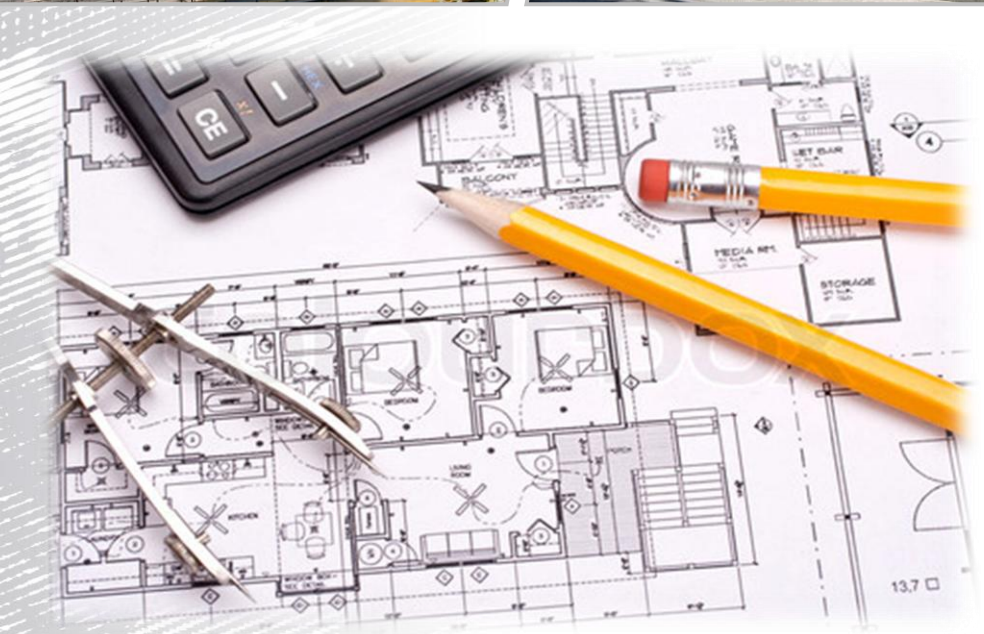




Limited Liability Company OGNEUPORKOKSERVIS

Technical Assistance in Construction, Upgrading and Repairs
of Coke Oven Batteries



Moscow, 2021

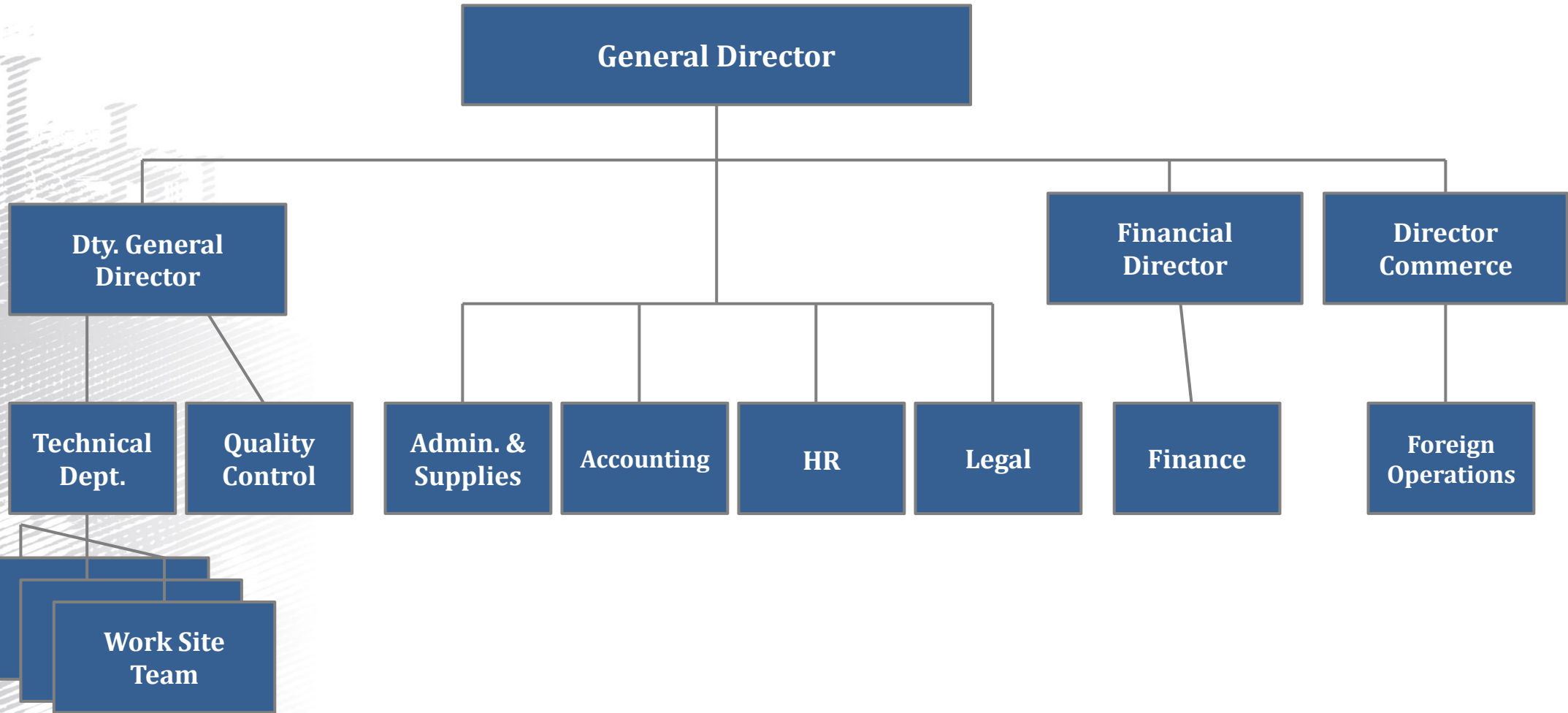


- ❖ OKOS was founded in April, 1993
- ❖ KOKSOKHIMMONTAZH is our parent Company
- ❖ Our Mission:
 - Rendering highly professional engineering & consulting services for Coke and By-Product plants;
 - working out the most efficient technical solutions for our Customers, in particular by joining efforts of professional players in the industry: R&D institutes, manufacturers of machines and equipment for coke ovens, producers of refractory materials, and others.





Company's Organogram





QUALITY, HEALTH AND LABOUR SAFETY POLICIES

- ❖ Quality Management System complies with **ISO 9001:2015**
- ❖ The QMS Certificate was issued by **TÜV International Certification (TIC), Germany.**

- ❖ Health Protection & Labour Safety Management System complies with **ISO 45001:2018**
- ❖ The respective certificate was issued by **TÜV International Certification (TIC), Germany.**

CERTIFICATE



for the management system
according to ISO 9001:2015

The proof of the conforming application with the regulation was furnished and in accordance with certification procedure it is certified for the company



Limited Liability Company
"OGNEUPORKOKSSERVIS"
Legal address: Maly Tolmachevsky Lane, 8/2
Moscow 119017, Russia
Real address: 3-rd Khoroshevsky proezd, 1/1
Moscow 123007, Russia

Scope

Technical assistance and supervision activities for construction, repair and operation work of coke ovens and other industrial ovens

Certificate Registration No.: TIC 15 100 42150 Valid until: 2023-08-03
Valid from: 2020-08-04

Audit Report No.: 3330 247E S0

This certification was conducted in accordance with the TIC auditing and certification procedures and is subject to regular surveillance audits.

TÜV Thüringen e.V.
Certification body for
systems and personnel



Moscow, 2020-08-04



Original certificates
are branded with a hologram.

This certificate was created by the critical location of TÜV Thüringen e.V. in Moscow.
Interoffice TÜV in Verbund mit TÜV Thüringen, Architekt-Wassow-Strasse 33, 17393 Moskau, Russische Föderation

The current validity can be demanded at our homepage: www.tuev-thueringen.de
Zertifizierungsstelle des TÜV Thüringen e.V. • Ernst-Ruska-Ring 6 • D-07745 Jena • ☎ +49 3641 399740 • ✉ zertifizierung@tuev-thueringen.de

CERTIFICATE



for the management system
according to ISO 45001:2018

The proof of the conforming application with the regulation was furnished and in accordance with certification procedure it is certified for the company



Limited Liability Company
"OGNEUPORKOKSSERVIS"
Legal address: Maly Tolmachevsky Lane, 8/2
Moscow 119017, Russia
Real address: 3-rd Khoroshevsky proezd, 1/1
Moscow 123007, Russia

Scope

Technical assistance and supervision activities for construction, repair and operation work of coke ovens and other industrial ovens

Certificate Registration No.: TIC 15 118 20178 Valid until: 2023-08-03
Valid from: 2020-08-04

Audit Report No.: 3330 247E S0

This certification was conducted in accordance with the TIC auditing and certification procedures and is subject to regular surveillance audits.

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Certification body for
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Moscow, 2020-08-04



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❖ We do our best to meet the requirements of our customers and partners to the fullest possible; we also aim at making our services more market-competitive.

OUR PARTNERS:



Koksokhimmontazh CJSC, Russia
Holding Company



Eastern Coal & Chemicals Research Institute
(aka VUHIN), Yekaterinburg, Russia
Coal Research Institute



KOKSOPROJEKT Sp.z.o., Zabrze, Poland
Research & Design Institute



HUTNI PROJECT Frydek-Mistek a.s., Czech
Research & Design Institute



DINUR OJSC , Pervouralsk, Russia
Producer of Silica Refractories



OGNEUPORY JSC, Bogdanovichi, Russia
Refractories Producer



Borovichy Refractories Plant, Borovichy, Russia
Refractories Producer



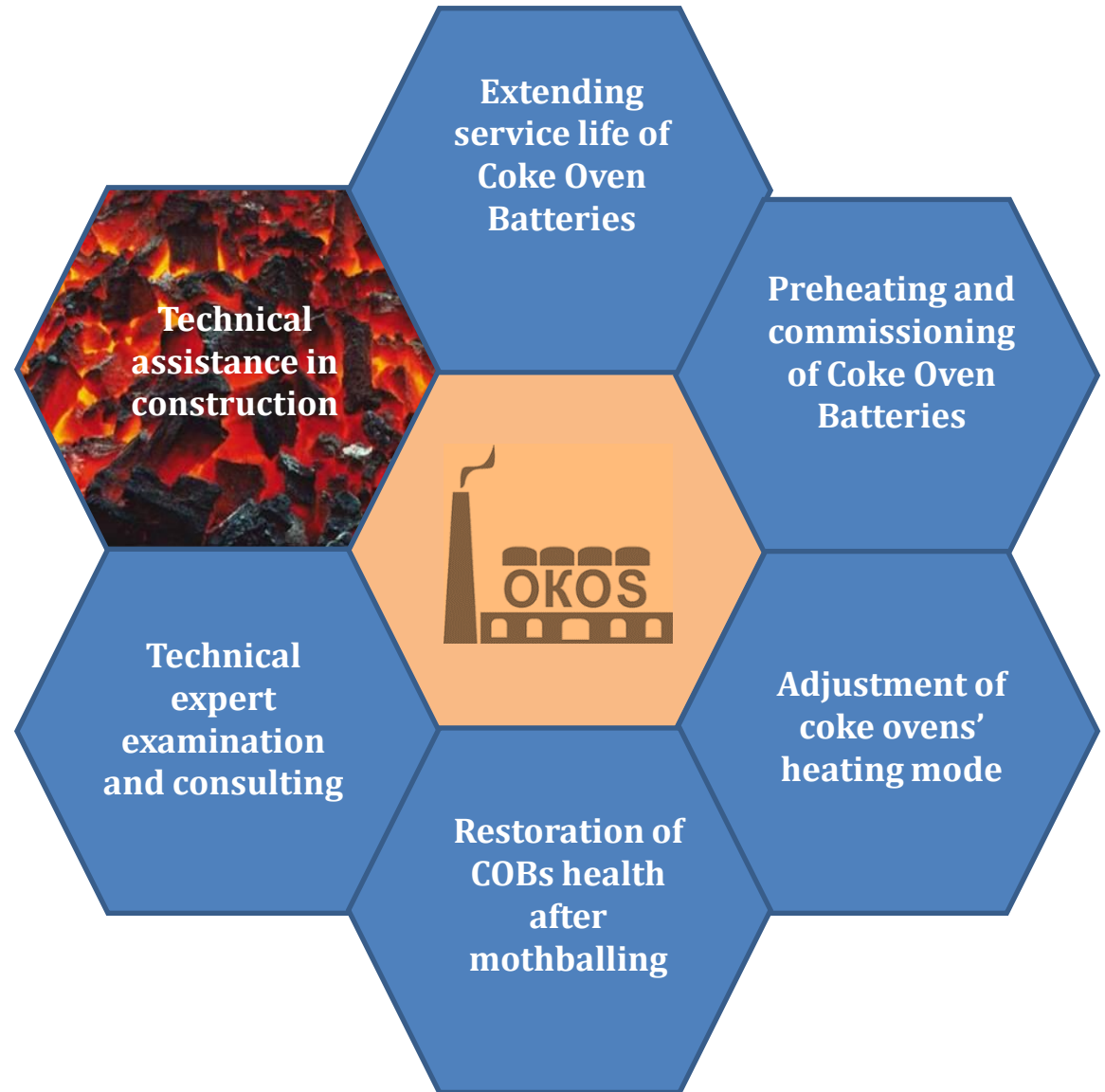
FIB Services International, Luxemburg
Ceramic welding technologies supplier
(Strategic partner in Russia and Kazakhstan)



NPO Megatek LLC, Dzerzhinsky, Russia
Materials & equipment for ceramic welding

TECHNICAL ASSISTANCE IN CONSTRUCTION

- ❖ Supplying refractories, various materials and process equipment
- ❖ Construction and installation work
- ❖ Technical supervision
- ❖ Commissioning of coke oven batteries and achieving their rated operation parameters



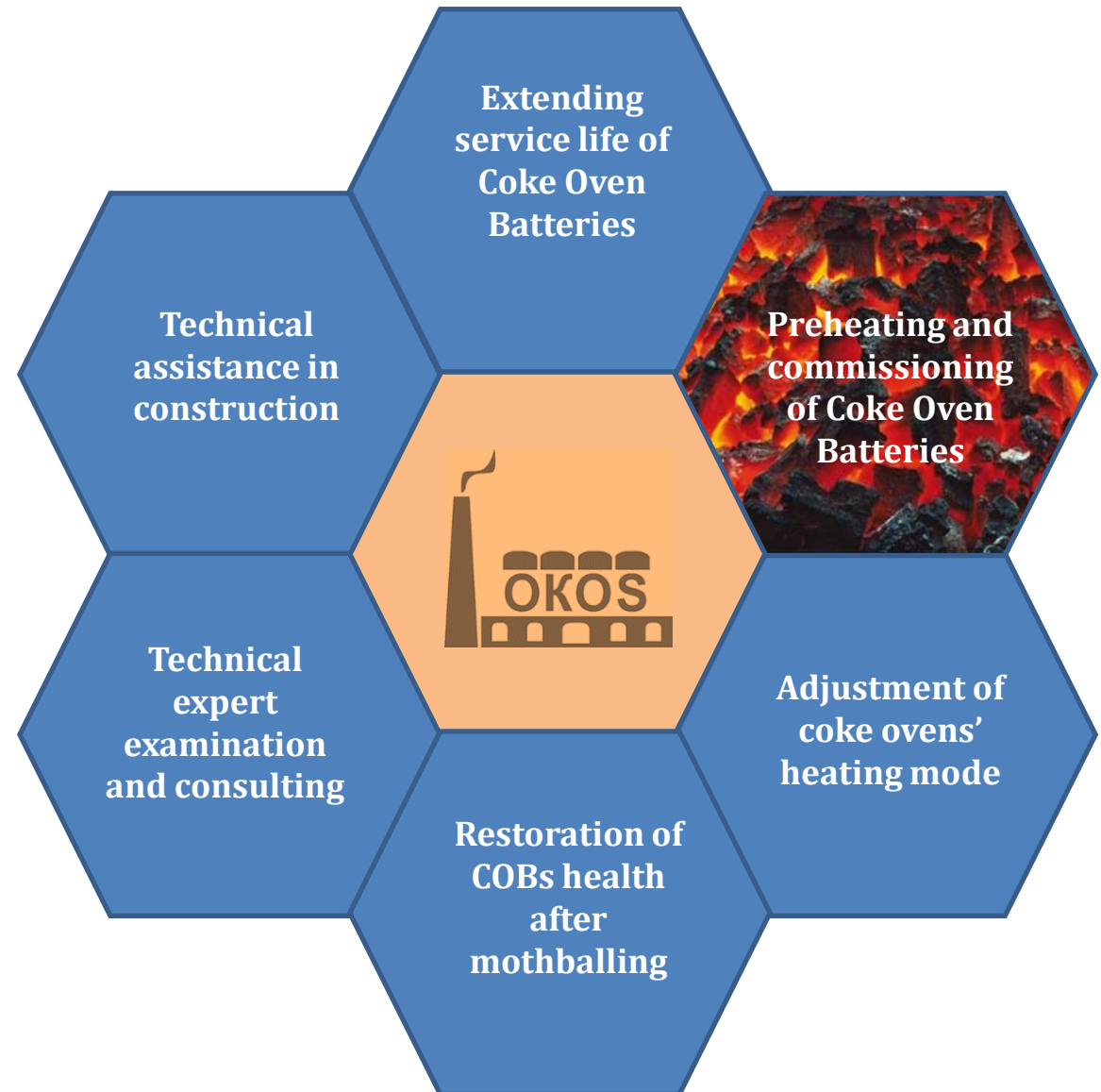
EXTENDING SERVICE LIFE OF COKE OVEN BATTERIES

- ❖ Rebricking of heating walls to various depths
- ❖ Repairs of corbel area and regenerator area, incl. replacement / cleaning of the regenerator checker bricks
- ❖ Repairs and replacement of coke oven process equipment
- ❖ Ceramic welding of brickwork
- ❖ Supervision of COB facilities' operation



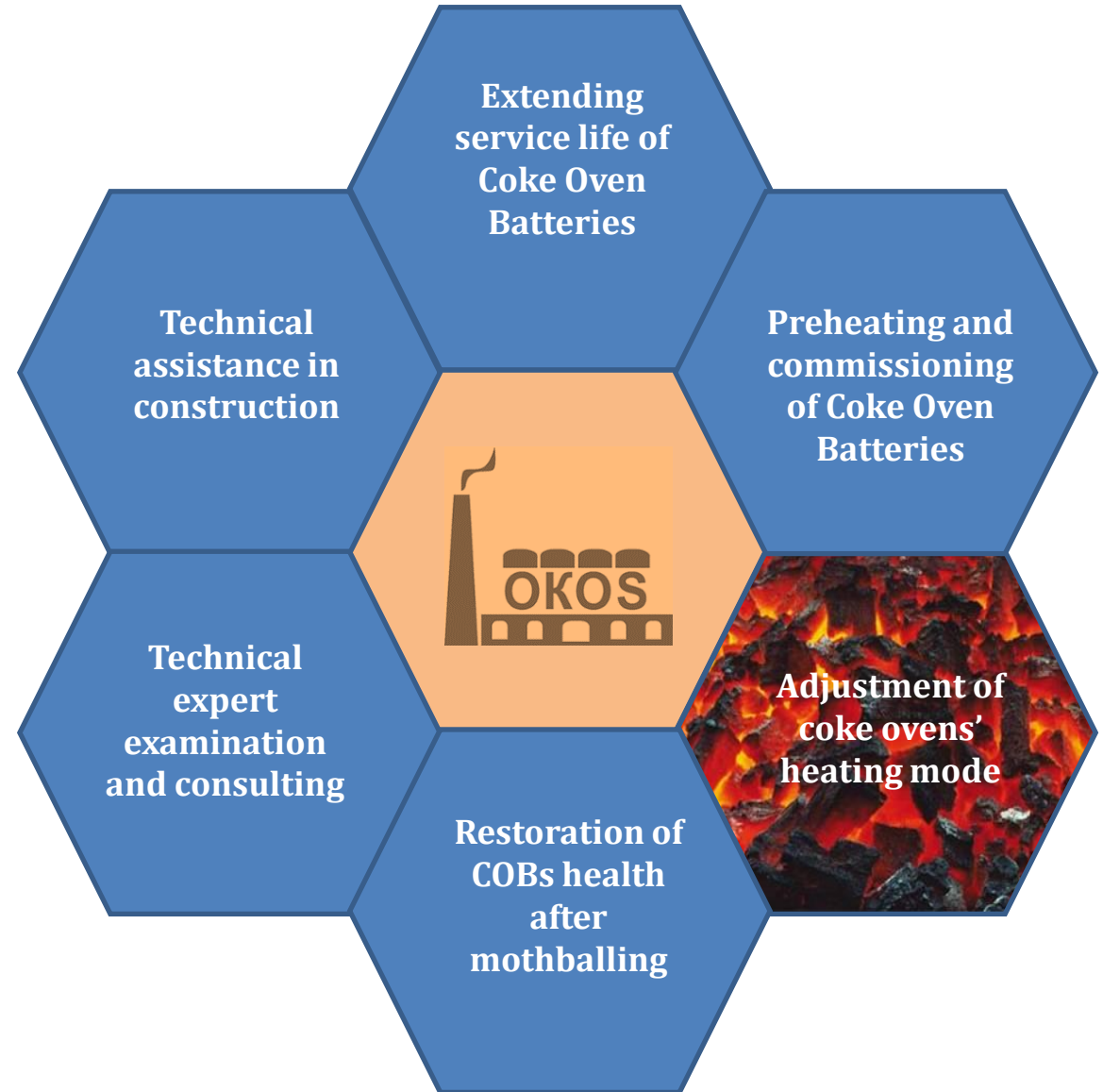
PREHEATING & COMMISSIONING OF COKE OVEN BATTERIES

- ❖ Preheating of coke oven batteries using any gas fuel;
- ❖ Switching a battery over to the permanent heating mode;
- ❖ Commissioning of a battery and first coke pushing;
- ❖ Admitting the coke oven gas into Plant's pipeline system; starting up the process units/equipment;
- ❖ Achieving COB's rated output capacity and adjusting COB's heating mode



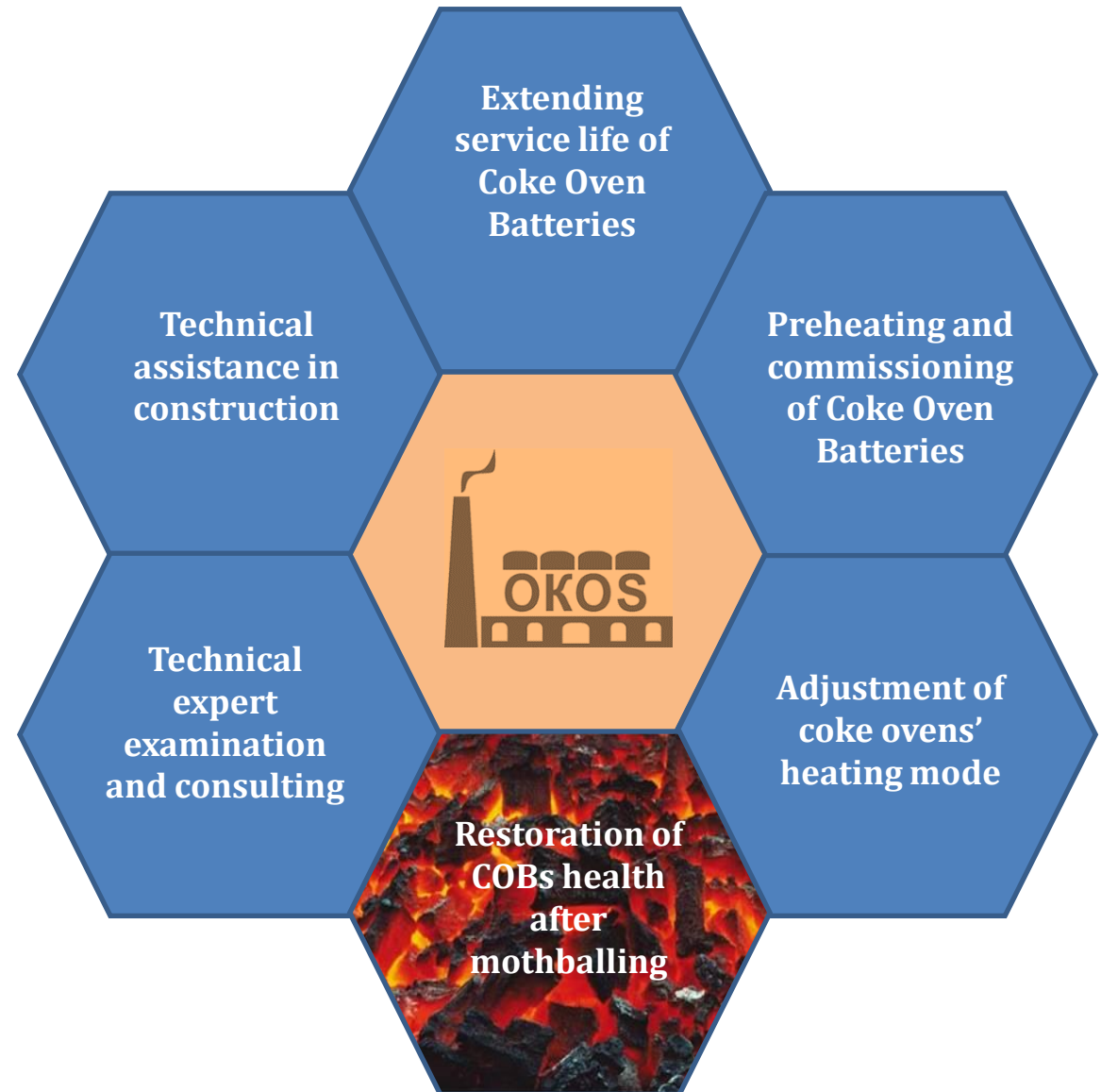
ADJUSTMENT OF COKE OVENS' HEATING MODE

- ❖ Monitoring the coke ovens temperature range
- ❖ Monitoring the coke ovens hydraulic mode
- ❖ Adjusting distribution of heating gas flow and air flow through the heating walls



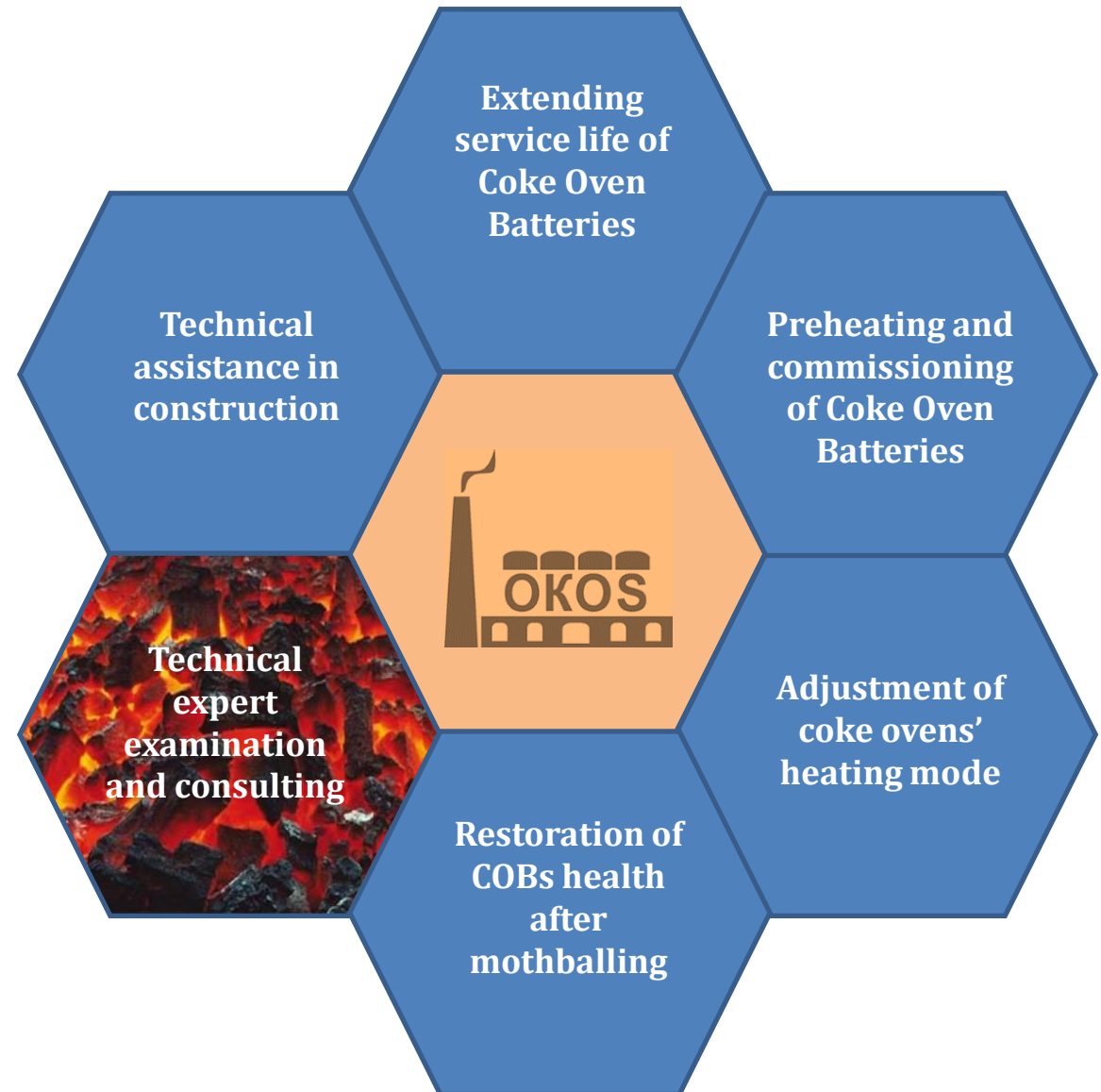
RESTORATION OF COKE OVEN BATTERIES' HEALTH AFTER MOTHBALLING

- ❖ Technical survey of coke oven battery
- ❖ Cold repairs of refractory brickwork of ovens and equipment of coke oven battery
- ❖ Drying, pre-heating and putting COB into operation
- ❖ Hot repairs of coke ovens' refractory brickwork by ceramic welding and gunniting
- ❖ Adjustment of coke ovens' heating mode



TECHNICAL EXPERT EXAMINATION AND CONSULTING

- ❖ Expert review of design documentation
- ❖ Technical survey / inspection of coke production facilities and issuing an expert report
- ❖ Expert appraisal of industrial safety
- ❖ Optimization of business processes
- ❖ Developing a package of documents for the operating company: production procedures, process regulations, operating instructions, etc.
- ❖ Training of customer's personnel











Our personnel is
an invaluable asset
to the Company

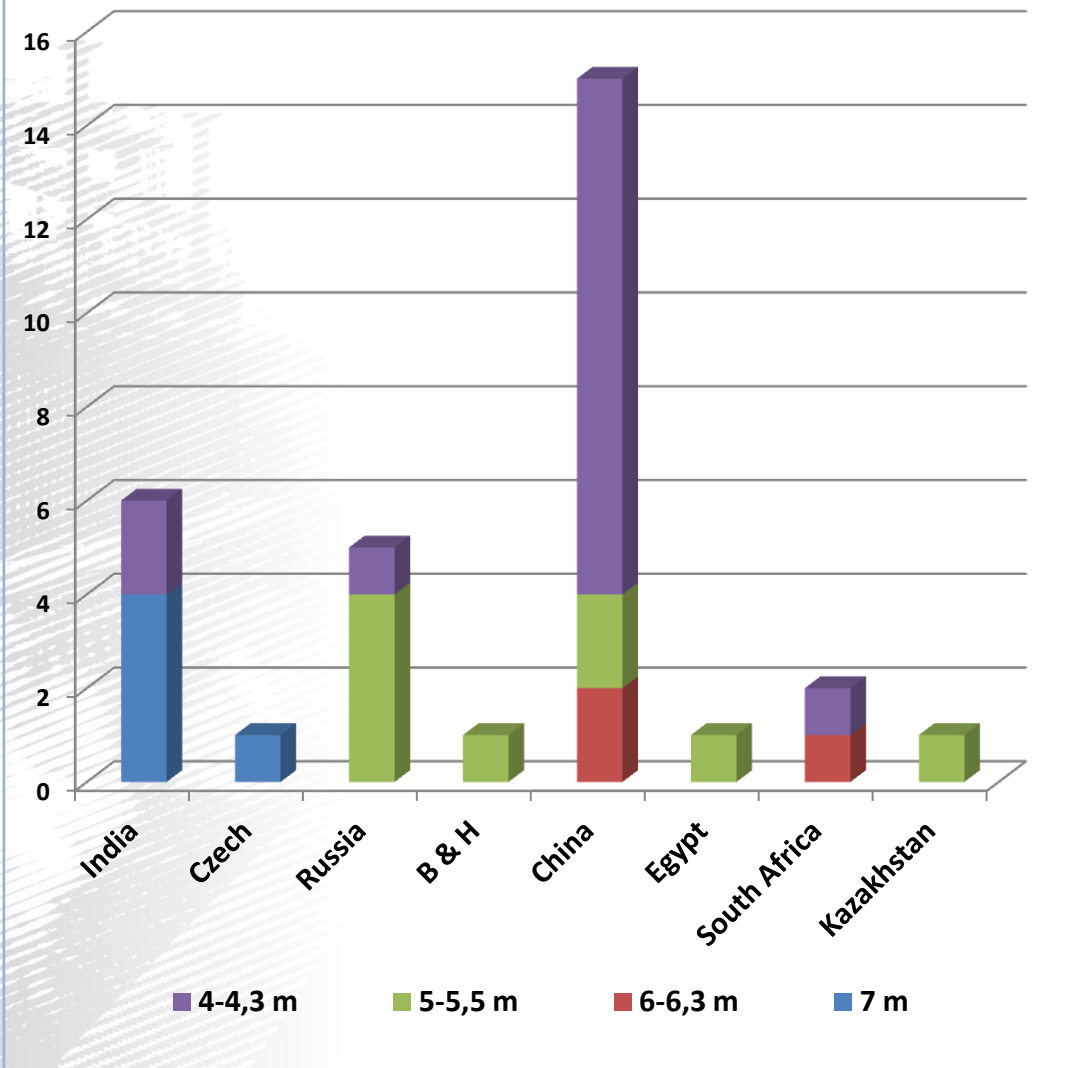


- ✓ Technology/Process Engineers
- ✓ Mechanical Engineers
- ✓ By-Product Engineers
- ✓ COB Heating & Adjustment Engineers
- ✓ Highly Qualified Refractory Specialists

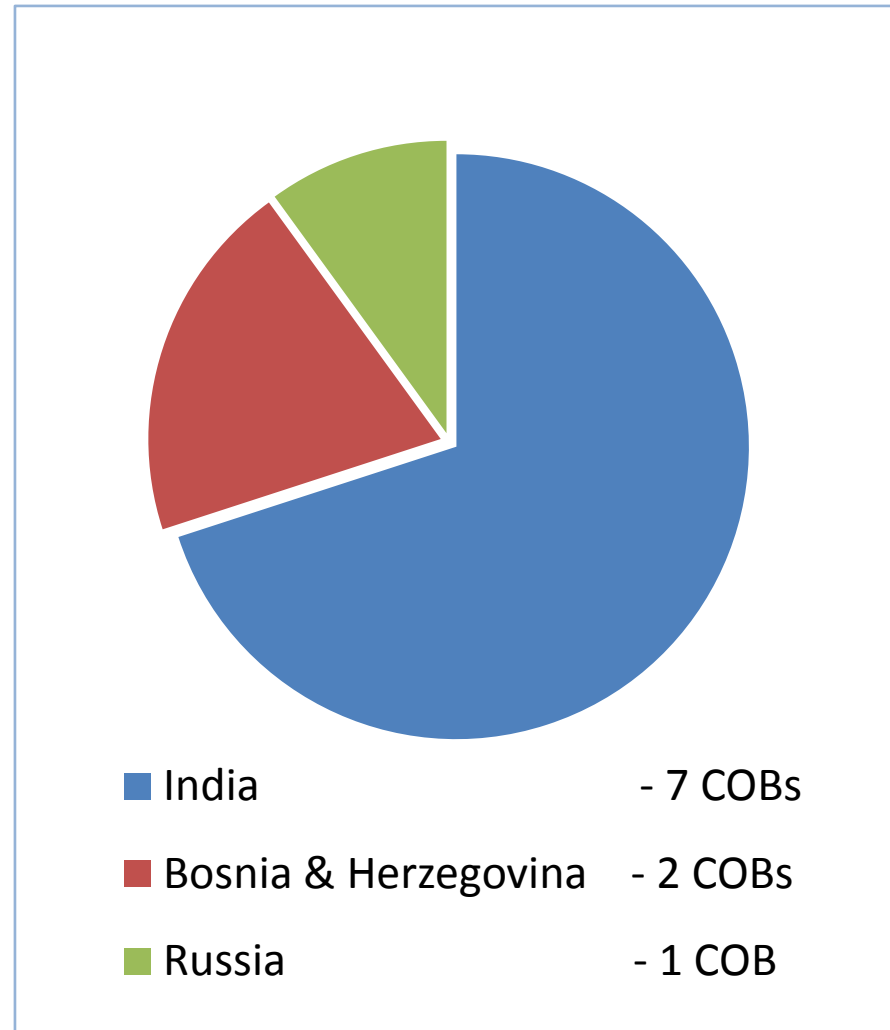
FACTS AND FIGURES:

	REFRACTORIES AND MORTARS SUPPLIED	95,627 MT
	REPAIRS: COLD AND HOT TYPE, incl. CERAMIC WELDING	43 COKE OVEN BATTERIES
	PREHEATING AND (RE-)COMISSIONING / HEATING MODE ADJUSTMENT & REGULATION	10 COBs / 4 COBs
	REBUILDING & RETROFITTING OF COBs, incl. START-UP AFTER LONG MOTHBALLING	3 COKE OVEN BATTERIES
	TECHNICAL ASSISTANCE IN OPERATION	8 COKE OVEN BATTERIES
	AUDIT OF INDUSTRIAL SAFFETY & COB INSPECTIONS	37 FACILITIES

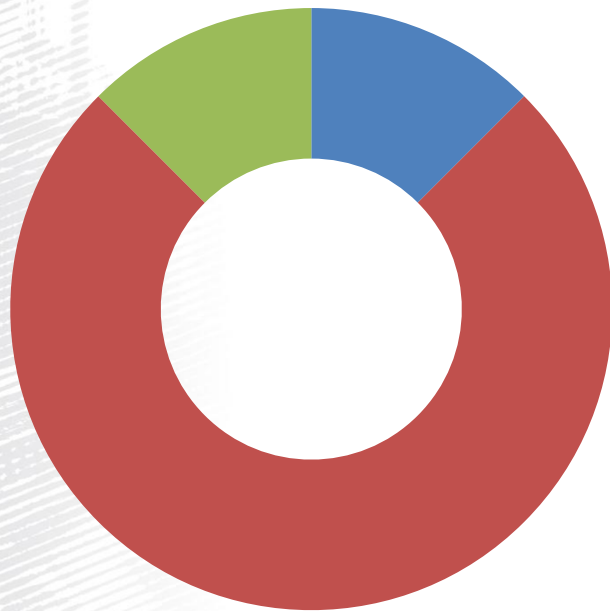
REPAIRS OF COKE OVEN BATTERIES



HEATING UP AND COMMISSIONING OF COKE OVEN BATTERIES

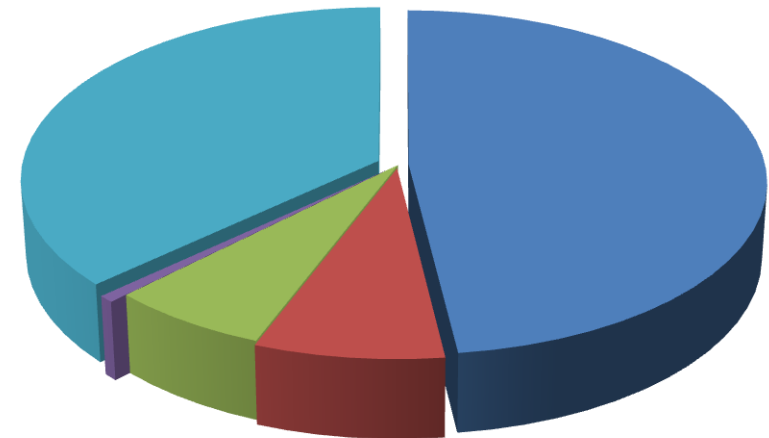


TECHNICAL ASSISTANCE IN OPERATION & MAINTENANCE OF COBs



■ Bosnia and Herzegovina	- 1 COB
■ India	- 6 COBs
■ Iran	- 1 COB

**SUPPLYING REFRACTORY MATERIALS:
95,627 MT**



■ Kazakhstan	- 45 957 MT
■ Algeria	- 7 458 MT
■ Egypt	- 6 351 MT
■ Czech	- 616 MT
■ Russia	- 35 245 MT



GEOGRAPHY OF WORKS

CZECH REPUBLIC

- Iron & Steel Works in Ostrava

ALGERIA

- ArcelorMittal Annaba

EGYPT

- Al-Nasr Co. for Coke & Chemical, Helwan

KAZAKHSTAN

- ArcelorMittal Temirtau, Karaganda region

IRAN

- Esfahan Steel Company (ESCo)

SOUTH AFRICA

- ArcelorMittal Newcastle
- ArcelorMittal Fanderbeylpark

BOSNIA AND HERZEGOVINA

- ArcelorMittal Zenica,
- GIKIL, Coke & By-product plant, Lukavac

RUSSIA

- EVRAZ ZSMK, Novokuznetsk
- SeverStal, Cherepovets
- MMK, Magnitogorsk
- NLMK, Lipetsk
- Ural Steel, Novotroitsk
- Altay-Koks, Zarinsk
- NTMK, Nizhny Tagil
- KOKS, Kemerovo
- Gubahinsky Koks, Gubaha

JAPAN

- Integrated Iron & Steel Plant of JFE in Chiba
- Integrated Iron & Steel Plant of JFE in Kurashiki



CHINA

- Integrated Iron & Steel Plant of HBIS in Xuanhua
- Integrated Iron & Steel Plant of HBIS in Tangshan
- Integrated Iron & Steel Plant of HBIS in Handan
- Hangzhou Iron & Steel Group Company in Hangzhou, Zhejiang province
- Integrated Iron & Steel Plant, Sanming
- Integrated Iron & Steel Plant, Xiangtan
- Integrated Iron & Steel Works, Jiuquan Iron and Steel (Group) Co., in Jiayuguan, Gansu Province

INDIA

- Rashtriya Ispat Nigam Ltd, Vishakhapatnam Steel Plant, Andhra Pradesh
- Integrated Steel Plant in Meramandali, Orissa (Bhushan Steel Ltd.)
- Jindal Stainless Ltd., Kalinga Nagar Industrial Complex, Orissa
- Nilachal Ispat Nigam Ltd.
- Bhilai Steel Plant, Orissa
- Bhushan (BPSL), Rengali, Orissa





OUR CUSTOMERS





Customer: ArcelorMittal Temirtau

Site: Iron and Steel Mills in Temirtau,
Republic of Kazakhstan

Job Name: Major repairs to rebuild and restore coke ovens operation at the COBP Plant (on the running batteries No. 3, 4, 7)

Job Duration: March 2019 – present time (2021)

Scope of work:

- Inspection to evaluate condition of batteries No.1 to 5;
- Rebricking of end verticals for 4-6 flues deep;
- Full-length rebuilding of heating walls;
- Replacement and alignment of flashplates, door frames and reinforcement items;
- Adjustment of heating and hydraulic modes for COBs No. 3, 4 and 7;
- Instructing and assisting customer in operation of the coke ovens.





OUR PROJECTS



Customer: EVRAZ ZSMK

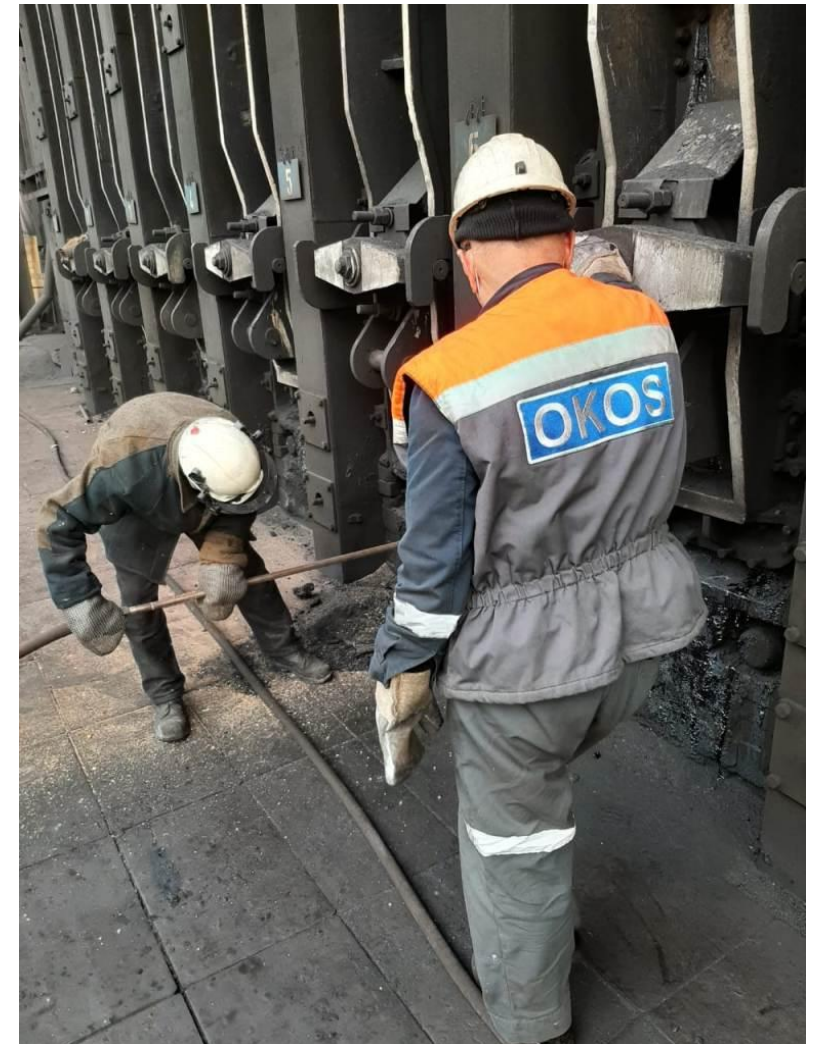
Site: Zapsib Iron and Steel Mills in Novokuznetsk,
Russia

Job Name: repeated regulation and adjustment of
the heating mode of operating COB No.1

Job Duration: July 2020 – Dec. 2020

Scope of work:

- Inspection to evaluate condition of Battery No.1;
- Restoration of the rated loads on the COB bracing system spring units;
- Purging of gas guns, massive replacing of vertical flues' burners;
- Adjustment of the COB heating/thermal mode;
- Adjustment of the COB hydraulic mode;
- Developing and issuing the Process Regulations & Procedures to run the ovens at various coking times.





OUR PROJECTS



Esfahan Steel Company

Customer: ESFAHAN STEEL COMPANY (ESCO)

Site: Iron and Steel Mills in Esfahan, Iran

Job Name: Adjustment of heating mode and alignment of buckstays in Blocks 1 and 2 of Coke Oven Battery No.3.

Job Duration: July 2018 – March 2019

Scope of work:

- Battery heating and hydraulic modes adjustment;
- Alignment of buckstays in the COB;
- Instructing customer's staff during the repair work, issuing recommendations and requisite documents;
- Classroom and hands-on training of customer's personnel for proper methods of adjustments/alignment and maintenance.



Customer: Severstal PJSC

Site: Integrated Iron & Steel Plant in Cherepovets, Russia

Job Name: Hot repairs of Coke Oven Battery No.8

Job Duration: Dec. 2014 – May 2015

Scope of work:

- Supervision and control over complete rebuilding of heating walls and replacement of mechanical equipment of the coke oven battery;
- Issuing technical solutions and recommendations to the customer to ensure proper COB operation and maintenance during and after the repair;
- Instructing and hands-on training of customer's personnel.





Customer: Rashtriya Ispat Nigam Ltd.
Site: Visakhapatnam Steel Plant (VSP), India

Job Name: Hot Repairs of Batteries No.1 and 3
Job Duration : Dec. 2010 – May 2015

Scope of work:

- Rebuilding work Supervision for full-wall rebricking of the COBs heating walls;
- Repairs and replacement of COBs mechanical equipment;
- Replacing the bracket supports of gas collecting mains at COB No.1;
- Developing the system of periodic check-up and assessment of the batteries' health, and the measures to ensure proper operation of COBs 1 to 4 of the VSP;
- Working out and implementing measures to rectify Hudhud cyclone's damage effects;
- Training customer's local personnel.



Customer: Bhushan Steel Limited

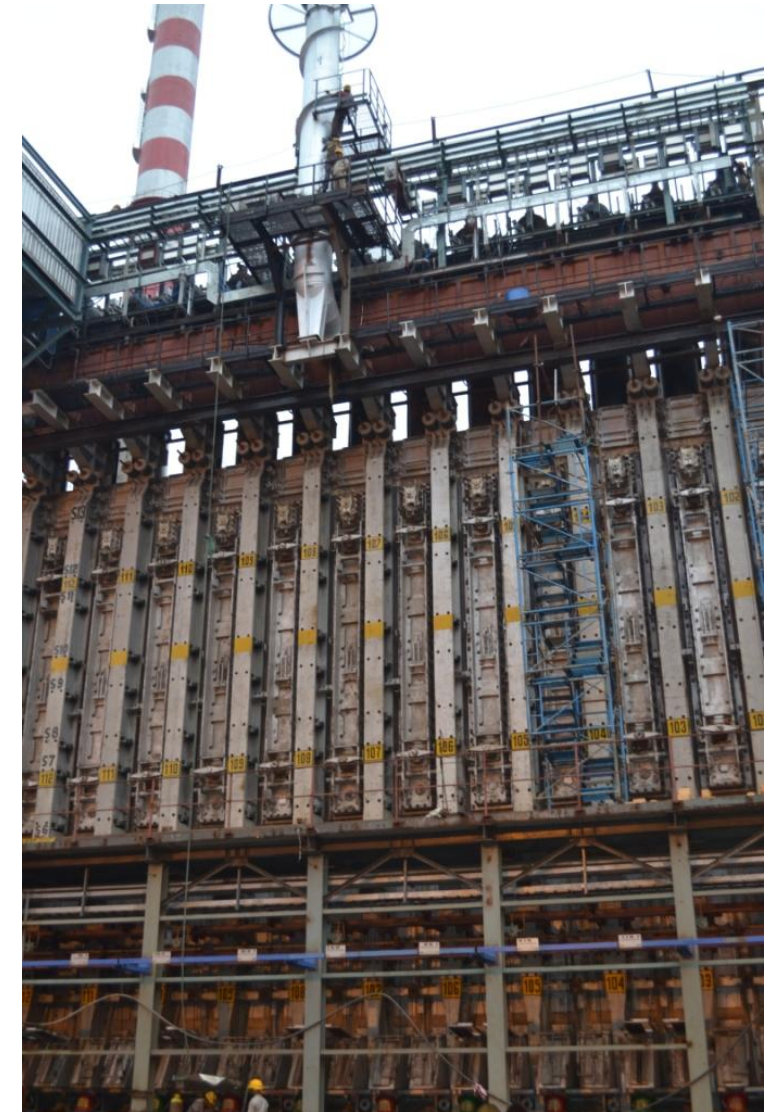
Site: Integrated Iron & Steel Plant in Shibapur, Meramandali
(Orissa state, India)

Job Name: Heating-up of Coke Oven Battery No.1
(Coke Oven Shop-2, Paul Wurth design, chamber height = 7.8 m)

Job Duration : 2014

Scope of work:

- Developing of engineering documentation;
- Supervision of the COB and By-Product plant preheating & commissioning activities;
- Sealing the firing holes with ceramic welding;
- Adjustment of COB's heating mode;
- Training of customer's personnel.



Customer: Hebei Iron & Steel Group (HBIS),

Site: Integrated Iron & Steel Plant in Tangshan,
Hebei Province, China

Job Name: Hot repairs of coke oven batteries No. 1&2

Job Duration: 2009 – 2012

Scope of work:

- Developing of engineering documentation;
- Rebuilding COB's heating walls:
 - a) to the depth of 4-6 vertical flues;
 - b) entire wall length (32 heating walls).
- Repairs and replacement of reinforcing equipment;
- Ceramic welding;
- Adjustment of COB's heating mode.



Customer: ArcelorMittal Zenica

Site: Integrated Iron & Steel Plant in Zenica,
Bosnia & Herzegovina

Job Name: Restoration and re-commissioning of Coke Oven
Battery No.6 after its long-term mothballing

Job Duration: 2007 – 2008

Scope of work:

- Repairing COB's brickwork and equipment;
- Preheating and re-commissioning of the COB;
- Re-commissioning of the By-Product plant;
- Adjusting the machinery and equipment;
- Adjusting the heating mode;
- Application of ceramic welding;
- Training of customer's personnel.



ARCELORMITTAL ZENICA, D.O.O.
COKE OVEN DEPARTMENT

Отзыв

о работе ЗАО «Отнеупоркоксервис» (г. Москва, Российская Федерация) по ремонту, разогреву, вводу в эксплуатацию и освоению коксовой батареи №6 компании «Арцелор Миттал Стиль» (г. Зеница, Босния и Герцеговина).

1. Компания «Арцелор Миттал Стиль» заключила с ЗАО «Отнеупоркоксервис» контракт COVR-08-001# от 25.05.2007г. на расконсервацию, холодный ремонт, разогрев, ввод в эксплуатацию и освоение коксовой батареи №6, в комплексе с цехом химического улавливания (Коксовая батарея №6 компании «Арцелор Миттал Стиль» была выведена из эксплуатации в 1992 году из-за военных действий и находится на холодной консервации).

2. ЗАО «Отнеупоркоксервис» разработало и выдало компании МСЗ детальный инженерный план на различные этапы работ и командировало группу своих специалистов для технического содействия в выполнении работ по расконсервации, холодному ремонту, сушке и разогреву, горячему ремонту, пуску в эксплуатацию и освоению коксовой батареи в комплексе с цехом химического улавливания.

3. Благодаря совершенному инженерия, квалификации и опыту специалистов ЗАО «Отнеупоркоксервис», все работы по подготовке к вводу в эксплуатацию, разогреву, последующий горячий ремонт и ввод в эксплуатацию коксовой батареи №6 с цехом химического улавливания выполнены успешно. Продолжается дальнейшее освоение работы коксовой батареи.

Компания «Арцелор Миттал Стиль» выражает благодарность за работу, выполненную ЗАО «Отнеупоркоксервис» и надеется на дальнейшее сотрудничество.

Директор
А.К. Олянович

NEELACHAL ISPAT NIGAM
KALKAJI NAGAR INDUSTRIAL COMPLEX, DURGAM
PHONE: (08726) 241805, 241972, FAX: (08726) 241980, 241991
Fulfillment of Contract Obligations under
701/120/19-2492 dated 26.11.2003 and by
dated 06.05.2004 by CSC

唐山钢铁集团有限责任公司
对焦炉热态维修工程俄罗斯专家组的评估

在唐山钢铁炼铁厂1#、2#焦炉热态维修工程中，0组的专家们，能够以严谨的科学态度、高尚的敬业精神、顽强的工作作风和满腔的工作热情，保质、保量、要求，热修后效果十分明显，得到我厂的一致好评，专家们兢兢业业、无私奉献的爱国主义精神让我们无憾献血，这种大爱无疆的国际主义精神让我们难以忘怀。此外，贵公司专家组长阿尔焦姆先生的工作中他亲临现场指挥施工，在制定每个单元维修使维修工作具有极强的针对性，他富有责任感和敬业精神，出色完成了热修维修的各项任务。

对俄罗斯耐火焦化服务股份有限公司专家组
在邯钢热修工程中进行技术服务的
综合评价

耐火焦化服务有限公司：
焦化厂2号焦炉蓄热室热修和3号焦炉燃烧室热修一期工程已经竣工。期间我们焦化厂项目组提供技术支持的专家组为此做出的贡献。在此一并表示衷心的感谢。

2号焦炉蓄热室和3号焦炉燃烧室热修工程工期长、技术含量高、条件艰苦且与生产相建交，在维修过程中遇到了很多困难。为难的几位专家与中方项目组合作，尽心尽力、艰苦奋斗、不分昼夜的工作，在开工日期推迟、开工后由于方焦炉煤气短缺只能的情况下，如期安全、保质保量地完成了工程施工任务，作为专家组长阿尔焦姆先生在工作中始终以身作则，起到了很好的表率作用。

焦炉热修一期工程目前虽然只完成了整个工程的一半，但意见，例如：3号炉内没有观察到漏修现象，保证了焦炉头漏修明显减少，冒氨冒水现象得到基本解决；维修过程中电正常，相应提高了焦炭和煤气产量，缓解了缓解了方焦炉的环保压力，减少了焦炉维护工人的工作量和效果，我们感到满意。希望专家组在二期工程的工作中做得更好，使我们施工的效率得到进一步提高。

耐火工程咨询服务有限公司
项目经理部
2011年6月6日



OUR CONTACTS

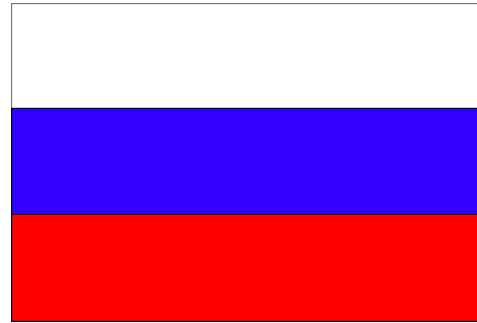
HEAD OFFICE OF OKOS LLC

No.1/1, 3rd Khoroshevsky proezd,
123007, Moscow, Russia

Tel./Fax: +7 (495) 953-5083

E-mail: okos@okos.ru

Web: www.okos.ru



THANKING YOU!