



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





GIAP in Figures

2 specific divisions:
Engineering,
Technologies and EP
projects

5 branch offices: Moscow,
Novomoskovsk,
Dzerzhinsk, Togliatti,
Kaliningrad

550+ employees –
professionals in nitrogen
industry and related areas

Licensing | Design | Engineering | EP



since 1931

leading company among technology providers
designing plants for **fertilizer industry** and **gas
monetization**



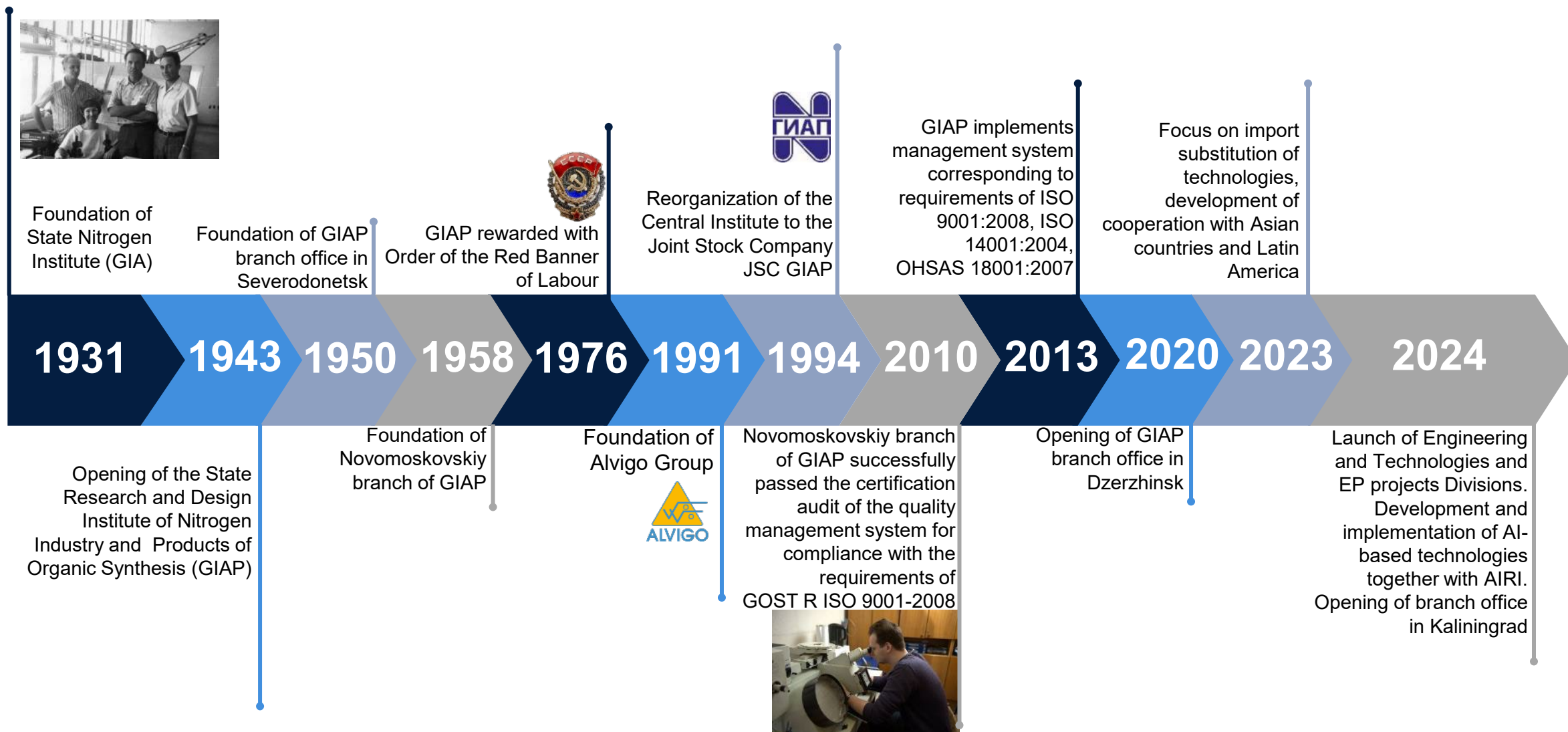
500+

successful projects within 20 recent years in
**Russia, CIS, China, Eastern Europe and Middle
East**



Every **10th** Ammonia Plant in the world works based on **GIAP TECHNOLOGY**

Our History



Our Strategy



MISSION

Creation of the best technologies, successful implementation of projects, and also development and recruitment the most competent, talented and sought-after specialists in chemical industry.



VALUES

Corporate values are an essential part of our corporate culture, serving as guidelines for employee's behavior both internally and externally.

Our values are:

Result,

Initiative and Responsibility,

Business integrity.



VISION

To become leading Russian and world wide partner for digital engineering with EPC competence.



Services and Products



Technologies

- Ammonia
- Ammonium Nitrate
- Nitric Acid
- Methanol
- Acetylene
- Acetic Acid

Design

- Basic Design
- Development of Project Documentation
- Development of Detailed Design Documentation

Consulting

- Technical Consulting
- Development of Technical Appendices to Contract with Licensor
- Technical Support in Bidding for Selection of Licensors
- Consulting Services for project management, getting approval of the GGE (Glavgosexpertiza of Russia)

EPC

- Maximum application of GIAP engineering competence
- Comprehensive responsibility and common strategy of management at each stage
- Efficient procurement and validation of vendors
- Cost management from “Technical assignment” up to “Commissioning”
- Experience in Main State and Non-state Expertise of any level

Equipment

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

Engineering

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

Industrial safety expertise

- Industrial safety expertise

Licensing



GIAP unique developments

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



Up-to-date effective solutions

Offered to Customers for implementation of revamping, modernization projects of existing plants or construction of new plants.

400 units designed for organic and inorganic chemical industries



Engineering



Comprehensive engineering

separate units and entire plants



Permits and licenses

for the design of chemical and petrochemical plants of any complexity



All project stages

starting from the earliest stages to plant start-up and ramp-up to design capacity

800 000+ annual engineering manhours



EP. Integrated Approach to Project Implementation



Comprehensive activities

for highly complicated facilities, starting from technology selection till facility ramp-up to design capacities.



Shared pass-through responsibility and strategy

considering all project peculiarities and ensuring optimal integral process engineering solution.

60 specialists

5 Offices across Russia



Projects Implementation Experience. Ammonia



Capacity increase of Ammonia Units No. 3 and No. 4

Client: JSC GrodnoAzot, Republic of Belarus

Target capacity: 2100 MTPD

Basic Design: GIAP

Scope of work:

- Development of Basic Design
- PD and DDD
- Equipment procurement
- Engineering services

Capacity increase of TEC Ammonia Unit

Client: PJSC Dorogobuzh, settl. Verkhnedneprovsky

Target capacity : 2100 MTPD

Basic Design: KBR

Status: put into operation in 2019

Scope of work:

- PD and DDD, Site Supervision

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

Client: PJSC ACRON, Veliky Novgorod

Target capacity : 2060 tons of ammonia per day

Basic Design: Haldor Topsoe

Status: put into operation in 2016

Scope of work:

- Revision and adaptation of Basic Design
- PD and DDD, Site Supervision
- Audit
- Plant 3D-model

Revamping of AM-76 Unit to increase capacity up to 1750 MTPD

Client: LLC Gazprom neftekhim Salavat, Salavat

Project objective: to achieve capacity 1750 MTPD

Technical solutions (basic design): GIAP

Scope of work:

- Feasibility study
- Development of Basic Design

Projects Implementation Experience. Nitric Acid



Revamping of AK-72 Unit 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

Status: successfully completed in 2021

Scope of work:

- Development of Basic Design
- PD and DDD
- Equipment design development
- Procurement
- Construction, Site Supervision

Technical upgrade of UKL-7 Units of workshop No.6/1 of Nitric Acid Plant

Client: JSC Nevinnomyssky Azot, Nevinnomyssk

Objectives: generated steam pressure increase up to 2,0 MPa

Status: successfully completed in 2020

Scope of work:

- PD and DDD, Site Supervision

Technical upgrade of AK-72/1 Unit

Client: PJSC Dorogobuzh, settl. Verkhnedneprovsky

Objectives: capacity increase of the unit by 6 tons per hour
Implementation of low-temperature selective catalytic treatment of exhaust gas
Exhaust gas temperature decrease at the inlet to gas turbine

Status: successfully completed in 2017

Scope of work:

- Development of Basic Design
- PD

Construction of Nitric Acid Units UKL-7

Client: JSC KCKK Branch, Kirovo-Chepetsk

Status: successfully completed in 2015

Scope of work:

- PD and DDD
- Construction, Site Supervision
- Industrial Safety Expertise

Projects Implementation Experience. Ammonium Nitrate



Construction of 2300 MTPD Ammonium Nitrate Granulation Unit and 2nd stage evaporation

Client: PJSC KuibyshevAzot, Togliatti

Project objective: increase of capacity and reduction of harmful substances emissions

Basic design: GIAP

Status: put into operation in 2023

Scope of work:

- Development of Basic Design
- PD and DDD
- Equipment design development
- Procurement
- Construction and Site Supervision

EPC

Revamping of AC-72 Ammonium Nitrate Unit

Client: JSC URALCHEM, Berezniki

Project objective: increase of Ammonium Nitrate AC-72 Units capacity up to 2100 MTPD

Status: in progress

Scope of work:

- PD and DDD

Capacity increase of AC-72/2 Unit

Client: JSC URALCHEM, Kirovo-Chepetsk

Project objective: capacity increase from 1630 MTPD up to 2100 MTPD and reduction of emissions into atmosphere

Status: completed in 2011

Scope of work:

- Development of the Main Technical Solutions
- PD, DDD, Equipment detailed assembly drawings (RKD)
- Industrial Safety Expertise
- Site Supervision

Technical upgrade of AC-72 Units No.1,2

Client : JSC AZOT, Kemerovo

Project objective: capacity increase up to 2300 MTPD and reduction of harmful substances in emissions from granulation tower up to concentrations: NH_3 – max. 30 mg/m³, NH_4NO_3 – max.50 mg/m³

Status: completed

Scope of work:

- PD and DDD

Projects Implementation Experience. Methanol



Construction of Methanol Plant

Client: JSC Nakhodka Fertilizer Plant, Nakhodka

Target capacity: 1,8 mln.tons per year

Basic design : Haldor Topsoe

EPC-Contractor: Chengda Engineering

General Designer: GIAP

Scope of work:

- Performing of the General Designer's functions
- Adaptation of Basic Design of the EPC-Contractor and Licensor
- Development of the PD
- Getting expertise approval

Two-stage capacity increase of Methanol Unit M-750

Client: LLC Sibmetakhim, Tomsk

I stage – capacity increase from 2500 up to 2800 MTPD of rectified methanol;

II stage – capacity increase from 2800 up to 3070 MTPD of rectified methanol

Status: stage I was completed in 2016

Scope of work:

- Development of Basic Design
- PD and DDD
- Industrial Safety Expertise

Capacity increase of Methanol Unit up to 3375 MTPD with NG flowrate reduction

Client: PJSC Metafrax, Gubakha

Scope of work:

- Methanol Casale & Nuovo Pignone S.P.A. Basic Designs acceptance
- PD and DDD
- Assistance during Industrial Safety Expertise
- Site Supervision

Projects Implementation Experience. Engineering



Construction of Melamine 2 Plant at PJSC Metafrax Chemicals site

Client: PJSC Metafrax Chemicals, Gubakha

Basic Design: Casale

Start of the Project: 2021

Scope of work:

- Adaptation of Basic Design of Casale
- PD
- GEE and GGE

Chlorine and caustic soda production and epichlorohydrin production

Client : DCC LLC, Dzerzhinsk

Basic Design: Beijing Chostar Equipment
Engineering Technology Co., Ltd

Start of the Project: 2021

Scope of work:

- Adaptation to check compliance with RF norms
- Development of the Main Technical Solutions
- Development of 3D-model
- PD

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

Client: JSC Volzhsky Orgsynthese, Volzhsky

Basic Design: Glatt

Start of the Project: 2021

Scope of work:

- Updating of the Main Technical Solutions
- PD and DDD
- GGE

Advantages of Cooperation with GIAP



Many years' experience

In implementation of big investment projects of ammonia, methanol, nitric acid, acetylene, fertilizers units, etc. at the territory of CIS countries



Wide data base of studies

Allows to make forecast of the final result of performed activities



Effective projects implementation

Based on own technologies and technologies of foreign licensors



Solutions for OSBL facilities

Allow to minimize works execution schedule and to coordinate and to optimize designed solutions in a proper way

Our Clients



ТОМЕТ





Thank you!

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