



# PJSC “UkrGasVydobuvannya”

Reforming UGV. Increasing Ukraine’s gas production

November 2016

# Contents

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- **UGV overview & key highlights**
- Strategy 20/20

# Naftogaz – a vertically integrated company

## Gas business



### Upstream, gas processing

- **16 bcm** gas produced
- **230+** oil, gas, condensate fields
- **39** gas processing plants
- **294 bcm** 3P reserves



### Gas transportation & storage

- **178 bcm** exit cap.
- **150+ bcm** transit capacity to Europe
- **21 bcm** entry -EU
- **67 bcm** transit volume
- **34 bcm** transmission
- **31 bcm** storage



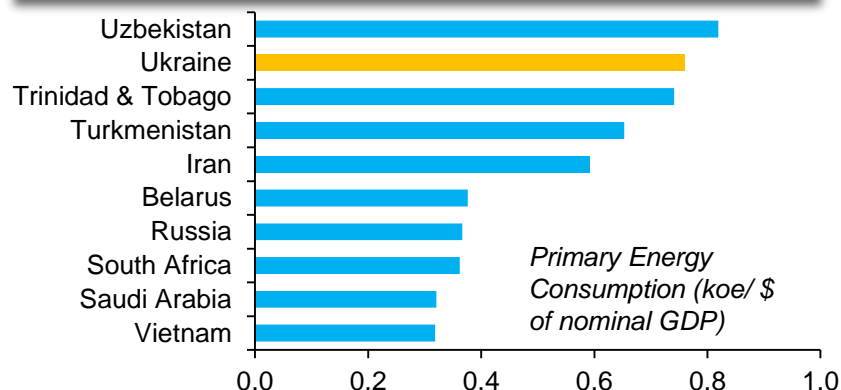
### Wholesale gas trading

- **93 %** market share in imports
- **75 %** market share in production
- **100 %** supplier to households

# Ukrainian economy

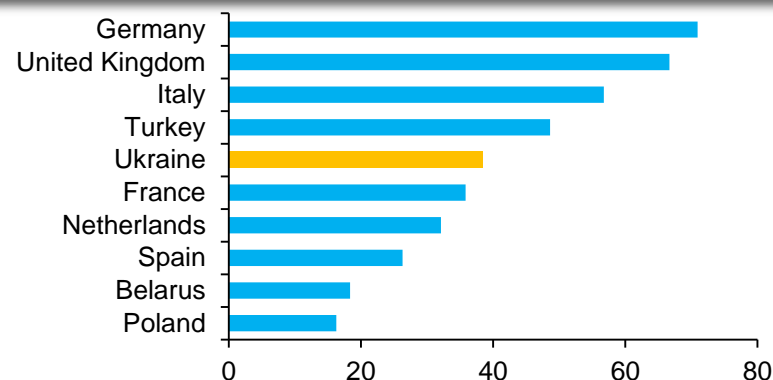
## heavily dependent on natural gas

### World's most energy-intensive economies, 2014



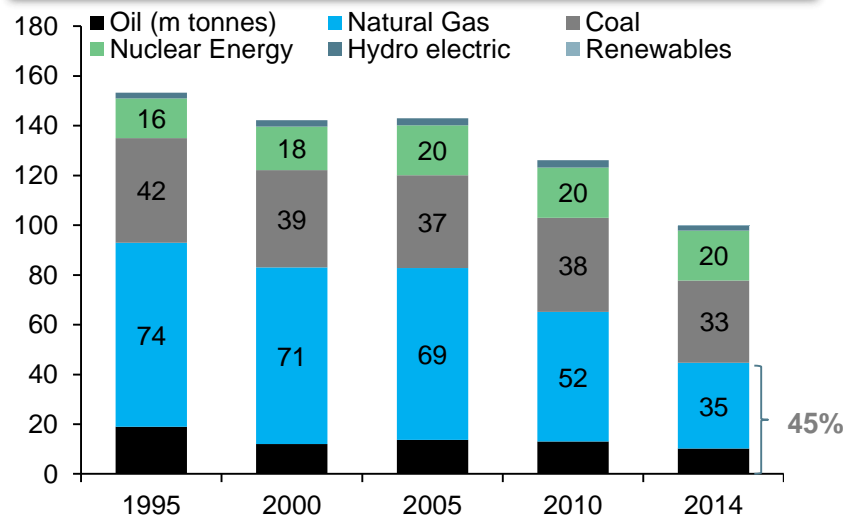
Source: BP Statistical Review of World Energy 2015, World Bank, own calculations

### Major gas consumers in Europe\*, bcm/y, 2014



Source: BP Statistical Review of World Energy 2015. \* – excluding Russia

### Primary energy consumption in Ukraine, by fuel type, mtoe



Source: BP Statistical Review of World Energy 2015, own estimates

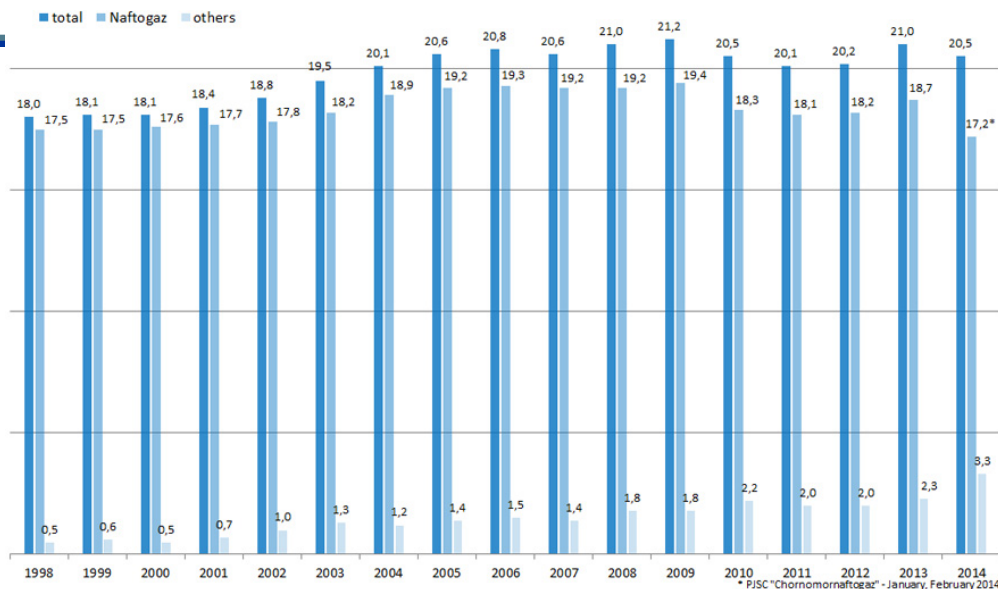
- **High** share of industry and residential sector
- **45%** of primary energy consumption is oil & gas
- **4th** in Europe by gas consumption
- **5th** in Europe in gas consumption by households

**Ukraine**

**one of the most  
energy inefficient  
countries**

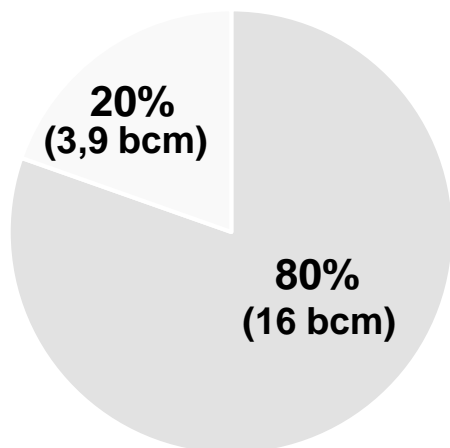
# Natural gas production – 19,9 bcm in 2015

## Gas production, bcm



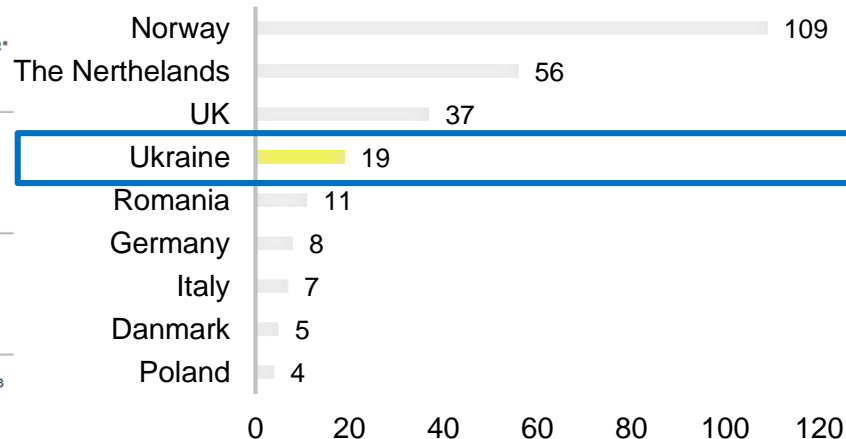
Source: <http://naftogaz-europe.com>

## Main local gas producers in 2015

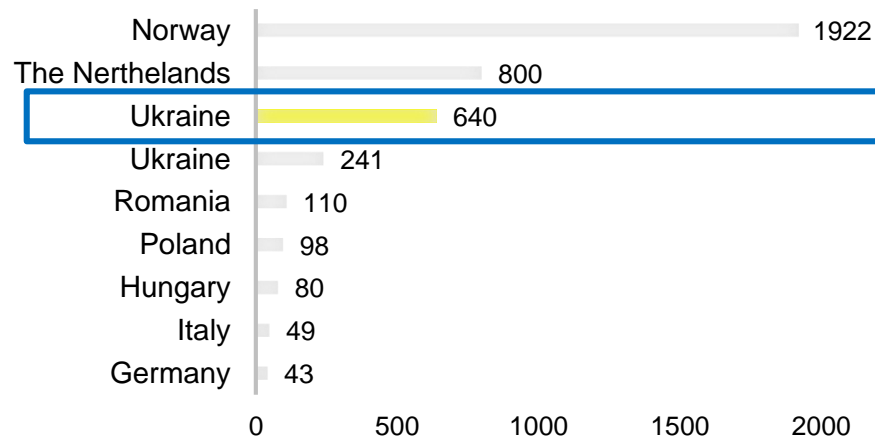


Main operator – PJSC Naftogaz of Ukraine

## THE BIGGEST GAS PRODUCTION COUNTRIES IN EUROPE IN 2014, BCM



## THE BIGGEST GAS PROVED RESERVES BY COUNTRIES IN EUROPE, BCM



Source: BP Statistical review, June 2015

# UGV is the largest O&G company in Ukraine and the region



**Production of 14.5 bcm - 74% of total Ukrainian gas production**

- ~500 thsd t of oil and condensate (20% of the market)



## 285 bcm of 2P reserves<sup>2</sup>

- 140 production fields



## ~5% of state budget receipts of Ukraine

- 37 bn UAH in taxes (plan 2016) - #1 tax payer in Ukraine



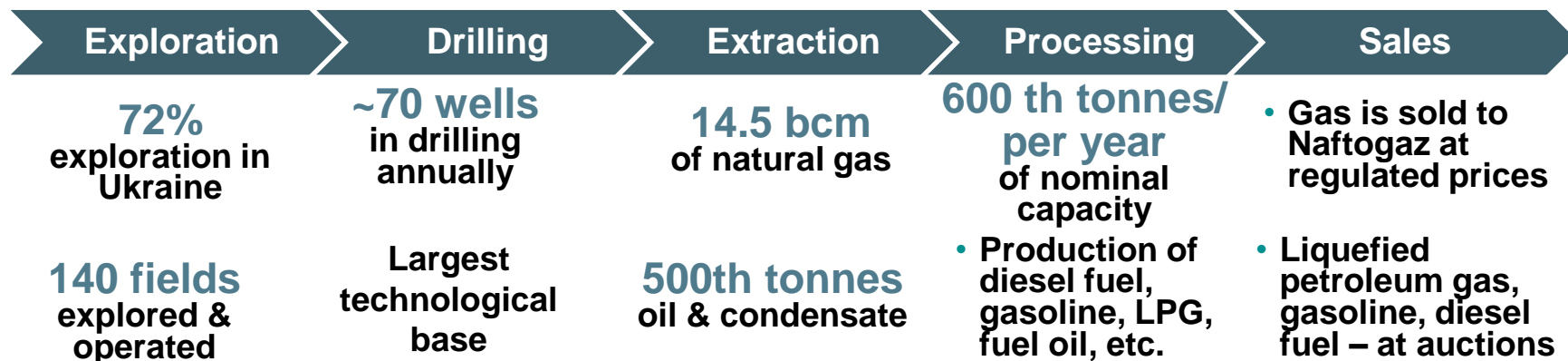
## Vertically integrated company

- Full operational cycle from exploration to distribution

Notes: 1. Calculated based on Ryder Scott as of 01.01.2015 and production 2015, based on 73 major fields

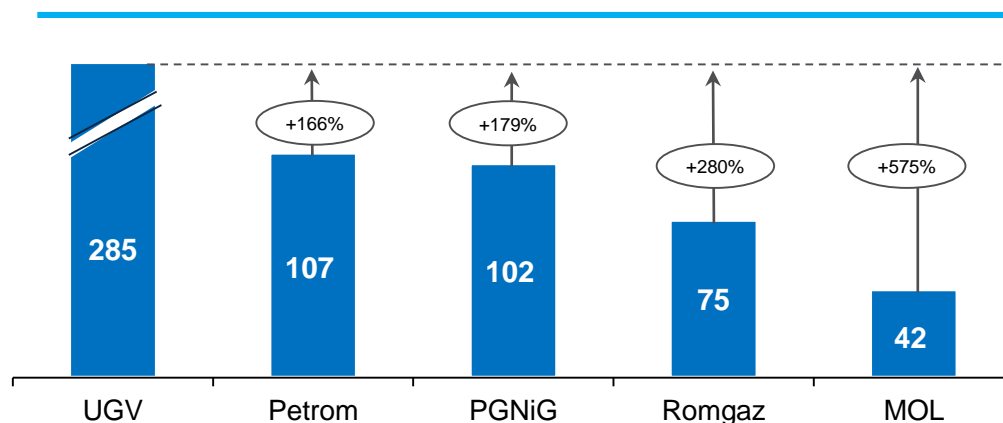
Source: UGV

# Ukrgezvydobuvannya - upstream and processing



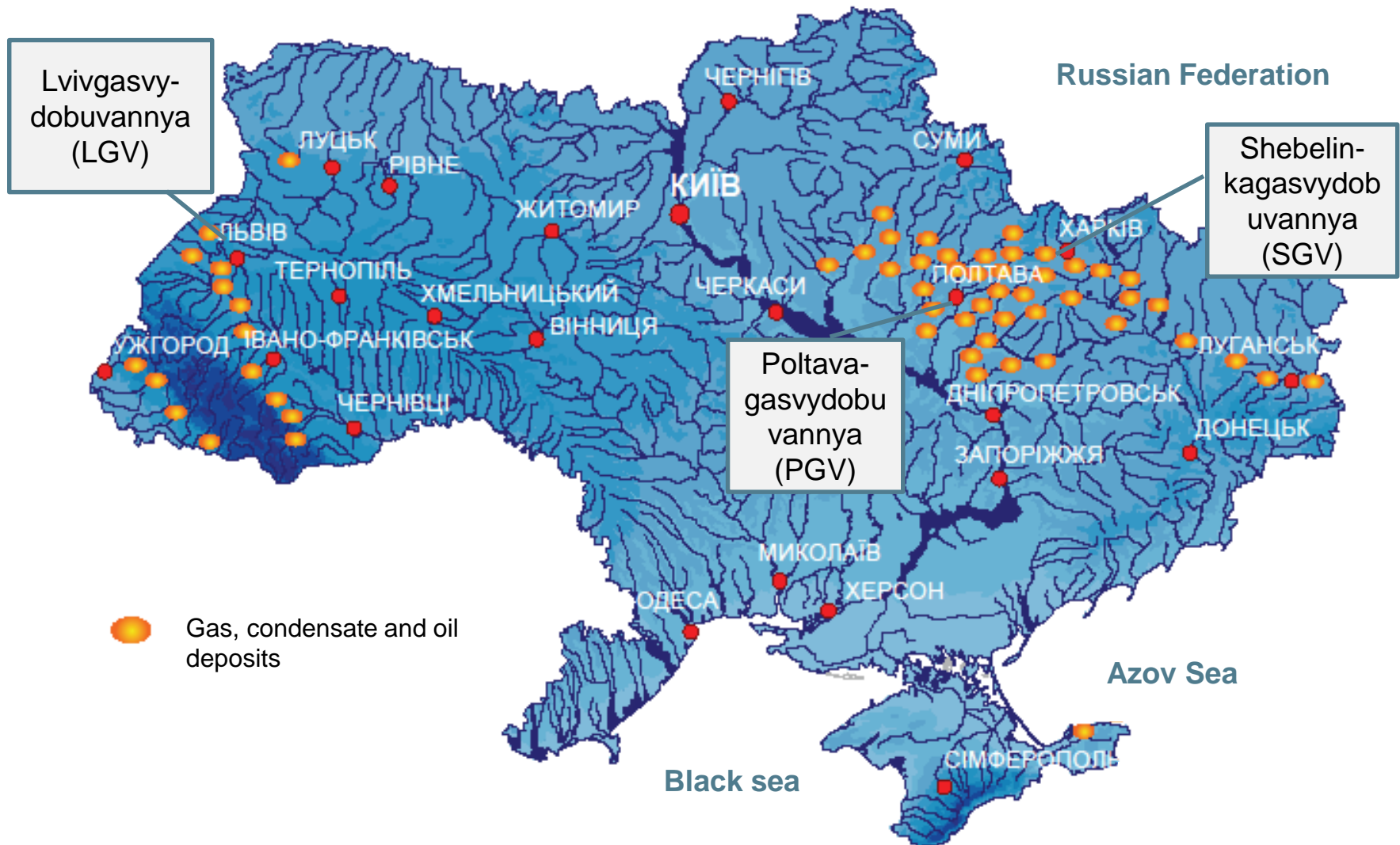
Approximately **285 bcm of 2P reserves**

*In bcm,*



■ International 2P reserves

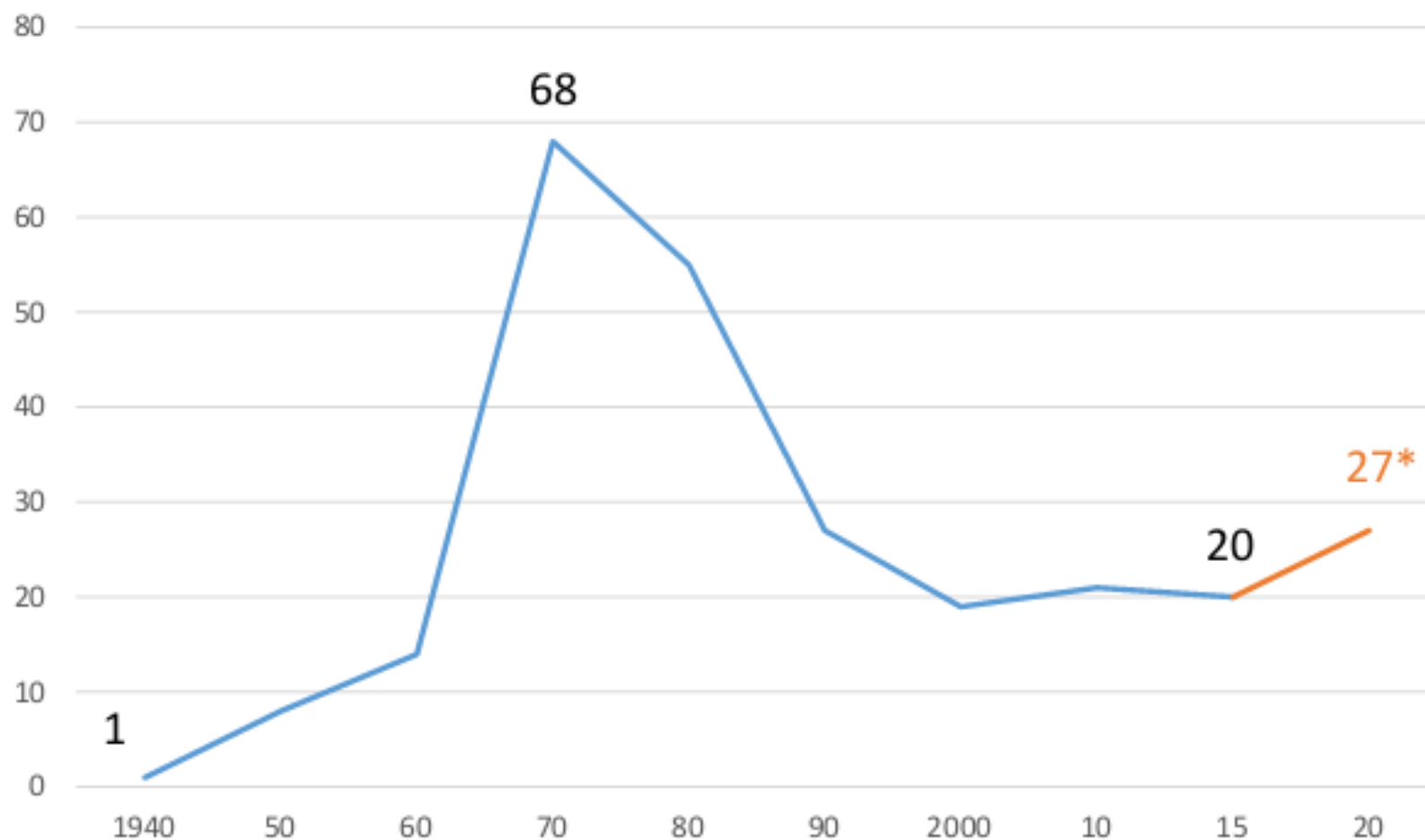
# UGV has operations across all regions with hydrocarbon deposits





# Ukraine's historical gas production

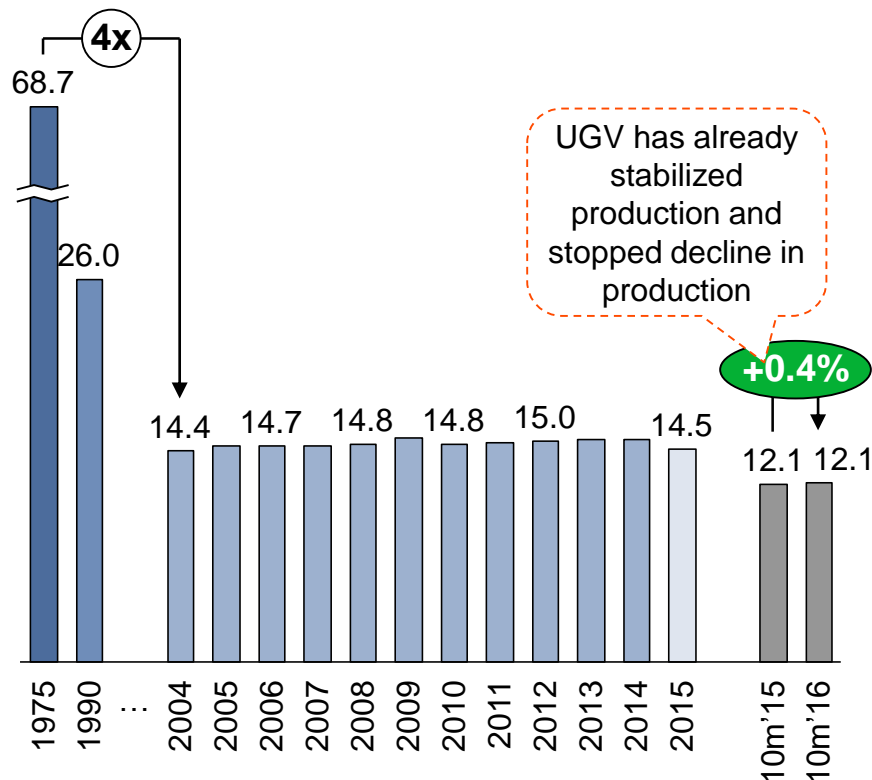
Billion cubic meters



# Chronical corruption and underfinancing led to import energy dependency of Ukraine

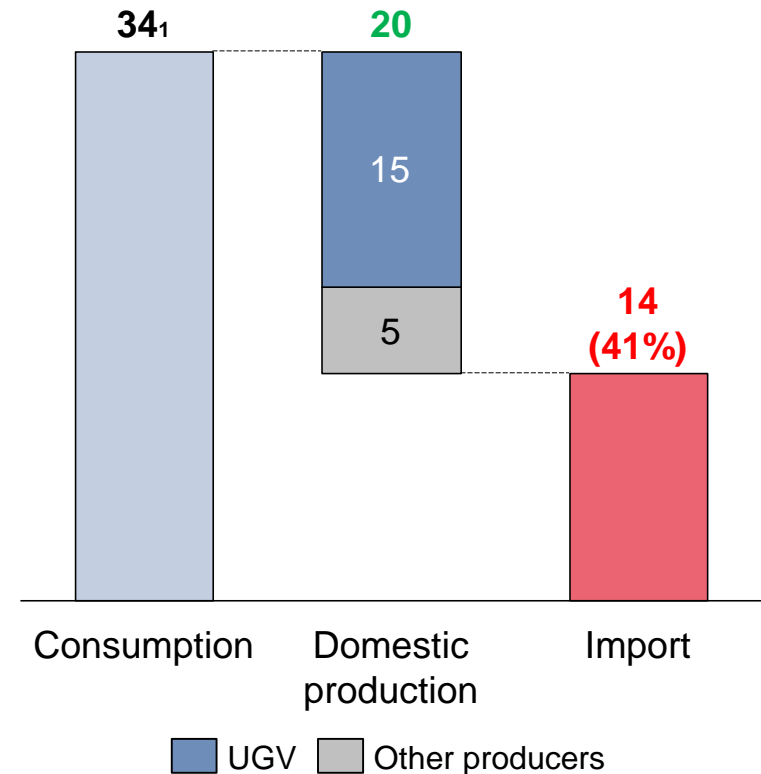
**Gas production in Ukraine has been stagnating last years after 4x fall...**

*Production, UGV, bcm*



**...which led to dependency of Ukraine on imported gas**

*Gas market balance<sup>1</sup>, 2015, bcm*



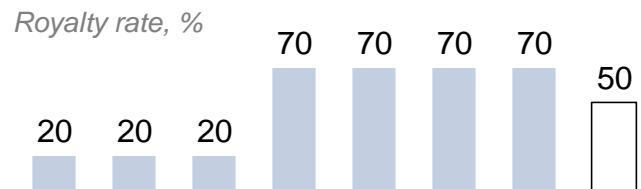
Notes: Does not include gas for underground gas storage facilities, Gazprom balancing volume and take-up / filling of gas pipelines  
Source: UGV, Naftogaz

# Populism and corruption led to stagnation of production volumes for UGV

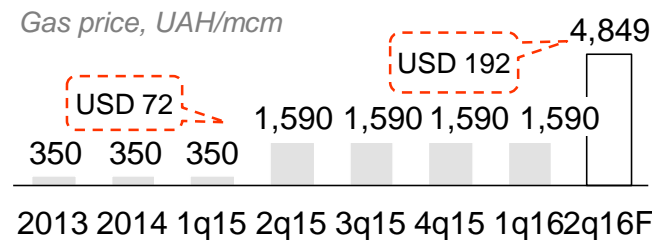


**Populism**

## Unstable fiscal regime – increasing royalties for UGV



## And artificial and subsidized gas price



- **2-3 bn UAH** – annual leaching of money due to corruption schemes



**Corruption**



## Outdated equipment

- average age of drilling rigs ~23Y
- drilling speed ~287 m/month



## Using outdated technologies

- almost no hydro fracking for the last 5 years



## Lack of professionals

- Noncompetitive salaries and brain drain as a result



## Underfinancing and no modernization

- Emergency condition of critical equipment



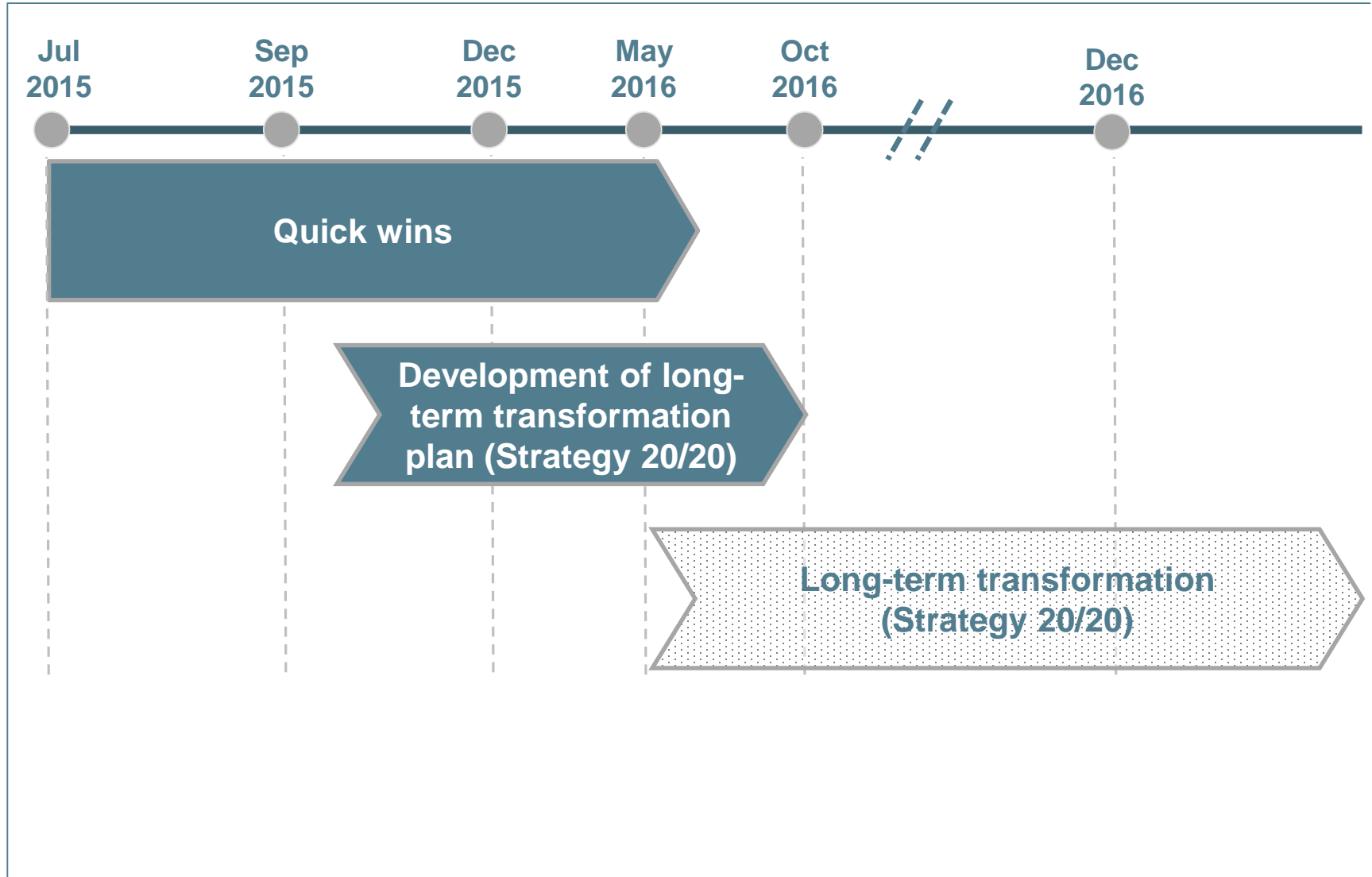
## Energy dependence of Ukraine

- Used to import ~40-50% of consumed gas from Russia

Notes: 1. USD/UAH average rate for 2Q 2015 -22.046; as of 1.05.2016 UAH/USD 25.185

Source: UGV

# UGV's new management has started the company's transformation



# Today UGV has new experienced management and cooperation with international institutions

## New management from international and Ukrainian well-known companies



## ...which is supported by international partners



# New management has already demonstrated significant success in reforms



Notes: 1. Including ProZorro. Including 4.5 mln USD effect on methanol purchases 2. Excluding JAAs and ATO zone

Source: UGV

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# UGV's new management has formulated vision to become a production and technological leader in Ukraine's O&G industry

## MISSION:

Ensure energy security and energy independence of Ukraine through developing its gas resources potential, domestic technological competence and robust industry ecosystem

## VISION:

Production and technological leader in Ukraine's O&G industry with full fledged capabilities and at par with market standards in operating and HSE practices

### GOAL 1:

Achieve sustainable increase of production scale and reach **20 bcm by 2020**

### GOAL 2:

Increase **economic efficiency** and keep cost of gas below import price

### GOAL 3:

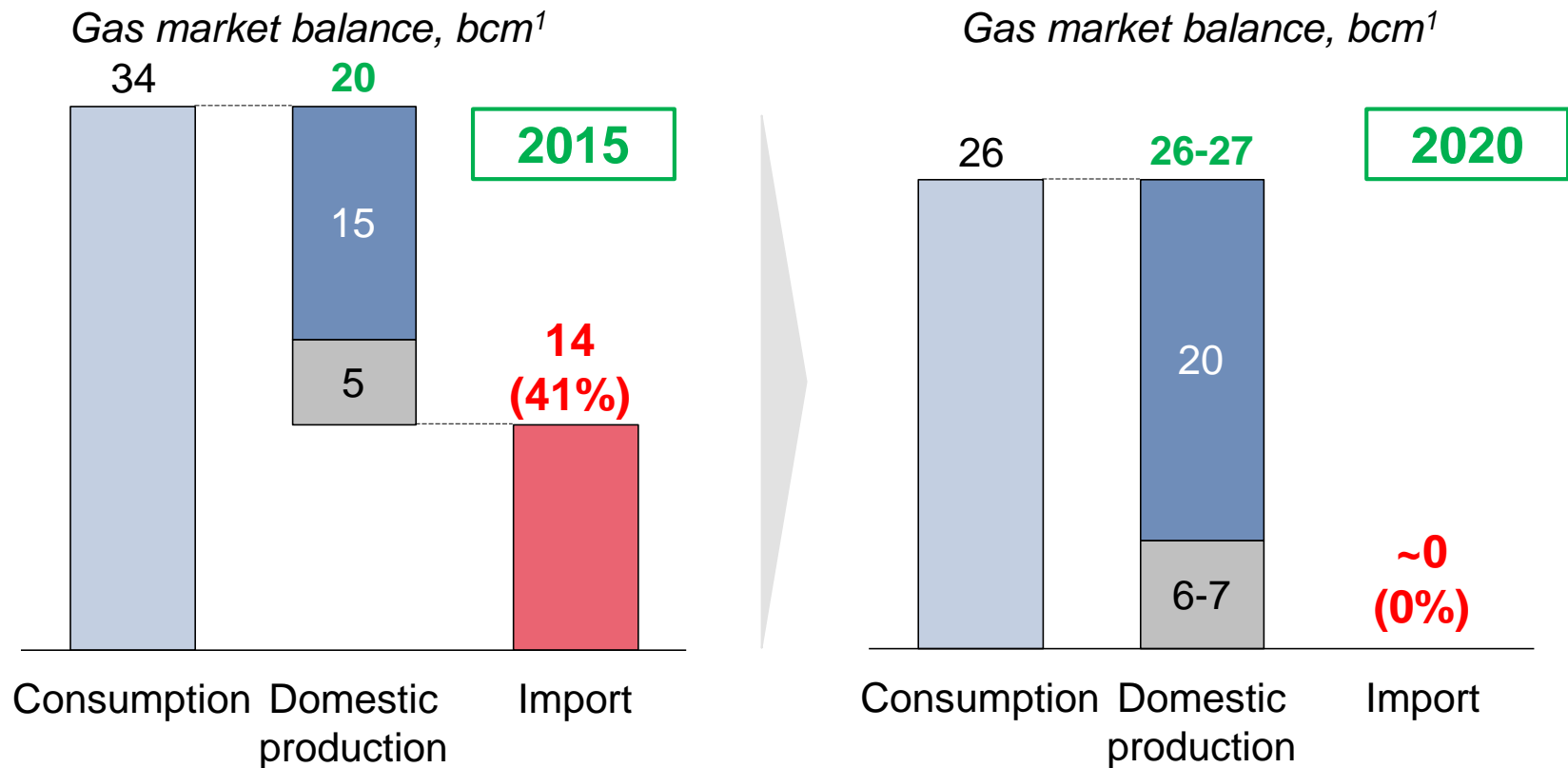
Transform company culture and implement **world-class management, operational and HSE practices**



# Strategy 20/20 will allow Ukraine to **cover 100%** of consumption by domestic gas in 2020

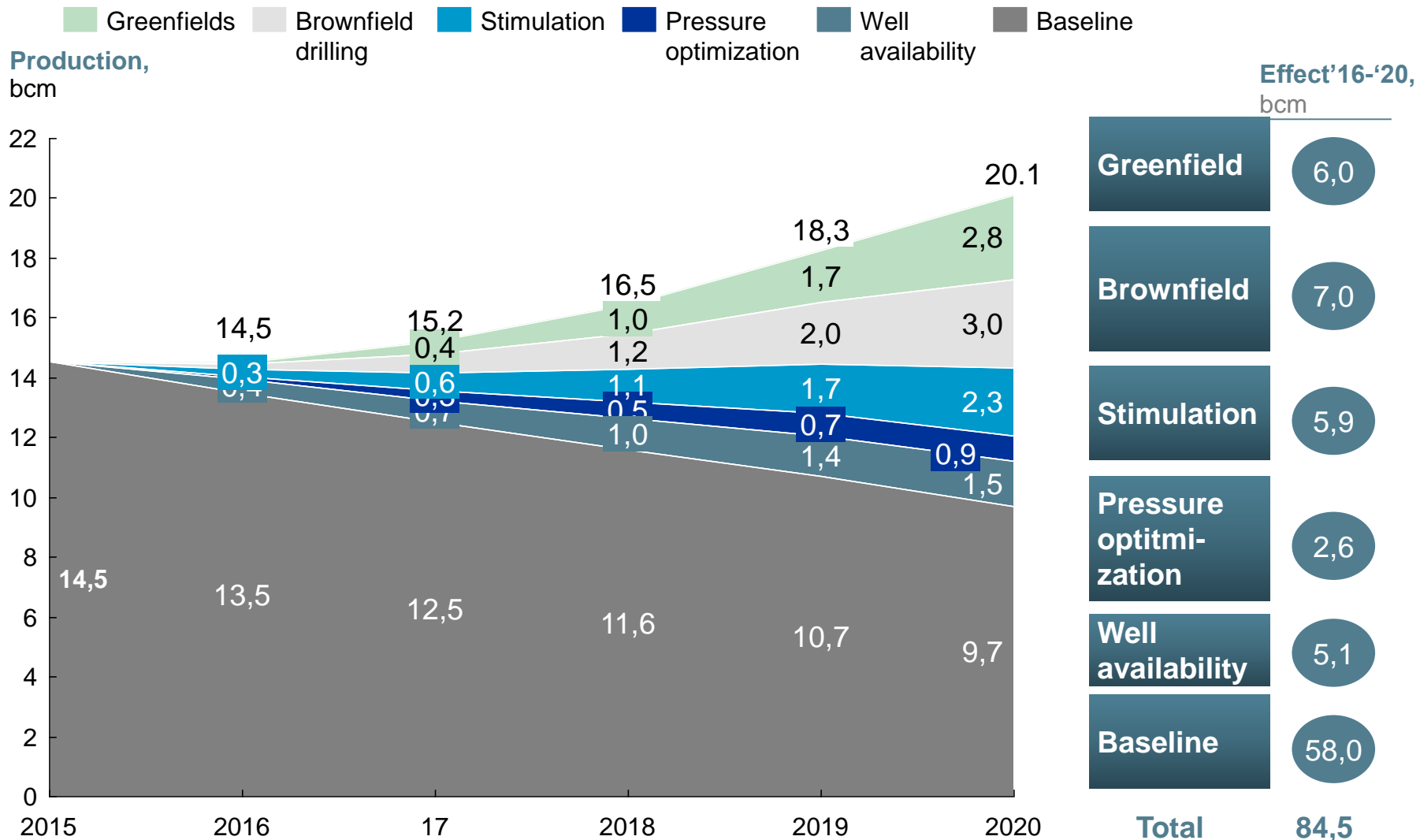
Government aims to cut imports by 2020  
to ensure energy security of Ukraine

UGV  
Other producers



Notes: UGV/McKinsey estimates. Does not include gas for underground gas storage facilities, Gazprom balancing volume and take-up / filling of gas pipelines. 2. Under the condition of fulfilling of production plans by UGV and private players. 3. Calculated based in Ryder Scott as of 01/01/2015 on 73 major fields and production 2015.  
Source: UGV, Naftogaz

# UGV is implementing a program to raise production to 20bcm in 2020



Notes: brownfield drilling first year adjustment factors of 0,25, 0,25, 0,3, 0,3 and 0,5 for 2016-2020 respectively

1. Baseline level is within +/-5% of Ryder Scott numbers

Source: UGV, team calculations

# Implementation of the program requires ~4 bn USD of CAPEX till 2020

	CAPEX by '20, bn USD	Effect '16-'20, bcm	Comments
Baseline	0,5	58	<ul style="list-style-type: none"> <li>Organic CAPEX needed for maintenance of existing infrastructure</li> </ul>
Well availability	0,1	5,1	<ul style="list-style-type: none"> <li><b>More than 1 000 WOs</b> by 2020 (incl. 200 WOs to be outsourced)</li> </ul>
Pressure optimization	0,1	2,6	<ul style="list-style-type: none"> <li>60 mini compressors to be installed</li> <li>8 new booster stations to be built and 7 - modernized</li> </ul>
Stimulation	0,2	5,9	<ul style="list-style-type: none"> <li><b>250 fracks (wells)</b> to be done until 2020 (significant level of outsourcing required)</li> </ul>
Brownfield	1,4	7,0	<ul style="list-style-type: none"> <li><b>Up to 270 wells</b> to be drilled by '20 (up to 30% of wells are completed with frack)</li> <li><b>25% drilled by external contractors</b></li> </ul>
Greenfield	1,6	6,0	<ul style="list-style-type: none"> <li>Up to 390 wells on greenfield till 2020</li> <li>First production well in 2017</li> </ul>
<b>Total</b>	<b>3,9</b>	<b>84,5</b>	

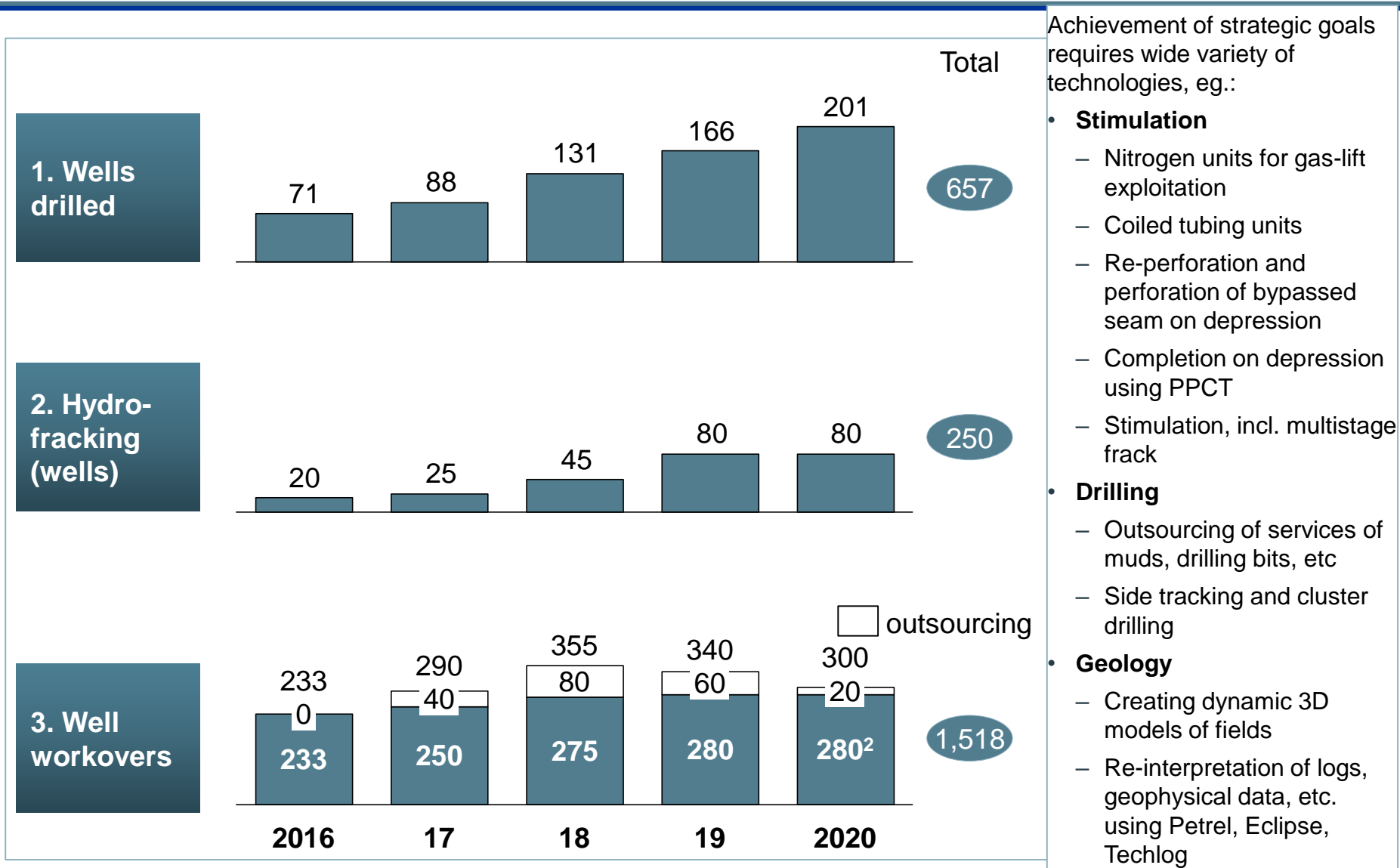
■ Required outsourcing

Notes: brownfield drilling first year adjustment factors of 0,25, 0,25, 0,3, 0,3 and 0,5 for 2016-2020 respectively

1. UGV financial plan

Source: UGV, team calculations

# UGV has started operations' scale increase to fulfill production program



1. Using success rate 2 Number may decrease after implementations of preventive measures (inhibitors, tubing metallurgy etc.)  
Source: UGV

# UGV's strategy will have significant effect for the O&G industry in Ukraine overall

## Key oil & gas market services market growth

- UGV plans to use **third-party services to perform significant amount of key activities:**
  - Workovers
  - Hydro fracking
  - Drilling
  - Seismic and geophysical services

## Market entry for International players & new technologies

- The scale of UGV's operations, also through third-party involvement, will become a **significant stimulus for international players to enter the market and ramp up** their presence

## Increasing efficiency of the oil & gas industry

- Market expansion and entry of international players will result in **creation of competitive environment** that will ensure **optimal pricing and development of solid legislative base** for the oil & gas industry of Ukraine

# Drilling capabilities development plan to substantially increase drilling speed

## Three key streams of UGV rig fleet capabilities development

### Rig fleet modernization

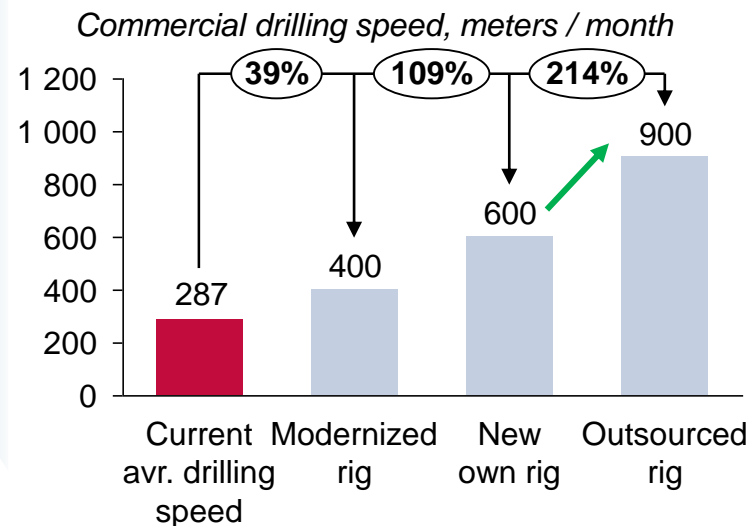
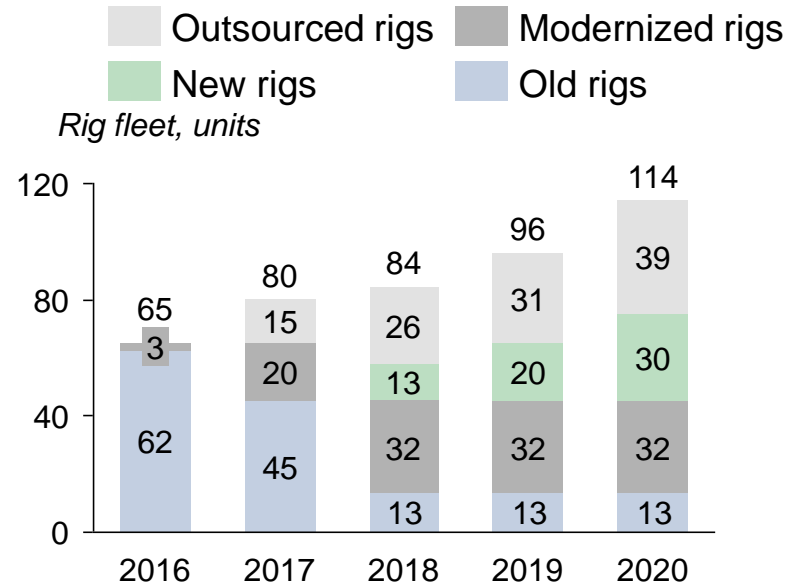
- 32 rigs until 2018

### Outsourcing of drilling

- 15 rigs already in 2017

### New rig purchasing

- 30 rigs until 2020



# UGV is already launching major tenders for services and equipment

## Drill rig outsourcing

- **Tender for 90 wells** to attract 15 outsourced rigs – tender announced on **27 October 2016**
  - Structured as 2+2+2 (two specific wells with option for 4 additional wells)

## Drilling services

- To support outsourced drilling UGV is planning to tender **key drilling services** – tenders to be conducted in **November-December 2016**
  - (1) Drill bit service, (2) Drilling mud service, (3) Cementing service, (4) MWD/LWD service, (5) Completion service, (6) Coring service, (7) Mud logging service, (8) Drilling jar rent service, (9) Mud motor rent service, (10) Drilling supervising service

## WO rig / services outsourcing

- Tenders for **WO rigs to conduct ~80 complex operations**, to be announced by the **end of 2016**
- **WO / coil-tubing services** tenders will be conducted in 2017 to cover needs for hydrofracking operations

## Hydrofracking

- Four tenders for the total of **100 HF operations** completed, additional tenders will be conducted **during 2017**

## Seismic works

- **2D and 3D seismic works** tenders to be conducted throughout **2017**
  - Over 1 500 km<sup>2</sup> of 3D seismic planned to be done in 2017

# UGV is increasing its cooperation with international companies and financial institutions

## Selected examples

### Equipment

- KATT GmbH
- PAT Process Automation Technologies GmbH
- ThyssenKrupp Mannex GmbH
- GEA Luftkühler GmbH
- INTMA GMBN
- JIANGSU
- NOV Fidmash
- Petrochemical Systems & Technologies Limited
- SIA Lat Chem
- SC Drilling Equipment SRL
- S.C.EURO GAS SYSTEMS S.R.L
- PETAL S.A.
- USA DENIMEX INC.
- Dost Petrol

### Services

- Exalo
- TACROM
- Belarusneft
- Weatherford
- Halliburton

### Financing

- EBRD
- EIB
- KfW

### Technical assistance

- Department of State
- Ministry of foreign affairs of Norway
- PETRAD





# UGV would benefit strongly by complementing its size and scale-up ability with capabilities of market players

Type of player	Current capabilities	Scale in Ukraine	UA scale-up ability	Key considerations
UGV				Capability gaps vs. existing scale, incentive and ability to ramp up production to meet targets
Existing local service contractors				Better capabilities due to specialization vs. limited presence and inability to take up complete projects due to narrow focus
International OFS players				World-class capabilities vs. limited presence and significant country risk, try to avoid asset ownership
Ukraine's private O&G players				Better capabilities vs. very sub-scale and limited incentive / ability to undertake large / risky projects
International O&G companies				World-class capabilities vs. risk aversion, need to rely on OFS market and slow expected ramp-up

**Accelerated development strategy lies in complementing UGV advantages of scale and ramp-up potential with other players' capabilities through service outsourcing and partnerships**

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**THANK YOU**