

# TECHNOLOGICAL LEADERSHIP PROGRAM

*In an effort to develop crucial technology expertise and introduce the best technical solutions throughout the technological chain, the Technology Leadership program has been developed and is being implemented, including projects in the following areas:*

- ▶ Technologies to ensure efficiency gains in exploration (Discovery project)
- ▶ Technologies to increase the oil recovery index (ORI) (Smartflooding, Entalpy, and Tight Oil projects)
- ▶ Technologies for the efficient development of small fields (Nestro-TEC)



*A key focus in this regard is also the end-to-end digitalization of production processes through the implementation of the program projects. The strategy guides the Company's digital development.*

## PROGRAM PORTFOLIO. CHALLENGES AND ACHIEVEMENTS

### Geological exploration

**≤20%**

Share of replenishment of production reserves with new oil and gas exploration technologies

**DISCOVERY**

- ▶ Increased efficiency of oil and gas exploration

### Development

- ▶ Using technologies to increase the NPV and ORI of current assets
- ▶ Technological basis for entry into new projects

**≤5%**

ORI of current assets

**SMARTFLOODING**

- ▶ Enhanced oil recovery methods using chemicals and gas

**~1 bln tons**

commercialization of bitumen production in Cuba

**ENTALPY**

- ▶ Enhanced heating oil recovery methods

Launch of **2** new projects  
Involvement in the production of hard-to-recover reserves (HTR), vertical seismic profiling (VSP), and radio-frequency surveying in the Kharyaga production sharing agreement

**TIGHT OIL**

- ▶ HTR development

### Production

**≤3 times**

CAPEX optimization by applying mobile solutions and new technologies

**NESTRO-TEC**

- ▶ Infrastructure