



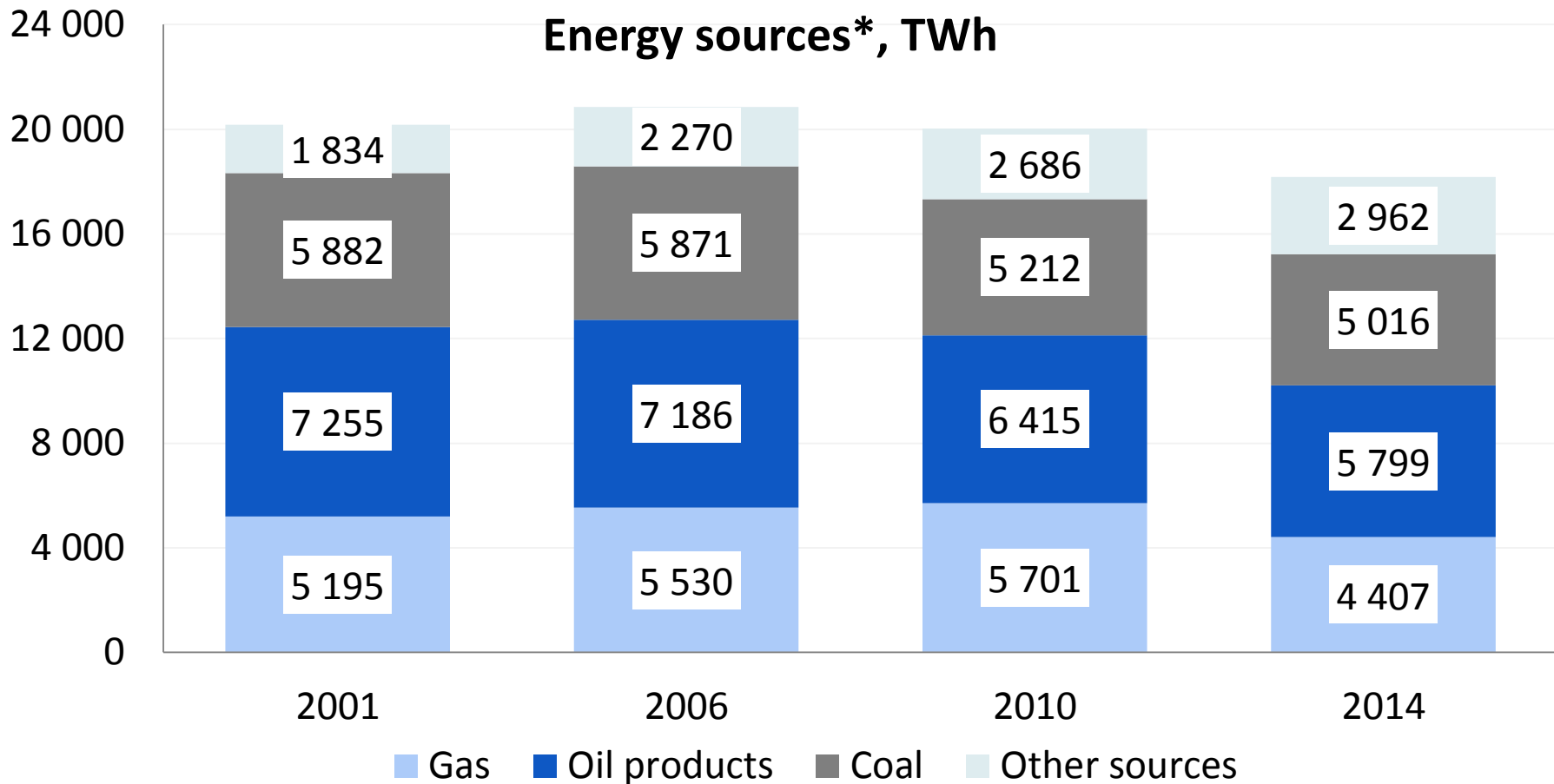
# Natural gas and renewable energy: challenges for gas distribution in Ukraine Kyiv, April 07, 2016

BUILDING PARTNERSHIPS FOR ENERGY SECURITY

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## Energy consumption in the EU



\*Data from Global Energy Statistical Yearbook 2015



## Advantages of natural gas

- Cleanest among fossil fuels: burning gas releases **60% fewer GHG** than coal or fuel oil
- Requires minimal preparation – extraction and delivery (infrastructure already built) requires fewer resources compared to other energy sources
- Stability – does not depend on weather conditions (sun, wind)



## The future of natural gas\*

- Gas-fired power plants are the most flexible and the best complement to variable renewables. Together they will replace coal as fuel for producing electricity while ensuring reduction of GHG emissions as demand for energy increases
- Gas will account for 22% in the total volume of energy sources by 2040, while the global gas consumption will exceed that in 2013 (3 321 bcm)

*\*Prognosis by International Energy Agency*



## Required investments in gas infrastructure:

### > EUR 10bn/year through 2030:

- Replacement of coal with gas and various renewable sources of energy
- Development of gas distribution networks and implementation of gas as fuel for freight and marine transport...
- ... and development of technologies, such as biogas and energy to gas, for storage purposes



## Situation in Ukraine?

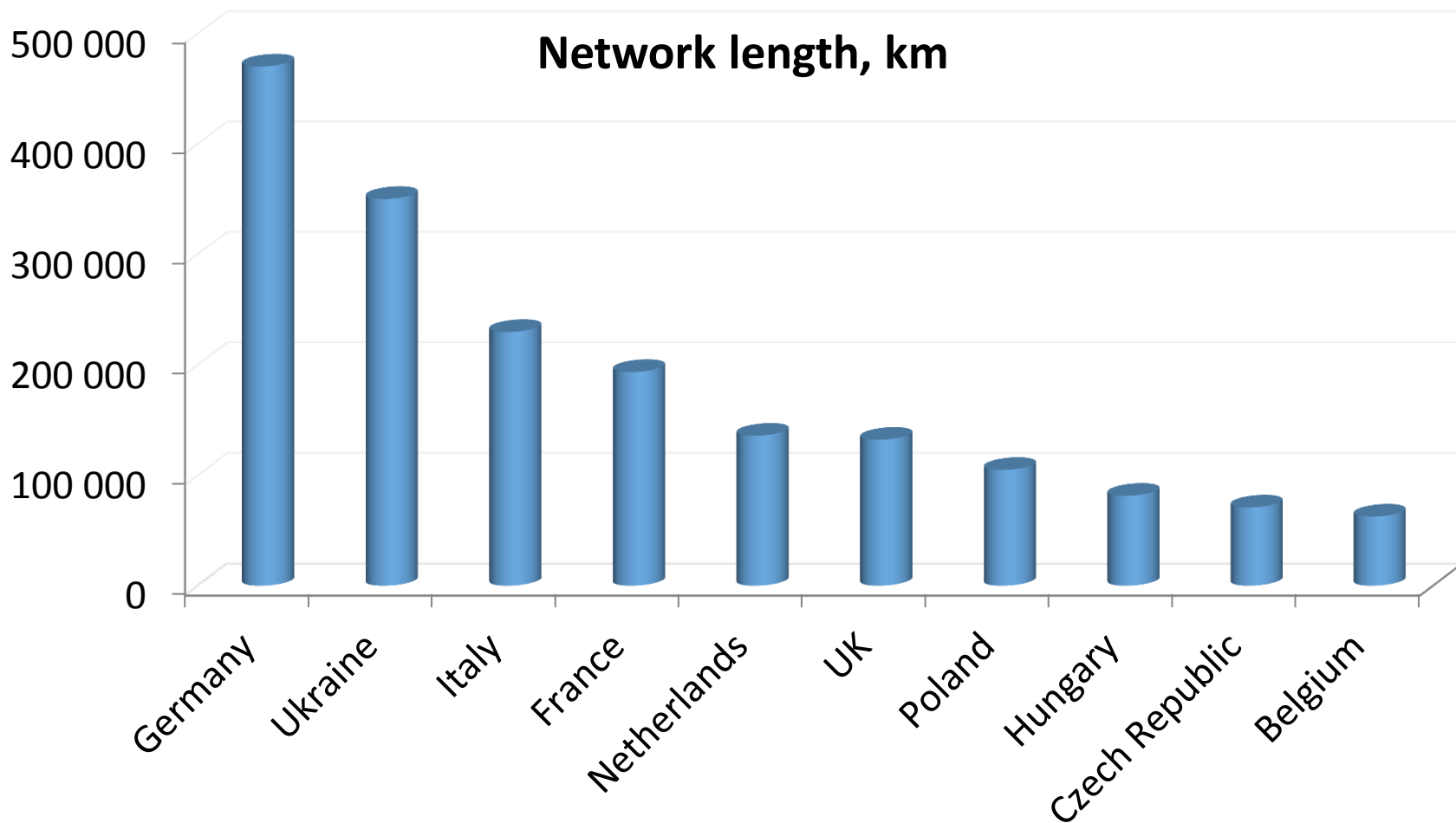


## Gas distribution in Ukraine

- Length of gas distribution networks: **> 350 000 km**
- Number of gas distribution points: **> 60 000**
- Number of gasified apartments: **≈ 12 000 000**
- Urban/rural communities gasification: **78%/28%**
- Number of industry employees: **≈ 60 000**
- Annual gas consumption: **34.9 bcm**



## Ukraine vs. Europe



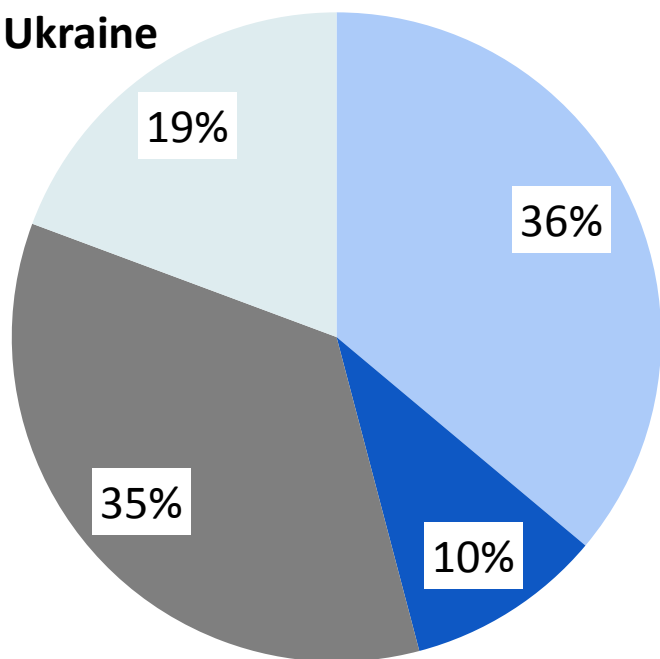




## Ukraine vs. EU

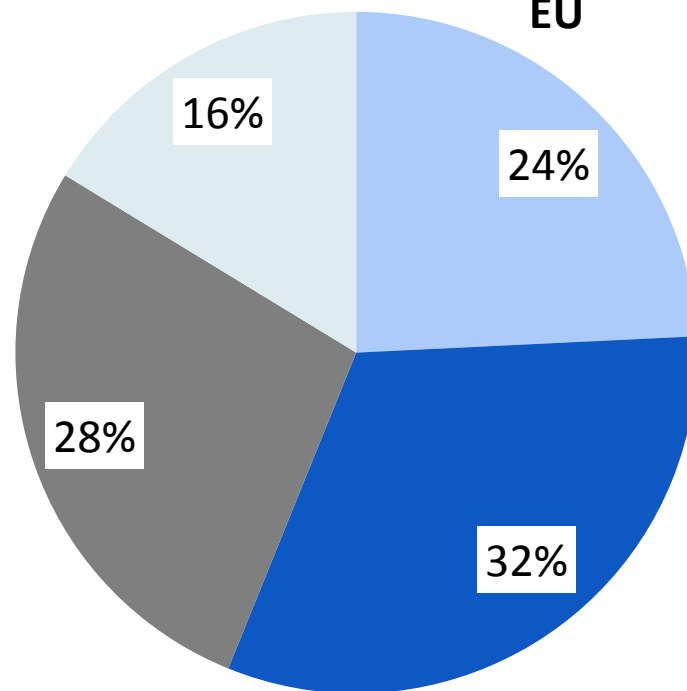
Sources of energy\*, TWh

Ukraine



Renewable sources: 2%

EU



Renewable sources: 16%

\*Data from Global Energy Statistical Yearbook 2015



## Challenges for gas distribution

- Creating conditions for attracting investments into maintenance and development of gas distribution systems through conscious transition to incentive-based regulation
- Installing 3.5 million gas meters for households
- Replacing 2 million gas meters that have exceeded 20 years of service life set by producers
- Installing smart systems for remote collection of gas consumption data
- Improving the effectiveness of existing gas distribution networks through the implementation of modern technologies
- Replacing obsolete gas regulating equipment in households
- Reducing technological losses through installation of modern gas equipment and devices
- Conducting comprehensive inventory and certification of facilities and equipment of the gas distribution systems based on modern geographic information systems
- Ensuring the development of territories through comprehensive gasification of urban and rural communities based on long-term (10-year) strategy
- Facilitating connection of biogas producers to gas distribution systems



**Association of Gas Market of Ukraine**

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**Thank you for your attention!**