



**Research and Design Institute
of Nitrogen Industry and
Products of Organic Synthesis
(JSC GIAP)**

GIAP: FIGURES



WORKING
in the field of ammonia synthesis

since **1931**

SUCCESSFUL PROJECTS
over last 20 years in Russia, CIS,
China, Eastern Europe and Middle
East

500+

CURRENT ORDER BOOK

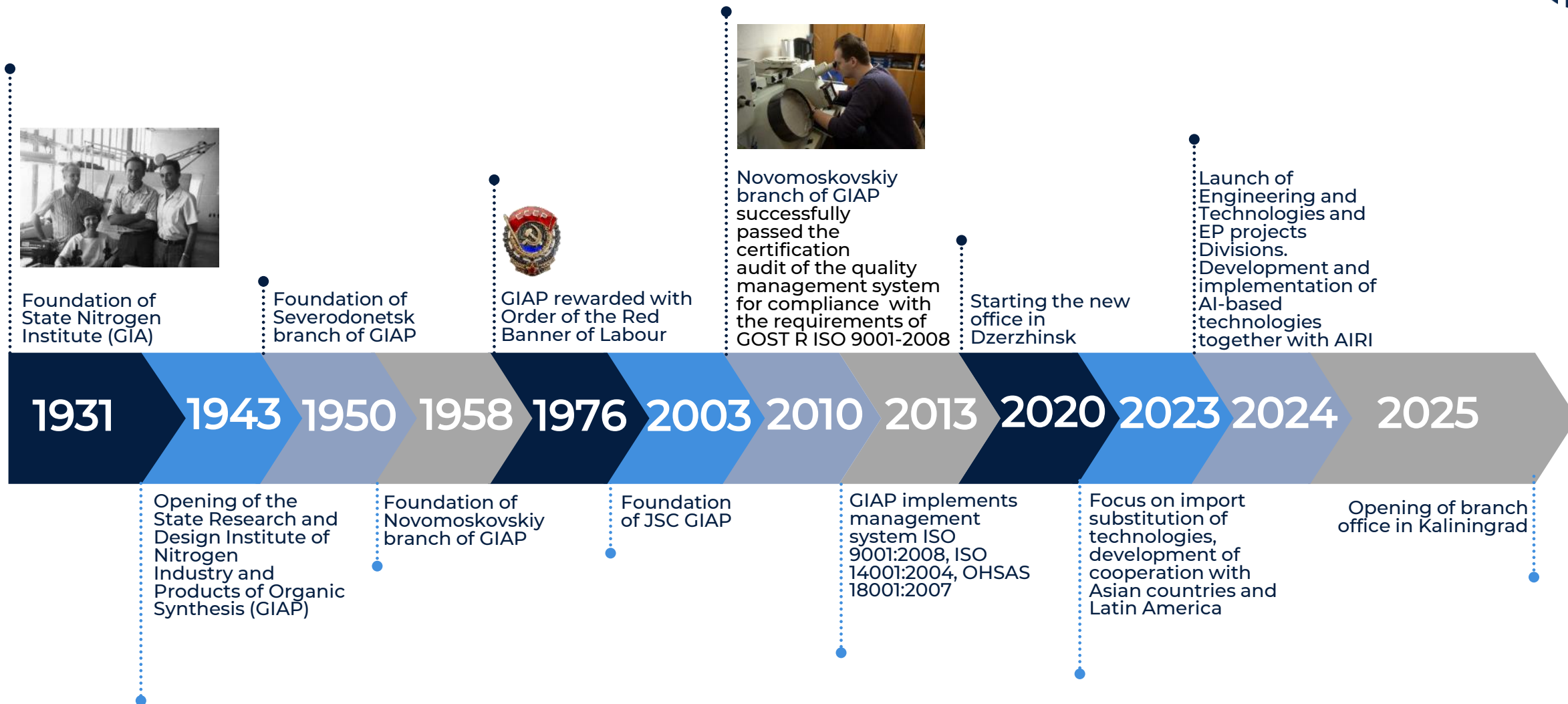
8,2 bln. Rubles

PROFESSIONALS
in nitrogen industry and related
fields

480+

Technologies | Design | Engineering | EPC

HISTORY



SERVICES AND PRODUCTS



Licensing

- ✓ Ammonia
- ✓ Ammonium nitrate
- ✓ Nitric acid
- ✓ Urea
- ✓ Methanol
- ✓ Acetylene
- ✓ Acetic acid

Engineering

- ✓ Basic Engineering
- ✓ Project Documentation
- ✓ Detail Design Documentation

Design

- ✓ Pre-design services
- ✓ Basic Design Adaptation
- ✓ Development of Operational Documentation
- ✓ Construction Monitoring

SERVICES AND PRODUCTS



Equipment

- ✓ Development of Equipment
- ✓ Fabrication of Equipment
- ✓ Process Equipment Cleaning
- ✓ Passivation, Unloading, Loading and Reduction of Catalysts

Consulting

- ✓ Technical consulting
- ✓ Tech. Appendices to Contract with Licensor
- ✓ Technical Support in Bidding for Selection of Licensors
- ✓ Consulting Services for project management, GGE

Industrial safety expertise

- ✓ Industrial safety expertise

SERVICES AND PRODUCTS



EPC

- ✓ Maximum application of engineering competencies
- ✓ Full responsibility and common strategy of management at every stage
- ✓ Efficient procurement and validation of vendors
- ✓ Cost management from “Technical assignment” up to “Commissioning”
- ✓ Experience in Main State Expertise (GGE), Non-state expertise and State Ecological Expertise (GEE)



GIAP UNIQUE DEVELOPMENTS

constitute ground for one of the largest nitrogen industries with advanced level of technical solutions

UNITS

of organic and inorganic chemistry have been implemented with the participation of GIAP worldwide

UP-TO-DATE EFFECTIVE SOLUTIONS

for realization of revamp, modernization projects of existing plants or construction of new plants

400

ENGINEERING



**COMPREHENSIVE
ENGINEERING**
separate units and entire plants

**ENGINEERING
MANHOURS**

PERMITS AND LICENSES
for the design of chemical and
petrochemical plants of any
complexity

**GIAP SERVICES COVER
ALL PROJECT STAGES**
starting from planning and design
to commissioning and ramp-up

700 000+

GIAP'S EXPERIENCE IN PROJECT IMPLEMENTATION

AMMONIA



project Revamping of Ammonia Unit No. 4 (GIAP) and No.3 (TEC) with capacity increase to 2100 MTPD

CLIENT:
JSC Grodno Azot, Grodno
TARGET CAPACITY:
2100 MTPD of ammonia
BASIC DESIGN:
GIAP
STATUS:
in progress

SCOPE OF WORK OF GIAP:

- Development of Basic Design
- Development of engineering documentation under project
- Equipment procurement
- Engineering services

project TEC ammonia unit capacity increase

CLIENT:
PJSC Dorogobuzh,
settl.Verkhnedneprovsky
TARGET CAPACITY:
2100 MTPD of ammonia
TARGET ENERGY CONSUMPTION:
max. 8 Gcal per 1 ton of ammonia
BASIC DESIGN:
KBR
START OF DESIGN:
2018
STATUS:
put into operation in 2019

SCOPE OF WORK OF GIAP:

- Project Documentation and Detail Design Documentation
- Site Supervision

project Construction of Ammonia 4 Unit on the basis of unfinished AM-76

CLIENT:
PJSC ACRON, Veliky Novgorod
TARGET CAPACITY:
2060 MTPD of ammonia
TARGET ENERGY CONSUMPTION:
max. 7,25 Gcal per 1 ton of ammonia
BASIC DESIGN:
Haldor Topsoe
START OF CONSTRUCTION:
2014
STATUS:
put into operation in 2016

SCOPE OF WORK OF GIAP:

- Revision and adaptation of Basic Design
- Project Documentation and Detail Design Documentation
- Audit of equipment vendors, analysis of equipment documentation during
- PO placement and acceptance
- Site Supervision over the construction works execution
- Development and use of 3D models of plant under construction to control construction stages

GIAP'S EXPERIENCE IN PROJECT IMPLEMENTATION

AMMONIUM NITRATE AND NITRIC ACID



Проект Ammonium Nitrate plant

CLIENT:
JSC Grodno Azot, Grodno
TARGET CAPACITY:
1500 MTPD
BASIC DESIGN:
GIAP
START OF WORK:
2023
STATUS:
in progress

EP

SCOPE OF WORK OF GIAP:

- Development of Basic Design
- Development of engineering documentation under project
- Equipment procurement
- Engineering services

Проект Construction of 2300 MTPD ammonium nitrate granulation unit and 2nd stage evaporation

CLIENT:
JSC KuibyshevAzot, Togliatti
BASIC DESIGN:
GIAP
START OF WORK:
2019
STATUS:
put into operation in 2023

EPC

SCOPE OF WORK OF GIAP:

- Predesign activity with capex estimate
- Development of Basic Design, PD and DDD
- Equipment Procurement
- Construction and installation works
- Construction and Site Supervision
- Commissioning works and Installation Supervision

Проект AK-72 Unit revamp with transfer to low-temperature selective catalytic treatment of exhaust gases

CLIENT:
JSC Minudobreniya, Rossosh
OBJECTIVES:
capacity increase up to 60 t HNO₃(monohydrate)/hour
BASIC DESIGN:
GIAP
START OF WORK:
2020
STATUS:
put into operation in 2021

EPC

SCOPE OF WORK OF GIAP:

- Development of Basic design, PD and DDD
- Equipment Procurement
- Construction and installation works
- Construction and Site Supervision
- Commissioning works and Installation Supervision

GIAP'S EXPERIENCE IN PROJECT IMPLEMENTATION METHANOL



project Construction of methanol production plant

CLIENT:
JSC Nakhodka Fertilizer Plant, Nakhodka
TARGET CAPACITY:
5400 MTPD
BASIC DESIGN:
Haldor Topsoe
FEED:
Chengda
START OF WORK:
2020
STATUS:
approved by GGE

- SCOPE OF WORK OF GIAP:**
- General Designer's functions
 - Adaptation of EPC-Contractor's and Licensor's Basic Design
 - Project Documentation
 - Getting Expertize approval

project Revamping of methanol production plant M-750

CLIENT:
LLC Sibmetakhim, Tomsk
TARGET CAPACITY:
1000 kt pa
BASIC DESIGN:
GIAP
STATUS:
I-st stage was completed in 2015

- SCOPE OF WORK OF GIAP:**
- Basic Design applying own technologies
 - Development of conceptual process solutions for capacities increase and expansion, energy efficiency and equipment replacement
 - Development of the Main Technical Solutions for capacity increase (PD and DDD)

project Methanol unit capacity increase up to 450 kt pa with NG flowrate reduction

CLIENT:
JSC Shchekinoazot, Shchekino
TARGET CAPACITY:
450 kt pa
BASIC DESIGN:
Haldor Topsoe
STATUS:
put into operation in 2011

- SCOPE OF WORK OF GIAP:**
- Acceptance and adaptation of the Foreign Licensor's Basic Design in all parts and in compliance with the RF technical regulations and design rules
 - Development of PD
 - Development of DDD
 - Site Supervision and technical assistance during facility construction

GIAP'S EXPERIENCE IN PROJECT IMPLEMENTATION

UREA



project Construction of nitrogen complex
Ammonia-Urea

CLIENT:
NDA
TARGET CAPACITY:
1,05 mln. TPY of urea
CONTRACTOR:
Wuhuan Engineering Co., Ltd
START OF WORK:
2025
STATUS:
In progress

SCOPE OF WORK OF GIAP:

- Feasibility Study
- Estimation of a part of off-site facilities
- Financial model

project Construction of nitrogen complex
(Ammonia-Urea-Nitric Acid-
Ammonium Nitrate-UAN)

CLIENT:
Confidential information
CONTRACTOR:
Confidential information
START OF WORK:
2023
STATUS:
In progress

SCOPE OF WORK OF GIAP:

- Development of Basic Engineering Package for NA, AN, UAN
- Adaptation of FEED for compliance with RF norms
- Development of PD Engineering services
- Getting expertise approval
- Complex of works for PD and FEED for OSBL facilities

project Technical upgrde of urea
production unit

CLIENT:
JSC Apatit, Cherepovets
START OF WORK:
2018
STATUS:
completed

SCOPE OF WORK OF GIAP:

- Development of Detail Design Documentation for technical upgrade of unit No.1 in urea production plant

GIAP'S EXPERIENCE IN PROJECT IMPLEMENTATION

OTHER PROJECTS



project Potassium butyl xanthate unit with capacity of 20 000 tons per year

CLIENT:
JSC Volzhsky Orgsynthese, Volzhsky
BASIC DESIGN:
Glatt
START OF PROJECT:
2021
STATUS:
in progress

SCOPE OF WORK OF GIAP:

- Updating of the main technical solutions
- Development of Project Documentation and Detailed Design documentation
- Obtaining of expertize approval

project Site Supervision and updating of DDD for construction of Ammonia-Urea-Melamine Complex at PJSC Metafrax site

CLIENT:
PJSC Metafrax Chemicals, Gubakha
BASIC DESIGN:
Casale
START OF CONSTRUCTION:
2017
STATUS:
completed in 2023

SCOPE OF WORK OF GIAP:

- Site Supervision, preparation of replies to technical queries
- Updating of PD and Detail Design Documentation
- Pipelines passportization and certification

project Construction of Melamine-2 plant at PJSC Metafrax site

CLIENT:
PJSC Metafrax Chemicals, Gubakha
TARGET CAPACITY:
40 000 TPY of melamine
BASIC DESIGN:
Casale
START OF PROJECT:
2021
STATUS:
completed

SCOPE OF WORK OF GIAP:

- Casale Basic Design adaptation
- Project Documentation
- GEE and GGE

project Chlorine and caustic soda production and epichlorohydrin production

CLIENT:
LLC DCC, Dzerzhinsk
BASIC DESIGN:
Beijing Chostar Equipment Engineering Technology Co., Ltd
START OF PROJECT:
2021
STATUS:
completed

SCOPE OF WORK OF GIAP:

- Adaptation for compliance with RF norms
- Development of Main Technical Solutions
- 3D Model development
- Project Documentation

OUR CLIENTS





Thank you!

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