


# Development of Coalbed Methane in Russia: First Results and Prospects



# OUTLINE

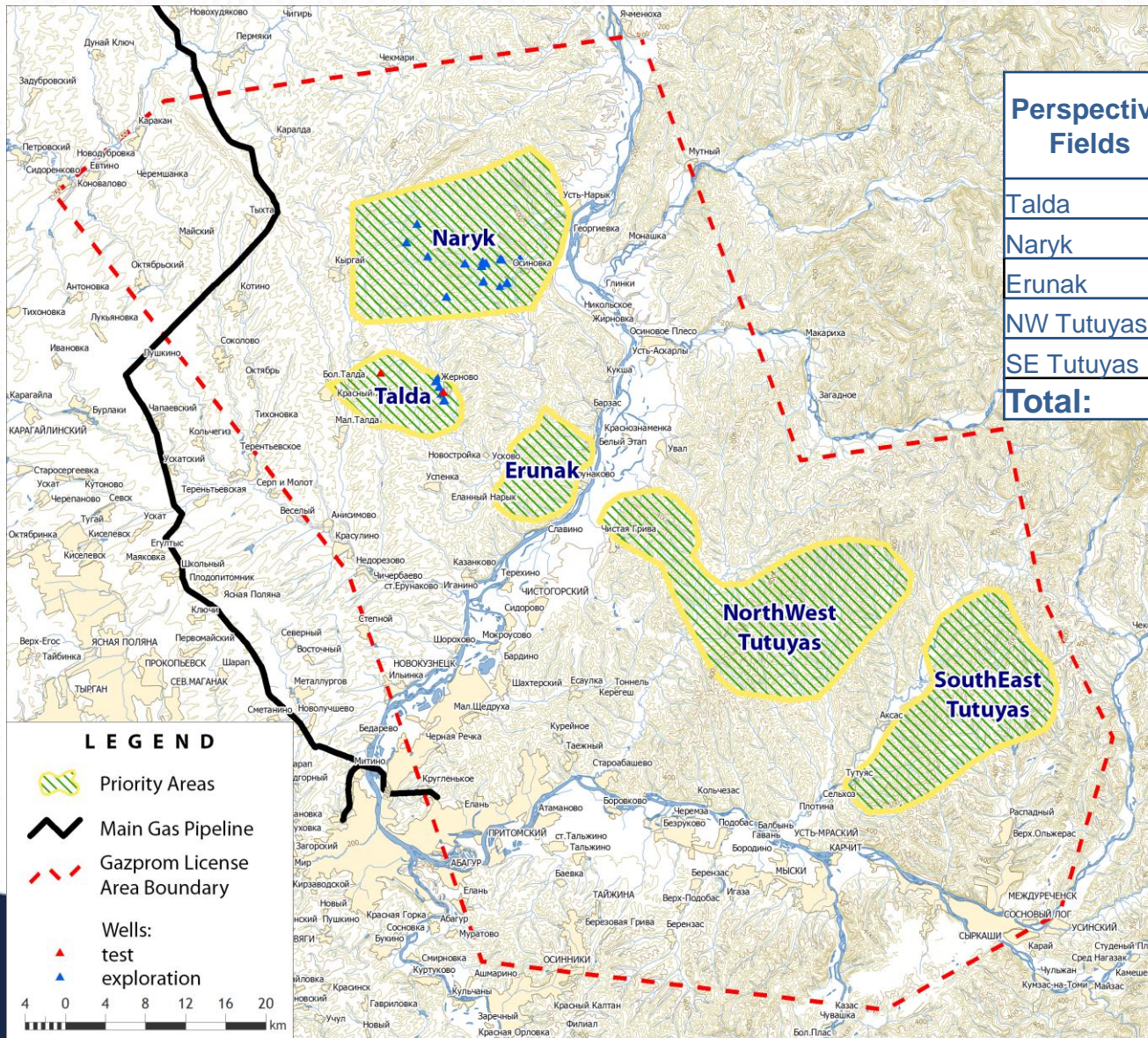
1. CBM Resources in Russia: volumes, location, and development state
  2. GAZPROM CBM License Area in the Kuznetsky Coal Basin:
    - Resources, Reservoir Geo-Physical characteristics;
    - Pilot Test Programme Results;
    - Modern Exploration and Development State;
    - Outlook for Commercial CBM Production;
  3. Government Support of the CBM Project Implementation
  4. Conclusions
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# CBM Resources in Russia



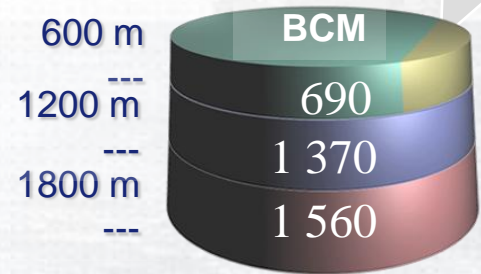


# Gazprom License Area: Resources and Perspective Fields



Perspective Fields	Area, km <sup>2</sup>	CBM Resources, BCM	Resource Density, BCM/km <sup>2</sup>
Talda	74	88,4	1,2
Naryk	197,9	409,6	2,1
Erunak	77,7	56,5	0,7
NW Tutuyas	300	216,2	0,7
SE Tutuyas	230	197,2	0,9
<b>Total:</b>	<b>879,6</b>	<b>967,9</b>	<b>1,12</b>

350 BCM within mine fields

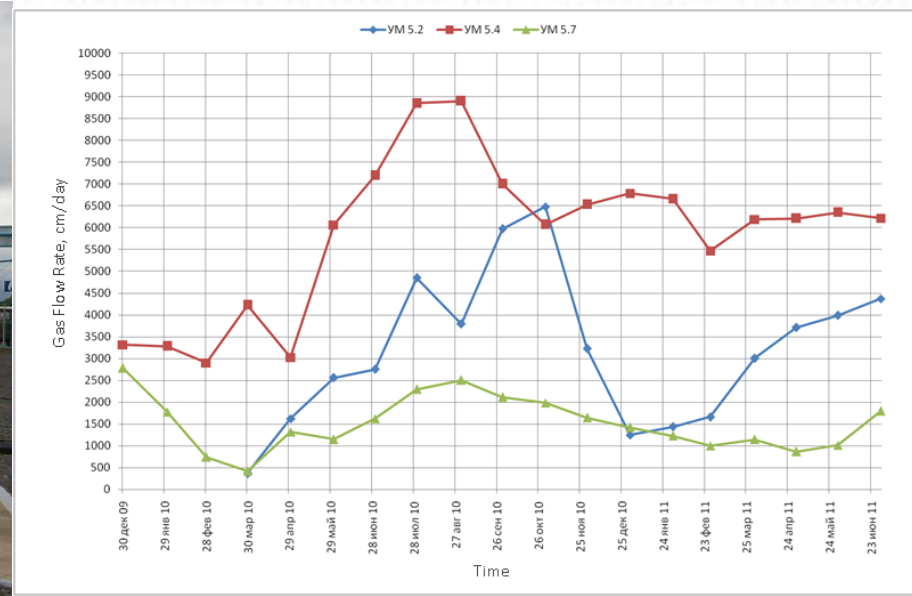




## Geo-Physical Reservoir characteristics

Characteristics	Talda Field	Naryk Field
Age	Permian	Permian
Rank (Vitrinite Refl., %)	Bituminous (0,72 – 1,2)	Bituminous (0,72 – 1,2)
Production interval, m	350–950	300–1200
Thickness, m	1–4 (average: 2,5)	1–10,5 (average: 5)
Seams	12	17
Gas content, cu-m/t	10–27	10–25
Permeability, mD	1–10	1–5
Gas Rate, Mcu-m/day	1–11	1–5
Water Rate, cu-m/day	3–99	3–50

# Pilot Test Programme





# Pilot Production Project in the Talda Field



Number of Wells	20
Production Volume	30 MMcu-m/year
CBM Utilization	<ul style="list-style-type: none"><li>- Power Station (2-10 MW)</li><li>- Autonomous Gas Filling Compressor Station</li><li>- mini LNG Plant (~ 1 ton /hour)</li></ul>



# Planned Commercial CBM Production in the Naryk Field

2010-2013:

Exploration works and test production  
from 30 exploration wells

2013-2014:

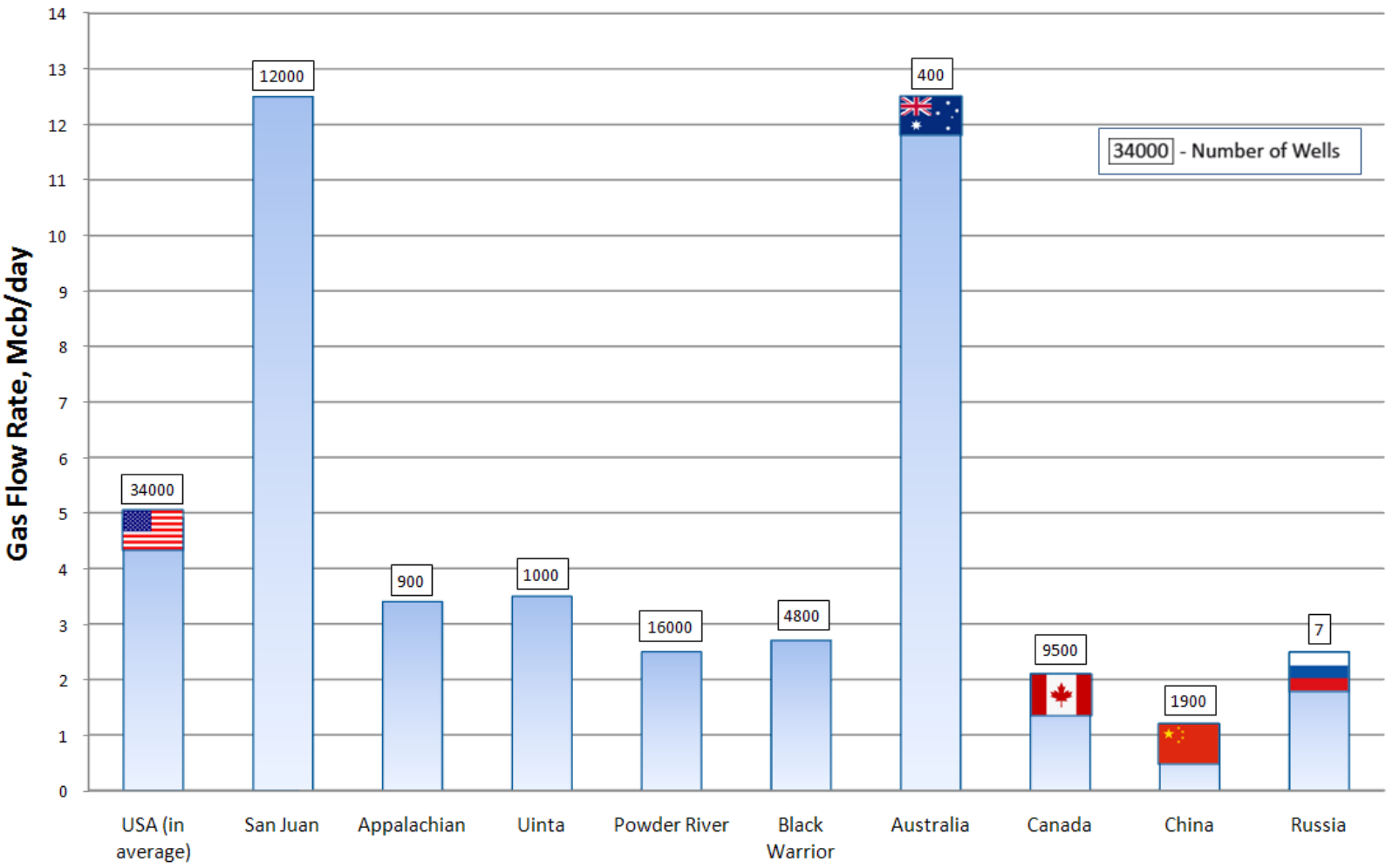
Preparation and Improvement of  
Feasibility Study



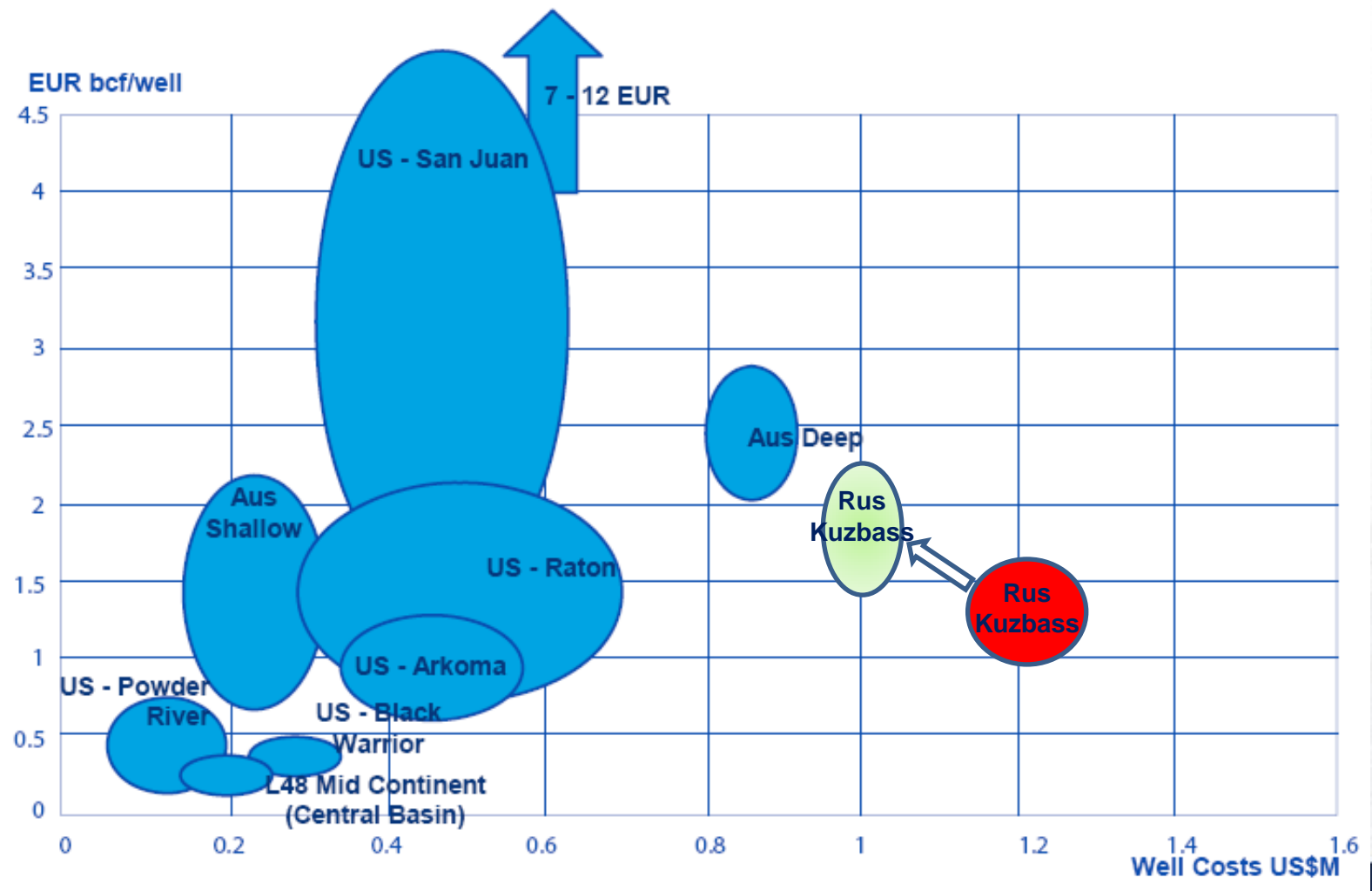
<b>Number of Wells</b>	<b>~1000</b>
Production Volume	1-1.5 Bcm per year
CBM Utilization	- Boilers and Power Stations - Industrial and commercial customers - Households



# World Average CBM Well Gas Flow Rates



# CBM Well costs



Source: WoodMac, BP



# Government Support of the CBM Project Implementation

CBM production is stimulated by;

- Exemption from assessed tax;
- Reduction of income tax rate;
- Exemption from royalty (discussed).

Additionally to increase safety of mine work

- Coal producers are obligated to extract CBM before underground coal recovery if gas content exceeds 13 cu-m per ton
- In doing so, they recoup the cost of drilling, completing and connecting wells from royalty payment

# Conclusions

1. Russia possesses huge CBM resources, but most of them are undeveloped and located in hard-to-reach sparsely populated areas
2. Kuzbass with CBM resources of 13 000 BCM is very attractive development option due to advantageous position and the fact it has been thoroughly studied
3. Commercial development of CBM resources in Kuzbass is mainly restrained by:
  - Large proven reserves in conventional gas deposits;
  - Low economic efficiency;
  - Uncertainty of transition to large-scale production
4. Basic conditions promoting CBM project implementation are:
  - Optimization of construction cost;
  - Technology improvement to increase gas rate;
  - Government support.



**Thank You for Attention!**

