



EXPLORATION & PRODUCTION



WHO WE ARE

INA is a medium-sized European oil company, with a leading role in Croatian oil business and a strong position in the region. INA Group is comprised of several companies completely or partially owned by INA.

INA is committed to doing business in accordance with sustainable development, which means that it strives towards integrating economic, environmental and social factors in its daily operations. Trying to make energy available, INA wants to be a driver of social and economic development, taking care of people and the environment while fostering responsible business operations and local partnerships.



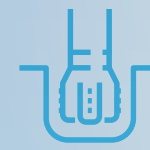
Data shown for 2023 year-end, unless otherwise noted.

INA'S EXPERIENCE IN EXPLORATION & PRODUCTION

INA's success is based on its experienced, educated, agile & creative employees. Understanding that people are the greatest value determines our business conduct, organizational and management structure and work processes.



EXPERTISE GAINED IN CROATIA AND ABROAD



Experts in exploring complex basins



Mature fields management



JV experience, shallow offshore operatorship

Production



24.4 Mboe/d

2P Reserves



77 MMboe

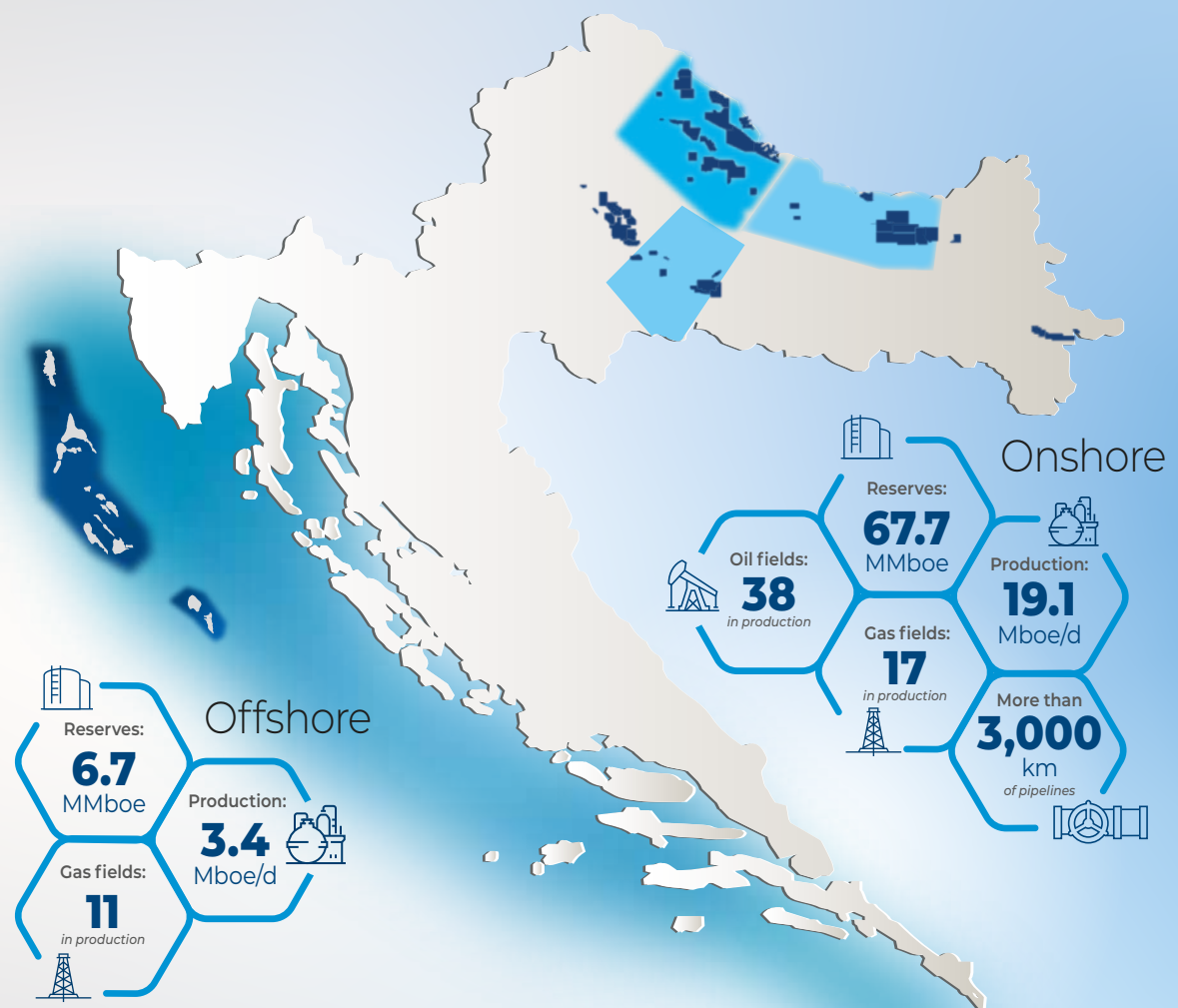
EBITDA & CAPEX



EBITDA: **390,1** USD mn
CAPEX: **100,2** USD mn

Know-how is a catalyst for technological change and improvement of products, processes and services.

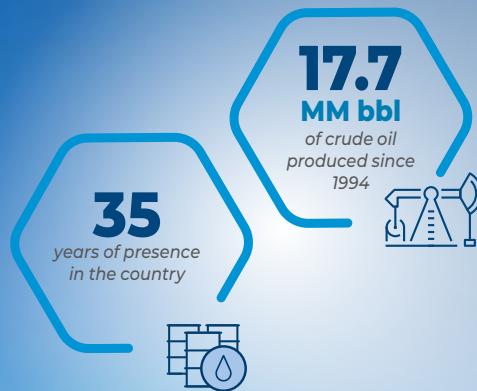
We encourage continuous development of competences and internal knowledge transfer.



*2024

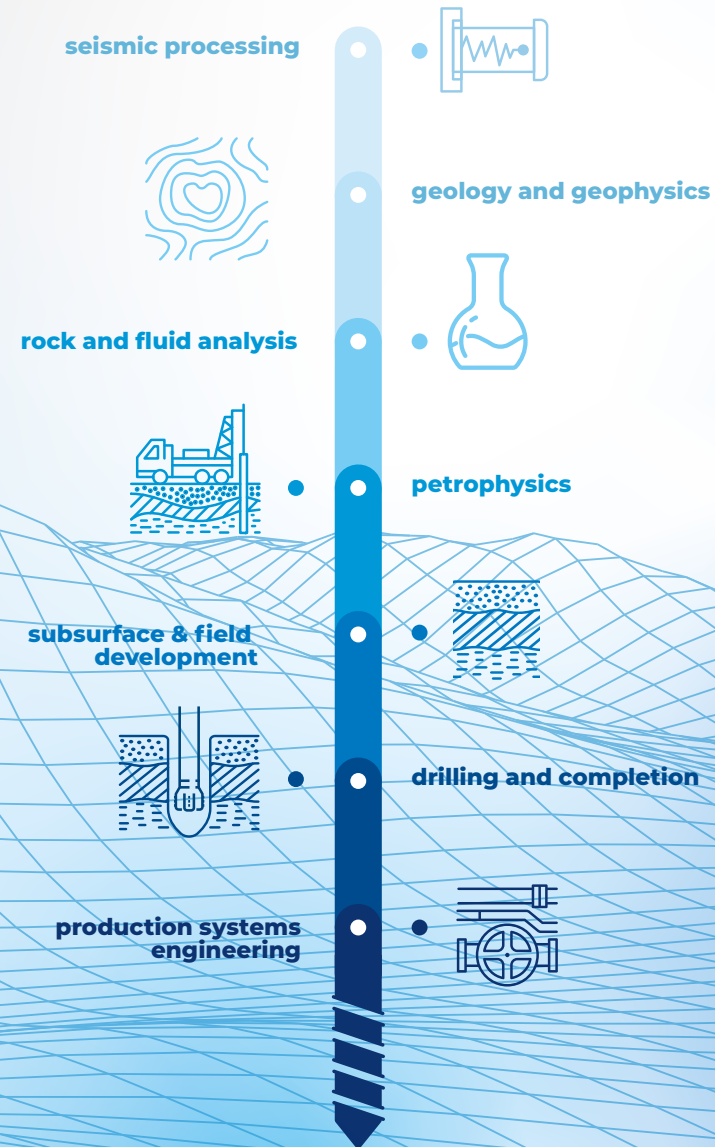
INA'S EXPLORATION AND PRODUCTION ACTIVITIES IN EGYPT

- INA's assets in Egypt include four development and one exploration concession.
- Development non-operated concessions are North Bahariya (INA 20% WI), Ras Qattara (INA 25% WI), West Abu Gharadig (INA 25% WI) and East Damanhur (INA 20% WI).
- The only active exploration non-operated concession is East Bir El Nus, with 50% WI.



OPERATING CYCLE

INA's E&P operating cycle is supported by key expert disciplines.



1) SEISMIC PROCESSING

Acquisition planning

- Geophysical survey design
- Onshore and offshore operations supervision & QC

Data processing

- Land, marine, 2D, 3D, time, depth
- Highly complex and low S/N ratio areas
- Pre-stack & post-stack merge of different vintages
- Analogous to digital conversion (scanning and vectorising)
- VSP data processing

Experience

- Pannonian Basin (Croatia and Hungary), Dinarides, Adriatic Sea, Syria, Kurdistan, Pakistan, Albania, Namibia, Iran, Egypt, North Sea

RECENT HIGHLIGHTS

- 1300 km² of 3D data processed in 2022



2) EXPLORATION GEOLOGY AND GEOPHYSICS

PLAY-BASED EXPLORATION METHODOLOGY

Regional tectono-stratigraphic interpretation

- Structural analysis and seismic interpretation
- Well correlation and stratigraphic modeling
- Basin analysis
- Play and prospect evaluation
- Resources and risk assessment
- Play fairway assessment and CRS maps

Experience

- Pannonian Basin (Croatia and Hungary), Dinarides, Adriatic Sea, Syria, Kurdistan, Pakistan, Albania, Namibia, Iran, Egypt, North Sea

RESERVOIR GEOLOGY AND GEOPHYSICS

- Attribute analysis
- Well correlation
- Fault correlation
- Fault modeling
- Pillar gridding
- Zonation and layering
- Facies modeling
- Petrophysical modeling
- 3D Structural modeling
- Volume calculation
- Well design

INTERPRETATION PLATFORMS

- Halliburton and Schlumberger software platforms used in exploration and field development workflows

3) ROCK AND FLUID ANALYSIS

E&P LAB

EXPLORATION & PRODUCTION LABORATORY

- Proactive participation in exploration and defining new exploration areas and petroleum systems
- Technical support for the field development, oil and gas production, EOR, CCUS & Geothermal projects
- Quality performance of rock and fluid laboratory analyses (oil, natural gas, condensate, water)
- High quality laboratory reports and studies with data interpretation.

Expert disciplines

- **Geology** (biostratigraphic, petrographic and sedimentological analyses & modelling)
- **Geochemistry** (geochemical analyses & data integration for basin modelling)
- Routine and Special **Core analyses**
- **PVT & EOR** analyses and studies
- **Fluid characterization** and rheology
- **Water** analyses
- **Corrosion** monitoring

Accreditation Certificate No. 1048 issued by the CAA according to standard **HRN EN ISO/IEC 17025:2017**

Partners: universities, scientific research institutions and external clients

4) PETROPHYSICS

WELL LOG INTERPRETATION

Open hole

- Petrophysics
- Borehole imaging, stress regimes, geomechanical analysis, wellbore stability
- Sandstones, carbonates, thin layer, complex lithology
- Geosteering
- Sedimentology

Cased hole

- C/O, sigma, cement bond, well integrity, production-injection profile

Software Packages

- Open hole (GEOLOG, TECHLOG, IP, EXPRESS)
- Cased hole (PLATO, FRS-TMD3D, CIT, QHW-PNN)

DATA MANAGEMENT

- Digitalization of hard copies and scans (documents, reports, well logs, master logs...)
- Corporate log database for petrophysicists (ascii, las, ddis, db, pdf, tiff)
- Archiving technical well documentation

Software packages

- DSIS, Neurolog

5) RESERVOIR ENGINEERING

- Reservoir monitoring & data analysis
- OHIP evaluation and reserves estimation
- Production optimization
- Workover activities and development drilling
- Well test design and analysis
- Field development plan preparation
- Dynamic modeling
- Production forecasting and sensitivity analysis
- Integrated asset modelling
- GT and CCS project development

6) DRILLING AND WORKOVER

Croatia Onshore

- Drilling depleted sandstone & carbonate reservoirs
- HP-HT deep gas-condensate D&C
- Slim hole RE HT-LP D&C
- Advanced acid jobs and HF stimulations

Croatia Offshore

- Extended-reach drilling / RSS / hydraulics
- Batch mode D&C of 6 deviated wells from one jacket
- Frac&pack or high-rate water pack technique for high permeability sand layers/thin layers
- Dual 2 3/8" completion design

International

- Drilling fractured carbonates and cementing liner
- Drilling creeping HP salt zones/high collapse casing
- Drilling sloughing shale zones/cementing
- Deep exploration drilling
- Drilling through HP zones (sandstone/shale)

Software

Landmark Drilling Package SLB Stimulation Package Prosper



7) PRODUCTION SYSTEMS ENGINEERING

Production Operations Engineering

- Nodal system analysis & integrated production modeling
- Completion systems engineering
- Artificial lift systems engineering and optimization
- Flow assurance and well production optimization
- Production loss management
- Production Management Framework concept
- Digital Oilfield concept

Oil and Gas Facilities Engineering

- Gathering and transport systems engineering and optimization
- Flow assurance
- Gas treatment and processing engineering and optimization
- Liquid and gas measurement
- Process safety management
- Integrated process modeling

Production Chemistry

- Paraffin waxes and asphaltenes
- Emulsions
- Corrosion
- Scale
- Microbiological fouling and corrosion
- Gas hydrates



MATURE ASSETS MANAGEMENT

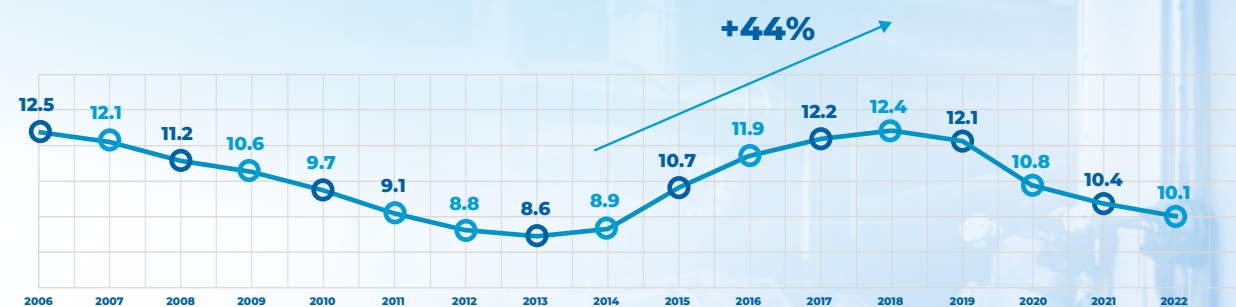
CROATIA'S OIL FIELDS

- 39 oil fields in production, 45 years-old on average, highly mature and depleted
- 90% of oil produced from 13 fields
- Continuous workover activities to diminish decline and maintain production plateau
- Possibilities of exploiting depleted fields for geothermal and CCS projects

WELL PERFORMANCE IMPROVEMENT

- Artificial lift optimization
- Well workovers, stimulations and sand control
- Perforating/re-perforating/fracing
- Installing wellhead compressors
- Improving flow assurance with chemicals

Croatia Onshore Oil Production (tbpd)



700+
OIL WELLS IN PORTFOLIO



180+
USD MN INVESTED
SINCE 2014



850+
WELL WORKOVERS & STIMULATIONS
SINCE 2014

RESERVOIR PERFORMANCE IMPROVEMENT

- Performing 3D seismic
- Updating and revising geological settings
- Identifying bypassed oil and gas
- Infill & sidetrack well drilling
- Opening idle reservoir intervals
- Monitoring reservoir pressure support and water control handling

IMPLEMENTING EOR METHODS

- EOR in progress on two fields
- Screening of other Croatia onshore fields identified potential for implementing EOR/EGR

ENHANCED OIL RECOVERY

IVANIĆ & ŽUTICA OIL FIELDS

- Large highly depleted oil fields in production since the 1960s
- Using high CO₂ content onshore gas fields as a natural CO₂ source
- Water-alternating-gas injection process running since 2014 at a rate of of 600.000 m³/day of CO₂"
- No HSE incidents despite operating in an urban area – safety is top priority

Results

- Incremental production reached 3.2 MMboe
- Ivanić field production more than doubled in the first 5 years of EOR
- Žutica North field production increased 4 times in the first 5 years, and by adding Žutica South increment, 12-year natural decline of the Žutica field has been annulled

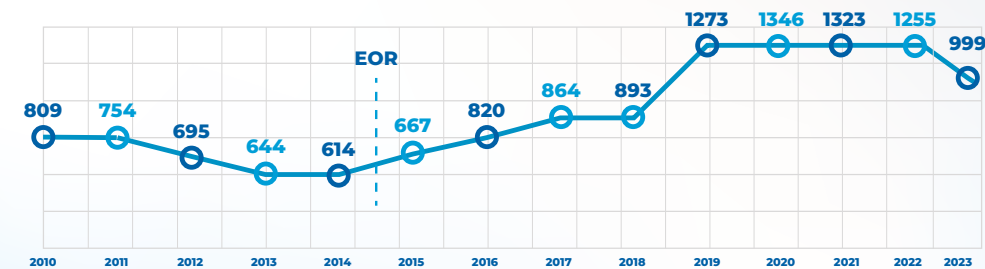


220
USD MN
INVESTED

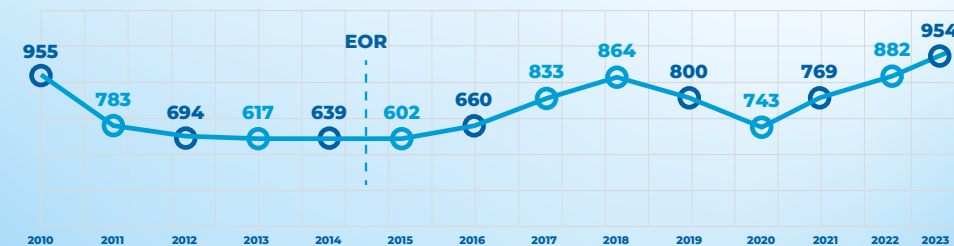


3.2+
MMboe INCREMENTAL
PRODUCED

Ivanić production (Mboe/d)



Žutica production (Mboe/d)



UPSTREAM GREEN TRANSITION

GEOHERMAL & NEW ENERGIES

- Exploration and production of geothermal energy is a new and key activity of the Oil and Gas Exploration and Production, which aims to create the basis for INA's transition into a sustainable energy company.
- Using existing knowledge and expertise acquired during oil and gas exploration; drilling and completion several thousand wells for 60 years; expertise in the field of geophysics, geology, petrophysics, reservoir engineering, production processes... INA has all the prerequisites for the successful growth and development of geothermal projects.
- In addition to geothermal projects, INA E&P develops and promotes other types of projects in the spectrum of low-carbon and sustainable solutions as fundamental determinants of INA Group's strategy.
- INA has permits for the exploration of geothermal resources in two research areas in the Republic of Croatia: Lešćan and Međimurje 5.



CARBON CAPTURE AND STORAGE

- INA Upstream analyses a suitable geological formation, both onshore and offshore, to permanently store CO₂, either from its own sources (gas fields, processing facilities) or from the third parties (CO₂ emitters in the region).
- The screening is primarily focused on depleted oil and gas fields, where infrastructure already exists, but the scope also envisages a potential available in the saline aquifers. Through these activities Upstream plays a crucial role in green transition and fulfilment of company's target to reduce CO₂ emission.

PROCESS SAFETY MANAGEMENT

System directed towards preventing serious process-related incidents that might affect plant personnel, off-site communities, the environment and result in significant loss of property, business continuity and reputation. Implementation started in 2015.

Understanding hazards and risks, managing risk by providing appropriate layers of protection to reduce frequency and severity of incidents and implementing lessons learned.



HSE & SUSTAINABLE DEVELOPMENT

- Safety-first approach to all operations – people are at the centre of everything we do
- Successful operations without any fatalities or major injuries in decades
- Compliance with SEVESO Directive and Offshore Safety Directive - achieved higher level of safety
- Compliance with environment-related laws throughout our operations
- Successfully dealing with the harsh environment on onshore gas fields (CO₂, H₂S, Hg and HP/HT conditions) at the Molve gas treatment plant
- Improving HSE performance by operating PDCA cycles (Plan, Do, Check, and Act) based on the HSE management system conforming to international standards
- Committed to delivering positive outcomes in the communities where we operate
- The ongoing CO₂ EOR project is an example of our efforts to mitigate global warming

CERTIFICATES AND STANDARDS

To be in line with world trends we have:

ISO 9001:2015
ISO 14001:2015
ISO 45001:2018
ISO 50001:2018



E&P PROJECT MANAGEMENT

- Preparing pre-investment and investment studies, documentation for stage gate approval of exploration/field development/production projects.
- Management and supervision of all phases of the project.
- Financial monitoring of the execution of project obligations in accordance with legal norms and regulations.

E&P PERMITTING

- Obtaining all permits, issuing consents, special conditions and other documents related to E&P facilities.
- Resolving problems and compensating damage caused by E&P activities in cooperation with local community, legal and natural persons.
- Preparing geodetic studies and all other types of geodetic studies related to E&P facilities.

E&P COMMERCIAL & BUSINESS DEVELOPMENT

- Manage, supervise, coordinate and support activities related to marketing and sale of hydrocarbons produced by E&P as well as required logistic services.
- Support the valuation processes of new business opportunities and potential acquisition targets from commercial point of view.
- Managing and reporting on international assets, coordinating Branch and Representative Offices, operating companies abroad, providing expert and logistic support, participating in the process of selling/abandonment of the portfolio assets.
- Acquiring petroleum rights.
- Performing the process of finding potential business partners and negotiating for selected projects.



INA-Industrija nafte, d.d.

Avenija Većeslava Holjevcina 10

p.p. 555

10 020 Zagreb

CROATIA

e-mail: upstream@ina.hr

e-mail: pr@ina.hr (contact for media)

TOLL-FREE PHONE NUMBER: +385 0800 11 22

INA-Industrija nafte, d.d. Egypt Branch

55, Road 18, Maadi – Cairo – Egypt

Phone +202 2750 7441

Fax: +202 2750 7445



The logo for MOLGROUP, consisting of a white right-pointing triangle followed by the text 'MOLGROUP' in white, uppercase, sans-serif font, all contained within a red rectangular background.