

Management of Main Gas Pipelines "Cherkasytransgas"  
Branch Company "Ukrtransgas"  
National Joint-Stock Company "Oil and Gas of Ukraine"

**LEAK REDUCTION**

**AT NATURAL GAS COMPRESSOR STATIONS**

**of gas transition system of  
UKRAINE**

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# “Ukrtransgas”

Ukraine is located in the center of Europe and borders Russia the east and Belarus, Poland, Slovakia, Hungary, Romania and Moldova in the west



# “Ukrtransgas”

Gas transition system of Ukraine is the second on capacity in Europe after RAO Gazprom.



# "Ukrtransgas"

branch company

35 thousand km of gas mains

171 compressor stations



# “Ukrtransgas”

Branch Company "Ukrtransgas" is the main « gas bridge » between Russia - the greatest gas extracting country and consumers in the countries of Central and Western Europe.



# "Ukrtransgas"

branch company

190-200 billion m<sup>3</sup> of gas



# “Ukrtransgas”

branch company

management of Main Gas Pipelines

## “Cherkasyransgas”

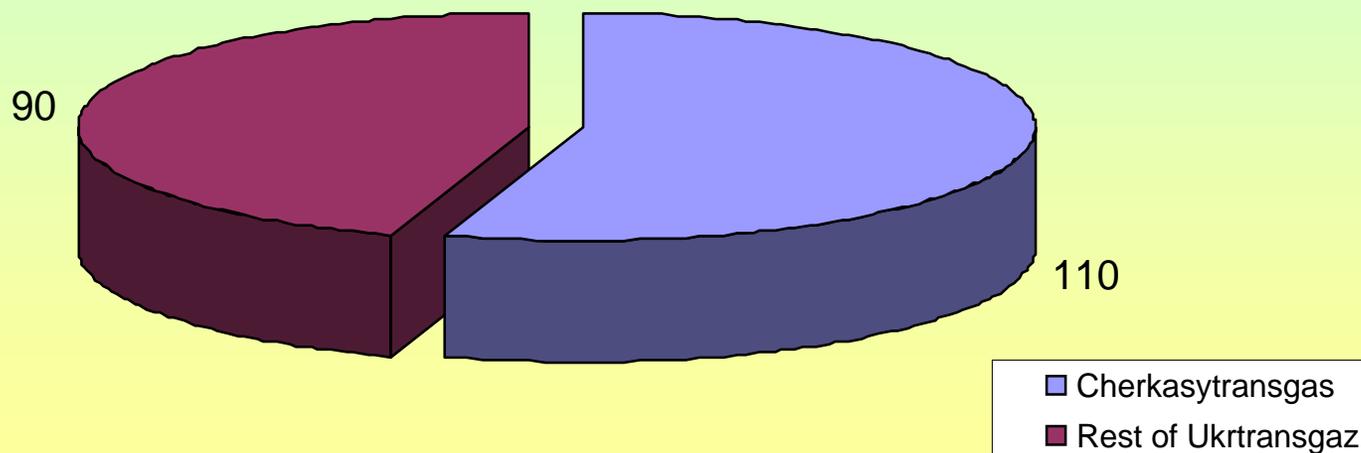
5 thousand km of gas mains

23 compressor stations

100-120 billion m<sup>3</sup> of gas

main office

Comparative Volume of gas transition  
of Ukrtransgas and  
Cherkasytransgas, billion m<sup>3</sup> per year



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**“Cherkasyransgas”**

NARRATIVE PART

## leak detection and measuring



1

## development of leak repair plan



2

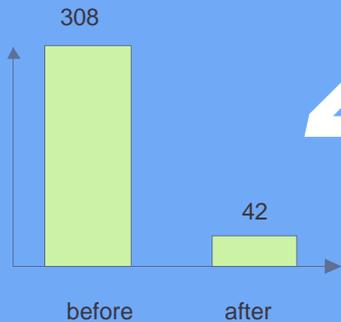
development of leak repair plan  
aimed on elimination  
of methane emissions

leaks detection  
and measuring

**LEAK  
REDUCTION**  
at natural gas  
compressor stations

repair works

## summarizing



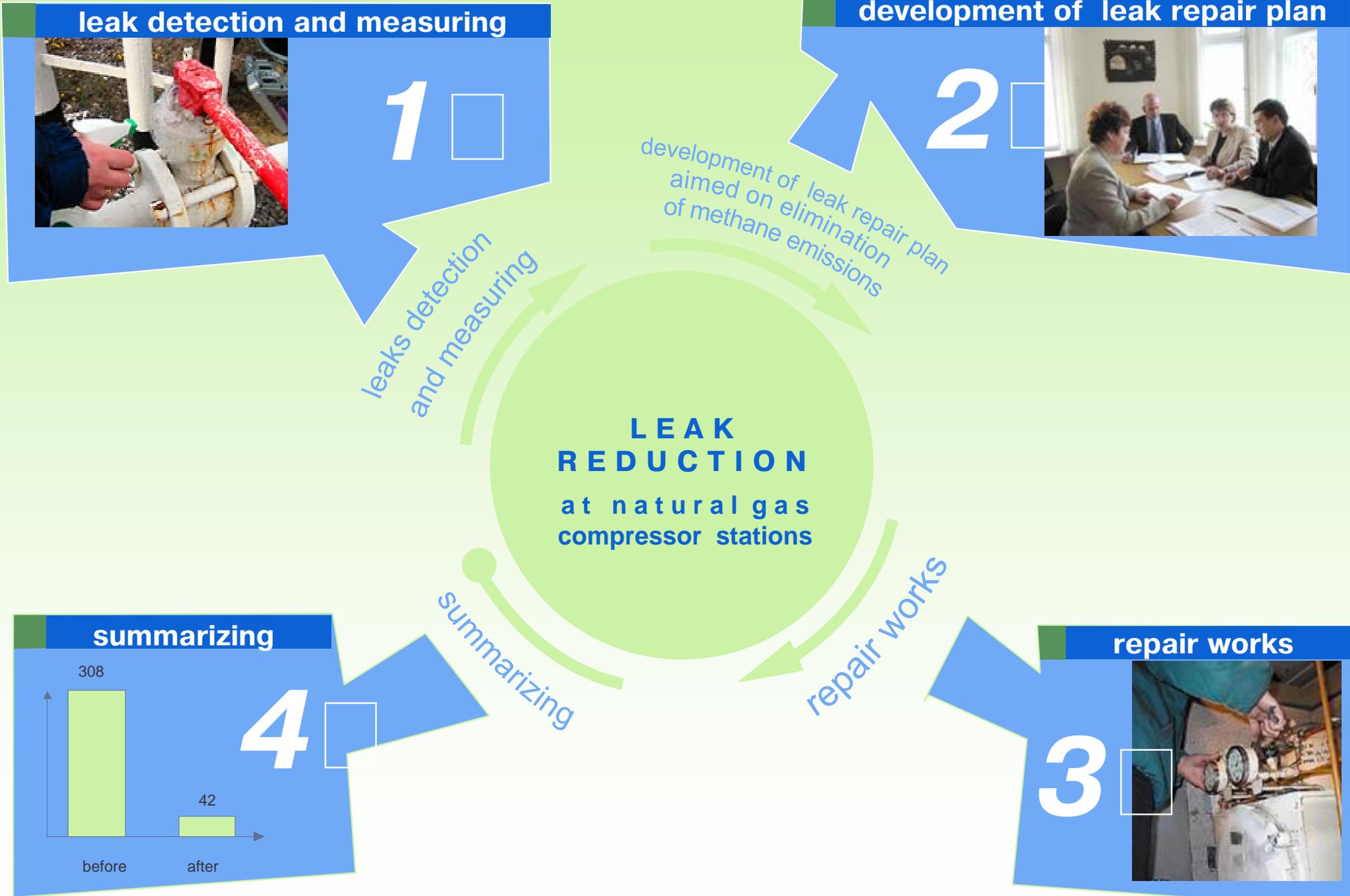
4

summarizing

## repair works



3



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## KREMENCHUK Linear Management

20-100 billion m<sup>3</sup> of gas

1 thousand km of gas mains

3 compressor stations

### Compressor station



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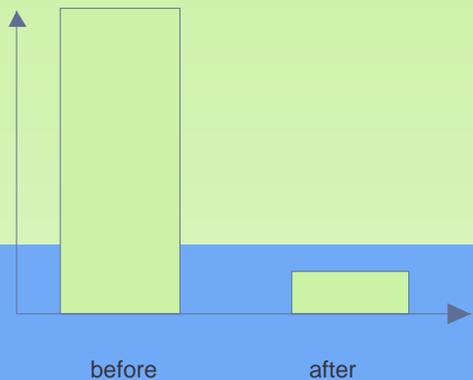
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KREMENCHUK Linear Management

Compressor station

leak detection



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l e a k  
d e t e c t i o n

combination of soap solution and  
natural gas electronic detectors



**l e a k**  
d e t e c t i o n

three measuring techniques

Leak measuring using  
Hi-Flow Sampler

“Vent-Bags”  
method ”

Leak measuring  
using  
anemometer

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**l e a k**  
d e t e c t i o n

# Leak measuring using Hi-Flow Sampler

1



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**l e a k**  
d e t e c t i o n

**“Vent-Bags” method** using  
calibrated bags made of anti-static plastic

2



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l e a k  
d e t e c t i o n

# Leak measuring using anemometer



3

## l e a k d e t e c t i o n

### Results of measurements

**169 leaks** with a **total leakage of 2209 thousand m<sup>3</sup>/year** were found at Zadniprovskaya compressor station.

**112 leaks** with a **total leakage of 749,0 thousand m<sup>3</sup>/year** were found at Kremenchugskaya compressor station.

The carried out analysis has shown, that **70 % of the total leakage** at each site comes **from 20 % of the leaking components**.

## l e a k d e t e c t i o n

### Results of measurements

■ The **total leakage** at two Compressor Stations **was reduced by 1954 thousand of m<sup>3</sup> per year** that makes in money terms 101,3 thousand US dollars per one year at cost of gas of 51,7 US dollars for thousand m<sup>3</sup>.



101,3 thousand US dollars  
per one year

## OUTCOMES OF THE PROJECT

- For the first time in Ukraine was conduct leak measurements using “Indaco” techniques.
- To estimate existing leak rates on equipment of natural gas compressor stations.
- Define the priority of components to be repaired and demonstrate feasibility of such repair
- The modernized “Indaco” instrument for leak measurement was bought at the expense of grant

## OUTCOMES OF THE PROJECT

**Within the project the gas leaks has been measured twice before and after repair.**

**Initial** leak rate measurements have allowed:  
to create leak database.  
develop norms of technological leaks.

Measurements conducted **after repair** have allowed:  
to define efficiency of repair.  
provide the internal monitoring system.

The article about the project is placed on “Ecolinks” site:  
[www.ecolinks.org](http://www.ecolinks.org)

## PROMOTION OF THE PROJECT EXPERIENCE

### Booklet about the project

Implement the experience of "Cherkasytransgas" in all divisions of Branch Company "Ukrtransgas".

For last two years gas leak measurements have been done at 23 compressor stations, linear valves and gas distribution stations, after repair at 8 compressor stations.

In future we plan to conduct measurements at all compressor stations, gas distribution stations and linear valves, to create database for all the leaks.



### Seminar after the project

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**Thank you !**