



## **First Corporate Project of Greenhouse Gas Emissions Reduction in Russian Coal Industry**

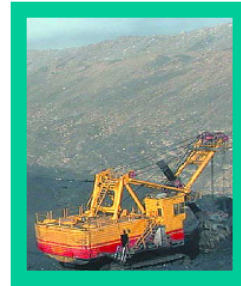
**CSLF Technical Group Meeting  
April 3, 2006**

**Dmitry V. Volokhov  
QHSE & Knowledge Management Director  
OSC «Siberian Coal Energy Comany»**

## SUEK Business in 2005



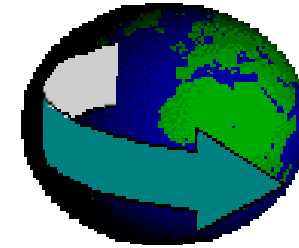
84,4 mln MT  
of annual production



44700 employees in  
8 regions



37% of the Russian  
steam coal market



Export to 30 countries  
18,7 mln MT

**SUEK – strategic investor to energy generating companies**

COMPANY	Installed capacity, MW
KuzbassEnerg	4 797
AltaiEnerg	784
KrasnoyarskEnerg	2 188
OmskEnerg	1 630
BuryatEnerg	140
ChitaEnerg	513
KhabarovskEnerg	2 125
DalEnerg	1 174
AmurEnerg	499
YakutsEnerg	618
LUTEK	1 467
<b>TOTAL</b>	<b>15 935</b>



## SUEK Environmental Policy – GHG related quotes



- ... to minimize environmental impact on the atmosphere during underground coal mining and coal-based power generation processes
- ... utilization and disposal of greenhouse gases are the principles for sustainable development of the Company



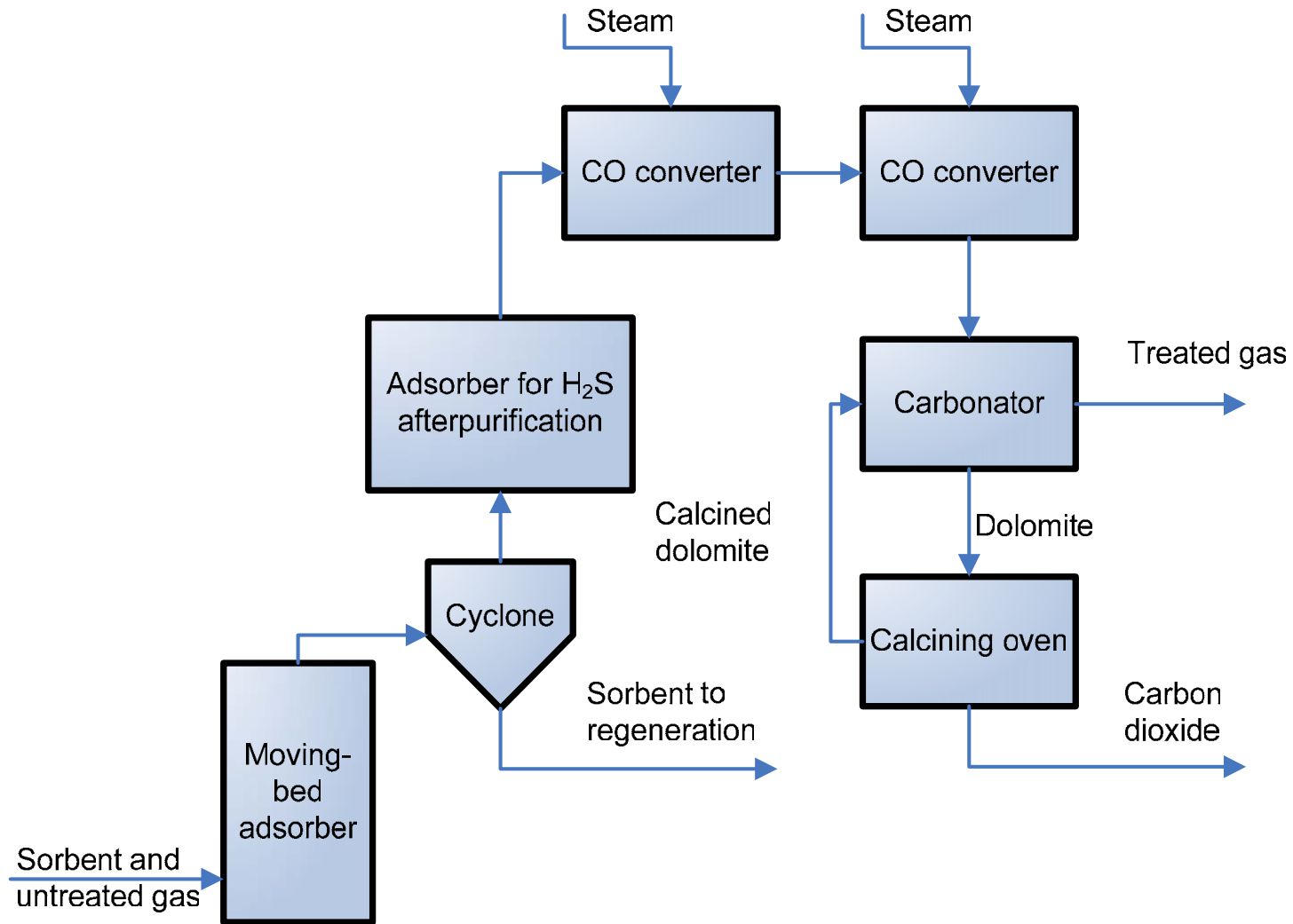
## **Goals of SUEK integrated innovation projects**

- **Reduction of carbon dioxide emission during power generation**
- **Utilization of mine methane captured during underground coal mining**
- **Extraction of CO<sub>2</sub> from producer gas, gas of underground gasification and flue-gases.**
- **Utilization of extracted CO<sub>2</sub> by:**
  - **Storage of CO<sub>2</sub> in geological structures damaged during the process of coal mining and in liquidated mines**
  - **Injection of CO<sub>2</sub> in the coal seams for stimulation of methane extraction**
  - **Reuse of CO<sub>2</sub> during underground gasification of the coal**

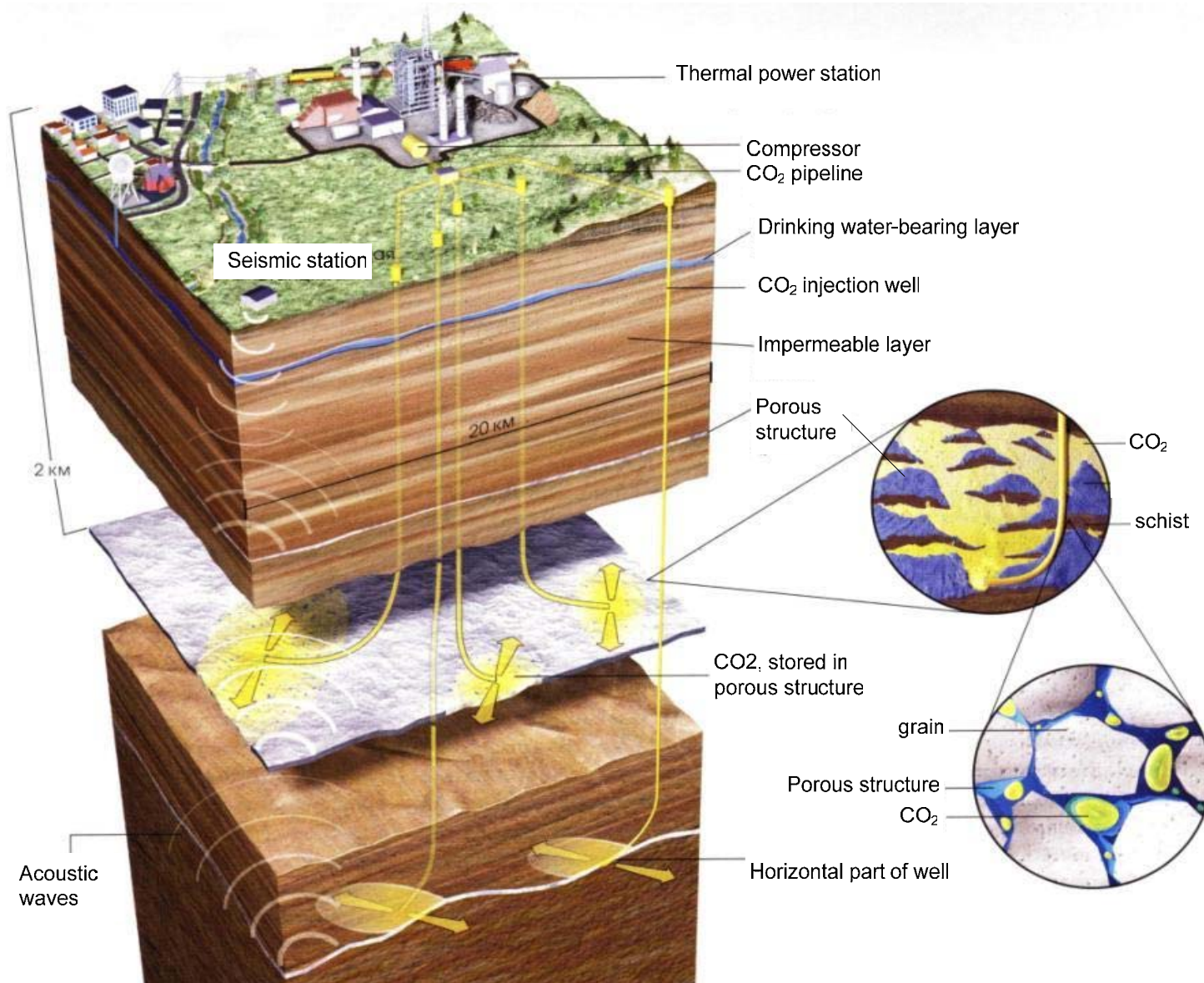
**Integration of research and technological projects targeted reduction of Greenhouse Gas Emissions up to 100 mln m<sup>3</sup> / year**



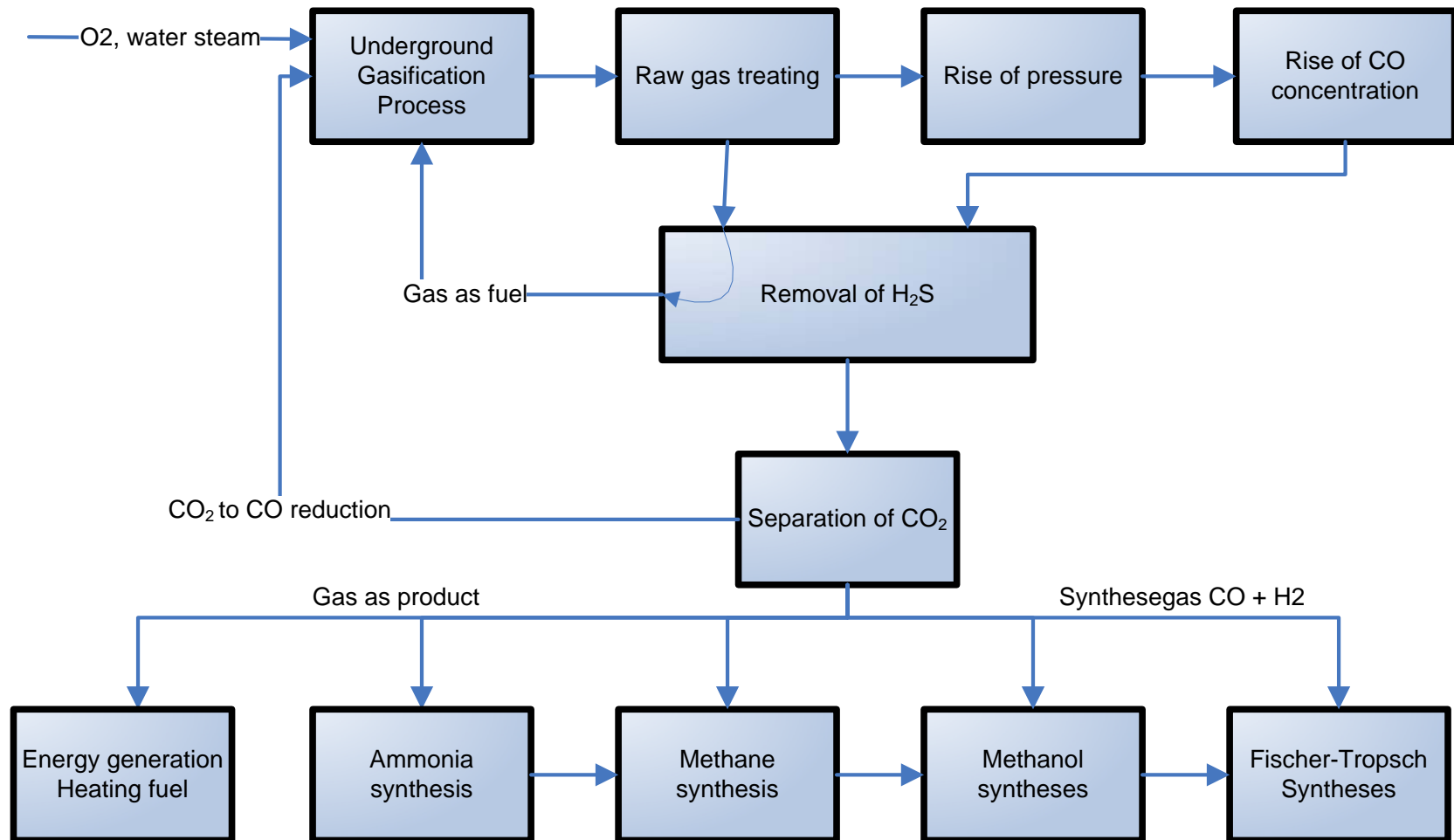
## Extraction of CO<sub>2</sub> from producer gas, gas of underground gasification and flue-gases - “Dry method”



# Use of and storage of CO<sub>2</sub> in geological structures

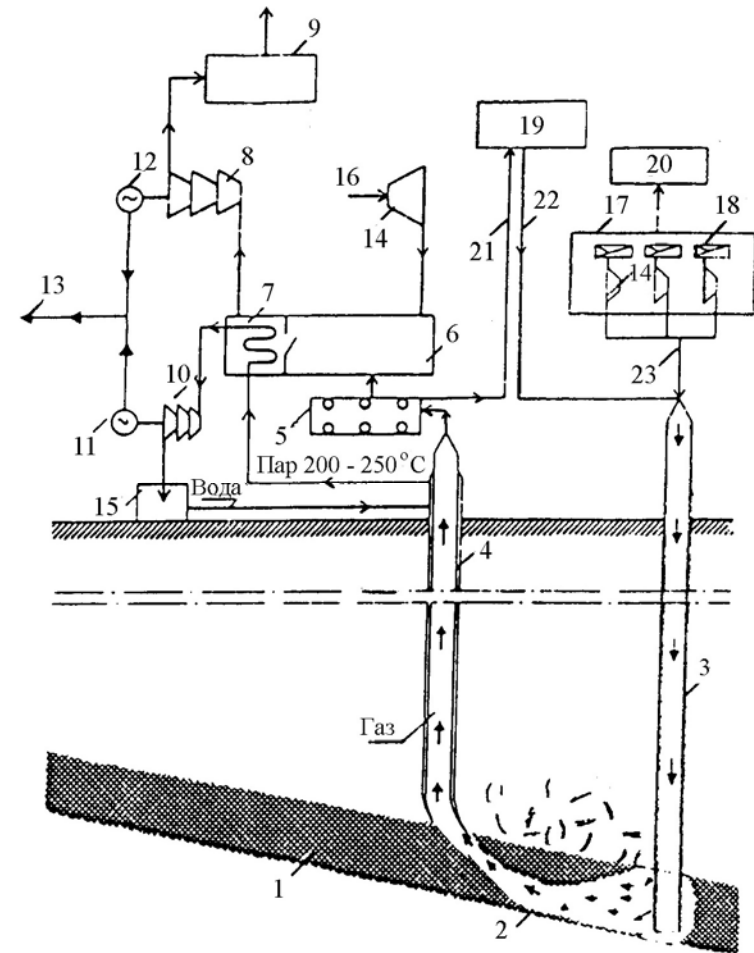


## Alternative schemes of gasification gas use



## Scheme of power and technological complex on underground gasification gas

1. Coal seam
2. Underground gas generator
3. Ignition and force wells
4. Gas observation wells with recuperative heat utilizer;
5. Gas cleaning units
6. Heater under pressure
7. Overheating of steam from utilization well
8. Gas turbine
9. Heat utilizer
10. Steam turbine
11. AC generator
12. AC generator
13. Power grid
14. Turbocharger
15. Steam condenser
16. Air
17. Oxygen storage
18. Oxygen distribution units
19. Steam boiler-room
20. Nitrogen producing installation
21. Low-cal gas
22. Steam under the pressure
23. Oxygen under the pressure







## Thank You

**Siberian Coal Energy Company (SUEK)**

7/22 Derbenevskaya nab.,

Moscow, Russia

Tel.: +7 (095) 795-2538

Fax: +7 (095) 795-2542

E-mail: [office@suek.ru](mailto:office@suek.ru)

[www.suek.ru](http://www.suek.ru)