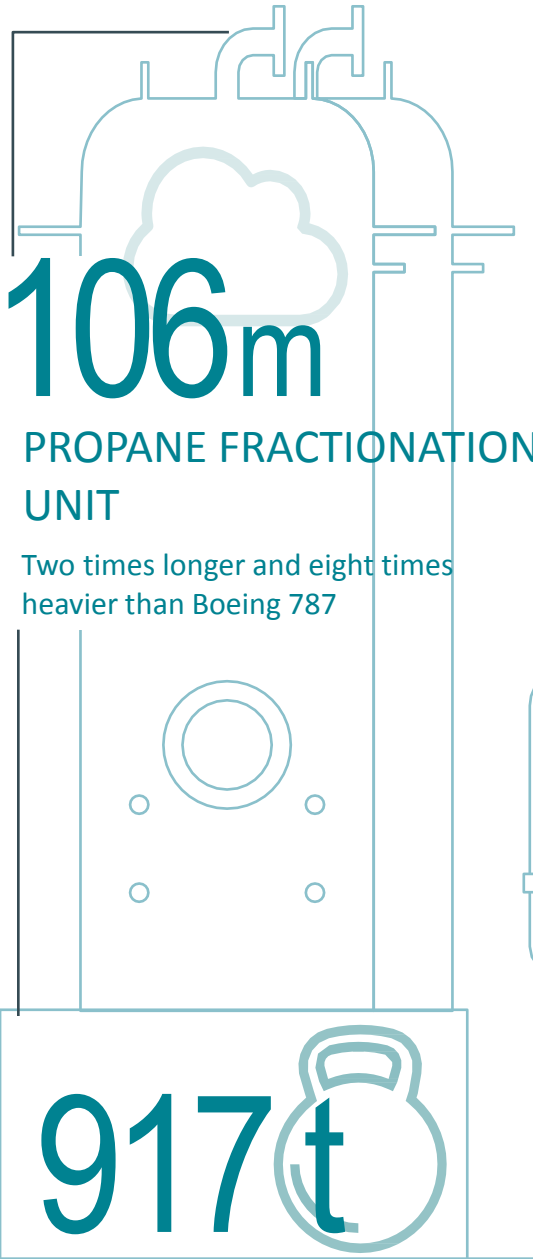
OVER **200** km of plastic pipe

OVER **12,000** km of cable



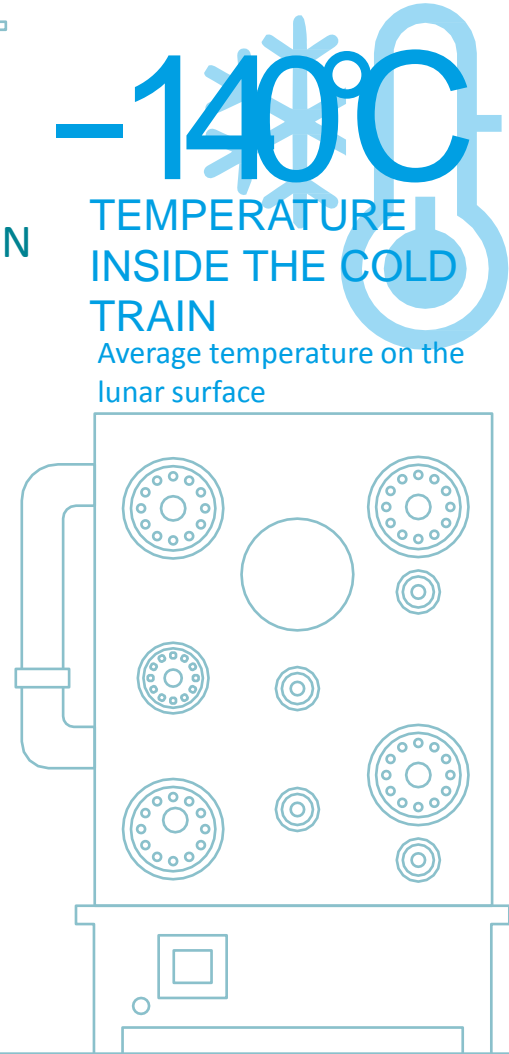


Unique cutting-edge equipment

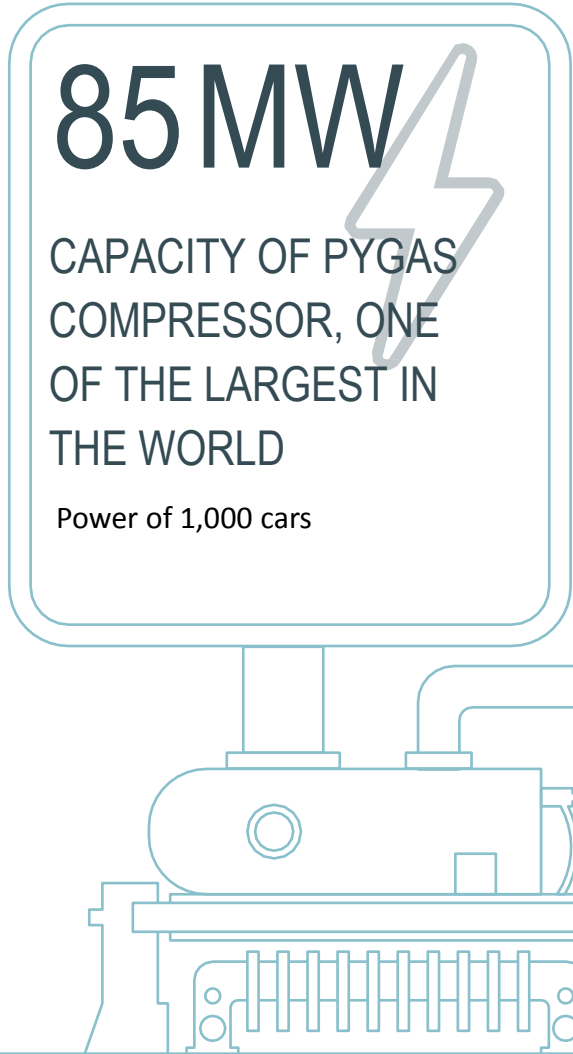


**106m**  
PROPANE FRACTIONATION UNIT  
Two times longer and eight times heavier than Boeing 787

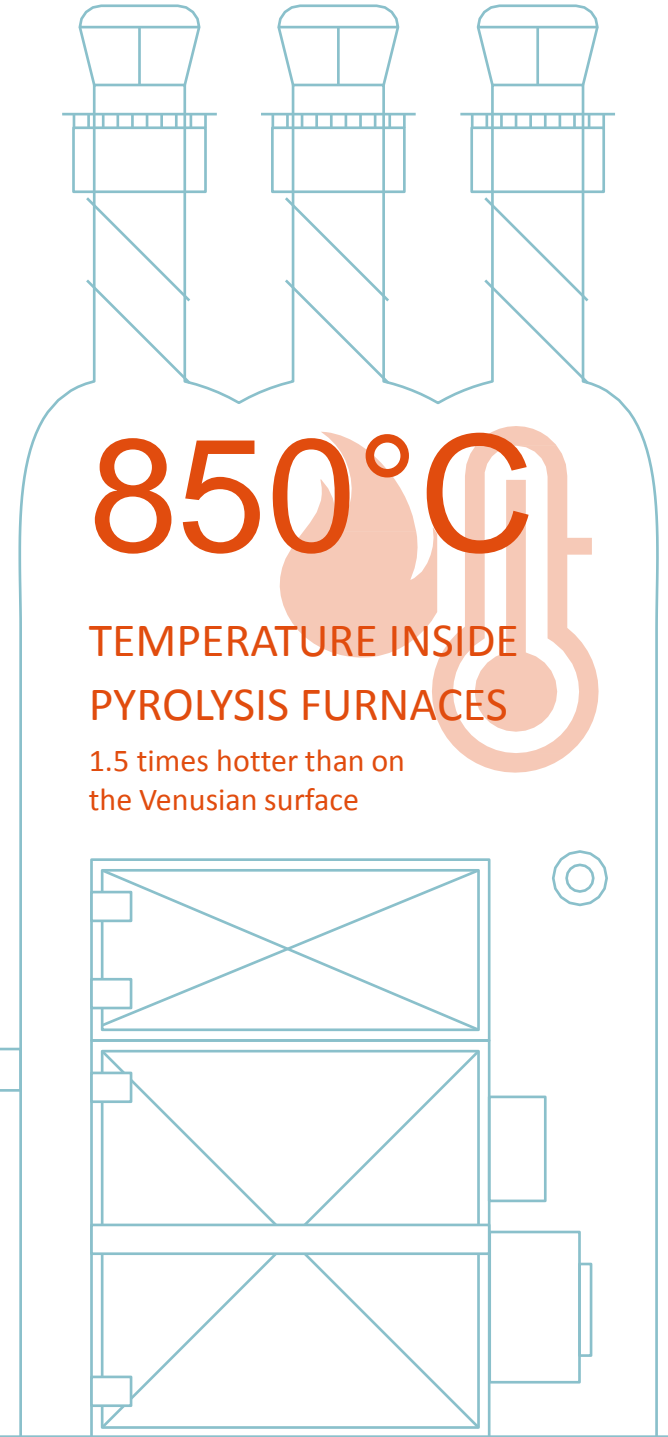
**917t**



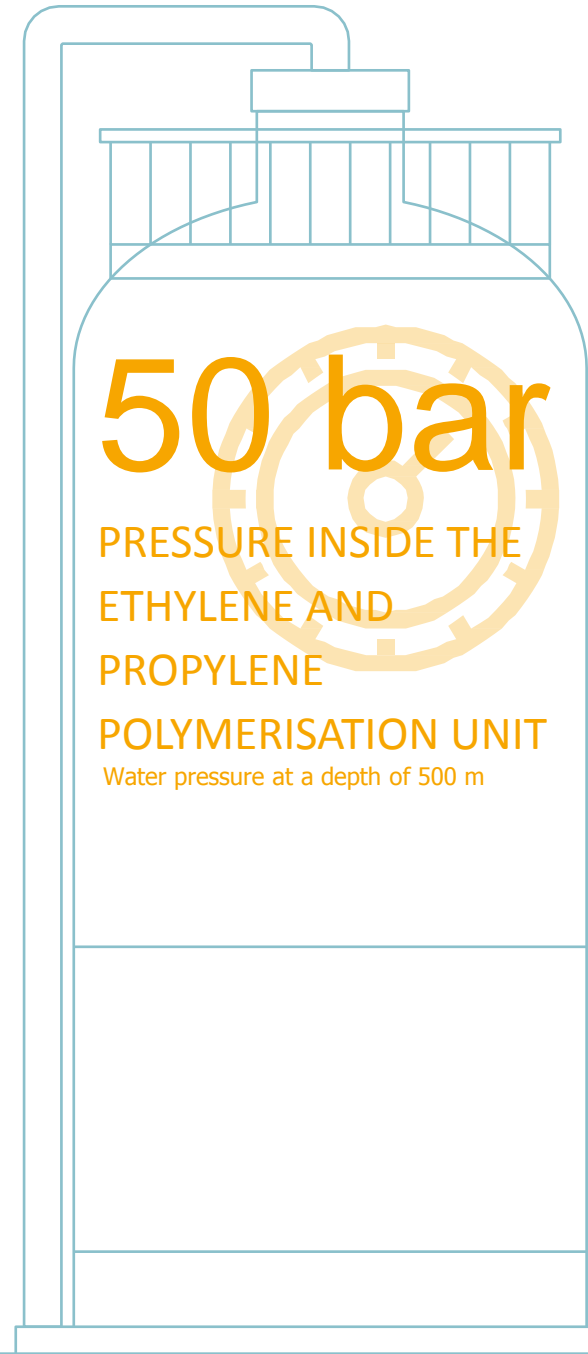
**-140°C**  
TEMPERATURE INSIDE THE COLD TRAIN  
Average temperature on the lunar surface



**85 MW**  
CAPACITY OF PYGAS COMPRESSOR, ONE OF THE LARGEST IN THE WORLD  
Power of 1,000 cars



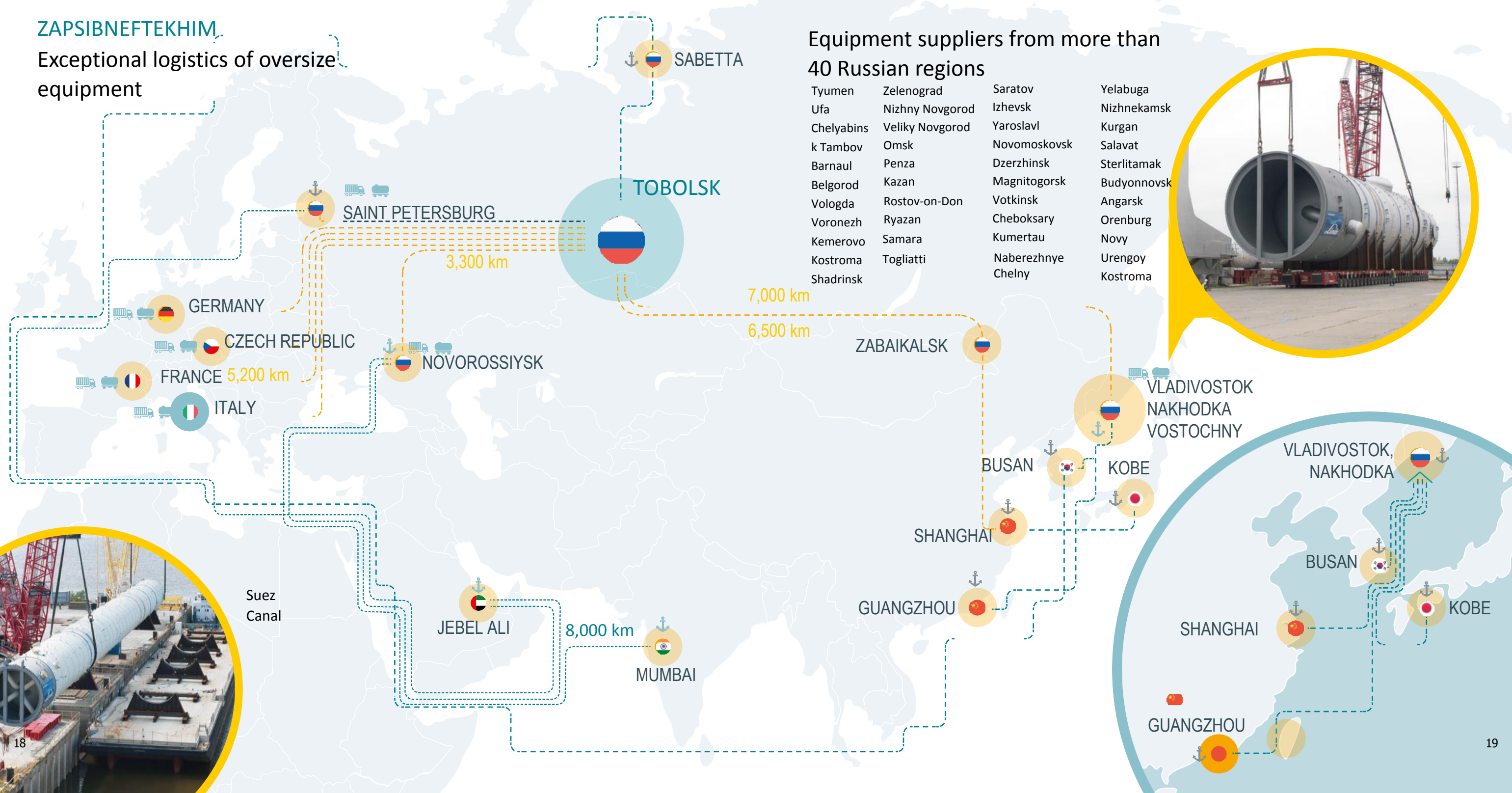
**850°C**  
TEMPERATURE INSIDE PYROLYSIS FURNACES  
1.5 times hotter than on the Venusian surface



**50 bar**  
PRESSURE INSIDE THE ETHYLENE AND PROPYLENE POLYMERISATION UNIT  
Water pressure at a depth of 500 m

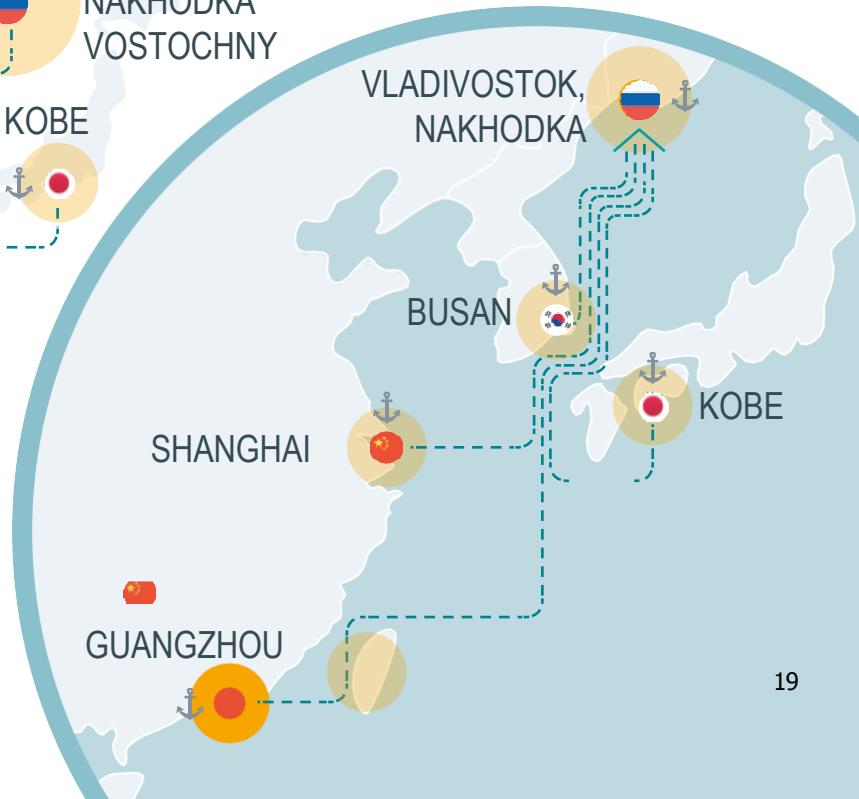
# ZAPSIBNEFTEKHIM

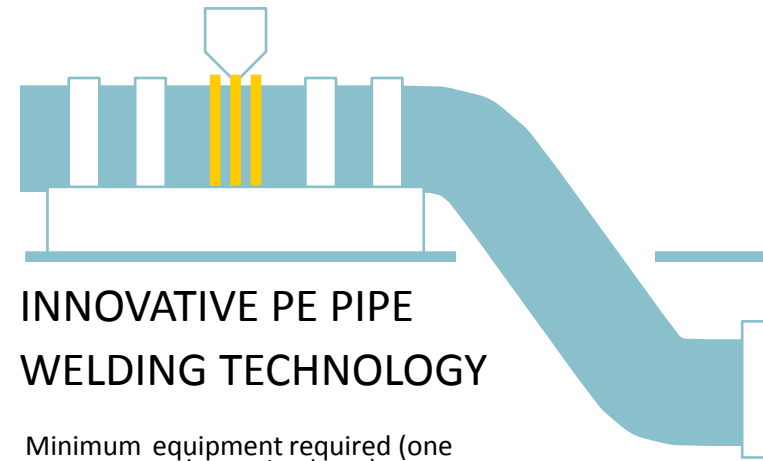
Exceptional logistics of oversize equipment



## Equipment suppliers from more than 40 Russian regions

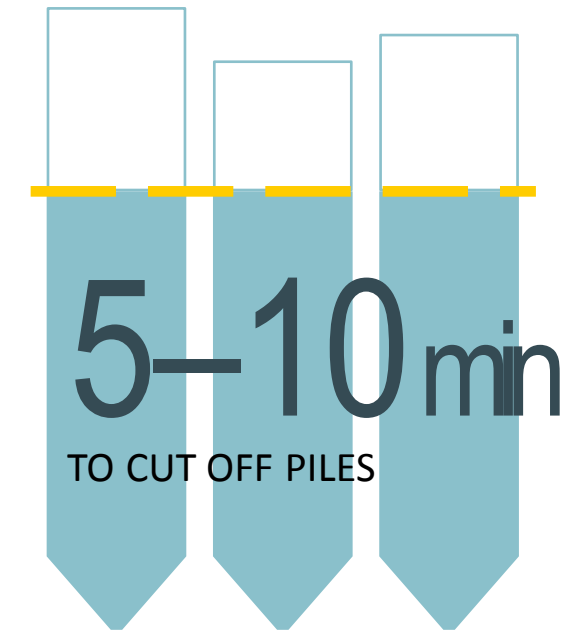
- |             |                 |                    |             |
|-------------|-----------------|--------------------|-------------|
| Tyumen      | Zelenograd      | Saratov            | Yelabuga    |
| Ufa         | Nizhny Novgorod | Izhevsk            | Nizhnekamsk |
| Chelyabinsk | Veliky Novgorod | Yaroslavl          | Kurgan      |
| k Tambov    | Omsk            | Novomoskovsk       | Salavat     |
| Barnaul     | Penza           | Dzerzhinsk         | Sterlitamak |
| Belgorod    | Kazan           | Magnitogorsk       | Budyonnovsk |
| Vologda     | Rostov-on-Don   | Votkinsk           | Angarsk     |
| Voronezh    | Ryazan          | Cheboksary         | Orenburg    |
| Kemerovo    | Samara          | Kumertau           | Novy        |
| Kostroma    | Togliatti       | Naberezhnye Chelny | Urengoy     |
| Shadrinsk   |                 |                    | Kostroma    |



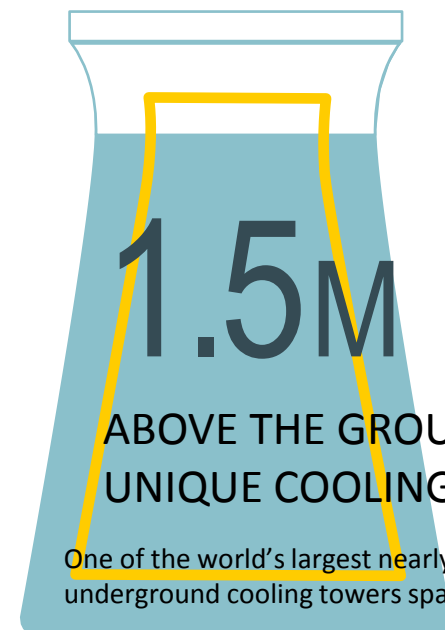


**INNOVATIVE PE PIPE WELDING TECHNOLOGY**

Minimum equipment required (one excavator and one pipe layer)

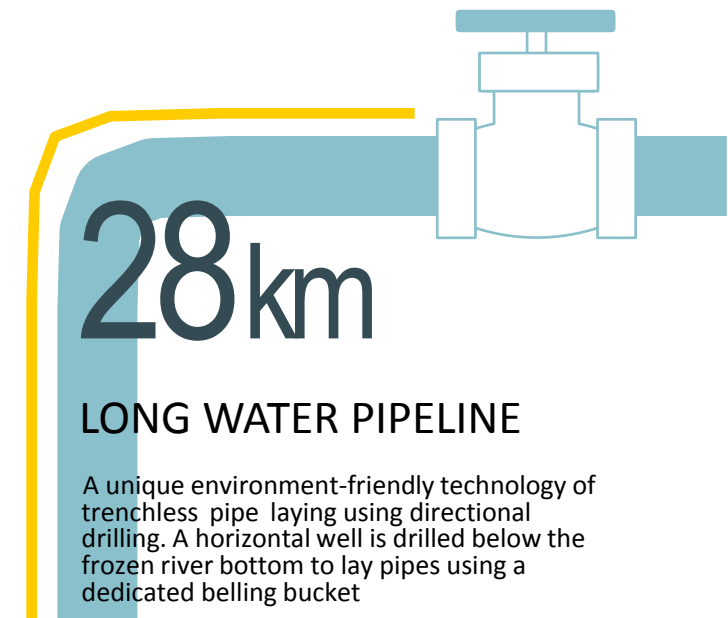


**5-10 min**  
TO CUT OFF PILES



**1.5M**  
ABOVE THE GROUND – A  
UNIQUE COOLING TOWER

One of the world's largest nearly fully underground cooling towers spanning 9,000 sq m



**28km**

**LONG WATER PIPELINE**

A unique environment-friendly technology of trenchless pipe laying using directional drilling. A horizontal well is drilled below the frozen river bottom to lay pipes using a dedicated belling bucket

New jobs

Construction

18,000

PERSONS ENGAGED AT THE PEAK OF CONSTRUCTION



Post-commissioning

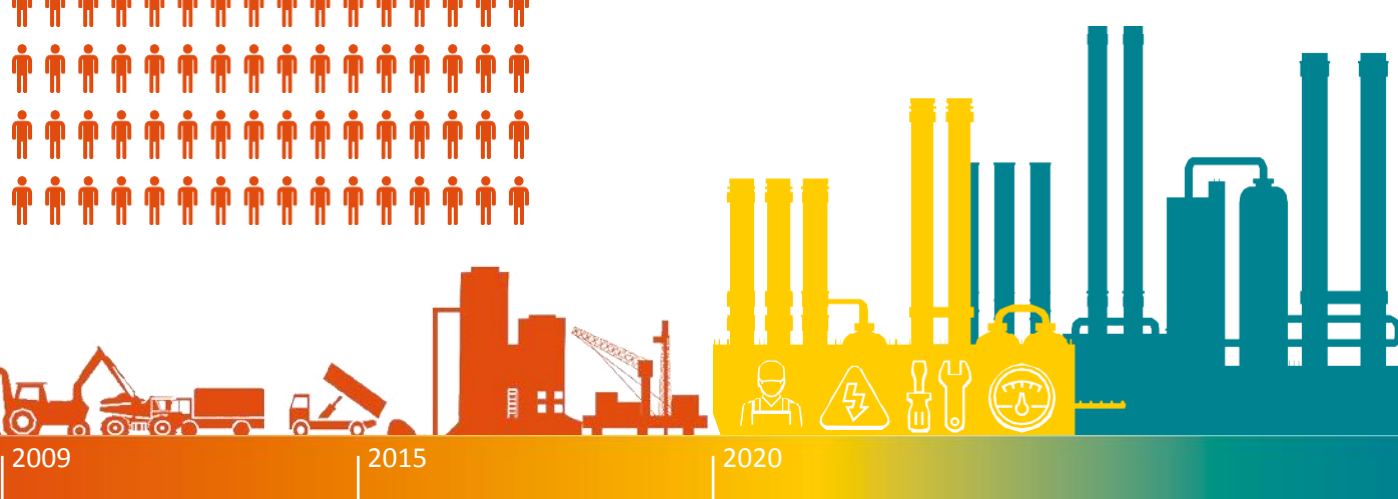
2,000

PERSONS ENGAGED IN AUXILIARY SERVICES



1,700

PERSONS ENGAGED IN CORE PRODUCTION



Employment geography

- Petrochemicals
- Oil refining
- Gas processing
- Universities and colleges
- Backup programme



**Backup programme**  
 Programme participants include external candidates to be trained as backups by SIBUR's mentors at a number of production sites. After completing the programme, backup employees are hired by ZapSibNeftekhim or replace their mentors transferred to ZapSibNeftekhim.

Environment-friendly processes

REGULAR INITIATIVES UNDER THE ENVIRONMENTAL MONITORING PROGRAMME INCLUDE:



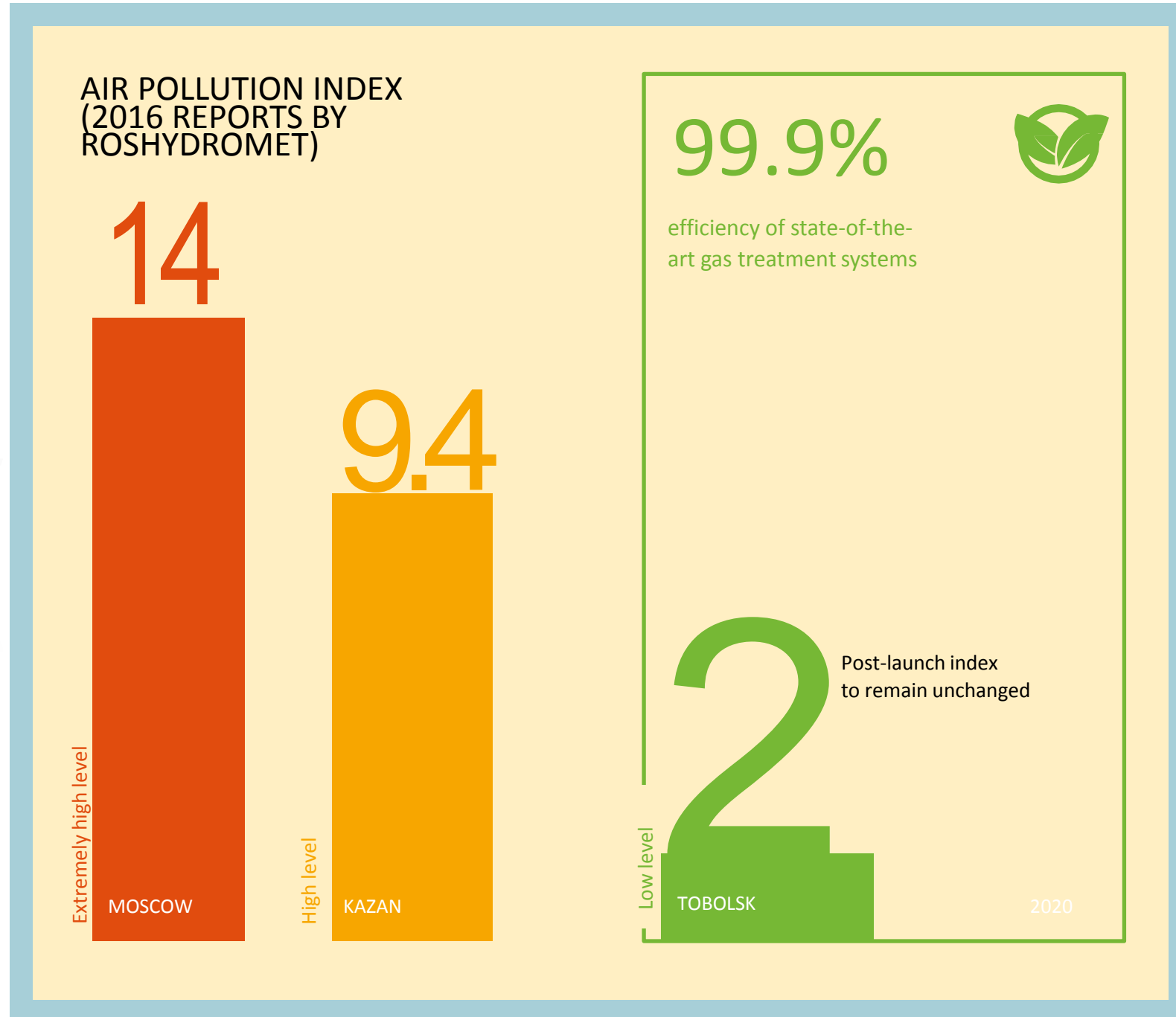
Air monitoring



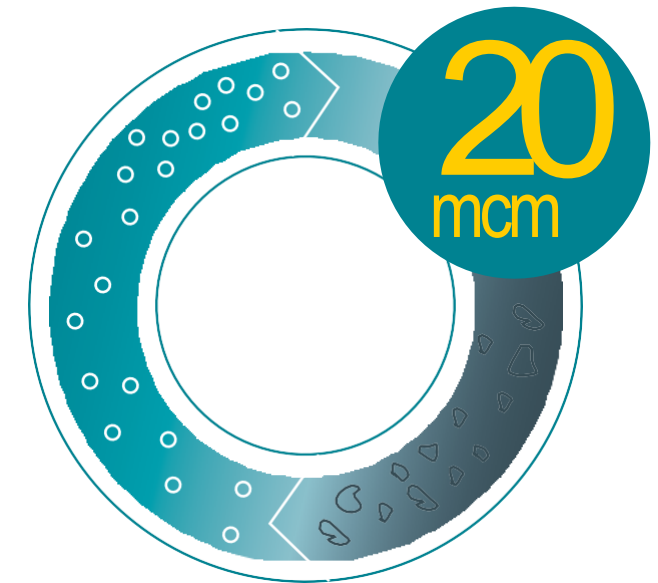
Fauna monitoring



Vegetation monitoring



THE BULK OF WASTE IS TO BE RECYCLED



CLOSED-LOOP WATER SYSTEM

## ZAPSIBNEFTEKHIM

Similar production sites  
in Europe



Cologne,  
Germany

## POLYPROPYLENE UNIT

Technology

Lyondellbasell, Netherlands

Płock,  
Poland



Litvínov,  
Czech  
Republic

## POLYETHYLENE UNIT

Technology

Ineos, UK



## STEAM CRACKER

Technology

Linde, Germany

# ZAPSIBNEFTEKHIM

## SIBUR's Nature Path

A joint project of SIBUR and RAS's Integrated Research Station in Tobolsk to study and monitor biodiversity in the vicinity of the site

3

forest routes

500 m

away

from ZapSibNeftekhim's construction site

1,500 m

away from the Tobolsk production site



The project received an award of the Environmental Culture, Peace and Harmony international project and the jury's accolade as Russia's only initiative of the kind rolled out in the immediate vicinity of an industrial site, as well as the Vernadsky National Environmental Award.



Local fauna has fully adapted to the industrial environment

The routes have monitoring sites to analyse air, water and soil samples, information boards, and other required infrastructure

The nature path features bioindicator plants



Tree lungwort



Relict pine tree



Spotted orchid

SKY DECK IS THE HIGHEST POINT NEAR THE CONSTRUCTION SITE



### Formula of the future

Maximum utilisation of energy efficient polymer construction materials makes the facility unique

#### CORIAN

A solid surface material made of acrylic resin and aluminium trihydrate

#### WOOD PLASTIC COMPOSITE

Hybrid of wood and plastics that rivals the strength of metals

#### POLYURETHANE FLOOR COATING

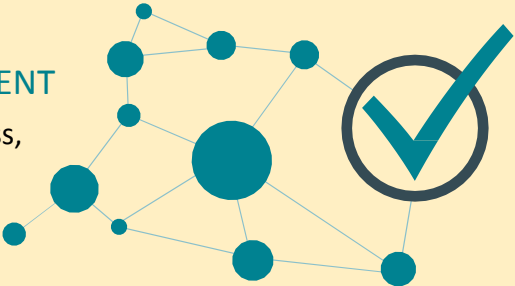
High-tech tough flexible seamless self-levelling floor coating made of heterochain polymers (two components in the main chain)

#### COMPOSITE REINFORCEMENT

Non-metallic bars made of glass, basalt, carbon or aramid fibres bonded with a thermosetting polymer binder

#### EXPANDABLE POLYSTYRENE

High-quality thermal insulation material with uniform structure



58 mm

THICK INSULATING GLASS UNITS (IGU)

6 m

IGU WITH THE LARGEST GLASS PANES PRODUCED IN RUSSIA

UV

REFLECTIVE WINDOW GLASS



SIBUR Holding, 2017

